HALESWORTH & DISTRICT MODEL ENGINEERING SOCIETY Ltd

Autumn Newsletter 2023

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Cover Photo the Editor **Article** Andy Belcher

You all know that I am as soft as a Sunday morning curry.
I watch all those modern kid's animated films, as they are usually quite clever and contain references to all my favourite films; half the fun is spotting them.
I loved "Cars" and in particular the Mater character, as I think that he shows the best side of Americans.
I first saw Kevin's model many years ago and always wanted to have a go at driving it; I was always a bit jealous at seeing kids riding Mater about.
Then today, at the Club Picnic, Marion told me to get on and have a go - but the children were busy playing and I didn't think it fair to push them off...but later I got my chance.
The photo says it all...

Editor: This is the man who used to drive large lorries thousands of miles across the continent to Krasnodar in Russia! HDMES – where simple wishes can come true.

Chairman's Jottings Philip Hall

As a club, I know that we value and enjoy our exchange visits with members of IMES.

As you would have seen in the last Newsletter, they visited us on the Coronation weekend in May I, sadly, was unable to be there, but from the photos I have seen everyone had a great time. On Saturday 20th May I was pleased to attend the official opening of the new IMES Clubhouse at Ipswich. They have demolished the old building and built the new one, in about a year. What a wonderful achievement. As you will see in the pictures, they have a purpose-built building to suit all their needs, both practical and social. At the time of my visit the paths and driveway were not finished, but they have since been surfaced with tarmac. The sun shone and many members, their families and friends, enjoyed this unique occasion; the ribbon was cut and the opening ceremony was completed with a glass of "bubbly." There were a good number of members' locomotives on display, and the raised track was enjoyed with both steam and electric locos giving rides. The garden railway was also in action. Please remember that on Saturday 7th

October we have been invited to visit Ipswich MES. This will be a good time, not only to see their new premises, but also to enjoy a wonderful fish and chip meal with them. They will also be joining us on our return visit to the East Anglian Transport Museum on Thursday 7th September.

Our Club programme has been most interesting so far this year, with good support from members. Particularly of note was an illustrated talk by Kevin about his work and experiences at Sizewell. More recently the Father's Day summer picnic and steam up attracted a good number of people, of all ages. The traction engines were very much in evidence, ranging from the very small right up to the largest one, built to a scale of 6" to the foot. The raised and ground level tracks were both in use, and a raffle was held with proceeds towards Club funds. I expect that photos of the event will be in this Newsletter.

September and October will bring two major annual events to look forward to. Henham Steam Fair will be held on 16th and 17th September; please support this by exhibiting your models in the tent to promote our Society. Lowmex is being held on October 28th and 29th, please speak to Kevin, or his committee, to exhibit or if you are able to help in anyway. My good wishes to you all.

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Secretary's Scribblings Brian Sinfield

Well, here we are again, where has the last three months gone? I said that this time last year. Boring, aren't I? I don't seem to have spent many hours in the workshop though. However, time certainly flies and there is no getting away from the fact that we are halfway through July. Strumpshaw Steam Rally has gone; Weeting has just finished as I write these Scribblings; Forncett Industrial Steam Museum, if memory serves, has an event on the first Sunday in September; and then we are up to Henham. I will admit to a soft spot for

Forncett, they do have a few more open days before the end of the year, so the best thing I can do is direct you to their website at www.forncettsteammuseum.co.uk Well worth a visit if you haven't been.

Although I haven't spent that many hours in the workshop, I have been doing some interesting searches for information. Calling it research would be a bit over the top really. Anyway, to cut to the chase, I am planning on making a pair of large balance wheel electric clocks, to a design by John Wilding. Skeleton clocks (and similar) have always appealed to me, and coming from an electrical background, this design really caught my eye. The reason for two is that my granddaughter and I had a day in the Science Museum in South Kensington, and it now houses the Clockmakers Museum, moved from its old home in Guildhall. The collection was originally assembled by the Worshipful Company of Clockmakers. The collection includes more than 600 watches, 90 clocks and 30 marine chronometers and sundials (sadly not all are on display) mapping the history of watch and clock making in London from 1600 to the present day. Quite amazing. So, my granddaughter said, "You could make me a clock, couldn't you?" (Cannot say no to my granddaughter). After going weak at the knees I thought, if I am making one for her, I am certainly going to make one for myself. Now, what all this is boiling down to is simply polishing - mainly brass in this case – and this is an art I have not attempted before. How do you get that mirror like finish? If anyone has done so, and can give me some hints and tips, I would love to hear from you.

