NEWSLETTER March 2018

i) FORTHCOMING EVENTS

- **Club Meeting** Wednesday 4th April. Rebecca Ellis – talk on "Speed on Two Wheels".

- **Workshop Morning** Tuesday April 17th 10-12 noon

ii) Club Meeting Wednesday 7th March

- **Subscriptions** Some subscriptions were still due as of the club meeting.

- **The Railway**

Three outings are planned for this year:

a) Welburn Hall School ~ 26th June
b) Malton Show ~ 1st July
c) Ryedale Show ~ 31st July

For some of these events the railway has to be set up the night before. Volunteers are needed with a vehicle which has a tow hook for the small trailer. Peter Bramley has volunteered for the Welburn Hall school event which leaves two volunteers still required for the other two events.

The post winter test for the locomotive is scheduled for the workshop day on the 17th April. A couple of days notice is required before picking the locomotive up from its storage site, and a volunteer is needed to tow the small trailer and locomotive back to the workshop.

- **Workshop**

The workshop is now available for use, and the chairman himself avails himself of the facility. He gave a huge thanks to all those who have made it happen, especially George Gibb, for his tutorial and help on the milling machine. For those who want to use the workshop, there are three keyholders :

a) George Gibb
b) Tony Leeming
c) John Powell

There is a log book to sign in, and it would be appreciated if users take away their own waste.

- **Workshop Master Classes**

George Gibb has agreed to mentor members in boiler making. There will be a meeting to discuss what we need to do to get started and what George, as a boiler tester, needs from those interested in pursuing this.

- **Outings**

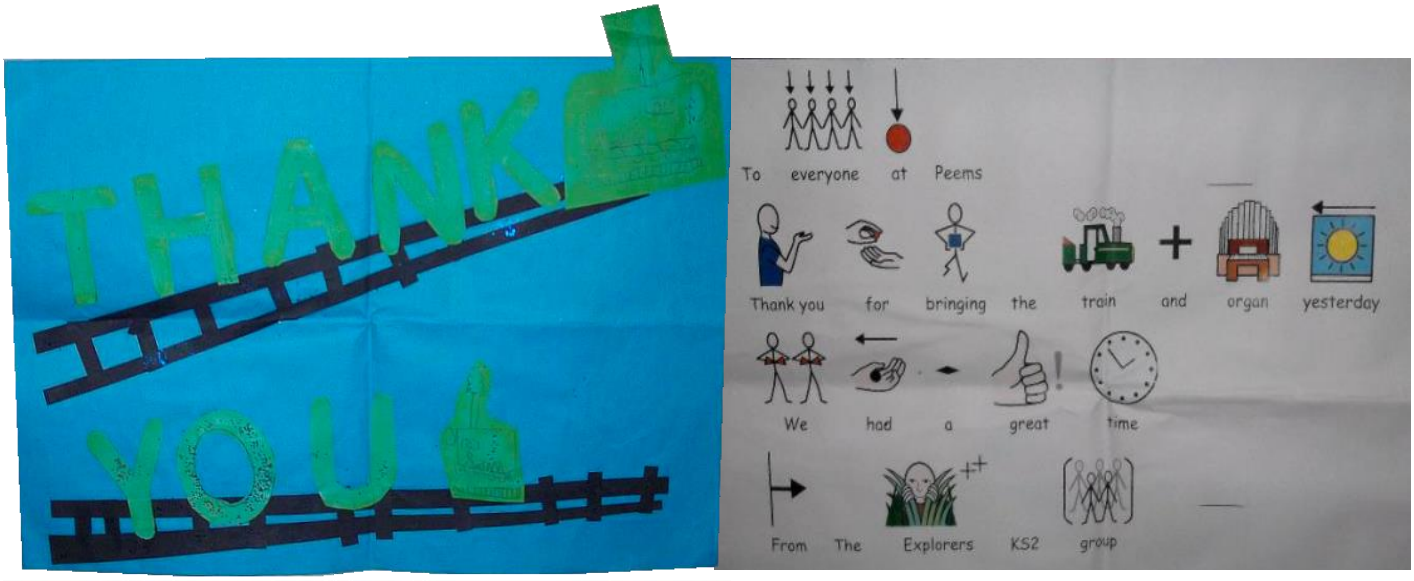
a) Parkol Marine Ship Yard, Whitby for August. David Proctor has contacted them, but as yet has had no response. He will contact them again to see if this feasible.

