



# TORQUETUBE

**Magazine of the Riley Motor Club, Qld, Australia Inc.  
May 2018**



*Riley Motor Club enthusiasts in the streets  
of Caloundra prior to the National Rally*

From left to right: Alan Lecky, Josephine Woodcock, Wilma Henderson, Wendy Lonie and Doreen Wheeler. Keeping a low profile in the front seat Ken Lonie and Ian Henderson

## Editorial

The National Rally is nearly upon us and you can see from the front page that there are many Riley enthusiasts looking forward to the event. Just in time, the rainy season has concluded and it looks like an ideal time with blue skies and warm days to make our interstate guests feel welcome.

I know from conversations with participants from around Australia that many members are getting their cars ready for the event. If you are

local and have not been able to put aside the week, maybe you would be able to visit us during one of the days of the Rally?

This edition of Torquetube is a slim compliment to the National Magazine that will be published during the National Rally. Contents are just about what has happened and what will happen in our club this month. Special thanks to Peter Lee and Doreen Wheeler who have proof read both portions of the Monthly read.

**Below: Rileys visit Caloundra**



## The editor appreciates receiving articles by the 21st of the Month

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## April Outing to Bournedrill by Peter Lee

One of the more unusual monthly outings in recent times also became one of the best attended.

More than 20 RMCQ members were the guests of Graham Bourne, his wife Kay and business partner and younger brother George at Bournedrill in Archerfield on Saturday 21 April.

This engineering works was established by Graham and George as a partnership in 1963 and two years later was first registered as a company.

As its name implies, Bournedrill has primarily focused on the design and manufacture of standard and customized drilling equipment supplying everything from parts to fully assembled rigs.

Over the years, the company has carved out an enviable international reputation for the effectiveness of its geophysical, water, mineral exploration and oil drilling rigs. These are designed at Archerfield and usually built in-house then shipped to the local overseas company's factory where they are assembled on to local trucks and field commissioned.

They have been exporting rigs for more than 30 years to mainly Asian markets such as the Philippines, Pakistan, Indonesia and Malaysia as well as Thailand where approximately 180 have been delivered. For more than 30 years, up to 2010 overseas customers took the bulk of Bournedrill's products and services.

**Below: Graham Bourne (centre in blue shirt) and Trevor explain the set up of a job and how quickly and accurately it can be done.**



The RMCQ tour kicked off with a welcome by Graham and George while Kay presided over a delicious Devonshire tea spread. Shortly after

entering the factory via the front offices, the real scale of the operation readily became apparent.



**Above: Bournedrill staff member Ben demonstrating the speedy tool changing as well as precision on the large AGMA CNC vertical milling centre.**

Few of the RMCQ group were prepared for the size and range of equipment needed to build and maintain large scale drilling equipment. This has also paved the way for the company to move into heavy duty general engineering in recent times.



**Above: Bournedrill staff member Mattie explains the set up and functions on a 60 plus-year-old vertical borer that was manufactured in Coventry. Some comments were made about other Coventry-manufactured products that were not quite so trouble-free over six plus decades.**

The factory tour concluded with a viewing of Graham's latest restoration project – the rebuilding of a very rare 1939 J series Vauxhall roadster complete with dickey seat plus a similar 1939 J series Vauxhall sedan.

Following this excellent tour, those who were able to rounded off the day with lunch at the Salisbury Tavern.

## *May Riley Motor Club events*

**Tuesday morning 1st** Tinkerers meeting will be at the **Hills, 4 Mahdeen Place, Samford**. Restorers' activities, friendship and technical advice. BYO lunch and drinks. Tea and coffee provided.

### **Monday 7th—11th The 2018 National Riley Motor Club Rally at the Oaks in Caloundra and surrounding area**

**Tuesday morning 15th** Tinkerers meeting will be at the **Hills, 4 Mahdeen Place, Samford**. Restorers' activities, friendship and technical advice. BYO lunch and drinks. Tea and coffee provided.