I do hope you all keep in good health, and I do hope you are all getting more time in your workshops than I am! So, keep engineering!

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New HDMES stall at Lowmex

Have you wondered what to do with that quality, but now unwanted, engineering item? That casting that you didn't use; that 'under the bench' part or project that you no longer intend to finish; that present that you've been trying to off load? Well, dust them all off, as you now have a way of selling them – and helping Club funds as well.

Gary will sell the items for you at Lowmex. All you have to do is price the item you wish to sell (a description would be helpful as well) and give it to Gary, he will try and sell it and will take 10% commission for Club funds if he does. Sorry, he cannot accept any electrical items, tools or 'junk', – desirable items only, please.

Small Print: - Whilst every care will be taken with your item(s) neither Gary, his representative, HDMES or LOWMEX can be held responsible for any loss or damage. By giving Gary your priced, desirable, item(s) for sale, you are agreeing to these terms and conditions.

Our Exhibition at Energy Skills Centre, East Coast College, NR32 2NB

28th & 29th October 2023 Kevin Rackham

If you have not yet booked in, we would love to see your exhibit(s) (unfinished projects are more than welcomed). Let us see what you have been working on. An entry form is enclosed with this newsletter for those who have not yet booked in; and extra copies are available in the clubhouse.

You can hand your completed forms to any of the committee members, or post /e-mail the information to me. Details are on the bottom of the form.

Please help to advertise the Exhibition in your local area. Posters & fliers are available in the clubroom, help yourself or contact any of the committee and we will supply you with some.

The Exhibition is on track to be as big as last year, a lot of the favourites from the last Exhibition are returning, along with numerous people and trade stands exhibiting with us for the first time or returning after a break. See the web site for the latest list. (www.lowmex.co.uk).

Outside, miniature traction engines, lorries and stationary engines will be in steam, along with helicopter flying displays (weather permitting). If the weather is bad, we will display the exhibits indoors.

HDMES had a brilliant display last time; let's try to improve the display this year. It's our chance to really showcase what we get up to. So, if you are in doubt about entering or helping, stop doubting and support your Society, you may even enjoy yourself!!

There will be ample hot & cold food and refreshments provided by the college and Sizzlers again on Sat. & Sun., adjacent to the Exhibition.

If you have not already volunteered, and can spare any time over the weekend, please fill in the form or let one of the committee know, it's our Exhibition, and we do need your help. Whether it is stewarding, talking to the public, helping on the entrance etc. you will be more than welcome. The more people we have helping, the easier it is to spell all of us.

Set up will be Thursday 26th Oct from 09:00 – 17:00, Friday 27th Oct from 09:00 till 20:00 and Saturday 28th Oct. from 07:00 till 10:00. The Exhibitors have been told they can turn up from 12:00 noon on Friday.

Public opening will be Saturday 28th Oct. from 10:00 till 17:00 and Sun 29th Oct. from 10:00 till 16:00.
Dismantling will be Sunday 29th Oct. from 16:00 till 20:00 and Mon 30th Oct. from 09:00 till complete.

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Midsummer/Fathers' Day Picnic

Weatherwise it was a Goldilocks' Day, not too hot, not too cold etc. – you get the idea; it was just right. There were engines working on all the tracks, often with different drivers, and the children (of all ages and sizes) had a wonderful time.

After lunch there was a drive round and a line-up. From left to right in the lineup are:- Theo and Tony on Becky's (as yet un-named) 3" Marshall featured on page 10/11; then Emily on Clive's 'Magic'; Gary with Emiia, Hendrix and George on 'Old partner'; Tom with Jack on Kevin's Dodman, which finally has a name plate and is called 'Royal Norfolk'; Richard and Christine on 'Harriet' (Riley, the dog, is in the trailer); and on the right-hand side is Mater, which gave so much fun and enjoyment to all. In the background of the photo, on either side of Gary, you can also just see Andy and John (on the left of Gary) waving to the camera as they are taken round the ground track by Oliver (on the right of Gary) driving 'Rosie'.

