## Autumn 2014



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Vic Clifford Photo



Autumn 2014

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Deadline for the next issue is 14 November 2014

# **Chairman's Chat**

I am very pleased to announce that the sole remaining Gunpowder Boat, which used to be in a tent next to L153, one of the original steam powered mills, has now been moved into the Green Hut, L185, on the Long Walk. The Hut, which arrived at Waltham Abbey in 1939/1940 originally to be used for chemical analysis in connection with RDX manufacture, was later used by Dr Uri's group working on autoxidation. After I left WA to go to the Ordnance Board in 1981 it was used for first aid training and at lunch times for table tennis. After a lot of work by us on the Green Hut and the Gunpowder Boat both are available for visitors to see although neither of them are yet completely refurbished.

On Wednesdays during the summer we have been entertaining visitors by firing black powder rockets on Queen's Mead. Most Wednesdays we have had very little wind at ground level so we were able to launch them from the middle of the Mead. Unfortunately above the trees there was sometimes more wind and from unpredictable directions which resulted in some rockets finishing up in the trees. Now we need stronger winds to blow them down!

I hope that those of you who have visited the Mills during the summer enjoyed their visit.

John Wright

# Editorial

It has been pointed out to me that recent email versions of Touchpaper (Autumn 2013, Winter 2013, Spring 2014 and Summer 2014) have not been searchable. My apologies for this, as far as I can tell this is a Windows 8.1 'feature'! The same files and versions of the Scribus program produce a searchable PDF file using Windows 7.

This issue has been prepared using free fonts to avoid Microsoft's fonts. This allows output of a searchable PDF file, I hope the new style is acceptable. Anyone who wants replacement versions of the non-searchable files should let me know.

The email versions of Touchpaper can be stored on your computer and (hopefully) easily found and searched for items of interest after you have forgotten exactly when you first saw them.

In Adobe Reader CTRL+F will open a simple search box to search the current document, CTRL+Shift+F opens an advanced search panel where it is possible to search all documents in a given location, clicking on a search result opens the relevant document at the correct point. In addition the size of the text and photos can easily be increased by holding down the CTRL key and rotating the mouse wheel.

If you receive the paper copy and would like the email version as well let me know. Touchpaper can also be read on tablets, the electronic types! If you refuse to use modern things you'll have to remember where you read it and where you put the copies.

.Rrian Clements

# Uncle John's Railway - May 2014

Well railway lovers, here I am again to tell you about my adventures in building a 7  $\frac{1}{4}$  gauge railway.

In my last musings you heard of my problems with the locos and today I will tell you a little about the track.

2012 saw the start of the first section (200 feet) of track which was laid just in time to give rides for the August summer holidays.

2013 saw the construction of an engine/carriage shed and its connection to the running line with two sidings, which brought us up to 300 feet, where we finished track laying and concentrated on rides for the public.

This year the Mills purchased some readymade, second hand track and three set of points, which when laid, took us up to the wood pile and gave us a total length of track of just over 500 feet or for you modernists out there, 152 metres. Oh how I hate the metric system, yes I know it's easier than the imperial, with its factor of 10, but give me good old fashioned inches, feet & yards any day, still I digress, back to the track.

At the wood pile we constructed a passing point so that two trains can be run on the single line track and pass each other, which is where we finished for the 2014 season and concentrated on passenger carrying instead (at least we would have done except for our loco problems). This leaves us with a further 500 feet of track needed to reach the Main Laboratory and our link to our big brothers on the 2 feet 6 inch railway, who will be building a station adjacent to the Main Lab. It's now down to the Mills to cough up the money for the 500 feet of track and 3 sets of points and lot of ballast. One set of points will link a third siding in to the engine shed and the other two sets are for a further station run round at the Main Lab end. The big problem with track laying is that we are on an Ancient Monument and are not allowed to excavate the ground at high points to give a reasonably level track. So there are a lot of dips and climbs for the trains to negotiate.