b) 'The Flowers Of May' Museum (nr.Scarborough) for July. There is a museum there with numerous cars, motorcycles, tractors and is open anytime. There is lot of seating and it is on the flat. A Wednesday or a Thursday is the best time to visit.

c) Visits to Members' Workshops and Gardens. This has been done in the past, but not recently. This will be discussed in committee, to see if it is feasible.

- **Welburn Hall School ~ 26th June**

When we take the railway to Welburn Hall School, there is also a request for members to take along exhibits, and demonstration items. At the next club meeting (4th April), names and exhibits will be requested. This is a poster of appreciation from the young people after a previous visit:



- **Safety Officer**

There is a continuing vacancy for this position. The task is to keep a watching brief on the safety items and complete the forms in the red file. Tony Leeming has organised the red file so it is coherent and easy to use. The safety officer would also fill in safety assessment forms. All the forms are on a CD, so they won't need writing out.

- **Doncaster Show. (11th/12th/13th May Fri-Sun)**

Everyone should have now received a letter or e-mail with the form that has to be filled in by each exhibitor. A list of all the models have to be in before the next club night.

What is missing on the form, however, is an indication of whether the exhibitors can take their own exhibits or require someone else to take them. That information is needed.

What is required is that the forms are in and completed before Doncaster Show's deadline which is 2nd April. This allows the show to print the programmes with the description of what is on the stand.

iii) **Mini** '**Bring and Brag'**

As a continuation of the Club Night mini 'Bring and Brags', the club evening had three exhibitors:

- **Ted Fletcher ~ Rotary Table Controlled By An Arduino Microcontroller**

The control system was based on an article in the "Model Engineering Workshop" which Ted decided to make. It was, however, a bit more difficult than he had imagined.

The power supply was bought and sits on the wall of the workshop. It has a sheet skin covering it to prevent debris falling in. The control box itself has a keypad (£1.90 for three), bonded in with self-adhesive.

A hole was cut into the box front to fit the liquid crystal display which bolts into the back of the box front. On top of that plugs an Arduino board minicontroller.

On the keypad are the A,B,C and D keys as well as all the number keys.

The ‘A’ key gives the angle.

The ‘B’ key is the ‘bump’ or ‘jog’ key.

The ‘C’ key rotates the table continuously until it is stopped.

The ‘D’ key is used to divide the rotation into divisions. For example, if a 20 teeth gear is required, 20 is entered and the table will step around. The number of divisions can be altered quite easily.

Ted demonstrated how the controller worked. The screen showed “Continual 100%”. An angle was set at 180°. Start was set, and the table rotated 180°. Pressing again saw the table rotating another 180°.

Pressing “0” reverses the rotation.

Pressing “5” pauses the operation.

Ted has written down all the key codes so others can use it.

The table rotates at constant speed. Usually in the ‘Model Engineering Workshop” magazine articles, this type of operation is by switches. However, the magazine recommends keypads because of all the extra functions described above. It is almost impossible to install the Arduino microcontroller board (£3-£4 each) the wrong way, because the pins line up.

The operation of the table can be seen at the following link: https://www.youtube.com/watch?v=LT3VZMEKdi4
Use the back arrow to return to newsletter. ⟵

- **David Hampshire ~ Hopper Wagon Kit**

David’s original garden railway was down in Norfolk. It took part in a television series and it can be seen on the internet. When David came to Pickering, he rebuilt it.