### **Thursday 17th 8 PM. Monthly General Meeting of the**

### **Queensland Riley Motor Club, Samford Show Grounds.**

**Sunday the 20th** Breakfast run to Red/White Cedar picnic area on the western side of Mt Glorious. We will meet in Samford at 0745 to leave at 0800 routing through Samford and up and over Mt Glorious and down the other side to the best picnic site. Please note, these BBQs are wood fired.

Thank you. Elizabeth. 0419 730 642

**Tuesday morning 22nd and 29th** Tinkerers meeting will be at the **Hills, 4 Mahdeen Place, Samford**. Restorers' activities, friendship and technical advice. BYO lunch and drinks. Tea and coffee provided.

## *Dems the Brakes by Ken Lonie*

At a Riley/MG breakfast recently, Michael the jeweller from Samford was looking at my recently completed Riley and noted the brake booster unit I had installed. I have a VH 40 booster on this car which has disk brakes on the front (original mechanical drums on the rear) and a VH 44 unit on my RMB (original drums all round, hydraulic on the front).

He commented that he had had a problem with the brake boosters where the small rubber hose about 50 mm long with a 45 degree bend had split and allowed air to be sucked into the inlet manifold. Apart from the problems caused with dilution of the mixture and erratic running at idle, he said that the effect on the brakes was to prevent them from retracting. The result was dragging brakes. He had had difficulty getting replacement hoses and eventually got them from eBay.

I had noticed that the front disk brakes had seemed to be dragging and the disks were getting very hot. Also, the power wasn't what it should have been. When I got home I lifted the bonnet with the engine running and, lo and behold, there was a hissing coming from the hose area. Closer inspection revealed a large crack in the underside of the hose.

### **Below: A brake booster and the split hose**



Off to Maleny Auto Spares and I was able to modify a u-shaped piece of hose to provide me with 2 replacement hoses. I fitted one to the new car and the hot disks disappeared and a new lease of power was released. I then had to rebalance and tune the carbies, but that's another story.

Several days later, I checked out the RMB and the splits were even worse. I replaced that hose as well and the brakes will now stand the car on its nose.

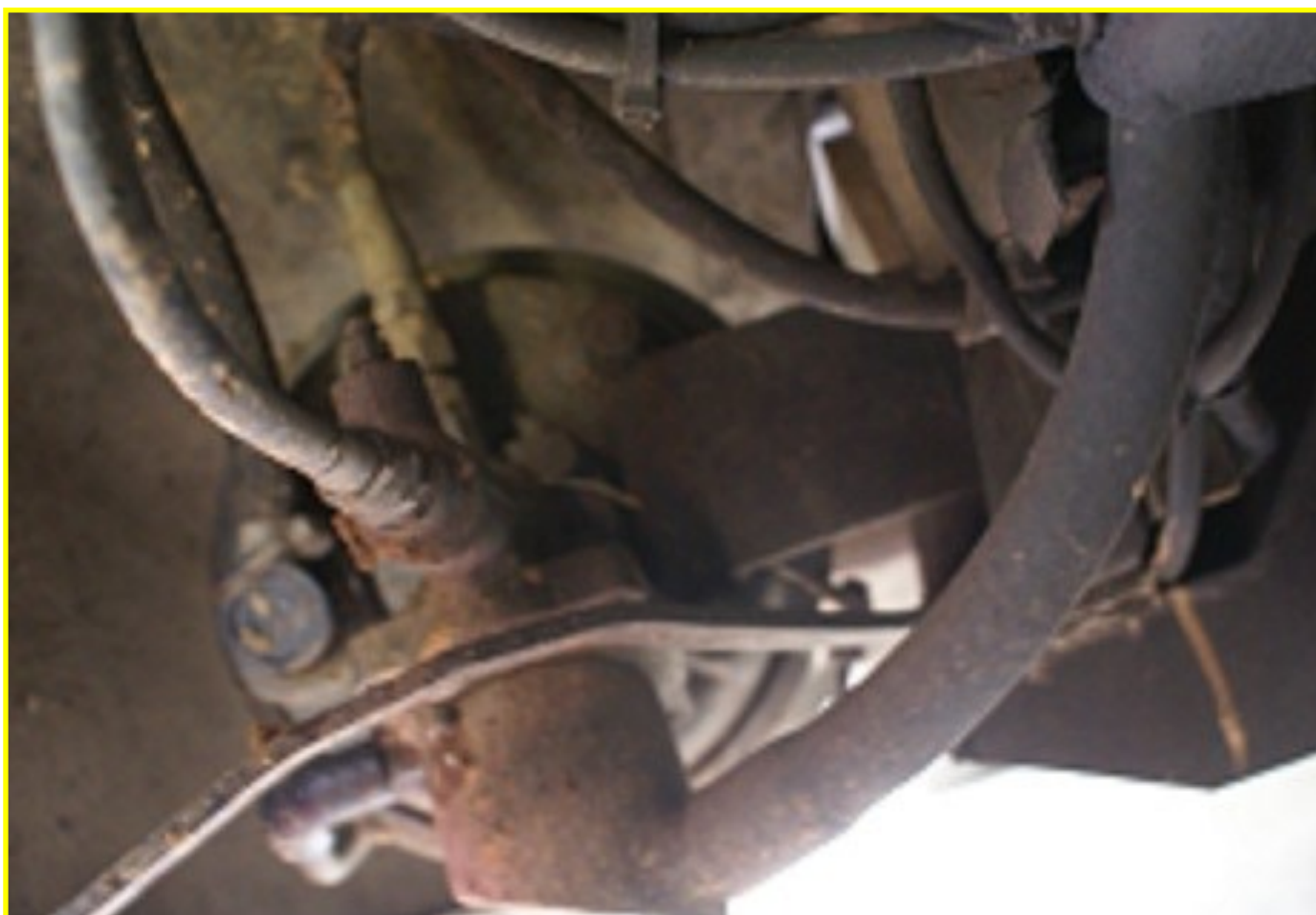
For those of you with brake boosters fitted and your brakes could be better, I recommend you check out this little hose.