One particular point on the phase one 2012 section is a deep dip that turns into a lake in heavy rain and required building up the track level by around 18 inches over a distance of around 50 feet (you can work out the metric equivalents) and I am giving serious thought to removing the material and building a bridge instead, as the hogging and ballast keeps washing away in the rain.

Is there anyone out there with a spare mini digger they would like to donate, only my seventy year old body is getting fed-up with all the digging and shovelling that this will require?

Or alternatively are there any thirty something's out there that would like to shovel around 20 tons of hogging and build me a bridge? For those not familiar with the term, hogging is a mix of clay and stone, very heavy and hard when dry, even heavier when wet.

Other jobs for the future, extend the station (it's too small) at the south end of the line and make a bigger turntable.

Build a station and Turntable at the Main Lab.

Add signals (dummy), gradient, slow, sound horn, signs for added interest along the line. Make a level crossing at the engine shed.

Build a third more powerful loco which will be a tram engine and for which the parts are on order.

John Wilson (Uncle John's Railway)



2012 and no station



John and Mark at Station April 2014



Rough idea of how the new loco may look

## Propellant stability work in L145 and H10

Firstly a bit of background for anyone unfamiliar with stability. All nitrocellulose/nitroglycerine based solid propellants whether for guns or rockets undergo slow decomposition at room temperatures, stabilisers are added to mop up the nitrogen oxides released as these have a catalytic effect on the decomposition (ref 1 which is on the internet). The stabilisers included substances such as methylcentralite or nitrodiphenylamine.

Propellants were heated at various temperatures and times and we had to extract the stabilisers to determine how much was left and extrapolate back to storage temperatures to work out a storage life. When I arrived at ERDE in 1973 fresh from university and started working in L145, methods were antiquated compared to now but were standard methods for the time.

I remember analyses were undertaken using thin layer chromatography. These were about 20cm square glass plates coated with a silica slurry then dried. The propellant extract was spotted onto the bottom of the plate, dipped in a solvent which travelled up the plate by osmosis and in the process separated the stabilisers from other components. The relevant spot was scraped off dissolved up in another solvent and measured using an ultraviolet spectrophotometer, all a very long winded process. Then came high performance liquid chromatography and everything speeded up. Other stabilisers and components were measured by using gas chromatography (as photographed fig 108, ref 1) in L145.

Another product of propellant ageing were gases such as carbon dioxide, nitrogen and oxides of nitrogen, these could induce a pressure inside a large propellant charge and cause it to crack so an understanding of this was important.

A non standard analysis was used for the gases evolved from propellants on storage. This used glass vacuum lines as photographed with me in fig 110, ref 2 and described in ref 3. These were built and maintained by a team of glass blowers, Bert George and Bill Corthine to name a couple. The principal of the method was to take ground propellant and put some in the a "break seal" glass tube. The filling end then had to be "constricted" by heating the glass to red heat and pulling it out without igniting the propellant at the other end of the tube. In the early days, before I arrived, this was done by the glass blowers by hand. One day, as I understand it, when Bill Corthine was doing this some propellant ignited, he escaped with a burned hand. When I arrived a remote glass working lathe was being used to pull the tubes, no doubt "invented" soon after Bill's incident. The tubes were then attached to a vacuum line and all the air pumped out of the tubes and sealed by melting the constriction.



After appropriate storage the tubes were brought back to the vacuum line, as shown in the diagram. A small steel weight was balanced on the thin glass of the break seal and when all the air had been pumped from the vacuum line (using a mercury diffusion pump and checked using a mercury filled McLeod gauge) the steel weight was lifted using a magnet and dropped onto the break seal the break it and release the gases into the vacuum line. By forcing the mercury up and down

the Toepler pump the gases could be transferred into the glass bulb. These were small amounts of gas (often only a fraction of a ml at normal pressures). The glass bulb containing the gases was then put on another vacuum line connected to a home made gas chromatographic device (ref 3) for analysis. The storage tests were at different temperatures and times so that extrapolation to in service conditions could be made.

Sometime in the 1980's we moved from L145 to join General Chemistry in H10 (ref 4)

The list of H10 General Chemistry scientific staff I remember as:-Reg Powell, Mike Farey, Ian Wallace, John Williams, Peter Maher, Paul Bunyan, Sally Westlake, Ray Vaughan, Bernie Downes and myself.

