

**HALESWORTH & DISTRICT
MODEL ENGINEERING
SOCIETY Ltd**



Newsletter
Winter 2023/24



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Cover Photo - the Editor **Article** - Mike Kent and Gary Edwards

A bench seat in memory of Dick Barker.

Mike – A lot of years ago my sister bought an orchard and built a bungalow on the land. In the bushes we found metal work for a bench. I took it home, cleaned it up, painted it, got some wood and made a bench; I even made an archway for it. My mother used to enjoy the garden from that bench. That was a long time ago, but that bench held memories of my mother and sister, so I kept it after they passed.

Gary – Mike Kent said, “would it be a good idea to make a bench in memory of Dick Barker, because of all he has done for the club?” He then said he had some rusty bench ends that we could use for the project. Several of us agreed that it was a good idea. Clive Randlesome got the bench ends blasted and powder coated in British Racing Green; Tom Rackham supplied the timber (F.O.C.) and I teak oiled the wood, assembled the bench, and made and fixed the brass plaque.

Chairman's Jottings Philip Hall

Well! Here we are, already into November with another successful Lowmex Exhibition behind us which I believe was the best yet, with many more people attending. Many congratulations to Kevin and the committee for all their hard work. It really is an excellent way to promote our club and all types of modelling as well.

The Cromford Canal Derbyshire.

In October Carol and I visited the historic Cromford Canal. It was built by William Jessup and Benjamin Outram and ran for a distance of 14.5 miles, between Cromford Wharf (Photo 1, right.) and the Erewash Canal. It's construction consisted of 4 tunnels and 14 locks, and was completed in



1794. Goods carried were mainly coal, lead and Iron ore on narrow boats pulled by horses. The canal had a link with the Cromford and High Peak Railway at High Peak Junction (Photo 2, left). Further along the canal, Leawood Pump House (Photo 3, below left) was built in 1849 to pump

water from the river Derwent up to the canal to maintain the water level. It is now well over 150 years old and is still in excellent working order having been restored and maintained by a local volunteer group. On the day of our visit the boilers were being stoked (Photo 4, below right).



and the beam engine was raising water from the river below to the canal. The smell of steam and hot oil and the power of the pump as it pumped 4 tons of water was very atmospheric. The canal is now looked after by "The Friends of Cromford Canal". Boat trips are operated along the restored 1.3 mile section of the canal from Cromford Wharf to Leawood. Passengers are carried in a historic cargo narrow boat (known as a



“Butty”) named “Birdswood” (Photo 5, left). It was originally towed behind a powered narrow boat when carrying cargo. It has been converted to be powered by electric motor in its modern role. We enjoyed a wonderful leisurely trip along the canal which lasted 2 hours, including the visit to the pumping station. If you are

ever in the area, I can recommend this as a very unique experience.

The society has had another good season with an interesting and enjoyable programme of events. Particularly of note was a return visit to The East Anglian Transport Museum where we were joined by our friends from Ipswich MES and a great evening was had by all. The festive season is fast approaching and may I wish you and your families a very happy Christmas and all the best for a successful and healthy 2024.

Secretary’s Scribblings Brian Sinfield

I scribble these Scribblings with the Editor looking over my shoulder, life as usual being rather full at the moment, and me trying to play catch-up – as usual. To cap it all, a sore throat and a bad head cold tend to make the thinking process take at least twice as long as it might do on better days. None the less, although I was unable to spend as much time at LOWMEX as I would have liked, there can be no doubt at all that it was an absolutely superb show, better than ever, and I loved every bit of it. I must congratulate Kevin and his team for putting on a show that seems to improve from year to year, and I feel it can justly be considered without any doubt the premier show in the East of England. Knowing Kevin, he is already working on next year’s show.....

Through our presence at Henham and Lowmex, we have gained a few new members; welcome! The pleasing increase of membership was discussed at our last Committee meeting and the Committee appreciate that, with the number of members we have now, we cannot all know each other. So, to avoid any embarrassing difficulty, we are now suggesting that members carry their membership cards with them when visiting the Club so, should they not be recognised by someone, they will easily be able to identify themselves.

For the benefit of our newer members, I was approached some time ago by a member asking about polo shirts etc. We no longer have these in stock, but they can be bought at very reasonable prices and made to order by a company at the top of the town called Admiral Tees, at 76 High Street Lowestoft, just above the area known as The Triangle. They keep our artwork on their computer, and seem to make stuff up quite promptly, so that is the place to go.

The Editor tells me that this issue will land on your doormat at the beginning of December, so may I take this opportunity to wish you the season's greetings. Best wishes to you all.

Profile Jon Ford



I have always had a mechanical mind. At the age of 4, in the '60's, I could find the right imperial size spanner while helping to repair the family car.

In September 1977 I started a four-year apprenticeship with Philips Research Laboratories, near Redhill, Surrey. This was a good step towards learning skills to take forward in my future employment.

I joined HDMES in 2015. In 2017 I was given a chassis and running gear for a 1930's Type3 10¼" 0-4-0 Sentinel Shunter wagon, which was built by the brother of a club member who had passed away. I tried to scale it down to 7¼" but the chassis profile was too tall, so I decided to build a new chassis and running gear for a 7¼" shunting wagon.

