



NEWSLETTER 112

June - July 2013

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This bright yellow Rebel is actually a purpose built competition car, for trials! Built by John Dixon, who's based in Pleurtuit in France. John's plan is to base the car in England and commute across the channel to attend trials events. Although it looks normal, beneath the skin it's very much beefed up. The base vehicle was a 750 Rebel (with a galvanised chassis) John bought from our Registrar back in 2002. This had been vandalised so John bought another yellow Rebel saloon with a rotten chassis and built this one from the pair. To conform to regulations it still has the original 750cc engine....

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



The Reliant Kitten Register

Rebel parts stock held by: - Adrian Hanwell Tel: **01723 341498**

New Kitten / Fox / Rebel parts stock held by Brian Marshall Tel: **0141 886 6117**

E-mail info@kitreg.org.uk

Rebel alternative parts list contact: John Blagburn, Tel: **01670 862255**

E-mail: wirelessjohn@googlemail.com

Kitten alternative parts list: Contact: Alan Osborn, Tel: **01953 884681**

E-mail: alan@aloz.org.uk

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

Tel: **01603 663311** E-Mail hidunc@ntlworld.com

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

Tempest Registrar: Roger Brown, Brownhill House, Ruyton XI Towns, Shrewsbury, SY4 1LR

Tel: **01939 261121** E-mail tempest@eleventowns.com web site: <http://www.tempestregister.org.uk>

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

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

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

Dinky Cars

RELIANT SPECIALIST

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**SALES, SPARES, REPAIRS,
ENGINE RECONDITIONING**

I N D E X

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Welcome once again, this is getting really out of hand (he said, wondering as he typed during a sleepless night in March, less than 48 hours after taking edition 111 to the printers, if he would leave this bit in or not!)

Yes really, it is almost five in the morning, I have spent the last couple of hours working on the next edition, as, in spite of having put an extra A4 sheet – 4 more pages for you to enjoy! into this one to try and make room for everything, I have had to move some articles forward to number 113, and in spite of doing so have barely enough room in here for

everything. It's all John Box's fault! (wonderful to have someone to blame!). If he had not built, along with Ian Foster, whose Idea I believe it was in the first place, all those Tempests and Vantiques I could have saved so many pages in here!

Seriously, streaming nose apart, things are looking pretty good at the moment. I am one cheque away from finishing, for the meantime, my new job as adverts co-ordinator for a certain Owner's Club's National publication. I am, as you have just read, well ahead with Mewsletter plans, we have only one front cover picture to find till the end of the year, go on Frank, let's make this year the one we don't feature a Kitten on any of the covers at all – I'll leave you to de-cipher that one! Ok, update on that Frank has reluctantly sold the Cipher, and Simon Fitch, head of the family that are its current custodians, has promised me some pictures, so a whole year without a Kitten on the cover is a real possibility! Fear not, we have plans to feature two kittens you have not seen before on the first two covers next year.

I don't know why I'm so cheerful, we were at a funeral yesterday, I have had less than two hours sleep, I have a 4 page A4 form to complete for the DVLA in the hopes of retaining my driving entitlement, and while my in-box is still below 10 items – after a bit of a blip during the past week or so, my desk is getting out of hand again!

Phil Hallam has been a huge help with trying to clear out my lock up. Now that I no longer drive a Reliant, there is not a lot of point in me having a lock-up full of second hand Reliant spares. I do however feel a tad guilty, there being no catalogue of parts, we are simply starting at the door and working our way in. The technique, which is working well, if slowly, involves a digital camera and Phil's reputation and expertise on e-bay, which, due to the timescales involved, pretty much excludes the possibility of offering the parts through these pages, so I feel that to some extent I am letting you down by failing to give you the opportunity to be involved.

That said many of the folk who are buying the bits are in fact subscribers, about half I would say, and I know that many reading this do not have internet access – another of life's compromises that I am uncomfortable with, but do not see a way round.

