



NEWSLETTER OF THE COLCHESTER SOCIETY OF MODEL & EXPERIMENTAL ENGINEERS LTD

No 59

Autumn 2021

**Activities since Autumn LINK No 58**

As lock down came to an end and the government restrictions on activities were removed at the end of June, members started to make more use of the club and numbers attending on Wednesdays have increased and it almost feels like old times. Fortunately the weather has been kind to us and there has not been the need to use the clubhouse so social distancing has been easier to uphold in the open air.

It might be because people have spent more time exploring our website by being stuck at home but suffice to say that we have gained 10 new members during this year which brings the Clubs membership up to 111. We welcome the following to the club:

Mr David Bray	Mr Simon Bullimore	Mr Peter Cracknell
Mr Steve Crompton	Mr Clive Joseph	Ms Paula Nevard
Mr Paul Purser	Mr Richard Roberts	Mr Andrew Thurgood
Mr Simon Webb		

But it is with regret that we report two members have passed away this year, Graham Austin in February and Bev Corkett in April.

The first official activity this year was the 75<sup>th</sup> Anniversary celebration party held on Saturday 18 September. The weather was perfect and 42 members together with their wives/partners and guests had an enjoyable day. 9 locos ran on the raised track at various times throughout the day with 3 on the ground track and the passenger rides on both tracks were fully appreciated by all. Outside the clubhouse, on the new paved area, Ian Pryke fired up and ran his steam powered stationary engine and for once we were able to see Geoff Ewers beam engine operating on air amongst the small display of models in the club house. Thanks go to Suzanna Geira and her band of helpers in the kitchen who provided the constant supply of refreshments in the form of teas/coffee and cakes. The fish & chip van again proved successful and provided a steady supply of freshly cooked meals with minimum waiting times.

Simon Webb arrived in his Stanley steam powered vintage car urgently requiring the water tank to be topped up.



**Sep 24 Winter talk** - Forncett steam museum by Rowan Francis.

This 1<sup>st</sup> talk of the season was well attended by 29 members. Rowan, an anesthetist by profession, made a hobby out of collecting old stationary steam engines, both large and small, and formed the start of the museum within his back garden in 1969. Rowan explained the history behind the engines and provided many photos showing the restoration of the machines to full working order. The museum became a charitable trust in 2018.

The 2<sup>nd</sup> planned event will be the Night run and fireworks on the 6<sup>th</sup> November which will be greatly looked forward to if previous years are anything to go by.

**Don Black**

### **Children's Parties 2022**

Even in these uncertain times we have 6 parties booked for the 2022 season. We are planning to run two parties on each of the 3 dates being offered through the year. The morning party starting at 10:00 and finishing at 12:00 giving us time to prepare for the afternoon party which starts at 14:00 and finishes at 16:00. There will be one loco on the raised track and two locos on the ground tracks. The locos, apart from Peter Bohns Beast, will be changed out for the second session in order to relieve the drivers. As usual we will need a supply of volunteers to step forward and assist in running these days. If you are unable to commit to a full day then either a morning or afternoon would be most welcome.

Dates of the parties will be advised nearer the time.

**Graham Willmott**

### **CLAUD HAMILTON LOCOMOTIVE Part 2**

Having completed the cylinders and valve gear in part 1, Geoff now goes on to finish the loco...

One of the problems with machined from solid crank shafts is the fitting of the eccentrics and getting the valve timing right. The usual method is to make split eccentrics across the centre and then hold the two halves together with two cap head screws recessed into the eccentric. I have had problems with this method in the past and redesigned the ones for Claud. I decided to make them as shown in my sketch (below) with a tapped thread passing straight through across the eccentric. This has been very successful so far. The grub screws locking the eccentrics no longer force open the eccentrics when tightened up to lock the eccentrics on the crankshaft.

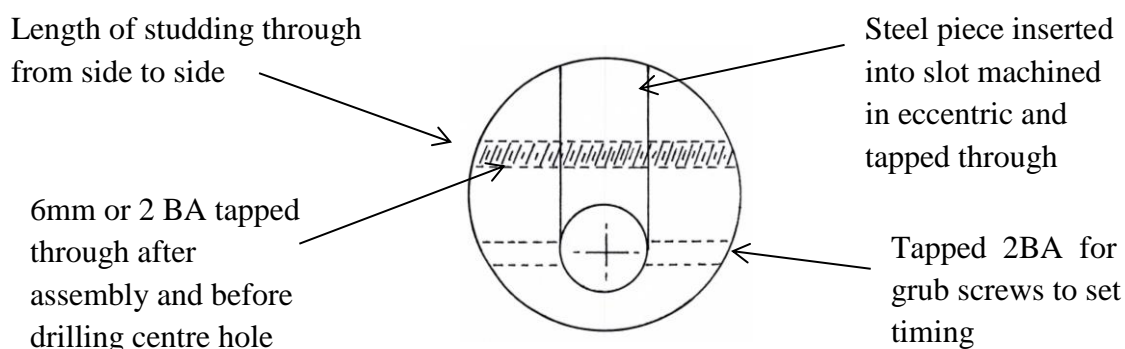
With the locomotive frames and cylinders completed and test run on compressed air, I then made the running boards and the reverser. Attention then turned to the tender. The castings were ordered i.e. horns, dummy springs, axle boxes and tender wheels. Building the tender went without any problems, with minor dimensional changes to allow for the different scale. The tender body was now made with my now standard sump/filter box between the frames. The other mod made on the tender was the hand pump, which was made with the pump handle pivoted on an "A" frame, which overcomes any side loads on the ram, and then mounted sideways in the tender. The remainder of the tender was made to the full size Great Eastern drawing, but with reference to Martin Evans version. The tender was completed with all the lockers etc. The pipework was also done, taking all the water from the filtered sump for the locomotive.

