

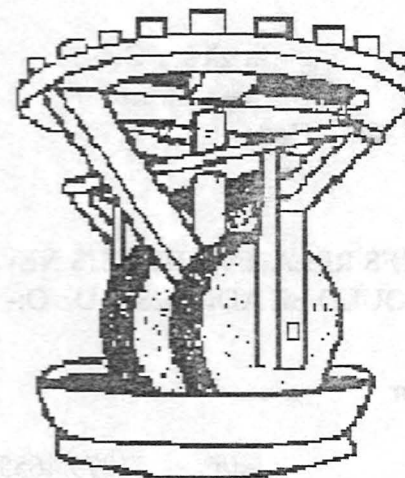
**ROYAL
GUNPOWDER
MILLS
WALTHAM ABBEY**

‘TOUCHPAPER’©

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Touchpaper

The Newsletter of the
**ROYAL GUNPOWDER MILLS WALTHAM ABBEY
FRIENDS ASSOCIATION**



**MARCH
2006**

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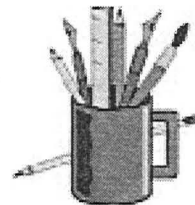
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PLEASE NOTE: Deadline date for submissions to
the next issue is 15th May 2006



Editorial

The new season is fast approaching and there is much to do on site with a revamp of exhibitions and maintenance.

A good programme of special events have been booked which can be seen on the 2006 calendar on page 4 and in the new site leaflet accompanying this issue.

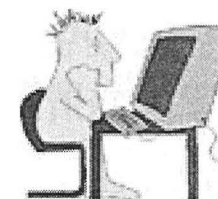
The AGM and Reunion date has now been set (see p3) which we are pleased to announce will be held on site for the first time. This AGM is especially important as the membership needs to adopt the new constitution in order for us to gain charitable status.

Members will find a booking form for the Reunion accompanying this issue and an addressed envelope for your return.

Those of you who have yet to renew your membership will also find enclosed a reminder notice (You can use the same envelope for your renewal).

Norman Paul

Touchpaper Editor



CHAIRMAN'S CHAT

Welcome to the Spring issue of Touchpaper.

Not all members may be aware that Norman Pember, kidnapped in Iraq some weeks ago, worked here in the Main Laboratory during or just after the war. He is on the photograph currently displayed outside the Main Lab. We hope sincerely that he will soon be freed.

On a happier note the new season will soon be here; opening date is the 29th April. We look forward to seeing as many as possible of you during the summer. Many of the exhibits are new or modified from last year; including our exhibition on rockets which has been expanded.

During the winter the fallow deer have become more used to people and are often to be found on Queens Mead. We await, with interest, whether this will continue during the season when there are more people about. Even the shy muntjac deer have been seen more frequently than before.

The SEETECH workers have cleared a lot of undergrowth and young alders from the area north of Queens Mead and the buildings there are now more readily visible.

A major on-going project is restoration of the Powder Boat in L168. This requires stabilisation of the rotting timbers and replacement of missing parts. It is a long process but we hope that it can be completed by the end of this year.

We have at long last obtained planning consent for a major project in one of the bays of L157. The floor here had been dug out to reveal the original power shaft and gearing for the steam powered incorporating mill. We now have permission to install a wooden flooring and a full size model of an incorporating mill. This will provide a long needed addition to this listed building. The work will be carried out and funded by the Friends Association.

We also hope that this year it will be possible to spend some money on repairs to the roofing of some buildings and also to the roads used by the Land Train.

John Wright

2006 AGM and REUNION

ANNUAL GENERAL MEETING

The Association AGM will be held in café of the Royal Gunpowder Mills on Friday 12th May 2006 commencing at 11.00.

Nominations for Committee Members and Officeholders should be sent to the Secretary at least two weeks prior to the meeting.

Any motions or amendments to the Constitution should be made in writing and be sent to the Secretary at least two weeks prior to the meeting.

The current Officers and Committee Members are willing to stand again but additional nominations will be welcome.

ANNUAL REUNION

Following the AGM at the Gunpowder Mills on Friday 12th May we shall be holding our Annual Reunion.