Anyway, enough of this - *The following unsolicited letter which arrived from a chap who inherited a Kitten, but never drove one, nor has he ever been a subscriber – the car was advertised in the supplement with the last Mewsletter – is the sort of thing that makes all this*

worthwhile, so I just thought I'd share it with you – there having to be an extra few pages in this edition anyway I thought we had the room. Ed.

~~~~~

Dear Brian,

18/3/13

I am just writing to thank you for all your help in the re-homing of the Kitten, and also to thank you for forwarding me two very interesting magazines. They are put together in a very well produced way which shows a considerable amount of work, as I well know as I produce the newsletter for the local boat club. However it does not contain a great deal of technical knowledge like yours. One of the interesting facts that I included in the last update was that the late Arthur Lowes's first army posting at the beginning of the second World War was at Llannion barracks, just down the road in Pembroke (he ended up as a sergeant running the theatre in the Middle East until demob!) Not a great deal of help if you have an engine failure in the middle of Carmarthen bay!

As you probably know by now, Carl Pickles from Yorkshire bought the Kitten, and an extremely nice young man he is. Everything about the day for once went well - *Yes, that does happen sometimes, and leaves you with a great feeling when it does too – Ed.* I travelled to Cardiff on the Sunday, and was just pumping up the tyres when at 12:30 when he arrived with the transporter right on time, no mean achievement considering the distance he had come (*about 200 miles, Ed*). The vehicle was loaded without any problems, and he was on his way with a quantity of spares too by about two o'clock, and I understand that the journey back was uneventful. To help, for once, the day was dry and reasonably warm for the time of year.

As you are possibly aware the Sunderland's (WW2 flying boat) had a base at Pembroke Dock during the war, and one night, during a severe storm, one of them sank at its mooring. A few years ago they managed to get enough money together to set up a museum at Pembroke Dock, and they are currently bringing up the Sunderland piece by piece, with the help of the local sub aqua Club. Unfortunately much of the aircraft including large parts of the engines, were made of alloy. This has been mainly eaten away by saltwater corrosion and the team, who are very dedicated, spend much of their time cleaning up the bits as best they can, before being put on display in the museum. This has been of particular interest to me as there is a programme which is repeated fairly frequently on one of the Sky channels about the history of the Sunderland and a large part of it is devoted to the presence of Sunderland flying boats at Pembroke Dock.

I have enclosed a small cheque by way of my appreciation of your help and my best wishes for your continued success.

Roger Harris. From Laugharne

~~~~~

Hi Brian

By this time you should have my application. The Mewsletter was very interesting, particularly about gearboxes! I was delighted to see that we are not alone in naming vehicles although the Fox just seems to be 'Foxy', but other than that we have a Landcruiser called 'The Beast', a small Transit called Rosie and a 3.5 Transit called Roger. My other 'classics' are a 1933 Plymouth Six known as 'Miss Plymouth' and a Bond Minicar under restoration called 'Piglet'

Update on the Fox – it now has an MOT and is taxed. The main problem for the MOT was the tie bars on the suspension, the rubbers had disintegrated and one side had been drilled for an 8mm bolt and the other still had the original stud but in very poor condition. I have now drilled through both sides 1/2" dia (I broke the drill on the one that was previously drilled, not quite in line) and used 12mm studding. This makes an adequate job but I'd like to return it as it should be. This seems to have cured the tendency to pull to the left when you let go of the wheel, but I think the steering geometry needs to be checked – it seems to turn very quickly once you are off centre but definitely prefers a turn to the left. Mind you, all this is on country lanes in pretty poor condition, I can get to the MOT station without going near a main road. Pity they didn't make a five speed box!

I put down enthusiast on the form but in truth I bought the Fox – I would have had a Kitten – because I wanted something I could maintain myself, not all the complicated nonsense that needs a computer to tell you what's going on, but it has grown on me.

Kind regards,

Martin. (Pook) No. 958 from Dorchester

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Dear Brian,

27.04.2013

Sorry for the delay in replying. I am so busy with my new job, even after one and a half years. I was in Northern Ireland last week to see a

finished waste recycling plant before shipping to Switzerland. I spent two days making a bit of a tour along the north coast, it was lovely. With three days of bright sun and blue skys we saw the South Western shoreline of Scotland, visited the Giants Causeway and Rathlin Island.

Otherwise, the Kitten is running perfectly, 40 motorway miles a day, full throttle, the more I drive it the more pleased I feel, it is a part of me.

I did a gearbox overhaul this winter, the first and third gears jumped out, too much side play in the pinions, so after a bit of turning and shimming, it was back to as new.

My Marcos is slowly coming to the end of restoration, and my Austin Seven Special project is taking shape. We had so long a winter with much snow and cold that I spent many Saturdays and Sundays in front of a log fire with a book and single malt instead of working in the workshop.

I hope you are all well and I send my best regards from Switzerland.