Work then returned to the boiler. The first to be made was the smoke box, which was rolled up from 1/8" steel plate on my homemade rollers. These do not have gears to turn the rollers but have spanner hexagons on the ends of the rollers so you can turn them in opposite directions if you have something a wee bit on the awkward side. The front and rear rings were turned and then the smoke box was made complete with the Great Eastern stainless steel ring on the front. The boiler gave me no problems and was ready for testing in three months. The super heater is to my own design (see Spring 2019 LINK issue No. 54) and goes back almost to the fire box door. Work continued and everything was ready for the first steam test by September 2006.

There followed test runs in steam, some of these being on an oiled board at home, tuning up the petticoat and blast nozzle, and by April 2007 was considered ready to paint and line out. At this point disaster struck! The trailing driving wheel set rolled off the bench and smashed one of the wheels. This disaster was caused by the balance weights being in the wrong place when I put the wheels down on the bench and when I made the bench vibrate they rolled over the side. I went to Blackgates for a replacement and we did a deal. Blackgates gave me a new wheel casting in exchange for the wooden patterns that I still had. I have been forever grateful for this generous gesture. I am **still** very aware of where the balance weights are when I put wheels down on the bench.

Regular running now occurred and minor tuning up continued for a while. Eventually all seemed good. The loco was painted okay and lined out with a Bob Moore lining out pen made from a hypodermic needle. I still have all the templates used to do the lining out should it ever need to be done again. The locomotive has now been run 118 times and has done 512 miles with no major problems. If any member would like to see my loco or have a drive, they only have to ask and I will show them all the changes I have made.

#### Method of making eccentrics for one piece solid crankshaft



**Geoff King**

## The Wednesday Wrinklies Report

The task of changing out the decaying timber track edge timbers around the raised track for pressed concrete path edging sections has now been completed with 295 installed. Members were still able to run locos during the work whilst observing safety measures and sounding their whistle when approaching the work area.



An assortment of second hand paving slabs had been acquired during the last year and has enabled the lining of the raised track cutting to be changed from timber boards to slabs



The grassed area in front of the workshop has also been paved over to save the awkward area of grass cutting and improve the seating area.



A further change to the grounds, in order to reduce the maintenance involved in weeding, has been to remove the raised garden area in front of the Clubhouse and leave the Fuchsia as a feature whilst the grass area is now easier to keep tidy.



The two steel water tanks by the clubhouse, which had reached the end of their life and corroded, have been replaced with reinforced plastic tanks. A new pressure pump was also fitted while this work was going on.



Painting of the raised track steelwork and access bridge has commenced with several volunteers helping complete this task in as short a time as possible to minimise the restriction to using the track. The colour is a lighter green (Holly) than before but at least it is obvious where re-painting is still required!



And finally the ground level steaming bay has now got a rain cover to protect members whilst carrying out steam tests. This is formed by recycling a hurricane proof washing line, kindly donated to the club, with a 4m square tarpaulin fixed over the top. The cover is removed and stored in Peter's crossing shed and easily fitted when required.



**Don Black**

### **Experience at the Locomotive Drawing Office, Swindon..** **Part 2**

We pick up the story from where Paul left off concerning his activities on the design of the Class 14 loco .....

About this time the Yorkshire Taurus made its appearance. This was an 0-8-0 locomotive utilising two Rolls-Royce 'C' range engines. The principal feature was its Fell transmission. Lt. Col. Fell was a remarkable man who had demonstrated his ability to progress realistic ideas for diesel locomotive transmission which avoided electrical machines and couldn't really be called hydraulic either. The basis of his system was to gear two (or more) engines in such a manner that the loco would start from rest on only one engine at a gear ratio that gave the maximum tractive effort, as the vehicle speed rose to a chosen level, the second engine would cut in and at an elevated gear ratio. In the case of the Taurus this enabled a maximum speed of 35 mph to be obtained -- that would be with both engines at their maximum speed. Although not really a hydraulic transmission it did use a torque convertor to start from rest and as far as I can recall the second engine drove via a fluid coupling. Some years before Lt. Col. Fell had produced a 4-8-4 mainline loco of 2000 hp using this system. It was generally known as the 'Fell' or simply the diesel - mechanical. It worked up the Midland mainline for an extended period and its crews seem to have regarded it well. It had four Paxman RPH engines connected to what is called a 'four star' differential gearbox. As with the Taurus it started from rest on only one engine; as speed rose the others were cut in and it thereby generated a reasonable Tractive Effort Curve (TE curve). Top speed was around 80 mph. Given its novelty, it did spend time in Derby works but it did much useful work and I felt that it wasn't given a fair trial. I was fortunate to take a trip on the Taurus between Swindon and Bath including a bit of shunting. It performed very well though the top speed of 35 mph was a bit below what we were after. The noise at maximum speed was quite high. (Note that whilst the Class 14 maximum speed was to be 40 mph -- this was to be achieved at the rated engine speed whereas, in practice, the governor runout would give one an extra 10 or 12 per cent if the load was light). The frames were some 3" thick with manganese strips welded directly to them. With the Class 14 now well under way it was difficult to recommend buying a batch of Taurus locos. In point of fact, BR's experience of the Rolls-Royce 'C' range engine in DMUs out of St. Pancras was, I heard, unsatisfactory.