**Below: The booster in situ**

the brakes were still hopeless. I had adjusted up the adjusting cone on the rear brakes so that the brakes were just starting to drag with brakes off, but still no good. I knew I had a slight leak in the left rear wheel hub seal, so I pulled that apart and replaced it.

While reassembling the hub, I noticed that the cones at the ends of the rear brake rods were fully drawn into the brake backing plate, even with the brakes off. I then realised that when the rear brake rod was pulled, there was no further wedge on the cone to spread the shoes.

I then fully released the rear brake rods allowing the cones to fully retract and the shoes to contract. I then adjusted the manual adjusting cones on the other side of the brake backing



### **Adjustment of Rear Brakes**

As a separate issue, the brakes (no booster) on my little Austin 10 have been hopeless for a while and I thought it was time I did something about it. They are mechanical rod drum brakes all round.

Despite adjusting the linkage so that the cams on the front are providing maximum leverage,

plate until the brakes were just starting to drag. I was surprised. I was able to screw the cones in by at least 2 full turns until the shoes started to bind. I then went back and readjusted the rods on the other side, so that they too, were not quite causing the shoes to bind.

**Below: A cone above the brake shoe expander on the rear axle yet to be restored**



Lo and behold, the brakes now work like they have never worked before.

The rear brakes on the RMB utilise the same design and I suspect that some of our braking problems with the RMBs are caused by only adjusting the manually adjusted cone on each brake backing plate each time the brakes require adjusting, until the brakes just start to drag.



**Above: The rear brake equaliser where the brake linkages need to be released and below notice the same system on a 12/4.**

What is really required each time the rear brakes need adjusting, is to first back off the brake linkage so that is loose and the cones on the end of each brake rod, fully retracted. Then adjust the manual cones on the other side of the brake drum, in quarter turns, until the brakes start to drag and then back the cones off by a quarter of a turn.



**The one pictured above are on the front of Elspeth, the Riley Falcon and below the linkages to the master cylinder**



Then finally, readjust the rear brake linkages so that the rear brakes are not quite starting to drag with brakes off. You also need to ensure that there is a small amount of clearance in the slot at the front end of the master cylinder, so that the brake pedal moves a small amount before starting to pull on the master cylinder.