At that time possible gas cracking of the Polaris rocket motors was a concern and we had various samples from motors to measure gas evolution on storage. The method was "modernised" we switched to micro Gas Chromatographic systems with mass spectrometers as detectors (Vacuum Generators Micromass 6 and Micromass 16). The



micromass 6 system and blast cabinet is shown in the photograph.

The propellant could not be ground but had to be chopped into tiny pieces, it went to "South Site", I can't remember whether it was P1 or P2, and came back as thin sheets which we then fed through a hand

cutter John Williams made. This advanced the propellant through a reciprocating guillotine blade, you did this twice at 90 degrees and ended up with lots of little cubes. These were put in steel pots, I suppose about 50 ml capacity, which were sealed to a tiny metal sample loop using gold o-rings and heated in oil baths at appropriate temperatures. John Williams made the o-rings in his office from gold wire using a mini hydrogen oxygen welder (used o-rings were collected up and sent back to Johnson Matthey). To control the valves on the sample loops we used Sinclair ZX spectrum computers running a BASIC programme we had written. Who remembers the days of storing a programme on an audio tape? We also used an early HP desk top computer probably a HP85.

The method was more efficient than the glass tubes as many measurements could be taken from one sample of propellant without the need of a toepler pump. The apparatus including glass vacuum line mercury pumps etc. were housed in blast cabinets in case of accidents. I remember the testing of a steel vessel at New Hill, in spite of a big bang it was not a detonation and the blast cabinets were considered a safe containment.

You will have noticed references to mercury, in a big Toepler pump and associated vacuum line there could be 20 plus pounds of mercury, the lines were built on wooden trays so that mercury spillages, could be sucked up and disposed of but no-one worried about a few globules of mercury on the tray. This is in contrast to recent working life when even mercury thermometers were considered a hazard!

Other chemistry work that went on in H10 included heat evolution from propellants on storage and NOx measurements (Paul Bunyan); mass spectrometry to identify compounds e.g. novel energetic materials (myself) and compatibility testing of initiators, propellants and explosives. We had a top of the range mass spectrometer, a Vacuum Generators 7070EQ, which to those who are technically



minded was a high resolution magnetic mass spectrometer with a quadrupole mass spectrometer behind it to do daughter ion mass spectrometry. There's me in the photo at the controls!

I stayed in H10 until just before the site closed when I transferred to the Fire Research Station and spent my first few years there setting fire to things like aircraft, buses, artificial limbs, and various building structures!

#### John Rowley

ref 1	ERDE TECHNICAL NOTE No. 47 R Stenson
ref 2	The Listed Buildings and Other Principal Structures at the Royal Gunpowder Mills Waltham Abbey
	Author: Les Tucker Publisher: Royal Gunpowder Mills
ref 3	The determination of gases evolved from propellant compositions by Gas Chromatography FIH Tunstall
	Chromatographia 3 1970 (note there is also an earlier paper in Chromatographia 1)
ref 4	Touchpaper Jan 2009, Malcolm Bergh

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The Archive team of Les, Richard, Ian and myself have re-visited the proposal to suggest WW1 Poems for Touchpaper. We do not wish to miss this opportunity to commemorate the 100th anniversary of the start of WW1 this year and suggest that a poem is included.

I came up with a shortlist of 3 poems and the team have decided, by majority vote, on "In Flanders Fields" by John McCrae.

**Michael Seymour** 

# **In Flanders Fields**

In Flanders fields the poppies grow Between the crosses, row on row That mark our place; and in the sky The larks, still bravely singing, fly Scarce heard amid the guns below.

We are the Dead. Short days ago We lived, felt dawn, saw sunset glow, Loved and were loved, and now we lie In Flanders fields

Take up our quarrel with the foe: To you from failing hands we throw The torch; be yours to hold it high. If ye break faith with us who die We shall not sleep, though poppies grow In Flanders fields.