Reverting to the Class 14 frame, it only remains to discuss the buffer beams. Since it was already apparent that the locomotive would not be underweight it seemed sensible to bring the buffer beams down to just above rail level. Obviously, with a shunter working in yards of varying track quality, the occasional derailment would happen. If it could be made easier to re-rail it -- so much the better. An annoying issue here was that the stylists wanted to make the bottom edge of the buffer beams a shallow 'Vee' shape; this to be emphasised by highlighting the edge in a contrasting colour. (The slope would have run from the centre point outwards to strike a tangent with the curved cutaways that matched the requirements of the L1 loading gauge).

The silliness of this plan was, of course, the hazard involved in putting a jack beneath a sloping surface. Nevertheless, I found it irritating that few people were willing to support the view just mentioned simply because it meant opposing an instruction that had emanated from the Board. In any event I drew the buffer beams out with a plain, parallel, bottom edge and they stayed that way. The 5" thickness and the 1 1/2" of the two buffer beams simply resulted from the calculated weight distribution. The 'Tee' slots were put in to accommodate the B.R. three-piece standard snow plough. Likewise the bevelled side edges. The two lugs on either side of the draw hook took the centre part of the plough -- a 'Vee' shaped device which matched the slope (in plan view) of the side pieces. At the top edge of the frame I figured that the engine could readily be mounted on suitable angle flush with the top edge of the frame. There had been thoughts of using a sub-frame but to what advantage? Having positioned the engine, transmission and final drive I started on other aspects residing above the frame such as placing the fuel priming pump behind the buffer beam on the nearside. By now the job was beginning to expand and other sections were getting involved. My colleague did the brake cage and compressor (in the rear bonnet) and another did the spring hanger brackets but I recall doing the scheme for the positioning the exhausters with the heat exchanger underneath. This probably included the cooling unit. The next section down the office handled the superstructure-- i.e. the two bonnets, the cab and fuel tanks. The section leader being a Mr Gimlet, I regret I can't remember his first name -- he was a good chap -- nothing was too much trouble (I believe I only provided the outlines for the cab and bonnets). With reference to this last item, the job was being handled by one of Mr. Gimlet's men and I was surprised when he told me that he was going to construct it using nuts and bolts. Moreover, he was going to use relatively small bolts for the job on the grounds that a multiplicity of small bolts was stronger than a lesser number of larger ones. Whilst this was theoretically true, it was practically a piece of nonsense.

Better council prevailed eventually but it did serve to reveal a disturbing trend as to the competence of the newer drawing office staff. Another instance arose concerning the dead man's pedal. Although the requisite drawings had been completed and issued to the workshop it seems that the quality of the said drawings fell short of the usual standard. (By and large the factory retained a high opinion of the locomotive drawing office and so this was something of a surprise). On this occasion the foreman of the shop involved approached the section leader with the comment: 'How am I to make this?' The drawing simply doesn't give enough information for us to know what you require. In short the individual responsible seriously lacked design experience but he excelled at his college work. The question is: 'How could an apprentice spend the requisite time in the works without learning the basic processes of engineering?' Hitherto, Swindon had gained a worldwide reputation for the knowledge and ability of its home-grown engineers -- certainly some excelled academically but not to the cost of their basic engineering knowledge. It seems that times had changed. Yes, there were people in the office that possessed a wealth of good practical knowledge but this did not seem to apply to everyone who had been through the works more recently. The management did much to encourage further academic education which was fine but there were downsides to this: because of the gentle pace of activity in the office those studying found it convenient to do the homework within the working day. Moreover, one senior staff member actually conducted tutorials during the day. (He lectured at the college in the evenings). Naturally, this was a considerable benefit to the students concerned but it was hardly fair on individuals in other companies who had to do their homework in their own time and who were studying for the same exams.

A possible spin off from this situation related to the D1000 air intake. Usually the air intake would be situated to one side -- sometimes at the cant rail -- with the exhaust coming out at or close to the centreline of the locomotive. This arrangement would ensure that the air intake would not normally be polluted by the engine's own exhaust. On the D1000 the two were placed one above the other. The ingestion of exhaust gas by the engine would be inevitable. Consider what would happen in a tunnel. Needless to say the D1000s were frequently criticised for being down on power when compared with Class 47s and 50s. People who studied thermodynamics at the college would have been taught that the successful combustion of the fuel depended on a decent ratio between the fuel and the oxygen. In practical terms this was known as the air/fuel ratio. Normally, diesel engines tended to be 'excess air' engines -- the aim being to operate on the safe side of the stoichiometric figure, (Viz: 14.5:1) This being the chemically correct figure for combustion but with nothing to spare. In the real world, diesel engines were arranged to run with some proportion of extra air. This was necessary to obtain complete combustion and minimise the smoke. With the exhaust / inlet juxtaposition used on the D1000 class there would be several disadvantages. One would be the heating of the ingoing air, the second the progressive clogging of the air filter by the soot -- a consequence of both these conditions would be to reduce the mass air flow into the engine. In service this would manifest itself as a reduction in available power. In the longer term it may also affect the service life of the turbocharger. At the time it seemed that it might be a good idea to simply blank off the intake louvres that were on the exhaust side (since the intake duct ran across the width of the locomotive to a further set of louvres on the other side). Unfortunately, whilst this would have improved matters, the exhaust coming from the front engine of the pair could still access the intake of the rearmost engine -- albeit to a lesser extent. How much power would be lost is a matter for conjecture but the presence of the soot is all too evident -- photographic evidence shows the uppermost louvres are invariably coated with soot.