The photo left shows Mike with his 5" Compass Class 314 loco' (featured in Summer 2023 Newsletter) and Oliver with "Rosie" (there is an article about "Rosie" in the pipeline). The photo below shows the club loco' "Southwold" (built by Peter Lewis). All the loco's gave rides all day on the ground track.

They queued up to use the raised track – well, they have to, really, don't they. In front, photo below, is Kevin with his 5" GWR 1400 Class loco' (featured in Spring 2022 Newsletter) about to give Audrey and Mike a ride. Behind him is Colin with his "Maid of Kent", with Ruth waiting for departure.

Also on the raised track, being put through its paces, was Tony Stockman's loco', a modified 0-6-0 BR Class 10 and this is where it gets technical. **Tony** - At the moment (the moment being the Father's Day Picnic) the loco' is controlled by a DNO 4QD controller. This is an analogue system where you have a dial which you physically turn to change speed etc.; Rob has built an app on his Android phone and will be able to/can already control the loco' with this app, using Arduino software. (Editor: Arduino is an open-source hardware and software company, project, and user community that designs and manufactures

single-board microcontrollers and microcontroller kits for building digital devices. Source Wikipedia.) or you could use a Raspberry Pi to make the process digital. Using the app on your phone you can then send a signal to change the speed, turn the lights on or off, stop or start, whatever you want it to do; all via Bluetooth on your phone and using no wires. Because it is Bluetooth, you would have to be on the train or walking near to it and, for safety reasons, you would always have to have something in your hand that you press, a switch, to make it work (a dead man's handle, of sorts).

Some photo's from the Picnic

Previous page:- top left: Theo, Tony and Becky on Becky's 3" Marshall; top right: Oliver on "Rosie"; bottom left: Christine and Richard on "Harriet" taking Ruth and Riley the Labrador for a ride; bottom right: Colin with Ruth on Colin's Maid of Kent.

On this page - above left: Andy driving Gary's "Old Partner". Above right: Miranda having a driving lesson from Tom on Kevin's Dodman. Below left: Emily driving Clive's "Magic" and lastly the new name plate for Kevin's Dodman, "Royal Norfolk" below.

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<u>On Test</u> - **<u>3" Marshall</u>** Stuart Hart

I'm Stuart Hart and this is actually my daughter's engine, Becky Smy, they bought it 3-4 weeks ago from a bloke in Framlingham. It is a 3" scale Marshall. The model is based on a 7-horse single cylinder engine and was built about 1999, but it has been laid up for about eight years. I have had it steamed at home, and it ran like a little Swiss watch. Because it has been laid up, we are having a full boiler inspection, you can see the man-hole door open for the inspection; then I'll put it all back together and we will have an

hydraulic test, pump it up to 180psi; it works on 120psi steam pressure and is quite lively at 100psi – pulls wheelies! It has a V5, so is road registered. The name used to be "Sheila" but they have taken that off, so it is an X at the moment. The boys, cousins Theo and Tony, are members of the National Traction Engine Trust Steam Apprentice Club and they went to Weeting at the Easter weekend with a load of other apprentices. There were about 24 of them on 14 engines: lighting up, driving, looking after engines – wonderful. The Aveling steamroller got stuck multiple times – and a Burrell.

My own engine is a full-size Fowler K7 ploughing engine, all 24 ton of it. I've also got a 1921 Stanley steam car that runs at 500psi and prior to that we had steam rollers. I also restored a full-size traction engine from a derelict condition in my back yard, which took me seven years.

2611 Jubilee Tank Engine Ben Fraser

This is a 3½" gauge 2-6-4 Jubilee tank engine, based on the real thing, but this is just a two-cylinder engine, not a three cylinder. I've had it for about three years, I bought it off eBay for about £1500, but I was moving house and didn't have the time or the workspace to overhaul it, so I had James do the overhaul for me, that's what he does. Everything needed doing – that's why it was so cheap. We've put in a brand-new boiler and everything that was handmade had to be replaced; we had to completely start again and replace everything from the bottom up, so almost an original! James has steamed it at home, but this is its first official steam test.

