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The

Buzzing Club®



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(The suffix (D) above indicates a Director of the NACC Ltd. company)

General enquiries; please contact hello@thebuzzingclub.net. Items for the October 2022 magazine to be sent to editor@thebuzzingclub.net and reach Dave at Buzzing Production well before Friday 16th September 2022 as by that date 99% of the magazine will be finished.

Cover image: The front cover of a Mobylette AV3 booklet produced by Moto Révue, the French equivalent to our Motorcycling/The Motorcycle magazines, which also produced similar booklets. The AV3 in all its glory; lovely curved-tube frame - allegedly designed by artist Geo Ham (Georges Hamel) - no clutch, small fuel tank, headlamp mounted on the front mudguard and that wonderful bell, operated via the ignition system, which was kept on the top-spec curved-tube frames until the AV51 of the late 1950s.

Club Information

Membership

Membership of the NACC in the UK costs £18.00 a year. Associate Membership is £3 in addition to the full membership fee. European membership costs £20.00 and the rest of the world £25.00 per annum. Application forms are available from Membership Administration (see previous page) or downloadable from our website www.thebuzzingclub.net - click on "Join the Club". **Our bank is the HSBC, sort code 40-47-11, account no. 52867664, for payments and renewals by BACS transfers. Our BACS account name is The National Autocycle and Cyclemotor Club Ltd - please use this title.**

Dating and Registration

The current dating fees for club members are: £10 (£20 for non-members) for a certificate supporting an application for an age-related registration, £12.50 (£30 for non-members) for processing a V765 application. Contact the Machine Registrar for details, please send an SAE.

Affiliations

The NACC Ltd. is a member of the **Federation of British Historic Vehicle Clubs** and we have corresponding agreements with; the Register of Unusual Microcars, New Zealand Classic Scooter Club, the Bermuda Classic Bike Club, Rijwiel Hulpmotor Club Nederland, AML GC17 in France, and the British Two Stroke Club.

Club Insurance

Full and Associate members of the NACC can benefit from our Footman James NACC Insurance Scheme, offering a range of policies to suit Autocycle, Cyclemotor and Moped owners, including those riding sub-50cc machines on full car licences without a motorcycle licence or CBT. Please quote your membership number when contacting **Footman James on 0333 207 6293**.

Library

Dave Beare can supply copies of material held in the NACC Library (contact Dave for a copy of the Library List, see previous page for his details)

Website

www.thebuzzingclub.net Our website has up-to-date news on upcoming events, a regularly-updated events calendar and news of section & club activities. Next time you're on the 'net take a look.

Events Calendar

If you want to organise a club-permit event and wish information to appear in Buzzing in time, please write to the Events Secretary at least 2 months prior. Application forms can be downloaded from the NACC website. Events organised at short notice (min 28 days), apply via email or in writing to Events Secretary Bob Jeffcoat to ensure issue of a permit. Details will then be posted on the NACC website. **Signing-on sheets must be returned within 14 days of holding the event.** The rule for riding on NACC events is **no membership card- no ride**. Those who cannot produce a valid card have to pay a £3 day membership fee. All participants must personally sign the official sign-on sheet issued by the Events Secretary. Events shown in **BOLD** on the next page are official NACC events, those not shown in bold are non-NACC events which may require a day membership payment.

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News from HQ.

It is vitally important for run organisers to contact Events Secretary Bob well in advance of the date of an event or run to have a permit issued and have their event or run listed in Buzzing and on the NACC website. Recently, some sections have been contacting Dave the Ed to have events listed in Buzzing and on the website but neglecting to apply for a permit. This negates any PLI cover which covers official NACC events and runs and, should an accident happen, nobody participating in the event or run would have any recourse to insurance cover for potentially huge medical or damage claims. In future - unless a permit has been issued - an event or run won't be listed in Buzzing or on the website. We would all be liable if something ghastly happened, please remember that.



ANNUAL GENERAL MEETING 2023

We hereby give Formal Notice of the Annual General Meeting of the National Autocycle & Cyclemotor Club Ltd. Due to the success of holding last year's AGM via Zoom we have decided to continue with this format for the 2023 AGM. This will be held via Zoom on Saturday 28th January 2023, commencing at 10.30am. Members who wish to participate should contact Secretary Liz at least week prior to the 28th January 2023 so that a link to the meeting can be emailed to them.

Any proposals or items for the agenda to be sent in writing to reach Secretary Liz by Saturday 29th October 2022. Proposals should be seconded, also in writing. Likewise, anyone who would like to offer their services to the Club as a serving officer to send their proposal in writing by Saturday, 29th October, again these also need to be seconded.
Liz Butler, Secretary, Rose Cottage, 5 Sandy Lane, Codsall, Wolverhampton WV8 1EJ



Stafford Show, October 15-16 2022

We will have a Club display at the Stafford Show in October as usual. This time, we are back in the Prestwood Hall so it will be a great opportunity to showcase the Club and our machines. If you're interested in having a bike on the stand, please let me know - 07833 623630 or email nick_devonport@hotmail.com. Set-up day is Friday 14th and we're expected to have our bikes on show until late Sunday.



No apologies for the quantity of run reports in this issue of Buzzing, we're catching up on two year's worth of restrictions and cancellations! The 'electric' content of the later pages is something I'm afraid we'll all have to get used to in the near future.....Dave B

Chairman's Chat

The highlight of my year so far has to be the Sars Poteries run in France (report pages 20-23). It was a great week – despite the weather! – and a wonderful opportunity to catch up with friends who we don't see that often. Looking around the campsite, I thought of my years of Club membership. It seemed that I'd been a member since God's dog was a pup but in reality, it's only since 1989 when I bought my first VéloSolex and through that I met Tim and Margaret Bunting, who remained close friends until their deaths a few years ago. I have met many others along the way and count some of them among my closest friends. Some are sadly no longer with us but it's always a pleasure to meet up on a rally field or campsite to share the joys of our hobby and, occasionally, a glass or two of something red.

The Coast to Coast run took place in June and our thanks go to David Quainton and the TWITTS section who, assisted by Ian McGregor, put on a great event (report pages 26-30). It made the local paper and, as we know, any publicity is good publicity! I hope to take part in 2023. The National Rally in July was another chance to meet friends old and new. Ian Harris, John Burgess, Neil Howells and Ken Hayes did a great job in organising and checking the routes and the rainy weather did little to dampen our spirits. My MBK shredded the drive belt before the Saturday run but it was JB to the rescue and I borrowed his spare machine, another MBK, for some strenuous pedalling around Saturday's course. If you ever get to ride in the area, I recommend it – the scenery is beautiful!

I look forward to seeing some of you at Stafford in October.

Nick Devonport

News

Colin Ellarby recently contacted Buzzing via our website with the following request: “You have been recommended to me by a Facebook group in the hope you may be able to assist me in finding my grandfather’s old Raleigh RM1. I have recently found a photo of it back in the early 60s and I would really love to track it down or at least discover its fate. There are no records on the DVLA of the registration WTR 757 that I can find so not sure if it still exists. Any help would be greatly appreciated. Kind Regards, Colin.”



The EDITOR'S CORRESPONDENCE

The club does not hold itself responsible for the opinions of its correspondents. Please send all items to Dave Beare, contact details on page 2 and please include your name and address.

Dear Dave,

When electric bikes were launched on the market it was with the strict proviso that power was only applied to assist pedalling. That stage has long passed and though they have pedals there is no real need of them, and large numbers of people in the area I live use them as what they are in reality - autocycles or mopeds - and are never policed. Near where I live is a cluster of blocks of flats with an access road about 200 yards long. Some lads were doing speed trials with their electric bikes and scooters, so I watched out of curiosity and they were timing at 30 to 33mph. I did try an electric bike at a cycle-show and it gave a performance I could only dream of with my 98cc and 49cc mounts.