The real difficulty with this type of problem was that even if the engine was suspected of being down on power, and was hence removed and placed on a test bed, it would then of course, be seen to deliver the rated power. The whole problem was the matter of its installation in the locomotive. It proved impossible to persuade anyone in the office that this issue needed to be addressed. The fact was that few people in the office had any practical experience of running internal combustion engines. I once had occasion to do some repair work on a generator set owned by a Staffordshire farmer. Having completed the job I started the engine and when he had declared his satisfaction he shut the engine down by pushing the exhaust pipe with his foot until it faced the air intake. The engine stopped immediately.....

Perhaps a few words on the spirit of the drawing office would not come amiss. A rather pleasant routine was the attitude to birthdays. When it was your birthday you were expected to buy cream cakes for everyone on your section. Sometimes our section would see fit to include the tracers as well. Christmas was another distinctive occasion; the drawing boards in the carriage and wagon part of the office would all be moved aside and a fully-fledged brass band would be set up in the centre. Occupants of all the drawing offices would then position themselves around the periphery and a carol concert would take place. This would be done on Christmas Eve; the proceedings ending with Auld Lang Syne.

Although I must have been regarded as something of an intruder, coming from outside of the railway industry, and with many of the people in that office having family connections with the works that went back many years, nonetheless I was accorded a warm welcome, not only in the office, but to a large degree in the works as well. I did have some friction with the section leader on the engine group but then to an extent my presence was hardly something he could have welcomed. As far as the works was concerned I could hardly have experienced a more cordial disposition. I found the 'A' (main assembly) shop generally most helpful, the foundry and the pattern shop were a real support -- especially if you wanted to do something slightly different.



The pattern shop foreman was a fellow Welshman -- I really regret that I can't remember his name -- he always referred to Wales as 'Gwent'.

Another slightly humorous aside might be slipped in here. Sometimes one had occasion to visit the running shed.(i.e. Swindon Loco Depot). Naturally there was a store here which held material for the routine maintenance of the locomotives. This store featured two doors. I had been in there looking for some parts and when I'd found what I needed I made for the door; "Ah, no Sir you cannot go out that way, you must use the other door -- which was wide open. We have strict instructions from Paddington that the door to the stores must be kept locked at all times. Naturally, I said:" But this one is wide open anyway". "Yes, I know Sir, but if anyone phones from Paddington to check if the door to the stores is locked we can honestly tell him that it is. We are very strict on security here "he said.

A further instance of the goodwill and helpfulness of the Swindon workforce came about in the L2 shop. I had been enquiring about the manufacture of a swing for the children (there was already an established design which this shop would happily make up for you) and I was fool enough to raise the question of how to take it out of the works -- after all, there was supposed to be a security system in place -- but his response was instant and managed to imply that one didn't ask that sort of thing. He simply said: "Well it will go out on the lorry Saturday morning -- just give me your address and that will be that."

Whilst on the subject of the day to day happenings of the place, I do recall one occasion which provided some entertainment for the others -- if not for me! Various forms of damper were being assessed to deal with the Warship ride problem. These consisted of a resilient link between the bogie and the locomotive body; a pretty hefty chunk of gear consisting of many steel rings alternating with rubber discs; something like drawbar springs. For some reason Les Slade wanted one of these up in the office for closer examination and so to save time myself and Eric Whiteley (the chap who did the brake cage on the Class 14) volunteered to fetch one from the 'A' shop. The whole thing was held together with a large nut -- probably 1" Whit -- and to facilitate dismantling it in the office we thought it a good idea to slacken this off until the last thread or so. We came up to the office via the fire escape stairs (these led directly into the works and were the quickest route but were slightly harder to negotiate with the damper) each of us had hold of one end. Alas, just as we made the last turn of the stairway the nut came undone --- steel discs and washers all over the place -- it took us a good half hour to find them all. Some went round in circles at different levels of the stairway and some made it to the ground floor.

As in all drawing offices I suppose the impression to a visitor was one of almost monastic calm: men sitting at their boards wrestling with deep issues that taxed their mental powers to the limit, whereas in fact beneath the surface there was probably some form of ribaldry being enacted. A certain man on the section was curiously unwilling to take responsibility for anything that he worked on. He was also distrusting of his colleagues -- a bad trait for sure. When he went away for his summer holiday he chose to place a hair across each drawer of his desk --- presumably so that he would know if someone had been into his drawers. Well, of course, someone noticed the hairs and then made sure that everyone else was aware of it. Someone then drew a large cartoon depicting the chap on the beach at Torquay, with his girlfriend, and with the desk alongside them and a massive chain going around the whole thing to provide security. A caption indicated the girl friend saying to him: ' It was a good idea to bring the desk with you Ron'. My friend and namesake was the foreman of the shop that cut the frames -- a great guy who was later to send me up a complete Maybach head to the Ford Motor Co.at Dunton. (The Research and Development Centre). We were interested in the Maybach combustion system at the time.