An Evening you may have missed

Sizewell Kevin Rackham

Kevin Rackham presented a very interesting evening of slides, information and anecdotes about Sizewell A, literally from the ground up. He said how his father had taken him, when he was about 5/6, to see the Leith Crane, (called Goliath, photo right, it had the biggest span for lift in the country at the time at 250 feet and an overall height of 248 feet); little knowing then that he would be one of the people who would 'fly' the nuclear reactor as an adult. Taking 5 years to build, Sizewell A was completed in 1966 and was groundbreaking technology at the time.

Kevin described how seawater was used to cool the steam as it came out of the turbine, causing it to condense - which then created a vacuum on the turbine which in turn created more power. There were two tunnels of different lengths going out to sea, the longer one was the inlet, as the incoming water was colder; and fishermen fished near the shorter out-take pipe as the water became warmer there and fish congregated. 27 million gallons of water was pumped each hour. The photo, left, shows the construction of the outlet tunnel.

The boilers started as huge, section tubes lying on their sides, and they slowly rotated on rollers so that the welders could weld the 2¾" boiler plate steel from the top as they rotated round, photo right. Each tube was added one at a time, and every weld was x-rayed as it was laid down. Each boiler was 91ft long by 22 ft in diameter. The finished boilers were hydraulically tested. One boiler was (accidentally) tested to destruction, as they had mistakenly forgotten to calculate the weight of the water in the boiler for the test and it had been laid down on its side. It was repaired and went on to do 40 years of service.

Kevin described how there were three of them per shift in the control room that controlled the reactors, keeping them to exact levels to maintain a consistent flow of electricity onto the grid. He also said how everything changed after 9/11. Before 9/11 Sizewell A had up to 50,000 visitors a year who would have a tour over the whole site, including the control room; all of that changed after 9/11. A new armed police group were created, the CNP, Civil Nuclear Police, and they were not allowed to attend any other incident(s) they were just there to patrol the nuclear sites.

Well before 9/11 the site was also 'security tested' by the SAS (Special Air Service). They managed to get on site. Nobby Clark was in the basement of the turbine hall and asked one of them what the hell they were doing - he was put up against a wall and held there while they did what they had to do, putting in their dummy charges etc.

There was another buttock clenching moment. The control room had 28 phones, and after 9/11 another one was added, the 'Cheetah' phone, a hot line to warn if there was incoming aircraft (there is a no-fly zone over the site) and it had a very distinctive ring. One night it went off – it was a double-glazing salesman on a cold call – the guys didn't actually trip the reactors as the code word wasn't used, but they were preparing for it. Apparently, there was hell to pay over that. Kevin said that if that phone went off it was actually a suicide job, there would be no-where to run to, no time to run anyway, and their job was to safely close down the reactors in the quickest possible time; a procedure that they regularly trained for.

Another time one of the external line phones had rung. It was a Lady from 42, Acacia Ave. whose lights had gone out and she demanded to know what they were doing and what they were going to do about it! As if they had switches for every household in the control room.

One of the interesting things from Kevin's photos was the social differences, especially in work clothes. The foremen, and bosses wore a jacket and collar and ties, and they even smoked pipes on site, whereas the workmen were nearly all in flat caps and open shirts. There was hardly a hard hat to be seen. There were no corporate 'uniforms', identifying clothing, ID cards or even overalls, very different from today's workforces.

Kevin finished his extremely enlightening talk with the following statistics: -

During its lifetime, Sizewell A produced 110 TWh (110 thousand million) units of electricity. This is enough electricity to meet the domestic needs of England and Wales for six months, and the value of its lifetime output at 2006 prices exceeded £4 billion.

Had the power generated by Sizewell A been generated by a conventional power station it would have led to an additional discharge of 125 million tons of CO2 into the Earth's atmosphere.

To produce the same amount of electricity as 1 Tonne of Magnox fuel at Sizewell A, a conventional power station would burn 14,000 tons of coal.

Sizewell A was the first industrial facility in the world to attain the highest levels in the International Safety and Environmental Rating Systems (ISRS & IERS).