This will start at midday with a buffet lunch served at around 12.30pm.

A bar will be available from 12.00

By holding this on site we have been able to reduce the cost over last year's to £7 per head

Members will receive a booking form with this issue and an envelope, addressed to the Treasure, to whom payment should be sent.

PLEASE NOTE THAT CARS MUST BE PARKED IN THE MAIN CAR PARK AT THE END OF BEAULIEU DRIVE AND ENTRANCE TO THE SITE WILL BE VIA THE VISITORS ENTRANCE.

DURING THE AFTERNOON THE MAIN EXHIBITION, FILM AND OTHER FEATURES OF THE SITE WILL BE OPEN TO VIEW.

2006 EVENTS CALENDAR

SEASON STARTS 29th APRIL

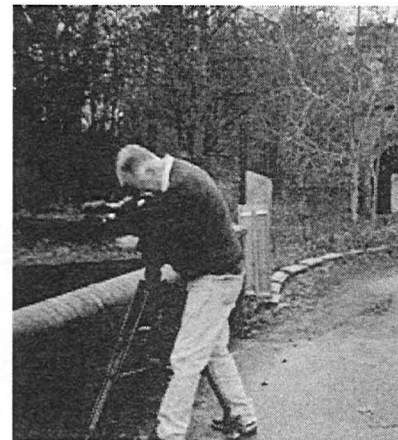
April	29/30/31	Medieval Siege Society
May	6/7	VE Day (Spitfire display on Sunday)
	20/21	Steam Fair
	28/29	Multi period living history
June	10/11	Essex Militia
	24/25	Military Vehicles Show
July	8/9 (not 5/6)	World War I display
	15/16	Regia Anglorum
	29/30	English Civil War
Aug	5/6	Victorian Experience
	19/20	American Civil War
	27/28	Napoleonic Association
Sep	2/3	The Home Front
	9/10	Essex Militia
	16/17	"The World Aflame" Jacobites, Yankees and France - The wars of King George
	23/24	Guy Fawkes Experience

SEASON ENDS 1st OCTOBER

OTHER SITE NEWS

MEDIA ATTENTION

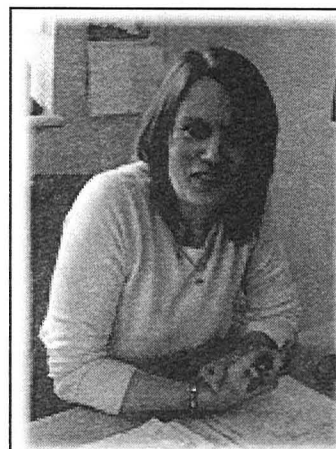
As reported previously the Mills have already been used as a film location for 'Enigma'. This has attracted the attention of other film makers from the world of TV. The photograph shows one of them filming one of the site's rare cast iron aqueducts. The bridge he is standing on appeared in 'Enigma' with Kate Winslett.



In addition there are an increasing number of local radio items advertising the site and, most recently, an ITV spot in which Lynne Lennard starred. (Autographs available on request !)

This must all help in attracting new visitors to the site.

STAFF



We published a picture in the last issue of Lynn Duke who joined the staff in October. She wasn't too happy with it as it was taken outdoors on a wet and windy day so here is a better one. Lynn has settled in well and is a great asset.



We are pleased to see Sue back in the main office after her operation and long absence, albeit for only three days a week.

As she says 'I'm slowly getting there'.

Good to have you back Sue.

ARCHAEOLOGY

SITE INVESTIGATION

A number of Friends participated in an archaeological investigation instigated by the Waltham Abbey Historical society on the Millhead. The remains of the first incorporating mills which replaced the previous stamp mill was uncovered. The figure on the left is Peter Huggins and that on the left is Ted Ayres, both of the WA Historical Society. The centre figure is one of the Friends, Dennis Ashby.