Of course, there were many different shops in Swindon works -- there was no way that I would have business in them all! I suppose the only downside regarding the works was the trade union activity. Swindon as a town seemed to have a significant Communist movement. As you left

the works at the end of the working day a man would frequently be standing just outside the B.R. boundary (i.e. just on public land) and he would have a massive pile of political pamphlets which he would press into the hands of those leaving the works. They generally had a provocative political message: one read: "Keep the Jackboot out of Swindon Works". I could never figure what this meant, was it a reference to the use of German engines and transmission's? Either way, these people also seemed to have influence within the works -- this sort of thing was beyond my normal function but one heard stories. For instance: a fitter would need a requisition from the foreman to obtain the bits and pieces needed to assemble something. Naturally, he would write out one such requisition for the whole lot. But then, enter the trade union. They were trying to persuade the management that a separate requisition should be used for each part or at least for each sub-assembly. This was plain silly, but the union's motive was to enhance the pay of the store keepers who were paid on the basis of how many requisitions they handled per week. I don't think the management gave in to this particular nonsense but I'm sure there were other things. Unfortunately, it was later established that Crewe could build a D1000 class for around £10,000 less than Swindon. For this reason the Board transferred a number of the class to Crewe. Unfortunately, the Board were probably right and one wonders how much other restrictive practices influenced the final price.

Now that the Class 14 project had grown to involve most of the office, it was time for me to wonder about what may come next. Furthermore, Mr. Scholes had retired and his place was now taken by Mr. Sly --- in my view a well-deserved promotion. Of course, this meant that the Chief Draughtsman's job was now vacant. Perhaps surprisingly, this post was not filled by an internal promotion but rather by a gentleman moved up from Brighton Drawing Office. Namely one Jimmy Jones. A delightful character who certainly had a few stories to tell -- especially where Oliver Bullied was concerned! As I have indicated there was a little bit of a tendency to be 'holier than thou' in the Swindon Drawing Office; after all, there were one or two lay preachers amongst the draughtsmen. Coming from elsewhere Jimmy Jones was not really aware of this and following a meeting discussing rubber suspension systems he detailed certain people to contact the suppliers for information and then as an afterthought said, "Mind you don't get mixed up with the french letter people by mistake!" I'm afraid some of the older men took this rather badly..... Moving on, there was still no news as to a fresh project. In the light of this I decided to put out a few feelers within the railway itself. One such post that I applied for was at Marylebone -- that is at B.R. Headquarters. This job would have entailed preparing schemes for possible new locomotives that the Board might wish to consider. It sounded interesting and I was pleased to be granted an interview. This went well and I was starting to think that I was seriously in the running. The chap went on to explain quite a lot about what it would be like working at the H.Q. He pointed out that timekeeping would be reasonably flexible (especially if one travelled there from some distance away). In fact all seemed quite encouraging until the final question: "Mr. Davies, do you have any connection with a member of the B.R.B.?" At the time I was taken aback that such a blunt manifestation of nepotism should be put to me and I, perhaps foolishly, indicated that I had not. With the wisdom of the passing years it might have been an idea to indicate yes but decline to say which member it was. This would have put the fellow on the spot and one could hedge endlessly about the chap's identity on the grounds that he wished it to remain a private matter. Naturally, I didn't get the job but on reflection, would one really want it -- if this was the basis on which one was chosen?

Meanwhile the Class 14 was proceeding steadily and major components were beginning to appear in the works. The first few Paxman engines were lined up ready for installation and also the Voith transmissions. I can recall turning the input flange round by hand and being surprised how easy it was to do so. Meanwhile the frames had been flame cut and assembly had begun. Roughly concurrent with our work on the Class 14 another project was underway elsewhere which was strongly supported by the board. This was the Clayton Class 17. For reasons, which I was unable to establish, the Paxman engines in this locomotive gained a reputation of being particularly troublesome. This situation had little bearing on the Class 14 but in view of the

promising behaviour of the Paxman Ventura engines in the Warship D830 (Majestic) this seemed surprising. In the longer term the development of this engine to the type called a Valenta which was used with great success in the HST's, one couldn't help but wonder what was wrong in the Class 17. The engines of this loco were, of course, a different model -- a horizontal six -- but given Paxman's experience going back to pre-war, one would not have expected trouble. At one point it was intended that the D1000 Class should get Paxman engines but political lobbying by the M.P. for Coventry (wherein lay the Bristol-Siddeley factory) put paid to this plan. (Why didn't the M.P. for Colchester get his oar in?), The only difficulty with D 830 was that it was stationed at Plymouth (Laira) and Paxman's were in Colchester -- since it was a one off it would have seemed more rational to have kept it at Old Oak Common to give Paxman's easy access.

Once again I was (as the politicians say) having to consider my position. After all I was still relatively new to the place and this would hardly bode well if a crunch was coming. There was still no sign of a new project. As it happened, about this time, the Ford motor Co. had been conducting job interviews at the Goddard Hotel (?) and it seemed sensible to go along. After all, I had motor industry experience from my previous employment. The upshot of this was a job offer at a salary that was, to say the least, very impressive! There wasn't much point in thinking about it really but when I mentioned it to Arthur (Sly) he did seek to persuade me to stay and offered me a job on Jack Preedy's section. This group spent much time travelling on the locomotives and were, I suppose, akin to Churchward's inspectors. They provided an important and very practical feed back to the drawing office. Much as I would have truly loved this job the salary would have stayed the same. After much soul searching I went for the money; after all, there was the family to think of. The passing of many years confirmed the wisdom of this decision. In due course Swindon works was pretty well annihilated and most of the drawing office staff moved to Derby. Possibly Jack's section would have stayed at Swindon -- at least as long as the hydraulics were still in service. I made a couple of return visits. As ever, people were as friendly as hitherto and Arthur arranged for me to go down to the running shed to see a finished Class 14. Very fine it looked too -- in its two tone green. Next time I went back, the drawing office had gone and Railtrack were ensconced within. I chatted up a security man who was kind enough to let me wander about the place but it was all very sad. At least the building was in good condition but I remember him telling me that the security dogs (Alsations) wouldn't climb up the last few stairs to the old drawing office. They just froze and stood riveted to the floor. The guard went up that bit alone. I was told by a former draughtsman that a certain person had committed suicide by jumping over the balustrade into the stairwell from the topmost landing. This being the stairs described at the beginning of this article. Either way, the quantity of history vested in the place would make it a prime candidate for some kind of supernatural activity.