The point is, why do we have to have licences, insurance, road tax and MOTs for bikes with less performance and better safety equipment? Many electric bikes don't have proper lighting, are silent and the scooter types have poor roadholding or braking. Worse still, they ride them weaving on the pavement – imagine if we did that! I suggest, and I can't be the first, that this is an injustice that needs to be pressed strongly by the club via the FVHBC. Surely there should be one set of rules for all powered two-wheelers? Kind regards, **Alistair Jones.** (See page 33 for current EAPC rules)

Dear Dave,

I would like to be in contact with NACC members who are cyclemotor riders living in or near the Cotswold Water Park. Locals will know that the area is attractive, flat, and has plenty of quiet lanes and many good cafes. It is very suitable for a possible cyclemotor meeting, which of course would need to be formally approved by the club before it can take place. At this stage we need to determine the degree of interest, so please contact me if you have a cyclemotor and might be interested. I live in Cirencester, which is a short ride to the centre of the Water Park.

Dear Dave,

I'd like to request a Thank You note in Buzzing for the efforts of all those involved in making our excellent National Rally weekend the event that it was - this obviously included the researching and booking of the campsite, the planning, test riding and instruction sheet production for the rides and of course, our NACC Committee for agreeing that the weekend could go ahead now that Covid precautions are a little more relaxed and better understood. I would add my personal thanks to all attendees for their good company over the weekend. One conversation I had with several individuals over the weekend was about our good fortune that our club seems to be made up of such a friendly bunch of people. There was also some reflection on those amongst us who have suffered illness and loss during the pandemic and sharing of fond memories of those no longer with us. Thanks again to all concerned and let's hope we are now able to continue to enjoy our club activities in a way that feels more like 'normal'. Best regards, **Dave Johnson.**

Nick's Birthday Run 23.1.2022

Nick Devonport

It was another milestone birthday for me this year – my 65th – so it was great to see a turnout of 16 machines to help me with the celebration. My first birthday run was for my 40th when I rode a Raleigh Wisp – of course – so this one marked 25 years of punishing our bodies around a freezing cold course in January.

As usual, we met at the Dover Transport Museum where the volunteers had been working hard over the winter to prepare the exhibits for the coming season. The museum is open on Sundays and Wednesdays from 10.30 until 16.30 from April 6 and your entry ticket is valid for multiple visits for a year. What a bargain!

Leaving the museum, our route took us nearly 20 miles through the Kent countryside, apart from one of the Francis-Barnetts which didn't leave the car park and another mid-route failure which called for Michael in the sweeper car to ferry the owner back to the museum to fetch his trailer. I borrowed William's Tomos Racing 45 to find out the reason for the delay as it's faster than my Standard and found that the problem had been sorted. I really must get mine back on the road!



Lunch was due to be at the Plough and Harrow pub in Tilmanstone but a family emergency meant that our visit was cancelled with three days' notice. The Rock Rose next to the Museum stepped up, though, and we piled in. It was warmer outside than inside because the boiler was broken but they did us proud. Thanks to everyone who came, some from miles away, and made the day an enjoyable event.

Riders: Matt Baldwin – City Monkey, Dave Benn – Raleigh RM6, Dave Beare – Skyteam Dax, Keith Clarke – Yamaha 50FS1M, Nick Devonport – Tomos Standard, Russell Germain – Honda Vision, Rob Gill – Raleigh RM6, William Gill – Tomos Racing, Andrew Johns – MBK Club Swing, Marie Johns – Peugeot 103, Ian McGregor – Mobylette Club, Peter Olbrich – Honda Camino, Marino Palermo – Batavus GoGo, Dave Raggett – Francis Barnett, Dave Redknap – Kawasaki, Ray Tapping – Francis Barnett.

Leicestershire Enthusiasts 21st Anniversary Elaine Jones

The morning of the 8th May 2022 dawned clear and bright with a promise of a lovely sunny day ahead. From all directions of the compass around Leicestershire, Derbyshire and further afield an assortment of classic mopeds (Mobylettes, Raleigh RM6, RM8 and Wisp, Puch, Honda 50s and 90s, a Bown Autocycle and NSU S23/2 including a very nice static racing NSU) converged on Stonehurst Family Farm and Motor Museum at Mountsorrel.



Leicestershire Enthusiasts 21st Anniversary celebrations were actually happening after a delay of two years. The event was originally planned as a 20th Anniversary in May 2020, and we all know what went wrong with that! The next plan was for a 21st Anniversary which was then delayed to May 2022.



Looking very smart in their new commemorative polo shirts (thanks Ian), the club members and friends assembled their trusty mopeds on display before an original Founder Member of the Section flagged off the run, which was a very pleasant ride around the Charnwood Forest area of Leicestershire, passing through picturesque villages and notable local landmarks of Bradgate Park and Beacon Hill.

We eventually arrived back at Stonehurst Farm without too many upsets. Ben Jackson from BBC Radio Leicester interviewed some riders and Mike (our Chairman) explained the origins of the section and the joys of messing about with underpowered little bikes!



It was then time to enjoy a superb buffet lunch during which Mike awarded the Founder Members present with special certificates (left). Afterwards there was time to chat and visit the little Motor Museum.

In the time-honoured spirit of the NACC, when it was time to leave, one of the bikes refused to go home, requiring on site 'fettling' to sort out a carburettor problem, after which we are reliably informed "It went like a rocket"!

A wonderful day, we now look forward to many more such days over the next 21 years. Thanks to all who organised and attended our event.



Grantham mid-Summer Run 17.6

Bill Harrison

Friday 17th June turned out to be the hottest day of the year so far! Temperatures in the 30s and wall-to-wall sunshine. This was the third run I'd organised and turnout was somewhat limited on the first two, but finally the word had got out and we had 5 starters! I'd set off to the start at the Windmill in Wymondham with plenty of time on my little Trojan Mini-Motor attached to a Raleigh 3 speed bike, which had been fairly reliable up until then, but issues with the back wheel moving had led to a damaged axle nut and about 1/2 mile from home the wheel moved enough to allow the brake blocks to catch the spokes and come to a noisy stop. Thankfully with brake blocks removed I was able to limp home and pull my so far untested NSU quickly out of the workshop.

The Quickly was low on fuel and I'd no idea what mpg I could expect or the capacity of the tank, as luck would have it my 25:1 and 20:1 cans were just about empty so packing 5 litres of 2-stroke and a mixing bottle, I headed off to the nearest garage to fill up. Luckily Mike Lewis had decided to decline my offer of a



moped (the NSU Quickly) and had come on his super reliable Honda Deauville, so after a hasty, messy fill up (2 litres), we made best time to the Windmill, some 13 miles from Grantham. Only 2 miles in and the NSU coughed and spluttered, nearly ground to a halt, then picked up and away we went again.



Feeling somewhat hot, sweaty, dirty and worried now about the little NSU's reliability, we finally made the Windmill at almost 10.30, our planned departure time. Nobody seemed the least bit concerned and we settled down to fill in the paperwork and generally chat about the day ahead. We now had a fivesome, with Kev Hand on a nice little Red Norman Nippy, Bill Cotton on his BSA C11 (left) - he's still not sure about his cyclemotor! Terry Green drove his lovely Morgan 3-wheeler (photo next page), his cyclemotor is on a 24" frame bicycle and too big even with the saddle fully down.

