

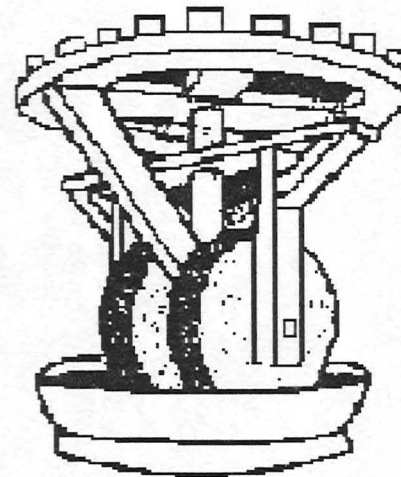
**ROYAL
GUNPOWDER
MILLS
WALTHAM ABBEY**

‘TOUCHPAPER’[©]

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Touchpaper

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



**JUNE
2006**

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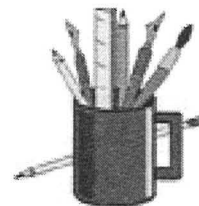
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PLEASE NOTE: Deadline date for submissions to
the next issue is 15th August 2006



Editorial

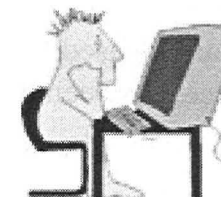
There has been a really good start to the new season with three major weekend events and visitor numbers are significantly up on the same time last year. Let's hope we can keep the momentum going.

The AGM and Reunion held on site for the first time went well. With the adoption of the new constitution the way is now clear to follow up on our charity status. We hope to have news by the next issue.

We have had an encouraging response to the appeal for information on the post war propellants era but I am sure there are many more of those who worked here at that time have stories to tell.

This is a larger than normal issue as there has been so much to report and a number of articles, Please keep them coming in.

Norman Paul
Touchpaper Editor



CHAIRMAN'S CHAT

The new season has started well with the rocket propellants and laboratory exhibition. We have made modifications for this year and updated the rocket display to include a portion of a V2 rocket that landed in Loughton. The result looks much better and visitors seem to enjoy and be interested in it.

The first three event weekends turned out well. The opening weekend saw the Medieval Siege Society conducting some excellent battles from the War of the Roses. Their clothes and weaponry were very impressive.

On the following weekend there was the VE Day Anniversary including, on the Sunday, an aerobatics display by Carolyn Grace in her Spitfire, as she did last year. Not surprisingly numbers attending were a little down on last year's corresponding weekend but large number of people enjoyed their visit, particularly on the Sunday.

The Steam Fair on 20 - 21st May was another big event that was well attended despite the poor weather.

Visitor numbers have increased significantly so far this year with about 4000 visitors since opening. This is an increase of 43% over the same period last year.

The Friends Annual General Meeting and Reunion on Friday 12th May was held on site for the first time. Both were well attended and numbers were up on last year. Members were able to go round the exhibitions and other open areas of the site. Overall a very successful day and the weather was perfect. Our thanks to Norman Paul who did most of the organising.

We are pleased to note that Norman Kember, an ex-ERDE employee, has been released from captivity in Iraq.

Do visit the site during the season.

John Wright

2006 AGM

The AGM, held on the same day as the Reunion, was well attended.

The Treasurer presented the annual accounts for 2005 which showed a healthy balance of £2,735 and no increase in subscriptions rates were envisaged.

The following Officers and Committee members were elected:

Chairman: John Wright,
Secretary: Richard Penfold,
Treasurer: Norman Paul

Committee Members:
Brian Clements, Bryan Howard, David Manners,
Sheilagh Owens, David Sims, Ron Treadgold, Les Tucker

The other main business was the adoption of the new constitution necessitated by our application to become a charity. This is now being progressed and if successful we will be issuing Gift Aid forms since subscriptions attract Gift Aid whereby we can claim 28p in the £ from the Inland Revenue. This only applies if the member has a taxable income. (which must cover nearly all of you).

REUNION 12th May 2006

Held on site for the first time. Numbers were up on last year with over 80 bookings.

A mobile bar was arranged which was much appreciated.

Fortunately the weather was kind with a beautiful sunny day.



A buffet lunch was served in the site cafe provided by the usual on-site caterers.

There was plenty for everyone with tea/coffee available.

Much of the site's attractions were open and many members took advantage of the weather to walk around the site.

Of course, there were those who preferred to stay within easy reach of the bar!