The original chassis and wheel assemblies have been used for a ride on carriage, as displayed at the last three Lowmex exhibitions. Work on the project has stopped for nearly three years as the project of two motorbikes have taken most of my spare time. I hope to have 'project Sentinel' on track in the spring of next year – time will tell.

I was voted onto the Committee at the AGM in March of this year (2023)

Profile Julie Williams



It was my husband, Pete, who became a member in 2004, I just went along and helped at Henham, St Felix and the BBQ's, and gradually got to know people. In 2014 I had my arm twisted and was "dropped in it" to become the newsletter editor. Previous newsletter editors have always had a position on the Committee, I thought the newsletter could be the bridge between the Committee and the membership, and vice versa, so I declined Committee membership. Unfortunately, there has been little traffic crossing on that bridge in the past few years. One evening Philip asked if I would fill in and take the minutes for a Committee meeting, as Brian was unable to attend. I found it extremely interesting and informative and thought that some of the information could be passed on via

the newsletter to the membership – after all, the club belongs to all of us. A few members had suggested that I would be welcome if I ever wanted to become a Committee member, so I was pushing on an open door when I asked Gary if he would suggest it. The request was discussed at the Committee meeting in May and voted on; I attended, and was co-opted onto, the Committee at the August 31st meeting.

Committee meeting take-away – 31st August 2023.

The role of Vice Chairman has been kept vacant, as a mark of respect since Dick's passing earlier this year. That position has now been filled. Gary Edwards was voted in as the new Vice Chairman, a position which will run alongside his role as Treasurer.

Some months ago, there was discussion about the lighting and electrics at the Club. An independent inspection took place at the beginning of the summer and the club will soon have new green lighting installed. (Since the meeting new LED strip lights have been installed in the clubhouse, fewer in number and more efficient).

Committee meeting take-away – 9th November 2023.

Vic Churchill announced that he would be stepping down as senior boiler tester, with immediate effect. Vic had been a club boiler tester for about 25 years, and the Committee thanked him very much for his commitment to the club. Vic will continue to be a Committee member.

The Committee discussed at length the situation of the club loco's, particularly 'Dholpur' and 'Butch'. It was decided that both these loco's would be offered for sale to the membership, in the first instance, through sealed bids (details below).

If there is something you would like the Committee to discuss, an issue or project you would like the Committee to consider, then approach any Committee member (their details are on the inside cover) to have it presented to the Committee.

For Sale - Dholpur and Butch

The HDMES Committee is selling Club loco' 5" 2-8-4 'Dholpur' and are offering it, in the first instance, to the membership. If you wish to put in a bid, in excess of **£5,000**, then please submit your offer, in a sealed envelope labelled Dholpur, and send to Gary Edwards by **31st December 2023**.

Also for sale by the HDMES Committee, is the Club tank loco' 'Butch'. 'Butch' is a part finished 5" 0-6-0 and is being sold as a project for someone. The boiler is sound, but the new owner would have to obtain some parts that are missing from the project; a list of missing parts is included. Sealed offers labelled Butch, in excess of **£800**, to be sent to Gary Edwards by **31st December 2023**.

Both loco's can be viewed on a Thursday, when the Thursday Gang are working, or on a Club night. The envelopes for both loco's will be opened at the Cowshed at the **New Year's Day 2024** steam up. The new owner must remove Dholpur from the club by 31st January 2024, and the new owner of Butch must collect by the same date.

Tramway Visit



On Thursday 7th September HDMES met with IMES for our second visit to the Tramway Museum in Carlton Colville, and it was well worth the £5/head entrance. The tour was different from last year, although the rides were similar. What was impressive though was how much they had achieved since last year;

including the recently purchased land that they are developing with new storage buildings, which has freed up the old buildings for workshops. Some of the new area won't be used/developed for a while yet, so they are thinking/hoping that they might be able to run a steam rally with miniatures next year on that bit.



What also seemed more noticeable this year were the peripherals, the shop fronts and other 'Beamish' type presentations.

However, the most fundamental changes have been happening in the background because of inspections. Everyone has an opinion about inspections and inspectors, and the Tramway Museum thinks it has escaped inspection, so far, mainly because it is away from the beaten track; most museums of this type are in the midlands and north – but it will happen. Crich Tramway Village closed last year (2022) over safety concerns and it was not the only one, others jumped before they were pushed. The Carlton Tramway Museum committee are trying to pre-empt the areas an inspection might highlight and are getting their ducks in a row now. One of the problems though is that



at the emergence of tram and trolleybuses there was no standardisation, so it can be quite difficult to inspect.

The tram that actually started the Tramway Museum is being restored. Built by Milnes in 1901, this Lowestoft Corporation tram, in its first livery colours, was in service from 1903 to 1935 and used to run from the tramways in Pakefield, through the town, over the bridge, and up to just past the lighthouse, and back again. It has a 3' 6" gauge when the standard gauge was 4' 8½".

It will be interesting to see what other changes will have taken place by our next visit – whenever that will be.

