



A magazine for Riley restoration enthusiasts

in Australia February 2023

No Web address yet



Editorial

The front page illustrates time out from Riley projects. Albert is pictured with very special human friends who have just married. Thankyou to Keith Walker, president of the NSW Riley Motor Club who provided coverage for Albert to do the outing on Queensland roads and also to the Queensland Main roads who provided helpful advice. Riley enthusiasts, you can legally use your Queensland concessionally registered Riley while belonging to an interstate club.

Recently Lindsay Stephens contacted me and asked if the Riley Restorer magazines could be included in the NZ Riley club's online library. I consider that to be a privilege and a compliment to the quality of the magazine. You can now find the published magazines in the library under Riley Restorer. Interestingly the library is accessed by enthusiasts in 10 countries.

In other news, the first AGM and monthly meeting of what has become the Riley Restorer club will be on February 19th. It will be during the AGM that the club will decide if they want to seek incorporation.

We are still seeking financial partners. For \$20 a year an enthusiast can support the Riley Restorer magazine, become a member of a Riley club that seeks to provide Riley restoration advice and skills in a positive environment and publish your restoration stories.

Years of Riley restoration stories are being collated into an electronic book and it was hoped that it would be finished this month but it seems that time has run out. Hopefully it will be finished next month.

Office	name	Contact details
Chairman	Wayne Powrie	wayneapow@gmail.com
		0418 373 104
Editor	Philip Wyllie	philip.w.wyllie@gmail.com
		Mob: 0400 049 493
Treasurer	Doreen Wheeler	doreen.w.wheeler@gmail.com
		Mob: 0400 049 493
Secretary	Philip Wyllie	philip.w.wyllie@gmail.com
		Mob: 0400 049 493
Contents		Getting the details rightpage 7
Cover page		Riley Restorer paint supplierpage 11
Albert and human friends at the foot of Mount Tibrogargan, one of the Glasshouse moun- tains. Editorial, contact details and contentspage 2 Riley matters Events during February/Marchpage 3		Locked outpage 12
		Riley Restorer bearings providerpage 14
		5 Ply timber framingpage 15
		Important Riley factspage 16
		DISCLAIMER: The Riley restorer magazine, its editor and . Accountant accepts no responsibility for the results of con- tributor's advice. It proudly endorses any services/ goods/
In the Garage		
Henry's new lease of lifepage 3		products offered by sponsors. Opinions expressed in this magazine are not necessarily those of the Editor

The Editor appreciates receiving articles by the 21st of the month

February/March Events

Sunday 19th 11 am: AGM and Monthly meeting followed by a BBQ lunch at 74 Treehaven Way, Maleny. Lunch is \$5 per person. Members and guests are invited. Further information can be obtained by contacting the secretary.

Sunday 5th 10 am: Club Outing to the Treehaven retirement home garage. Post war and pre-war Rileys may be viewed. Simple timber framing techniques will be demonstrated along with methods for determining the health of the timber frame in your Riley. The garage visit will be followed by a BBQ lunch. Cost is \$5 per person. Adjacent is pictured a current project.



Henry's new lease of life



In a previous magazine the story was told about straightening Henry's chassis. Henry is a 1924 Riley Side Valve (SV). When the task was completed, the suspension springs were taken to Spring Master's in Brendale, Brisbane with the hope that they could be salvaged and reset. It didn't happen. They were too pitted and worn. New ones needed to be made. Notice in the picture that the end of each leaf is square. Each leaf is also thicker than the originals as imperial sizes are unavailable. Unfortunately the maker made them with a more significant curve than the originals. Another interesting thing about the original suspension springs is that the eyes and length of the rear springs are larger than those of the front

springs. Phil Evans suggested that it was because the rear springs were expected to carry more weight than the front ones. Replacements were made and after a few months they were collected and laid beside Henry's chassis. The main thing that could not be reproduced was the dimple at the centre point that fitted into a corresponding excavation in the axles. Interestingly from the centre point the copies were a ½ inch longer from the front eye to the centre than from the centre to the rear eye. Maybe that was a colonial variation? Perhaps I will never know. The week prior to Christmas arrived and other projects were put aside with the plan to get Henry back up on his feet. The chassis was put on trollies, and it was rolled out of the garage.