Finally, we were all mounted and running, and I lead the little group North past Belvoir Castle and down into the Vale (of Belvoir). The NSU seemed to have the edge on top speed so I kept to a steady 25-30 and squinted into my vibrating mirror, which became more and more loose as the day wore on, to keep Kev at a reasonable distance. Once down into the Vale we headed up to Long Bennington to get to the east of the A1 and were all in good shape as we slowed for the first junction. The road was clear so off I went, only to find I was on my own and after a short wait retraced my steps. Kev's little Norman Nippy had stopped at a T junction and there was a short interval whilst we diagnosed the problem, Kev thought the flywheel/magneto had stopped rotating after a woodruff key failure and the little bike was deemed to be unreparable at the roadside.

My little NSU had used quite a lot of fuel so I managed to borrow 2 litres from Terry who carries a can in his Morgan. I'd also noticed that when I pedalled the engine seemed to swing left and right rather more than it should so I tightened up the various engine bolts with a pair of pliers, good enough to get me home! Once again the messy job of mixing and filling the little tank-at least I could give my hands a good wash! Terry then had to dash off to help fix a fellow Morgan owner's car and Kev hitched a lift.

The remaining three saddled up and headed in a roundabout way back to the Windmill, first we headed north west towards Newark, crossing the A1 again at Balderton (just south of Newark) and then looping south back towards Belvoir Castle. On just about the busiest part of the ride so far my little NSU started playing up, eventually stopping and I had to select pedal mode and limp to a suitable place to stop. Imagining all sorts of mayhem I removed the plug to check for a spark and a tiny hair-like piece of carbon was bridging the contacts, one new plug later and we're off again, heading south with the NSU at full throttle for the next 25 miles.



The climb out of the vale near Stathern meant a first-gear scream for what seemed like an eternity and even when the hill flattened I had to keep the little bike in first - there's quite a gap to second and if I change up too early the poor bike bogs down and I have to start all over again! The little Sachs engine put up with the abuse and away we went, over the Wolds and past the Melton Mowbray TV mast and back to the Windmill. Five miles out again the NSU slowed but a quick change to reserve restored power and we rolled into the carpark elated at our little adventure.

I planned to get back for 2pm but it was nearer 3pm. Excitement over, we tucked into tea, coffee, cake and a few chips! Feedback seemed good so there's another ride on the 18th July. Total mileage was 60 on the ride, with another 27 for me to get to the Windmill and back. All in all a lovely day out for everyone concerned; even Kev was happy with events and tells me his problem was that his coil melted and covered the points with sticky goo!

South Glocs Saunter 22.6

Rod Western

Eleven riders eventually assembled at one of our favourite venues, The Fox & Hounds at Acton Turville, for our saunter around the Sodbury vale and Cotswold escarpment. New member Mike Burgess was there, Roger Knight joined us from North Somerset, Dave Benn from Salisbury and our esteemed editor from Wales. A saddle-sore Rob Little was also there, fresh from his solo ride around the coast of Ireland on his trusty Yamaha YB100 - we didn't mention the rain. Rob has a YouTube channel with most of our runs on it and his Ireland trip, search Rob Little UK.



Eventually we all buzzed off towards Badminton and after crossing the A46 and passing through Hawkesbury Upton began the long gradual descent through Hillesley and on to Kingswood. From here it was a straightforward run to Wickwar and on to Horton via Mapleridge Lane.

A loop around Little Sodbury took us, via a gated road, onto Sodbury common and our coffee stop in the High Street. The return leg involved a long gradual ascent starting behind local minor stately-pile Dodington House up to and across the A46 again and back on to relatively level terrain through Tormarton, Nettleton and Littleton Drew, to The Fox & Hounds where most of us enjoyed a convivial pub lunch. An event free run using an easier route than on previous occasions and probably all the better for that.



Riders were: Rod Western - Honda Innova; Dave Benn - Raleigh RM6; Dave Beare - Skyteam Dax 50; Dave Skinner - Mobylette AV50; Tony Prescott - Suzuki; Ray Hill - Suzuki TS90; John Hembrough - Gilera; Steve Bush - BSA; Roger Knight - Gilera; Mike Burgess - Piaggio Liberty and Rob Little - Yamaha 100.

NACC National Rally 2022

Autocyclus

We were unable to go to our usual site for the National Rally this year as pitch-drainage work at Wolverhampton Rugby Club meant the club was closed to visitors. In Ted's Hunger Hill campsite we discovered a huge rural space with basic facilities but plenty of hookups and water taps everywhere. John Burgess and I arrived on the Thursday afternoon to set up, and were greeted by a torrential thunderstorm! Neil Howells joined us shortly afterwards and we all took refuge in the caravan, watching fellow campers sloshing around the site. Not a great start...



Above L to R: three rider-campers - Dave Johnson from Leek, Russell Germain rode all the way from Kent and Dave Stevenson from Rotherham.

On Friday many more NACC members and campers arrived and we were a dozen to share a few beers in the evening sunshine. Chairman Nick's MBK Club chewed up its drive belt on an afternoon ride-out and was relegated to the gazebo in disgrace.



Saturday dawned wet and 'orrible but the rain soon cleared and seventeen riders set off for our first long run, 40+ miles via Patshull fishing lake to Halfpenny Green aerodrome for lunch. We were guided by John Burgess, who had ridden both routes on Friday morning and had to change our run through Shifnal due to a new one-way system. Nick's borrowed Mobylette (above) needed frequent HPA (heavy pedal assistance) on any hills he encountered.



Left: the line-up at Patshull lake.

Halfpenny Green airfield is an ex-WW2 training base and houses a small museum of artefacts - mainly bits of crashed aircraft and mangled engines - plus a memorial to those who lost their lives there. A salutary reminder of those fliers who gave everything so we can live in freedom.

Shortly after we arrived the rain did too! This was pretty much the story of the weekend, sunshine and then some showers.

Right: - L to R, Ian Bolland, Ken Hayes and John Burgess.

A convivial evening followed on Saturday. Most campers had sorted food ahead of their arrival as there was nothing to be had in Sheriffhales, but there were lots of takeaways in Shifnal.

Sunday dawned overcast and grey, but we were not put off! Two runs were on offer; the longer 24 mile run ending up at the RAF museum at Cosford for a visit to the superb museum there, and a shorter 12 mile run for those who wanted to get away in good time. Most chose the longer route and were able to watch (at a distance - entry fee was £15!) the large-scale model aircraft show being held on the airfield.



All in all we had an excellent weekend, made possible by Ian Harris who drew up the routes, John Burgess, Ken Hayes and Neil Howells, who rode them several times before the event, and Ted, our genial host at his Hunger Hill campsite. Grateful thanks go to Ian, John, Ken and Neil for all their help with everything, especially John B, whose determination to make sure our routes were safe and rideable was very much appreciated!

Buzz'ards All Round the Wrekin

A few photos from the All Round the Wrekin run on May 29th.



Above, admirers of Angus's unknown make of motorcycle!

Buzz'ards Midway Run

June 26th saw the Buzz'ards setting off from an unaccustomed start-point, a biker/truck stop café at Prees Heath, which foxed a couple of members who turned up at the Corbet Arms, Uffington, the usual Buzz'ards start-point. Read your Buzzing magazines boys!

Those that did turn up at Prees Heath were in for a treat. Ian Harris had planned and led a good hour-long route to our lunch stop at Sleaf airfield (pronounced Slape) where there's an excellent café in the control tower, via lots of lovely rural lanes. On arrival we were greeted by a multitude of bikers on much bigger modern machines than ours, with the words "Here come the Hells Angels!" They were very interested in our mopeds and many reminisced about how they'd passed their test back in their teenage years on just such machines as ours. (photo second down next page)

Autocyclus



Some came from far away to join the Buzz'ards: Paul Newton from the Lancashire Slow Riders and Dave & Pat Keeling on a beautifully-restored big Suzuki, with Pat on pillion.

Riders were: John Burgess-Velofax; Simon Lake-Honda CT70; Ian Harris-Honda PCX; Graham Bennett-Suzuki; Ken Hayes-Honda PC50; Paul Newton-Mobylette; Dave & Pat Keeling-Suzuki 750; Dave Beare-Skyteam Dax.