It also holds the RoSPA President's Gold Award for more than 10 years of exceptional safety performance.

During construction and operation, up to 2006, Sizewell A provided 40,000-man years of local employment.

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The Editor: We went to Bristol for our holiday this year, and I could fill the whole Newsletter with photos and blurb about it, but I will keep it to just two venues.

On the way down we stopped at Didcot Railway Centre to stretch our legs and have a look round, they have an incredible amount of loco's on display. The main shed was a lineup of magnificent loco' after magnificent loco', far too many to list or show here. One loco' stood out, though, because it was in blue livery, not the black or green of the other engines. This loco' was the "King Edward II", built in 1930. The powerful "Kings" represented the final development of Churchward's "Star" class and Collet's "Castle" class. Only three are left today, and this one is awaiting a fresh overhaul before it can steam again.

Outside the main shed were two very interesting engines. In the foreground is "Trojan", built in 1897 this 0-4-0 worked the dock sidings until the company was absorbed by GWR in 1932, and they gave her the number 1340. She arrived at Didcot in 1968 in need of restoration, but there were issues with her boiler refit(s) and she didn't work at the site until 2002. After another overhaul in 2011, she came back into service in 2021.

Behind “Trojan” and looking like an older model, is another 0-4-0, the 1949 Stephenson and Hawthorns “Bonnie Prince Charlie”. Another powerful little engine which again started life working the docks, she was bought by the Salisbury Steam Trust in 1969 and came to Didcot soon after.

The two loco’s which really caught our eye, and which we spent a lot of time looking at, were in a small shed of their own at the very end of the line. The first of these engines was the “Iron Duke” and we were fortunate in that one of the men who worked on the engine was there.

Andrew Snell – “The 1847 4-2-2 “Iron Duke” is a broad-gauge locomotive, that's 7’ gauge as opposed to our present 4’ 8½”. The original ran between London and Bristol in the 1840’s, '50s and '60s. This particular one is actually a replica, built in the 1980’s for the Science Museum. It's a working replica and it could go into steam given the necessary overhaul. It's a very simple locomotive looking at it, compared with more modern steam locomotives, it has very basic controls and they kind of ran them by the seat of their pants, by instinct largely, more so than in the later steam days. There is no cab, so the crew were exposed to all weathers, ice, snow and rain, traveling at speeds of 60 miles an hour. Broad gauge was built for speed, that's why it was that far apart. It was also a bit safer for other reasons; more stable. It was some years before the Great Western Railway was convinced by its locomotive crews to build cabs for their protection against all weathers. That also went for the passengers, there was an open truck, or carriage, for third-class passengers (photo above). I don't know if anybody actually froze to death, but I suspect several people would have in those days, given the amount of time they were spending in those conditions. So, the “Iron Duke” has got one really big driving wheel on either side that is seven foot in diameter, and that is to give speed. The greater the wheel diameter, the faster the speed.”

In front of the “Iron Duke” was the beautiful broad gauge 2-2-2 GWR “Fire Fly”. The original loco’ began service from March 1840 and is said to have covered the 30.75 miles from Twyford to Paddington in 37 minutes, an average speed of 50 miles an hour – an unprecedented speed in 1840.

The photo on the right shows the brass water level gauge that was used, they didn’t have glass gauges then, the glass gauge shown is a modern addition. The bottom brass valve, when cracked open, would emit water; the middle valve, when cracked open, would emit water and steam; the top valve, when cracked open, would emit steam. By constant checking of the valves, the engineer could estimate how much water was in the boiler.

We also visited the Avon Valley Railway where we had a ride on a train in an individual compartment in a carriage (a nostalgic ride back to my childhood). The carriages were pulled by “Wimblebury” a 1956 0-6-0 Hunslet works loco, built for the National Coal Board. It was built to the design that was used to supply the Ministry of Defence and is regarded as an Austerity type loco’. It was a delightful experience with beautiful scenery.

I know I said two venues, but if you are in the Bristol area then a visit to the Oakham Treasures is an absolute must. So many ‘Memory Lanes’ to wander down and get lost in, so much to see, it is an amazing collection and is well worth a day out - the food is good and reasonably priced too!