Henham

The Club again had an impressive showing at Henham this year. Lots of interest was shown in the models in the model tent, where we had almost half the area, and there were several members with their traction engines chugging their stuff round the show ring and the show site as well. The youngest Club member to do so was Harvey Yarham.

Harvey Yarham



Harvey is one of HDMES junior members. He belongs to the North Norfolk Railway as a youth volunteer, and he is also a volunteer at Eaton Park Railway in Norwich. As well as this he is a member of the Steam Apprentice Club, which he attends once a year for a steam up weekend with Mr. Parrot at Weeting.

Harvey is the proud owner of a 4" Foster Agricultural engine built in 2017. It was bought for Harvey by his grandad and dad, David, in 2019 from Berrybrook Steam and Classics in Devon and was unpainted when they brought it home. They ran it unpainted for the first time that year at Henham. They then stripped the engine down in lockdown and changed a few things on it. They fitted a new mechanical lubricator, as the original one was a massive displacement lubricator, which was a different sort, not to scale and not as reliable, and they also put a new redesigned (by Clive

Randlesome) grate into the ash pan. Clive also fitted a hand water pump to the engine as a second source of water intake.

The engine was then spray-painted British Racing Green by a friend who paints David's tractors and then a signwriter came to line the Foster out; but Harvey kept the lining to a minimum as it is an agricultural engine. As yet the engine has no name.

This was only the second time that Harvey had run his engine at Henham and the first time with its green livery.

IMES Visit David Whitehead **Photo's** Chris Nobbs

Our annual visit to Ipswich MES (IMES) usually has two standout attractions, their large, impressive gauge 1 layout, built over many years, and the excellent fish and chips that we have for lunch.

On the 7th of October the day of our latest prearranged visit to Ipswich arrived, and the weather was warm, bright and dry. On arriving we were guided to our parking spot which was inside their 3.5" / 5" raised track, teas and coffees were soon acquired and consumed during a tour of their impressive new club house, which includes a larger workshop area. IMES have been on this Foxhall Road site since 1949.



A couple of our members took their locos to run on their raised track, which various people also drove around before and after lunch.

It was also good to watch locos and trains running around their large gauge 1 layout, which also has a raised viewing platform. This gives a good and different perspective view of their track and steaming bay area.

Kevin Rackham's young grandson looked to be enjoying himself, controlling a Gauge 1 loco with a remote control under the supervision of his parents.

We had a break for a beautiful and tasty fish and chip lunch (finished off with some cake) with running of locos resuming into the afternoon.

After seeing someone with a lightsaber, and doing some research, I realised that I had the equipment in my workshop to produce the handle part of one; and the more research I did, the more interesting it became. You can buy electrical parts and you can buy 'wandy' parts and you can buy handle parts – but what you can't buy is that something unique and I realised that producing one of these might be quite interesting.

I bought myself a core, which is the mechanics in the handle – the electronics that makes the thing work – and I bought a wand, which is the shiny bright 'lighty-up' stick out of the end. I bought these as a kit, so you have to do a bit of assembly work, a bit of soldering and some jiggery-pokery to get them together (you can buy this already done, and I would advise that going forward).

I investigated my material stock and numerous pieces of junk I had laying around in my workshop and I set about producing the handle. There was no real thought in what I was going to make, I just stuck a piece of aluminium in the chuck and started turning shapes. The more I thought about it, the more interesting it became, making a cut here and changing the angle there etc. In a short amount of time I produced the base of the handle, which I then polished up. I felt good about that. I then decided to make the bit you actually hold and thought a knurl would look good. I found a knurling tool that I had and started to practice knurling with pieces of aluminium; that's not as straightforward as it seems, but it produced something that looked good enough. All that took a day.

The next day I decided to finish it off. I rushed into the workshop, found another piece of aluminium that was going to be the front end of the handle, the bit that is closest to the 'wandy' bit, and started turning chunks off here and bits off there. I produced, almost by mistake, something that was presentable. Over the next night I put the whole thing together, the core, the wand, and the handle. I then played about with it.

When you buy a core, it comes with a set amount of programs already installed, which give you different colours, different lighting effects and different sound effects; but you can reprogram them, you can change them. There are different makes and quality of core, the electronics, and that is the key to how big the whole thing ends up. You have to have a certain length of core and a certain diameter of core that goes inside the handle that fires and provides the power to the wand – the rest is up to the individual. The other thing to think about is the how to assemble it to hold the core in position and how the sound is produced from the core. I built an echo chamber in the base of my handle to amplify and give some depth to the sound.

The wand is a polycarbonate tube with two rows of LED lights on a back-to-back strip on a support core in the middle, which is wrapped round with, for want of a better word, a foam material that reflects the light around the entire circumference of the tube. You feed the whole thing up the tube and wire the LEDs to an end cap which is put in the bottom. It takes about 30 minutes to make.



Nowadays you can download, from various websites, different sounds, fonts, colours, variations on themes of how it all looks when you are using it. For example: if you strike something with it, it will make a ‘thud’ sound and it will give an indication of a flash.