David started forty years ago, and at that time, neither track or rolling stock were available ‘off the shelf’. Engines were available at a price, and these were mainly meths fired.

The scale is 16mm to the foot. This scale originated because the Welsh engineers wanted to make working steam models of the Welsh narrow gauge engines. The only track available back then (c. 1920s) was the old tin plated ‘O’ gauge. This happens to be 32mm across which represents 2 feet, so the whole gauge is 16mm to the foot. ‘O-O’ gauge is 4mm to the foot.

Over the years David has built ten battery operated engines, and about 30 wagons from scratch.

Richard Longely set up a business called ‘Brandbright’. He collected all the components needed to build 16mm scale objects. He sold brass track and wooden sleepers which David uses in his garden railway. The other company David used was Bonds of Euston Road. Four years ago, Richard Longely decided to sell his business, because no one was interested in building models. Nowadays running models can be bought off the shelf at far less cost than it costs to make.

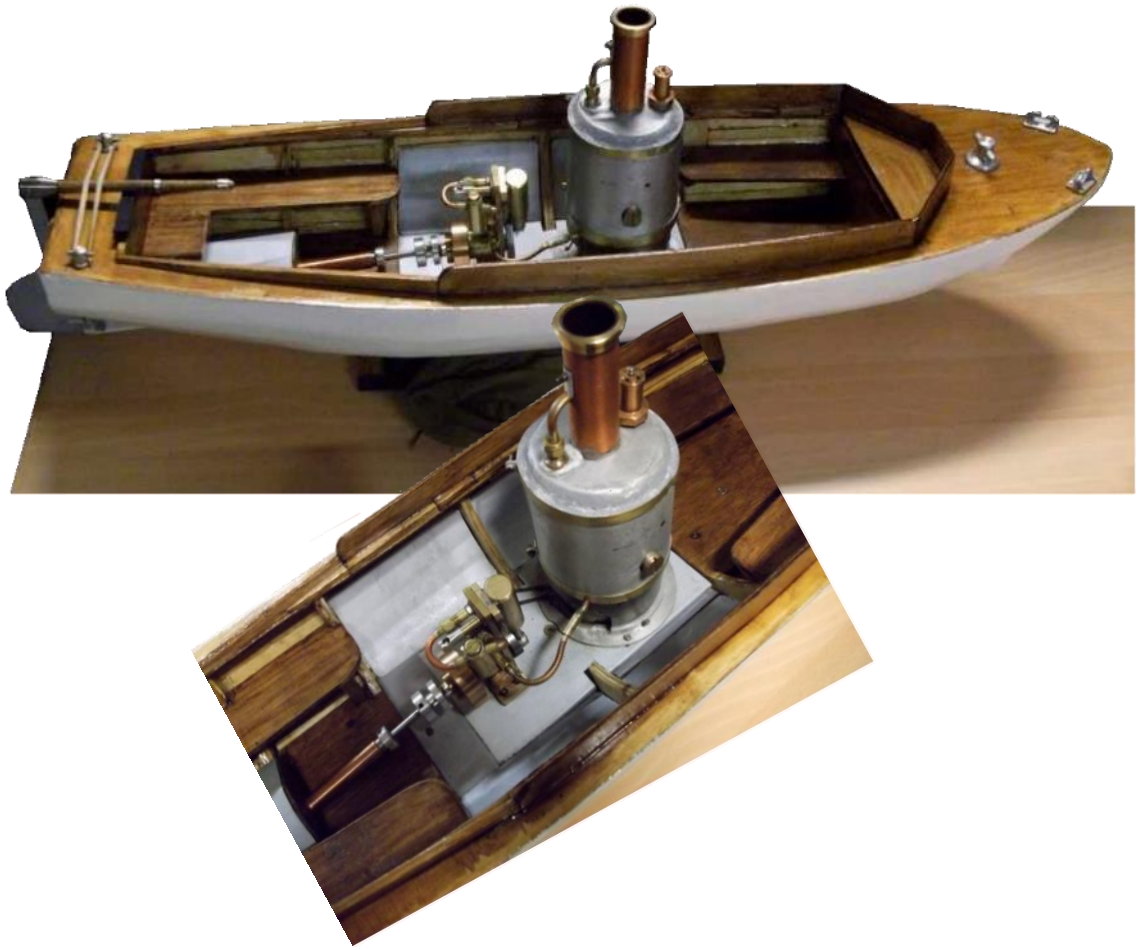
It seemed that when no one bought ‘Brandbright’, the parts that Richard built himself, like the excellent wheels would be lost. Fortunately, a friend of Richard continued the business, under the original name ‘Brandbright’ and started making parts again, including the wheels.

