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## The “WOBBLE KNOCKER”



*One of the beautiful painted silos on the club silo run and it is a Morris.*

**BMC-Leyland Car Club Inc**

**A0061520N**

**Committee of Management**

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<b>REGALIA.</b>		Gary Turner and Sue Wilson
<b>LIFE MEMBERS.</b>		Rae and Peter Luxmoore.

***The following members are authorised by the club to sign VicRoads renewals.***

Gary Turner, Francis Borg, Norma May, Sue Wilson, Terry Sawyer, Vincent Stok.

***The following members are authorized to sign Standard Declaration and Eligibility forms for the CPS. These members are club scrutineers and Safety Officers.***

Gary Turner, Francis Borg, Terry Sawyer, and Vincent Stok.

*(No new cars will be admitted to the scheme unless the VicRoads CPS person, Sue Wilson, grants prior permission.)*

*Club Scrutineer's and Safety Officers are for signing off on the VicRoads Vehicle Eligibility and Standards Declaration Forms and for advice only. As of March 31, 2017, all cars must require a RWC including all those of pre-1949.*

This publication contains general information, which does not necessarily reflect the views of the Club, its Committee or Editor and should not be relied upon without specific advice from a qualified professional.

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# President's Report



Hi everyone.

Well things are returning slowly to the club after all the lockdowns and so on. The weekend away touring the painted silos in central Victoria has been done and dusted at long last. After so much time planning, putting off, planning and putting off again and again because of COVID we finally got the tour in and it was well worth the wait. From the first day it was fun all the way. The club was kind enough to subsidise a few of the activities including lunch and dinner on the first day of Saturday. Dinner was especially a great fun time for many members. A full run report is further in this newsletter. Thanks to all who came along and organised the tour especially Sue who made and prepared the lunch and dinner for the Saturday.

We have a couple of new events coming up and I hope as many of you as possible can support them. Details further on.

There seems to be a bit of confusion about transferring your car over to this club if you have it at another car club. It really is easy and does not cost a single cent. You DO NOT need a RWC if the car is already on a CPS with another club, to do this. Some think you do, not the case and you can transfer your vehicle at any time during the year, not just at renewal time. Why pay 2 club memberships if you only need 1. The process is easy. 1. Let Sue know of your intentions to transfer your vehicle over to our club. 2. Confirm the CPS number (rego) and renewal date, make, model colour of the vehicle with her. 3. We will send you a letter which you take along to your nearest VicRoads office. 4. Present the existing CPS book and the letter to them and they will print out a new sticker for your book. 5. Notify the old club that you no longer have the vehicle with them. That easy, that simple.

That is, it for now, take care out there, fill in your logbooks every time you use your CPS vehicle, and we hope to see you on our next event.

Thank you,  
Gary Turner.  
President/Editor.  
BMC-Leyland Car Club Inc





## CAR CLUB CALENDAR of EVENTS 2021

### APRIL 10<sup>th</sup>

Club car run organised by Alan and Yvonne Bennett.

**Meeting point:** *Berwick Main Street* **Meeting time:** *9am for a 9:30am depart.*

Set aside Saturday, April 10, 2021 for a glorious drive through the eastern side of the Dandenong Ranges – hopefully, some of the trees will be putting on their spectacular autumn colour thanks to cooler nights and the potato fields around Cockatoo and Gembrook will be a lush green with harvesters tilling through the rich red volcanic earth bringing in the crops. The trip will be on gently winding country roads with all bitumen surfaces.

Starting from Berwick Main Street central car park at 9.30am (above the public toilets) we will tour through the outer reaches of Berwick onto the Emerald-Beaconsfield Rd towards Emerald. The trip will take us through the picturesque village of Upper Beaconsfield before a morning tea stop at the colourful and unique Elephant Rock which overlooks Cardinia Reservoir (no toilets or seating).

From there we will travel through the hills around Upper Pakenham and Gembrook before stopping at the Ash Wednesday Bushfire Education Centre in Cockatoo for a tour around the center. (Toilets available). The building holds a special place in the hearts of locals as it was the refuge for many families during the disaster. Re-developed as an education center three years ago and staffed by volunteers it provides information on Ash Wednesday, outlines how the community has rebuilt itself, and importantly offers advice on staying bushfire safe in the home and garden. (Public toilets available). The education center is all set for our arrival 10.45-11am.