This is the lightsaber that you see in the photo, the one I showed to a few friends who all wanted one – so I decided to make another one. There was a few months gap between making the first and starting the second and, of course, the second is always going to be better than the first – it’s evolved.....

Being displayed in the main hall at Lowmex, alongside our own club exhibits, was John Luscott’s motorcycle, which won first prize at last year’s Midlands Model Engineering Exhibition. The following are John’s own notes and photographs about his magnificent motorcycle which he kindly and generously sent me. He even made the tyres!

BSA DBD34 Gold Star Scale 1:3.5 - Year of manufacture 1957—1963 John Luscott.

Brief notes on the design and construction of the main parts of the model



complete the finished model.

These notes are very brief as the whole project was quite lengthy i.e. about 20/25 years. (Please note however that my working life took me away from home on many occasions sometimes weeks at a time.) But hundreds and hundreds of hours have been spent in the design, manufacture, and construction; plus producing the many jigs and tooling to

Major design/methods/machining/construction Chain – Frame – Engine - Wheels – Rims – Spokes – Tyres - Jigs and Tooling.

Chain. Firstly, I thought making a chain would not be practical. I was able to obtain a suitable chain of the correct profile from an old cinemograph. The chain then obviously determined the scale, this worked out to be 1:3.45. I took 1:3.5 to be more practical (incidentally the chain and suspension springs being the only items not produced by myself).

Frame. I had a great amount of luck with producing the frame as, when visiting the classic bike show in Stafford some years ago, I met a Mr. John Gardner on the BSA Gold Star Owners Club Stand who had written books on the Gold Star. He sent to me a copy of the BSA Works drawings of the frame, which included angles and dimensions. This was of course critical in getting the frame exact to scale.

Engine. All engine main parts such as head, barrel, cases etc. were machined from aluminum, with the parts which are cast on the road bike, shot blasted to create a 'cast' effect. The barrel fins were cut on the milling m/c using slitting saws.

Wheels. Wheels and tyres created the biggest challenge for me in producing a realistic model. Rims are again made from aluminum, as on the road going bike, these were machined on my 918 lathe with tools ground to the specific form of the rims. I actually had to make a large tilting angle plate to support a rotary table to drill the holes. (Note: front and rear wheels and tyres are of different widths, with the front wheel dished).

Spoke hole drilling. Drilling of the spoke holes was very critical, as front and rear spoke configurations are totally different; plus the fact that front and rear hub widths are different, thus requiring different angles.

Nipple well forming. I needed to make a press tool in order to form the well recess in the rims to locate the spokes. A few designs were drawn up and made. Rims were annealed to ensure the material did not split and, again, trials of the forming of the recess had to be performed.

Spokes. The spokes are made from silver steel formed with a washer and brazed to create the anchor within the hubs, these were then chromed.

Tyres. I thought a great deal about how to create the tyres for many months, including 3D printing, but the cost of this process was out of the question. I eventually decided that I had to machine them myself. Samples of rubber of a high shore hardness were obtained, and the best sample for machinability was chosen.

Treads. Treads were cut on lathe and milling machines, using a tilting indexable rotary table and self-produced small slitting saws. (Note: I agonized for weeks on the

methods of producing different size tyres and different treads before plucking up enough courage to commence machining). Treads are very loosely based on the Dunlop TT100 tyre at the rear, and Avon Speedmaster front - these were the tyres to use at the time.

Jigs and Tooling. I had to produce many jigs and special tooling, plus modification of existing machine accessories such as face plates etc.

Please note that the design, production of these many Jigs and tools perhaps gave me more pleasure and satisfaction in producing the end product.

Note: In order to get expert critical comments on the model, I requested the East Sussex BSA Owners club if I could show the model at the South of England Classic Bike Show in 2019. This was accepted, which resulted in a few comments being successfully acted upon (a very useful exercise).

A small world Article and photo's Ruth Walton

In a barn, on a farm in the middle of Suffolk, there is a miniature world of trains - a wonderful layout of the Gauge 1 Model Railway Association (G1MRA).



HDMES members were invited and made very welcome on a particularly cold, wet November day. The club members have rebuilt what was a huge open shed on a farmyard and installed a waist level track – no bending down, wonderful! – which has as many as five lines in some places. All the locos and carriages are gauge 1, most of the steam locos were main line models such as Jubilee, B1, and 9F all hauling large numbers of

passenger carriages or freight wagons, with effortless ease. The attention to detail in the building and painting of them is so good that they look completely realistic, whether it be an eight-carriage passenger train or an LMS hauling coal, timber or commercial goods.

The layout looks very true to life by the mixed scenery; departing from a very detailed station complete with a crossing to other platforms, a signal box, passengers with their luggage and a porter, miniature benches, properly scaled lamp posts, fire buckets, enamel signs, a trolley laden with parcels, another weighed down by sacks of flour, all held to the layout by magnets. Lots of trains stopped in the station and an occasional express rushing through added to the atmosphere of the 1950s.