Rando Cyclos at Sars Poteries

Nick Devonport

After a break of two years, we were wondering if Sars Poteries would start again. Answers to emails to contacts in the organising team, to the camp site and to the Mairie took ages so the regulars decided to go for it anyway and booked ferry crossings around the expected date. At almost the last minute, we received the invitation and the event was on!

Despite the dire press reports, there were no delays on the way to the port on June 1st and the DFDS crossing was smooth. The teething problems with the new berths at Calais seem to have been sorted out and Dave, Ian and I arrived at Felleries by mid-afternoon. John and Josie were already there and Andrew was on site to guide us through the access system – the *commune* has done away with the friendly site manager in favour of an impersonal card-operated barrier but the machinery worked OK after a fashion. We set up our pitches and spent the evening reminiscing about past visits, happy to be back in one of our favourite areas of France. A significant quantity of the local wine ensured a decent night's sleep.

After a trip to ALDI to stock up our larders, we attempted to sign in but the Office de Tourisme was closed, apparently for good. They're now operating out of an office in the Mairie which we found after bursting into the wrong office and gate-crashing a Town Council meeting. After lunch at the camp site, we headed for Solre le Château and a visit to the army surplus store. I discovered that I take a 3XL in fleeces & T-shirts but rationalised that the Belgian Army has a different size chart....

This would be our last visit to the premises as the owner is retiring. It's not all bad news, though – one expression of interest in the shop is from a friterie. Taking the country route home, I soon got lost and handed the navigation baton to Andrew who led us back to Sars Poteries for a drink in the St. Laurent bar.



Thursday is rehearsal night for the Felleries Pompiers (Fire & Rescue) band. They are a motley crew of individuals who lack musical talent but compensate for this in enthusiasm. I've been going for nearly 30 years and recognise the only tune that they seem almost able to play. All the right notes, not necessarily in the right order!

Friday morning saw us preparing for the visit to Avesnes market. Neil's Bown Autocycle suffered a broken fuel filter, quickly remedied from the spares box, and Dave treated us to a coffee in the market square as the church bells chimed noon.

The former Mobylette dealership is still there but time is not being kind to the building which has been empty for some time. On a visit to Val Joly for an ice cream that afternoon, my MBK, usually more than up to the task of lugging me around, seemed to lose power and require some LPA to get up hills. John and I discussed the problem and experimented with a different plug and a weaker two-stroke mix in the interests of not gassing following riders. Normal service was resumed!



We can't resist clutter, especially French clutter, so on Saturday morning we called in at Emmaüs in Glageon. I picked up a couple of horrendously tacky trophies but pickings were lean, especially on the moped front. The sky got very dark on the way home and it looked like France Météo had got it right with the thunderstorm forecast. We were treated to a lightning show which Bram Stoker would have been proud to write, with the village church silhouetted against the sky in true Gothic style.

The Sunday vide-grenier, source of much clutter in previous years, was a predictable washout with more gaps than stallholders due to the weather forecast again. We packed our waterproofs and headed for Sars Poteries square where the only two autojumblers had decided to keep their wares dry in their vans.

(Photos pages 22 & 23 courtesy of Andrew Johns)



Naud Andekerke of the RHC proudly displayed the Felleries Cup, awarded to him by the last recipient in 2019. In the Salle de Fêtes, lunch was preceded by speculation about the likely winner of the prize-machine, a Valenciennes-manufactured StarNord moped powered by a VAP4 engine and missing many parts. The location of the hedge under which it had been found was not disclosed. John Aston was very keen not to take it home but in a cruel twist of fate, the winner of the draw was - drum roll, please - John Aston! Efforts were made to re-home the machine and it ended up coming back to England anyway. The plan is for it to be restored and ridden in the 2023 event.



Anyway, enough of all this. The weather leading up to that particular weekend broke some records, it was extremely hot in the south of the country and pretty good in the Midlands too, a bit cooler going north but not bad for June. As it happens, the weather was pretty good during the week after too. BUT on Saturday 18th June the weather map across the East Midlands showed a cool front with a lot of rain. Typical! What a shame.



Not to be daunted, nine hardy members and friends of the Leicestershire Enthusiasts Section turned up at the Old Black Horse pub in Houghton on the Hill, Leics, to take part in a run around the small lanes and rolling hills of the area. The pub opened early for us to partake of liquid refreshment which was appreciated as an escape from the weather, then we prepared for the run. Most of us were wearing our waterproofs, however Roger decided shorts were the order of the day! Less material to get wet I suppose! Actually once we set off the rain wasn't too bad.

We set off down a little lane past the deserted village of Ingarsby, past Quenby Hall (a Jacobean house set in parkland owned by the Ashby family since the 1300's), on through Baggrave Park and Ashby Folville. From there it was a steady climb (very, very steady for one rider) up to Burrough on the Hill, which is an Iron age hill fort commanding an impressive view across Leicestershire.



We headed off towards Somerby, various gated field roads and small lanes eventually led us to Knossington which is very close to the border with Rutland (the smallest county in England) only 4 miles from Oakham. Onwards to Gates garden centre in the village of Cold Overton where the restaurant provided us with a huge choice of meals and snacks.

Hope you've still got your map working! The return journey took us through Owston (where it turned out the flags, one saying "Welcome to Hell!" and barriers were not set up for our arrival, they were preparing for a big cycle race the following day). Marefield the next hamlet is so small you would blink and miss it. I wonder how many riders noticed the red kites soaring above us. Then various lanes took us through Lowesby Park, yet another old country estate, (their formal gardens were originally designed by Sir Edwin Lutyens) where we played a game of 'avoid the sheep' with animals who seemed to prefer strolling on the tarmac rather than the grass. A rambling return back to Houghton on the Hill with a challenging ascent to give us no doubt where the name came from.

Thanks to all our riders, the oldest machine was a James, other bikes taking part were Hondas, assorted Mobylettes, a Yamaha and an NSU, machines chosen, certainly in my case, in order to cope with wet roads. However, although progress was slow at times, we all kept going. Thanks to Steve and Arthur with the breakdown trailer, a reassuring presence.



Coast to Coast Run 2022

David Quainton

Before starting to compile this report I looked back to David Stevenson's report on the 2019 run in Buzzing. It seems he was quite reluctant to take on the organiser's role, but all credit to him as he did it anyhow, with a little support from me. Previous C2Cs were organised from Yorkshire. But there were suggestions that the recently formed section in the North East, the TWITTS, should organise the 2020 event. Why not? It is on our "ground" after all. But of course the 2020 run didn't happen and neither did 2021 for reasons we are all well aware of. Below - climbing Teesdale to Alston.



So, come 2022 and a relaxation in the Covid Rules, what was going to happen to what has been referred to as the NACC's 'Premier' event? Personally, I thought that we TWITTS should take it on, particularly as it was the 25th anniversary year. But, like David Stevenson, I was still a little reluctant and, in retrospect, I was very naïve about the amount of work that was going to be involved. But we were keen that the event shouldn't die, which it could have done after two blank years. After general agreement at our regular meeting we undertook to make it happen.

Although it was my name that Bob Jeffcoat put on the NACC permit, it wasn't just me that did the work. Before going any further, let me acknowledge just some of the key people involved. First there was Gary Emerson, who re-rode the whole run and revised and updated the route sheets and maps, although he couldn't do the run himself because of a clash of events. Next there's Ian Dowson, who helped me to prepare my pick-up truck, trailer and an emergency aid kit, to make it ready to act as the life-boat throughout the run. Then there was John McQuade, who helped with the start at Crimdon and then escorted the riders to Alston on his big bike. Next, Mike Laidler who printed finishers' certificates and provided his van for breakdowns on Sunday, and then took some bikes back home for their riders.