The building is filled with information and we expect most people will be happy to linger for 45 minutes or so before we head off for the lunch spot – arriving 12.30ish.

Bring a picnic lunch and camp chair for our destination of the day travelling through the popular town of Emerald and onto Wellington Rd for lunch at one of Melbourne's most picturesque outdoor destinations - Cardinia Reservoir Park at Narre Warren East. The lush Australian landscape includes views of the dam wall and spillway and has many spots for us to enjoy lunch to end our day. Those who want to linger can try out the well-formed and signed walking trails and others needing to get going can travel along Wellington Road towards Rowville, Narre Warren, or the northern suburbs.

Remember your picnic lunch, chair, and teas/coffees as none of our locations provide these facilities. Please let Gary and Sue know that you are attending or contact Alan or Yvonne on 0407 545 992 or 0437 158 958.

### MAY 16<sup>th</sup>.

Saturday Club car outing organised by Brett Huxtable. Wine tour of the Bellarine Peninsula. Details to follow in the next newsletter.

### JUNE 6<sup>th</sup>.

Our member Steve Haralambous has invited us to view his extensive collection of 15 cars at his factory in Seaford. Light refreshments then lunch at a place to be informed.

**More runs to be announced as they become available.**

## 6<sup>th</sup> June Run

Steve Haralambous's list of club cars.

Here is what would be on display:

- 1974 BMW 2002
- 1963 Daimler 250
- 1963 Mercedes 220SE Coupe
- 1967 Mercedes 250S
- 1967 Mercedes 250SL Pagoda
- 1967 Mercedes 280SEL
- 1973 Mercedes 450SL Coupe
- 1988 Mercedes 560SEC Coupe
- 1959 Morris Major Ser 2
- 1961 Triumph Herald
- 1964 Rover P5 Ser 2
- 1977 Triumph Stag
- 1988 VW Golf GTI Convertible Karmon

## How to organise and put on a run.

Choose a month and a date that you can help

Once chosen, decide on a time and place to meet

Contact Sue and let her know so she can co-ordinate with the editor and committee.

Ask members to say if they are attending and make sure you have their phone number and give members yours. This will be possibly put in the newsletter anyway.

On the day get to the meeting point a few minutes early if you can.

Wait for members to arrive and leave at the designated time.

Try and travel in convoy. Do the right thing and if you cannot see the member behind you, stop and wait for them in a safe place. Another reason why you need phone numbers.

Upon arriving check that everyone has arrived.

Take a note of who came, where you went, what happened, any story and any other details for doing a run report.

Forward your notes to Gary so he can write up a run report for the magazine.



### EXPRESSIONS OF INTEREST

On the 16<sup>th</sup> May we are planning a wine tour on the Bellarine Peninsula down Geelong way. Brett Huxtable who is running this tour needs to know some numbers so he can book the appropriate place for lunch just in case we are still having COVID restrictions. PLEASE let Sue know on 0421841939 if you would like to come along. From previous runs organised by Brett you will have a great day out. Details on the last page of the newsletter.

# RUN REPORT

## Silo Tour 6<sup>th</sup> 7<sup>th</sup> and 8<sup>th</sup> March 2021

*Members 26 Classic Cars 13.*

In attendance for this great weekend were the following members and cars:

Gary Turner – MGB, Sue Wilson – Jaguar XJ6, Lloyd and Glenda Newnham – 1960 MG Midget, Rick and Kay Smith – MGB, Peter and Terry Nodzio – Mini Clubman, Ron and Pat Sinclair – Morris Major Elite, Clyde and Diane Wilson – Wolseley, David and Annette Neish – MGB, Cheryl and Terry Sawyer – Morris Minor Convertible, Francis Borg and Norma May – MG Midget, Sue and Alec Robinson – MGB GT, Peter Bernardi – MGB, Rami and Sami – VW and Jo and Kel Hawkesworth – Morris Minor.

Special guests from Lifestyle were Wendy Watt-Boyle, Norm and Liz Gillespie. Mike and Mark from Mikes Mobile Racing along with Mike's wife Sue also attended with a great night of slot car racing.