John McCrae died in Base Hospital, 1918

# Julie's Nature Column

With the spring now over and summer underway the wildlife on site will slow it's pace a little as food should be plentiful. The hot weather has ensured a feast of insects for this years fledglings and I've seen Swallows flying over the water at New Hill catching insects on the wing.

This year our resident Swans laid 6 eggs, but only two hatched. The two cygnets look very healthy and survival should be in their favour as the parents have less to keep watch over.



Just the other day a Swan had lost it's bearings and was on the road of the land train route. We had to slowly usher it quite a walk to reunite it with the water. Hopefully the visitors on the tour didn't mind being held up for a short while.

From time to time Buzzards visit the Mills and can be heard calling very high up in the sky. To my surprise one was on the ground having it's dinner which gave me a photo opportunity.



Our resident deer are in the process of growing new antlers. The velvet will normally start to shed in late August and then the build up to the rut will begin. At the moment the deer will be lying down keeping out of the heat of the day. The females will have fawns now and will spend a fair bit of time keeping out of sight.

Julie Matthews The Mills Nature Conservationist



All photos by Julie

# World War One The Response of the Royal Gunpowder Factory



To mark the outbreak of World War One an Archive based board display has been compiled and sited near the entrance to the cinema, opposite the stairs.

The theme is the response of the Factory to the demands of the War and how this was achieved.

Salient features were :-

Production of cordite and guncotton was increased to around ten times pre war levels – ultimately rising to around 200 tons of each per week.

This was achieved by a combination of :

New building, such as the North Site east flank cordite complex

Recruiting for the first time women workers, to a total of 3000 in a total staff number of 6000.

For the last two years of the War round the clock working 7 days a week

Improving product flow by construction of a railway system

#### WW1 munition workers imagery

It has been noticeable that of the many images of female munition workers in WW1 recently published in the media by far the greatest number have been of filling factories i.e. where explosives manufactured elsewhere were filled into shell etc. There has been a far lesser number of actual explosives manufacture – which makes the Factory's 1917 series of female operatives beside the plant they operated, such as the following, all the more historically valuable as time moves on.

Les Tucker

Some images from the display and others from WW1 -



#### **Munition Workers Postcard - 1917**

A cheerily patriotic munition workers post card emphasising the triangular war workers badge. Although the wording talks of output proving that the worker had 'put on speed' explosives factories would still have worked within strict safety rules. The safety record of the Factory throughout the War was outstanding, there were no explosions, the sole fatality occurred in the acid factory.

Other postcards were markedly different in tone, attacking those considered not to be ' doing their bit. The Factory Hierarchy - 1917



Lt. Col. Fisher Superintendent (7th. from left in seated row) and his staff.

Having overseen the influx of female workers and other aspects of the Factory's response to the War, Col Fisher moved on in 1917 to be replaced by the Assistant Superintendent Major, later Lt. Col., P H Evans (on Col. Fisher's right)

To Col. Fisher's left :

Mr. J M Thomson Head Chemist/Factory Manager – patentee, with his brother W T Thomson, Manager Guncotton, of a revolutionary improvement in the guncotton manufacturing process of fundamental importance to the Government and internationally.

Lady Superintendent, un-named, appointed when female workers were recruited. This is probably the second, co-operation of the first with Col. Fisher was not good and she was replaced.

The last figure on the seated row to Col. Fisher's left is Dr. R C Bowden, later OBE, the first civilian Superintendent of the Factory, in 1934, later Superintendent of the new Ordnance Factory at Bishopton and one of the most senior in the Government explosives scientists hierarchy.

## Male Supervision-Quinton Hill Cordite Workers - 1916



Whilst the female workers were invaluable in operating the plant, supervision and setting up of machines was largely reserved for male workers.

## Superintendent with workers and management Cordite Press House Number 2 – 1918



This photograph was possibly taken to mark the end of the War

Lt. Col. Evans is flanked by on one side the Lady Superintendent and on the other by Lt. E L Blee – Danger Building Officer.

### Female workers operating processing plant





Two from a series taken in 1917 showing workers alongside the plant they operated.