## Carburettor tune up

Not too long ago, Brian Jackson asked if he could place an advertisement in the magazine with an offer to sell a pair of rebuilt carburettors or swap them in exchange for worn out ones at a lower price. He said that he thought they may have come from Albert, the RMD as they had been purchased from David Schoch. At last an advantage has been discovered in being the editor of the Queensland Club magazine! The advertisement did not get into Torquetube as I was interested in fitting Albert's original carburettors back into him. The carburettors sat on the bench for a while as the editor was distracted with the cable brakes in Edward, the Riley 9. With the brakes assembled, attention was turned to the carburettors. The only issue found with the carburettors was the play in the butterfly shafts so one thing needing to be done is to re-bush them.

Following a careful check, the 'old' carburettors were replaced with the 'new' carburettors. Unfortunately, the choke cable broke from repetitive fittings over the years, so a visit was paid to the local car parts shop and a likely specimen was purchased. The button was filed to resemble the original and the whole arrangement was fitted. Likewise, the mechanical hand throttle mechanism was replicated and when this was done the connections were made and Albert was ready for a tune up.



**Above: Carburetors in Albert**

In the first instance, readers may remember a story in Torquetube about a visit to Carl Harries' garage where a 'Colortune' tool was

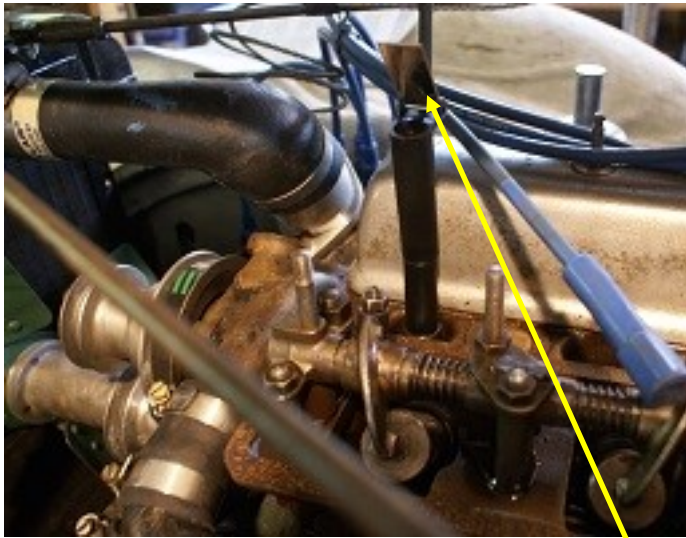
demonstrated. Carl said that they were common in the UK and that he had mislaid his old one, so he had just purchased a replacement. After the visit and as soon as convenient a 'Colortune' kit was purchased over the internet from England. This was the instrument that was used to tune Albert.



**Above: The components of the 'Colortune' kit**

Number one spark plug was removed, and the Colortune spark plug was fitted in its place. It has a glass base that you can see through. Over that a tube was fitted that has a mirror fitted at the top that conveniently allows the 'mechanic' to see into the combustion chamber. On top of this arrangement a stiff rod was screwed into the transparent spark plug and the high-tension lead was attached to it. The engine was then started and looking through the mirror I could see the fuel combusting in the chamber producing a yellow colour. The front carburettor was running too rich, so the adjustment nut was wound down two flats

and the combusting fuel changed colour to blue. According to the colour tune chart this was the colour for the fuel air mixture to combust correctly so the process was repeated on number four combustion chamber and when both produced the required colour the springs for the choke levers were replaced.



**Above: The Colortune assembly fitted to number one combustion chamber. The mirror is at the top of the column. Below: The Colortune guide**



Next, the nut was loosened on the butterfly shaft and the balancing tool was placed over the air intake of the front carburettor and the idle screw was set so that the ball in the vacuum tube settled in the middle. This procedure was repeated on the front carburettor and the nut on the butterfly nut was tightened. After that a telephone call was made to Alan Lecky who is a trained mechanic to ask him if he would look at the tuned engine and confirm that the carburettors had been set correctly. After a few days Alan arrived on his motor bike and the small leak that I thought would resolve itself after the cork 'O' ring swelled became a little creek. He quickly determined that it was the copper washer in the seat, this was replaced, and the leak was fixed. A much smaller leak from the banjo nut on the float bowl was then fixed by tightening it with a spanner and Alan re-checked the balance between the carburettors. When the job was complete, Alan was invited to enjoy a cup of tea. Thank you, Alan.