**Paul Davies**

### **Great Bentley History**

I have inherited a small book written by a man who was well known in Great Bentley when I was a young man. Len Newman was a traction engine owner, who had his engine yard on Bentley Green, and was the employer of members of my family for many years. I have found it of interest and we could all enjoy some of the history.

In 1579 Queen Elisabeth 1<sup>st</sup> passed through Great Bentley on her way to a five day visit to St Osyth, passing through Horsley Cross and Great Bentley on horseback from Harwich. The railway was laid in 1865 and was a single track as far as Weeley which had the local name of Wheeley Whoop, and opened to traffic in 1866, then on to Kirby Cross and finally to Walton on the Naze in 1867. Clacton had only just begun to be built and was connected to the railway in 1882. The line was re-laid to Thorpe as a double track in 1890, and then on to Colchester in 1898. In the 1940's I can remember older people who even then referred to Wheeley by the old name, and St Osyth was sometimes called Toosy Whoop. The railway was run by the Eastern

Union, and then taken over by the Great Eastern, until the LNER came along. By now the line was a busy one, and Clacton had become the biggest town.

Also of interest was the fact that Great Bentley was a registered sea port, with coastal ships berthing to load /unload cargo for the area. It was the coming of the railway which closed the port down as the railway gave much better access to the village. The port was finally closed when a damn was built across the tidal creek behind the Hill Cottages and the Flag Hill. Even now the stream is known as Saltwater Brook to the local people.

Lastly in the centre of Great Bentley Green there have been three corn mills with the last one being a steam powered one. This one was built by Len Newman`s ancestors. Some of my family worked for the Newman`s when they had a traction engine yard on the Green. The large house in the middle of the Green overlooking the football pitch is still called the Mill House and was for many years the local maternity home, which is where I was born.

**Geoff King**

### **Chairman`s ramblings**

At long last we are back to some sort of normality and it's good to see the numbers coming on a Wednesday are back to pre-Covid times with the same applying to Friday's and Sunday's. It's also good to see the back log of maintenance work is being gradually reduced, thank you to all those who are helping out.

Bev's family have asked us to dispose of his work shop and we have ended up with about 300 lots. This will mean two auctions on the following dates 2nd & 30th October with a 10 am start and all proceeds will go to the family.

Seven members have successfully completed the first revamped driving course. Further course's will be run as necessary, so if you wish to take part, please get in contact with myself.

For some unknown reason, we have recruited more new members during the lock down's than in the past few years when we attended village fete`s

All being well I hope to organise a coach trip to the Doncaster Exhibition in the spring of 2022 and details will be posted on the notice board and our website as they become available.

Finally what a fantastic day was had by all when we held the 75th anniversary of the founding of the club on 18th September. I would like to thank all those members who helped to make the day the success that it was.

Don't forget the winter talk programme has now started with details shown below.

**Ian Pryke**

### **Secretary`s Report**

I am pleased to see that the club is now back up to full steam with the board now meeting on a regular basis and minutes published on the web site.

You will already see a number of enhancements to the web site which I have been promoting. This is an on-going process so please let me have your suggestions for further improvements in particular to encourage new members.

**Jim Hollom**

## CMSEE Winter Talks Program 2021/2022

Please note the night run will be held on Saturday the 6th Nov starting at 3.0pm followed by a Fish & Chip supper and fireworks.

Sep 24th	Forncett steam museum **** 7.30 Start ****	Rowan Francis
Oct 8th	Lynton and Barnstable Railway **** 7.30 Start ****	Charles Summers
Oct 22nd	A Brief History of my Time	John Barritt
Nov 6th	Night running and Fireworks	
Nov 19th	Holden F5 steam locomotive trust **** 7.30 Start ****	Stephen Cooper
Dec 3rd	Automated External Defibrillator Training	Suzanne Giera and Sue Bohn
Dec 17th	Christmas Party	
Jan 14th	LNG Raft	Don Black
Jan 28th	Safety is no accident. Piper alpha (Video)	Introduced by Richard Brown
Feb 11 <sup>th</sup>	Financial Presentation	Peter Bohn
Feb 25th	Auction TBA **** 7.30 Start ****	
Mar 11th	Auction TBA **** 7.30 Start ****	
Mar 25th	Refurbishing QE2	Martin Harrison
Apr 8th	Models Night	
Apr 22nd	A.G.M	

### Lock Down project – Orrery

Hello all. I hope that you are all well and have managed to dodge the dreaded Lurgy.

Suzanna has been pestering me to write up a little something on what I have been up to since Christmas so here goes.....

I have long been interested in Orreries; apparently the first one was commissioned by Charles Boyle, being the fourth Earl of Orrery, whoever he was. He commissioned the celebrated instrument maker: John Rowney to design and build one in 1704. An Orrery I hear you say? What are they then? Nothing to do with birds or their nesting homes or similar but, as I am sure some of you at least will know, they are 3 dimensional mobile models of the solar system. Well, when I started researching them and looking around for something to play with, I discovered a few antique Orreries for sale but none really hit my spot.

