The Oily Rag!

Autumn 2015
Issue No 123.

David Hartland and other prominent TME members at the 7.25" Gauge Society AGM

The Taunton Model Engineers' magazine

Contents

Meetings Programme inside back cover.

From the Editor

As you will see when you read the chairman's notes, the tide seems to be turning to our advantage. The new confidence means work which has been on hold, at Creech, is now starting to be done, more information about that in Mike's report. The new Facebook page is having quite an effect on passenger numbers, particularly at Creech, I hope we have now turned the corner.

My plea for more contributions to your magazine has had an effect, so I even have something in reserve for the next issue, but please keep them coming. One contribution was from the "Archivist" who pointed out that "The Oily Rag" is now thirty years old. So you can read about the start and I hope you enjoy the current edition

John

Chairman's Notes

By Mike Johns

Minute 15/177 of the Creech S.M. Parish Council meeting of 3 August 2015 includes the following statement :-

"IW explained that the FIT lease signed jointly by the PC and TME in 2013 had strengthened TME position as a tenant. The Clerk confirmed that the Solicitor had said it strengthened their arguments. This was discussed and given the Solicitor's previous advices and that both parties had already signed the FIT agreement it was agreed that TME is to stay at the Rec Park and be offered the new lease. Action. IW and the Clerk are to examine the draft lease which may need some further negotiation with TME."

IW is the present council chairman, Ian Wright, and FIT refers to the 'Fields In Trust' documents that TME signed alongside the Parish Council over 2 years ago when the recreation field was renamed the Queen Elizabeth II Recreation Park and brought under the jurisdiction of the National Playing Fields Association.

Whilst we have yet to hear from the Council it is clear that our patience over the past 4 years is being rewarded and the threat of removal has been lifted. We now await the terms of the proposed revised lease with interest.

News from Creech

By Mike Johns

Thanks to Andy Webb and a significant donation made by David Spicer we now have a Viceroy milling machine in the workshop which is currently being wired in ready for use by Andy Cooke and Don Hancock. This is a major addition to our workshop capacity and, as with David Hartland's lathe, the mill will be available for club members' use either under supervision or individually when members are judged competent. The one golden rule is that no one should carry out any activities at Creech without there being a second member on site.

Also thanks to Andy Cooke the welding bench now has its steel top in place which gives us a much better work surface for fabricating track, etc. This will be required shortly when some further track panels are made up to form the revised tracks to the shed to improve operational flexibility and take account of the additional internal storage created by the extra door which has been completed. At the moment David Hartland is building a new point into an existing track as step one in creating a better yard layout.

Tony Gosling has taken the lead in upgrading the ballast boards with whatever help is available on Thursday to install the boards and improve the ballasting of the track as required. Whilst most of the long straight track through the trees has been done there is still much to do and Tony can always use more help. Tim Griffiths, Mike Pinkney and a number of our newer members are keeping the needs for outdoor maintenance under control, checking and adjusting point controls, weeding the track and general grass cutting.

Three weeks ago we suffered some vandalism on site when the pavilion was also damaged. In our case the point levers on several points were damaged but thanks to Tim Griffiths these were mended and new sleepers installed in time for the next running day. Some weeks earlier a track joint was displaced and then put back such that the rail misalignment was not obvious. Tim Hims carried out the regular pre-service track inspection the following running day when his locomotive `Dianthus' was derailed and turned on its side. Fortunately Tim was not hurt but the incident demonstrated just how careful we have to be before opening the railway to the public.

The new points with 7.25” gauge only into the carriage shed.

Running days are still gaining in popularity and we have been enjoying the company of some 150 passengers most Sundays even when the weather has not been so good. We tend to get a steady trickle of riders throughout the afternoon rather than queues and

often find the last ones turn up just as we start packing up. This emphasises the need to have sufficient club members on hand not only to look after our customers but also to help getting things ready and clearing up when the public is not around so how about coming along and giving the regulars a break sometimes? It will be appreciated - thank you.

Report from Vivary Park

By Diana Fathers

On the whole, the fine weather has continued to bring in the customers throughout the summer - with the exception of the Flower Show, when it rained on both Saturday and Sunday. Unfortunately, the Flower Show management saw fit to make it almost impossible to gain access to the railway, until Phil asked the announcer to broadcast the fact that we were running, when they were obliged to make a (well guarded) small gap in the defences. The additional running day on Sunday was so wet that no running was possible. (We missed it as we were busy getting drowned at the WSR Norton Fitzwarren steam rally for the fourth year running!)