Nitration of Guncotton treating cotton with nitric and sulphuric acids.

Incorporation of Cordite – blending of cordite paste – mix of guncotton and nitroglycerine, with acetone, to aid gelatinisation of guncotton in mix, and Vaseline, to improve storage stability.

Railway 18in. gauge - 1916



In 1916 an 18in. gauge railway was constructed to improve product flow - particularly of cordite trays from North Site to South Site for drying ( acetone removal ) and transport of finished cordite and guncotton out to the main line. The system was largely operated by female workers.

## Recreation Girls Day Out - 1917



## History of the Ordnance Board



This year the Ordnance Board celebrates its 600th anniversary as the tri-service and civilian government organisation responsible for ensuring that weapons, munitions and ordnance entering service for the UK military are "Safe and Suitable for Service", meaning that they function correctly when intended so to do, but do not pose a

hazard to users when in storage or use throughout their service life.

Quite a number of ex-Waltham Abbey staff have served tours of duty in the Board, for instance myself and Ian Wallace as Vice Presidents, John Wright as a Member and Peter Hart, Tony Kosecki, Ted O'Day, Roy Stenson and others as Technical Staff Officers. It seems fitting, therefore, on this anniversary, to give a brief history of the organisation and to explain how it evolved and worked.

The first link to the Ordnance Board, albeit rather tenuous, is Nicholas Merbury. In September 1414 he was tasked with recruiting workmen for the Ordnance, after which he was appointed the first Master of the Ordnance for life by Henry V who was on the throne from 1413 –1422. He was then already engaged in preparations for Henry V's invasion of Normandy; in October 1414, for instance, an assignment of £66 13s 4d was made to him from the Exchequer to cover part of his expenditure on ammunition. The office and main arsenal were located in the White Tower of the Tower of London, and it was the administrative centre of the new Board. Gunpowder was stored in the White Tower and continued to be kept there until the mid-nineteenth century. Small arms, cannon, ammunition, armour and other equipment were stored elsewhere within the Tower precinct, a succession of Storehouses and Armouries having been built for such purposes.

In 1597 the Board of Ordnance was established with responsibility for the whole business of ordnance for land and sea. From 1603 until 1855 the Master-General of the Ordnance was the chief officer of the Board. The responsibilities of the Board spanned everything from design and production to storage and distribution.

The Board's primary manufacturing site, and a key location for several of its activities, was the Royal Arsenal in Woolwich. Guns had been stored and proved there from the mid-seventeenth century. It later expanded into a large-scale production facility, specializing in manufacture of shells, projectiles and propellants at the Royal Laboratory, established at Woolwich in 1695, having been previously based at Greenwich. The manufacture of cannons, mortars and other artillery pieces was undertaken at the Royal Brass Foundry and the manufacture of gun carriages and other ancillary items from the 1750s onwards was at the Royal Carriage Works. Small arms manufacture was begun by the Board on Tower Wharf in 1804, but was subsequently transferred to the Royal Small Arms Factory at Enfield, which opened in 1816.

Gunpowder manufacture was mostly kept separate from other operations and was generally in the hands of the private sector, but beginning in the eighteenth century, the Board began to purchase mills that had been established under private ownership. Faversham became the Royal Powder Mill in 1759 and Waltham Abbey became the Royal Gunpowder Factory in 1787. Faversham was returned to private ownership in the early nineteenth century but Waltham Abbey, as we know, remained in Government hands until 1991.

Storage facilities were also needed in the vicinity of the Royal Dockyards, to enable easy transfer of guns, ammunition, powder, etc on board ships for use by the Navy at sea or for delivery to the Army in areas of conflict. The principal yards were at Chatham, Portsmouth, Plymouth, Sheerness and Woolwich.