Patrick (Vallat) from Porrentury. (Switzerland) No. 702

~~~~~

REBELLIOUS CONDUCT - 23

By **Terry Horler** - January 2013

At last, something to report – unfortunately! It has been a long time since I last reported on the life and times of my 1972 Rebel van/estate - LRF 671K. (Mewsletter edition101 as my records recall – certainly, my memory doesn't!) Hence, the following tribulations refer to this lengthy period of almost everyday usage.

Firstly, a slight vibration set in, leading me to think that a universal joint was heading for retirement. I had already replaced the front U/J so naturally; I thought that the rear one was catching up. The slight vibration suddenly became a rather more serious vibration, no more time to think, time to get the trolley jack under the axle. Rotating the twirly bits soon revealed that a rear tyre was no longer round, the offside rear displaying considerable distortion in the carcass – on goes the spare - vibration gone. This particular tyre, and its mate on the other end of the rear axle, were original to my purchase of the Rebel in August 2005. Although the tyre

maintained air pressure and the tread was still reasonably good, I had no idea as to how old these 'Warrior' brand 145 X 12 tyres were – so replace both. A pair of 'Runway' 145 X 12 were fitted for £55.90 by Elite Tyres at Yate. Just proves that there is more to tyre safety than retaining pressure and the depth of tread!

The next little problem was equally unexpected. Shortly after purchasing LRF, I fitted the 4 new front wheel slave cylinders found in the 'supportive' box of goodies received with the car. Shortly before the 2011 MOT date, I found I could turn left by prodding the brake pedal. Sure enough, one of the 'new' cylinders was leaking hydraulic fluid. Although the new cylinders had been in the original packaging prior to fitting, quite how long the cylinders were in the box is unknown, but I guess quite a long time! I reckoned that the bores should still be fine and that just a set of new rubber seals should provide a fix. Ordering a new set of seals from **PAST PARTS**, I was rather dismayed to find that they didn't fit. Although the new seals were the correct (.750" - that would be ¾ " then, Ed who can't get a full stop raised to be a decimal point! - cylinder bore size) diameter, the inside diameter was far too small for the pistons. The 'new' cylinders were Quinton Hazell items, part number BWC 3260 (offside) & BWC 3261(nearside). Fortunately, I had kept the original cylinders and sure enough, the **PAST PARTS** seals fitted the original pistons perfectly. The original, chrome plated pistons were all in very good condition; these received the new seals and fitted into the Q-H cylinders. Indeed, the original pistons were in a far better condition than the Q-H pistons, these lacking the chrome finish to the outside diameter. Luckily, I had not driven the Rebel far enough to cause any significant contamination of the brake linings and a few good shoves on the pedal soon burnt off any slippery bits, LRF now pulled up fair and square once again. Well, that was a couple of jobs that I hadn't planned on. On the plus side, both serious safety related items caught before the 2011 MOT date, or a serious mishap!

Moving onto 2012, the threat of an MOT failure manifested itself in the form of rear axle oil in the nearside rear brake. A bit of pre-planning had me ordering new brake linings, wheel cylinders and oil seals from **GRAHAM WALKERS**. However, **G-W** could not supply the inner oil seal, the Rebel having both an inner and outer oil seals. Fortunately, I sourced the larger inner seals from a local supplier. Pulling the tapered hubs off the half shaft ends was the only exciting bit; you do need a hefty puller for this! Examining the old slave cylinders, I was surprised to see each was of a different bore size; someone had been there before I guess. The 2012 MOT threw up only one minor issue, a split ball joint gaiter. This is now an MOT failure.

