



MEWSLETTER 97

November - December 2010

Edited and distributed by Brian W Marshall,
16 Glendee Gardens, Renfrew, PA4 0AL

☎ 0141 886 6117 www.info@kitreg.org.uk



There are only half a dozen Asquith Shetland vans on the Register at this time. This one, first registered in October 1989, belongs to Neil Kinneally of the Ship Inn in Anglesey, you can, I am sure, understand why we chose not to use a close-up picture of the van for this our Christmas cover! It has belonged to Neil since 1989 (from new maybe?) and has covered 26,000 miles.

***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>

Dinky Cars

RELIANT SPECIALIST

**Wennington Marsh Farm, Wennington Road
Rainham Essex RM13 9EE
Tel: 07958 246891**

SALES, SPARES, REPAIRS, ENGINE RECONDITIONING

INDEX

Issue 97

Page	3	Index
Pages	3 & 4	The Editor speaks
Pages	4 to 7	Rebel stuff
Pages	7 to 10	Kitten Chassis by John Pearce
Pages	10 to 13	The Reliant BRM engine story John Sawle
Pages	14 & 15	Readers Letters
Pages	15 & 16	FBHVC AGM report
Pages	16 to 22	Getting Technical
Page	22 - 23	Parts
Page	24	Sales and Wants
Page	24 - 26	Epilogue

Seasons greetings to you and yours, and welcome once again, this time to our 14th Christmas edition. Back in the early days the first year was not as clearly defined as we have graduated to over time, and so while it was 19 years ago that I started all this, this is just about our 13th or 14th “Christmas edition”. Number 19, Nov / Dec 1997 having some holly on the cover, and edition 25 in Nov / Dec 1998 the first one to actually begin with the words “Welcome to our Christmas edition”

I have decided not to make this the usual bumper sized edition we enjoy at this time of year, potential grandparental responsibilities and the desire (need?) to save myself for our 100th in a few months time have persuaded me that restraint should be the order of the day (no doubt great sighs of relief can be heard throughout the land – well all over the planet actually!) That said, should my letterbox be filled with articles from you in the coming week or two, who knows what may transpire? (he said in the middle of October.)

As ever I am indebted to those who have supplied input over the past year.

One coincidence that made me smile happened just after I mailed the last edition, John Box returned the envelope to me with a small newspaper cutting about pubs recommended in the “Good Pub Guide 2011” with a post-it note attached – John knows I like to plan ahead, and he was recommending a couple of possible venues for our 25th anniversary do in 5 years time (possibly 4 by the time you read this). What was really striking, John, who like most people, had no idea what the cover picture of this edition was going to be, had enclosed a short article on the british public’s attitude to pubs, their satisfaction, or in too many cases (a figure of 4 in 10 no less) dissatisfaction, but three shone as beacons of best practice, service atmosphere and good food, and the **Ship Inn** was one of those to get top marks! (just look at that picture on the front cover will you!)

Subsequent conversation with John about what I had seen as this extraordinary coincidence, brought to my attention that, while there was no doubt a coincidence there, I had completely missed the point (*not for the first time methinks!*) the venue mentioned in the article that had motivated John to send the cutting to me was the first named establishment in the article, namely the **Tempest Arms** in Elslack in Yorkshire.

One little gem I uncovered recently (I always have great difficulty in understanding the significance of really big numbers) I used to try and imagine neatly piled matchsticks in 100's, not actually that helpful when you get into many thousands, but the following (though I have not checked the maths, but it just seemed such a helpful idea) big numbers are best thought of in terms of seconds. A million seconds is 11 days, a billion seconds is 32 years, if true, that perhaps helps put the difference between a million and a billion into perspective! Yes I know the Yanks take a different view on what a billion consists of, but you could say there's nothing in it!

We do not often host an obituary page, I'm not sure if I should follow that statement of fact up with the word thankfully, or just make the comment that with a few notable exceptions I tend to try and accentuate the positive – BUT, and hopefully I will prove to be mistaken, but my sources tell me that the imminently anticipated Christmas edition of Liege News will be the last edition of that fine publication.

Not into the chastisement of dead horses, John Sawle has sadly been experiencing a drought of articles from that - oh dear, it's that elusive adjective time again.... Anyway, those guys out there who always amaze me by the number of vehicles they are able to muster at events all over the country, (they often manage to muster 20% or more of the total number of vehicles produced at an event, I doubt many makes can claim to come anywhere remotely close to that level of support and dedication) would appear to be too busy enjoying themselves using (or building the few that are not yet complete) their cars that they have been rather lax at telling John and Mel what they have been up to.

Say what you like about Peter Davis, to design and organise production of over 50 cars (when he originally intended to make 2!) not only shows a failure to recognise the demand for such a thing, but surely says much about his abilities. Sure one can criticise some aspects of the design, (any self respecting designer / engineer jolly well ought to be able to criticise another's work) and in some instances the speed of service may have fallen short of expectations, though I never heard Peter promise a firm delivery date for anything! But come on, honestly, could you have done it, never mind done it better? (And if the answer to that is yes, then what the hell stopped you??)

Anyway, John has had enough, I gather he is quite prepared to print and distribute a magazine in future, if someone else compiles it. Hopefully someone will step up, and everyone interested will be able to say "Well Marshall certainly got that one wrong" And I assure you, no one will be more delighted than I.

Moving on then, Oh, our gathering in the summer is now booked at Erddig on Sunday the 3rd of July 2011, more details next time.

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

The Rebel in me... Part Three

A tale in numerous parts by Colin Barr

Held over till next time, (becoming a dad before Christmas) have a Happy New Year... Colin

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

Hello Brian,

21/10/2010

Thanks for your phone call, I hope that you and Moira are well. I am sorry that I have been out of touch for much of this year. I have been rather busy writing a book for most of the year. As I sent the manuscript off to them, they asked me to write another - so here I go again. This year, writing has not been quite the relaxation that I normally enjoy.

Rebel wise, I have not much to report, LRF passed its MOT in August without any trouble, and I still use it but far less than I used too. The paint is falling off rather alarmingly though. I did meet up with John Parker at a local car show in September. He has sorted out the overheating problem in his Escort powered

Rebel estate. Whilst John attended in the Rebel, I was in my Mk1 Escort GT so that was another opportunity lost.

I may have missed something – what's happening in July 2011 as referred to in the latest edition? *We are having a get together at Erddig on the Sunday the third, see picture below, Ed*



I have very much enjoyed the tales of No. 3, and I think it most appropriate that it is now in your hands. Keep up the good work.