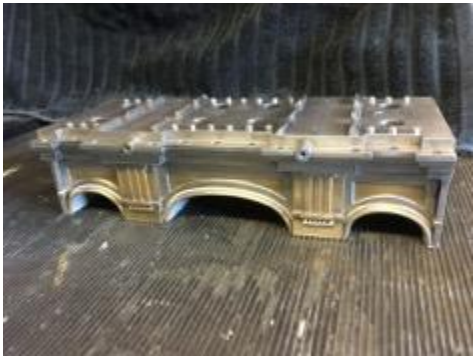
In the early stages of this project (in the mid-1980's) I had only a workbench and pillar drill in a corner of my garage. Despite these limitations, I decided to begin work on fabricating the entablature for the miniature pumping engine. This is a major structural component that carries the trunnions for the beam and sits upon four rather grand Doric columns. The prototype entablature, constructed of massive iron castings, has three arches with panelled infills and decorative architectural features (photo 1, left).

For the model I was unsure quite how to approach this, but I chose to fabricate the item due to the fine detail, plus I had managed to acquire some useful off-cuts of brass plate and bar. I started by making a 'frame' on which I could build up the decorative features, comprising two 1/8" thick plates separated by spacer blocks. I marked out, chain-drilled and filed the arches to shape on the two plates; and faced the spacer blocks to length on the pillar drill using a cross-vice (as I didn't have access to a lathe or milling machine). The side plates were then fixed to the spacers using 6BA countersunk screws (photo 2, right). My busy life then took over and, like the beam assembly described in my previous instalment, the frame was left untouched for about a quarter of a century before the project was re-energised and work recommenced.

Some head-scratching was needed, but I eventually came up with a scheme to complete the entablature. Time and technology had moved on since my original conceptual ideas for building this component, so I was able to take advantage of laser cut parts to build up most of the top section as a series of laminates (Photo 3, left). I designed these laminates using an old version of AutoCAD I had been given (my skills with this programme are rather

limited as I am self-taught), but I was eventually able to send DXF files to the laser cutter who imported them directly to create the cutting program. The exception was the classical 'cyma recta' moulding layer (this is an inverted version of the more common 'ogee' moulding shape) which, due to concave inside corners, could not be made as a laser cut part.

Most of the other parts were fabricated from brass and soldered to the original frame, although some were made from mild steel and glued in place with high strength epoxy resin. The small half-pyramids that form one of the decorative features were an interesting challenge. In the end I filed the end of a piece of 1/8" thick brass to form the six half-pyramid shapes and cut through the bar leaving the pyramids still attached. I then soldered this to the block and carefully milled the excess material away, leaving the pyramids still firmly soldered in place (Photo 4, above). The undersides of the arches were constructed using individual panels cut from thin mild steel sheet (salvaged from a scrap DVD player) and glued into the recesses in the arch mouldings. The top laminates were glued and screwed together with high strength epoxy resin, although the 'moulding' layer with its inside corners needed to be built up from multiple pieces of profiled steel that had been mitred. The profile was first milled on strips of mild steel using a large centre-drill ground to the correct profile by hand on the bench grinder. These strips were then sawn into sections and mitred on the milling machine. In total 26 pieces were used to make up this layer of the entablature. The completed entablature is shown in photos 5 and 6, below.



The four columns that support the entablature were tackled next. Each comprises of a base, a capital and a column having 24 flutes (Photo 7, left). The columns are parallel at the bottom with a tapered top section. I created a drawing using my CAD system and set about turning and milling these components. This proved relatively straightforward but was quite a time-consuming process. The column 'blanks' were turned first from 1¼" diameter free cutting mild steel, with the taper created using the compound slide. The bases and capitals were then turned from square mild steel bar in a self-centering four-jaw chuck. I used a solid carbide bull-nosed cutter to mill all the flutes, taking 3 cuts to produce each flute. Bearing in mind

there are 24 parallel and 24 tapered flutes on each column, that equates to a total of 576 passes of the cutter, plus a few for setting up (Photo 8, right). My milling machine doesn't have a power feed, so my biceps were beginning to feel a little lop-sided by the end of the fluting process! The solid carbide cutter remained sharp throughout, so justified my investment. I used a rotary table stood on its end to divide for the 24 flutes, with my lathe tailstock pressed into service as support for the other end. To mill the flutes on the tapered section, I used trigonometry to calculate how much packing was required, raised the tailstock by the appropriate amount and shimmed one edge of the rotary table's clamping face. Photo 9, left, shows the final assembly of the entablature and columns. To be continued…

Showman's Trolley Tom Rackham.