**Above: Alan Lecky after checking the carburettors in Albert and below: The carburettor balancing tool employed**





## The Lucas Distributor

Both George and Albert have been fitted with Mitsubishi electronic distributors with an alternator that has an inbuilt regulator. It is easy to do the conversion and it is well worth the effort. No more fiddling with points and dial gauges. These days, of course, Lucas offers an after-market electronic module that fits straight into the Lucas distributor and that system, I am told works well. But, the original distributor and generator has been kept intact in Harold, the 1948 RMB and it has come time to put him back onto the road so that he can find a new garage and a new human to look after him. It has been five or six years since I last fiddled with a Lucas distributor. But it seems like riding a bike; once you get the hang of fitting the points and setting up the timing it just comes naturally.



**Above: A very familiar sight to Riley enthusiasts; the Lucas distributor**

In the first instance, the spark plugs were removed from the engine and a dial gauge with spark plug adaptor and extension rod was screwed in place of the number one spark plug. The picture below shows the set up of the dial gauge. Mine was made about 20 years ago by taking out the innards of a spark plug and fitting a copper tube over it with a thread in its side to take a small bolt so that the dial gauge could be fixed into place. The extension simply screws into the base of the dial gauge

plunger. After fitting it into place, the engine was turned over until number one piston reached top dead centre. After confirming that top dead centre was indeed the position of the piston, the dial was zeroed, fourth gear was engaged, and Harold was pushed backwards until the dial gauge retreated to 25 thou before top dead centre. That is equivalent to 8 degrees before top dead centre.



**Above: A fairly old dial gauge fitted into a copper tube and over an old spark plug with an extension to reach the piston.**

**Below: The dial gauge fitted into number one spark plug showing top dead centre ready for the distributor to be set. And locked into position.**



Next, the points were fitted. At that point there was a little problem. The points that I purchased were Fuel Miser L10s but the gap that was required could not be achieved. It appeared that the points were too big! A spare distributor of the same model was taken out of the box that it was kept in and the bottom half of the Fuel Miser L10 points were fitted into place, then the old Lucas points were fitted over the top of them and the Fuel Miser L10s were a clear 1/8<sup>th</sup> of an inch proud of the Lucas points. How interesting! At that point Paul Bae was SMSed and the conundrum was explained in text. He assured me that the correct points were indeed the L10s, but I insisted that they did not fit and sent a photo on my return SMS (don't you love modern technology!). The issue is not yet resolved but the old Lucas points were cleaned up and fitted with a 12 thou gap between the points and then a testing light was attached to the coil and an earth and the distributor turned until the light came on. The distributor was then locked into place and the electrical timing was complete. This interesting activity has consumed hours of my life over 36 years of tinkering with Rileys and it still entertains.



**Above: The L10 points fitted into a spare distributor but without adjustment to create a gap between the points**

Seeing as the distributor was out of the car, it was decided to replace the condenser as well. The one chosen was a Japanese 022 NF. It was selected because it was side mounted and the electrical wire to it was long enough to double back around the condenser to the distributor contact without fouling with the distributor shaft. It was attached to the base plate of the distributor by drilling and tapping the hole and fitting a small retaining bolt through the side mount to the distributor baseplate.

In the process of playing with the distributor, it also occurred to me that I had taken the mechanical advance fittings off Harold to complete the appearance of Albert, so the fittings were copied and fitted into place.