All in all a very good and successful reunion,

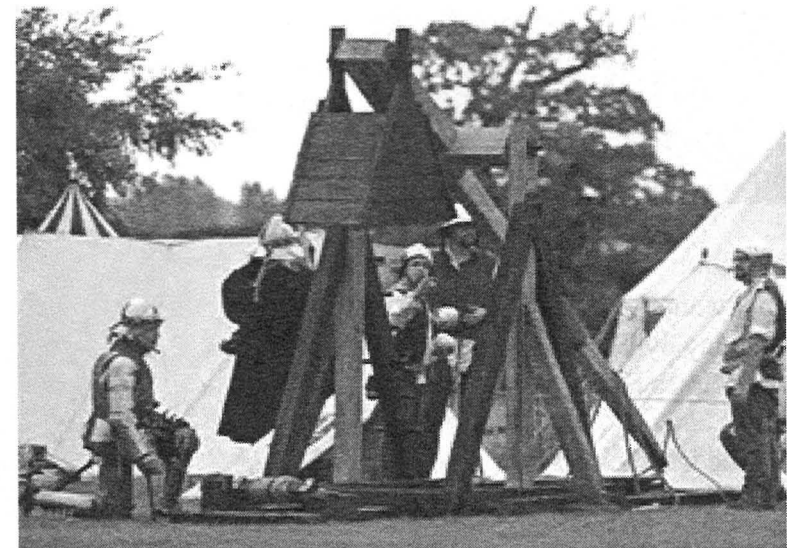


MEDIEVAL SIEGE SOCIETY EVENT

April 29 - May 1st



This a new re-enactment event depicting battles from the Wars of the Roses. Very realistic battles and excellent commentary. Watching the archers loosing volleys of (rubber tipped) arrows was very impressive as was the demonstration of the trebuchet used to hurl large stone balls at castle walls.



Almost certain that they will be booked again.

VE DAY WEEKEND

May 6 - 7th

Following last year's very successful celebration this was once again a popular event.

Many re-enactors representing many nations showed off their uniforms and equipment



On both days the highlight was the mock battle taking place each afternoon.

The sound of gunfire and smoke drifting across Queens Mead made the whole thing very realistic.

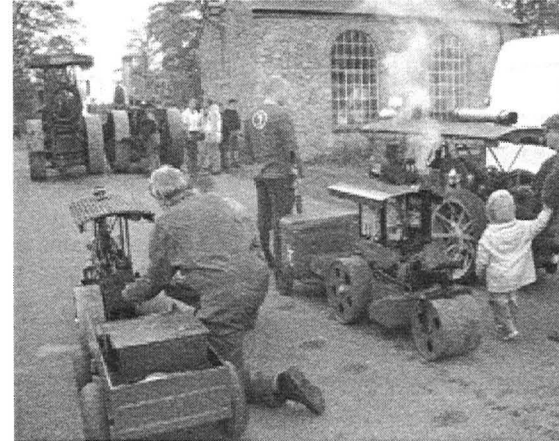
On the Sunday another thrilling aerobatic display by Carolyn Grace in the 'Grace Spitfire'.

Fortunately the weather held up and the clouds were fairly high.



STEAM FAIR WEEKEND

May 20 - 21st



This major event, organised by Robin Parkinson, attracted a large number of vehicles of all shapes and sizes as well as a large number of visitors new to the site.

Many of them who had come just for the Steam Fair said they were impressed by the site and would come again.

Due to heavy rain only the smaller vehicles could get on to Queens Mead and the grand parade was on the roadway from Long Walk.

Despite the weather both days were well attended and this was a very successful event.



As well as the impressive engines on display there were numerous stalls, model railway and other related exhibits.

It is hoped that this event will also generate interest and support for our own railway venture.

‘ THE HIDDEN RAILWAY ‘

Like the Phoenix rising from the ashes, the Hidden Railway News appears again.

The 2006 season has started with much to report, the construction of the new sidings is almost complete. We now have two sets of points and, at last, the run-around loop with a centre siding road to be built this Spring. The future need for more sidings has been included in the plan with the inclusion of a spur that could finally run up to the back of 83B, where carriages might be built. We also welcome three more valuable new volunteers: Steve Reid, Grahame Browne and John McCarthy from EDF Energy.

HOWEVER, THE MAJOR BREAKING NEWS IS:

The part sectioned boiler of ex. RAR Vulcan Foundry 18" gauge locomotive *MARS* Works No. 1160 built 1885 will be coming to WARGM, nearer her original home at Chatham Fortifications, although she spent most of her working life at Longmoor Military Railway. This boiler was on display at the Museum of Army Transport at Beverley, Yorkshire until 2004, then kept stored at Shildon. Ownership has been transferred from Talyllyn Narrow gauge Railway Museum to the WARGM Co. and the boiler will be restored and displayed in the large artefacts section of the Mills. This is a further expansion of our future 18" gauge railway history centre.