Fortunately, the garage keeps a stock of gaiters (various) and soon fitted a new one. Feeling smug that another MOT had been obtained, trouble was but a couple of days away. The indicators had been gradually slowing, slowing to a stop in fact. A spare flasher unit failed to make any difference, as did two more spare units. Checking with a multimeter, I found that the supply voltage to the unit was a good half a volt lower than the battery voltage. Temporarily connecting a cable directly to the battery, normal flash rate was restored. Further checking revealed that the lighting circuit fuse was at full battery voltage but the ignition and other circuits were reduced. I suspected that the ignition switch might be the cause of the voltage drop as it tends to get warm. However, as all other electrical functions were functioning normally, and it was close to dinner, I just connected a cable from the lighting fuse to the flasher unit and all is well. The only downside, the flashers can now be operated without the ignition being turned on; I now look back at the Rebel when parked to see that it's not winking at me.

With everything in the braking system being renewed during my ownership, I was a bit miffed to then find that the brakes were not releasing properly. A very slight jerk when coasting to a halt raised my suspicions. I soon found that it was the master cylinder piston sticking, not badly, but enough. I had already replaced the piston and seal from a new old stock master cylinder. I reckoned that the piston must have corroded so I made a new one in stainless steel. However, once stripped, it was the seal that was the culprit; it was distorted and sticking in the bore. Again, new old stock hydraulic seals are not a good idea. A new seal kit from **PAST PARTS** and my stainless steel piston should provide a much longer service life.

Whilst rummaging among my Rebel spares, I took a look at the gearbox I removed some time ago. This had developed a tendency to select neutral whenever it felt like it. This is an all synchro box with the long lever and hydraulic clutch but fitted to a 700 rather than 750 Rebel. The number on the bottom of the box is **S702164**. Does this number mean anything to any rebel experts out there? It has a boss either side of the bell housing to carry the cross shaft for the earlier type mechanically operated clutch. My replacement gearbox, from a 750, did not have this feature. Is **S702** a prefix making this gearbox number 168? Most of us know how VIN and engine numbers are applied but the gearbox ID is a mystery to me at least. Who has an explanation – your challenge for this month? (Sorry – no prize offered other than a thank you)

Other than this, the Rebel has fought its way through another hard winter, shedding paint furiously and now looking very patchy. Actually, it is

getting rather embarrassing now - but it did look good for the few days it was covered in snow!

Terry Horler - from Bristol No. 755

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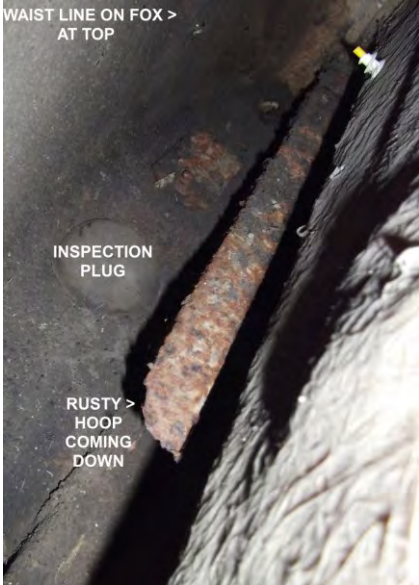
*My apologies to Simon Hodges who sent in a really good Rebel article, complete with some great pictures, this editing lark can cause difficult decisions to need to be made, and I struggle to find the words to aptly **express my gratitude to those who have made my job really easy** over the past months in particular. Simon, next time, honestly! It was in here, but in spite of me putting in the extra pages this time, I needed room for the Tempest's anniversary story, I was still short of space – **No I am NOT making it monthly!** Ed.*