Kind regards, Terry (Horler) Bristol - No. 755

~~~~~

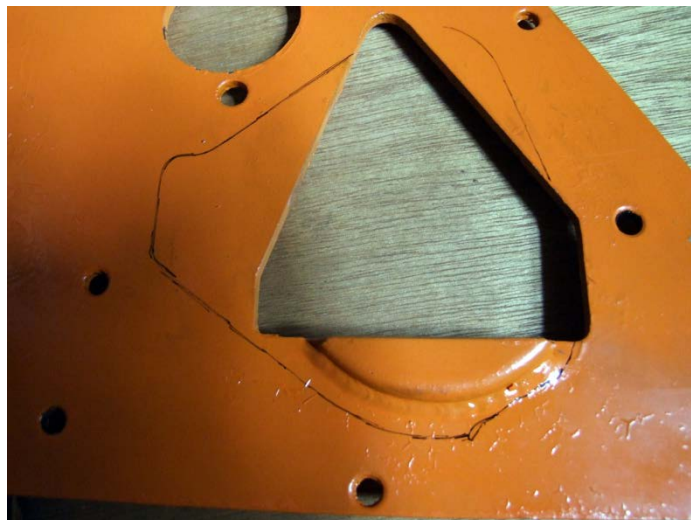
From Oliver Smith of Alyesford

*If you have a Rebel, and no one else can help, and if you can find them, maybe you should call, Rebel Rescue.*

Hi Brian,

September 2010

Here is a picture of the bearer plate with the 850 overlaid and marked in black pen....



As you can see the welded raised part is unlike anything I have seen on a Reliant engine, and it fouls the chain drive wheel. ?Can you offer any thoughts?



The Rebel does 55mpg and I have re-painted it 4 times in 24 years.

I am retired now and so I do less miles.

John Flood - Lincoln

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

*Thanks for that John, though I must say that you are too modest – for example that sentence at the top of the page “I changed the back axle for a Robin one” I happen to know that the Rebel axle sits above the leaf springs while the Robin one hangs beneath them, never mind the fact that Rebel leaf springs are roughly half the width of Robin ones, and on top of that the handbrake mechanisms are completely different so I just know that you are being economic with words in your description of the axle change – never mind the other mods you have carried out so effectively to the car. Ed.*

*Just to digress for a moment (you know by now how my mind wanders a bit off topic sometimes), a bit of irrelevant information just sprung to mind, Lincoln, where John lives, well, bear with me here, the thought process, Rolls Royce (where my dad worked, indeed his only full time employer), built a factory near here at Hillington, specifically to make Merlin engines, (the big office block they built in the 1960’s, or was it the 1970’s? next to the M8 near Glasgow airport is to this day called Merlin House) Merlin engines as used to power Spitfires, Hurricanes, Mosquitoes, and the Lancaster bomber of Dam busters fame, to mention but a few, well, the last remaining airworthy Lancaster in the U.K. has a name, and that name is the “City of Lincoln” I just know you will sleep better tonight for knowing that!*

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

**Old number three update**

The idea of a fund to help support old number three, or the Scarlet Lady as she was known to her previous custodian, has received some support. A new bank account will be opened, the name of which I will advise as soon as it is decided. Ed.

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

**Reliant Kitten Chassis Information**

By John Pearce

During the production run of the Reliant Kitten three different chassis were used. The actual geometry of the chassis remained the same throughout, the modifications applying only to the method and materials used over the time. Detail differences to gusseting and non-critical bracing are clearly visible but body shells are said to be completely interchangeable on all types. From the experiences of some Register members this might not actually always be the case but probably more due to Reliant’s legendary build quality (sic) than any other reason!

The later Fox chassis (1983 on) was very different though, and whilst it is possible to install a Fox chassis under a Kitten it is by no means straightforward as few of the mounting points actually line up. The Fox also differed in being hot-dip galvanised and the front lower suspension tie-bars (or radius / track control arms) are a completely different design and cannot be fitted to a Kitten chassis. Other suspension components are the same though.

All chassis were stamped with a frame number (as opposed to the vin number issued when the vehicle was built) and this is a method of dating the actual frame as the number is sequential with the prefix "10", (or "FW10" on some cars). The number's actual position varies but it is always in the area of the left-hand front suspension / engine mounting. Unfortunately in many cases the body needs to be removed to see it. My own is on the top rail, under the body and when I last had the engine out I was able to see it with the aid of a small Dentists' mirror..... The vin number was stamped on to the n/s diagonal chassis brace adjacent to the exhaust.

Reliant records advise that between 1975 and 1982 a total of 4074 Kittens were manufactured although it is unclear as to whether this was vin numbers issued or chassis constructed. Many chassis were not made in to Kittens, with other vehicles (Jimps, Salamanders, Caribbean Cubs, Asquiths etc) also being constructed on the platform. In truth it is unlikely that any Kitten frames were made after 1979, the reason for which will be suggested later in this article.

The front and rear suspension was generally the same throughout production with most components being identical and interchangeable, though the type 1 chassis, being, in effect pre-production, had some "parts bin" components which were different, but are still obtainable although not necessarily from Reliant dealers or Partsworld.

## **The Chassis**

Type 1 chassis were effectively modified Robin chassis, with around 50 produced. These are different in a few crucial areas, the front anti-roll bar being of thinner section, the upper wishbones are different and visibly "handed" – and the wishbone to chassis mountings are half an inch wider apart than the later chassis. I was able to source spares for my own (early) car from Lotus as the Kitten front suspension is a loose copy of a system used on a Lotus car, possibly a Europa?? The new rack presently fitted to mine (in 1992!) was definitely a Europa one..... Effectively a Ford Escort mark 2 with a relocated inboard mounting point. Additionally the early ball joints had a different taper and cannot be used on later models. The rear suspension retained the Robin's rear anti-roll bar on early chassis and the rear spring & shackle bushes were Robin as well. Most of the survivors will by now have had the rear anti-roll bar removed as the ride with it installed is diabolical and on a four-wheeled vehicle it is completely unnecessary. I removed mine very early during my ownership!!! Likewise most will have had the later front anti-roll bar fitted.

Type 2 (1975-1977) were the first discrete Kitten chassis and were, in my opinion, by far the best. All the suspension components were manufactured in house and parts for these can still be obtained, either from Partsworld or via the Kitten Register, who also can supply powder coated components. The upper wishbones are "handed" as are the tie-bars. The front anti-roll bar is of thicker section. The exploded view in the factory workshop manual (attached) clearly shows the layout and refers to this chassis.

Both type 1 & type 2 are extremely durable with serious corrosion generally rare. When it does occur it is normally confined to the upper surfaces, between body & chassis and at the rear where the chassis kicks up over the axle. It is far from unusual to find these chassis to be in excellent order even now, 30+ years on, with light surface rusting only. Towards the end of production, rear seat belt (lap belt) mountings were added. These consisted of a captive nut let in to the rearmost outrigger for the outboard mounts, plus the incorporation of a sub-frame, welded to the rear cross tube (where the shock absorber mounts are) forward to the centre of the rear seat lower pan in the centre of the car, with captive nuts for the inboard mounts. An identical set up was used on Robins (from the "A" posts back the chassis is effectively the same).



Type 3 (1977-1982) were very similar but were made of thinner (Italian sourced but originally made in Russia) steel and had slight modifications to the gusseting. Front and rear suspension was identical, though the braking system was now dual circuit with an extra bracket added to the forward right-hand chassis rail to support the balance valve. Unfortunately the steel used proved to be excessively high in carbon content which made it brittle and readily prone to corrosion. These can and do rust (from the inside out) just about everywhere with the worst place being the front suspension towers and mountings. The steel also proved almost impossible to weld conventionally, with oxy-acetylene or tig being the only practical methods so, alas, many cars have been lost due to the welding necessary being considered unviable. If kept undersealed / waxoiled from new these chassis prove no problem however and many were / have been so treated and survive well. Fortunately Reliant owners in general have a tendency to do such things!

Whilst this problem was not unique to Reliant with other manufacturer's (notably Lancia) being afflicted with the same poor quality steel, it did cause serious difficulties for the company, who were forced, during late 1979, to carry out an expensive recall and modification exercise when Robin steering boxes started to tear off their mountings, resulting in accidents. The negative publicity from the media at the time, notably the "That's Life" consumer programme, further damaged the company's reputation, leading to the suspension

of Robin production, (and, I suspect, Kitten too). Most Kittens "manufactured" after 1980 were "dealer kits", that is, assembled to order by dealers, some later ones of which were on galvanised Fox chassis. The latest one known to the Register was completed and registered in 1984.

It was at this time that Reliant launched the Rialto, mechanically / structurally virtually identical to the previous Robin but with the chassis galvanised. No factory Kittens were ever made on a galvanised chassis.

Alas the galvanising did not prove to completely solve the issue though and it is not that unusual to find Foxes and Rialtos suffering serious corrosion. The galvanic coating plus the type of steel causing repairs to be even more awkward..... During the late 1980's Reliant returned to the earlier specification steel, retaining the galvanising, plus they improved production methods and thereafter the problem was solved.

### **Other Chassis Related Notes**

The Kitten always had a different rear axle to the three-wheeled Reliants of the period being three-eighths of an inch wider, due to the different (wider) brakes fitted. Robins were fitted with Standard 10 / Herald 948 rear brakes which have shoes three-sixteenths of an inch narrower than the 850 Mini rear brakes that all Kittens had. (Kittens have 850 Mini front brakes and brake plates too by the way, also, dual circuit Kittens have different (but interchangeable) wheel cylinders although as long as changed in axle sets this causes few problems).....

Early axles were greatly beefed up, with heavier gauge side tubes and far more substantial shock absorber mountings which were located on the centre line of the axle tubes as opposed to the Robin ones fitted on drop plates welded to the axle tubes. The ratios and internals were always the same as the Robin though.....

Sometime during 1976 this was deemed unnecessary and from then on, Kittens had the same axles as Robins, but retaining the 850 Mini brake back plates and brakes so were still wider overall. It's far from unusual for the shock absorber plates to snap off these as there are no external bump

stops so bottoming out the suspension causes severe strain on the mounts leading to stress failure. A simple repair however.....

A few Kittens will by now have had actual Robin axles fitted, easy to spot as the handbrake mechanism is totally different, as are the brakes which have a sliding single-piston wheel cylinder to enable brake compensation as opposed to the fixed, two piston 850 Mini wheel cylinders.

Two different lengths of shock absorber were used so when replacing it is essential to take a pattern to ensure the new ones are the right length. All early cars used the shorter one (Mini Clubman fronts?) as did some later chassis which had cast drop brackets bolted to the upper chassis tube to "lengthen" the shock absorber by a couple of inches. Original shock absorbers had bump rubbers fitted internally but most modern replacements do not.

Just ahead of the forward spring shackles is the bracket which supports the body shell roll bar. This is a length of one inch, thick wall box section steel, a hoop bonded in to the body to reinforce the door pillars and designed to sustain the loading of the upper front seat belt mounting. Robin's (and Rialto's, Robin 2's etc) simply had this bonded in to the glass fibre but on the Kittens, Reliant brought it out to be bolted firmly to the chassis at this point. The lower few inches of these rot like crazy as the box section was not even painted during assembly!!!!!! This is not too critical in that the upper section where the seat belt mounting is, being bonded in glass fibre, secure and does not readily rot out, but it's an MOT failure if the tester is savvy enough to spot it. Luckily it is all but invisible unless you know where to look.

Various methods of repair have been submitted to the Register down the years, my own being a length of square section solid galvanised billet (from an old section of fencing), which is a tight sliding fit in the existing box section, being inserted, drilled, tapped and bolted securely top and bottom using the original mounting plate (as these rarely rot out). If you are doing this or similar be aware that the box was welded to the plates at an angle so the plates are therefore "handed". Due to lack of access, the lower brackets have to be completely removed to fit the repair.....

John Pearce - RKR