**BIG** thanks to the following: Sue Wilson for preparing all the food for lunch and dinner on the Saturday as well as organising the places for dinner on Sunday and Monday nights. Kay Smith for organising the run days. Wendy from Lifestyle for all her great work cleaning and looking after our members. Peter Nodzio for helping on the BBQ. Mike Barrow, Mark and Lloyd for setting up and running our slot car competition which was thoroughly enjoyed by all. Plus, everyone who made the effort to come away with the club in which was a fun weekend.

## DAY 1.

A couple of members came up and arrived in the motel early whilst the others came up and arrived at the motel altogether. Upon arriving members were met by Sue and after checking in they all followed her to where Sue and I live at Lifestyle Shepparton where they all parked in front of the main club rooms. After a brief tour of the place, they were taken outside under the beautiful vines where we all sat down and had lunch which Sue had prepared earlier that day. It was also let known that Ron Sinclair was celebrating his birthday, so a cake appeared and demolished within a few minutes. After lunch, some members returned to the motel whilst others went for a drive.

At around 6pm members started to arrive at the pavilion which was situated also in Lifestyle where Mike, Lloyd, Wendy, Sue, Mark and myself had been busy setting up the room and Mike's slot car track which covered an area of 4.5 x 2.4 meters.

It was not long before members started to get involved with the slot cars and I started the BBQ with Peter Nodzio taking over shortly after as I got busy elsewhere.

Dinner was served and all but a few bits and pieces.

Then it was race time on the slot car track and the guys got racing as well as many of the ladies got involved as well. There were three lanes on the track so the way to sort out a winner was to race on each of the lanes making it even for everyone. In the men's race each one was eliminated until just 3 remained. These were Peter Nodzio, Alec Robinson and David Neish. Three races were run, each in different lanes and the winners were, 1<sup>st</sup> David, 2<sup>nd</sup> Peter and 3<sup>rd</sup> Alec. Great racing guys.

Then it was time for the ladies to race. Contenders were Cheryl Sawyer, Annette Neish and Jo Hawkesworth. A special mention to Sue Robinson who was just pipped at the post. Pretty tough competition by the ladies but the eventual winners were, 1<sup>st</sup> Cheryl, 2<sup>nd</sup> Annette and 3<sup>rd</sup> Jo. Well done to all those ladies as well.



But the surprise out of the racing was for the fastest lap out of all the competitors and that was Annette who blitzed the field, well done.

During the day when all the cars were parked in front of the clubrooms, Sue asked one of the homeowners to pick out a couple of cars she most liked for our Show and Shine. She said she was a big fan of the MG Magnette as a young woman so chose Francis's MG Magnette and Lloyds MG Magnette. Both were awarded a special trophy done up for the day, well done guys.



*Lloyd and Francis with their show and shine awards.*

While all this was going on our guest homeowner, Wendy was busy cleaning up the BBQ and stacking the dishwasher plus heaps more and we all thanked her for the great job. By 10:30, all was packed up and members left for their motel and a good night's rest.

## DAY 2.

Today we were off on the first day of the tour to look at some street art and Silos. After meeting at 9:30am Lloyd took the lead in his prize winning Magnette and we headed out through Mooroopna to the first stop which was a huge water tank that was in the process of being finished at Kyabram. We did not have the best viewing point as the tank was in the last couple of days being finished and there was no viewing platform, but we did manage to see at least one side of it even if it was through a large fence.



*The water tank at Kyabram and a line-up of the cars.*



*Kyabram Water tank which is now all finished showing some of the art we did not see.*

Next it was off to the small town of Tongala where it was said there were lots of street art and there sure was. Walking around the town there was so much to see and take in.



*Some of Tongala's street art. There was so much more as well.*



After a coffee and a cool drink at the only open store in the town, Lloyd lead the way again to our next stop to a larger town this time, Rochester to view more street art and silos. After parking we all ventured away where some went for lunch and others went looking for the street art agreeing to meet back at the cars by 1pm.