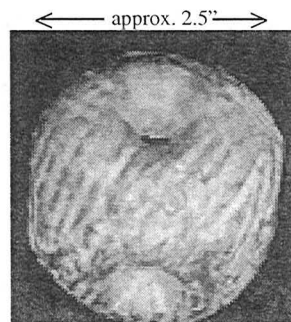
GUTTMAN BALL

Some years ago a friend unearthed a mysterious earthenware object while metal detecting - probably in the Upshire area. Several museums were unable to identify it and, only recently have I discovered it is a 'Guttman Ball' used to pack acid towers.

Janet Grove

Waltham Abbey Historical Society

Around the turn of the late 19th century Oscar Guttman (of Hungarian birth but later naturalised as British) was a chemical engineer with experience in the explosives industry who was consulted on a number of questions and was responsible for the erection of the acetone factory at Waltham Abbey. These 'Guttman Balls' were another innovation and were used to pack the distillation towers in the concentration and recovery of acids for the nitration of glycerine and cellulose to yield nitroglycerine and guncotton for cordite. Ed.



EXTRACT FROM THE ARCHIVES



The Muzzle-Loading Haversack Five Pounder

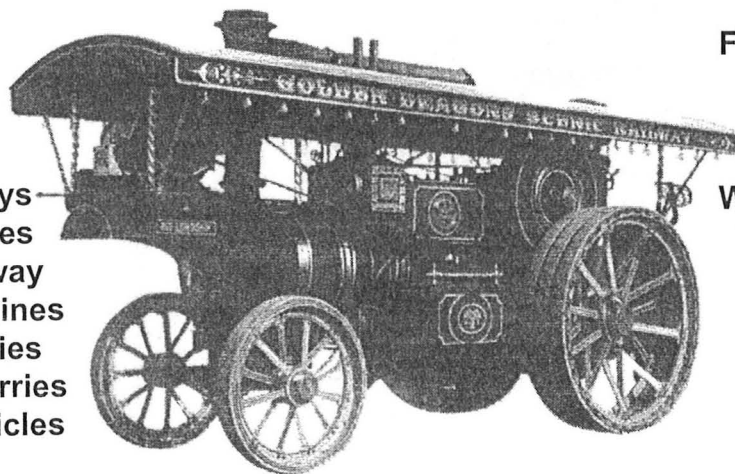
The demonstration of this new weapon was one of a number of festivities arranged to celebrate the coronation of Ferdinand I as king of Bohemia and Hungary. But the ballistics experts responsible for the design failed to take into account the effect of recoil. It was said at the time that had not the gun been blessed it might have dethroned the Emperor or worse.

Richard Thomas (one of our archivists) shows this in his talks and likes to add:

'Unfortunately there was a communication failure between the gunner and his assistant with the gun on his back, who turned to bow to the assembled dignitaries after the gunner was seen to light his igniter rather than before'

STEAM FAIR 2006

Miniature Railways
Stationary Engines
7.25" gauge Railway
Scale Traction Engines
Scale Steam Lorries
Half Size Steam Lorries
Unique Steam Vehicles
Steam Car



Traction Engines
Full Size Showmans engine
Full Size Steam Rollers
Full Size Steam Lorries
Foden Steam Lorries
Working Blacksmith's Shop
Childrens' Fairground
Trade Stalls
Book Sellers
AND MUCH MORE

20th-21st May 2006

11.00am - 5.00pm

ROYAL GUNPOWDER MILLS

Beaulieu Drive -Highbridge Street EN9 1JY
(opposite McDonalds)

Tel: 01992 707370

www.royalgunpowdermills.com

WALTHAM ABBEY

Rail - Waltham Cross Station

M25 junction 26

Registered Charity No. 1062968/0

THE 'WOOLWICH INFANTS'

6 off 12 inch shells were used as part of a garden display, outside Walton House and were (indeed still are) referred to as the Woolwich Infants (anybody know why?). One is now part of our 2 foot 6 inch gauge railway display at 83B, where it is mounted on a railway wagon. 3 are laying in a metal pallet besides 83B and two are now on display in the large exhibits area.

They are 12 inch muzzle loading, rifled, armour piercing shells (M. L. R.), made at Woolwich Arsenal to the design of Major Sir William Palliser 1830-1882 and were made in 1871, with only fifteen guns being built to this calibre.