March saw the arrival of 2' 6" rolling stock from the system at RNAD Trecwn in Pembrokeshire. This delivery comprised four Box Vans 5 ton capacity built by Cravens Wagon & Coach Works of Leeds, thought to be circa 1940s and two Flat Wagons of similar make and construction. The Box Vans will form the nucleus of the passenger stock and were acquired with funds kindly donated by both Railway Volunteers and members of the WARGM Board.

The steady supply of rail and sleepers has always dictated our track laying efforts. Now by luck, scouring the railway press, we have obtained sufficient nearly new 35lb flat bottom rail (20 tonnes) and 680 concrete sleepers to track lay as far as Hoppit Road (Beaulieu Drive) at the southern end of the site. This deal included two complete sets of points; material coming originally from the 2' 6" system at Shoeburyness in Essex.

The task ahead is a real challenge but, as usual, the will and energy of the Railway Group will be undaunted, however, the time is right to ask all interested railway enthusiasts out there:

ARE YOU INTERESTED IN BECOMING A VOLUNTEER?

We normally work Wednesdays, Thursdays and Saturdays. Please come and visit the Mills Industrial Railway and see what we have achieved to date, visit our website; royalgunpowdermills.com links to narrow gauge railway, or call 07979820605

Robin Parkinson @ WARGM Railway

APRIL 2006

A GUNPOWDER MUSEUM IN DENMARK

The following article has been sent to us by Kristian Jensen, a retired electrical engineer from The Danish Steel Rolling Mills, and currently a guide at the Krudtværksmuseum in Frederiksværk, Denmark.

When I found out, through the Hagley Museum Delaware USA web site, that there was a Powder Mill Museum in England, I was more than eager to have a look at it. And so in December last year, at the invitation of Ian MacFarlane and Les Tucker, I got the chance to see your impressive museum.

At the same time I was told that you had established a Friends Association, and after returning home I was even accepted as a corresponding member of this honourable institution!

By now I know quite a bit about Waltham Abbey, but The Friends' knowledge of our museum must be very limited. In the copy of *Dangerous Explosives*, which I bought from Les, our museum is not described but only gets a mention (almost in parentheses), and so I promised Norman Paul to try and write a few words about 'us'.

His Majesty King Frederik V founded our town by signing a contract with Messrs. Classen and Fabricius at Fredensborg Castle on 25th August 1756.

In the contract it is stated how much

gunpowder the two men had to deliver to the Army and how much sulphur and saltpetre per year they should have from the Crown. The King gave his permission to name the place Frederiksværk i.e. Frederik's Works.

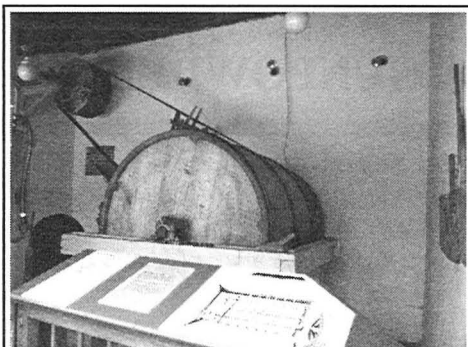
Before that date there was almost nothing in the area but a canal from Lake Arresø down to Roskilde Fjord transporting 50 million cubic meters of water per year; but within 2 years the production of gunpowder and bronze cannons had begun. The production of black gunpowder continued up to 1965, and of cordite likewise but only from 1892, while the casting of bronze cannons stopped in the 1860s.

In 1965 the Powder Mills, Härems Krudtværk, was closed down, as it was no longer profitable. Typically such a factory would have been thrown on the scrap heap and all houses demolished, but staff from the *Museum of Arms & Uniforms* in Copenhagen saw the chance of establishing a museum with some of the oldest buildings and the best machinery, and these were placed at their disposal. We are more than grateful to them!

They opened the museum in the summer of 1968 and it is still open to the public every summer from June to mid-September and one week in October (the schools' Potato-Holiday).

In 1996 we had some of the exhibitions renewed and of course there is still maintenance work to be done on such old houses and machinery. Two years ago the local authorities took over and now run the museum, which includes 4 full-time employees and an equal number of part-timers. During the season we have a number of hourly-paid guides, of whom I am one. What have we now got inside the 14 registered buildings? I think we have the necessary machinery - if we were clever enough - to start production of black gunpowder tomorrow, if only we could get the necessary permission from the police and could buy the ingredients.