*Rochester Silo Art*



*A couple of the local buildings caught my eye, beautiful.*

At 1pm we all gathered back at the cars and we headed off again to our next silo art stop, a one-horse town called Colbinabbin where we had arranged for the local general store to open between 12 and 2pm for us to check in before we checked out the silos, they silos were a sight to behold for sure.



*Colbinabbin Silos, with a line-up of BMC vehicles on the run.*



*Colbinabbin Silos, some of the best in the area.*

After checking out the silos at Colbinabbin we all headed off back to Shepparton to rest up before going out to dinner that night which Sue had arranged.

Most of the fun and games happened the night before at the slot car racing but Alec Robinson would have nothing of that. Alec decided to have a quick walk on the outside of the hotel but while relaxing the hotel water sprinklers went off catching Alec and giving him a brief soaking while he ran like someone possessed to get to a dry place. Poor Alec was not happy but everyone else had a great laugh at his expense.

Then it was off, back to the motel where Alec dried off and the rest went happy to their beds.



*Alec Robinson and his unexpected shower.*



*Thanks for the entertainment Alec.*

## **DAY 3.**

Meeting again at the motel at 9:30am we all were led off by Rick Smith in his MGB to our first stopover at the Silos at Tungamah. We were greeted with some of the very first silos painted in the area which again did not disappoint.

Pictured next page.



Then we were off again to our next painted silo, a small town called St. James. This place is where GJ Cole was born. GJ Cole was the founder of Coles. His portrait was painted on one of the silos as well as a delivery vehicle which happened to be a Morris as well as some draught horses which looked incredible.



*Silo painting at St. James and the hotel from which they were serving coffee to all the passing tourists.*

Next, off we went to our next stop the small town of Devenish where 3 of the silos were painted in the theme of ANZAC. Rather stunning.



We all piled into the cars to the next stop which was the Goorambat Uniting Church where there was supposed to be some Sophia paintings but for some reason we were rushed past this place to the silos in the town. Which I must admit was well worth the trip. Pictured below.



After another brief stopover we were taken to Benalla where members were left to their own devices to get lunch and then return to Shepparton where Sue had booked us all into a local hotel, not far from the motel for dinner.

After dinner, goodbyes were had, and members returned to their motel where they all departed the following morning for home.

Below are a few photo collages of some of the sights we travelled past and saw. Thanks to all those who helped, organise and participated.

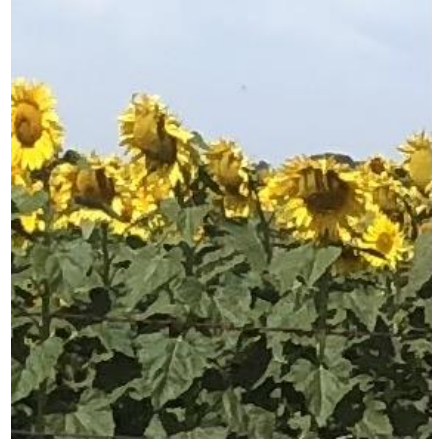
Gary Turner, editor.



*MG FUEL. Just for MG's?*



*Ron Sinclair, the birthday boy.*



*Fields of Sunflowers along the highway.*





*Some of the many painted cows we passed along the way of which the region is famous for.*