**Above: Mechanical advance with the distributor in place**

Just in case you are tempted to fit an electronic distributor and alternator to your car the following steps and parts might be utilised to complete the process. I should also add that I am entirely untrained in anything mechanical or auto electrical so the following although functioning well in my cars does not have a stamp of approval of an Auto-electrician who has training in converting a Riley from a generator and a points distributor to alternator and

## Conversion to Alternator and Electronic distributor

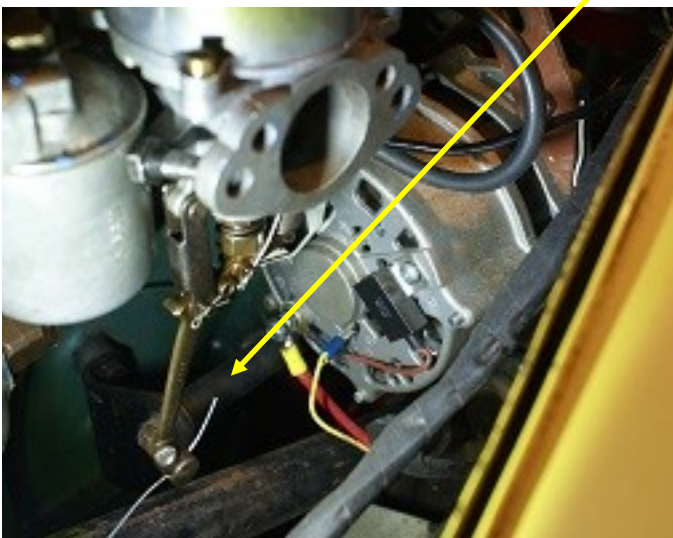
Turn your battery around so that it is negative earthed but do not connect until you complete the following:

1. Purchase an alternator with inbuilt regulator and replace your generator with the alternator. The alternator chosen for George and Albert was OAE - BXA007 (RPL BOSCH ALT 12 V 55A SIN).

Just in case you want to purchase a genuine Bosch made in Germany or other brand name with its traditional country of origin, you can't. They are all made in China or Brazil, but mostly in China and maybe the Bosch brand is made in the same factory as the Chinese no name model? The Chinese alternator may be the exact same unit, but it is \$50 cheaper.

You can either take the pulley off and split and pack it out so that it will take the C3 belt or replace the C3 belt with a C1 belt. You will also need to line up the alternator pulley with the crank and water pump pulley. This was done in my cars by reversing the front bracket and fitting a threaded rod through the eyes of the front and rear brackets with packing over it to advance the position of the Alternator.

**Below: Alternator fitted. Note the shaft and packing to move the alternator forward**



**Below: the same Chinese Bosch pictured from the front. Note the packing in the alter-**

## nator pulley



2. Disconnect the yellow 3 MM wire from CB -D that goes to the ignition warning light and the 6 mm Yellow wire from CB-D that goes from the junction box to the generator (D) and solder them together and insulate the soldered join. Connect this wire to the small terminal on the alternator. (Note: If you have an early RM without an ignition warning light you will need to incorporate one.)

3. Run a Red 8 mm wire from the positive side of the battery to the Alternator (large terminal).

4. Replace the Lucas points distributor with the electronic version. Fitted to both RMs is a Nippondenso distributor: KN Mitsubishi MO 125049 100291-2300. If another conversion from the Lucas system to an electronic system is desired in the future the Lucas module would be my first choice. I am told that It fits straight into the old distributor.

5. Connect the Negative battery cable from the negative battery terminal to earth and the Positive battery cable to the starter motor solenoid terminal. You can then start your engine.

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An original set of Lucas points were purchased through the local spare parts shop. The Lucas numbers are 407050 B1351. When these arrived they were fitted into the spare distributor and the gap was set at .012 thou. They were not put into Harold's distributor as yet because the old ones well still in good condition.

## *The never ending story of Albert*

Just when you thought that there was nothing more to be said about Albert something new comes along. Readers may remember that in the last edition of Torquetube there was a picture of a broken pushrod. It was thought that maybe emersion under the Brisbane River for a few weeks may have contributed to the deterioration of the pushrod but fortunately there was a spare and it was replaced. But the engine did have a tappet noise so after running the engine for a few minutes the tappets were reset and the engine was restarted. The tappet noise was still there! Albert was then taken for a run around the block and upon return the rocker cover was removed and the number one exhaust pushrod appeared to be dancing around under the rocker. It was taken out and found to be bent.