At about that time when the springs came home an email was received about the SV in Kurt Schultz' garage, Kurt is a Riley enthusiast who lives in Melbourne. It too was being restored and it is at the stage of being a complete running chassis, but he encountered a problem. The universal pad in the rear twisted when connected by the drive shaft to the gearbox. It seems that the gearbox was out of line with the differential. I emailed him with the theory that his rear springs were the same as mine and one of them had the long end facing forward. Not so. On his Riley, the front and rear eyes were exactly the same distance from the centre point. If Kurt's Riley was the same as mine, it would have been a simple fix if all that needed to be done was to turn a spring around. But going back to Henry, it was time to put him back on his feet again.

There are no Riley shops selling aftermarket shackle pins for SVs so UNF bolts of two sizes were purchased. They were drilled through the bolt head end using a 1/8th drill bit, then the top 3/8th inch was enlarged with a 3/16th drill bit, threaded and grease nipples screwed into the ends. The shanks were placed in a mill and flats machined and a hole was drilled to allow the grease to flow along the flat to lubricate the bronze bushes.



Above: The shackle pins are high tensile steel and each was purchased of a length to fit the various spring hanger requirements.

Brass shackle bushes were available and could be purchased off the shelf and these were sourced from the *Queensland Bearings* shop in Zillmere, Brisbane. The larger size for the rear springs could not be sourced so a bronze bar was purchased, and bushes were machined to fit the eyes of the rear springs on a lathe.

The end of the bolt that passes through the centre of the springs was cut off and the nut on the end of the bolt fitted into the cavity on the front axle. Pictures of Paul Baee's SV show a plate that fits over the spring and bolts are passed though the openings in the plate to fix it to the axle. These did not exist on Henry, so a non-ferrous foundry was visited a month previously and some plates were copied from a spare owned by Paul Baee. By the time of assembly they had not been made so the 'U' bolts that were supplied with the Riley were used as a temporary fix.



Above: The plates copied from Paul's treasure trove.

The bronze bushes were pressed into the eyes of the front springs. Three of them fitted perfectly but the fourth spring eye was not perfectly round and when the bronze bush was position it became slightly oval. This was easily corrected with the use of a rheme of the correct size (5/8th inch) to make the ID round again.

The shackle pins fitted through the chassis eyes and through the front spring eyes easily. The shackle hanger likewise fitted without drama, but the spring needed to be straightened slightly to get the last shackle pin through the hanger and the spring. The beam axle went on without any dramas as the threads on the 'U' bolts had previously been cleaned and the threads improved with the use of a die. Finally, the front wheels went on without any issue. At the beginning of the day, it was thought that both the front and the rear axles could be fitted in one day, but it was already late in the afternoon, so the rear axle needed to wait for the procedure to be completed on the following day.

Once again, the bushes were pressed into the eyes of the shackles and this time three of the shackles were pressed slightly out of shape so a rheme got a further work out. The front fixing point on the chassis was in good shape and the shackle pin passed through the chassis and the spring without issue. Likewise, the shackle hanger on the rear fitted easily. Unfortunately, however the front chassis opening was not quite in line with the rear shackle hanger, so the spring didn't line up. The curve in the spring needed to be straightened so the spring eye would line up with the shackle hanger. To remedy the situation a heavy plank was fitted over the top of the chassis. The opposite side was fixed in position with a 'G' clamp, a short length of 4 X 4 timber was placed between the chassis and the spring at the rear. Then another clamp was used to straighten the spring. This was done by fitting the bottom of the clamp under the spring and the top over the chassis. The clamp was used to press the spring up and that had the effect of elongating the spring so the shackle pin could be passed through the hanger and the rear eye of the spring. To get it through a mallet with plastic heads was used to tap the shackle pin through. It was then that it happened. The openings in the shackle hanger and the spring eye didn't quite line up so when the mallet was swung to tap the shackle pin into position my left thumb got in the way. It was a silly thing for it to do but my eyes watered in sympathy, and I went for a

brief stroll around the garage while refocusing on the task at hand. A second tap using the mallet did the job and everything fitted together. Thankfully the other side spring lined up perfectly and the system used to line up the spring eye with the shackle hanger worked well and it all came together. By this time, it was getting late on the second day and I had promised my neighbour that I would come over for Christmas drinks and I was in need of anaesthetics anyway.