~~~~~

There follows a pictorial description of how to repair rusted roll over bars on a Fox.

(Sadly your very well organised Editor included the pictures so long ago he cannot now remember who it was that very kindly sent them! Fire the man, I would!)









A TRUSTY SPRING LOADED
HACKSAW TOOL WAS USED TO CUT OFF
THE RUSTY HOOP ENDS



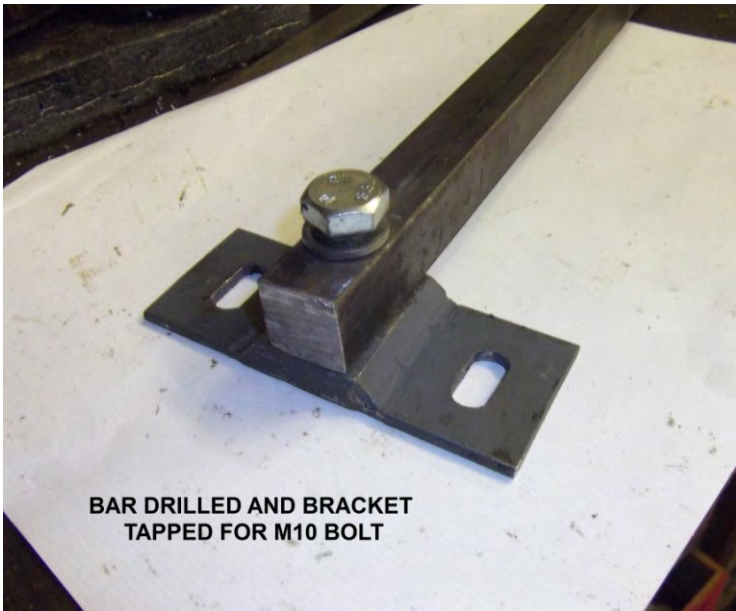
RUSTY ENDS TRIMMED OFF



ENDS CUT BACK TO SOUND METAL



**DRILLING JIGS MADE UP FOR DRILLING THE HOOPS
IN THE BODYWORK**



**BAR DRILLED AND BRACKET
TAPPED FOR M10 BOLT**



**SOLID BAR TRIAL
FIT**



JIG USED TO DRILL HOOP AND BAR



**EVERYTHING COLD GALVANISED
BEFORE BLACK PAINT APPLIED**



BOLTS THROUGH BAR AND HOOP FRAME

I know I will probably feel really silly when I learn the answer, but how, or perhaps more to the point, with what, does (can) one paint on top of zinc with and expect any adhesion (I quite accept that things may have moved on from my day, but am always keen to learn), Ed.

~~~~~



Now my proof reader just pointed out that I had failed to attribute that – my apologies.

~~~~~

Dear Brian,

May 19th 2013

Nick Peck in Eastbourne asked me to drop you a note to update you on the latest news of his Rebel.

After a long tale of woe stretching back to last year, he has finally cured :

- a) Petrol pump problem (after 2 replacement engines, we eventually diagnosed problem as the petrol pump diaphragm leaking fuel into sump). We eventually sourced a replacement pump from Joe Mason.
- b) Hydraulic clutch problem : After being unable to get hold of a replacement clutch master cylinder, he has now converted the clutch to mechanical operation by fettling the parts himself.

This enabled the Rebel to pass its MOT last week, with an advisory note to replace the track rod end rubber gaitors for next year.

So the Rebel is now back on the road again and will be used regularly.

On another subject : As you may know Nick has always been an enthusiast of Bond Minicars (he has a Mk E Tourer with a Villiers 9E engine). However, it's a nightmare trying to obtain parts or get repairs done

on the engine. The Bond Owners club has been next to useless in helping to obtain parts or providing info on who can repair Villiers engines. We even took the engine to Villiers Services in Birmingham last year and waited 6 months for them to carry out some minor repairs. When we got it back it had had even more faults. Nick is asking if any Kitten Register members know of anyone in the South of England who can repair Villiers 9E engines as used in Bond Minicars. Could you possibly ask via your magazine.

Regards,

Jim Hicks, on behalf of Nick Peck. No. 305 from Eastbourne

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## *Celebrating 25 years of the Tempest*

### A history of the Tempest

Ian Foster had the idea of producing an "all new" kit that could be registered as a new vehicle. This resulted in the mid 1980s in him and John Box designing the Tempest sports two-seater. John had been chief engineer at TVR and was subsequently a consultant to Reliant, and hence in a position to liaise for components. Ian Foster was best known for his Teal Bugatti lookalike. He was also John's wife's cousin. Sadly Ian died in 2005.



The Tempest was conceived as a lightweight classic style roadster. The basis of the car was a 100% new galvanised steel chassis (Fox chassis) fitted with the Reliant 848cc o.h.v. engine, four-speed gearbox, double wishbone front suspension, semi elliptical leaf spring and live axle rear suspension. Reliant also supplied every other mechanical item plus the instruments and heater. The bodywork was a combination of fibreglass mouldings and aluminium, over a steel frame.

The prototype was built in 1987 and the first production car produced in 1988. The original factory built cars were supplied 85% finished with every component needed for completion included. John Box owned Thoroughbred Projects in Burton-in-Kendal whereas Ian Foster owned Trafford Brake Services in Burscough and the building work was split between the two. The address for Tempest Cars as given on a sales leaflet was 84 Ramsbottom Road, Hawkshaw, Bury, Ian's home just used as a registered office. Thirteen cars were produced including one that was chassis and floor pan only, the Tempest 95 and, some time later, the Raptor (it was not completed till 2010/11, by then being the last Reliant built on a new chassis). In 1988 the price was £4,350 + VAT with hood and side screens extra.



Eight kits were also sold so that prospective owners could assemble

their own car on a donor Fox or Kitten. Two others were built after production finished by Dave Smith and Dave Price, who were loaned the jigs by John Box before the business was eventually sold to Steve Campbell in 2000. When Reliant got into difficulties and went into receivership the supply of new parts dried up so that only kit conversions of Fox or Kittens could be built, an option Ian Foster had no interest in.

In February 1991 John Box quoted £2,098.75 including VAT for a kit (to allow the purchaser to convert their Fox or Kitten donor vehicle into a Tempest) which included hood and sidescreens, but a lighting set was £134.55 extra.



