

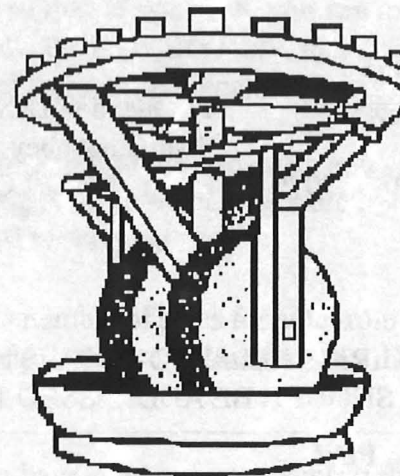
**ROYAL
GUNPOWDER
MILLS
WALTHAM ABBEY**

'TOUCHPAPER' ©

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Touchpaper

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



**SEPTEMBER
2002**

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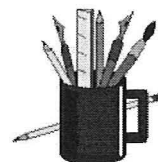
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PLEASE NOTE: Deadline date for submissions to
the next issue is 15th November 2002



EDITORIAL

This issue sees the start of a new serialisation on archaeology by Les Tucker. Having completed the series on the Listed Buildings (now available as a complete booklet) Les is turning to the other important and significant structures that are not actually listed; starting with the Grand Magazine. Once again this can be found in the centre pages and are not numbered so that, if you wish, you can remove them and collect them separately. We hope, of course, that the complete set will be published as a booklet in our publication series.

Details of the AGM and Reunion are given and we hope that as many as possible will attend. In particular there are important matters to be discussed at the AGM this year.

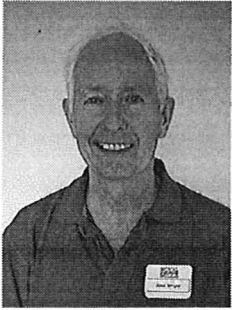
You will also find a number of pleas for help from the Operating Company. If you can help in any way please contact them direct. Your help is really important.

To all of you who have renewed your subscriptions - many thanks. Your continued support is vital to the Association. For those tardy ones among you who have, perhaps, forgotten, a renewal reminder is enclosed with this copy.

Norman Paul
Editor



CHAIRMAN'S NOTES

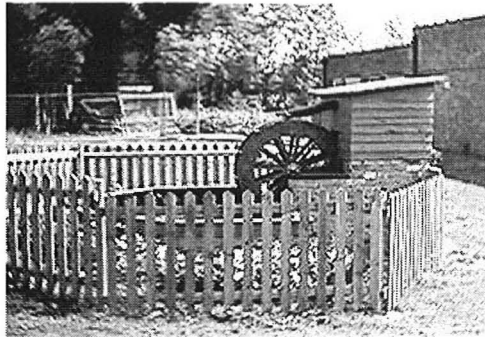


The Friends and other volunteers have completed the conversion of L180 into a Volunteer Base and Friend's Room. More Friends are very welcome there, particularly at the regular working parties on Wednesday and Friday mornings.

The Site now has more attractions (see below) and if you haven't been recently, do come and see them.

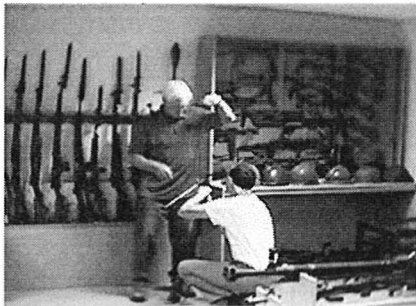
WATERWHEEL

The waterwheel, sponsored and built by the Friends is now complete and gives a very restful 'splash, splash' as you look at the flowers kindly donated by Simmons Nurseries of Bullsmoor Lane, Enfield.



SMALL ARMS EXHIBITION

A recent addition is an excellent display of small arms from the earliest times to the present day in what used to be the Education Room at the southern end of the main Exhibition Hall. Dave Sims, with some help from others, made the exhibition cabinets for Brian Street's collection.



DUSTING HOUSE REMAINS

Now much more visible thanks to Dennis Ashby and Les Tucker are the remains of the sluice and waterwheel arrangements for the Dusting House which was on the west side of the Long Walk



MODEL RAILWAY

A model railway layout, (see p 8) showing how the narrow gauge railway would have looked is now displayed in L168 which also holds the large transport artefacts (Powder Boat, Explosives Transport Lorry, Narrow Gauge Railway Engine and various Firefighting artefacts).