On the third day, the Dodge steering box was fitted to the chassis along with the drop arm that had been made a few weeks previously. The drag link used was from an RM steering system. The story about the Dodge box modification is in another magazine. But to explain its use a few comments are worth making. There are no intact Riley SV steering boxes in existence except those on a few Rileys that are in use, so a substitute needed to be found. Phil Evans told me about the Dodge box. It fitted into the Riley chassis bracket perfectly. It looked similar to the Riley box but it was made with cast iron rather than aluminium. It had the further advantage of having adjusting screws where the Riley box had none. The pinion was taken out of the Dodge box and an RM pinion was fitted in its place using the Dodge worm gear. Ken Lonie kindly machined the gear off the Riley pinion and the tube cavity was slightly enlarged to take the advance/retard and hand throttle tubes. Thrust bearings were sourced through the bearing shop in Zillmere.

Below: The Dodge steering box fitted with a post-war Riley pinion and drag link



Co-incidentally Kurt Shultz visited during the week prior to Christmas. He was in Queensland to spend Christmas with the part of his family who migrated to the warmer climate. He brought diagrams of the chassis running gear and immediately we saw that the new suspension springs were all too short. How that could happen I do not know. The rear shackles instead of being at 1 O'clock or nearly vertical were at 10.30 O'clock. This meant that the differential was forward of the place where it should have been under the curve in the chassis. It also meant that there was a possibility of the shackles swinging in the wrong direction if the car hit a bump in the road.



Above: The shackles too far forward and below: The rear shackle position. They are about 2.30 O'clock—too close to 3 O'clock putting them at risk of swinging in the wrong direction.



The consequence for the rear axle was that it was too far forward.



That will mean that the people at *Spring Master's* will have to make a new top spring for all of the spring assemblies. At least that is what I hope they will do. But my Christmas project was blown away because the springs needed to be removed, the bushes taken out of the spring eyes and the springs returned to *Spring masters*.

It is now the day before Australia day. The Australian flag is proudly displayed at the front of the house and *Spring Master's* have contacted me saying the spring assemblies have been rectified and are available for pick up. It is now late January and Henry may still be undergoing restoration in the year of his birthday. Close examination of each spring assembly showed that they were now flatter and two inches longer than they had been previously.

Below: The rear springs re-fitted. The shackles sit at about 1 O'clock without the load of the body pressing them further back





Above: without the load of the body the front shackle seems to be in the correct position at 5. 30 o'clock.

During the Christmas period Henry had been laid up in the timber workshop waiting for his suspension springs to return. Apart from other distractions a load of Flooded Gum has just been milled to the size required for Riley sills and was available for pick up. That meant that Henry needed to move out of the workshop. Previously each of the bronze bushes had been numbered against the eye that each one had previously occupied. In the morning the bronze bushes were pressed back into their eyes and the bush ID's cleaned up with a rheme.

The rear springs were fitted first. Interestingly the misalignment on the driver's side spring had been rectified in the setting of the new top spring. It lined up perfectly from front eye to rear eye. The shackle pins were a close fit but they were fitted without difficulty. The same out come was experienced on the passenger side. The front drivers side spring was slightly skewed so that a plumbers wrench was reguired to align the spring shackle while the pin was pushed through but the passenger side lined up without any difficulty. Later, after the sill timber was brought home, the springs were set on their axles and the 'U' bolts were refitted and Henry was back on his feet again. He was rolled out of the workshop, the timber was stacked with airgaps (typically the timber dries to an inch depth per year) and when this was finished roof rails were cut for the '47 RMB and Henry was rolled back into the workshop. His next adventure will be getting a rebuilt gearbox

Getting the details right -The 1947 RMB

Prior to receiving this Riley the timber parts for the frame had been made and it was expected that the assembly would be completed in a month. Not so. The parts looked the same but there were subtle differences. The tub is rounder on the '47 RMs so the bottom of the rear window frame has a 3/8th inch difference in its curvature. The rear corners are slightly different. The doors are higher and so are the hinges. The Windscreen surround does not have the tabs that the later Rileys do. The top and bottom window rails are different and so are the 'A' pillars – not by a huge amount but sufficient to require changing the timber frame for others. A discovery (made two days ago) revealed that the windscreen surround has a small impression on either side of the cut out for the window winding mechanism. It is only an 1/8th inch cut but until it was found the windscreen surround would not fit onto the bottom window rail. The rail was chiselled out to accommodate the impression and when that was done the frame sat evenly on the rail. The differences are not annoying. They are interesting. Some of them were not noticed immediately because they were not expected to be there. But closer examination has revealed some very interesting and different features.