There are now 4,000 members of the 16mm society in this country as well as many members in America, Germany and Japan.

David bought four of these kits to work on over the winter (four for the price of three). The kits came as a ‘flat pack’. It was quite difficult to make as all the pieces had to be tapered, which took a lot of filing. The hopper has 140 nails in it to represent rivets.

The hopper works, and the hopper floor can be dropped to unload it. The hopper took three weeks to put together.

- **John Heeley ~ Steam Launch**



John started this project because he wanted to build something that worked after his two and half years of convalescence. It worked immediately after build.

The boat was intended to be a test vehicle for the steam engines and boilers that John has built. Therefore, it wasn't just a case of building a model boat and installing a single boiler and steam engine. John has four engines and two boilers and all are interchangeable. They are all held down by a single screw in the middle of the boat.

The only problem with the design is that there isn't enough room for a bigger propeller. John thought about using a saw to create more space for clearance. The propeller is 1¼" and with the engine running, the boat moves at a very stately rate, so it does work, but it needs to be faster.

The boat cost nothing to build. John's son's firm had some 4 foot square aluminium delivered between two sheets of 2mm thick three ply plywood from China. The plywood is very low quality; the plies are glued together with fish glue. The frames are made from plywood and the hull consists of pieces sandwiched together. The plywood wouldn't bend in two directions, so John was tempted to rub it down hard and skin it in glasscloth. It would be out of character for a steam boat hull to be covered in glasscloth, so John has decided to leave it as the 'badly built boat'.

The hull shape was based on the type of boat pulled up on the beach at Whitby, without damaging the propeller, so he doesn't want the propeller any lower than he has it.

It might be radio controlled at some stage, when John works out how to put in a bigger propeller. He has played around with the pitch of the propeller, but a point is reached when the blades stall. The engine can run up to 1500 rpm, as measured using an optical rev counter used for model aircraft engines.

It is the simplest engine with the simplest centre flue boiler (there are no cross tubes). It's just two tubes with two flange plates. It's been tested to 60 psi at the Barnsley Club, on a Southern Federation ticket, and rated at 30 psi. It runs at 6 psi upwards, and runs very nicely at 18 psi not using much steam. It uses a meths burner in a round tin with a bit of gauze.

It all went together in a month last August, and the fact that it worked has brought John back into model engineering. Only one boiler has a certificate. The engine in the boat has sufficient torque but this can't be absorbed by the propeller. The propeller does not go fast enough for cavitation to be the problem, and the propeller is not big enough to absorb the power. John has tried steepening the blade angle. As the pitch is made greater, an optimum point is reached after which the blades will stall. Paul Windross's fast boats use propellers pitched at around 20°. At 3000 rpm, the 1¼" propeller would probably be acceptable, but at 1500 rpm a 2" propeller is probably required to absorb the power.

The propeller is handed a different way to normal. Viewed from the flywheel end it turns clockwise which is different to most engines. Propellers for this hand are available, but only in limited sizes, so self built propellers are sometimes the only option. The flywheel is held with a grub screw which is quite adequate.

iv) PEEMS Annual Dinner ~ Friday 16th March

PEEMS members and wives had an excellent annual dinner at the Forest and Vale Hotel in Pickering.