A series of steps to cross the layout provide a 'tunnel' for the trains which passed by Victorian warehouses, open fields with grazing cows, here the track ran adjacent to a canal with a barge under a road bridge where a 1950s Land Rover was crossing over. On past a gas works, a viaduct, a red bricked factory, the sort that nowadays has been converted into upmarket flats, then a few run-down stables for a few run-down horses living on meagre grass not far from the track. It was very lifelike and animated as two or three engines passed each other or pulled into sidings.



The management of the points looked complex, but everything ran smoothly.

Some locos were radio-controlled, and battery powered with the addition of sound effects; with your eyes closed you could imagine you were close to a busy railway line. Other locos were fired by gas, or methylated spirits.

We were glad of the adjacent clubhouse, with electric heater, kitchen and lots of seating where we shared tea, coffee, biscuits, mince pies and plenty of conversation.

Lowmex 2023

Kevin Rackham

Firstly, I would like to thank, on behalf of the Lowmex Committee and myself, HDMES members, wives, partners, family members, friends and volunteers who helped in the setting up, taking down and any part of the weekend. Along with the team from East Coast College, without their continued support Lowmex could not and would not happen. I would like to especially thank the number of helpers who stayed on Sunday evening to help put the college back together again in record time, leaving us with very little to do Monday morning.

Our eighth Exhibition was again held in the Energy Skills Centre and the 6th form College at the East Coast College. Setting up this year was again started from Thursday, which allowed us to primarily get the main hall set up on that day. This allowed Club members to start bringing in models from Friday first thing, although we did have a few models on the Thursday afternoon, by arrangement, and visiting exhibitors in tranches from 12:00 hrs. on Friday.

This year's exhibition was again bigger than last years, with more exhibitors and trade stands booked in. There were the obligatory last-minute changes to the plan, but

nothing that the area stewards could not handle. We ended up with nearly 350 tables of exhibits, which does not include the railway layouts, models on purpose-built stands and floor standing models.

Early Saturday morning the remainder of the models arrived and were quickly put into position. By 10:00 everything was ready and the first of the public were already walking round.

A walk round the exhibition to give a flavour of what was on display: - The main entrance & tombola were staffed by Club members and friends of the Club who did a sterling job all weekend. The Tombola was again filled with quality items, generously donated by local firms and Club members, along with some bought in items.



In the main hall: - HDMES had a good display running on compressed air: - Neal & Nigel exhibited a good range of their exhibits from a 3½" gauge railway crane to a model yacht; from a traction engine and thrashing set to their 5" Gauge Big Boy (see photo 5) and lots

between. Dave Fountain had several of his launch engines running. Jonathan Welch displayed some small engines and workshop equipment (photo 1, above), and Alan Gardner also displayed some small stationary engines. John Murray was displaying a range of hot air engines, steampunk, and steam engines, some displaying that model engineering does not have to be complicated, but can still demonstrate perfectly (Photo 2, right), along with visitor Paul Barwood also displayed a range of Stirling engines. Ken Hutchinson was displaying his steam plant with a James Coombes engine, which was being steamed most of the weekend.



John Child had his stationary engines running all weekend and did a great job looking after my stationary engines. Update on his under-construction model of the 90" pumping engine, currently being described in our newsletter, John has laid about 10,000 of the estimated 12,000 individual bricks! There were also some of John's smaller models (Photo 3, left).

Also on the stand was John Luscott's amazing BSA BDB 34 gold star motorcycle. When photographed it is hard to believe this is a model (photo 4, next page, top left).

Tom Rackham displayed his 2" Fowler Road Locomotive and living van and showed good progress on his 3" scale Marshall traction engine and new for this year, his under construction 2" scale World War One TR1 Field gun with the 5" gauge Big Boy for size comparisons (Photo 5, right).



Richard Stratton displayed some of his hand-built machinery including his impressive lathe and accessories (photo 6, below left). Philip Hall displayed his transport museum diorama and his new Eastern Counties bus diorama (photo 7, below, right). Mike Wickenden showed his good progress made on his Tom Rolt locomotive.



Peter Williams displayed his Minnie, Fydracer and his Adams 4-4-0 Express Locomotive, which is still under construction but nearing completion; hopefully we will see this completed by next year's exhibition (photo 8, left).



Colin Walton displayed several of his clocks, including his rolling ball clock which always draws a lot of attention, with his newly completed Jersey Lily in

the background (photo 9, right). He also displayed his Aveling and Porter diesel road roller. Chris Rackham displayed his 3" scale Foden Colonial lorry and Gresley A3 Solario on his custom-made realistic track. I displayed various models including the GWR Steamworks kit 14xx Class made up in the guise of the one from



the Titfield thunderbolt film. Not to be outdone, Marion displayed some of her unique models all made from scrap clocks and watches etc. and very delicate (photo 10, left).



Gary Edwards exhibited his unique sculptures of mainly Sci-Fi inspired characters (photo 11, right), along with his 5" gauge 0-4-0 and 08 shunters and Peter



Joyce showed off his newly completed twin cylinder Garrett stationary engine (photo 12 below, left), along with his 9F and various other projects, including workshop tools.



Chris Bedwell exhibited his gauge 1 Gresley A4, Gresley A1 tornado and a class 66 diesel. Rob Buck displayed a 1940's motor torpedo boat (photo 13, below).