Above: The window winding mechanism cut out is almost invisible.

To my relief the rear window is the same size as later RMs (apart from the RMF and RME) and the newly made '47 rear window frame fitted against the tub quite well. The rear corner pieces were rounder but they only took a short while to make and fit.



The cant rails (the pieces that go over the doors) were basically the same as on other RMs.



The 'A' pillars are angled slightly more in the middle to accommodate the windscreen surround and the tops are an 1/8th of an inch narrower to receive the top window rail.



Above: You can see the curve at the side of the top windscreen rail.

When the 'A' pillar was fitted, it was possible to see where the 'A' pillar and the cant rail meet so the packing under the tub, sills and the scuttle could be fitted. The tub was inclined slightly down at the front so that the rear doors could fit up to the openings. The 'B' pillars were set so the rear fixing bolt was over the angle in the sill. The sill itself needed to be cut out slightly deeper to produce the angle required for the rear doors to meet the tub door openings squarely. The scuttle required a 1/2 inch of packing and the front doors fitted up to them without much adjusting. There are 8 support points for the body and each affects the other seven so experience has taught the need to check each adjustment against all of the doors to ensure that the change to the positioning and height of each support point doesn't throw out the position of the doors on the other side of the Riley. It takes about a day to get the best fit and even then the lines are not exactly the same on each of the doors. And of course, most of the Rileys that have been built in my garage have hinges that have been bent backwards on the front passenger side door but on occasions the driver's hinges have been found to be bent backwards as well.



Yesterday, different nose timbers were made. The scuttle was found to be slightly rounder over the top of the parcel shelf than on later RMs. It could be like this on this particular Riley or it could be like that on all '47 Rileys. There is no way to find out without examining another Riley of this year. So the whole process of assembly took longer than expected.

Today it was discovered that the roof rails are $\frac{1}{2}$ an inch longer than on later RMs.



Above: The roof rail on the left was made last year before knowing that the Riley was a '47 model.

The front scuttle timbers are quite different to accommodate the external bonnet lock. These fitted together quite well. The body number was cut using a Dremel and the Riley Diamond chassis plate cleaned up nicely and was screwed onto the passenger side scuttle timber. This Riley only had three fillets between the top windscreen rail and the roof rail cross piece, but a fourth was added as I had cut four.

At this stage the steel windscreen surround



had been on and off the Riley several times as it was fitted into position. Strangely, feeler gauges are used to find the high spots on the front of the cant rail and the top and bottom windscreen rails. The bottom of the windscreen surround was already fitting well but there was a few high spots on the driver's side rail and cant rail. These were identified by pressing the surround against the timbers and running the feeler gauge between the timber and the steel skin. It is a slow process but it is better to inch towards the best fit rather than taking too much off and having a loose fit. Eventually the windscreen surround fitted into position snugly. The tell tale signs are the weld points on the quarter panels. They should line up exactly as they did prior to the strip down. The other tell tale point is the openings for the chrome piece that go between the bonnet and the front doors. These must correspond to the holes cut through the

sides in the scuttle. Ultimately the only important thing is that the door jam fits up to the 'B' pillar and along the windscreen surround and the quarter panel to the knee block with a good gap when the front doors are closed.



In my garage there are four pullies permanently attached to the roof rafters. A chord is fitted and the end is tied back to the walls and when the roof steel is repaired and painted, it is lifted up from the floor using the chords and it hangs above head height until the Riley is ready for the roof steel to be fitted. After that nails and screws are employed to fix the door jams and roof to the body.



Above: Roof metal hanging about

There are also a number of screws that attach the interior timbers and the 'A' pillars to the 'K' panel.



Above: Interior timbers

No spare wheel door came with this Riley so the best of the ones hanging on the garage wall was sandblasted to use for this Riley. Sadly the passenger side had numerous rust holes. Fortunately during a trip to the NSW second hand spare parts containers a door was scavenged that had rusted out on the driver's side. The two doors were cut along the same line and joined together to make one good door from the two rusted ones.