*ANZAC Day memorial at Tongala.*



*Our cars lined up along the road at Kyabram.*



*The participating cars on our silo run.*



*Line up of cars at Lifestyle Shepparton.*



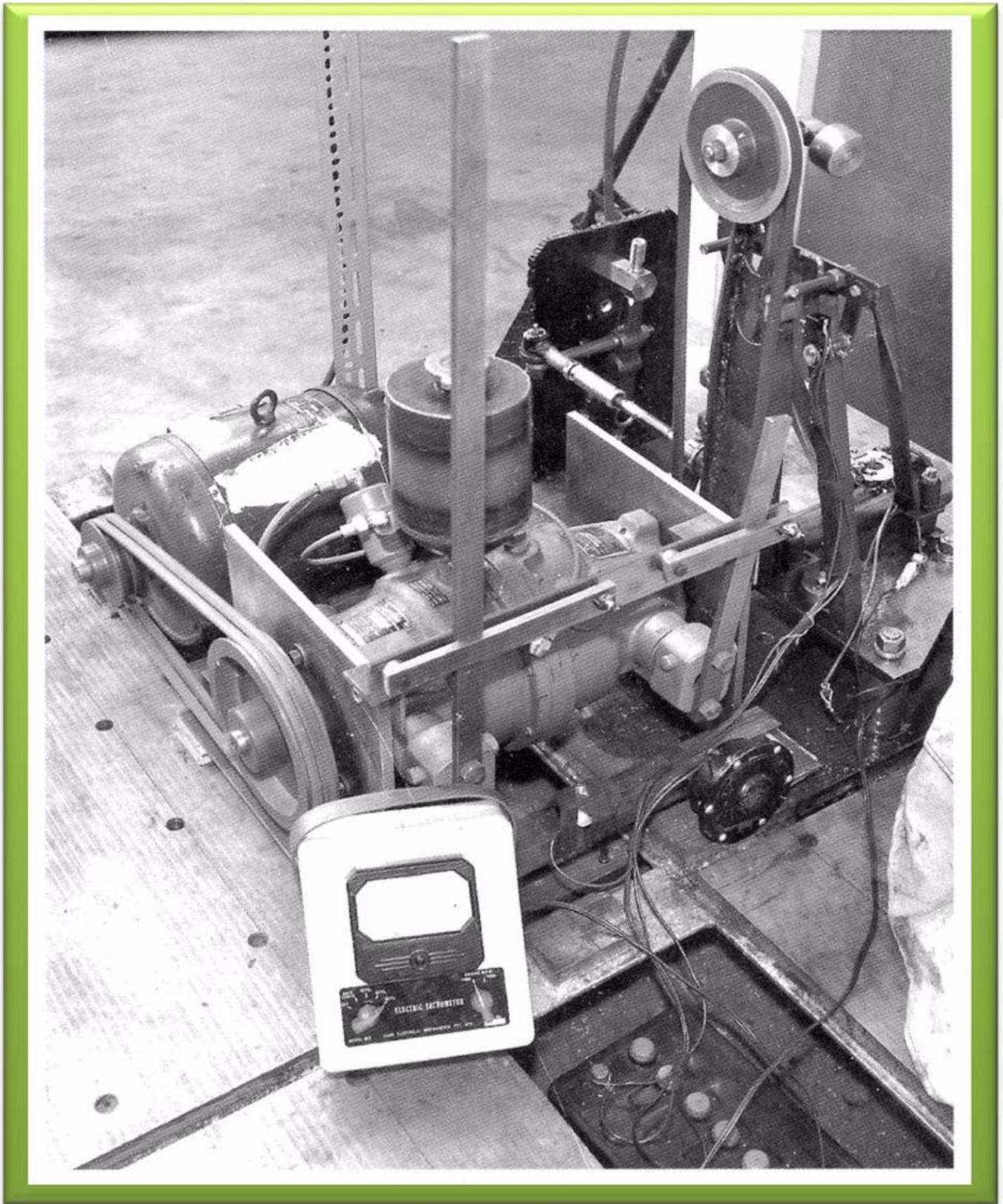
*A wall of art at Tongala.*





**Why** *call the magazine "The WOBBLE KNOCKER"?*

For those new members who do not know.....read on.



**"The Wobble Knocker"**

## The Wobble Knocker Machine.

A durability driver rang around 8pm one night. He was not best pleased. A steering arm on a prototype car had failed – alongside a deep railway cutting near Thirlmere.

Next morning, having retrieved the car, we found that the other three steering levers (there were two prototypes) were cracked – it was six months to production. Perversely, finding all three cracked was good – there was no doubt that we had to do something. The Experimental Department was only nine months old and we were operating in a temporary area. We urgently needed a fatigue testing machine.

Reg Fulford, from his experience with fatigue testing at Holden decided on the machine concept and the ingenious Clay Turner designed and built the “wobble-knocker” within a week.

Clay subsequently built machines to test a wide range of component and systems. An example was his trailer dynamometer which employed an aeroplane propeller that had to be guarded so it would not ingest small animals beside the road – a story in itself.