The Board of Ordnance became the second largest Department of State, next only to the Treasury, and the Master General had a seat in the Cabinet. However, this very power and size, plus the anomalous split in command of the armed forces between the Master General and the Secretary of State for War, were to lead to the Board's temporary downfall. Issues of performance in the Crimean War, especially disastrous lack of proper provision for operations during the Russian winter of 1854 brought about the Board's demise in 1855, so the history of the Board was not to be a continuous one. In that year the Board, and the office of the Master General were abolished and the responsibilities were passed to the Secretary of State. With the Board's closure, the Artillery together with the Royal Engineers came directly under the Commander-in-Chief and the War Office like the rest of the Army. The former Board was incorporated into the War Office by an Act of Parliament as the Department of the Master-General of the Ordnance, which took over some of its activities. Its storage, research and manufacturing sites were for the most part allotted either to the Admiralty or to the War Office.

In 1881, following unease after the Second Boer War that the British Army had been ill-equipped, a new office called the Ordnance Board was created, and after that there was an unbroken succession. The Ordnance Board consisted of a group of munitions experts, whose purpose was to advise on the safety and suitability of weapons for service use. The role of the Board was subsequently extended to become a truly tri-service organisation, although the Royal Navy never really saw it that way, having its own Chief Inspector of Naval Ordnance (CINO) which it fiercely defended. In its recent history the Board featured a number of Divisions, headed by Members, covering Army, Royal Navy, Royal Air Force, Nuclear, Ranges and Scientific Support work. The President of the Board was a Two Star appointment which rotated through the three services with, until 1993, two One Star military officers from the other two services acting as Vice Presidents. In that year the first civilian Vice President was appointed, much to the chagrin of the military. The Members of the Board were predominantly serving military officers, with just the Scientific Support Division being headed by a civilian.

One of the Members was usually an Australian serving officer, and the Ordnance Board Officers Mess (the bar) was known as the Australian Members Room, this tradition survived moves of the Ordnance Board from Charles House near Kensington Olympia to Empress State Building by the Earls Court Exhibition Centre and finally to Abbey Wood at Filton near Bristol. For many years the Board had its own printing press which published the Proceedings of the Board. These formed the Board's definitive advice on the safety and suitability for service of weapons and ordnance. The Proceedings were subject to extensive peer review, then presented to the full Board at its regular meetings on Tuesday mornings. This rigorous process ensured that the advice given was clear, accurate and unequivocal. The Services did not have to follow that advice, but they ignored it at their peril. The Ordnance Board and its name survived within the Ministry of Defence (which itself was not created until 1964) until the late 1990s when it was renamed the Defence Ordnance Safety Group, finally ending the long-standing Ordnance Board/CINO dispute. That name continues to this day, but sadly the Australian Members Room does not.

Geoff Hooper

# 100th Aniverary of "Success"



Bob Pumfrey driving Ruston, Proctor traction engine no. 50278 "Success" at Chrishall Grange, Cambridgeshire, while under requisition for the war effort in 1915. This engine had been purchased brand new by the owners, Charles Pumfrey and Sons the previous summer.

Pumfreys were threshing contractors and agricultural machinists from Duxford. During the Great War three of their engines, along with balers and associated equipment, were commandeered by the Army Service Corps. These outfits were operated by "forage units" which included women, forerunners of the Women's Land Army of World War 2. They travelled from farm to farm, baling straw and hay stacks that had been requisitioned. These bales were then hauled, by steam, to the nearest railway station and transported onward to the men and horses on the Flanders battlefront.

"Success" made a national record by baling 242 tons 4 cwt of hay in a week during this time. She subsequently moved from baling to haulage. After the war she continued contract threshing for the family firm until 1950.

With the advent of steam rallies in the mid-fifties, Bob took this engine to shows and rallies throughout East Anglia, and she is still with the Pumfrey family, steaming proudly on in her centenary year.

#### **Michael Pumfrey**

"Success" appeared in "The Four Feathers", a film about the First World War.

A book, 'One Hundred Gold Sovereigns', by Robert and Michael Pumfrey with many pictures tells the story of the Pumfrey family and their work in steam and agriculture. Details from mrpumfrey@tractionengines.com. Ed.



"Success" at Haddenham 2014 with Robert and Michael

# Letters to Touchpaper

## Another 2014 Anniversary 1314 - The Battle of Where?

In the days when junior school history consisted of laboriously learned lists of dates and the Kings and Queens of England, probably because it tripped easily off the tongue the one they always got right was 1066, The Battle of Hastings.

