# EXPANSION LINK

BASINGSTOKE and DISTRICT MODEL ENGINEERING SOCIETY

**Volume 10 - Issue 1 – March 2016**

Editor Austin Lewis


This year's programme cover by Richard Holt

## Editor

As you can see from the front cover the Steam Gala will be taking place on the 9th and 10th April with set up on Friday 8th April. **Can as many members as possible please let the Committee know which days they will be available** – not just for the raised track. It is very important that we have a rota of members to help out with the selling of programmes and tombola. The more volunteers the shorter the time we all have to do. **Can I again ask for articles for EL** – interesting visits, progress on your model what have you.

# Maintenance at Viables

## The Track

Following last year's replacement of the section of track before the tunnel, there have been some concerns regarding the alignment of the track, and passenger trolleys contacting the support pillars. During November, the green passenger trolleys had the rubbing blocks modified to prevent further contact - this proved successful during December's public running day. Since then, the ends of the track panels have been tweaked to provide a smoother sweep around the top bend.

There had also been some sleeper damage following a passenger trolley derailment on the morning of the Halloween run. During these repairs, the opportunity was taken to fit 3 steel stretchers that will ensure that the track is held 'in gauge'.

## Passenger Trolleys

During the 2015 season, the 4 green passenger trolleys were fitted with 'bought in' bogies. Following the successful trial, the Board decided a similar upgrade should be done on the 2 'Great Western' passenger trolleys. This has now been completed, along with adjustment to the coupling height to GL5 standard. At the same time, the opportunity was taken to make similar adjustments to the couplings on the 'Red' passenger trolleys - and also to rectify a loose wheel.

Work was also done on the driving/guards trolleys to bring their buffers and couplings to the same height. All our rolling stock now has buffers and couplings to GL5 standard.

## Traverser

During the latter part of the 2015 season, the main pivot bearing began to deteriorate at a worrying rate. The traverser has now been modified to incorporate a car front wheel bearing assembly. Whilst it was dismantled, adjustments were made to the traverser and the track that links it to the turntable to provide a flatter run between the turntable and track. The deck of the traverser was flattened to reduce the chance of the larger engines derailing on accessing the track. The steel track for the steadying wheel was scalloped out so that the traverser naturally dropped into alignment with the track (instead of trying to drift away!). Later, an interlock will be fitted to prevent the traverser being swung whilst there is a loco on it.

More maintenance work on the track and anti - tipping rail is in the pipeline (in readiness for the coming steam rally - sorry, Gala!).

The above are the larger projects that were held in abeyance until the closed season but there are many tasks that have been attended to during the whole year - like maintenance of the Club's electric loco, maintenance of the track signalling and general site maintenance and hedge trimming. Thanks are due to the various members who have assisted with these tasks - especially the ones that often get taken for granted.

Eddie Turner

# Memories of Summer 2015

Photos Richard Holt

# The Club in 1984 and Trolley Gap Protectors

The following is from Engineering in Miniature April 1984. An interesting first paragraph about the club with Mike Topping being elected Chairman and further down the page Bristol Society's use of a fixed rubber sheet to protect hands and legs from going between passenger trolley ends.

## CLUB NEWSROUND

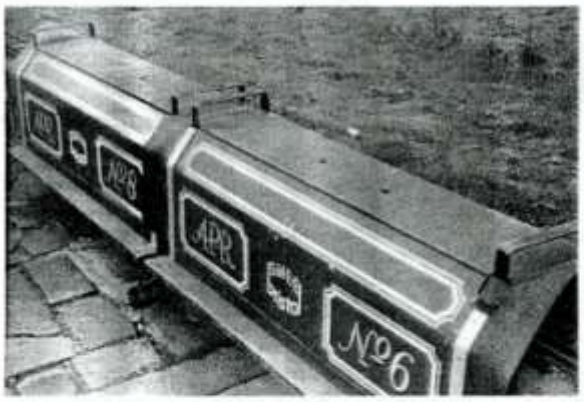
The **Basingstoke and District Model Engineering Society** were represented at the Reading Society's exhibition recently at the Hexagon in Reading. Amongst the models displayed by the Society were a boring head and 'Metro' chassis from member Martin Smallwood; a traction engine and a collection of stationary engines from John Hutson; 'Jersey Lilly', an 'O' gauge Hudson and stationary engine from Pete Simmons; a collection of stationary engines and a 2" toy engine from John Dixon; a narrow gauge engine Linda from Don Squibb; and the Club's stretched 'Simplex'. The Society also held its AGM recently at which Mike Topping was elected Chairman, John Dixon Treasurer, and the Secretary is now Don Squibb of 37 Park Avenue, Old Basing, Basingstoke. Following the election of officers, a list of proposed projects for the coming year was discussed and it was decided to improve the steaming bay, build additional passenger trolleys, construct a roadway for use by traction engines and other road vehicles, complete the club locomotive and build an extension to the clubroom for extra storage space.