Above: Spare wheel doors ready to be grafter together

Lead wiping is the next step. This job is made easier by removing the paint and contaminants from the door jam, windscreen surround and the quarter panels and tinning them prior to fitting. The nails used are bronze silicon of a type used in wooden boat building. All of the screws are stainless steel except for the ones at the

base of the 'A' pillars. These are brass slot headed screws. Other visible screws are also slot headed including the fixing screws for the Riley diamond on the front of the scuttle. It took an extra month to build this Riley but it was a fascinating journey and I have a spare set of timbers for the next post-war Riley project.





Above: The body completed. Notice the door gaps and the position of the quarter panels. They meet the front edge of the scuttle timbers—an excellent outcome.

AUTOMOTIVE & INDUSTRIAL PAINTS



CONCEPT PAINTS-UPOL-3M-GAS SUPPLIE-IWATA-CUSTOM PRESSURE PACKS-BODYFILLER

NARELLE KERR

425 NEWMAN RD GEEBUNG 4034 QLD PH:3865 6180 MOBILE:0422 304 763 E:hartspaints@bigpond.com

Harts paints are a Riley Restorer magazine sponsor. They supply paint, paint related products, outstanding advice and colour matching as good as you can get anywhere.

Locked out

When building a 1950 RMD (drophead), a pas- copied for both the passenger and the driver's senger side door lock was borrowed from Ross McOmish who was at the time restoring a drophead himself. The drophead that was in my garage had no door locks, catches or for that matter no catches or chrome parts at all. They all had been taken off and souvenired or utilized for other restorations. I remember one person telling me that he had visited the site where the drophead – now named Albert was left derelict. He said he found the rear window laying on the ground next to the body so he took it home. I asked if I could borrow or buy it but you know when a conversation is closed when the other person stops talking to you. I recall borrowing one that was in the collection of Neil Patrick and ended up making three but that is another story.



Above: The locking mechanism.

The internal door handle fits onto the centre post. When turned it pushes the tongue back into the mechanism. The spring is a back door RM spring. When the interior door handle is turned backwards the centre piece locks into a space on the external door mechanism locking the door.

The lock that was sent from Ross was carefully

side with the components positioned on the lock plate to suit left hand and right-hand operations. Later when the Riley was finished, roadworthied and on the road the internal lock mechanism on the driver's side was engaged. It was supposed to be on the passenger side only but copying and not thinking two passenger side mechanisms were made and I was locked out of the Riley. Oh dear! With a long piece of wire the handle was pulled up from between the hood and the top of the door. After that attention was focused on another build and I forgot about the 'booby trap' that had been built into the lock. It was now time to fix it as our youngest daughter asked if I would take her to her wedding in Albert and I didn't want to risk being locked out.

This is how the locks were made: The parts of the lock that was sent from Ross' collection were looked at closely. The base plate was simply a heavy gauge sheet of steel that had a 90-degree bend. A friend had a bending machine that was capable of doing the deed so two pieces of steel plate that were cut to the correct dimensions were taken to his shed and for a miniscule amount of money the two plates were bent exactly where they were meant to be. After taking them home a vernier was used to measure the exact locations of each of the components. After double checking the component locations on the plates, they were marked with a scribe. The tongue was made from a square bar. One end was made round in a lathe to fit a spring onto it and the other end was filed to make the locking tongue. At the time I did not have a folding machine or a mill so a pedestal drill was used with mill bits. That might explain why the cuts look a bit rough and the folding of the bolt tung casing not that professional looking. The bolt was put into a vice on the drill bed to cut out a slot for the locking mechanism. This was cut from 3 mm steel plate. The sleeve that the bolt fitted into was simply a piece of panel beating steel bent to shape and fitted onto the locking plate with .

round head 2BA bolts. A 2BA tap was used to make the threads in the plate.

The internal door handle seat was scavenged from am RM rear door lock as was the spring. You can see from the picture that a mushroom like post was fitted to locate the spring and a peg was located on the lock plate to tension the spring. You can see that the spring fits into a slot in the door handle seat. The locking bolt is actuated by turning the internal handle causing the seat to press against the shape in the locking bolt. To lock the passenger side door the internal handle is simply turned down and its seat is locked into the external handle seat so the locking bolt is prevented from moving.