The Tempest has earned an impressive pedigree of competition successes in trials. The initial successes were achieved by Robert Porter who bought the prototype, and followed up by several people to whom the TT (Trials Trophy) demonstrator was lent, including Robin Jager a former BTRDA (British Trial & Rally Drivers Association) trials champion. Successes included a class win in the 2000 Association of Central Southern Motor Clubs Trials Championship, and a third in the RACMSA National Championship the same year by Jack Williams of Rougham. In recent years the trials regulations have legislated against Tempest and now they are rarely seen at events.



The rights to this fine vehicle were acquired in 2000 by Stephen Campbell, of Sportsman Ltd in Birkenhead who intended to re-launch it early in 2001. He made some changes (replacing the aluminium floor pan with a fibreglass version amongst other changes) and sold a few kits but the number is not known. The project then passed to Mike Phillips in Bisley (an ex Rolls Royce engineer) in 2003, the deal being that he would pay in commission on kits sold. Family health problems were probably responsible for no kits being produced and the project reverted to Steve Campbell in 2005.

Tempest Cars was then acquired by John Melody in 2006, and the car went back into production at Pilling, Preston. A number of upgrades were made including a conversion to disk brakes at the front. Despite considerable effort in attending shows, only very few were sold. During his ownership he acquired several Foxes, and provided body spares to people needing them. He also refurbished the Reliant factory owned Vantique, during the refurbishment it was fitted with an engine built by John Box.



John Melody advised that a Fox was a better donor for a Tempest than a Kitten for a number of reasons:

It has a galvanised chassis and it is therefore almost certainly going to be in excellent condition.

The steering column and pedals require little modification.

The back axles ratio was 4:1 which enables larger diameter wheels to be used. The back axle ratio of the Kitten was 3.2 :1 which is too high to run anything bigger than 12" wheels. However, he could supply a 5:1 replacement diff.

In 2011 the business was sold again, this time to Joe Mason of Second Hand Reliant Spares in Cradley near Worcester where it continues today.

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John Box had other strings to his bow, and during the Tempest's time in production he was developing and building the 1930's looking Vantique. As the name implies, it is a van.



The prototype was first on the road on 1st Nov.1989, and the last of just 11 built was completed a decade later. In fact the first 10 were complete by 1993, the last one taking a little longer to finish! Vantiques incorporated the only 4 Fox chassis built by Beans after they took over Reliant.



Above is the last Vantique leaving the factory in 1999 on its way to Wensleydale. Below is a view of the factory floor about a decade earlier.



Bean had been a vehicle manufacturer in their early days, there exists an owners club to this day. Indeed Bean built the Thunderbolt in their works at Tipton which held the world land speed record a couple of times between 1937 and 1939, so they were no strangers to vehicle production. They were the supplier of gearboxes and axles to Reliant for many years.

Reliant finally failed in 1995. The Bean take-over was essentially a way of them hoping to recoup some of their losses, but sadly Bean themselves were then bought by a foreign firm with no interest in vehicle production.



Thanks to Brian Marshall and Roger Brown for compiling this brief history and to John Box and John Melody for providing information.



Above - the Raptor, the last Reliant ever made.

The history of a Tempest Owners Club or Register is a bit vague. Mike Furze was running a club in 1994 and compiled a database of owners. They had a club pitch at Stoneleigh in 1994 and '95 but it seems that it did not continue. The Reliant Kitten Register, which includes Tempests, was started by Brian Marshall in 1991, but apparently Mike Furze was not a subscriber. At some point, Joe Boulderstone-Salthouse became registrar until he sold his car in 2003/4. Roger Brown took over from Martin Seymour as registrar of the Tempest section in 2012, and currently holds information on no less than 38 Tempests and all 11 Vantiques.

If you know of any (more) Tempests out there (there were only ever 11 Vantiques made) please get in touch, see inside the cover for details.

Here's to the next 25 years.

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## Tempest time line

|                                                                                                          |                                                                                             |                                                                         |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Thoroughbred Projects<br>Thornleigh Stables<br>Thornleigh Drive<br>Burton-in-Kendal<br>Carnforth LA6 1NQ | Trafford Brake Services<br>Unit CB1,<br>Platts Lane Ind. Est.<br>Burscough<br>Lancs L40 7TE | Tempest Cars<br>84 Ramsbottom Road<br>Hawkshaw<br>Bury<br>Lancs BL8 3JS |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|

1987    November    Prototype Tempest

1988    April            Production prototype  
          September    Demonstrator

1990    August           Last Box/Foster factory car  
          September    Reliant goes into receivership

2000    Sold to Steve Campbell  
          Tempest Cars  
          Units 2&3 Quarry Bank Workshops  
          Oxton Road  
          Birkenhead CH41 2ZD

He sold a few kits but the number is unknown.