More members have been turning up at the Tuesday evening runnings, which have given learner drivers the chance to practice without any hassle and owners of new locos the chance to try them out. These evenings have been very pleasant, with more wives and partners coming to join in the chat, so if you haven't been before, make sure you come and join us next year.

Some of the Vivary regulars have been helping John Pickering to run the portable track. This is unbelievably hard work for people of mature years (or advanced old age, to be more correct!), so a little

help from some younger, fitter members would be most welcome. Phil and Viki Mortimer ran it for many years and when they were obliged to stop there was a gap of quite some time before John volunteered to take it on. The worst part is the assembling and dismantling the track. The trailer is well designed but the track sections are heavy and the trolley is both exceedingly heavy and cumbersome. All have to be moved several times each trip.

Bob Richards and his Sweet Pea at The Dalwood Country Fair.

This September the Brean Steamers turned up on the day expected (unlike last year when they came the following week). The rain held off and it was good to meet up with old friends again with a good welcoming crowd from the Vivary team and between them all, they demolished four dozen rock cakes!

Also in September, we had the annual visit from the Welling Pre-school toddlers, who enjoyed their rides nearly as much as the teachers! As it happened there were lots of children in the park, including two other pre-schools - all wanting rides and, of course, we couldn't disappoint them so were kept busy all morning.

As the season finishes, with only the Santa Special to look forward to this year, our thanks go to the guys who arrive early to set up the track every time, to Barney for keeping everyone refreshed with tea and coffee and also to Mel, who helps out in any way that's needed

DAVID EATON
1947 - 2015

Once again it is a sad task to announce in these pages the passing of another stalwart club member. David was not able to attend many meetings in latter years but was a driving force in Taunton Model Engineers a few years ago.

In those days the railway in Vivary Park ran every Sunday through the summer months and David, together with his wife Beryl, a one-time chairman, secretary, vice-chairman etc, who passed away a few years ago, were there on every occasion.

I well remember being encouraged by David when I first became a member in the mid eighties and if I had a problem he was always the first person I contacted. He had an extensive engineering knowledge and was always willing to share this with anyone. Members may recall his prowess at the various quiz evenings we have enjoyed over the years.

Our thoughts are with his stepson, Roger Young, a former member of TME, together with Roger's family.

Andy Cooke

How I became a model engineer

By Andy Cooke

As we have some new members who, by their own words, are beginners in the hobby I thought these few words may be helpful.

As a child I watched my father as he rebuilt the engine of his old car, a 1936 Standard Little Nine. The vehicle was so old that spares were becoming very difficult to get hold of so many had to be made. I well remember his motto when I approached him with (to me) a technical problem - "what do you mean, it won't come apart, it was put together wasn't it? Of course it will come apart". In that era this was a true statement, unlike today with factory sealed components which may only be dismantled by wrecking them.

My first introduction to a lathe was during school holidays when I earned a few bob by painting a couple of them in "corporate colours" at the small factory where father was works manager. I remember a row of women working fly presses, all on piecework, what they were producing still remains a mystery to me. So progressed my early years until I left school, father suggested I became an apprentice toolmaker, mother wanted me to work in an office and come home with clean hands and clothes. I defied both of them by obtaining a post as an apprentice compositor in the printing trade, a line now long defunct. Cutting a long story short, one's early years in employment are frought with many things, motorcycles, cars, etc and of course the attraction of the opposite sex. This left no room for thoughts of model engineering or anything remotely similar.

It was not until many years later, and several changes of employer, that I became interested in steam.

My girlfriend, later my wife, dragged me to a local steam rally, which particular one it was is lost in the mists of time. I became interested in the motion of an open crank with the con rod and piston rod moving majestically backwards and forwards. I must have spoken about this at work the following week as a colleague showed me a Stuart Turner catalogue. I fell in love with their Number 8 horizontal engine, an open crank engine some nine inches or so in length. I dismissed the idea of building it as I had no skills in this area and did not possess a lathe. It is strange how things turn out. Another colleague said he had an old lathe which he wanted to get rid of. I said I would like it. An "old lathe" turned out to be somewhat of an understatement. It was treadle operated, the crank for the treadle rattled in its housings and the 3 jaw chuck was almost seized up. There was no provision for a lead screw, the cross slide being clamped to the flat bed and there was no hole through the mandrel, only a dead centre at the back. Anyway I motorised it with an old motor I had in store. This arrangement worked, though accuracy was out of the question, as was anything but the smallest of cuts

I was a lot younger and a lot less crotchety in those days so readily agreed to accompany my other half to the Taunton Flower Show (I could then as now barely tell the difference between grass and tomato plants), being a little bored I found myself leaning on the fence near the railway at Vivary watching the trains going round. Suddenly I heard a voice from "she who must be obeyed" saying "give this man a fiver", I thought "oh dear, what an earth has she bought now" but being a dutiful person I did as I was told. She then said "you are now a member of Taunton Model Engineers".