What makes these shells unusual is their method of manufacture.

Sir William realised that to penetrate the new armoured war ships which were appearing in the 1860s, a hard point was

required, to punch a hole through the wrought iron armour.

He came up with the idea of a water cooled mould for the head of the shell, with a conventional sand mould for the other two thirds. The reasoning being, that when cast iron is cooled suddenly, it becomes very hard. The shell was cast nose down with the steel part of the mould at the bottom. The sand part of the mould cools slowly, so the main body of the shell remains ductile and can be machined to take the driving studs for the rifling.

Each shell weights approximately 800 lbs & required a charge of 43lbs of gunpowder to fire it to a maximum range of 6000 yards.

The shell could be used in two ways, (a) as a plain shell without explosive charge, or (b) with 9lbs 14oz of large grain gunpowder, or guncotton, inserted through the base into the shell cavity, the base then being sealed.

A red band around the nose denoted that the shell had a charge of powder. When filled, no fuse was needed, as the impact of the shell against the target was enough to set off the charge.

Note the driving studs which engaged the rifling to impart spin to the shell.

By the 1870s these studs were found to be unnecessary and a copper or lead gas check was fitted to the base of the shell to engage the rifling.

Although William Armstrong designed & built breach loading rifled guns from the 1850s, the breach mechanisms proved unreliable for large calibre guns, and until the 1880s (when a more reliable breach mechanism came into service) muzzle loading rifled guns were the norm for large calibres above 7" both on land and at sea. The photo on the next page shows the type of gun for which the shells were intended. It is a rifled muzzle loading gun and weighed 38 tons.

A crew of twelve men were required to fire this monster and this type of gun was sited at forts on the coast such as Hurst Castle in Hampshire (where the photo was taken), to guard the western entrance to the Solent and on the larger battleships such as H.M.S. Inflexible of 1881, which had two twin mount 81 ton, 16 inch calibre M. L. R guns mounted in turrets amid-ship.

7, 9, 10, 12 & even 16inch M. L. R. guns were built and used both on land and at sea in the new Iron warships which had replaced the traditional wooden ship of Nelson's time by the 1860s.

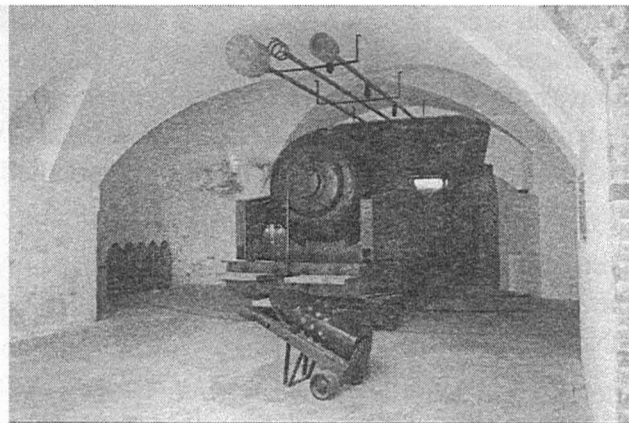
The Hurst Castle site had ten 12.5 inch and five 10 inch, 18 ton rifled muzzle loading guns which were installed in the 1860s and (all though, by the 1880s were obsolete) were kept in service (as a reserve) until the end of the 1914/18 war, when they were finally scrapped. The gun in the photos was salvaged from the Isle of Wight and mounted on a simplified replica carriage.

How were these guns loaded?

Well there were a number of methods, the most sophisticated of which was to turn the gun from its firing position, through 180 degrees so that it faced a shell hoist and mechanical rammer this method being used on battleships for the larger calibres, such as the 16inch guns mentioned earlier. The bag of gunpowder (don't forget, this is before the days of cordite) was hoisted from the magazine below, level with the muzzle and the rammer operated to drive it home. The hoist returned to the magazine where the shell was collected and raised level with the muzzle again. The shell was then rammed. The gun was then swung back to its firing position, ready for use.

At Hurst Castle the loading method was much more physical, with the gunpowder charge being loaded and rammed by the gun crew. The shell was then lifted level with the muzzle by crane and again rammed by the gun crew. It must have been a hell of a job ramming 800 lbs of shell down the barrel of a rifled gun.