2003    Autumn Sold to Mike Phillips  
          Tempest Cars  
          Unit 11, Rectory Farm Workshop  
          Bisley GL6 7AS

2005    Ownership passed back to Steve Campbell as part of the deal as  
Phillips did not sell any cars.

2006    Sold to John Melody  
          Tempest Cars  
          Unit 6, Thorncroft  
          Bradshaw Lane  
          Pilling  
          Preston PR3 6SN

2011    Sold to Joe Mason  
          Wood End Farm (Out 2 Grass Mountain Board Centre)  
          Cradley  
          Worcester WR13 5JW

For his initial modifications see Mewsletter 101.

# Converting Kitten and or Fox lower ball joints to use a Metro joint by Dean Howells

Hi Brian,

21<sup>st</sup> March 2013

I thought your readers would like to see my Fox bottom ball joint conversion. Attached are photos of the conversion.

I think this puts an end to the ball joint problem (much quicker and easier to convert.)

Step 1.

Use an angle grinder to remove the bottom retaining cup of the old balljoint. (The internals will knock out of the bottom.)

Step 2.

Mill off the material down to the shoulder of the rubber dust cap retainer groove. (The new ball joint can then sit a bit lower as it is slightly longer than the original).



Step 3.

Bore out the centre of the hole to 32.5mm (thread minus the pitch).

Step 4.

Tap with an M34 x 1.5 mm thread (Or hold in a four jaw chuck on a lathe) A tap is about 100 quid, but would be worth it !!!



Step 5.

Screw a 1984 mini metro ball joint straight in.. About eight quid each.



The new (1984) Metro ball joint



Step 6.

Fill in the base of the new ball joint with silicone to protect the remainder of the thread (wait until it is cured, trim off with a sharp knife before installing)



Step 7.

HAPPY DAYS !!!!! A ball joint that can be changed easily.

Regards Dean (Howells) No. 941 from Torfaen

*Now I have to say that I am impressed, and a tad frustrated that I didn't think of it! As I said to Dean, it avoids the need to make a tube nut, or a threaded plug, and the welding so close to a stress point to attach said tube nut to the "U" part of the assembly involved, and it also addresses the fact that the Metro joint is a couple of mm or so longer than the original, which was a minor criticism of John Melody's otherwise clever solution. The only thing you lose is the only thing that ever fails in the original ball joints, i.e. the internal damper. That said perhaps some locking mechanism could be introduced, or is the silicone meant to do that? Alan, (Shaw) your thoughts would be appreciated, Ed.*