~~~~~

Now, by the kind permission of John Sawle of the Liege Car Club

THE RELIANT BRM ENGINE

When I first heard of the Reliant BRM engines I determined to try and write an article about them. I began by contacting individuals who might be able to help but it quickly became evident that any written records had been destroyed during the several company takeovers that had occurred in the intervening years and when manufacturing ceased at Reliant Motors in 2003.

However from the memories of some of those men who were involved at the time the following story has emerged.

We have to first go back a bit, to 1968 when Bond Cars of Preston introduced a new 3wheeler car, the Bond 875. This was powered by the 875cc Hillman Imp engine. Production ran until March 1970 by which time 3400 vehicles had been made.

The Reliant Motor Company, of Tamworth, Staffs. bought the Bond company in 1969/70, to absorb a competitor, and continued producing the 875 for some months.

In June 1970 however they introduced an entirely new model, the Bond Bug designed by Tom Karen of Ogle and powered by the Reliant 700cc all alloy engine. The early Bugs were made at Preston and then, in July 1970, the Bond works were sold and Bug production was moved to the Reliant plant at Tamworth. When production ceased in 1974 a total of 2268 Bond Bugs had been made.

It would be pertinent now to say a few words about the development of the Reliant o.h.v. Engine. The first Reliant vehicles used the well known Austin 7 side valve engine of 747cc. dating originally from 1922. The Reliant company produced their first o.h.v. alloy engine, of 600cc, in 1963. This was subsequently enlarged to 700cc. in 1969 and then bored out to 750cc in November 1972 before being stroked to 848cc in 1975. Back to the story.

Sometime in the early 1970's the Reliant Motor Co. developed a 'grand strategy' to produce a small four wheeled sports car based on the Bond Bug which was then in production. It was intended that the BRM engine would go into this car. In the eventuality only one four wheeled Bug was produced (Reg.No. GBF 473H) before the project was shelved and the development of the engine was therefore stopped.

Tony Stafford, later and perhaps better known to us as the founder of Stafford Vehicle Components, worked for Reliant and had this to say about the BRM project.