Wow, what do I do now - I had no engineering experience or skills, save that I could keep an old car going and I could arc weld. I went along to my first meeting, was made welcome and given the suggestion to go to the local tech where there was a good model

engineering class but I would need a project on which to learn. So back to the Stuart No 8 idea. A set of castings and materials was duly purchased, I remember for the princely sum of around £26. On examining the drawings I had a shock - what on earth did things mean? What the hell is a pcd? Oh dear, I have wasted my money.

Taunton Model Engineers in those days had fewer than forty members and had only been established in Vivary Park for six years. Meeting arrangements were the same as now, with two meetings per month. The railway at Vivary then ran every weekend, 3.5 inch gauge was common with 5 inch gauge being big. How things have changed in the meantime!

Not being one to give up so easily I went along and joined the sessions at the tech. The tutor asked if I knew how to use a lathe. I hesitated and informed him that I had never used one like those in the workshop (mostly Colchester 1800s) which seemed enormous. I opted for a steel bar instead of starting my project. The tutor said "face it off and centre drill it" (this is about all I knew how to do). Having done that he then said "now take a quarter inch off the diameter" "what", I said, "in one cut?" The reply was "yes, of course, I want to see the swarf coming off blue".

Again cutting a long story short, the No 8 was finished, with much help. It was a bit stiff but with a decent air supply it ran well enough. By coincidence a club meeting near the end of the build was “Work in Progress” so I took it along in a cardboard box. When I saw what was on display I hid it under a table as I felt that the items there were far beyond my capability and that my humble engine would be a figure of fun. Nothing could have been farther from the truth. My arm was twisted to get the No 8 out and members showed keen interest, offering much advice. Unfortunately most of those members are now no longer with us but that's life . . .

After the Number 8 came a beam engine, two more stationary engines and three traction engines in various sizes and I have never looked back. The first old lathe has gone to a museum and I am now a small 3.5 inch lathe, three Myfords, two Harrisons and three milling machines later on in the hobby. What a wonderful hobby model engineering is! I have now started a rather large narrow gauge railway engine in 7.25” inch gauge, much to the amusement of some members as I always pretended to shun all things railway!

What I am eternally grateful for are the tech courses which I attended and learned such a great deal, now unfortunately no longer available as far as I am aware. Partly because of this we have installed some machinery in our club facility and hope in future to offer some basic instruction to those who require it. Also I cannot stress enough the advantage of being a member of a club where like-minded people can offer advice and swap ideas. After being a member for almost 30 years I can recommend it!

Boiler Fitting Failure

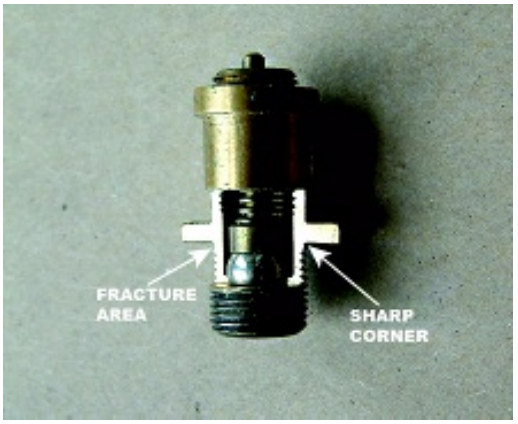
By Mike Johns

Members' attention is drawn to the details of the failure of a safety valve on a locomotive whilst being used in public serviceat another ME club. This failure occurred shortly after the boiler had been examined and tested by an accredited inspector who had passed it as fit for service. While working a train there was a sudden release of boiler steam when one of the two safety valves broke immediately below its mounting flange leaving its lower end screwed in the boiler. Fortunately no one was hurt by valve debris or the hot steam.

Having made the boiler safe the second safety valve was removed

for inspection and subsequently sectioned to examine its construction, both valves having been purchased as a set commercially. The accompanying picture shows what was found. The widest section is the hexagonal flange which provides the means by which the valve may be tightened in a boiler.