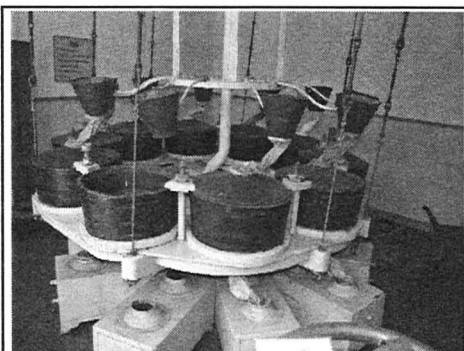
In the first house with machinery in it we have a pulveriser and visitors can hear the rumbling of the 1.5 cm bronze balls inside the rotating drum driven by a water turbine.



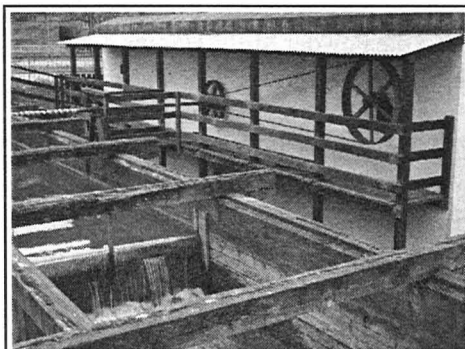
the shaft passes through the wall to the belt drive inside the house with the Pulverising Drom

In the next house there are the mixing drums for both binary and ternary mixing, but here the rumbling is softer as the balls (D=3.5 cm) are made of Pokkenholt (hardwood) and the inside of the ternary drum is clad with leather.

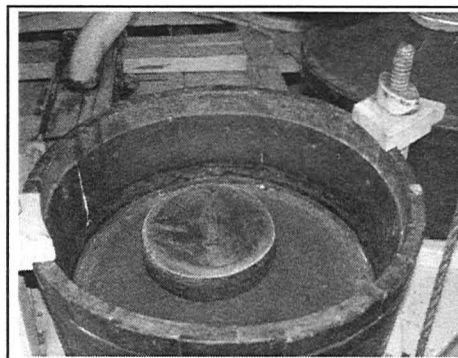
In the graining house we have our real wonder: A Lefebvre's Graining Mill dating from 1875.



The Graining Mill with 10 copper funnels and sleeves leading the powder plates down to the barrels with bronze sieves and a beech disc on each sieve pressing the grains down and into the cupboards underneath



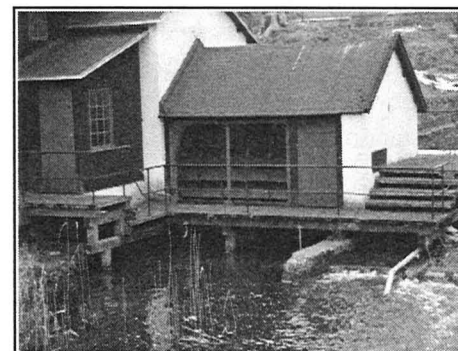
Showing the shaft crossing the canal from the water turbine to the Pulverising Mill, the belt drive and pulleys.



A close-up of one of the barrels with its disc.

We believe that this mill is the only one of its kind in existence - not just in Denmark and it produced grain gunpowder up to 1965! Unfortunately we have no hydraulic press to compress the powder before the graining - and only one roll of a rolling mill to do the same thing.

The polishing mills are in the only house with a working water wheel driving the drums by cogwheels (one with 126 wooden cogs) long axles and leather belts, 20 cm wide.



Water Wheel driving 4 Polishing Drums

The powder grains themselves do the polishing as they tumble inside the drums - but now without balls of any kind. Built together with this house is

the drying hut and on the other side of the canal the sorting house has running ridges and sieves driven with leather belts - but an electric motor.