"There were six ohc. engines made, two were fitted into vehicles although they needed further development. They would not tick over slowly, below 1000 rpm. The compression ratio was perhaps 11.5 or 12 to 1.

I had three engines in my stores area that were never run.

Reliant were planning to produce a four wheeled Bond Bug, an idea which originated after Reliant bought Bond cars at Preston, mainly for their Triumph outlets.

The BRM engines were intended for the four wheel Bug which was to have been built at Preston, although it was a barn of a building with no central heating and broken windows. The engine ??? missing something here /???

I spoke to John Tunnicliffe on the telephone. He, together with Pete Draper, worked in the test shop at Reliants until 1986, and ran the test rig on which the o.h.c. engines were run. He remembered that the engine produced about 60 bhp. but said," It was a very lumpy engine that would not idle slowly".

The following paragraph was given to me in a telephone conversation, after exchanging letters, by Ray Wiggin who had been managing director at Reliant from 1959 to 1978.

"In designing the engine, Reliant collaborated with BRM (*British Racing Motors*) and together they designed a single overhead camshaft cylinder head to fit the Reliant block, or rather the Reliant short engine. The leader and coordinator on the BRM project was John Crossthwaite who had been a consultant with BRM, as a chassis designer, before he came to Reliant in 1962 or '63.

Ron Heathcote and David Page were the chief designers at Reliant. Ron Heathcote did most of the design work on the BRM engine on Reliant's side, however it took a long time to get decisions from BRM so there was no quick progress. It was intended to put this engine into a four wheel sports car. Reliant had the rights to use the BRM name for the car. Unfortunately during the takeovers much historical paperwork was destroyed".

It must have been apparent from very early in the design process that the new cylinder head could not be a crossflow design since the arrangement of studding in the Reliant block prevented the required positioning of the inlet ports. Retaining the same inlet and exhaust port layout as the original overhead valve cylinder head

seriously limited any great improvement in engine performance. Moreover, whilst the o.h.c. layout allowed the rocker shaft and arms to be deleted it added a second camshaft design work was done by BRM and the heads were made by Coventry Climax. When the agreement with BRM ended a man came to Tamworth from BRM to destroy the engines but two engines that were in R&D survived." whilst still retaining the original camshaft which was required to remain in place to drive the oil pump and distributor. There was therefore no saving in the power used to drive the valves.

The new overhead camshaft, which was identical to the original except for modified cam profiles, was driven by a single chain, which also continued to drive the original cam. Tensioning was accomplished by the original Reliant spring loaded block. The new arrangement required an extended timing chain cover and mounting plate.

The new aluminium cylinder heads were manufactured for Reliant by Coventry Climax Ltd. who had an acknowledged expertise in building O.H.C. engines, although I have not found that they had any design input in this particular venture.

As to the number of engines built, the best evidence suggests six, although the alternative number of ten is also quoted. I believe it was six.

Back to the Bugs. Following the end of the Reliant Bond Bug project in 1974 the matter lapsed until 1990 when father and son team, Mike and Gary Webster of Braishfield, Hampshire founded the Webster Motor Company, bought the moulds and developed a four wheel version called the WMC or Webster Bug.

On one occasion when they were exhibiting their new vehicle at a kit car show Mike Webster was approached by a man carrying a bin liner bag in which was a Reliant BRM cylinder head. He had been given two BRM engines by Reliant to enable him to enter the 1981 Monte Carlo Rally in a BRM powered Kitten. The car failed to complete the rally because the engine threw a con rod.

Mike subsequently bought the two surviving 750cc o.h.c. engines from this bin bag man and later rebuilt the broken engine onto an 850 block which was given to him by Reliant Motors on the understanding that they could have the engine on loan for dyno testing at Tamworth. The agreement was that Reliant would release the dyno readings to Mike and would not strip down the loaned engine. Mike had to go to the Reliant works to retrieve the engine and on inspection it was obvious that it had been dismantled and rebuilt. The only information that he had from Reliants was that it had produced 40 bhp which he found unbelievable.

The 750 engine was kept as original. Neither of the BRM engines had an engine number at this stage.

In 1990 Reliant Motors were keen to buy the moulds for the Webster Bug and the design rights from Mike but a deal could not be arranged. The business was eventually sold to a third party who passed it on to Reliant. The 850cc BRM engine went to Hans Kirimar of Rebel Racers at about this time and was eventually sold to its present owner, Bruce Jones from Sutton Coldfield in 2008.

Bruce has now numbered the engine as 4B/850/106671E and fitted it into his Tempest kit car Reg. No. A417 GDC. The engine number was chosen because it was the number of the Reliant Fox engine, now scrapped, in the Tempest donor chassis and using this number saved making changes to the DVLA's V5 form and possible complications there.

The more original 750cc BRM engine is still unnumbered and in the possession of Mike Webster in Hampshire.

These are certainly the only two Reliant BRM engines to survive.

~~~~~

The Reliant BRM engine in Bruce Jones' Tempest in 2010



A seasonal picture, the last winter faced by Jim Smith's last Kitten estate.



~~~~~


Hi Brian,

17/10/10

I've just read your article about vehicle lighting, filament bulbs v. LEDs etc. I have a copy of the official SVA manual, which I referred to while building my Liege, which had to pass the test in 2002. Although it is now technically obsolete, with SVA having been replaced by the IVA test, I think the relevant lighting regulations are unchanged.

The SVA manual states that a light of "similar brightness" to an E marked one is acceptable for the purpose of the test. For practical purposes, it is the light output (measured in Lumens) which matters, rather than the wattage rating. It is possible for a bulb of the "correct" wattage to put out insufficient Lumens. This is what is actually being looked at by an MOT tester.

The "old fashioned" rear foglight unit I used on my car, as supplied by Peter Davis, was not E marked, although it uses a "standard" 21 Watt single filament bulb. The tester looked for an E mark on all the car's light lenses. Having noticed that there wasn't one on the foglight, he produced a purpose made wooden board with an aftermarket E marked fog light on it (from Halfords!) and placed it next to my light. A car battery was connected to it and he stood back to compare the two outputs. My fog light was of similar brightness (in fact he said slightly brighter than his) and he said therefore it was perfectly acceptable.

Some years ago I replaced the bayonet fitting 5/21 Watt filament bulbs in the combined tail position / stop lights with LED ones, which fit exactly the same as the originals. The car has passed the MOT four or five times with these fitted; no issues were raised. They are brighter than the filament types and light up noticeably quicker.

The E mark is a guide to light unit design. Light bulbs themselves are not checked during an MOT test because this would involve dismantling the light unit. As long as the tester is happy with the output brightness and colour of a light, I don't think there will ever be a problem with using them.

LEDs are the way forward. In addition to current mass-produced cars being so equipped, there is a whole range of aftermarket E marked lights which use LEDs by design; these are now being sold by a number of specialist kit car component suppliers, and cars so equipped are obviously getting through the IVA test.