The food was commendable and the ambience was very agreeable. PEEMS would like to thank the management and catering staff for their great service. There is also a special thanks to David Proctor for organising this event.

v) Amotherby School – British Science Week on Wednesday 14th March

PEEMS was invited for a return visit this year to take part in British Science Week at Amotherby Junior School. Approximately 100 pupils in four groups of mixed ages toured round four classrooms where eight PEEMS members were teaching/demonstrating. I am not sure who had the most fun – children or adults!

The exhibits were spread around three classrooms. The first had an Orerry, and teaching took place on the solar system. A variety of static electricity experiments were carried out using a Wimshurst machine. One experiment resulted in hair standing on end - a doll had to be used as the teacher declined!

A second area housed the Can Crusher and a Harmonograph, both of which were used to demonstrate the effects of energy. Crumpled cans and many different drawings were produced. In the third area, a Hot Air Engine and Stationary Steam Engines demonstrated the use of heat to produce rotary energy.

A fourth classroom was temporarily turned into a rocket factory where each pupil had hands-on experience of turning the taper on rocket nosecones. Then, with the aid of a teacher, the children assembled the parts – body, nosecone and fins.

The final session was held outside with the rockets being launched with compressed air, amid great cheers from the children and staff!

The event worked out as a highly successful day enjoyed by all. One question remains – when will the next one be?

Tony Leeming

vi) Visit To North Yorkshire Moors Railway Motive Power Depot (MPD) 22nd March

This excursion was well attended by PEEMS members who visited the MPD area at Grosmont.

Grosmont Motive Power Depot is the locomotive headquarters of the NYMR, where the majority of work on steam and diesel locomotives is carried out. The department is staffed by both full time staff and volunteers. The kind of work carried out varies from boiler repairs, to the manufacture of specific locomotive parts.

One of our guides was John Fletcher, who in his prime was a fireman with British Railways from 1961 until 1968, when steam ended. After that he came to NYMR and then spent fifteen years at West Coast Railways in Fort William. He was a fireman there on steam locomotives. He has written a book “Fifty Years On The Footplate”. We were joined by the other guide Stewart who was a fitter.

We visited the workshop to see where the milling and lathe work was carried out. Renovation work is currently being carried on a 4-6-0 Class S15 (Southern). Two new pistons are being manufactured. The casting below has been turned down, a hole will be drilled in the middle, and then it will be put on the lathe to have the grooves cut. The cylinders have already been machined to size, and the pistons will be machined to fit and new rings put in.

We also saw the axle boxes for the ‘Sir Nigel Gresley’ bogies. The boxes have already been “white metalled”, and are awaiting measurements so that they can be finally machined off

We then looked at the work on S15. Some of the rods were on, and the crosshead is being machined elsewhere and will be “white metalled”. For S15, some parts have been machined at the MPD and some have been machined elsewhere.

BR Class 24 Diesel No. D5032 "Helen Turner" was also in for restoration. Everything has had to be stripped out to get to the wiring which needed replacing. The wiring is the job that is taking the time. The locomotive will be eventually fitted out with all the safety gear. The radiators, which have been overhauled can be seen in front of the locomotive. It will be fitted out so that it can be operated on the mainline to Whitby and Battersby.

We then visited the workshop where “white metalling” was carried out.

Another locomotive in for overhaul was the D2207 BR Class 04 0-6-0 Diesel Shunter. It has just been fitted with a reconditioned Gardner 8LW (8 cylinder) diesel engine. This is the third oldest ex BR Drewry/Class 04 shunter in existence. It was built in 1953 and has been preserved at the NYMR since the mid 1970s.

Another locomotive being overhauled was the NER Class P3 (LNER J27) 0-6-0, which is owned by the North Eastern Locomotive Preservation Group (NELPG) This has an internal Stephenson valve system.