Points to note are the thin section of material around the valve between the lower screw thread which is ½" x 26 tpi and the adjacent hexagon flange. The external diameter is wasted slightly and measures 0.495" with an internal diameter of 0.380" giving a wall thickness of 0.0575" which ought to be adequate. There is a very small radius in the lower corner of the flange creating a possible stress raiser depending how tightly the safety valve is screwed into the boiler. A check fitting of another similar valve showed that tightening into place with an 8" spanner was sufficient to initiate a hair-line crack.



The sectioned valve.

Clearly if using this type of safety valve care is needed to avoid over tightening. It would be prudent to carefully examine the body below the flange for any signs of cracking whenever the valve(s) are removed from a boiler and be prepared to renew them at the slightest sign of a crack. This is particularly necessary if it is regular practice to remove a safety valve in order to fill the boiler with water when the frequent removal and refitting can strain the valve body and also lead to thread wear and a sloppy fit.

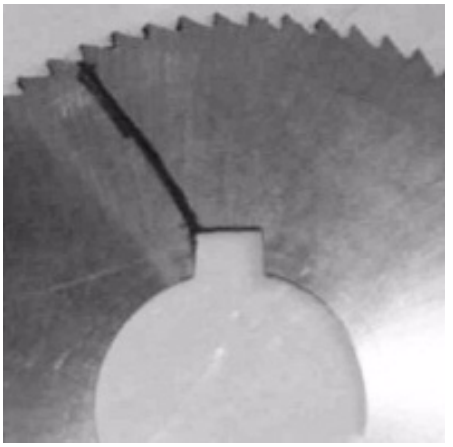
When making safety valves every care should be taken to avoid very thin sections in stressed areas if at all possible and again ensure that they're not over tightened when installed. Valve bodies should, of course, be made of phosphor bronze or gunmetal - not brass in any circumstances.

SOME THOUGHTS ON MAKING A SLITTING SAW LAST LONGER

By Andy Cooke

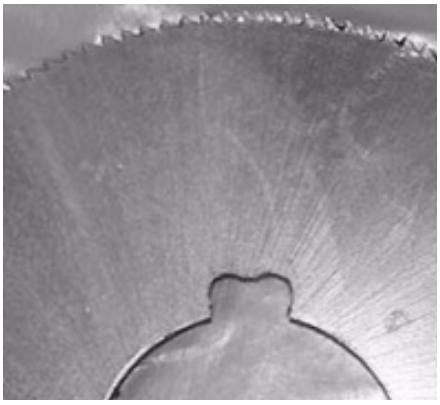
With the risk of "teaching Grandma to suck eggs" I pass on the following:

Much to my frustration I have had two slitting saw blades break in an identical manner after very little use. I run the blade on a commercially made arbor on a substantial vertical milling machine. The feed on the table is about right as are the revolutions of the spindle. Both blades failed whilst slitting steel with flood coolant being applied.



the black line is the break
Photo 1

I wondered is it the blade, is it me, or what is the problem? Using an arbor on a vertical machine I have no need for the keyway slot in the blade, the square corners of which are an obvious stress point and this was actually the point of failure (see photo 1).



the rounded corners
Photo 2

I decided to take a Dremmel (a die grinder or similar would do as well) with a small cylindrical grinding tool (about 3mm diameter) to round off the corners of the key slot on the new blade (see photo 2) thus relieving the stress point.

I have yet to ascertain the effectiveness of this but unless you use the keyway slot what disadvantage could there be?

"The Oily Rag" is 30 years of age!

By "the Archivist".

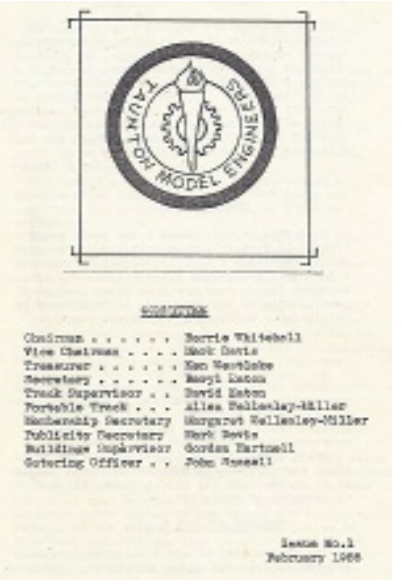
December 1985 saw the fourth edition of the in house newsletter published; this was the first copy to bear the title "Oily Rag". The magazine title was the subject of some debate, the options offered were as follows.