Best regards, Paul Wheatley - Shireoaks - No. 422

The Federation of British Historic Vehicle Clubs 11th AGM

Once again we found ourselves at the Rolls Royce Museum, Paulerspury near Towcester amongst this August company. As usual we have the finances first, last year there was profit of 5.3% on a turnover of £109K while this year we have a 8.4% profit with a £115K turnover. It might be asked why do they have such a large turnover when they are a 'not for profit' Company? But they do have a full time secretary and attend meetings here and abroad working for our right to drive/ride our old vehicles. There are subscriptions to FIVA as well to pay. This assures us we are all working together. A couple of the more salient items that were dealt with last year they attempted to identify the shortage of skills in servicing and remanufacture in the trade that went towards our older vehicles. The returns from a recent questionnaire were disappointingly low but it did point out what areas we have shortages in.

Another significant point of now/future problems is the increasing use of Ethanol in gasoline. It is some 5% at the moment but likely to rise to 10% as per the rest of Europe. As for the usage as a fuel in our new and old vehicles there doesn't seem to be a problem, but this does become one with storage. If you leave the higher Ethanol in your petrol tank for say 6 months (unattended) then you are likely to get gumming/deposits in carbs. Petrol filters and the bottom of tanks. Apparently if Ethanol and water are left in your mild steel tank for some time you will have no tank! Regular usage of the vehicle will hopefully reduce any problems. Personally I have heard of problems with Fibre glass and a well know petrol tank sealant. More details on the FBHVC web site or in their Newsletter. 5.

After lunch and the formal AGM as usual we had a short Conference. This time it was on the DVLA. Details of how they try to run things and all the numbers of how many numbers they crunch in a day or so etc. The details of reregistering a vehicle and retaining original registration numbers with some of the snags being covered. Some of the clubs, often on a voluntary basis, would seem to be doing sterling service on our behalf, so please be patient with them if you need to re-register a vehicle. One word of advice is only give the DVLA what they ask for, do NOT complicate the issue with other facts and documents that might cloud the issue.

One other point that some of us should be aware-of- once you have MOTd and taxed a vehicle, you then have to continue to do that, or SORN it, or sell it. If instead you decide to SCRAP it, this is where your problems might start. It appears that, to be able to scrap a vehicle, you must supply DVLA with a CoD - Certificate of Destruction. And you guessed it only certain persons can issue these – official vehicle scrappers. So beware. If you scrapped a machine you might end up trying to explain to a Magistrate why you should not declare SORN or TAX a vehicle that doesn't exist! The FBHVC are working on this anomaly for us.

Al Osborn. Mid Norfolk - No. 295

~~~~~

## Technical times

The final? Word on Kitten back brakes

Brian,

13/10/10

Enclosed the pictures you asked for re the rear brakes. With the chalk arrows I think they are self explanatory. Note the fitting of the shoes with relation to leading edge and direction of rotation.

ALAN Mid Norfolk - No. 295



*Alan, as ever, thanks for going along and keeping us in the picture first hand. Ed.*

~~~~~


Mewsletter 96 Fox tie bar bushes

Dear Brian,

October 2010

I am not sure that I fully understand the piece on Fox tie bar rubbers.

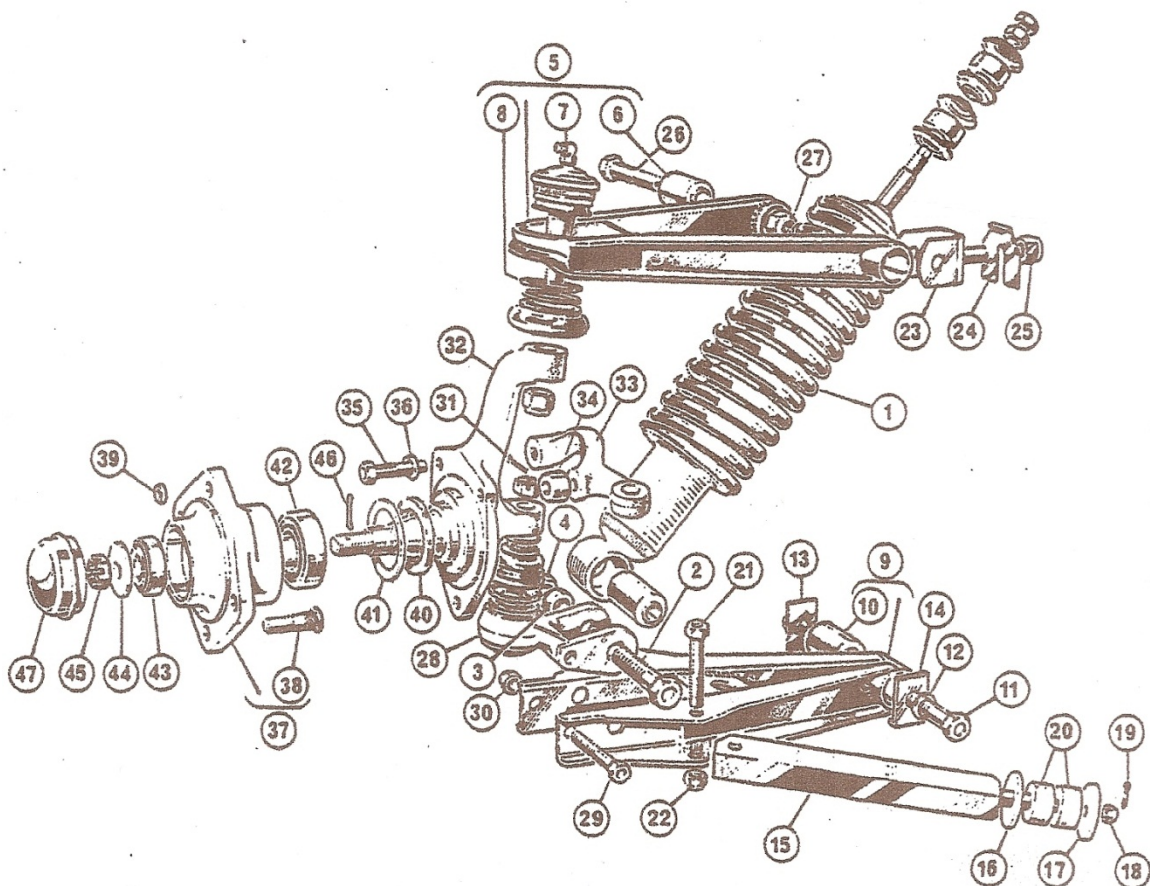
The stud is an integral part of the tie bar. The early version is stepped down from 1/2" to 3/8" diameter, the later one is 1/2" diameter along its whole length. The early version is fitted with 2 10swg washers 16 & 17 (see illustration). 17 has a 3/8" diameter hole and abuts onto the 1/2" diameter shoulder and imparts a pre-determined compression onto the rubber bushes.