Then I discovered the Eagle Moss Orrery. This was a magazine based metal / brass kit that needs to be assembled over 25 monthly magazine issues. Apparently, the magazines are long out of

print: 2015 was the publication date, but there are a few unmolested examples still being offered. So, last Christmas, I sent a letter to Father Christmas to see if he could find a full, unassembled and new set complete with all the relevant magazine issues. Underneath our Christmas Tree I found a large heavy box addressed to me. It contained 25 magazines complete with all the bits and pieces to assemble a full main powered Orrery. Success!!!

Now, I spent some days perusing the magazines and assembly instructions before deciding to take the plunge and start assembly. The first few modules were slowly put together but after I assembled a few modules, I discovered a pattern to the assembly. The project then rapidly progressed to its conclusion. Ultimately, I must have spent less than a week assembling the beast. I must say that a few of the smaller pieces went scurrying across the floor but were found. Unfortunately upon completion of the construction, I decided that I was missing a planet. Maybe I had missed retrieving a scurrying piece. After identifying what I thought that I was missing, I managed to track one down and purchased it. Needless to say, as soon as I took delivery, the missing piece turned up so I now have an extra planet.

It was not only a great build project but it was also quite informative. The scale of the Orrery is clearly adjusted so that the Sun and planets are at least recognisable and ordered. After all, if the sun was represented to scale, it would probably be the size of a house with the planets the sizes of peas!

Now here is an interesting thing. How many planets are there in our solar system? I counted 9 planets although some consider that Pluto should not really be considered as being a planet, more of an ice dwarf. Well, I still consider it as being a planet and so does Eagle Moss. However, relatively recently, two other celestial bodies have been discovered in our solar system that add to our tally of planets. One is beyond Pluto and is called Eris. A small ice dwarf planet similar to Pluto.

The other is called Ceres, a small rocky planet that does not reflect much light and lies between Mars and Jupiter. Somewhat closer to home! So, if the question comes up on a quiz night as to how many planets there are in our solar system, the correct answer is now 11 but the quizmaster might not be as up-to-date as you are so beware! But maybe there are still more to find!

Here is a photograph that Suzanna took of the Orrery with the construction complete.



Keep safe and see you over a cup of tea and some biscuits soon.

**Tony Zymelka**

## Operating Procedures

A set of operating procedures covering all aspects of the Clubs activities is to be found in a hard back white folder (held in the club house) and it is the responsibility of the member to familiarise themselves with the contents and ensure they follow the guidance.

### Coal supply

The Club now holds a stock of 25 kg bags of Anthracite beans at a cost of £10.00 per bag for the benefit of members. Contact a committee member to arrange purchase.

### Steam Oil

Supplies of steam oil can be obtained from Ian Pryke at £5:00 per litre bottle.

### Editorial Comment

As you can see, apart from the Chairman's and Secretary's reports, only 3 members have contributed to this edition of LINK, for which I am most thankful, but we should not expect them to continue to provide articles for every edition. The magazine is for the benefit of all members but it needs you as members to contribute articles, short stories, interesting anecdotes, personal experiences related to club activities for it to continue. The next LINK, due out Spring 2022, awaits your contribution.

**Don Black**  
**Editor**

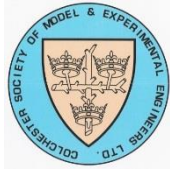
### Model engineering suppliers

The following information, which can be found on the Clubs website under "Links", has been reproduced here for the benefit of members who are unable to access the website. If you have had favourable experience of other suppliers not listed, which you feel may be of benefit to the membership, please advise Jim Hollom who will arrange to update the website listing.

<b>Boilers</b>			
Holt Boilers		Andrewkirk1973@gmail.com	07974 719295
Bell Boilers			01452 722211
Southern Boiler works	<a href="http://www.ptmachinging.co.uk">www.ptmachinging.co.uk</a>	<a href="mailto:ptmachinging.co.uk@yahoo.co.uk">ptmachinging.co.uk@yahoo.co.uk</a>	01276 505211
Western Steam Ltd	<a href="http://www.westernsteam.com">www.westernsteam.com</a>	<a href="mailto:enquires@westernsteam.com">enquires@westernsteam.com</a>	01278 788007
<b>Books</b>			
TEE publications	<a href="http://www.teepublishing.co.uk">www.teepublishing.co.uk</a>	<a href="mailto:info@teepublishing.co.uk">info@teepublishing.co.uk</a>	01926 614101
<b>Coal</b>			
Signal Fuels		<a href="mailto:signalfuels@hotmail.co.uk">signalfuels@hotmail.co.uk</a>	01773 747027
<b>General model engineering supplies, materials, castings, drawings etc</b>			
17D	<a href="http://www.17d-ltd.co.uk">www.17d-ltd.co.uk</a>	<a href="mailto:sales@17d-ltd.uk">sales@17d-ltd.uk</a>	01629 825070
Blackgates Engineering	<a href="http://www.blackgates.co.uk">www.blackgates.co.uk</a>	<a href="mailto:sales@blackgates.co.uk">sales@blackgates.co.uk</a>	01924 466000
GS Model Supplies	<a href="http://www.gssmodelengineers.com">www.gssmodelengineers.com</a>	<a href="mailto:info@gssmodelengineers.com">info@gssmodelengineers.com</a>	01278 788007
Kennions Model Engineering Supplies	<a href="http://www.kennions.co.uk">www.kennions.co.uk</a>	<a href="mailto:kennions@hotmail.com">kennions@hotmail.com</a>	01279 792859
Macc Models	<a href="http://www.maccmodels.co.uk">www.maccmodels.co.uk</a>	<a href="mailto:sales@maccmodels.co.uk">sales@maccmodels.co.uk</a>	0161 408 2938
Maidstone Engineering Supplies	<a href="http://www.maidstone-engineering.com">www.maidstone-engineering.com</a>	<a href="mailto:info@maidstone-engineering.com">info@maidstone-engineering.com</a>	01580 890066
MJ Engineering	<a href="http://www.mjeng.co.uk">www.mjeng.co.uk</a>	<a href="mailto:sales@mjeng.co.uk">sales@mjeng.co.uk</a>	01252 890777
Poly Model Engineering Ltd	<a href="http://www.pollymodelengineering.co.uk">www.pollymodelengineering.co.uk</a>	<a href="mailto:sales@pollymodelengineering.co.uk">sales@pollymodelengineering.co.uk</a>	0115 9736700
Steam fittings	<a href="http://www.steamfittings.co.uk">www.steamfittings.co.uk</a>	<a href="mailto:sales@steamfittings.co.uk">sales@steamfittings.co.uk</a>	01341 280637
Reeves Model Engineering	<a href="http://www.ajreeves.com">www.ajreeves.com</a>	Via on-line form	01827 830894