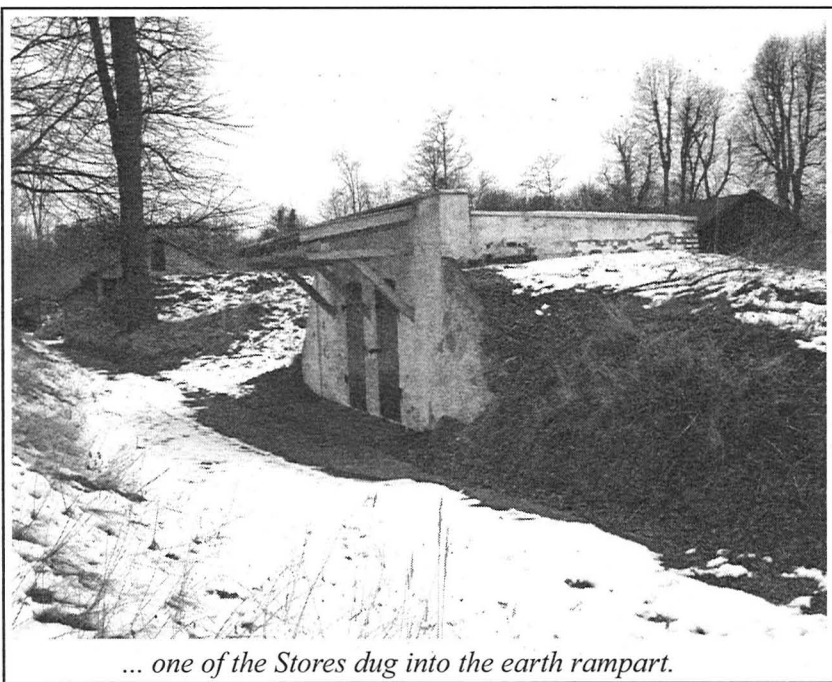


the smallest of our sorting machines in the background and a hand operated corning machine to the right. The sieves on the wall were originally (10 years ago) woven from silk but now of nylon.



The Sorting House partly hidden behind earth rampart. The flag shows "Machine Running"

In addition to these working buildings we have store buildings partly dug into the ramparts between all the houses. The whole museum is surrounded by 150 year old lime trees (the original elms died during the elm plague).



... one of the Stores dug into the earth rampart.

In our oldest building, a half-timbered house, dating from 1848, we have the shop and ticket office. It costs only £2 for a grown-up. This building also contains a beautiful model of the whole museum together with old pictures, maps and drawings on the walls.

As you will see from the beginning of this article, King Frederick V signed the paper that founded our town in August 1756. So, in August this year we will be celebrating our 250th Birthday. Our staff is right now writing a book to be sent out on the very day while the whole town will be "standing on glowing poles". (*this must be a Danish expression, I do not have an English equivalent! Ed.*)

So perhaps some of our Friends from Waltham Abbey would like to take part in the celebrations? We would be delighted to see any of you, if only to repay Les Tucker's kindness in giving me such an interesting guided visit in the middle of a very cold winter.

We will look forward to seeing you!

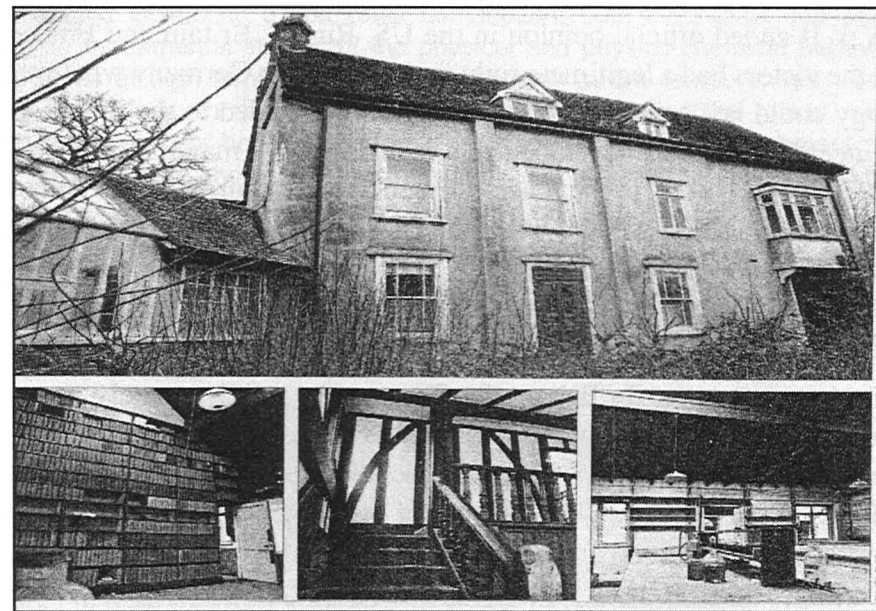
Kristian Jensen

All illustrations Industrimuseet Frederiks Værk.

OSWALD SILBERRAD - FAMILY HOME

Further to Dave Hartley's letter in Touchbytes, Touchpaper March 2006, and the article on C/E in Touchpaper June 2004, following the recent death of John, Oswald Silberrad's son, the family home Dryads Hall in Loughton, overlooking Epping Forest, has come on to the market (at £1.5m).