NAME THE NEWSLETTER

There have been several suggestions for a title, these have been shortlisted to the following;

The Oily Rag
The Cog and Torch
T.M.E.Express
The Vivary Bugle
Taunton Torque
Turnings Swarf and Scraps
The Smut (this might sell well to non-members but they would probably be disappointed)

If you have a preference let me know.



Chairman . . . . . Norrie Whitehall
Vice Chairman . . . . Mark Davis
Treasurer . . . . . Ken Westlake
Secretary . . . . . Beryl Eaton
Track Supervisor . . David Eaton
Portable Track . . . Allen Wellesley-Miller
Membership Secretary Margaret Wellesley-Miller
Publicity Secretary Mark Davis
Buildings Supervisor Gordon Hartnell
Catering Officer . . John Russell

Issue No.1
February 1968

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Issue No. 4
December 1968

The first (nameless) newsletter appeared in February of the same year but was recognisable as it bore the well-known “torch” badge.

Beryl Eaton, the then secretary, had suggested the club needed a newsletter. Apparently the committee of the day gave a mixed response to the suggestion, comments such as who will edit it, and how much will this cost from the then treasurer who kept a tight control on spending.

Beryl wasn’t going to be so easily put off; she countered by saying she would be pleased to take of the role of editor, and with advertising fees, the publication costs would be minimal. So there!

After Beryl, we have benefited from a number of different editors, each of whom has taken the publication to new heights. Where next? An eNewsletter perhaps?

BridMet

by Doctor Spin.

On Tuesday 18th August twenty one model engineers assembled in a country lane outside Bridport to visit BridMet, a company specialising in the cutting and shaping of metals. The gathering was organised by Robert Oldfield, and included members from both the Weymouth MES and TME. Our host was Gary Hedges, the Managing Director.

Bridmet has been running for around ten years and has both laser and water jet cutting. The laser, which we saw in action, is 4.4kW and capable of cutting steel up to 20mm thick, but we saw it producing complex cutout pieces from 16 swg steel. The process was fast, and as one member noted, the laser could cut far faster than we could draw the line. The finished cutout shapes were then folded on a computer-controlled folding machine to form electronic consoles. We were shown the water jet cutter, which could cut up to 200mm thick steel, but the recent work involved 45mm thick steel, where the complex shapes were being produced with a dimensional tolerance of +- 0.2mm. This means that the shapes being produced need little or no machining after cutting. We toured the welding bays where amongst other items, a series of aluminium fabrications were underway to form dog kennels for the Army in Afghanistan, to be mounted in air-conditioned shipping containers.

The tour finished in the Drawing Office where a young engineer very competently demonstrated the complex 3 dimensional computer design programmes, where the overall design of machines could be broken down into component parts, revolved to produce different views, cut open, and made to revolve or move to mimic the real function. All this was done on the computer screen.

One member, looking dumfounded at the complex revolving image on the screen, could only mutter ‘and I am still learning how to forward an Email!’

The Bridmet team were thanked by Robert and the visitors for a most interesting evening. The one slight disappointment was that the Company were not able to make one off cut items for the model engineering market!

“Fire Queen”

By Eric Lander

Built in 1848 and the oldest surviving locomotive in North Wales, ‘Fire Queen’ was built by Alfred Horlock’s, marine engineering company on the Thames, to haul slate wagons from the quarries at Llanberis down to the top of the incline above Port Dinorwic (Felinheli). The wagons were then lowered down a steep incline to the port, from where they were shipped all over the world. Slates for use in Great Britain could also be transported by the mainline railway from 1850 onwards.

The engine ran on 4ft gauge track, and is built without any frames, all the important parts being bolted directly to the boiler. It looks more like a traction engine than a railway engine. Coal and water were carried in a tender which is a standard gauge tender adapted for the 4 ft gauge. Along with its sister engine named ‘Jenny Lind’, (a famous opera singer of the time), it was in service from 1848 until 1882 when more modern engines took over its duties.

‘Jenny Lind’ was scrapped, but one of the quarry owner’s daughters wanted to start a small museum, so ‘Fire Queen’ was put in a small

“Fire Queen”

engine-shed in Llanberis. It was looked after there by the quarry apprentices for many years, but as the quarry’s fortunes dwindled it did not get very much attention.

In 1963 an American museum wanted to buy ‘Fire Queen’, but Mr Tom Rolt, founder of the Talyllyn Railway Preservation Society, persuaded Sir John Smith, the M.P. for Merioneth at the time, to buy the engine because of its historical importance. This he did, but it still lay in its little engine shed in Llanberis.

When the quarries closed in 1969, a new home had to be found.