The wobble-knocker comprised a vertical oscillating arm actuated by a rotating out-of-balance mass at the top and driven through a variable speed drive unit, a belt and pulleys. A link to the steering arm through a standard steering ball joint and tie rod loaded the part correctly. Deflection (and hence load) was measured by eye using the pointer on the ball joint and a steel rule – crude perhaps but we got useable results.

The road failure was reproduced – an essential first step in fatigue testing – and the standard part's life established – around 900,000 cycles. Three different “stronger” materials were evaluated, two having much shorter lives than the standard part while the third had about the same life. So, after months of effort we were back where we started. Time was running out and tests were done on arms with the diameter  $\frac{1}{8}$  inch larger. These ran for over five million cycles without failure. There was a scramble and the change was introduced before first production – just – and the Experimental Department had proved its first fatigue testing machine. It was subsequently redesigned to run much faster with proper instrumentation. In this form it was still being used 40 years later.

# ELECTRIC MORRIS MINOR REVIEW

Posted by Paul Wager on 14th January 2020

**The recent surge in electric classics has mainly been a high-end business fuelled by manufacturer-backed conversions. We find a much more down-to-earth approach in this electric Morris Minor.**

Admittedly you do find yourself in some unlikely situations doing this job but on the scale of 'things you never thought you'd do' trundling round Parliament Square in an eerily silent yet surprisingly spritely 1953 electric Morris Minor to the soundtrack of Cypress Hill's Insane in The Brain ranks highly.

Despite the slightly surreal nature of the experience though, the idea could not be more sensible and when Lon-don Electric Cars' Matthew Quitter tells me the cost of putting it together it seems like a no-brainer.

LEC's Morris is not the first electric classic of course, but it is the first usable concept we have come across here in the UK, aimed at people who genuinely want to use the cars in converted form.

Interest in electric-powered classics has traditionally been strong in environmentally aware California and only in the last few years has it become more popular in Europe. The highest profile is enjoyed by Jaguar's own E-Type Zero as featured courtesy of some high-level product placement in the last Royal Wedding, but although it is an impressively neat piece of engineering, it is hardly an everyday car: you are looking at £300,000 to get behind the wheel, which does not encourage you to leave it in the station car park every day.

Elsewhere, Aston Martin has similarly jumped on the high-end bandwagon with a converted DB6, while MINI has built a one-off classic Mini with electric propulsion as a novelty which is not even on general sale. A similar Mini will be offered to public sale by Swindon-based Swind but again is a costly proposition at around £80,000 as are the handful of other companies converting cars – many of which curiously never seem to be quite ready to test.

This 1953 Minor on the other hand is very much ready and willing, having been used daily around the Capital by Matthew for some time.

Key to its appeal is the pragmatic approach taken by London Electric. For a start, the firm is happy to use second-hand parts to create the conversion and in general has found the tried-and-tested Nissan Leaf to offer the components required.

Rather unsurprisingly, it seems that a salvage industry which is still dragging itself out of the oily mud of the traditional breaker's yard still does not know quite what to do with a crashed electric car. After all, batteries, controllers and motors do not wear out in the same way as internal combustion engines or geared transmissions, meaning there is not much of a market for used parts, so when an enterprising conversion company comes knocking then you are only too keen to get the parts off your hands.

The Leaf also has the advantage of using componentry designed to fit into a medium-sized platform, making the task of installing them into the average classic car that much easier. The batteries for example are a modular design, meaning that individual cells can be assembled into different sized packs to suit each car. Simple threaded bars and suitable end plates are all that is required to create a bespoke unit to suit each installation. It also means that in cases where space is tight, the batteries can be distributed around the car in multiple units.

The Leaf also uses relatively traditional lithium manganese oxide battery chemistry, meaning the units are not quite so unstable as, for example the higher-density Nickel Cobalt Aluminium chemistry used by Tesla which requires the batteries to be effectively armoured for safety. This in turn adds a lot of weight and requires more complex battery cooling, which is avoided by using the Nissan componentry.

The LEC Minor also retains the original car's four-speed manual transmission, which further keeps the cost of conversion down and retains more of the car's original character. You do not need to stir the gear-lever as frequently as the petrol-powered Minor and the clutch does not see much action, but the car still needs to be driven in the conventional way.