Although now in need of extensive refurbishment, the house is of great character, with fine Arts and Crafts oak panelling and staircase, wrought iron fireplace surrounds, science library etc. But what makes it of especial interest is the scientific connection. Dr. Silberrad established a laboratory in the basement for his explosives and other experiments, complete with a specially strengthened 'blast wall' and rising young chemists worked there, including Barnes Wallis later to achieve bouncing bomb fame.



Altogether a property of unique character and history and it is to be hoped that any buyer will in some way preserve the memory of the man who discovered and perfected the manufacturing process for C/E, tetryl, and of whom it was said :

'I confidently leave it to the Council to imagine how great a catastrophe would have befallen the country had it not been for Dr. Silberrad's discoveries'.

Les Tucker

ROCKETS - THE GERMAN CONNECTION

As Britain was painfully aware in WW II, Germany had established a lead in the military use of rockets. On 13th June 1944 the 155 Flak Regiment fired the first Vis at London from Northern France. None of the first nine reached England. Of ten more launched the same day, three reached the south of England and one reached London, falling at Bethnal Green. On September 1944 the first V2 to reach London fell on Chiswick. The explosion was reported by the authorities as a gas leak.

These were not the first instances of rocket powered attack on British interests. In little known incidents on 25th August 1943 HMS Bideford was damaged by the Hs293 rocket powered guided missile fired from aircraft and on 27th August 1943 HMS Egret became the first British ship to be sunk by missile attack, again the Hs923.

When WW II ended official opinion in the US, Russia, Britain and France was that the victors had a legitimate right to acquire from Germany whatever technology could be useful to them and this view extended to the scientists and engineers whom had developed this technology. A major instance of the transfer of technology in the reverse direction had occurred at the end of the Franco Prussian War in 1870 when the Prussians transferred the French gunpowder factory at Metz to Prussia.

Rocketry was an activity which exerted a powerful attraction. For the Us the acquisition of von Braun was the most famous instance and Russia similarly acquired top scientists, In Britain the Government, whilst acutely aware of the nation's economic position, nevertheless decided that a rocket programme was an essential part of Britain's position as a 'Great Power'. As a natural progression from its long history of propellant research, Waltham Abbey became the centre for rocket propellant research.

Initially, after the end of the war in 1945, British activity took place in Germany - Operation Backfire at Cuxhaven which continued the assembly and test firing of V2 s and the Ministry of Supply at the former Rocket Research Institute at Trauen. The main activities at Trauen were propulsion chemistry research based on the three main oxidisers (liquid oxygen, hydrogen peroxide and nitric acid) and heat transfer experimentation. In 1946 Waltham Abbey acquired five scientists from Trauen. These were: **Botho Demant, Norbert Loft, Franz Neunzig, Hans Ziebland, and Gerhard Muller.**

Other scientists were allocated to other research centres in Britain, e.g. Barrow in Furness where research into hydrogen peroxide fuelling of submarines running underwater was taking place. Doubtless the Germans were apprehensive about the reception which they might receive when they arrived in Britain. One of their number at Barrow in Furness imaginatively ensured a welcome by using his scientific knowledge to make perfume which he supplied to the luxury starved ladies of Barrow - doubtless also to his economic benefit. In 1950 official control of the Waltham Abbey Five was relaxed. Loft and Muller returned to Germany. Demant move don to non rocket work in Britain and Neunzig emigrated to Australia. Ziebland remained at Waltham Abbey until his retirement. His special subject was heat transfer as related to rocket motors and he published extensively in Government reports etc. An extract from a supervisor's report written on Ziebland at that time has come to light, as follows:

"Ziebland is making a first class contribution, both theoretical and practical, to fundamental studies of the physical and physico-chemical behaviour of gases at high temperatures (and of liquids at low temperatures) bearing particularly on the problems associated with cooling the rocket motor. On the subject of heat transfer no other scientist at this establishment possesses his wide knowledge ; his familiarity with engineering design and past experience of proofstand work in Germany are also exceedingly valuable."

Les Tucker

Editor's Note: The time covered by the above will be within the experience of some readers. Any contributions adding to our knowledge of the German experience would be welcome.



A MINISTERIAL VISIT ca. 1970

from left to right:

Harold Young, Dr Bellamy (Director), Norman Tebbitt (Local MP), Visitor, Hans Ziebland, Visitor, Ivan Dunstan (?)

TOUCH



William (Bill) Smith

3/71933 - 17/3/06

Bill Smith died suddenly on the 17th March from complications following an appendix operation.