Below - lunch stop at Middleton in Teesdale, on the way to Alston.



And a very big thank you goes to Ian McGregor, the NACC Committee Member who drove up from his deep-south home, brought the tabards, NACC banners and signs and helped with the start from Crimdon. He also attended our monthly TWITTS meeting just before the run and delivered a talk on NACC history.

There were also some quite unconnected folks

who deserve thanks for providing, facilities that made very positive contributions to the event. Let's start with Donna Roberts, manager of the fine new café at Crimdon: The Dunes. She opened up early on Saturday 25th (even though it was her birthday) and so provided us with the sign-on venue. This made it so much easier than fighting the wind blowing from the North Sea outside in the car park. Then there were Geoff Rogers and David Dickenson at the Hub Museum in Alston, who provided secure overnight parking for bikes and a great venue for waves and a mass-start on Sunday morning (below).



And there was also Paul Summerbell, whose farm and caravan site just down the road from Crimdon was the overnight stop for Ian McGregor's camper van on Friday night. Each of these three facilities could obviously be valuable again in future years.

We started pretty late in organising and publicising C2C 2022 and I feared that we would have very few entrants. As it happened we ended up with 27, which is comparable with 2019 and pretty good, considering the two-year gap. These were split about 50/50 between TWITTS members and others from the North East and those from further away. Among the TWITTS stalwarts were John Newham, Henry Curry and, not least, Ron Paterson (right, at Hartside), who sported a Union Jack on his Puch. There was a good contingent from Yorkshire and two from Nottinghamshire. However, the real long-distance entrants were Stephen Matthews from North Wales on his Sachs Hercules (right) and, all the way from Gloucestershire on his Honda C90, was Dave Godden, accompanied by Roger Kirkman from Wiltshire on his Honda CL50 (below).



The other bikes were, to sum them up, a fine assortment of oldies, the newish and quite new - and a rare one. This was Graham Harpin's Lion Rouge, a Sachs engined, mid-fifties Belgian moped (photo next page). Sadly, it didn't finish the run, failing to do the last few miles to Whitehaven - only a minor ignition problem we think.



Unlike 2019, there were no cyclemotors on this year's C2C. Although we know the run can be done on bikes with tiny engines, Hartside Pass and other climbs must have needed a great deal of rider's LPA!



The weather is an important factor on all runs and, after a few warm and dry days, the forecast for weekend was not looking so good. Saturday stayed dry and not too warm for heavy riding gear. Sunday was not as good, with heavy showers at times. On a long run, the stops are important - for rest, regrouping, refreshments and just good chat. Graham Harpin and Lion Rouge, left.

Like the route, the stop venues have become traditional. The Wheatsheaf at Chilton provided its usual morning hospitality, while the village of Staindrop used to be a stop but the loss of the tea rooms meant it did not really feature. The fish and chip shop at Middleton in Teesdale provided the perfect lunch stop, in warm sunshine. High Force Hotel comes up next, although being soon after Middleton, it wasn't everyone's choice this time. More fuel was unexpectedly needed there for one bike though, and that was provided. Then it was the climb up Teesdale and on to Alston for the

night, with riders split between the hotels and B&Bs but getting together for the evening.

On Sunday morning we set off on the climb for the first stop at Hartside Pass. The view's as good as ever of course (below), although overcast today, but the café, which burned out a few years ago, has now been completely razed. We found just a sad empty plateau, without even a burger van.



Then it was on to lunch at the Sun Inn at Bassenthwaite Village, for a very pleasant stop. The descent through the last few Cumbrian villages to Whitehaven is a little dull – at least if compared with the Durham villages between Hartlepool and Alston. Whitehaven Harbour and the Boathouse Café beneath the Beacon Museum is a good end-point, so we gathered there for refreshments, the essential photos and farewells (photo opposite page).

A report is something that looks back, but I think this one, about the NACC's Premier Event, should also look forward. After the off on Saturday, Ian McGregor, I and a couple more TWITTS stayed on for a while at The Dunes and informally discussed the future of the C2C. Our discussion included the following: The C2C and its route are now well established and some of those taking part this time, plus many others who were not there, have done the run several times before.

Is there a need for change and to review the route? There are many other suitable minor roads available. Alston is an excellent overnight stop but finding enough beds there is difficult. Given enough lead time though we might pre-book in anticipation of a bigger entry. That would mean a financial commitment and possibly pre-registration of entrants, or perhaps we could just find somewhere else? A hostel, outdoor centre or similar perhaps, where everyone could stay and enjoy the evening together?



Unlike most rides, C2C is a linear not a circular run. This raises various issues depending on where entrants are from. A ride back home to the North East or to collect and load up a car or van left near Crimdon? Individual's own cars or vans driven by friends or partners following run? Or a properly organised transport of bikes back along the route? Obviously this third option would also require finance, and it could double-up as breakdown cover, which should probably also be provided.

As I said earlier, we were a bit late starting to publicise C2C 2022. While we did end up with a respectably-sized entry, shouldn't we do much more and a lot earlier to promote C2C 2023? As well as our own website and Buzzing, we have access to social media and lots of contacts with other groups with similar interests. Perhaps we should start by fixing and publicising the dates? The obvious weekend, and that favoured by us TWITTS, is the 24th and 25th June 2023.

And, finally, why not an international event? NACC members enter events across the channel in France and the Netherlands, so why not invite our European cousins to join us on the C2C? We would have to make it suitably attractive of course, so the points above concerning the overnight stop, backup and breakdown transport would be important. Lots to think about then!



Electric Bikes - Why Not?

Chris Sawyer

This all started around May 2020 during the first Covid lockdown. I was gainfully employed during this period with the tedious but necessary task of servicing my fleet of old and needy vehicles. This tends to get neglected when the much more interesting modification, 'improvement' and upgrading projects present themselves. It was brought to my attention that a 'perfectly good' bicycle was about to be consigned to the tip as a result of being left out in my daughter's garden for a couple of years, the cables and chain being consequently all rusted up. The fatal words "I'll have that" were uttered and I become the owner of an immobile mountain bike.

All other activities were of course dropped and after liberal applications of WD40, 3 in 1 oil and finally Halfords cable kits, I was the proud owner of a fully functioning mountain bike. It was after riding it around the block I remembered that I didn't really like cycling much without an engine and so I was left with a piece of precious bicycle-shaped space occupied in my limited storage facilities.



Wind forward a few weeks and my friend Alan came to call and show off his brand-new electric bike. As my neighbour and I admired this device one of those light bulb moments occurred, why not make an electric bike out of my mountain bike.

Why not, what could possibly

go wrong? What do I know about it? Well about as much as most things I take on, so nothing apart that proper shop bought ones cost as much as £2,000 and I wasn't about to pay that. I set myself the budget of £200 and started to investigate. I might end up with an old motorbike battery and a windscreen wiper motor although I aspired to something a bit better. Above: 250w motor, 24volt battery.

It looked like there were three options for a bolt-on e-bike kit. Sorry to use the jargon term e-bike, but it's quicker to type! So, we have: hub motors which are fairly self explanatory. These are easy to fit and available in a wide range of powers and voltages. Next comes what are called mid-drive. These are mounted on the cycle bottom bracket and drive through the chain and the gears, again available in a wide range of powers/voltage. Both of these types were way beyond my budget even at base level 250watts/24v. These are the types most commonly found on proprietary e-bikes.

The third kind are called side-drive and immediately appealed, not the least because they were in my price range. The side-drive motor with internal gears mounts on the rear of the bike frame and drives the wheel by a chain and clamp-on sprocket. A freewheel sprocket on the motor ensures that you can over-run the motor without turning it backwards.