Trevor Allchin displayed his newly acquired 5" gauge Maid of Kent locomotive along with his design for a CNC router/mill which was under construction (photo 14, left). Visitor Robin Slatter displayed 3 of his stationary engines.

Jon Ford showed the progress made on his Sentinel Y3 0-4-0 shunting locomotive from 1930. Leo Whisstock displayed his 7 1/4" gauge Dutch railway's sleeper wagon and Ffestiniog railway brake van, along with other smaller models inside it and adjacent to Mike Millwards 5" gauge class 31 (photo 15, right). There was a 7 1/4" gauge carriage, built by Brian Breeze for his grandchildren which was inspired by Hornby



Tinplate. Ben Fiddes displayed his 3½" gauge Ivy Hall locomotive which he is currently rebuilding. John Cockrill's 5" gauge Scamp locomotive "Twice" was displayed adjacent to the 5" gauge club locomotive (Photo 16, right).



Chris Nobbs displayed his 16mm scale Penrhyn quarry models, locos, rolling stock (photo 17, left), and a boiler kit under construction. The Darjeeling and Himalayan Railway was the main theme for Andy Belcher's 16mm scale display of



Locomotives, carriages, and wagons, (Photo 18, right) along with the WW1 stock that he is also passionate about. Adrian Cowlin displayed his 5" scale



Scammell Highwayman Lorry. Ian Snowden Displayed his 3" scale Marshall road roller and living van along with Roy Currans Sentinel lorry (photo 19, left), David & Glenn Doddington are making two 4" scale Foster traction engines and displayed parts that they have produced so far for one of the engines (photo 20, below left). Nick Gratton showed his 2" scale showmen's engines with a Verbeeck organ (photo 21, below right) as well as his 1" scale versions.



The Phoenix Model Engineers had their usual large display. Charlie Lovett, after completing his magnificent LNER carriage, is now building a 7¼" gauge model of a Cowans 75-ton crane. It is massive, the jib alone is 8 foot long, and heavy, he is currently in the middle of cutting the gears for the crane, showing some of the detail (photo 22, next page, top left). Bernie Towers was displaying his range of workshop

tooling, some of which were made to assist in producing parts for the crane (photo 23, below right) and he also showed his award winning ER16 indexer.



Also in the main hall were our friends from the Ipswich MES, who again put on a magnificent display of models. Ron Feakes was steaming his table engine all weekend,



Terry Woodward's Glen Garry is nearing completion (Photo 24, left) and there was G1MRA with their working shunting yard, which members of the public were encouraged to have a go with. Alongside Ipswich was the stall of

Andrew Grace selling workshop equipment (webuyanyworkshop.com). There were great bargains to be had and attracted people like bees round a honey pot. For the first time we had the Federation of Model Engineering Societies explaining all the good work they do on our behalf. On Sunday we also had Anne & Helen, the ladies from Great Eastern Models, with their stall selling all things 'model railways'.

Our Club had a stall selling quality, but now unwanted, engineering items on behalf of members, along with stalls from Club members Andrew Lockwood and Richard Stratton. They all did a great trade, with donations going to club funds.

In hall 2: - Along with their colleagues from the Gipping Valley MBC, Peter Nash and Matt Fidler displayed their large radio-controlled model tanks from the first & second

world wars, running round inside and outside of the building (Photo 25, right). Lewis Barnes brought his original Dr. Who car Bessie, which was driven by John Pertwee in the series. The Daleks, and K9 did regular patrols around the exhibition interacting with the public (photo 26, next page, top left). Also running round with their sound synthesizes and interacting with the visitors, especially the children were, new for this year, the Norwich Droids which have a range of models from the Star Wars films (Photo 27, next page, top right).





Halesworth to Southwold Narrow Gauge Railway Society, were running their layout this year with live steam as well as radio-controlled locomotives; they also had a stall selling items for their cause (photo 28, left). The 16mm association had their 32mm gauge layout and also ran a range of live steam locomotives for the enjoyment of the public.

Professor Baz was demonstrating his home-made Enigma machine, explaining, and demonstrating how it worked and the link to Bletchley Park and the code breakers of the second world war (photo 29, right). Back by popular demand was his demonstrations of the wonders of static electricity with the Wimshurst machine and Van De-Graaff generators which were in almost constant use.



In the adjacent room to them was one of the college displays covering the advantages of wind turbines with interactive models.



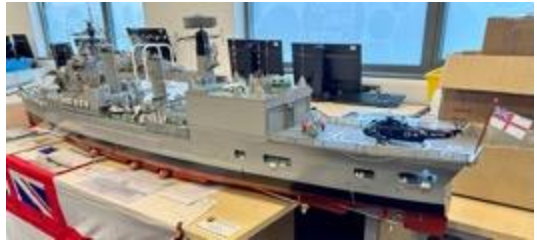
Into Zone 2:- In the first room were the Waveney Valley MRC with their Greystock Junction layout with a great amount of detailed modelling (photo 30, left). John Pettitt and had his scratch built working funfair models (photo 31, next page, top left) and the Tramway and Light Railway society showed three working dioramas of various trolley buses (photo 32, next page, top right).