He was born in Morristown, Swansea and educated at the local grammar school and university.

Bill joined Waltham Abbey in the 1950s and worked in Jack Powling's section where he published a number of papers on propellant combustion. His later years were spent in ballistics where he made important advances in the testing of gun and mortar propellants with the 'Shatter'

and 'Tail' tests respectively. He must rank among the best experimental scientists that Waltham Abbey produced.

Having a keen interest in industrial archaeology he was a member of the Waltham Abbey Historical Society and spent many holidays cruising canals and using the railways. In retirement he helped to make special items for the disabled, joined the U3A, took up painting and continued with his life-long passion for cooking. A modest man with a sense of humour; I cannot recall any disagreements in the 44 years that I knew him. He will be missed not only by his family in Wales but by his 'adopted' family and friends in the Waltham Abbey area.

Bryan Howard

MEDIA CONNECTIONS

Further to the item on filming on the site in the March 2006 Touchpaper:

Rising star Keira Knightley's antecedents were in the West Ham area of London where her ancestors had moved from agricultural employment in the Saffron Walden area to find jobs in Victorian industry.

One however went slightly further afield to find employment. Her great great grandfather Charles worked at the Royal Gunpowder Mills.

Les Tucker



BYTES

I read with interest the article on "Woolwich Infants". I stayed in the Woolwich Infant pub just outside the entrance to the Arsenal whilst doing a short spell at D I Arm at the old Red Barracks. I am now retired and living in Felixstowe. We have our own Landguard Fort which was fitted with 12.5 and 10 inch R.M.L.s (Rifled Muzzle Loaders). We have a replica 12.5" gun in one of the casemates with a fully weighted shell, on a 2 wheeled trolley (like an old fashioned porter's trolley) used to move it from the hoist to the gun.

Our research has some differences to the article:

A gun crew of 16 with a Sergeant Master Gunner was used. It took 4 to 6 men alone to lift the shell, in a wooden cradle, up to the muzzle for loading with the others 6 or 4 each side to pull on the ropes attached to the rammer. The Sergeant ensured that the studs located correctly and that the shell seated properly. The lands (rifling) spiral extremely gradually, so ramming the shell was not too difficult (once it was in the barrel). The bag charge to fire the shell could be lifted by one man and two were contained in each galvanised container (opened along its length like a "spotted dick" pudding mould) to protect from transit damage and sea air.

The magazines are below the casemates with pulley hoists for the bag charges and mechanical hand winches (one in working order) for the shells - but the openings in the gun areas are a long way from the muzzles of the guns!

The shell had a range of about one mile. It did not explode "on contact" as stated. It did not need a fuse because the Victorians worked out the heat transfer rate as it drilled its way through the armour so that it was in the ship's "belly" before the temperature of the filling reached spontaneous ignition.

Loved the article and get much pleasure from the Touchpaper - even though I was one of those "Lockies" down the road!

Please go to www.rsaf.co.uk or www.marinesintights.org.uk and click the Landguard Fort button for more information. The RSAF Apprentice Association visited Landguard Fort in 2005 and saw the 12.5" replica. We believe their may be 2 RMLs under the Felixstowe Dock and we are hoping to get them when the refurbishment begins in a few years time.

Regards, Mervyn Lemon Trustee of Landguard Fort

"Visit Landguard Fort, Felixstowe - site of the last major opposed invasion of England and the first land battle for English marines in 1667"

DON'T FORGET
DEADLINE FOR THE September 2006 ISSUE:
15th August 2006

A FEW BYTES MORE

COMBUSTION GROUP SPR II AUTUMN 1953



GK ADAMS, J SCRIVENER, J POWLING, -, R WAKELING
J HICKS, G STOKES, B ROBINS, R SMITH, ICP SMITH
Sylvia D'SAVE, Janet MERTON, Sheila BENNETT, Maureen McKAY

INTER-DEPARTMENT 6-A-SIDE FOOTBALL

This was an annual event played on Queens Mead and engendered much rivalry.

Competition was fierce and many were found limping the next day!

This photo, provided by Roy Atkins, shows the ISRG side of 1965/6.



This photo, provided by Roy Atkins, shows the ISRG side 1965/6.
BACK: Alan FERADAY, Roy ATKINS, John (twice) KNIGHTLY
FRONT: Can't remember the names!

PROPELLANT HISTORY

Through a friend I received the last two issues of Touchpaper and found them most interesting. For old times sake I feel I should join the Association.