Looking around the Morris, from the outside you would be hard pressed to tell that it has been converted. Indeed, a look through the window gives you no further clues either since electronic displays are hidden inside the glovebox and the dashboard remains standard.

Under the bonnet though, things are vastly different, but the car remains essentially standard, LEC's philosophy being to avoid cutting and welding.

Issigonis's original idea of using a flat-four engine provided an engine bay which was more than generous for the A-Series four-pot and provides ample space for the electronics. The view is dominated by the battery pack – in this case a total of 25 165Ah Thundersky Prismatic cells taken from an older electric conversion – and tucked behind it is the Curtis 1230 controller, while largely hidden from view is the motor itself which bolts up to the original gearbox bellhousing via an adapter plate.

The supporting frame for the batteries is welded to the bodywork in this car, but the Minor installation has since been refined to the point where existing damper mounting bolts can be used.

Open the boot and where the spare wheel usually lives under the floor is another battery box, with the coiled charging wire another giveaway that this is not your usual Moggy.

I found the presence of the standard 12-volt car battery an amusing sight under the bonnet, but this is explained by the traction motor running at 96 volts. Clearly, the lights, wipers and all the rest still rely on the traditional 12 volts, hence the use of the original battery which is charged not by an alternator but by a DC-to-DC converter which steps down the traction battery voltage, while a simple fuse box replaces the original voltage regulator. This has the advantage that if required the majority of the car's original wiring loom can be retained.

The motor used in this car is a 30hp unit offering 100 lb. Ft torque which in theory gives the car a range of 40 miles and a top speed of 50mph. Since the car is very much intended as an urban runabout, this is ample and as Matthew points out, in real-world daily use around London it only needs charging once a week. The Minor's light weight helps here: a 24Kw set-up would give a 100-mile range in a Mini, 80 miles in something like the Minor or 40 miles in a Land Rover.

So, what is it like on the road? Both comfortably familiar and startlingly different is the answer. Although the standard manual box and clutch is retained, the electric motor is not rotating at a standstill, so there is no need to use the clutch when pulling away. When doing a three-point turn for example or backing out of a driveway, the procedure is simply to switch the car on via the original dashboard ignition key switch, select first or reverse without even pressing the clutch pedal and then just ease on the throttle, at which point the car glides away.

From a standing start, it gathers speed impressively well thanks to the electric motor's characteristic of providing maximum torque at zero rpm and this makes it easily able to mix it with the most modern of city traffic. The high torque of the motor – after all, it is twice what the original engine offered – renders first gear effectively redundant and for most city driving Matthew reports that the car is quite happy in second. On faster routes the clutch is employed just as in a petrol car to change up, at which point third can also be skipped entirely and the direct-drive fourth used. This also makes the car much quieter from inside, since the notoriously rackety second gear in the Morris box becomes prominent when there is no engine to mask it.

In fourth the Minor is quite happy to spin up to 55mph or thereabouts, but since this Moggy is of 1953 vintage and – electric drive apart – all-original, its drum brakes and lack of seatbelts mean this is something for the brave. And speaking of brakes, an adjustable regenerative affect is programmed into the system, meaning that lifting off the throttle has a noticeable braking effect. As with many current electric cars, with enough practice you can avoid touching the brake pedal entirely – the benefit meaning the increase in range which can be as much as 10 per cent.

Top speed is not what this Morris is about, anyway – it is a very usable city car with all the charm of the original which really can be used daily with as much convenience as a Nissan Leaf, Renault Zoe or Tesla. And, it must be said, far more style than any of them.

And cost? Matthew reckons that including the cost of the parts, a conversion like this can be achieved for under £20,000 in most cases, which is a world away from the other options out there.

Interest in conversions like this is growing fast and back at the workshop, we find another completed project in the shape of a Series 2 Land Rover. Being a heavier vehicle altogether, this requires more batteries, a heftier motor and a cooling system for the electronics, but of course the trade-off is that there is more space to accommodate the batteries too. One box under the bonnet is complemented by a pair hidden underneath and one under the rear, while like the Minor, the conversion also retains the original transmission – including the low-range transfer box and four-wheel drive.