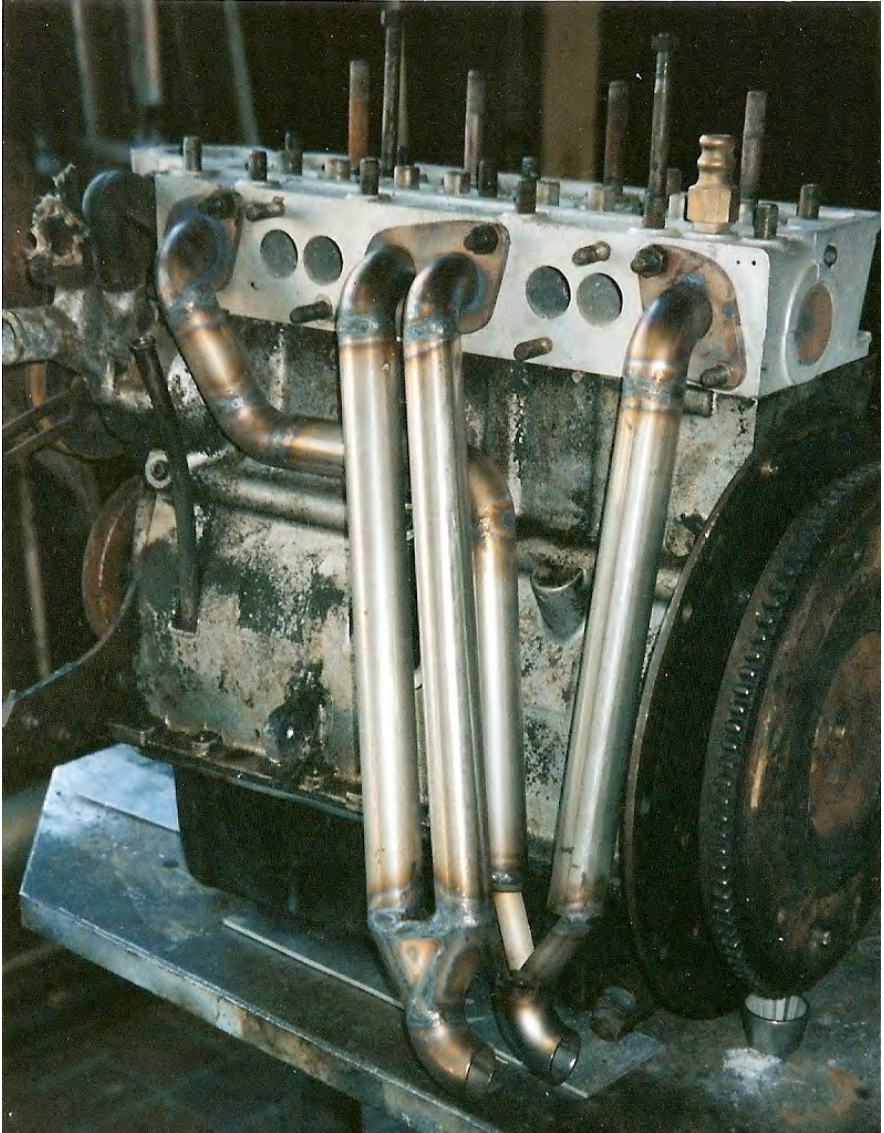
*I should point out that Joe Mason is having a batch of these done, they will even be nickel plated! Like our reconditioned ones they will be available on an exchange basis.*



## More on Manifolds.

Guy Buntinx was reminding me, having read about the best way to do this, that he has done it. I may have shown you these before, but not recently I don't think. (or I have, and really am losing the plot!)

Anyway, here are a couple of pictures of Guy's solution.





~~~~~

Federation News

Or not!

Well, not only have I been so clever including all the pictures in this bumper edition of the roll over bar refurbishment operation, but I failed to record which individual very kindly sent me all the captioned pictures! – thankfully the pictures are captioned very effectively and tell the story without the need for any additional text - please would the author make himself known so that I can give credit where it is due, but, being short of space in this edition I will use this opportunity to invite you to join those on the direct mailing list for a copy of your own Federation Newsletter.

We are entitled to one more hard copy that we actually take up. If you are interested and would like your own copy, please let me know.

Ed.

Epilogue

I have been meaning to share with you a story about one of the other loves of my life, steam power, and the only Reliant produced wee 4 wheeler I have never owned, the Fox.

I need to do this soon as the hard drive on which we store far too many hours of television (we now limit the number of episodes of Thomas the Tank, Waybuloo and Peppa Pig, not forgetting Roary the Racing Car, to 25 of each, never mind the grown up stuff!)

Anyway, either the hard drive or its control system are giving bother, and I am afraid that the solution might be replacement, so we would lose everything there! One of the programs I saved was an episode of “Escape to the Country” from last September (2012), it was first shown 20/10/2008. I need to do a little research – the memory not being what I used to think it was! The episode in question featured a couple, Geoff and Pauline, whose passion was steam powered cars, and he was at that time (and may still be, that is where the research is needed) the owner of the steam powered Fox, and the cameraman caught a couple of views of the Fox in the garage of their old house in Surrey. Frustratingly they were focusing on the property and its owners, and some new potential homes in Devon, and so the appearance of the Fox in the screen was accidental, and only showed the front drivers side corner of the vehicle, but plenty to easily identify it as a yellow Fox.

The last time I heard of that Fox it was for sale with an asking price of about £10,000, (it was white then! – there could not be two steam powered Foxes, surely?) what I wanted to clarify before writing this was, was the chap in the program the new owner, or the one who was selling it? As I may be about to lose the information I thought I’d better get something down on “paper”, even without solving the question.

I meant a few years ago to ask if we could use extracts from the article about the conversion that was published in the motoring press at the time, but I never did, and now I can’t even remember which publication it was that ran the article! – yes I’m sure I do have a copy of it “somewhere safe” – one day....

Till next time – keep things lubricated, and if it ever comes, enjoy the summer.

Brian

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