In the demonstration area, always drawing an interested audience, were the Waveney Valley MRC Mardlers, demonstrating their scratch building techniques in mainly

7mm to the foot O gauge modelling (photo 33, above). Also in the room was Chris

Bullock and Paul Hiatt with the larger model boats. This year Chris brought his 6' long model of HMS Norfolk, along with his newly completed 8' long cruiser class HMS Tiger, very impressive with all the working lights, radars, helicopters etc. (photo 34, right).



In the next room the Southwold Railway Trust had their model of Southwold and carriage trundling back & forth all weekend (photo 35, left). The Mid-Suffolk Light Railway stand was selling their goods and both societies were

promoting their causes; along with the Craftlight company selling their range of LED lights and magnifiers.

Next door were the large aircraft, helicopters, and drones of Dominic Vincent (photo 36, left). Also in the room was Bill Knights with his small battery powered, scratch built, narrow-gauge layout. Bill also had small displays of how he produces the various bits, from chassis construction to homemade scale corrugated iron sheets (photo 37, next page, top left).





Next were the large model aircraft of Terry Utting (photo 38, above), and Paul Catling.

Terry's latest model, now completed, is his "Spirit of Louis" which is a model of the aircraft flown by Charles Lindbergh on the first solo, non-stop transatlantic flight from Long Island, New York, to Paris, France, in 1927. Paul Catling displayed his impressive Lancaster Bomber with its 11-foot wingspan. Tim Ward was running his ever-popular flight simulator on the large screen within the room which is always a great draw for adults and children alike.

Progressing upstairs on the landing we had DRS Mugs and Signs and our beneficiary S.O.L.D. both doing a good trade.



In the large conference room and the two adjacent rooms were the plastic modellers represented by the Oulton Broad Scale Model Group (photo 39, left), Norfolk Scale Model Group showing a little bit of humour (photo 40, right), Fenland and Spalding Model



Club, The West Norfolk IPMS, Waveney Small Model Group, Mildenhall Small Model Group, Tiny Flying Legends (photo 41, photo left)



and last but not least Adrian Mayhew, who was re-supplying (photo 42, below). Catering to their needs

was High Peak Scale Models trade stand. It is always so awkward to pick out photos to cover such a wide range of modelling, but one final one from the Oulton Broad group





showing the number of small details included in the models (photo 43, left).

Into Zone 4: -



In the first room we had a large Lego city model by Simon Austin (Photo 44. above). Lego Technics model by Ernie Eade (photo 45, left) and Lego train models by Brian Cornwell (photo 46, below).



Norwich Model Boat Club and Dave Southernwood were in the same room with a vast range of nicely detailed model boats (photo 47) and radio-controlled



vehicles, primarily lorries (photo 48), which were running round the Skills Centre inside and outside over the weekend. Dave Southernwood also

displayed a good range of boats, trucks, and various miscellaneous exhibits, causing great interest and amusement (photo 49, next page, top left). In the next room was Gorleston MBC, again with a good display of model boats. (Photo 50, next page, top right) shows a beautifully made lifeboat.



The College were running their state-of-the-art Bridge Simulator all weekend and giving a lot of people the opportunity to have a go at piloting a range of vessels into ports around the world. The Simulator is so realistic, you know that you are on Terra Firma but the visualization is so good you feel as if the floor is moving, weird sensation.



(Photo's 49 and 50 from previous page).



Due to a last-minute decision by the franchisee in the 6th form Canteen withdrawing from providing the catering, Lowmex and the College are extremely grateful to Sizzlers, Donut lady and Piece of cake for stepping in at short notice to provide bacon rolls, burgers, hot and cold drinks etc. which went down very well. Malcolm Barker was in the 6th from college with his K'Nex model Fun Fair which kept people entertained whilst they consumed their food (Photo 51, below). Outside, Daniel Snowden was steaming round on his 4" Garrett, alongside John Wilkins with his 4" scale Burrell (photo 52, right).



This hopefully gives an, all to brief, overview of the eighth Lowmex exhibition. The exhibition continues to grow every year, I can never hope to cover everything and everyone and do justice to the many hours of dedication and painstaking work that goes into every one of the models. Please accept my apologies for the ones that I have not covered. I would like to thank all the exhibitors for sharing their models with us. I would like to acknowledge and thank Jamie Haywood, John Wilkins & Julie Williams for the various photographs used in this article. Also, I would like to thank Ken Kinsey for filming and uploading 2 short videos of the exhibition onto YouTube. Search "2023 lowmex".

The Lowmex Committee wish to acknowledge, with grateful thanks, the generous help of everyone who has assisted us in any way for this year's Exhibition, which is looking to be the most successful yet.

What are you going to exhibit next year? what progress will you be displaying? (Newly started models welcomed) come and enjoy a great weekend with likeminded people. Lowmex 2024 dates are still to be confirmed.