You ask for information on propellants research at Waltham Abbey. The area I worked in was concerned only with composite propellants containing ammonium perchlorate as oxidiser but a lot of original work was done when I was first on Hoppit Island (with Gordon Adams and Jack Powling) and after 1953 when I moved to South Site and was responsible for all the new plastic propellant compositions. The operating temperature limitations of plastic propellant were never fully recognised by the management and the system was preserved long after the obvious superiority of the castable composite systems should have been acknowledged. Together with John Scrivener in the late '50s we developed a range of polyester polyurethane castable propellants, one of which was adopted for the ill fated Blue Water artillery rocket system. Enormous investment and effort was put into developing both the propellant and the pilot filling plant for which I was project officer but in which Ron Campbell, John Scrivener and Bert Mather (ROF Bishopton but now deceased) and many others played key roles. Just as the installation was nearing completion in late 1962, an American system (the liquid filled Corporal) was purchased and Blue Water cancelled. Due to internal politics in ERDE all work on cast composite propellants was abandoned and, believe it or not, emphasis reverted to plastic propellant. I went to the Defence Staff in Washington DC from where I recommended (with all necessary technical details) *ad nauseum* a complete switch to an hydroxy terminated polybutadiene binder which happened many years later. A very successful use of this binder was in the LAW rocket motor. In 1966 my career took me into the RARDE sphere of armament research and into various HQ activities eventually returning to PERME in 1980 as Director.

On the question of Hans Ziebland I recall him well during my time on Hoppit Island as he 'operated' in the neighbouring bay in press house H10. There were quite a number working on the liquid motor test stand and firings were made most days. Red Fuming Nitric Acid (RFNA) was the oxidiser and most available hydrocarbons were used as fuel. I seem to recall that those in the higher octane range were particularly favoured by those with motor bikes! I never discovered what the purpose of the programme was as all the real liquid work was done at Westcott with which establishment communication was notoriously poor in those days. Dr Ziebland operated on the mini-motor scale in an highly professional manner and this must have impressed someone as he achieved an Individual Merit SPSO.

Westcott (a very separate establishment then) continued with liquids for a long time and was host to the Rolls Royce Blue Streak programme. Despite work on a packaged liquid motor taken to test flight prototype nothing ever went into service. The work for the Chevaline programme was under US direction and quite separate.

Barry Newman

Barry has now joined the 'Friends' and we were pleased to see him and his wife Dorothy at the Reunion.

This is the kind of information that we are currently seeking on the propellant work at Waltham Abbey and would welcome any further insights. Ed

Siemens Fire Alarm System

A telegraphic fire alarm system was in use at the RGPF in the early 20th century. When I started in 1960 only one or two pillars were visible and were no longer in use. Just before the site was reopened as a visitor attraction a number of these pillars and their control panel were returned and briefly stored in L176, now the café.

Early in 2003 I and other members of the regular Wednesday and Friday working party started to restore them. The first was erected in L168 opposite the café together with the control panel that was also later restored to working order. Last season we were able to demonstrate what may be the only complete working system. A photograph taken by Wayne Cocroft of English Heritage was published in the September 2003 issue of Touchpaper showing a similar pillar in Berlin.



My wife, Daphne, organised a trip for us to go to Berlin the weekend before the site opened for this season. Her cousin Graham, who has lived in Berlin for some years, met us. He took charge and looked after us very well and we had a great time. However, for me the highlight of the trip was spending the Saturday tracking down three pillars that Wayne Cocroft had seen, including the one shown in Touchpaper. Wayne very

kindly supplied a map and detailed instructions so the finding was easy; as intended red fire pillars are readily seen from a distance! I even spotted a fourth pillar in front of Schloss Bellvue from the top of a 100 bus. It was immediately obvious that the pillars were generally identical to ours. The top flame finial was larger, the other differences are in the doors and sides of the top box that houses the alarm mechanism. Here differences would be expected as the instructions, warnings and site identification would need to differ. The letters on the Berlin pillars are cast, above the operating point on the front door are the words 'Scheibe Einschlagen' or 'Break Glass'. Traces of these words were seen when stripping the door of the pillar now outside the old Main lab and can still be seen after repainting. There can be no doubt that the Berlin and RGPF pillars were cast from the same patterns.

The RGPF pillars are dated 1906, we also have RSAF pillars dated 1910, none of the Berlin pillars are dated. Two of the Berlin pillars appear to have been converted at some time from the original telegraphic to a telephonic system

Brian Clements

FORTHCOMING EVENTS

June	10/11	Essex Militia
	24/25	Military Vehicles Show
July	8/9	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