Last year, during a fantastic holiday at the Great Dorset Steam Fair, where many pints were enjoyed under the light of the showman's line up, which included the four Super Lions, Jaie, Jack and myself enjoyed five fantastic days. However, halfway through, the Dorset hills became far too big of a challenge for the pushchair. Luckily, in the usual British way and with the help of a ratchet strap, we battled on.

At Henham steam rally, not wanting to destroy the pushchair again, we opted for the green mesh garden trolley, lined with a pillow and blankets and Jack was very happy being towed round the show.

However, it needed to be slightly modified to make it fit in the steam scene; a couple of weekends work, or so I thought. Once back home I started to make wooden slatted sides, as I thought it could be turned into a traction wagon and, once Jack was finished with it, it could be doubled up to be my driving trolley for the 3" Marshall traction engine I am currently building.

The wooden sides were made, but the mesh base of the trolley just didn't look right, so a wooden base was constructed. The existing axles and wheels were unbolted from the garden trolley and fitted to the wooden base and painted ruby red, which was the colour I picked for the Marshall. The trolley was really taking shape.

Taking the trolley for a test drive with Jack around the garden, I wasn't happy about how top heavy it was, and with the rough grounds of the rally field it could potentially tip. Team this with the freshly painted woodwork, the axles and wheels just weren't good enough. Wheels sourced and a new axle constructed on a turntable and the trolley was much more stable. Another trial around the garden and Jack was very happy.

Considering the Great British weather Jaie decided a cover was needed. Construction of a showman's style canopy was started. Mum and Dad found four lengths of barley twist at a show which fitted the canopy style. However, there was not enough for the

diagonals. After a bit of thought a living van style back was fitted; this also gave the trolley a significant back rest for Jack. Of course, it wouldn't be complete without some lights so an LED tape light was fitted.

In my head this was going to be a simple task of converting the trolley over a couple of weekends. However, like most projects, it became a few months' work – and the only original part of the trolley left is the handle!

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Carriage Making Vic Churchill

I built two 32mm gauge garden railway carriages, fabricated from millimeter ply. The kits were purchased from Line Side Hut and were of laser cut plywood. There was a lot to do on the plywood to get the finish that I wanted, as the laser had left burn marks which I wanted to eliminate.

Each carriage side is made up by layering three plywood sides, built in three widths of plywood to get the 3D effect on the carriage itself. Each part had to be masked and spray painted in stages.

The window frames were extremely well made/cut, but the glass itself had to be cut for each window to make it look reasonable.

To enable the roof to be taken off, another former frame had to be made and fitted so it would keep its curved shape while it was removed.

The castings for the motion work (photo, left) on the carriage were in white metal, but they needed a lot of tidying up. I think I spent over a day on each carriage just tidying the metal work up.

The original buffer beams had to be scrapped and I made new ones which were slightly deeper, the original ones weren't deep enough so the buffers didn't line up with the loco'.

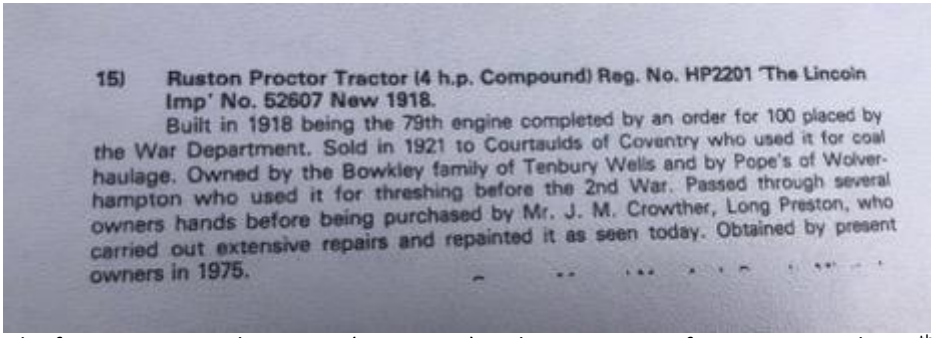
*****

Lincoln Imp Richard Walton

I have wanted a full-sized traction engine since I was about 14, and we have been seriously looking for one, and at other possibilities, for the past 2 years. We feel very comfortable with what we have found because it is a very usable, roadable tractor, which steers ever so lightly and is very manoeuvrable, as opposed to a large agricultural engine. We've just bought a full-sized Ruston-Proctor (later Ruston Hornsby) SCD Tractor.