North of the Border for the same reason the equivalent was 1314, The Battle of Bannockburn.

This was the two day battle in which, through the brilliant generalship of Robert the Bruce (the man in the spider story) and a highly trained and motivated army, the Scottish army although outnumbered 6,000 to 14,000 decisively defeated the army of Edward II, thereby ensuring the survival of Scotland as an independent nation, until the 18th. century when the Scottish merchants realised on which side their bread should be buttered.

And there it would have remained buried – until now. Mr. Salmond, leader of the SNP, never one to miss a political trick, has seized the anniversary as a heaven sent political gift as part of his efforts to stoke up nationalistic sentiment in advance of the independence referendum.

## Les Tucker (disenfranchised Glaswegian)

PS.

1 Newsletter 2013-1 of the Waltham Abbey Historical Society included the following item :

A Purbeck marble bust of a knight from the thirteenth century survived as part of the Abbey Church complex ;

It was researched by Ken Bascombe from WAHS and is potentially of Richard Bruce, a relation of Robert the Bruce.

2 Politics move fast. Since the above was written, the SNP have to some extent backed off commemorating Bannockburn. Apparently they have detected some lack of support from the female side and have concluded this important part of the electorate aren't interested in things like battles, so are concentrating on the matters which they think will interest them more.

Depending on date, whether it has worked will have been revealed by the time this is published.

#### Railway Name Change

Just to let you know that I am changing the name of Uncle John's Railway.

The new name is the Bangs-Galore and Gunpowder Creek railway, paying homage to the Far Tottering and Oyster Creek Railway created by the Cartoonist Rowland Emett, who promoted and designed many of the fun exhibits of the 1951 exhibition, including the 15" gauge railway that ran in Battersea Park, London during the Exhibition.

The odd spelling is to stop any confusion with the Bangalore Torpedo while still keeping some reference to the Gunpowder Mills history.

The Bangalore Torpedo was invented by Captain McClinock of the British Indian Army in 1912 for clearing booby traps and Barricades left after the Russo-Japanese and Boer wars and just in time to be used to clear barbed wire and defensive positions in WW1, and landmines as well in WW2 and more modern conflicts such as in Afghanistan. Its latest variant is the Bangalore Blade using aluminium instead of steel tube with plastic explosive and is made in the UK by Alford Technologies.

John Wilson

Friends Contribution to Home Front Legacy Project – 1914 - 1918

The Council for British Archaeology have launched a public engagement project to enable local people to record surviving remains of WW1 -

'The Home Front (1914-1918) and its Legacies'

Input is from volunteers and as a guide to methodology etc. a pilot project was developed by the Universities of Bristol and York in which two representative areas would be studied and a Handbook and Report written.

The two areas chosen were the Lea Valley and Staffordshire, with the Mills included in the Lea Valley sites. Eight building categories on the North Site were identified and detailed report forms on the relevant buildings were completed.

A Handbook and Final Report have now been published and the Mills methodology and data figure prominently.

http://new.archaeologyuk.org/news/home-front-legacy-project-launch

Les Tucker

#### Vic Clifford Photo

Apologies that I have read the Summer Touchpaper very late but the Vic Clifford photograph includes Brian Cuthbert (centre) and Ted O'Day.

There is a peculiarity involving some of the type face. What the "l" is going

on?

#### Dave Mullenger

The problem with 'l's only appeared in the email version, not the printed copy. It is hoped that the new fonts will have corrected this. If anyone notices other problems please do tell me.

Ed.

# Obituaries

My father Brian Leslie Hammant died on the 13th June peacefully in his sleep following a series of strokes.

#### Kerry Hammant

I am sad to report the death of John Ward on 21.06.2014, he died of pancreatic cancer, which was only diagnosed at the beginning of March this year.

It was a great shock to all the family, he will be sadly missed.

Shirley Ward (wife)



Mark and his loco 'Emily'



NG Wash Tub, Powder Boat and Cordite Drying Truck in the Green Hut