Fortunately the National Trust's Railway Museum at Penrhyn Castle was just being formed, and Sir John Smith kindly agreed to the locomotive being put on loan to the Trust.

When it first arrived at the castle it was in a very sorry state after almost 70 years of neglect. Since then the Curator assisted by many volunteers have lovingly repaired and repainted it to bring it back to its former glory. It is now part of a small but historically important collection of locomotives and rolling stock in the Penrhyn Castle Railway Museum. The Museum is open to visitors all year round except Christmas Day. Why not come along and see it.

The Seven Tuppenny Bits

By Doctor Spin

I was sorting through some junk at home the other day and I found a small plastic bag of coins. Closer examination revealed them to be seven 2p pieces; and the memory stirred….

Twenty Nine years ago the Taunton Group of the Great Western Society were very much involved in building the broad gauge trackwork at Didcot, from material recovered from Burlescombe in Devon, a few years earlier. The trackwork was mixed gauge, with bridge rails on longitudinal timbers, just exactly as Brunel had designed it, and by the summer of 1986 the layout at Didcot was almost complete. Meanwhile, thoughts had turned to a possible locomotive to run on the track. The Science Museum were building a replica Iron Duke class from contemporary drawings. In May 1986 the locomotive was first steamed and arrived at Didcot to run trains out from the Transfer Shed, over the mixed gauge pointwork and up the running line.

Unfortunately the locomotive was not very good at staying on the track. On the opening day, it derailed on the facing point, in full view of the General Public. Fortunately none was hurt, but the embarrassment was great. In fact this was not the first time it had derailed. The previous week, after unloading from a standard gauge wagon, and being pushed around a curve in the line, the trailing wheels had derailed. During later shunting the 8 foot driving wheels came off, and in all there were five derailments.

"Iron Duke" running on the mixed gauge track at Didcot Railway Centre, 1986.

I was charged by the Society with trying to find out what was going on. Initial blame rested on the track, as it so often does – after all the professionals at the Science Museum could hardly be blamed. The track was less than perfect, it was true, but we suspected that there was something wrong with the locomotive springs. We discovered that they had not been measured in the conventional way, on a locomotive weighing table, because (of course) there was no broad gauge weighing table in existence. This made us even more suspicious. No doubt the problems were the same as faced by Daniel Gooch when he was trying to get the original locomotives running properly – and he suffered several derailments himself in the early

days before the locomotives were satisfactory. Since the replica had been built from original drawings it was bound to have the original faults in it!

We needed a means of checking the springs – but our equipment was pretty basic. How could we do it? We spent some time mulling over the question (and over cups of tea). Then in conversation someone mentioned putting pennies on the line in their youth and seeing them squashed as trains passed by – suddenly an idea was born. We all turned out our pockets but found only a couple of pennies. We did, however, find seven 2p pieces, and we were off! We pushed the locomotive (using crowbars) up to a flat and straight portion of the track, where the rails were polished. The brake was applied and then six of the twopenny pieces were laid in front of each wheel – two for the driving wheels, two for the trailing wheels and two for the leading wheels (the second set of leading wheels were compensated from the front, so we could be reasonably confident that these would give the same reading). Iron Duke was then pushed forward, so as to run over the coins, flattening them. The coins were recovered and measured with a micrometer, and compared with the seventh, unmarked, coin as a control.
The measurements were as follows:

Front left: 0.063”	Front Right 0.063”
Left Driving: 0.062”	Right Driving 0.058”
Left trailing 0.064”	Right trailing 0.073”

To understand these figures, a new 2p coin is 0.074” thick, measured over the Queen’s nose. 0.073” means a slight flattening of her nose, whereas 0.058” is almost completely obliterating her face. From these measurements it was obvious that the springs on the wheels were not set correctly. The two driving wheels were uneven, and the right trailing wheel was taking virtually no load – in fact on further experimenting, it was possible to lift this wheel off the rail with a small crowbar.

No wonder the engine kept coming off the track. The running at Didcot was restricted to running on the straight track, and at reduced speed, for the following few weeks.

The Science museum eventually dismantled the locomotive and attended to the defects. All the springs were reset using load cells, and some other difficulties of alignment in the leading axleboxes and lack of roll and sideplay in the main hornblocks were also corrected. The work was complete a few weeks later and the locomotive was tested on the track, with the Railway Inspector present. With the safety valve lifting, Iron Duke was backed into the Transfer Shed and then run at maximum speed over the pointwork and the sharp curves. The improvements in the suspension were highly effective – no problems were seen and for the rest of that summer the train gave many hundreds of passengers an exciting run on Brunel's Broad Gauge.