In the later version with 2 No. 18 washers, the compression is correct when the split pin will only just enter the castellated nut. It is important to note that the rubbers locate around their **outer** circumference, not in the hole in the chassis. The nut, 18, is located with a split pin 19. A nyloc replacement is not entirely satisfactory.

The tie bar illustrated on page 27 is not resistant to axial rotation of the lower wishbone.

It is said that the tie bar was modified following failures on Asquith vans which ran on 14" wheels. Triumph had to recall thousands of their 1300 saloons following detachment of the lower wishbone tie bar due to the nyloc nut undoing itself due to suspension movement.

Regards from your avid Cumbrian reader, John (Box) - No. 044



Thank you John for that. The picture on page 27, and indeed 28, was of a reader's own interpretation of a mod made by an individual who is not a subscriber, but who favours the use of rose joints.

We offer a poly bush alternative to the original bush – I see John they are rubber, rubber, like steel, and indeed most materials, comes in many qualities / varieties / grades, and the material used by Reliant originally was relatively soft and compressed a lot during assembly. Indeed you could compress it noticeably with your bare fingers. I know that the quality of these bushes supplied latterly – about 2004/5 was I think the last time I had any, was so poor that if they did not crumble during assembly, they did so within days, so, in line with our attempts to constantly improve things where we can, we sought and identified a much stiffer poly alternative, the joys of fitting which were covered at length by Les Smith last time.

Since then Keith Gittus has designed and made a slightly dished 3mm thick washer which we now supply as part of the poly bush kit.

However, in view of John 's comments about the wisdom of using nyloc nuts on such components, perhaps we need to look further into this and see if, for example, the split pin hole might happen to line up with the new arrangement. That said I understand that many people, having had the original stud fail either due to corrosion, excessive tightening, or indeed a combination of those, have had a bolt welded on to replace the original stud, and I'll bet not one of them has drilled a hole for a split pin! – anyone care to correct me on that?

On discussing this matter with Keith Gittus recently, he tells me that he uses a locknut, i.e. two nuts locked together, on his Foxes.

Clearly safety is paramount here, so, if you have a Fox, get out there and check those nuts are tight please. And let us know your findings and experiences.

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

Hello Brian,

October 18th 2010

Taking on board your comments about the lack of material coming in for the mag I thought I would put pen to paper or rather digit (single!) to keyboard, and regale you with my latest exploits with the spray-gun. There seems to be plenty of coverage on the mechanical front but not so much on the cosmetic side, so I hope the following may be of interest to other members. I should say here that I have had no training but have learnt by my own mistakes which have been considerable. As you may remember I gave my Kitten a complete re-spray a few months before Burford in 2005. I was never happy with the finish I achieved on the roof and front which I put down to my inexperience together with a faulty spray-gun, which, when replaced, resulted in an acceptable finish on the sides and back. Having read an article in Practical Classics on electric spray-guns and wanting to get a better finish I bought an Apollo HVLP (High Volume, Low Pressure) spray outfit which put more paint on the car and less in the air. My old spray outfit was a high pressure gun, fed directly from the compressor with no reservoir, and this certainly put a lot of paint into the air. I should point out here that there are electric sprayers on the market that have a piston and motor contained within the spray gun and these should not be used for spraying cellulose as it is said that the heat from these could ignite the cellulose vapour.

The paint I use is Lechler Monofiller with Lechler Mach 5 topcoat, a car cellulose. The original re-spray was done with an industrial cellulose which at the time I was advised would give a harder wearing finish, but I now know that the Mach 5 gives a much better finish. I have heard that people use 2 pack paint which should be completely avoided as it contains Isocyanate (cyanide) unless you have the necessary breathing equipment to cope with it. Even with cellulose you should only spray in a well ventilated area and wear a good quality mask.

The sequence I use for spraying is:-

1. Remove as many fittings on the car as is practical.
2. Rub down with wet 240 grade wet and dry, I always put a little liquid soap in the water to help lubricate.
3. Clean surface with a damp cloth to remove as much residue as possible.
4. Clean surface again with panel wipe. There are two grades of panel wipe, a slow evaporation one which is ideal for removing sticky residues etc. and a fast evaporation one which I use prior to painting.
5. Mask up all surrounding areas and any fittings etc. that cannot be removed with a good quality masking tape. It pays to use a good quality tape as it peels off easier at the end of spraying and leaves a sharper edge.
6. Clean again with panel wipe.
7. Prime with Lechler Monofiller comprising three coats with a mix of one part paint to three quarters thinners, this seems to leave a slightly stippled finish but don't worry about this.
8. Apply a very thin guide coat straight on top of the Monofiller. I usually use a mix of one part Monofiller to two parts thinners. I use thinners that I have used to clean the gun last time I used a top coat, being coloured, this gives a contrasting colour on top of the Monofiller. (Alternatively add a dash of top coat to the mix).
9. Remove any runs with 400/800 wet and dry. To flat the entire area I use a wet Very Fine grade sanding pad until I get down to a speckled finish (this is caused by rubbing off the high points of the stippled finish on the Monofiller). I then switch to a wet Ultra Fine sanding pad to remove all traces of the guide coat. This ensures a smooth finish without over-rubbing and going through the Monofiller.
10. Clean surface with damp cloth and then with panel wipe.
11. Apply colour coat mixed one part paint to one part anti-bloom thinners. I apply six coats of this mix followed by three coats of one part paint to one and a half parts thinners which seems to bring up the shine but unfortunately does not alleviate the orange peel completely. This apparently is normal with HVLP unless you use very thin paint. There seems to be a very fine line between getting enough paint on for a smooth finish and getting a run. I haven't mastered this yet so I tend to put a good thickness of paint on so that you can flat this orange peel down.
12. Carefully remove masking tape when paint is dry, I have found it best on the same day, (leaving overnight before removing doesn't seem to leave such a clean edge).
13. When the paint has hardened I use wet 1200 grade wet and dry to remove any orange peel followed by a fine compound (I use Farecla G10) using a red finishing sponge on a sander/polisher set at medium speed. If you need a compound with more bite I use Farecla G4 but if used with a polisher the paint needs to be really hard or the heat created by the friction of the compound can soften the paint and spoil the finish. When I have a reasonable finish I give a final compound by hand to remove any swirl marks followed by a final polish using Farecla Black Top Hand Glaze to give a depth of shine. For hand compounding plus polishing I use muslin (available from curtain shops) this is softer than stockinette cloth and leaves less scratches.

The above method has achieved the best results so far but I'm always open to suggestions if anybody has any, meanwhile I shall carry on experimenting and no doubt making more mistakes. If this article inspires anybody to have a go and I can supply any further information I can be contacted on 01948 840896. Good luck, happy spraying, may all your runs be small ones and all your orange peel be fruitful.