It is the 79th engine out of 100 built for the War Dept. for the First World War. They were slightly different to standard tractors because they had larger front wheels, wider in diameter and width, and the rear wheels were slightly stronger with double 'T' ring and strakes – they had to cope with the mud. The record shows it was completed in December 1918, but it wasn't registered until 1921. We believe that in 1918/19 our engine was completed and stored with other ordered engines due to the war ending. After 1921 the First World War clearing operation was done by civilian contractors, consisting of Belgians and French, under the British Army/Royal Engineers using the earlier Ruston tractors, until 1926 when local communities took over. Only six of the

100 army engines built by Ruston's survived into preservation, and ours is one of them. Its first registered keeper was Courtaulds of Coventry in 1921.



15) **Ruston Proctor Tractor (4 h.p. Compound) Reg. No. HP2201 'The Lincoln Imp' No. 52607 New 1918.**
Built in 1918 being the 79th engine completed by an order for 100 placed by the War Department. Sold in 1921 to Courtaulds of Coventry who used it for coal haulage. Owned by the Bowkley family of Tenbury Wells and by Pope's of Wolverhampton who used it for threshing before the 2nd War. Passed through several owners hands before being purchased by Mr. J. M. Crowther, Long Preston, who carried out extensive repairs and repainted it as seen today. Obtained by present owners in 1975.

The first owner was the Crown (War Dept.) and we are now, after 105 years, the 14th owners. Registered as HP2201, engine no: 52607 it is famously known as "The Lincoln Imp" named after the legend of the Imp in Lincoln Cathedral. (Editor: you can read the legend of the Imp at visitlincoln.com) The Ruston Proctor factory was not far from the Cathedral at the bottom of the hill.

Our engine is a nominal 4 horsepower, twin cylinder engine; there is a high pressure and a low-pressure piston on it, which gives it more efficiency, effectively using the steam twice. It steams very freely and comes up to operating pressure within an hour and a half.

It had its 10-year inspection 18 months ago, so the boiler is fit for purpose for another 8½ years. We have to have a hot and cold test every year, with the boiler inspected in a 10-year test examining the structure of the boiler once all the lagging has been removed. The firebox was replaced in the 1990's and that is regularly tested with ultrasound equipment to gauge the thickness and wear.

It is registered as an historical vehicle and I have a photocopy of the original 1921 tax disc that I display on the tender.

H.D.M.E.S Events Diary - Sept. - Dec. 2023

September

Sunday 3rd	Steam up.
Thursday 7th	Club visit to the Transport Museum £5/head 18:00hrs start.
IMES have been invited to join us.	
Saturday 16th	Henham – Club presence in the model tent.
Sunday 17th	Henham – Club presence in the model tent.
Thursday 21st	Club night – Basics of Flight – Chris Nobbs.

October

Sunday 1st	Steam up.
Thursday 5th	Club night.
Sunday 15th	Steam up.
Thursday 19th	Stationary engines.
Thursday 26th	Lowmex set up from 09:00 – 17:00hrs.
Friday 27th	Lowmex set up from 09:00 – 20:00hrs.
Saturday 28th	Lowmex set up 07:00-10:00 - Public opening 10:00 - 17:00hrs
Sunday 29th	Lowmex public opening 10:00 -16:00hrs
Dismantling	Sunday 29th 16:00 – 20:00hrs & Monday 30th 09:00 onwards.

November

Thursday 2nd	Club night.
Sunday 5th	Steam up.
Thursday 16th	Auction night.
Sunday 19th	Steam up.

December

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

Check the website – hdmes.co.uk – for updates and changes.

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