In order to avoid accidents when carrying young children on public running days, the **Bristol Society of Model and Experimental Engineers** have recently modified their passenger trucks. The modification takes the form of a rubber curtain that covers the gap between the ends of adjoining trucks thus preventing any possible chance of injury to young children resulting from putting their fingers, hands or indeed even arms down between the two carriages. As can be seen from the photograph, the curtain detracts only slightly from the appearance of the carriages and leads to far greater peace of mind for all involved in running the track.

The **British Columbia Society of Model Engineers** held their Track Meet recently which was voted a huge success despite some inclement weather on the Sunday morning. Member Vern Johnson's Mogul ran all day without a hitch – this locomotive is fired by propane gas. The gas tank is actually located in the water section of the tender thus keeping the tank from freezing. It has been found that the locomotive will run all day on one tank filling. Also running at the Meet was Charlie McKenzie's ever reliable N.Y.C. Hudson, Ernie Allen's Columbia and Linsay McDonnell's Britannia. Another Britannia, this time a 3½" gauge model, was running on a raised track. Also in action was a Climax on the 7¼" gauge raised track together with a 5" gauge Johnson single 4-2-2 which proved quite a contrast. Added to this there was a number of other locomotives on either the 3½"/5" track or the 7½" gauge track. However despite the number of locomotives available, congestion on the track was much less following recent track alterations. For the future, the Society is hoping to extend the track and at the moment is still awaiting approval. Subject to this approval, it looks as if the Society will be able to add another 5000 ft. to their track, thus making it an extremely exciting line to operate.

The **Durban Society of Model Engineers** tell us that their recent 1984 Model Engineering Exhibition was judged to be a great success in spite of inclement weather. When the exhibition opened there was a steady number of visitors and after one or two hiccups everything slipped nicely into gear. There was a fairly large display of models of all kinds including no less than fifty locomotives either on the stands or in use for hauling passengers. Stationary engines were well represented with no less than twenty five models on display whilst other classes included several traction engines. Despite a very successful first day, the weather was much less helpful on the following two days and the total attendance was slightly down on previous years at around 2,500. Nevertheless several new members joined the Society as a result of what was an excellent exhibition.

The **Erewash Valley Model Engineering Society** are still proceeding with their search for a new track site. As is always the case, security is one of the most important things to take into consideration when choosing a track site and one possible location visited by members recently was reflected as being too open for safety.




*The rubber curtains which cover the joints on the Bristol Society's riding cars hardly detract from the fine appearance but they certainly add to the safety of the railway operation at the track.*

# NATURAL LAWS

I'VE REACHED
AN AGE WHERE
MY TRAIN OF
THOUGHT
OFTEN LEAVES
THE STATION
WITHOUT ME

**After your hands become coated with grease, your nose will begin to itch and you'll have to pee**

**The biggest lie I tell myself is: I don't need to write it down, I'll remember it**

Any tool, nut, bolt, screw, when dropped will roll to the least accessible place in the universe

***As soon as you find a product you really like, they will stop making it or the shop will stop selling it***

**When a body is fully immersed in water, the telephone rings**

IF YOU DIAL
A WRONG
NUMBER
SOMEONE
ALWAYS
ANSWERS

# The Steam Ship SHIELDHALL

Austin Lewis


In August last year, my wife and I sailed on the SS Shieldhall from Poole Harbour and anchored off Bournemouth to watch the Air Show. It was a great day and I would highly recommend it. The following, from the Shieldhall web site, provides a brief outline of the ship and I have included a few photos which I took on the day.