With luck Brian might insert some coloured images here

Malcolm Rush - Whitchurch - No. 352

Sadly Malcolm colour is not within the budget, and so you (well everyone else) will have to study the following three pictures very carefully. The car was first rubbed down, cleaned and wiped then masked.



Then the primer / undercoat as described in the text is applied



And finally the topcoat, the same dark green as before.

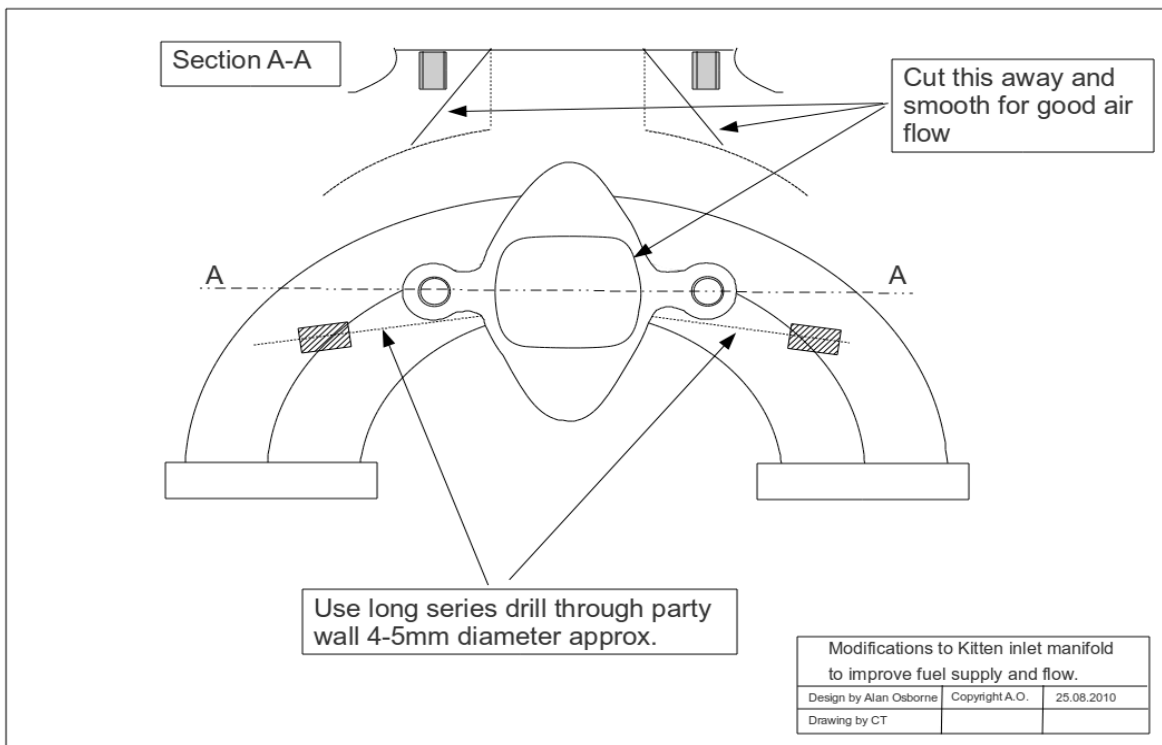


Inlet Manifolds (again)

In an attempt to get it all together herewith (again) a nice correct drawing of the modifications I have done to the Reliant Inlet manifold (thank you Chris Tooth). For those who have been 'looking in' for some time a brief overlook of past articles. Back in Mewsletter 88 I spoke of my disappointment, in what has been named as the Rebel Racing modifications. That is the manifold with the cut away between 1-2 and 3-4 at the head face (some details by Brian in Mews 91-Pg30) I find that nobody can explain how this works, while I am of the opinion that it doesn't! I came to this opinion by replacing the RR one with A) a standard manifold and B) the one with my ideas. My few improvements can be confirmed by improvements in pick up and sparkle. To complete the story we have Clive Angel in Mews 92 Pg23 and Mews 93 with words and pictures by me. A repeat of the facts in case you can't find your old Mews. First if we look at the inlet manifold channels you will see that 1-4 are 50% longer than 2-3. If you ever remove a head after a few miles then you should see that 2-3 is richer as opposed to 1-4. The difference is only slight and it just shows on the plugs, provided everything else is in good order. So to balance this mixture 1-4 needs to be richer, while 2-3 needs to be a touch weaker. See the 4 or 5 mm hole between 1-2 and 3-4. This steals from 2 and 3 and gives to 1 and 4. In itself this doesn't give any massive improvements, but it does balance the mixture so it must be a step in the right direction. Second idea is that mixture (air) when it is moving does not like going around a sharp corner, it will turbulate hence effectively reduce the diameter of the pipe it is travelling down. So we now look at the point where the swan neck drops into the manifold and we find a very sharp corner! Remove it. Help the gas get around the corner quicker etc. You then should have a circle from the swan neck drop and an 'egg' at the manifold, these two need blending, this is easiest done within a ¼" gasket between the two parts.

Once you have done these modifications and refitted the manifold, you should find that the increased flow makes it draw better, hence the mixture goes a touch rich, so you weaken it off a touch.

This must be tuning the right way, as the engine is now pulling more efficiently. Some persons have then questioned the overall MPG, fine, but IF you can modify/improve so that the engine pulls on the carb. better and/or runs richer (due to tuning before the carb main jet) then it MUST be running more efficient SO provided you don't 'woosh' everywhere, then you must use less petrol to do whatever you do with your car/engine. I haven't done a before and after MPG but the mixture change and sparkle tells me it works and costs nothing. Again this is a something for nothing mod. Have fun.



Alan Osborn Mid Norfolk - No. 295



More or Less noise up front.

28/09/2010

It takes a while to get used to a 'new' car, all its funny foibles, noises etc. Now the new car, the pretty one with the silver bottom. This has always had some undetermined noises up front. It was only over the really rough ground when the front suspension was having to do some serious work that we had some clonking! The noise wasn't quite metallic, but it was firm. Pulling and pushing on all the usual-ball joints, wheels didn't show up anything. So it was - ho hum. I am not sure if it was a pre MOT inspection that caused me to one day waggle a front wheel and detect a loose wheel bearing. So in and adjust, but it seemed to take a lot of adjusting as if the bearing was actually not seated right? Anyway after adjustment noise was significantly reduced but we still had a similar noise but not quite so many of them. This has been going on for several months, and there was some wear in the steering rack!! Yes you guessed it, after changing the rack all is quite up front. So the cause of elusive clonks was wheel bearing and worn rack. All good fun.

Thanks to Brian, and I gather Alan Shaw, a recon rack was readily available. Keep up the good work.

ALAN Mid Norfolk - No. 295

Parts

As so often seems to be the case my ability to anticipate demand would appear to be way off the mark. When the government announced the increase in VAT effective from the beginning of 2011, I thought, right, I'll stock up on the high value items like dampers and springs, only to have sales fall flat during the latter half of 2010!