The boiler was overhauled at Crewe, and immediately a boiler is hydraulically tested, its ticket starts running for 10 years from that point. The locomotive is to have the boiler retested hydraulically to restart the ticket. With its overhaul completed at the Grosmont MPD it will then run on the NYMR. There had been problems aligning the smoke box, and a new smoke box has had to be fitted in. The smoke box on this engine is not round.

LNER Thompson Class B1 1264 has undergone a repaint in LNER livery. The Thompson B1 was designed for mixed traffic in Scotland. It has also been undergoing an intermediate winter maintenance. During a winter maintenance, if a wheel set is needed to be dropped, it is done then, if there is time. Engines also come in for a 28 day “washout”, where the boiler is washed out with water under pressure. Any minor work that has been listed, (but hasn’t been done because the loco has been running) is also carried out. The engine is allowed to cool over two to three days and it is then drained and inspected with mirrors before being “washed out”.

We were very fortunate to see the boiler of “Black 5” 5428 “Eric Treacy”, being moved by a steam crane. The boiler has been hydraulically tested and is ready to be installed back on the locomotive.

The “Wheel Drop” facility was next on the tour. This is a great asset for the MPD, because instead of having to lift the engine to remove wheel sets, the wheel sets can be dropped to reach the springs.
Here we see a British Railways Standard Class 4MT 2-6-0 in the facility.

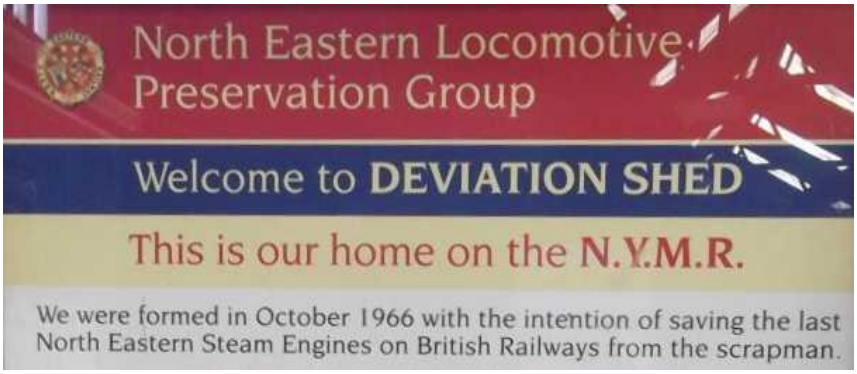
Next to the “Wheel Drop” was 75029 “Green Knight” a Standard Class 4 4-6-0 which is ready for restoration. The fittings have been removed ready for a boiler lift.

The next port of call was the “Deviation Shed” home to the NELPG. The “Deviation Shed” is so called because it stands at the junction of George Stephenson’s 1836 line and George Hudson’s later line of 1866. As Hudson’s line deviated from Stephenson’s original route, the names of tracks and structures in this area include the word “deviation”. Hudson’s new line was built to avoid the steep and dangerous incline at Beck Hole. Carriages were originally hauled up the incline using ropes, counterbalanced by wheeled water tanks, a system that was later replaced with a stationary steam engine and a winch. The new route avoided this feature altogether.

The NELPG own four locomotives which are associated with North East England:

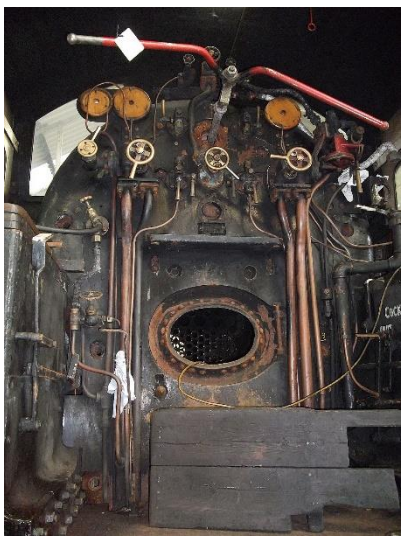
i) K1 class locomotive No 62005. ii) Q6 class locomotive No 63395. iii) J27 class locomotive No 65894. iii) J72 class locomotive No 69023

On route to the “Deviation shed we passed the coal drop. An engine uses about 3.5 tonnes of coal a day but can hold 9 tonnes in its tender.