I still have the little bag of coins. I kept them partly out of nostalgia for a stressful but rewarding time in that summer of 1986; but also because the Society Treasurer would not accept the coins as legal tender and my claim for 14p expenses has never been authorised….

Of Ships and Things

BY FIREMAN M. N. RETIRED

We got into London on 25th October and unloading started straight away, cranes took off the timber so the hatches could be opened and then huge suction pipes started to suck out the grain and also a floating suction elevator alongside discharging into barges.

We were due to sail again within the week so I signed on for another trip and meanwhile I did 12 hour shifts tending the donkey boiler and one generator on nights.

We sailed on the 31st October and once again rolled across the North Atlantic like a blown up paper bag. But then homeward bound the decks were awash most of the way. This trip was practically the same as the last one, except it was getting colder.

One strange thing I must mention, in all the bars there were sugar pourers on the tables. Instead of sugar they contained salt, the idea being to tip some into your glass of beer. The beer was pretty horrible and I am not a great lover of salt so I never did try it, perhaps that was another of life's great experiences I missed out on.

MV "Highland Monarch".

We got back to London on the 30th November and I got paid of and decided to go somewhere warm again. The Highland Monarch was tied up at the next berth so I went on board to see if there were any jobs going. I signed on as a fridge greaser to sail on the 4th December. That was four days time so I went home to see Mum, Dad and the girls as I hadn't been home since April.

The Highland Monarch belonged to the Royal Mail Line and was one of 4 sister ships on the South America run.

She was a twin screw motor ship of just over 14,000 tons with a speed of 15 knots, when she wasn't broken down. Built in 1928 she was 30 years old and was nearly ready for the breakers yard as the poor old girl was just about worn out. Harland and Wolff were building three new ships as replacements, So it was sailing on a wing and a prayer or two.

The first stop outward bound was Vigo in Spain to take on several hundred emigrants for Brazil. Then to Lisbon to pick up first class passengers then Tenerife for oil then across the South Atlantic to Brazil but this time it was north to Recife and Salvador to disembark the emigrants then the other costal ports to Buenos Aires. The main cargo was chilled beef and then cases of corned beef from Montevideo, about 2,000 tons of it, enough for quite a few fritters or sandwiches.

The refrigeration plant was two diesel driven units made by the National Gas Engine Company of Sandbach. They were twin cylinder horizontal jobs looking more like a steam mill engine, the pistons were about 2 foot in diameter they were double acting so the tail rod passed through a stuffing box to a crosshead and open crank shaft with huge hand oiled bearings and a 6 foot diameter flywheel at one end and cams and pushrods to work the valves. Two further cranks on the shaft drove the gas compressor cylinders.

Unlike modern units which use carbon dioxide or Freon, the gas used was ammonia which had a nasty habit of leaking from valve spindles and pipe joints mainly due to the age of the plant. The brine being pumped round the system was standard sodium chloride solution.

The Voyage ended in London on the 13th February. As a general refit was scheduled I stayed on board until unloading was completed.

Bagnall "Sanford".

By Bill Edmondson

Started in 2001, it is now working at last!

A brief summary of this locomotive's history – built in 1900 to an order from Isaac Owen for the Maenofferen Slate Quarry of Blaenau Ffestiniog in north Wales. Sold on to The Penrhyn Slate Quarry in 1929, and seen out of use by the mid 1940's. Later the chassis and cab were heavily modified to make a ballasted brake wagon to help control the heavy trains of slate descending the Penrhyn Railway. This locomotive was one of the interlopers into territory that products of the Hunslet Loco Co of Leeds dominated – most will have heard of the "Quarry Hunslet" – another 0-4-0 saddle tank

Sanford

It’s also interesting to note that this is clearly one of the saddle tank designs that Jack Buckler had in mind when he schemed out the very popular Sweet Pea locomotive. Being one of the outsiders and having the unusual Baguley valve gear appealed to me. Crucial drawings were obtained from Allen Civil who was a former employee of Bagnall, this included the valve gear.

Before wasting metal and time on the valve gear, I made a full size mock up with strip steel on a plywood sheet to determine how the valve gear is set up and check that I had understood the dimensional layout correctly. When I got to the stage of being able to air test the chassis, there was one heart stopping moment; the chassis operated in full forward gear straight away – what a magic moment. But then I thought I’d got my comeuppance as in reverse gear, events were all over the place and it simply wouldn’t go.