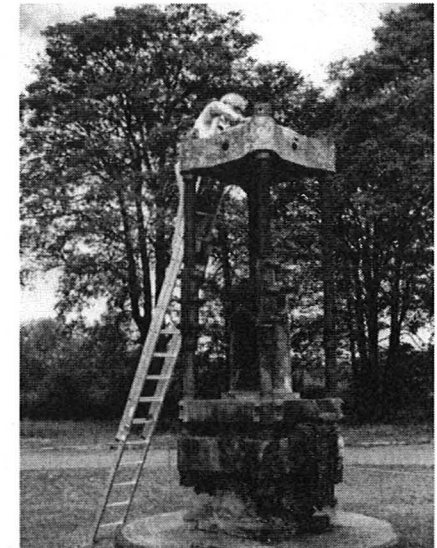


The Friends converted the two original partitioned offices, used when the building was a Stores, into one large enough for the railway.

GUNPOWDER PRESS

The 'Tangye Press' on the roundabout adjacent to L168 is being refurbished, almost single handed, by one of newer members, Gerry Miller.

Gerry is an example to us all - although he lives in Tonbridge, Kent, he has been braving the M25 twice a week to work on the press. A lesson to those who live somewhat nearer!



My particular thanks to those who have come in regularly on Wednesday and Friday mornings to work on projects and to carry out site maintenance. I look forward to seeing as many of you as possible at the Reunion on the Friday 4th October

John Wright

ASSOCIATION MATTERS

ANNUAL GENERAL MEETING

Notice is hereby given of the Association AGM which is to be held at the Royal British Legion Hall, Waltham Abbey on Friday 4th October, commencing at 11.00am.

Amendments to the Constitution:

1. para 10. Finance iii) delete '31st May' and substitute '31st December'
2. para 4. Subscriptions ii) delete '31st May' and substitute '31st December'
3. para 8 General Meetings i) delete 'four months' and substitute 'five months'

Resolutions:

1. That, contingent on the passing of the above amendments, the current financial accounting period running from 1st June 2002 to 31st May 2003 be extended to December 31st 2003 at no extra subscription cost to current members.
2. The Committee propose that a General Meeting and Site 'Friends Day' be held May 2003 and that in subsequent years a full AGM and Reunion be held each May.

Election of Officeholders and Committee:

The current Chairman, Secretary and Committee Members are all eligible for re-election and are willing to stand for a further year.

Our Treasurer, Jim Burgess, wishes to stand down but his wife, Frances, currently acting as Deputy Treasurer has been nominated to take over the post. This means that there is one possible vacancy on the Committee.

Nominations will be accepted at the meeting.

Any other nominations, amendments and resolutions from the membership must be in the Secretary's hands by 20th September.

REUNION 2002

Your last chance to book for the Reunion at the British Legion Hall (same day as the AGM) starting at 12 noon.

Cost is £7 per head, which includes the usual buffet lunch.

Please send cheque, together with name(s) to the Treasurer as soon as possible.

'LIBERATING' ARTEFACTS FROM RO BISHOPTON

Production at Bishopton finished earlier this year and we were invited to send a team from Waltham Abbey to collect items of historical interest. Accordingly, Sunday 19th May saw Dave Sims driving John Wright and me to Johnston where we met Eric Baker for the start of two days of intensive collecting and socialising.

On Monday morning, navigating from Johnston to Bishopton was not helped by a lack of road signs (the work of Caledonian vandals). Once inside the Admin. block we were met by Dave Stalker, Andy Whittaker and Elsa McFarlane where we were made very welcome. Jim Meney, our guide, arrived soon after and we headed for the first stop, Dargavel House. This site contained some useful things including; a Javelin missile, 81 mm mortar bomb, various shells and photographs. A small, but heavy, model of a propellant press was earmarked for transport at a later date. Both Royal Ordnance and DERA have generously offered to move items for us.

Two other fruitful areas were the small scale propellant development and the laboratories, yielding solvent extrusion dies, display cabinets, balances and glassware.

It's a pity that the narrow gauge railway differs from that planned for Waltham but even so the rails are well buried in concrete and not recoverable. However, the engine shed housed a useful woodworking vice which was removed by two of the team wielding 'wrecker' bars.

Sadly much of the ballistic assessment equipment had been 'junked' including an high pressure deadload tester that cost £30K 15 years ago and for which we had a customer for RO. There was, however, a fully operational gun pressure strand burner and a sectioned closed vessel breech.

On Monday evening George and Elsa McFarlane joined us for a meal at the Lynnhurst hotel. Elsa retires at the end of May and George in October. Another old colleague, Chris Robbins, was unable to join us as he was returning from celebrating his second wedding anniversary in Rome.