In the photos of the gun at Hurst Castle, you can see the ram and other implements needed to load the gun, in a rack directly above the gun position.



The last firing of a similar gun was on Malta, during the defence of the island from German attack in the 1940s. There is no record of whether it hit it's target.

Sir William Palliser: Soldier, Inventor, MP.

Sir William Palliser was a prolific inventor, born in Dublin on the 18th June 1830 and was educated at Rugby, Trinity College, Dublin and then Trinity College, Cambridge where he studied rifled ordnance and projectiles. He then went to Sandhurst and obtained a commission as an Ensign in the Rifle Brigade on 22nd. April 1844. He later served in the Crimea as a Lieutenant and in 1858 transferred into the 18th. Hussars where he was promoted to Captain.

In July 1860 he went to Dublin as Brigade-Major of Cavalry, where he remained until 1864, retiring from the army in December 1871 as a full major.

His inventing skills were first seen in 1853 at Shoeburyness, when projectiles to his design are tested and again in 1855 when a rifled mortar is tested. He took out a patent in 1854 for projectiles, and in 1860 for improvements to breech loading rifles.

In 1862 he designed a method of boring out smoothbore canon and inserting a rifled sleeve so making an obsolete 32 pounder smoothbore into a useful 64 pounder M. L. R. Some 60 guns of various calibres were converted in this way. Also in 1862 he took out a patent for screw bolts for fixing armour plate.

On the 27th May 1863 he took out the patent for chill-casting projectiles, which is when our 'infants' were born.

Between 1867 and 1881 he took out a further fourteen patents dealing with guns, projectiles & bolts.

Sir William was Knighted on 21 January 1873.

In 1880 he became MP for Taunton.

He passed away on 4th February 1882 and was buried in Brompton cemetery

Photos & Text by J. Wilson 10th January 2006

Many thanks to Philip A. Magrath, Fort Nelson, for his help in compiling these notes and also to my friend Cyril Martin, who did the research into Sir William's life.

TOUCH

Notice of the forthcoming Symposium of the International Committee for the History of Technology at Leicester.

If any of your contacts are interested in attending and would like to propose a paper, please ask them to get in touch with me.

We also have another meeting coming up of which your members would like an early notice. This is the **spring meeting of our Gunpowder & Explosives History Group**, to be held this year at Burlington House in London, on Thursday 8 June 2006. This will be a SULF/PHUR Day, and our hosts will be the History Group of the Royal Society of Chemistry, and the organiser will be their Fellow and our member, Dr. Gerry Moss. Please invite your members to get in touch about either event.

Brenda Buchanan (ssxbjb@bath.ac.uk)

Silberrad ... On the subject of the 'Silberrad question' raised in the last issue the following information has come from Richard Brewer. Richard and his wife were visitors to the Mills some time ago as guests of John Wilson; subsequently following up their visit by becoming members of the Friends Association. Both are volunteer workers at the Sherborne Museum in Dorset and, by an unusual; coincidence one of their colleagues there is a Mike Silberrad. Writing from the Museum Richard says that because it is not a common surname he asked Mike what he knew about it and his letter includes the following summary.

"Oswald Silberrad (see Touchpaper June 2004) was the father of the John Silberrad you mentioned. Oswald was my colleague's great uncle (known in the family as "great Uncle Bobby") who lived in Dryads Hall, Loughton and John inherited the Hall from him. Mike remembers both men well. John, therefore, was Mike's first cousin once removed."

As I had guessed there was indeed a relationship between the two men and I have expressed our thanks to Richard for his reply.

John Silberrad was a man of unusual talent and ability, recalling the outstanding qualities of his father in the chemical field. He had a hugely successful career as a barrister and was active in the local community. He was chairman of the Epping forest Conservative Association for 10 years, regular member of St John's Church, Loughton and supporter of many charities. To his MP Eleanor Laing, John Silberrad was a "loyal friend and a very wise man".