After several calming cups of tea, I eventually discovered that this valve gear is sensitive to the ride height of the driven axle. So packing that axle up to the height I figured the loco would run at, then resetting the valves, and phew, it worked correctly forward and reverse.

Boilermaking followed – the marine boiler design for Sweet Pea was used but with appropriate modifications to make it more prototypical. And at this point, a question – why are the commercial boiler makers so very busy? Why are model engineers shying away from making their own? If you’re at the point of deciding whether to make a boiler yourself or not, do talk to club members – there are several who have made their own boilers very successfully.

And so to May 2015 and the first run. This was with some trepidation as with unknown valve gear, and being a short wheelbase loco, I had wondered if it would be unstable. But thankfully it runs flat and level with not a hint of rock and roll. Only

slight disappointment is it is very quiet; the “front end” is set up using the well-known formulae for blast nozzle diameter, height from chimney base etc, and it steams well. But it’s almost silent – no discernable chuff which is odd.

Now to our August 2015 family holiday in the Lake District. Having thought I’d built a miniature steam locomotive, I discovered that it also functioned as a footplate pass! I’ll explain. We spent a pleasing day at the Ravensglass & Eskdale Railway (aka the Ratty) – probably most will know something of this 15” gauge railway. So, we book our ride and travel up the line (or is that down in railway parlance – I always get confused with this terminology – and perhaps it doesn’t apply to a disconnected narrow gauge line?). At Dalegarth I chatted to the driver about the locomotive River Irt which was on our train. This loco has a complicated history which I won’t go into here. But it does have a peculiar valve gear - Brown's, invented by the Chief Engineer of the Swiss Loco works. The driver wasn’t able to help much with how it works, but we enjoyed a chat during which I showed him two photos of Sanford which were on my camera. Without further ado, he said “would one of you like to ride on the engine back to Ravensglass?”. Our lad, Joe (15) was quick off the mark and so he enjoyed the trip sitting alongside the driver.

River Irt valve gear

Joe on the footplate

To put the icing on the cake, just as we were preparing to get in our car and leave, there was a heavy rumble of a train coming into the adjacent mainline station. This is the double track line which is maintained to superbly high standards as it is used to take the nuclear flask trains into Sellafield. We weren't the only ones attracted to the noise. A Ratty employee explained what was going on – it seems the local passenger trains were in trouble with some failed units. To maintain services, a class 37 had been brought in, hauling just two coaches – truly featherweight. We watched as this loco – "Mary Queen of Scots" departed. The driver clearly knew he was driving something interesting and played up to the gallery by revving up like a boy racer at the traffic lights, then shot off in a cloud of black smoke and a big grin on his face!

"Mary Queen of Scots"

Later in the holiday we spent a wonderful day at the Threlkeld Mining Museum near Keswick. This unusual place was set up to preserve something of the local mines history, but is also home to the Vintage Excavator Trust. Incredibly, there are around 70 machines on site – all cable operated – no new-fangled hydraulics here! And they range from dainty Ruston 10RB, up to giant Ruston RB7. Most satisfying, there are no restrictions on site – wander about and clamber amongst the machinery and close to the unfenced railway track.

But the star was clearly a steam navvy – Ruston Proctor No 306 built in 1909. This machine was the subject of an article in Old Glory July 2015 issue.

Typical of such machines, it lay rotting away for decades until rescued in the late seventies. It moved to Threlkeld in 2008 and has been the subject of a second restoration. Just a pity it wasn't in steam at our visit.

The photograph of the navvy also shows the Bagnall "Sir Tom" – resident loco operating on the short quarry railway – you can see where this is heading

Ruston Proctor No 306 and "Sir Tom"

Inevitably a chat with the driver was in order. He turned out to be the main man on the site – chairman of both the Mining Museum and the Excavator Trust. And given that the loco was a Bagnall, again I showed him my two pictures of Sanford. There was a long pause after which he asked where had I got the drawings for the valve gear; so I recounted what I had done.

His interest is because he is building a full size replica of one of the two Bagnalls that operated the original Threlkeld Quarry railway. These engines carried Baguley valve gear, but he had no drawings for same. So, I said I could provide what he needs and will post him the information. “You’d better come for a trip up the line” he says – on the footplate! What a plucky engine – pulling six carriages, and a gradient that at one point is 1 in 24, the loco simply dug its heels in and got on with the job – superb!

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Phil Mortimer and his Britannia at Llanelli

“Boris” and “Sanford” at Tiverton

Steaming bays at Llanelli.