Building a Cornish Waterworks Pump - Part 4 – The Main Trunnions John Child

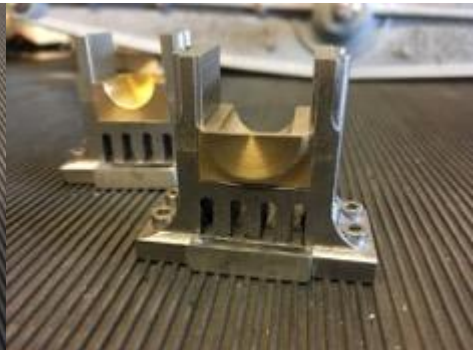
The next things to tackle in my Cornish Pumping Engine project, were the main trunnions and the trunnion supports. These sit on top of the entablature (described in my previous instalment) and carry the massive cast-iron beam which transfers the power from the steam piston to the water-pump. In the prototype, the trunnions are quite a complex casting (photo 1, below left), so I had to come up with a scheme to fabricate these for the model. I had some broken fragments of Victorian cast-iron water-main pipe, rescued from the scrap-box at Kew, so it seemed appropriate to use this material for the trunnions (photo 2, below right).



Once I had sawn a couple of blocks roughly the right size out of the pipe, I milled the blocks to size and drilled them from the bottom to form the cavities which would later be filled with turned pins to form the holding down bolt pads and the outside profile of the casting. Next, I drilled the cross holes which form the top of the slots. Another set-up and I milled away the centre part of the bottom of the trunnion, then cut the slots to connect with the cross-holes. The front and back were then machined to thickness, leaving the base with a step, complete with a small radius (photos 3, next page top left, & 4, next page top right). The sides were then machined away to reveal the holes drilled from the bottom and the slot was milled to take the half-bearing.



The next step was to machine the block for the bottom part of the trunnion, which was an easy milling job, and then turn up the stepped pins and pads. The main body, block and pins were test fitted, then thoroughly cleaned, and glued together using high strength epoxy resin (photo 5, below left). The final part of each trunnion is a half-brass, and these were machined in the lathe as a pair, the two blocks being soft soldered together. Once the turning was completed, the blocks were separated and cleaned-up. The finished trunnions, complete with their half-brasses, are shown in photo 6, below right. It is interesting to note that Cornish engines do not typically have top brasses and covers on the beam centre trunnions. This is due in part to there being no upward forces, but also to prevent excessive shock loading of the beam in the event of an overstroke of the engine – should the engine strike the blocks hard, the gudgeon pin can lift out of the bearing, thereby reducing the shock loading on the cast iron of the beam.



The next job was to fabricate the trunnion supports. These sit on top of the entablature supports and raise the level of the beam so that there is adequate clearance for the long stroke of the engine and provide a hollow space for the 'spring-beams' to pass underneath. The spring-beams have the catch blocks attached to them and are so named as they are light enough to have some flex in the event of an engine over-stroking and striking the blocks. The trunnion supports have quite complex stiffening ribs and fillets in the full-sized engine and a further bit of head scratching was required to come up with a



scheme for fabricating them. In the end, each support was fabricated from 22 separate pieces – a top block, two sides, a base, eight ribs and ten fillets (photo 7, left).

Making the component parts was, in the main, straightforward milling work, although the fillets were a little fiddly. The base and sides were machined with slots to help with strength and to give accurate

location of the parts. The top block has a very slight (1.5 degrees) taper at each end of the slot, to match the taper on the trunnion. The bottom plate has a similar taper along both long sides. This is to enable final adjustments to be made when aligning the beam, after which everything is held firm by hammering shims into the gaps both on the entablature top surface and where the trunnion sits on the support.



Each assembly was glued and clamped using high strength epoxy resin, with the top blocks also being pinned to the sides to provide extra support (photo 8, above left). In the model, I have added a couple of 6BA screws to secure the trunnion supports to the top of the entablature – these will be disguised by the spring beams on the completed model. Finally, photo 9, above right, shows the trunnions and trunnion supports in place on top of the entablature.

To be continued...

Please note that the opinions and views in the articles published in this newsletter are those of the contributors and may not necessarily be those of H&DMES or its members. We reserve the right to edit, or shorten, any material offered for publication in the Newsletter.

H.D.M.E.S Events Diary December 2023 – March 2024

December 2023

Sunday 3rd	Steam up.
Thursday 7th	Club night.
Sunday 17th	Steam up.
Thursday 21st	Club night.

January 2024

Monday 1st	New Year's Day steam up. Sealed bid auction for club loco's "Dholpur" and "Butch".
Thursday 4th	Club night.
Sunday 7th	Steam up.
Thursday 18th	Club night.
Sunday 21st	Steam up.

February

Thursday 1st	Club night.
Sunday 4th	Steam up.
Thursday 15th	Club night.
Sunday 18th	Steam up.

March

Sunday 3rd	Steam up.
Thursday 7th	Club night.
Sunday 17th	Steam up.
Thursday 21st	Club night.

Date for A.G.M. to be arranged.

A sincere "thank you" to everyone who has contributed, in any way, to any Newsletter; without your contributions there wouldn't be one.

[Check the website – hdmes.co.uk – for updates and changes.](http://hdmes.co.uk)

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