The external handle seat was scavenged from an RM rear door lock as well and this was fitted into the locking plate and held in position with a brass plate that had been cut out to receive the shape of the seat. The handle seat had previously been modified to suit the RMD door mechanism. To prevent the internal door lock from fitting into the locking position, the solution was simply to drill a hole through the locking plate and tap a 2BA thread into it. A 2BA bolt was then cut to length and screwed through the plate from the external side of the plate so it could not be turned to the locking position. The driver's side door could then only be locked with the key. The solution to being locked out took about 20 minutes to do and a

couple of years and a daughter's wedding to be motivated to do it.



What about the external door locking mechanism? The key barrel operates a small bolt. I have not actually seen what was used originally in RMDs but the internal opening in the escutcheon was cut adjacent to the locking bolt using a mill and this was further developed by making a brass tube that fitted into the escutcheon with a cut out that extended the locking bolt cut out into the opening in the door. The escutcheon is fixed to the door with two screws and the brass extension on it fits into the door opening against the skin and this prevents it from rotating in the opening when the screws are removed. It is amazing how daughters can motivate fathers into doing stuff that otherwise would never get done.





Make yourself known, show your club ID or magazine when in the shop.

Contact Us For Hard to Get Bearings Call Brian Phone 07 3265 3622 also Fax 07 3465 7077 Oil seals, Chains & Sprocket and Vee Belts etc. Email: sales@queenslandbearings.com.au Website: **RHP** bearings www.queenslandbearings.com.au Address: 2/260 Zillmere Road Zillmere, Brisbane Qld 4034 Postal: **PO Box 185** ZILLMERE QId 4034 **Div. General Bearing Corporation Oil Seals** Scagull C.M. Japanese Roller Chain

Five ply RMB frame



This Riley came as a parts car. It looked good for the purpose. The body panels were all there and they had the appearance of never being in a serious accident. It did, however, present better than it actually was. The gutters were done nicely. The roof vinyl was tight and straight. The doors were all there, the windscreens and rear window were good. The price was right. It had a number of bling factors that might attract an unsuspecting buyer to buy it with the idea of restoring it.

But then the vinyl roof cover was removed and you could see that a lot of bog was used to smooth out the ripples and fill in rust patches. The door jam was taken off the driver's side and some very interesting discoveries were made. The timber frame that was used was five ply. Where thicker timbers were required the 5 ply was glued one piece to another and then cut to shape. It was clearly not marine ply or even good quality construction ply. It had delaminated some long time previously. The



Riley's structural integrity relied entirely on the panels.



But none of these things really mattered. the metal could be used to replace parts on other cars. But the fact that it was built using 5 ply was interesting. It also showed me that there was a certain risk involved in buying a Riley with the view to putting it back on the road without really looking at the smallest hints of something amiss. Perhaps the clearest hint on this or any Riley is at bottom of the 'A' pillars. If there is rot or there appears to be a replacement of the bottom bit of the timber it could mean a complete rebuild using a new timber frame.

Below: The 'A' pillar seems to be delaminating.



Engine weights recorded by Jim Runciman

Ever wondered why you have suffered back problems in old age? When younger I picked up various Riley RMB blocks, a chassis or two or three and other bits that required some effort. Jim Runciman recently weighed various engines and this is what he came up with:

These will vary from car to car but give a good indication of the difference in engine weights. A very accurate weighing device was used and zeroed before each weighing.

- RMA/12/4 Approx 160kg
- 15/6 engine Approx 250kg

RMB engine Approx 225kg

Thank you for the details, Jim.

Above right; a Big 4 engine

And adjacent: a 12/4 engine

I use an engine crane to pick these things up these days





Future Riley sills

Drying time is about an inch per year. These timbers are 1 1/4 inches thick and in one year they will shrink to 1 inch thick and be ready to be transformed into Riley sills. While they wait to be transformed to be part of the world's best cars they will luxuriate in a quiet spot in a workshop somewhere in Queensland. They represent two trees that died of old age and will be repurposed to enjoy a new life alongside 4X4s (Future cant rails), 3X3s (Queensland Mountain Ash 'A' posts) and the like. Rileys are concerned about the environment and have a light carbon footprint compared with moderns. Consider inviting a friend to buy one.