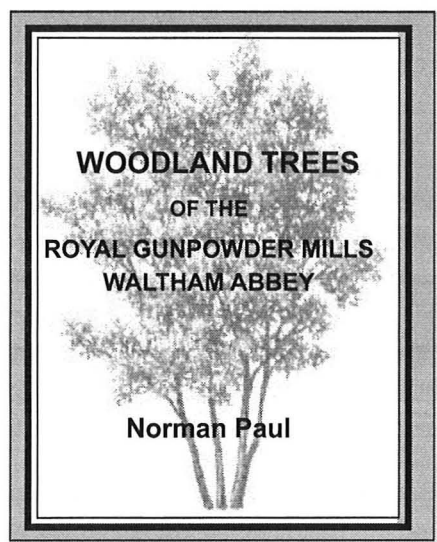
Fortunately we caught up with Chris on Tuesday morning at Environmental Testing which is very busy. He gave us a framed aerial photograph of the Waltham Abbey South Site that had been left behind by the Waltham contingent at Bishopton. By Tuesday afternoon we were heading south with a car boot full of 'goodies', described on the property pass as 'miscellaneous'. We hoped that a tyre wouldn't need changing on the motorway as we'd need to off-load a lot of ordnance which might have looked somewhat suspicious. Luckily enough Dave got us all safely home before 9pm.

Our thanks to all at Bishopton who made our trip both useful and enjoyable.

Bryan Howard

ASSOCIATION PUBLICATIONS

WOODLAND TREES



Following the success of the booklet on the Listed Buildings we have recently published a booklet on the Woodland Trees that can be seen on site.

Members can purchase these, through the Treasurer, at the special price of £1.

They will also be on sale at the AGM and Reunion.

LISTED BUILDINGS

Les Tucker's booklet on the Listed Buildings has been so successful that the entire print run sold out and we have had to have a further 500 printed. These are still available to members at a cost price of £1 which can be ordered through the Treasurer or on sale at the AGM and Reunion.

Advance Notice of a QUIZ NIGHT

We will be holding a Quiz Night at a local venue in Waltham Abbey in the New Year (late January-February) as a fund raising and, we hope, a Fun event.

Look out for further details in the December issue

FURTHER PRINCIPAL STRUCTURES OF THE ROYAL GUNPOWDER MILLS

Following the building studies published in the booklet 'The Listed Buildings at the Royal Gunpowder Mills Waltham Abbey', the series continues with structures of major significance in the Scheduled Ancient Monument area outside of the listing system - commencing with the Grand Magazine.

Part I The Grand Magazine

BACKGROUND

From the 17th century major Power rivalry, expansion of trade, territorial expansion, diplomatic and political tensions, all led to a series of conflicts. The end of the War of Spanish Succession (1701-1713) brought a period of peace. But it could not last. Rivalry between Britain and France in Europe, North America and India increased and the war between them (1756-1763) has been characterised as the first 'world' war. The War of American Independence (1775-1783) placed fresh strains on the British military supply system. Government supplies of gunpowder were obtained from private manufacturers and this system became increasingly unreliable in all respects - unable or unwilling to respond to fluctuating and increasing demand, poor attention to quality and overpricing.

Under the strong advocacy of Major, later Lt. General, Sir William Congreve I, Comptroller of the Royal Laboratory at Woolwich, in order to provide increased and assured supplies and set quality and cost yardsticks for the private sector the Crown purchased the Home Works in Faversham in 1760 and the Waltham Abbey Mills in 1787. Congreve vigorously directed a programme of new building, refurbishment and improvement of water supplies at Waltham Abbey. This took some time and production did not resume until 1789, coincidentally the year of the French Revolution, with all its ominous portents for the future. France declared war on Britain in 1793 and almost a quarter of a century of European war commenced.

Building activity at the Waltham Abbey Mills mirrored the escalating war situation, with a first particular concentration over 1801-1806.

THE MILLHEAD WAS ENLARGED:

9 horsemills together with stables and charge magazines (the use of horses rather than water power was probably a wartime expediency possibly reflecting concern over availability of water - still a problem).

2 horse corning mills on new canal cuts to the east of the Millhead Stream.

A steam drying stove on the south of the Millhead.

Various extensions to the canal system.

The Lower Island Works including incorporating mills, a corning house and a press house were established.

Storage buildings and an Engineers facility and finally, for the first time, a significant finished product storage facility - the Grand Magazine, completed in 1806.

Possibly prior to this. with a lower order of production, the Waltham Abbey system had relied on its small expense magazines and ongoing uptake by the Mills external shipment barges to avoid product build up to any great extent, but demand and production was relentlessly increasing and the Board must finally have concluded that the investment involved in building a central storage facility had to be made.