Dave Hartley

BYTES



This photo of the Adhesion & Rheology team headed by Wilf Dukes in L148 was sent in by Dr Frank Baker. He hasn't given a date but it was probably in the late 1960s or early 1970s.

Frank says his memory isn't what it used to be but has identified some.

Front row (L to R) Roy Stenson, Mavis ?, Wilf Dukes, ?, ?.

Middle row (L to R) Roy Gledhill, Greenwood, Frank Baker, Tony Kinloch

Back row (L to R) Tony Hamilton, Roy Atkins, Fred ?

An old cowboy told his grandson that the secret of living long was to sprinkle gunpowder every morning on his oatmeal. The grandson did this religiously to the age of 103.

When he died he left ... 14 children, 30 grandchildren, 45 great grandchildren, 25 great-great grandchildren ...

.... and a 15ft hole where the crematorium used to be!

MC Black

DON'T FORGET
DEADLINE FOR THE June 2006 ISSUE:
15th May 2006

MISCELLANY

*This came by email from Peter Pearce,
an ex-colleague, now living in Australia:-*

Tony Blair is visiting an Edinburgh hospital. He enters a ward full of patients with no obvious sign of injury or illness and greets one. The patient replies:

*"Fair fa your honest sonsie face,
Great chieftain o the puddin race,
Aboon them a ye take yer place,
Painch, tripe or thairm,
As langs my airm."*

Blair is confused, so he just grins and moves on to the next patient. The patient responds:

*"Some hae meat an canna eat,
And some wad eat that want it,
But we hae meat an we can eat,
So let the Lord be thankit."*

Even more confused, and his grin now rictus-like, the PM moves on to the next patient, who immediately begins to chant:

*"Wee sleekit, cowerin, timrous beasty,
O the panic in thy breasty,
Thou needna start awa sae hastie,
Wi bickering brattle."*

Now seriously troubled, Blair turns to the accompanying doctor and asks "Is this a psychiatric ward?"

"Och No," replies the doctor, "this is the serious Burns unit."

and this one also doing the rounds by email:-

"The way to achieve inner peace is to finish off all the things you have started".

So I looked round the house to see all the things I had started and hadn't finished; and before leaving the house this morning I finished off; a bottle of red wine, a bottle of white wine, the Baileys, three Bacardi Breezers, the Jack Daniels, the Prozac, some Valium, some cheesecake and a box of chocolates.

You have no idea how bloody good I feel. Pass this on to those you feel are in need of inner peace.

BRITISH ROCKETRY ORAL HISTORY PROJECT

ANNUAL CONFERENCE 6-8 April 2006

The British Rocketry Oral History Project (BROHP) holds an annual conference to discuss not only the history rocketry and missiles, but also the history of other post-war British aviation and nuclear weapons projects. One of the aims of the conference is to bring together the people who were involved in post-war defence projects, to begin either to recount the histories of these programmes or perhaps to act as a corrective to official accounts. The conference is open to everyone and the conference values everyone's story from the policy makers to people who had a more hands-on role in weapons development. Personal testimony is particularly important for recording the social history of these establishments, and understanding the characters of the people involved.

One of the themes to be addressed next year is the influence (or not) of German wartime technology on post-war British programmes. This might include discussions of the technology or more personal anecdotes about the German scientists and engineers who came to Britain after the war.

Over the past years we have heard about research carried out at, for example, at Aldermaston, Farnborough, Spadeadam and Westcott; Waltham Abbey's achievements, for example, in propellants technology has been noticeably silent - can this be remedied in 2006?

The annual conference is held at Charterhouse School, Godalming, Surrey, accommodation is available at the school or people may attend on a daily basis. The 2006 conference will be held 6-8 April. The conference is informal and friendly and is a great opportunity to meet people from other research establishments and historians researching their history.

If you would like to consider making a presentation, or would like to attend the conference please contact Dave Wright at BROHP2@aol.com

Are there any members who would consider responding to this plea for some sort of presentation on the work of Hans Ziebland or, more importantly, that carried out at Waltham Abbey on propellant research. It is time that we should be recognised for our achievements and will also be good publicity for the site. Please contact me A.S.A.P. Norman Paul