**History of the ship**

Shieldhall was laid down in October 1954, launched 7th July 1955 and entered service in October of that year. Built by Lobnitz & Co., of Renfrew on the River Clyde to a specification determined by the Glasgow Corporation, she was required to carry her “cargo” as well as passengers housed in a spacious saloon in her daily trips “doon the watter”.

Shieldhall was operated by Glasgow Corporation to transport treated sewage sludge down the river Clyde to be dumped at sea. She continued a tradition, dating back to the First World War, that Glasgow's sludge vessels carried organised parties of passengers when operating during the summer months. Thus Shieldhall was built with accommodation for 80 passengers.

In 1976, after 21 years of faithful service on the Clyde, Shieldhall was laid up. Shieldhall was purchased by the Southern Water Authority in 1977 and after minor modifications, she carried sludge from Marchwood, Millbrook and Woolston in Southampton to an area south of the Isle of Wight for five years from 1980. It was when she was suddenly withdrawn from service in July 1985, due to rising fuel prices, that active preservation began.

As a result of an initiative by the Southampton City's Museum Services, a preservation society was formed and Shieldhall was purchased from Southern Water in 1988, for £20,000.

The Society is registered as an Industrial and Provident Society as 'The Solent Steam Packet Limited' and operates as a charity.

All work associated with the Society and Shieldhall is carried out by unpaid volunteers. Much work has been done on the ship by these volunteers in order to keep her in sea-going condition. The saloon has been restored and the galley brought up-to-date. Crewed by volunteers, Shieldhall is a frequent sight around the Solent running excursions and such like. She has been to Holland for the Dordrecht Steam Festival and she has been an attendee at each of the International Festivals of the Sea at Bristol and Portsmouth.

During the summer months, various excursions are run in the Solent area and during the course of these voyages, passengers are encouraged to visit the Bridge and machinery spaces.

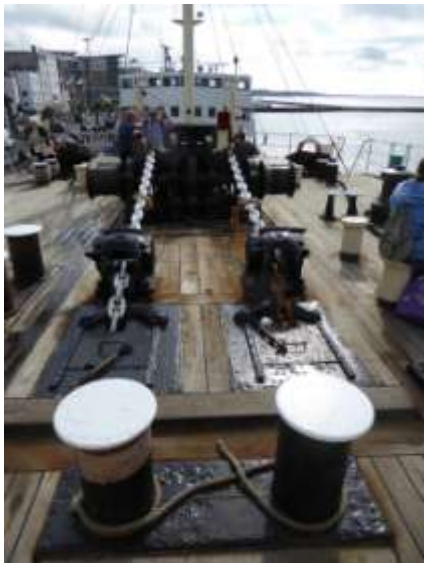
**Technical information**

The machinery on board is very similar, on a smaller scale, to that carried on the ill fated "Titanic", which makes Shieldhall a unique link with the past.

**Dimensions:**

| | |
|---|---|
| Length | 268 Feet |
| Breadth | 44 Feet 6 Inches |
| Draught | 13 Feet 6 Inches Aft |
| Gross Tons | 1792 |
| Net Tons | 1003 |

**The deck looking forward to the bow**



**Steam winches for the bow anchors**

**Boilers**

Two Scotch boilers, each 12ft diameter and 11ft long, produce saturated steam at a pressure of 180lb/sq.inch. The steam powers the main engines, auxiliary engines, all the deck machinery and a 25kW electrical generator (a diesel generator has been added to power modern navigational equipment).

The boiler is of riveted construction and has approximately 320 fire tubes. Fuel oil is forced under pressure to provide an atomised spray which is then burnt in the furnace. Air for combustion is supplied by a single-cylinder, forced draught fan. To improve efficiency, the air is heated by the combustion gases before they exit from the funnel.

**Above – the boiler room fresh air fan driven by a small steam engine and steam pipes from the boiler room**

Shieldhall has two large, oil fired boilers providing steam power throughout the ship.