1. Building No.1 The Grand Magazine - built 1806

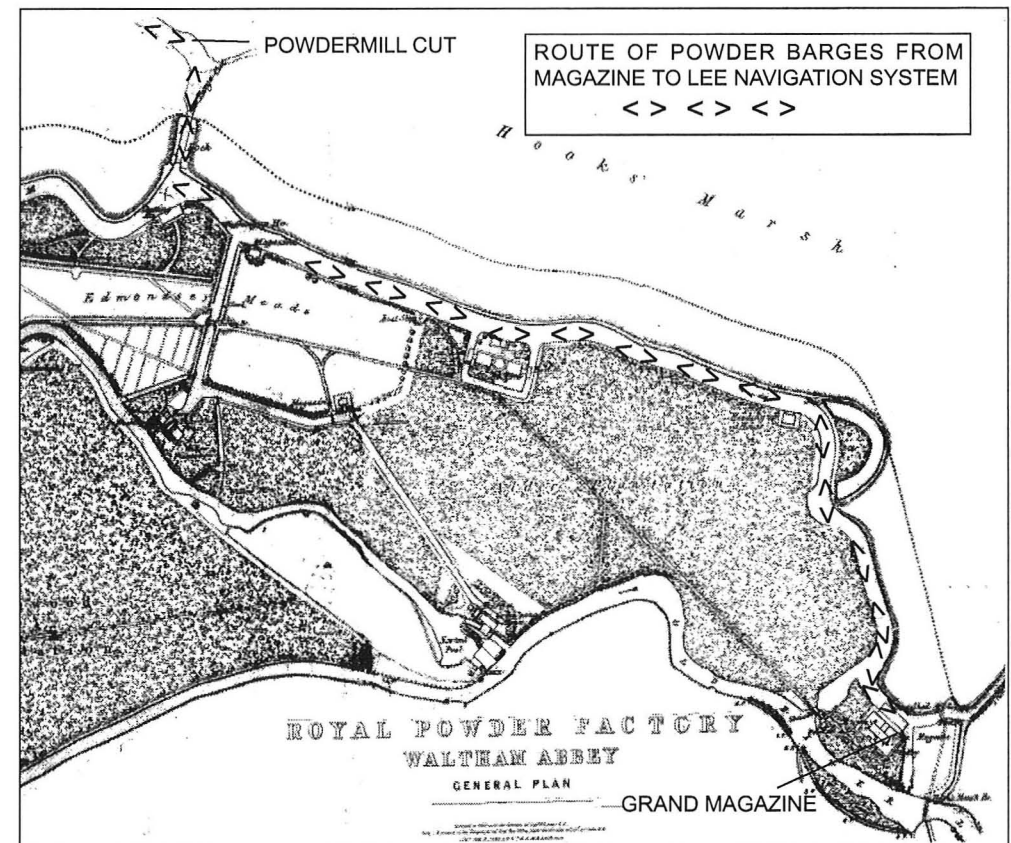
Designated Building No.1 in the original Mills numbering system

Location / Security

The Magazine was located at the northernmost part of the Mills south of the Hooks Marsh bridge on an island artificially created by three channels tapped off the River Lea to supply water to the high level Millhead Stream. The site was accordingly termed 'Magazine Island'. The island was therefore in a strategic position, apart from its important storage function, to control the inlet gates for water supply down the Millhead production line.

For general security a Watch House for a warden was built; his duties including preventing any unauthorised person from approaching the magazine, preventing the carrying of guns across the island and pipe smoking. The wardens were provided with pikes and sea service hangers - characteristic of security at the time at other similar locations e.g. isolated toll houses on the canal system.