This seemed to be something I could identify with. Further, you could get a whole kit comprising motor, chain, sprocket, control box, accelerator and mounting plate for less than £100 on eBay. The range of power/voltage was limited to 250, 350 or 450w and 24 or 36v. To stay in budget, I elected for the base level 250w/24v. The motor kit came from a company called L-faster (www.l-faster.com). They actually make all three types of motor kit. I set this aside and looked for the other big lump, the battery. Again eBay offered a wide range of batteries. Obviously my motor choice meant a 24v battery but the other main parameter was capacity. Basically, the smallest e-bike battery in general use is 10Ah. Very simply, 250w and 24v is about 10Ah and so about an hour of use. In practical terms about half that, but 10Ah was cheapest at £80 for an unbranded one so that was it.

The battery and kit were ordered up and eventually they arrived. The wait wasn't too long as the lockdown hadn't really got a bite on worldwide trade, it was to get much worse and of course all this stuff comes from China. While I waited I watched a few YouTube videos of how to fit the kit and saw happy Oriental chaps whizzing about on their new e-bikes. That'll be me soon!

I did say earlier what could possibly go wrong? Well, I'd missed one big thing. My bike had rear suspension and the mounting plate was for rigid bikes. The rear frame angle must be a common thing as I offered it up to the old Phillips frame of my Cyclemaster and it would have fitted that (now there's a thought, see photo page 34). It looked like I'd have to make a special plate. The one in the kit was 3mm steel and it looked like a lot of drilling and sawing would be involved, so I elected to use 3mm aluminium as I could cut this on my bandsaw. 6mm would have been better but this would have put the chain out of line. Below: 450w motor, 24v battery

You can also see the battery (the big silver thing over the back wheel). Now these are a rather nifty design as they mount on a rail which can be locked and unlocked so the battery can be removed for security and charging and also includes a set of charge lights.



The system is meant to bolt onto the bike frame but again on the mountain bike there was nowhere to put it. My initial attempt was to fit it to the underside of the lower frame tube but this didn't allow it to slide out so I made the cantilever tube with a mounting to the seat tube bolt and another convenient tapped hole in the frame. Again with a normal bike the easy solution is to buy a cheap rear rack and mount the battery there, but that wouldn't work for me.

That was about the end of the mechanical bit. The electrical connections to the control box looked a bit intimidating at first, particularly as the Chinese seem to have a random view of the colour coding of wires.

However, the plugs all match up, accelerator in, battery in and battery out. The rest were for spurious things like brake lights and indicators so were ignored. The control box goes in the black box above the battery. What you want to know is: what's it like to ride? Below: 450w and 36v battery.

The short answer is, well OK. What did I expect? Well, if you consider that a Cyclemaster is 0.8 hp (600watts), 250 watts was going to give me a bit less than half this so I couldn't expect blistering performance. It was quite quick off the line as maximum torque on a DC motor is at zero rpm (like a steam engine) falling away steadily to max revs, completely unlike an engine. We'll come back to this in Part 2 (spoiler alert). Top speed was 12 mph which was a bit disappointing as even I can pedal faster than that. Really this was a power assisted bicycle, you had to pedal at least 50% of the time.

I could see that this would appeal to those who wanted to cycle but needed a bit of help - continuous LPA. This wasn't really what I wanted but I'd learned a lot and decided to move on to find more power.



Let's just say a bit here about legality. Faced with the possibility of unrestricted electric bikes with more power than some small registered mopeds, the government introduced restrictions within which an e-bike is regarded as the same as an ordinary cycle. They are called Electrically Assisted Pedal Cycles (EAPC). The rules can be seen at: www.gov.uk/electric-bike-rules.

Briefly these rules restrict an e-bike to 15.5 mph, 250W maximum. So far so good for our 250w kit provided you show some information on your bike. Outside of EAPC rules you become a moped and must comply with all that goes with that. However, if you don't have the electric power only applied when pedalling (no accelerator) i.e twist and go, you must be type approved. Effectively this means you must buy a bike 'over the counter' from the likes of Halfords. This effectively rules out home build e-bikes made from kits like the one that I've used to build mine.

Consequentially, until I unravel all of this I am restricted to riding my e-bike on my country estate, visiting the gamekeeper to discuss the grouse moors and keeping an eye on my tenant farmers. Not on the road, officer. In this respect I decided that 250w was not enough and so upgraded to 450w to see what (little pun there) happens.

I kept my 24v cheapo battery for now and sold the 250w kit to my friend Gordon. Despite my repeated dire warnings that it was a bit weedy, he was keen as he had just inherited a nice bicycle. It took him a morning to fit the kit and he wisely bought a decent 20Ah battery. He absolutely loves it and uses it to scoot about the town and has to date clocked up about 500 miles.

Eventually my 450w motor kit appeared. My records show that it cost about £150 including shipping from Amazon. The first problem I found was that although the motor looked the same as the 250w one, the mounting holes were slightly different. So, with my home-made mounting plate I had a problem. I got around this by cutting the steel plate leaving the mounting holes and bolted this to my aluminium plate. The only other change was the controller.

Again, how did it go? Well, first thing, because of the motor gearing, it went faster, in fact up to 15 mph now. The performance was improved, but maybe not as much as I hoped. But it was OK until happily humming along at 15 mph there was an ominous clatter and the chain came off. The mounting plate had bent. Bother! Back to the drawing board. I contrived a pair of bracing struts as seen in the photo on the left. This solved this problem and I used the bike for a while all the time thinking about the next step. I was definitely suffering range issues compared to Gordon's 250w machine so I borrowed his 20Ah battery. This was a definite improvement in terms of performance, mainly due to the voltage not dropping so quickly, and range of course.

After much thought I decided I should either: (a) be satisfied with what I had and move on, (b) get a bigger, better 24v battery or (c) grasp the nettle and go for a full-house 36v, 20Ah quality battery. Of course, you know what I did and that was option (c). However, instead of just carrying on in a kind of dilettante sort of way, I decided to do my homework this time, after all I was now going to spend a bit of serious money. Firstly, I consulted my contact in customer service at L-Faster, the kit supplier. Although they don't do batteries he gave me some sound technical advice. Another good source if you are interested in e-bikes is e-bike school videos on YouTube. Below Dave B's 24v battery.

I did learn quite a bit about how e-bike batteries are made up: basically in a series/parallel arrangement of cells with series giving the voltage and parallel giving the capacity (amp-hours). An e-bike battery is made up of banks of lithium-ion cells connected together and a little circuit board called a battery management system (BMS) which controls the output and charging to protect the battery.



A 36v (10x3.6v) and 10Ah (4 rows x 2.5ah) is called 10 Series-4P parallel or 10S-4P. This will enable you to buy a battery but there is another consideration and that is the quality of the battery as a whole, the construction. If you just want to see how they are made look on YouTube. You can see that it's quite complicated and if you think a battery costs a lot more than you can buy the cells for on eBay, just watch the videos and imagine what would happen if you got the connections wrong and shorted the cells. Lithium-Ion batteries are quite safe if you treat them with respect, but if you damage them or short them they catch fire in a spectacular way. Just like a can of petrol does.

Quality will only come from a decent supplier and finding one isn't so easy. When I finally bought my 36v 20Ah battery, I researched the internet for reviews and reports and finally came up with the company Booant (www.booant.com), in China of course. Another consideration apart from cell construction is cell quality. Booant offer batteries with cells from different manufacturers, Sanyo, Samsung, Panasonic etc. Names you know. They also supply cells called 'China'. These are effectively unbranded so who knows, and they are a bit cheaper. In the end I bought a battery with Samsung cells as that's the same make as my phone and Samsung is Korean, for what that's worth.