The first Scotch boilers were introduced in 1862 to meet the need for higher steam pressures than hitherto existed. The boilers are robust and contain a relatively large volume of water to produce the accumulator effect necessary to meet variations in demand for steam. Originally designed for coal firing, later boilers such as those installed on Shieldhall were fired with oil or gas. Scotch boilers were introduced into the Royal Navy for the first time in 1890 on HMS “Trafalgar”. Oil fired Scotch boilers, albeit larger than those on Shieldhall, were used for steam raising on the largest Trans-Atlantic liners, such as the RMS “Mauretania” and RMS “Titanic”, in the early 1900’s. On Shieldhall the two Scotch boilers, each 12 feet in diameter and 11 feet long produce saturated steam at 180psi and are fired with heavy fuel oil.

**Main Engines**

The two main engines were constructed by the ship's builders, Lobnitz & Co., of Renfrew, Scotland. They are triple expansion engines with cylinder diameters of high pressure 15", intermediate pressure 25" and low pressure 40"and they have a stroke of 30". Each engine can provide up to 800 horse power to its screw. The normal service speed is 9 knots at 86 rpm. This is our economical speed, although the designed maximum is 13 knots at 120 rpm.

**The two triple expansion steam engines**


Waste steam from the engines, is ejected to a condenser where it is cooled by sea water passing through the heat exchanger tubes. The condensed steam is held in the hot well before being pumped back to the boilers as feed water.

Triple expansion steam engines were first developed by Liverpool ship owner, W.H. Dixon in 1874 for his steamer SS Propontis. This type of engine was soon adopted for large passenger liners, such as the SS “Majestic” in 1899 and was first introduced into the Royal Navy in HMS “Duncan” in 1900. The engines produce large amounts of power at relatively slow speeds, they are therefore reliable and are easy to maintain and operate. Due to the strong construction inherent in the design and the slow speed of operation, components had a long life enabling the engines to work for many years between major overhauls. On Shieldhall, the two main engines are triple expansion steam engines built by the ship’s builders. The low pressure cylinder exhausts to a condenser thereby improving the cycle efficiency and allowing the condensate to be recovered. At full load, each engine develops 800 horsepower. The engines are of open crankcase construction as required by the owner even though by that time the arguably superior enclosed crankcase design was in existence. Like the boilers, the engines are typical of machinery that powered ships throughout the steam age. Prior to the widespread introduction of the steam turbine following World War 1, even the largest steamships

were driven by reciprocating engines and this type of engine remained in service on cargo ships throughout. The famous Liberty ships, of which more than 2700 were built, were powered by triple expansion steam engines; the British equivalent “Empire” ships and the Canadian “Forts” both of which were also built in large numbers during World War 2, were similarly equipped. The triple expansion steam engine is therefore synonymous with ship propulsion over the richest period of Britain’s commercial maritime history.

**The ship’s whistle and siren**

**Other equipment**

There are 20 steam engines driving all of the original machinery. Modern diesel and electric machinery supplements power and fire-fighting capabilities.

**Steering Engine**

This is a two cylinder, fixed lap and lead reciprocating steam engine which alters the rudder angle through a rack and pinion arrangement working on the rudder quadrant. Rudder movements are transmitted from the ship's wheel on the Bridge by hydraulic pumps which form part of the wheel assembly. Control of the steam input is via a control ram working on a closed loop feedback which adjusts the steam inlet valves accordingly.

**Deck Machinery**

The for'd windlass and capstan and the after capstan are all operated by steam generated by the main boilers. They are normally used to moor the ship and to recover the anchors. The machinery to launch and recover the lifeboats and operate the cargo derrick, is an Armstrong patent.

**Bridge and Navigating Equipment.**

Within the charthouse, there is a traditional ships wheel and binnacle. The course to steer can be by reference to the magnetic compass within the binnacle, or the modern gyro compass, mounted on the deck head.

There are various items of electronic equipment which are required to navigate Shieldhall from port to port and an item of interest is the Decca Radar set which dates from the early 1960's and is still operation. It is normally used as a standby to the modern set located on the chart table.