Grand Magazine - Located at the northernmost tip of the site

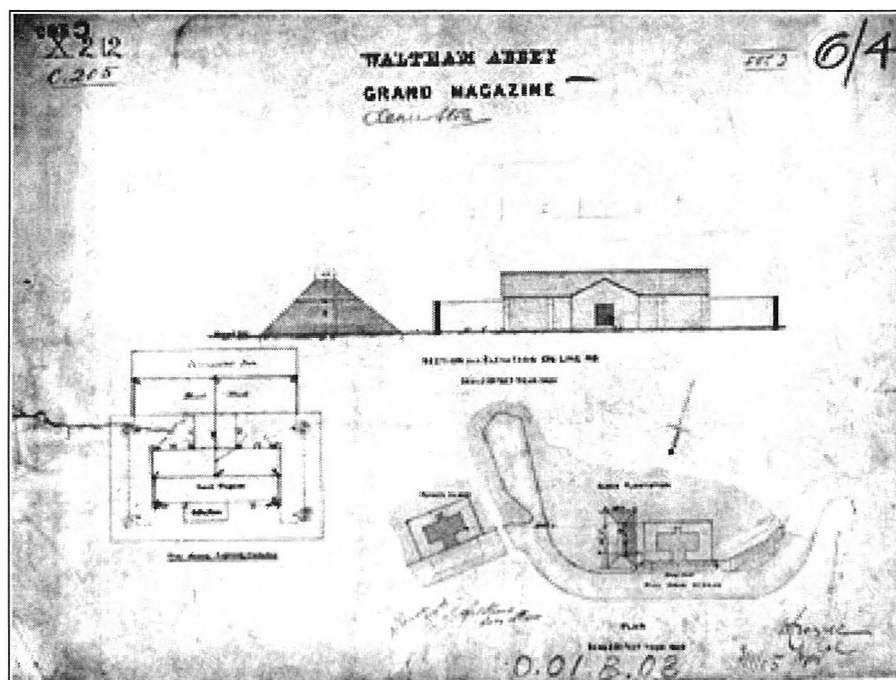


Function

The Waltham Abbey system involved production on a batch basis with product moving by water between the various processing stages from south to north up the Millhead Stream. The Grand Magazine in the north acted as the storage point for finished product. This was then transhipped to river navigation barges for shipment out via the locks of the Powdermill Cut, also built in 1806, to the Lee Navigation and on to the Government warehouses at Woolwich and Purfleet on the Thames.

Construction

The Grand Magazine was a plain rectangle 68ft by 35ft, surrounded by a compound wall. The normal building philosophy for gunpowder storage buildings was to construct strongly of brick with vaulted roofs and buttresses to protect the contents from accidental explosion in adjacent buildings, the weather and in some instances from hostile bombardment. The Grand Magazine did not however follow this, reflecting rather the light barnlike construction of processing buildings, with matchboard walls on brick foundations. It was presumably considered that its inland location, without nearby processing buildings made more expensive construction unnecessary.



Plan drawing of first Grand Magazine building.
Reproduced from the original held in the Site archive.

Capacity

The Magazine held 1500 barrels - of a lesser order than the main Governmental stores - Purfleet, Priddy's Hard Gosport (4500 barrels),but sufficient for its function of storage/fairly speedy transhipment whereas the destination magazines had to be large stockholders. The Magazine capacity compares with Mills output, which the 1801-1806 building programme had materially increased, rising to a peak of 22,000 barrels in 1813.

Overview

In spite of its relatively light structure, in the organisational terms of its day the Magazine could be viewed as the fitting culmination of a period of improvement and expansion at the Mills and an important point in a fully integrated industrial production, storage and transport system.

The end of the Napoleonic Wars in 1815 brought inevitable retrenchment.