The philosophy at LEC is to retain as much familiarity as possible, which is achieved by attending to detail work like retaining the original throttle pedal linkage – which obviously now attaches to an electronic controller switch rather than the butterfly of an SU carb but which as a result retains the same pedal feel, making it familiar to drive.

The light-duty Morris installation gets away without cooling, but the heftier Land Rover installation demands more of its electronics and so a cooling system is required. This is achieved using largely computer cooling technology, with a reservoir of fluid which is pumped through a radiator cooled by electric fans. Like an auto-motive cooling system in miniature, it is the type of setup you would find used on a heavy-duty PC.

Alongside the Land Rover, candidates lining up for conversion include a Volkswagen Karmann Ghia and a Lancia Beta HPE, while much thought on the day of our visit was going into a conversion of a classic Mini. It is no surprise to learn that the primary challenge in this case was finding space to install the batteries neatly, but the flexible nature of LEC's approach meant that all the nooks and crannies could be filled usefully.

it is no surprise to learn that a car of the Morris's vintage is easier to convert than more modern classics with no power brakes, no power steering and no ABS to consider. Not that these issues are impossible to solve: a vacuum-um pump can be employed to power a brake servo, while electric power steering is commonplace these days or an electric pump can be used to supply the original hydraulic set-up.

As I strolled back to the Underground past a line of hybrid Toyotas, they suddenly seemed clumsy and old-fashioned compared to the 66-year-old Morris I had just stepped out of which seemed perfectly suited to city life. Ordinarily, I'd be opposed to the idea of radically re-engineering a '50s Minor but somehow the LEC conversion is so much more elegant than any of the usual engine swaps Minors are subjected to. Yes, you could easily put the car back to standard of course, but... you know what? After just five minutes you really would not want to.

### **Electric traction**

It is easy to think of electric cars as the epitome of modern high-tech, but once you chat to people involved in the business, perhaps the biggest shock is how quite simple they are. As Matthew points out, an electric car is still very much like the remote-control Tamiya cars you might have built up in the past and the essential ingredients are the same: a battery pack, a speed controller and a motor.

Whereas your Lunchbox or Sand Scorcher used the remote-control servo to operate the speed controller, in the electric car it is your foot on the throttle pedal doing the same thing. There are a few differences, granted: the battery pack's DC power is converted to AC by an inverter, the use of an AC motor meaning it can be a brush-less design for quieter, more reliable and more efficient operation.

### **London Electric Cars**

It is no surprise to hear that before establishing London Electric Cars, Matthew enjoyed a career in software, but a love of classic cars proved to him just how cost-effective they can be when living in Central London. Amusingly, the time spent working in music production studios proved to be ideal experience for dealing with electric propulsion, since the science of pulse width modulation as used in synthesizer technology is also used in electric motor control.

Casting around for a new venture, he saw the light after getting complaints from his girlfriend about the exhaust fumes from his Spitfire while sitting at traffic lights. The idea of converting classic cars to electric drive was born and he has not looked back.

Ironically, the biggest abuse – good-natured though it is – comes not from the classic car purists but from electric car pioneers like the Battery Vehicle Society. With the rise to prominence of Tesla and its rivals, companies like LEC are getting the praise while the BEV people have endured the years of ridicule. And the Spitfire? Mat-thew still has the car, but ironically, it still runs on petrol power. For how long, we wonder.

Find out more at <http://londonelectriccars.com/>

Taken from [classicworld.co.uk/guides/electric-Morris-minor-review](http://classicworld.co.uk/guides/electric-Morris-minor-review)



*A couple of the sensational paintings on the water tank at Kyabram.*

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## EXPRESSIONS OF INTEREST WANTED ASAP.

Brett Huxtable is organising a wine tour of the Bellarine Peninsula on the 16<sup>th</sup> of May and needs numbers please.

Possible meeting place at Port Melbourne at 9:00.

First winery at Shadowfax Winery, Werribee South (TBC)

Then it will be off to lunch at the Ocean Grove Bowls Club.

After lunch, our next stop will be Leura Park Estate (TBC)

Then onto our last winery which is to be sought.

At this stage it is only a suggested list of places, but this should give a good idea what we have planned.

**Let Sue know if you intend to come along on 0421841939**