Enough batteries already! How does it go? Well at last a bit of performance so really it's all in the battery after all. Motor torque was well up as was speed, as this is directly proportional to voltage so now about 20 mph. Just to put this into perspective, I did a back-to-back road test with my Cyclenmaster (600w max) and measured almost the same average speed of 20 mph. Now this might seem odd as the e-bike is only 450w, but here's another thing: I fitted a volt/amp meter to the e-bike and it showed an almost constant 22A when running. At a battery voltage of 42v, this equates to 920w. This is electrical power and therefore gross but it must be over 450w. So where do they measure the 450w? The answer is at what they call rated speed which is about 3,000 motor rpm. As torque is inversely proportional to speed it goes up at lower speeds, maybe measuring the average road speed is as good as anything. The result of more power was that ominous clattery noise again. This time I did the job properly and brazed steel mounting brackets to the rear frame.



All in all, I got what I wanted in the first place, just not for £200. Knowing what I know now and buying the whole kit straight off it would have cost about £450 all in. The bike cost nothing, but judging by the cost of another bike I sold later which would have been ideal, £50 will get you a good second hand bike.

Left: Chris' Cyclenmaster/e-bike hybrid machine.

Finally, If you're bothered about green issues, many people (and manufacturers) tell you that investing in new electric transport is greener than your old motor as there are zero emissions at the point of use. Most people realise

that the electricity has to be generated but would argue that it's greener and cheaper. There is another issue and that is the cost in terms of emissions in the manufacturing of any new vehicle.

There are some figures starting to be published about this, but it must be true that using a bike (for instance) that already has been made saves another one from having to be made. The other really good green issue with any kind of smaller e-bike is because the charging current is so low, you can (and I do) use a solar panel and inverter to charge the battery, so it's 'sustainable' as they say. Personally I would say that an e-bike with a power about 500w and 15mph top speed would be a very real way to lure people out of their cars. To me, a street legal 250w bike wouldn't do it, but hey what do I know? My mate Gordon is still happily buzzing about on my old 250w 24v kit that I sold him. He hardly rides anything else.



Remaining on the topic of electric bicycles, member "Skungheneey" sent in this scan from his collection of moped brochures:



In the early 1970s Garelli took a petrol-powered Katia moped and converted it to electric power, using the battery technology of the day, which amounted to 2 x 12v lead/acid batteries connected in series to give 24v and a capacity of 50Ah. The motor was a Bosch permanent-magnet unit, driving via a toothed-belt to a jockey-shaft, with final-drive by chain, as per the original moped. Nowhere on the specifications sheet on the following page are weight and range mentioned.

No doubt heavy and a short range would have been the answers, not great sales-promotion arguments, given the limited battery and motor technology available at the time.

GARELLI KATIA Elettrico

Katia Electric
Katia Electric
Katia Elektro-Mofa

DEALER

MOTORE:
 Bosch a corrente continua
 Tensione: 24 Volti
 Potenza nominale: 700Watt (3/4 CV)
 Regime nominale: 3000/17" = 3000
 Distribuzione a magneti permanenti.
 Regolazione al processo con variatore elettronico.
 Limitazione al corrente del motore: 60 A
 Reflettore: 2 x 12 V di serie
 Capacità della batteria: 30 Ah.

TRASMISSIONE:
 Rapporto primario a singola corona:
 16/30 = 1:1,88
 Rapporto secondario a catena:
 17/30 = 1:1,76
 Rapporto totale riduttore: 1:1,62
 Cambio: Rapporto primario tipo "16/30"
 Catena: Rapporto secondario tipo:
 17/30 = 1:1,76
 Catena: Catena tipo:
 a rub 1,7 x 1,25 mm 21 T8

INELAI:
 In tubi di acciaio inossidabile
 Pneu: pneu. a girare a sinistra e a destra di 30"
 Distribuzione lubrificante a frizione idraulica auto-
 lubrificante.
 Distribuzione lubrificante a frizione idraulica ed
 idromotore idraulico.
 Pneu: pneu. di 30" x 1,25"
 Pressione di gonfiaggio: 2,50 kg/cm² art. a pneu.

APPARATI ELETTRICI:
 Lampada anteriore luce abbagliante 6 V - 10 W
 Lampada anteriore luce stop 6 V - 10 W
 Lampada posteriore 6 V - 10 W
 Indicatori di carica (batteria): serie 25 - 14 W
 Avvisatore acustico di corrente continua: 20 V

MOTORE:
 Bosch, a corrente continua
 Tensione: 24 Volti
 Potenza nominale:
 700 Watt (3/4 CV), 3.000 rpm
 Distribuzione: a magneti permanenti
 Regolazione al processo per variatore elettronico
 Limitazione al corrente del motore: 60 A
 Reflettore: 2 x 12 V di serie
 Capacità della batteria: 30 Ah.

TRASMISSIONE:
 Rapporto primario:
 catena dentata 16/30 = 1:1,88
 Rapporto secondario: catena 17/30 = 1:1,76
 Rapporto totale riduttore: 1:1,62
 Cambio: Rapporto primario:
 a rubino 1,7 x 1,25 mm 21 T8
 Catena: Rapporto secondario:
 a rubino 1,7 x 1,25 mm 21 T8

INELAI:
 Tubi di acciaio inossidabile
 Pneu: pneu. di 30" x 1,25"
 Distribuzione lubrificante idraulica
 idromotore idraulico
 Pneu: pneu. di 30" x 1,25"
 Pressione di gonfiaggio: 2,50 kg/cm² art. a pneu.

INSTALLAZIONE ELETTRICA:
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"

ELETTROMECCANICA:
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"
 Pneu. di 30" x 1,25"

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TELEFONATA

Fuel: vegetable in origin, free or low-cost grass, hay, oats, an occasional carrot. Emissions: recyclable for gardeners, not so useful in towns. Ah, and the smell! Visitors to Blackpool - the horse-drawn Landaus all have 'crapalitic converters' hanging under the exhaust pipe. The single or multiple horse outfit could pull very heavy loads, albeit at slower speeds (e.g. Harold Steptoe's scrap iron cart) or for speed, a six-horse train, pulling an artillery limber and gun.

What happened in 1890?

In Paris, two guys, Mr Panhard and Mr Levassor had a manufacturing licence to build the new Daimler internal-combustion engine. They decided to build a motorised four-wheeled 'dog cart'. With a gearbox, chain drive and tiller steering they built the world's first conventional automobile (right), and on a test run the new 'car' averaged 6mph, similar to a horse. They soon had a mass-production line going, twenty-one cars made in 1891. The sums now became: a 1,000cc vee-twin cylinder engine with 3hp, a similar power-output to a modern 50cc moped. The car weighed ¾ of a ton with a cruising speed of 6mph.



Interesting: 3 x the weight needed 3 times the power. Fuel: - refined oil, called petrol in the UK, and at first it was only available from Chemists. Vehicle Range:-it was dependent on fuel distribution. Emissions: noise, smoky fumes, smell, and occasionally flames!

By 1893 other makers had entered the market and the world's first open road race, the 1895 Paris-Bordeaux- Paris, was won by Emile Levassor in a Panhard at an average speed of 24 mph. More races followed, including accidents as speeds increased, and in 1896 Levassor crashed avoiding a stray dog and later died of his injuries. By the early 1900s such road races were banned in France.

The competition to the IC engine at that time.

Steam engines: Well established technology, good, reliable, excellent torque and pulling power. The overall efficiency of steam was low - for example by converting coal into steam then into reciprocating motion. Plus, the huge weight of carrying all the fuel and water put a limit on road usage. The other problems: - heavy, dirty, bulky fuel and, even worse, very greedy on water. Range limited to finding and taking on clean water, plus boiler safety concerns. Interestingly, a 'Chauffeur' in French means someone who 'heats.' In steam-engine terms, he who stokes the boiler. Not a lot of people know that!