### **Below: The broken push rod**



After some thought, the engine was turned over so that number one piston was fully up on the exhaust stroke and a screw driver was put under the rocker shaft with the end over the valve spring to see if the valve could be pushed further down. No, it had grounded. The pushrod had bent because it wanted to travel further down than the valve allowed it to. What was the problem? At first I thought that maybe the valve had touched the high lift piston on its exhaust stroke, but more knowledgeable Riley people discounted the idea as the stroke of the piston could not co-inside with the valve unless the timing was out and this could not be the case as the engine ran smoothly.

**Below: Collet collar grounded on the valve guide. Pictured a screw driver is used to push the spring collet collar down as far as it would go but not enough to prevent the push rod from bending.**



With that the head was taken off and placed on the bench. The exhaust manifold was then removed and the number one valve was examined and then the piston. No marks on the valve and no marks on the piston. And the valve ran smoothly in its guide. When the engine had been machined the machinist had fitted hardened valve seats and it was noticed that the exhaust valve was seated slightly further into the combustion chamber. The collets also sat fractionally deeper into the top of the valve as well. Did this have something to do with the issue? A dial gauge was then set up on the bench and the travel of the exhaust valves was measured with only the collets and the collet collar fitted. They all travelled the same distance. After some thought, a vague recollection arose about the exhaust valve guides being replaced when the engine was machined. So, as you do when all else fails, you check the workshop manual and the book said that the top of the valve guides should be set to 13/16ths above the valve seat. This was measured, and the top of the guide was found to be 7/8ths above the seat. For those who think in metric measurements 13/16ths is 20.6 mm and 7/8ths is 22 mm. Aha! But was the exhaust valve guide higher in number one than in number two, three and four? These were checked, and it was discovered that they were

A combination of a valve guide that was 1.4 mm longer than specified, slightly deeper set of collets on the number one exhaust valve and a slightly prouder valve seat allowed the collet collar to bottom out on the valve guide.

This is when all the mechanical engineers who might be reading this should close their magazines and not read any further. At this point, the choice was to remove the guides, alter the height of the shoulder and press the guides back into their places a little further possibly upsetting the valve seating or alternatively I could grind off the top of the valve guides with no risk to the valve seating. I chose the latter.



**Above: It is possible to just make out the top of the valve guide. The cloth was used to catch as much of the filings as possible**

Yes, I can feel the cringing as you are reading this. With a dremmel cut off blade, each of the valve guides were reduced in height by around 2 mm and the head was washed off with petrol and then high-pressure water, dried with



**Above: The valves and rockers prior to the re-build**

compressed air and put back on the bench. All the exhaust valves were then cleaned and re-assembled into the head with a smear of oil. After that, the spare head gasket was put back onto the engine with a light coating of Hylomar, small 'O' rings were placed over the oil tubes and then the head was replaced.



**Above: Engine cleaned and ready for re-assembly**

It should be added that over the years Riley heads seem to have become heavier to me. No longer are they lifted and placed over the head studs by hand. Instead the head is placed in a sling and lowered onto the engine with a block and tackle. This process has allowed me to continue to walk upright without pain. Having re-located the head on the engine, the nuts on the studs were torqued down, the push rods were fitted, the gaps set on the rockers and the engine was turned over by hand. No grounding of number one exhaust valve collet collar on the valve guide!

My next goal is to get 500 miles up prior to the National Rally so that Albert can be shown off in all of his restored glory.

## For Sale and wanted

### 1951 RMB for sale

This is a RM that needs to be sold/moved. It is from a deceased estate.

Cameron O'Conner is the nephew of the deceased, Melvin Parker, and the cousin of the current owners and is the one with access to the property where the car and parts are being stored. The car is at Caboolture, possibly a '51 RMB and purchased from a bloke named Bender about ten



years ago. Apparently, the car was used for a couple of years and then stored. They are hoping to sell and are seeking offers in the region of \$5000.

Cameron's number is 0421708177 if you know anyone who maybe interested.

*Welcome to Queensland  
to all our Riley friends*

Just yesterday a neighbour came up the back stairs for a visit. This harmless girl is about two metres long.