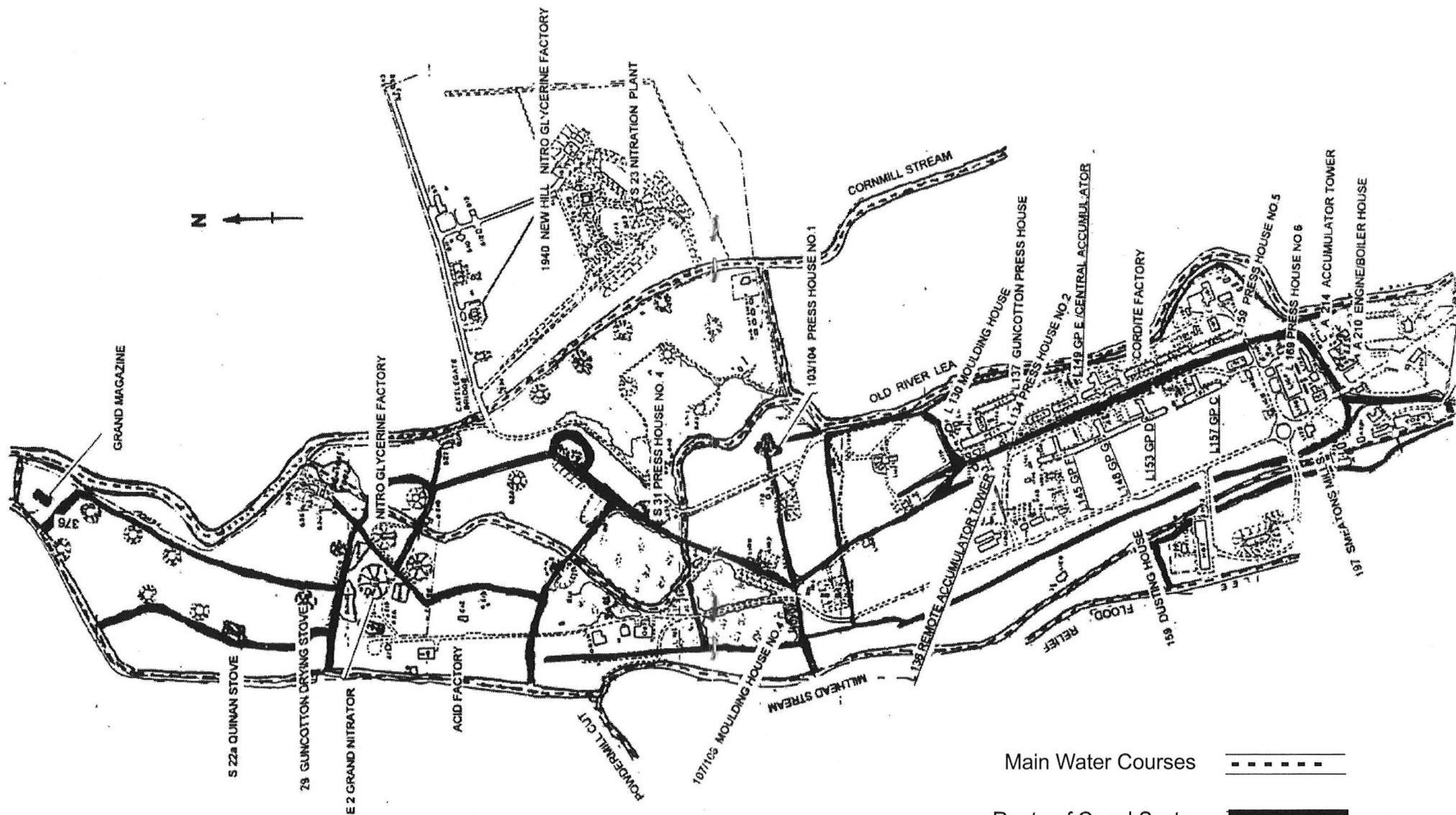
Staff numbers fell from a peak of 250 to around 35 and correspondingly output fell from the 1813 peak of 22,000 barrels to around 2000 barrels p.a. However underlying development did go on. William Congreve II had succeeded his father as Comptroller of the Royal Laboratory, including superintendence of Waltham Abbey, in 1814 and he continued the drive instituted by his father to more rigorous quality control, improvement of manufacturing method and a scientific approach generally. Individual developments of particular importance were - the introduction in 1816 of his patented mixing and granulating machines and the building of the Charcoal Cylinder House at the end of the 1820's in which wood was converted into charcoal in closed iron cylinder retorts, yielding much higher quality than pit produced material.

Further changes became necessary with the introduction of new, more powerful chemical explosives. The first of these was guncotton or nitrocellulose. This was too powerful to be used as a propellant, but the problem was solved by the patenting in 1889 of cordite, combining guncotton and nitroglycerine.

The speed with which the chemical explosives supplanted gunpowder is illustrated by the 1907 output figures of the Mills - 2000 tons cordite, 200 tons gunpowder.

The Mills main function had thus changed to the manufacture of cordite. Reflecting this the main input to the Grand Magazine was wet guncotton - which had firstly been moving up the Millhead from Quinton Hill and from the Magazine back to a complex of drying stoves south of the Magazine and later moving to the nitroglycerine plant.

The main function of the Grand Magazine had therefore changed from finished gunpowder storage to an expense magazine for an intermediate product prior to further processing and it was re-designated Wet Guncotton Magazine in the early 1900's.



Scale 1:2500

Main Water Courses ————

Route of Canal System ————

Listed Building ————

2. Grand Magazine Rebuild - by 1827

It seems possible that relatively early on the Board realised that the original facilities of the Magazine were not adequate for the volume of activity involved as 1814 proposed 'Works and Repairs' included work on the 'Grand Magazine and Loading House'. In spite of post war retrenchment this went ahead.

By 1827 the structure had been rebuilt, again of wood and brick. The central rectangle was now 80ft by 20ft. Crucially, loading facilities had been much improved by the addition of a barge shed and loading access bay on the west side. Later a belfry was indicated on the north side of the compound wall. The overall building shape had therefore moved from the pure rectangle to a cross shape and Magazine Island had now become Pain's Island.

Activity at the Mills continued at a fairly muted level into the 1840's.

Events of the 1850's began a transformation of the tempo. Serious deficiencies in the British military supply system were revealed by the Crimean War 1854-1856 and the Indian Mutiny just after, reinforced the message that the Great Power status of the country was on shaky foundations.

Various military reforms were introduced and starting with the construction of the first advanced steam powered incorporating mills in 1857 the Mills embarked on an extensive programme of modernisation and expansion, involving new building, expansion of the canal system and new technologies such as the centralised hydraulic power system.