**The ship's bridge and hydraulic steering gear**

**View from the 'gents'**

**And a few shots of the air show:**

**The Red Arrows**

**French aerobatic team flying three 'canard' aircraft and two single seat display planes, the prototype of which was a model plane which flew so well they enlarged it to take a full size pilot!**

# Basingstoke & District Model Engineering Society Ltd
# 2016 Calendar (Issue 2)

**January**

| | |
|---|---|
| 1 | Members Day (Friday) |
| 5 | Meeting Night |
| 16/17 | Maintenance Weekend |
| 19 | Bits & Pieces Evening |

**February**

| | |
|---|---|
| 2 | Meeting Night |
| 13/14 | Maintenance Weekend |
| 16 | Meeting Night |
| 28 | Driver/Public Running Training (Sun) |

**March**

| | |
|---|---|
| 1 | Meeting Night |
| 12/13 | Maintenance Weekend |
| 15 | Bits & Pieces Evening |
| 29 | Meeting Night |

**April**

| | |
|---|---|
| 3 | Driver/Public Running Training (Sun) |
| **9/10** | **Miniature Steam Gala** |
| 12 | Meeting Night |
| **23** | **Public Running (Sat): Queen's 90th** |
| 26 | Bring & Buy Evening |

**May**

| | |
|---|---|
| 10 | Stationary Engines |
| **15** | **Visitors' Open Day (Sun)** |
| 24 | Meeting Night |

**June**

| | |
|---|---|
| **5** | **Public Running** |
| 7 | Bits and Pieces Evening |
| **18** | Members Running & Barbecue(Sat) |
| 21 | Meeting Night |

**July**

| | |
|---|---|
| **3** | **Public Running** |
| 5 | Meeting Night |
| 10 | Members Running Day (Sun) |
| 19 | Meeting Night |

**August**

| | |
|---|---|
| 2 | Bring & Buy Evening |
| **7** | **Public Running** |
| 16 | Meeting Night |
| 30 | Meeting Night |

**September**

| | |
|---|---|
| **4** | **Public Running** |
| **11** | **Visitors' Open Day (Sun)** |
| 13 | Meeting Night |
| 24 | Members Running Day (Sat), incl. Fish & Chip Supper |
| 27 | Meeting Night |

**October**

| | |
|---|---|
| **2** | **Public Running** |
| 9 | Members Running Day (Sun) |
| 11 | Bits & Pieces Evening |
| 25 | Meeting Night |
| **29** | **Halloween Public Running (Sat Evening)** |

**November**

| | |
|---|---|
| 8 | Bring & Buy Evening |
| 13 | Members Running Day (Sun) |
| 16 | AGM (Date to be confirmed) |
| 22 | Meeting Night |

**December**

| | |
|---|---|
| **4** | **Public Running** |
| 6 | Meeting Night |
| 20 | Meeting Night |

**Treasurer**
Jon Evans
1 Grosvenor Close
Hatch Warren
Basingstoke
Hampshire RG22 4RQ

01256 471233
Jon.h.evans@btinternet.com

**Secretary**
Brian Hogg
14 Fontwell Drive
Alton
Hampshire GU34 2TN

01420 543581
brianjhogg@btinternet.com

**Newsletter Editor**
Austin Lewis
16 Church View
Hook Hampshire RG27 9HP

01256 764765
arlewis01@gmail.com

***Email Addresses***
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*Jon Evans*
*Treasurer*

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| | |
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| *Vice Chairman* | **Colin Stubbs** |
| *Secretary* | **Brian Hogg** |
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| *Director* | **Dave Andrews** |
| *Director* | **Darren Davis** |
| *Director* | **Steve Newell** |

**Project Leaders**

| | |
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| *Catering manager* | **Eric Widdowson** |
| *Electrical Work* | **Jon Evans** |
| *Library* | **Ken Jones** |
| *Station Buildings & contents* | **Dave Andrews** |
| *Publicity* | **Dave Mitchell** |
| *Track maintenance* | **Eddie Turner** |
| *Site maintenance* | **Eric Widdowson & James Barrett** |
| *Traction Engine Track* | **Austin Lewis** |
| *Webmaster* | **Mike Bowman** |
| *Newsletter* | **Austin Lewis** |