<b>Insurance brokers</b>			
Walker Midgley insurance brokers	www.walkermidgley.co.uk	enquires@walkermidgley.co.uk	0114 2502770
<b>Lubricants, steam oil</b>			
Morris lubricants	www.morrislubricants.co.uk	info@morris-lubricants.co.uk	01743 232200
<b>Metal suppliers</b>			
Clickmetal	www.clickmetal.co.uk	Via on-line form	01794 526090
College Metals	<a href="http://www.collegeengineering.co.uk">www.collegeengineering.co.uk</a>		
EKP Supplies	www.ekpsupplies.com	sales@ekpsupplies.com	01271 346441
John Keatley Metals	www.johnkeatleymetals.com	Via on-line form	0121 236 4300
Noggin Ends	www.nogginend.com"	mike@nogginend.com	01782 865428
Smiths Metals (Chelmsford)	www.smithmetal.com/smiths-chelmsford	info@smithmetal.com	0845 527 3331
<b>Laser cutting</b>			
Model engineers laser	www.modelengineerslaser.co.uk	sales@modelengineerslaser.co.uk	07927 087 172
<b>Name plates</b>			
Steamplates	www.steamplates.co.uk	info@steamplates.co.uk	07811 269186
<b>New and Second hand models and parts</b>			
CMD Engineering	www.miniature-trains.co.uk	Via on-line form	01634 888 621
Maxitrack	www.maxitrak.com	Via on-line form	01580 893030
Ride on Railways	www.rideonrailways.co.uk	esales@rideonrailways.co.uk	01708 374468
Station Road Steam	www.stationroadsteam.com	info@stationroadsteam.com	01526 328772
Steamdays	www.steamdays.co.uk	info@ steamdays.co.uk	07841 113 598
The Model Engineering Clearing House	www.modeleng.org		
<b>Paint</b>			
Live Steam Lining		pawnaxterwood@tiscali.co.uk	07971 637589
Phonenix Precision paints	www.phoenix-paints.co.uk	sales@phoenix-paints.co.uk	01268 730549
<b>Plastic suppliers</b>			
Direct plastics	www.directplastics.co.uk	sales@directplastics.co.uk	0114 2560889
<b>Silver solder</b>			
CUP alloys	www.cupalloys.co.uk	sales@cupalloys.co.uk	01623 707955
<b>Springs</b>			
Lee spring Ltd	www.leespring.co.uk	Via on-line form	0118 9781800
<b>Tool suppliers</b>			
Chronos engineering	www.chronos.ltd.uk	sales@chronos.ltd.uk	01582 471900
Engineering supplies	www.engineering-supplies.com	sales@engineering-supplies.com	01453 758285
Tracy Tools	www.tracytools.com	Via on-line form	01803 328603





**COLCHESTER SOCIETY OF MODEL & EXPERIMENTAL ENGINEERS Ltd**  
Limited by Guarantee. Incorporated in England Registered No 3052023

Registered Office:  
The Club House, 13a President Road, Colchester, Essex, CO3 9ED.  
Tel: 01206 769192

Affiliated to: Southern Federation of Model Engineering Societies.

**Note: All correspondence to Officers to be addressed via the Club House.**

**OFFICERS and OFFICIALS of CSMEE Ltd**

**Chairman of Council and Director**

Ian Pryke Tel: 01206 211540

**Company Secretary and Director**

Jim Hollom Tel: 01206 574813

**Treasurer and Director**

Peter Bohn Tel: 01621 815556

**Membership Secretary and Director**

Don Black Tel: 07769 048789  
(ask for Don)

**Event's Organiser and Director**

Ian Pryke Tel: 01206 211540

**Directors / Council Members**

Alan Illett Tel: 01787 460620  
Dave Hammond Tel: 01206 242150  
Graham Willmott Tel: 01206 382256  
Martin Courtis Tel: 07742 698366  
Suzanna Giera Tel: 07919 220807

**Boiler Inspectors**

Brian Upson Tel: 01255 503969  
David Cocks Tel: 01206 298661  
Martin Harrison Tel: 01206 386812  
Peter Varnes Tel: 01206 822644  
Terry Gardiner Tel: 01206 397388  
(ask for Terry)

**Club Badged Clothing**

Geoff King Tel: 01206 822735

**Web Master**

Andrew Cartwright Email: webmaster@csmee.co.uk

**Link Editor**

Don Black Email: linkeditor@csmee.co.uk