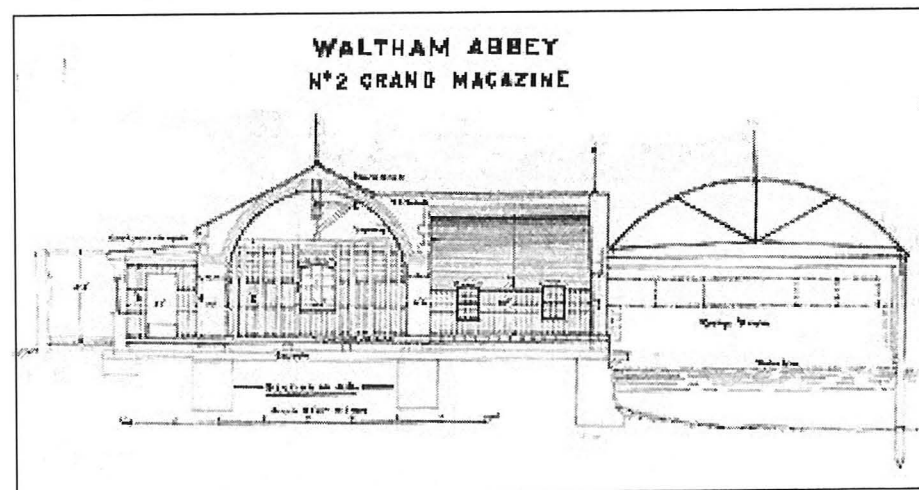
3. Grand Magazine - 2nd Rebuild 1867-8

The resultant output increases created the need for appropriate storage / transshipment facilities and in 1867-8 a second rebuild of the Grand Magazine was undertaken. The basic cross shape was retained. The central storage area was again rectangular - 65ft by 27ft. On the west side a projection contained a cooperage and on the east a lobby and shifting room and the building was enclosed by a compound wall 105ft by 65ft.

Importantly the previous lighter wood construction was finally abandoned in favour of the norm for magazine building - brick with barrel vaulted roofs for the central area and the cooperage with buttresses supporting the weight of the slate roofs.

Storage capacity was increased to 2000 barrels. The floor was of leather covered boards. The interior was lined with matchboard, fixed with copper fastenings, partitions were inserted in the main range dividing it into 4 bays and a 'traveller' was installed on the ceiling about 1875.

The Barge House for loading and unloading was iron built.
The spelling of the island had changed again - to Payne's Island



*Plan drawing of second Grand Magazine building.
Reproduced from the original held in the Site archive.*

4. Change in Function / Re-designation

Wet Guncotton Magazine - Early 1900's

The 1880's saw major developments in gunpowder technology to cope with the requirements of ever increasing gun sizes.

However as this was going on rapidly developing chemical science had already made discoveries which were to result in the replacement of the natural base gunpowder by chemical base explosives in a very short space of time.

After some setbacks a chemical explosive of superior power to gunpowder - guncotton (nitrocellulose) was produced. Waltham Abbey commenced experimental manufacture in 1863 and in 1889 a purpose built factory was built on land at Quinton Hill to the south of the town.

Building 2a

Subsidiary Wet Guncotton Magazine - built 1915

Waltham Abbey was the main supplier of cordite to the British Forces and WW I brought a massive expansion of output, from 26 tons per week to 140 tons. To cope with the increased guncotton storage requirement a secondary wet guncotton magazine was built in 1915 immediately south of the main Magazine. This was a wooden structure on brick.

The end of 150 Years of history - 1950's

Following the cessation of production at Waltham Abbey in the early 1940's the magazines fell into disuse. The subsidiary wet guncotton magazine was demolished in the mid 1950's and the barge house, cooperage and compound wall of the main magazine were removed over the same period, together with internal panelling and partitions, leaving the central rectangular storage area which remains to-day (later illegal brick removal further depleted the building).



The central main storage area showing results of illegal brick removal

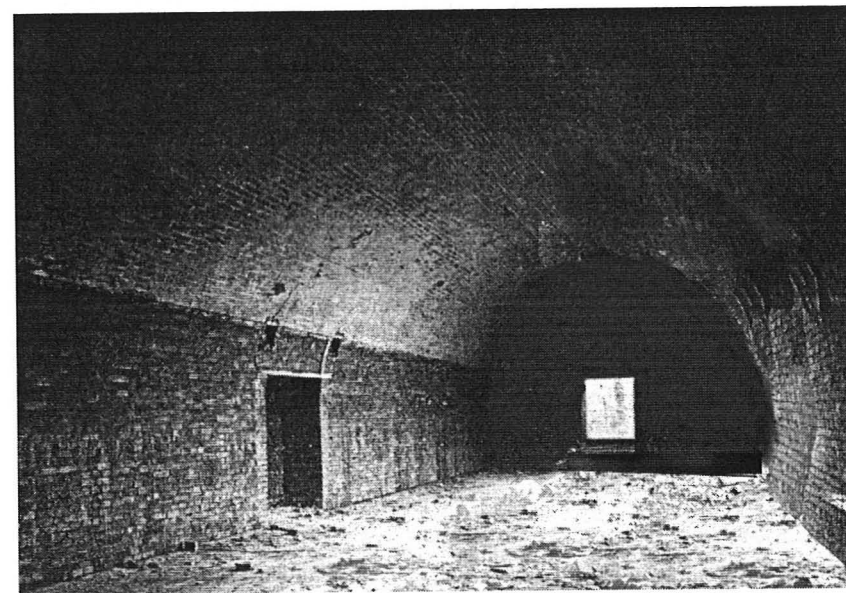
Storage - an essential link in the explosives chain.