Back to the Future?

Ted Bemand & Pete Nolan

Last month Pete Nolan and I did our talk on 'Back to the Future', exploring what post-2030 will be like when all new vehicles are electrically-powered. Doing the research, well to be honest it was rather depressing. I rather like my internal combustion (IC) engine and I understand its functions and foibles, I can find its food (sorry, energy) easily and can quickly take it on board. BUT the power units of the future will be rather different. An electric motor is far more efficient - approx. 95% as against 30% or so for an IC engine. However, for many drivers the energy source is not so easily or quickly acquired.

I am jumping the gun...2030 marks the next milestone in private transport. But first it might be useful to spend a few moments going back to the last such milestone. Prior to about 1890 the affluent commuter's SUV transport was a 2 or 4 wheeled cart pulled by a 1hp motor, a horse. Some maths: - one horsepower x 1/4-ton x 5 mph.



Electric motors: Simple direct-current motors were being made and many USA manufactures made 'town' carriages. Efficient, controllable motor speed and no need for crash gearbox skills.

None other than Ferdinand Porsche, an upcoming vehicle-developer in 1900, was part of a team that produced an electric carriage but the drawback was the batteries weighed 2 tons.

Problems: - simple lead-acid batteries were heavy and bulky, needed a source of charging and vehicles only had a range of up



to 30 miles and speed of 10 to 15 mph. However, in 1899 Camille Jenatton had set the land speed record at 66 mph in his electric car 'Never Content'. He is probably smiling in his grave now...

By 1939 petrol engines were well established, twin overhead camshafts, superchargers, now with an energy efficiency of approx 20 to 25 %, some engines producing well over 100hp, needed for the 'performance' cars of the period to exceed 100 mph. After WW2 things changed: tiny engines, simple lightweight, aluminium car bodies due to the steel shortages - millions of tons of it now lying on the world's seabeds.

In the UK we produced the 'new' streamlined Morris Minor 803cc, while in France the infamous Citroën 'Tin snail' the 2 CV with just 425cc and 12 hp, an all-up weight of ½ ton; top speed with a following wind of maybe 40mph? That power sum is now 12hp x ½ ton = 40 mph. The equation of horsepower needed to move a given weight increases, particularly if you factor in high speed.



Finally: current times - 2022.

The modern internal combustion engine is now approx. 30 to 35% efficient after friction/heat losses are taken into account. For example, a small car with 900cc (about double the old 425cc 2CV motor) had 90bhp. It can push a one-ton car up to 100 mph. You do the sums....

Fuel now includes 10% vegetable ethanol. Emissions for this engine are 110gm in the lowest taxable band. It will all end in 8 years' time so let's see what comes next in 2030 - production of new internal combustion powered cars ends. IC-engined cars and suitable fuel will still be around for another 15 to 20 years in the used car markets. Plus, of course, our classics ... dependant on future government policy! Not to mention heavy goods vehicles, farming, construction industry prime movers, boats, railcars, aircraft, all would realistically still need fossil fuels.

Into the future, the new energy source will be ELECTRICITY...currently stored in Lithium type batteries. Just for comparison, a conventional car battery has an energy rating in ampere/ hours, e.g., 48Ah. However, an electric car battery is rated in kilowatt hours; for example 50kWh. A capacity of 50 thousand watts for one hour. To fill the electric car fuel tank, sorry, battery, the best current options for an approx. 90 kWh battery, is we can get up to 350 miles in perfect conditions. Remember, a battery does not produce energy, it just stores it, a LOT of it.*



A 48-volt Lithium electric bike battery has the same cell size as the well-known Tesla electric car. The bike battery has 60 x 3.4 volt cells, the Tesla has 7,100 cells. Each 18mm x 650mm cell (¾" by 2½") is just a bit bigger than the AA battery in your TV remote control. Think about it...An old Ford Fiesta or Vauxhall Astra petrol fuel tank holds 10 gallons of energy, (weight

approx. 50kg), giving around a 400-mile range. To replace a damaged steel fuel tank costs £100 to £200 and they normally last the life of the car. However, a replacement electric 'fuel tank' could cost £8,000, £10,000 or even £12,000 plus fitting. It would probably need a fork-lift truck to swop it over as the battery pack on a Tesla weighs 500kg.

Typically, they are guaranteed for 6 to 8 years or 100,000 miles, so it's the unfortunate second-hand buyer who may take this hit. Unless there is an electrical fault, they do not totally fail; they just lose energy storing capacity - usually rated at less the 70% of new capacity. They are 'finicky:' - 300 or 400 volts need a careful BMS (battery managing system) - and they lose efficiency if they get too cold or too hot and regular high rates of fast charge or discharge will affect output or battery life.

Before we explore the exciting world of battery charging, perhaps we should look at a couple of cars. There are now loads of makers offering a bewildering range of full electric or hybrid vehicles. I have chosen just one manufacturer as typical. Peugeot, probably the world's oldest car builder, from 1891 to present. Why Peugeot? Well, the local dealership is ½ mile from my home. Peugeot E2008 ↑.

* I have a 7 year-old electric Kia Soul. The government has recently changed regulations on EV chargers, obliging an EV owner to keep the car connected to the grid overnight so some of the stored charge can be re-used by the grid. No mention of how this will be achieved or paid for. Smart electricity meters, anybody? DB

Electric vehicles come in three basic configurations. Self-charging: - in my opinion is a manufacturer's cop out. They need the engine running to create a sensible amount of charge and do not qualify for any government grants. Probably a short-term product to entice the undecided buyer? The halfway-point is the plug in Hybrid: - but remember, hybrids are also only short term, to be phased out by 2035.

The Peugeot 2003e Plug-in hybrid is approx. £33,000, (not grant assisted). It has a 1.2 litre/120hp petrol engine and an 81Kw electric motor linked via an 8-speed auto-box. The complete unit can run in tandem for maximum power, or just petrol, or just electric. The 4-cylinder engine-combined-electric motor unit incorporates regenerative charging, something new for the mechanics to get their heads around. Battery is a 300-volt, 12 Kwh. In 'electric only' the range is approx. 30 miles. Speeds can be up to 83mph, which will reduce the range somewhat!



Above, DB's Kia Soul EV.

The last option is the fully-electric car. As of 2022, a government grant of £1,500 is available for an up to £32,000 retail list price. The Peugeot E2008 - a mini-SUV - costs approx. £33,000 but does not qualifying for a grant. Motor: 110kW, (approx. 136bhp) Battery, 50 kWh. Range; 210 miles. Energy input: National Grid and distribution network cables. Emissions: almost nil from the vehicle.

These Peugeot examples are perfectly useable 'small' electric cars. If you want more acceleration and grunt, there are plenty of 200-, 300- or 400-kW powered cars, priced upwards of £60,000. Tesla is a quite well-established example.

The hidden extra bits. Many fully electric cars have battery heating and cooling systems. The cars have an on-board 7kW or 11kW battery charger, within the Battery Management System (BMS). There is also a built-in inverter that converts the 240-volt AC input into DC that the battery pack can accept. Ah... and it then restores it back to AC for the motor.

Charging the battery: Normally supplied with the car is a domestic 13-amp charger, at 2.3 kW = 20hrs+ to charge (only for emergency use, as pulling this sustained 12 amps can overheat the house wiring). Plus, a dedicated exterior wall charger-point will be needed.
 2) 3.7kW wall socket = 12hrs at approx. 15 amps, as much as an electric oven on full blast for 12hrs, no wonder the smart meter is spinning like a top!
 3) 7.4 kW wall socket = 6 to 8 hrs (pulling approx. 35 amps, enough to heat the under-floor wiring)
 This is normally the maximum power you can get from a home wall-charger port.

(To be continued in the next issue of Buzzing)

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