In the Deviation shed we saw two NYMR locomotives which are undergoing overhaul. The first was No. 5, a 0-6-2T tank engine built in 1909. This was based at Lambton colliery, and spent 60 years hauling coal wagons around Wearside. NYMR also acquired No 29 0-6-2T which was built in 1905 and also worked at Lambton. This is thought to be one of the longest operating steam engines in the UK. This is currently out of service due to a cracked cylinder block, and is based at Grosmont

In front of No. 5 was BR Standard 4 Tank 80135 2-6-4T, which also belongs to NYMR. This engine is currently in the shed while it awaits boiler repair.
The first locomotive we saw when we entered the MPD was 81035’s sister, Standard 4 Tank 80136 which isn’t owned by NYMR.



The visit to Grosmont MPD was excellent, and PEEMS would like to thank all those who made the visit so worthwhile, especially John (‘Fletch’) and Stewart our guides, who were a font of information.

Special thanks also to David Proctor who organised this visit for us.

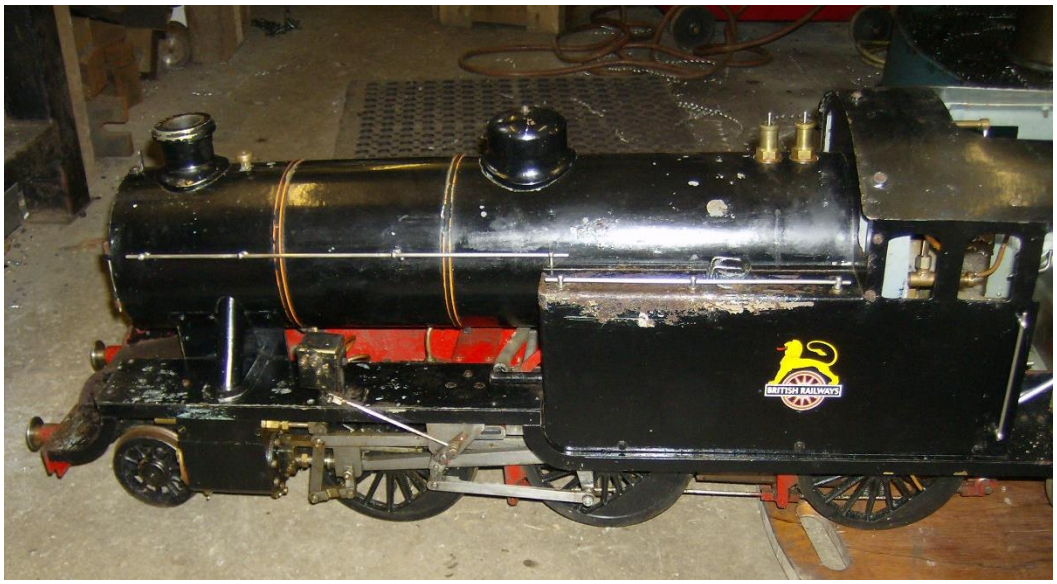
Items For Sale By Mark Angus

- Myford ML10 lathe: 3+4 jaw chucks, various tool posts and tooling, faceplate, collet, chuck and swivelling vertical slide. All on a stand with drip tray excellent condition. £1100 ono

- Quick change tool post with 4 tool holders £100.

- 5” gauge loco £2000.

Maybe someone in the club could put them to good use? If anyone requires more info, or would like to have a look, please give me a ring at 01944 758778.



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