The one part I have been asked about more than once this year is windscreens, oh, and the seals between the door windows and the doors. I have been aware of windscreen concerns – mainly regarding price

rather than availability, but only one person answered my question about who had toughened ones and who had laminated ones. (They are different thicknesses and so require different rubbers).

My time will likely be more restricted than usual for the foreseeable future, (about to be distracted by grandparental duties) anyone care to look into the window to door seal? It is the same part inside and out, so each car has 4 of them.

Sometimes the frequency of the Mewsletter can be a tad frustrating, yes, even for me! Phil is about to organise the purchase of material(s) to replace the door window seals on a couple of Rebels, the seal, though quite different from that employed on Kittens, is similar in as much as the inside and outside seals are the same, though they use different methods of attachment, new clips will be included. My current dilemma is how many sets to get? Here I am a couple of hours away from observing a couple of minutes silence, not really sure either when you will be reading this, nor certain exactly when Phil will be placing the order – what to do?

Don't worry, I'll make an executive decision, but had I been better organised, well, if you are in the market for a car set of those for your Rebel, I think we are talking of about £15 to £20 a car set, (4 seals and 10 clips) the exact price depends on the postage. I'll keep you informed.

Saloon rear window stays have long been unobtainable, or so we thought, then Keith Gittus, or was it Dick Goodall, made me aware of a potential source, I meant to follow it up, get a sample and try it out, but...

The best laid plans...

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

Hi Brian

Hope you are well, two things for the mag re cylinders

For the really worn out people westwood cylinder liners do a set of +.20 pistons and liners for an 850 for £225 +VAT and can be found on www.westwoodcylinderliners.co.uk

For people with only slightly worn bores there is a product by a UK company XADO UK which is said to renew bores. Not used it but it seems to have tuv accreditation.

Regards Phil

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

Right, in November I tried to be clever with e-mails, so some Rebel owners will know that Phil is in the process of buying a batch of material to do Rebel door winding window external / internal seals. If you are interested in a set (or more) of these, complete with retaining clips for the side that uses them, please get in touch immediately. We are looking at about £20 a car set (4 seals + retaining clips) delivered. I will take a couple of sets into stock, but the order is likely to be placed this week, so urgent action is required if you want a set.

The e-mailing thing did prove enlightening, less than half the folk I tried to communicate with acknowledged any of the 3 attempts I made, so relax, we are still a very long way from doing this electronically!

Oh, Phil rang last night to say he was placing the order (23/11/10) so we will have them in stock shortly.

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

Ho hum, decisions decisions, oh go on then, first right answer by phone to 01418866117, just leave a message if there is no answer, the system records the date and time.

So, it remains for me to once again thank those who have made all this possible over the past year(s), imagine it is two decades now since I started all this! having tried and failed to talk Terry Scott into widening his field of interest from only covering Rebels. (I always thought the “Rebellion” was a wonderful name for a magazine!) Back then Michael Bentley edited it, and I produced it for Terry.

It is fabulous fun, great therapy, we have met some fascinating people along the way, and made many friends. I really ought to record things more carefully because it is fast becoming part of history, jings just listen to me, we’ll be looking for an Archivist next!

Seriously, It has been, still is, great fun, and while sadly the number of cars has decreased, I am very happy to be able to tell you that, in spite of my pessimism in recent years, our numbers have held up very well. Every year I get a sharp reminder when I have to pay our subscription to the Federation of British Historic Vehicle Clubs, and that number has fluctuated, both up and down, by less than 5% a year over the 7 years that we have been with them, (for the record, we joined the Federation in September 2002 when we had 271 subscribers), and this year (2010) was up on the previous one at 221 at the end of May, and we have enjoyed no less than 21 new subscribers since then, (as at 1/11/10) those numbers exclude most of our advertisers, other organisations we exchange magazines with, and the motoring press, several of whom are on our mailing list. We also use the magazine to keep in touch with a small number of important individuals who have contributed to the Reliant cause and helped support this Register over the years. My special thanks to you (you know who you are).

Right, I’m not afraid to name individuals, this edition was going to be just 32 pages long, that was until John Box kindly took the time to write and keep me right regarding those Fox tie bars, besides I had not included many pictures this time, so, at the end of October, I slipped an extra A4 sheet into this, now bumper, Christmas edition.

So, with thanks to the three Johns, (Box, Flood and Pearce), Terry Horler, Alan Osborn, Malcolm Rush, Phil Hallam, Paul Wheatley, Oliver Smith, Rob and Fiona Wilkes, Charles Barker and all the rest of you who have made this edition’s extended size possible. It only remains for me to wish you and yours all the very best for the coming year, oh, and be not forgetting the need to look after those ball joints please! (I recently discovered that one of our readers - who does have a relevant vehicle – **does not possess a grease gun** – please assure me he is unique among us....)

Your renewal notice should be enclosed, yes it’s that time again already! Please use it even if you are not staying with us, if I know your intentions it will save us both from future chasing up!

Till next time, take care, and may you have a healthy and prosperous year ahead. Oh, and don’t forget to pencil in the 3rd of July in your 2011 diary.

Right, curses, I’ve misplaced the detailed advert for Thomas Touw’s 3 Ciphers, and he has not responded quickly enough to my request to send the details again, I had not actually left enough space (I seem to remember that, complete with pictures, it took up 2 or 3 pages, but you can reduce font sizes!) Anyway, the fact is I am undone, and out of time.

My deadline is screaming at me, Moira fly’s (should there be an apostrophe there?, or is the act of travelling by air, flying, described that way, oh never mind, answers on a postcard, or by e-mail if you like,

she leaves by plane, from Glasgow) out to Tenerife tomorrow, and I must get this to the printers before the week is out.

Oh, John Box was good enough to test fit a pair of our alternative Fox front strut bushes, with great success, and send me a report (25/11/10) thank you John – full details next time, well done Les Smith and Keith Gittus, you were spot on, though John questions the need for the new additional washer to be dished, but it lines up with the split pin hole with just the right amount of load on the bushes.

Brian

Resin Rockets

Reliant engine tuning for economy or whizz, not quite halfshaft breaking torque, but optimising the Reliant 850 so that its full potential is achieved.



Manifolds optimised

Heads tuned, including attention to valves

Carburettor gas flowed

Rockers realigned and lightened



Large selection of good used Kitten and general Reliant spares available, just ask for details. Also new wiring bits - all the funny coloured cables and crimps with electrical advice

Al Osborn 35 Griston Road, Watton, Thetford. IP25 6DN
01953-884681

www.aoservices.co.uk

GRAHAM WALKER LIMITED



28 Bumpers Lane
Sealand Road Ind Est
CHESTER CH1 4LT



**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

Mail Order: 01244 381777 - 7 Lines

Fax No: 01244 381262

OPEN

**Monday - Friday
8.00 am - 6.00 pm**

**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**