The product is hazardous, inherently and from outside sources. The quality of storage facility plays an important part in ensuring both safety and quality integrity.

The Waltham Abbey Magazine reflected the progression of the Mills role as the major propellant supplier to the British Forces over 150 years, firstly gunpowder then chemical base. As such it is a significant element in the history of the storage aspect of the explosives industry.

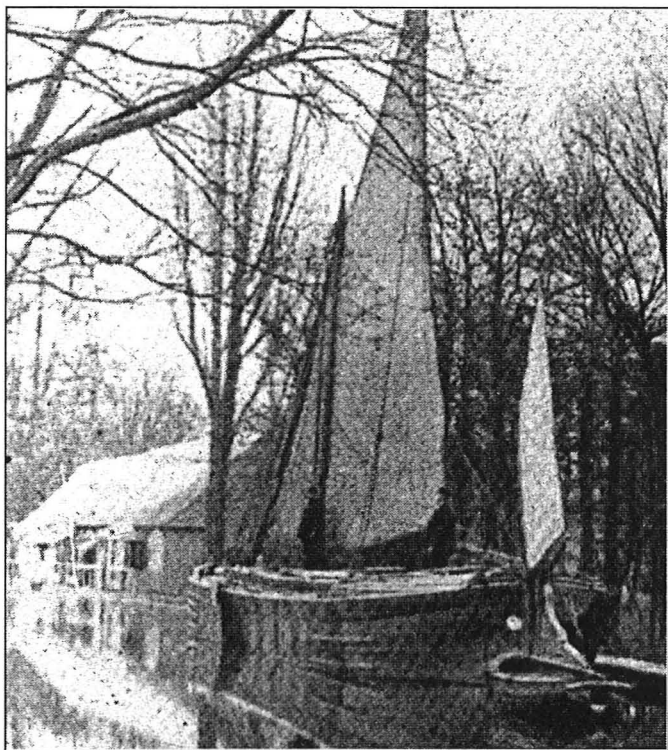


*Interior of the central main storage area showing results of illegal brick removal
The MoD Police caught a builder who had broken in at the North end of the Site and was in the process of demolishing the building for the bricks!*



*Digital reconstruction - How it would have looked before
Originally the roof and walls were lined with matchboard which was removed for safety reasons in the 1970's since it was found to be saturated with explosive.*

In the wider context the Grand Magazine remains as a reminder that from this deceptively rural location surrounded by marsh and water meadow flowed material which was a major instrument of the national geopolitical power, expansive or defensive, from the European conflicts of the Napoleonic era, Imperial expansion and Pax Britannica, with the accompanying rise of the Royal Navy as a world navy, and World Wars.



One of the fleet of Sailing Barges used to carry explosives from the Grand magazine to main storage facilities at Woolwich and Purfleet.

GUNPOWDER & DETONATION THEORY

In an earlier article on the Congreve Rocket we inadvertently said that the gunpowder warhead detonated and this sparked considerable discussion on whether gunpowder does actually burn to detonation.

In order to understand this we must first explain what is meant by a detonation rather than an explosion since all explosives explode (by definition) but not all explosives detonate.

The definition of an explosive is a solid or liquid substances, individually or mixed with one another, which are in a metastable state and are capable of undergoing a rapid chemical reaction without the participation of external reactants such as atmospheric oxygen.

Detonation is an higher order explosion where the speed of reaction produces a shock wave through the material. High temperature and pressure gradients are generated in the wave front so that the chemical reaction is initiated instantaneously. Detonation velocities lie in the range of 1500 to 9000 m/s. Slower explosive reactions, propagated by thermal conduction and radiation are known as deflagration.

The rate of burning of Gunpowder is dependent on the density of the composition, the grain size and pressure. The maximum rate of explosion is about 500 m/s - well below that for a detonation.

Therefore, Gunpowder does not detonate.

Norman Paul

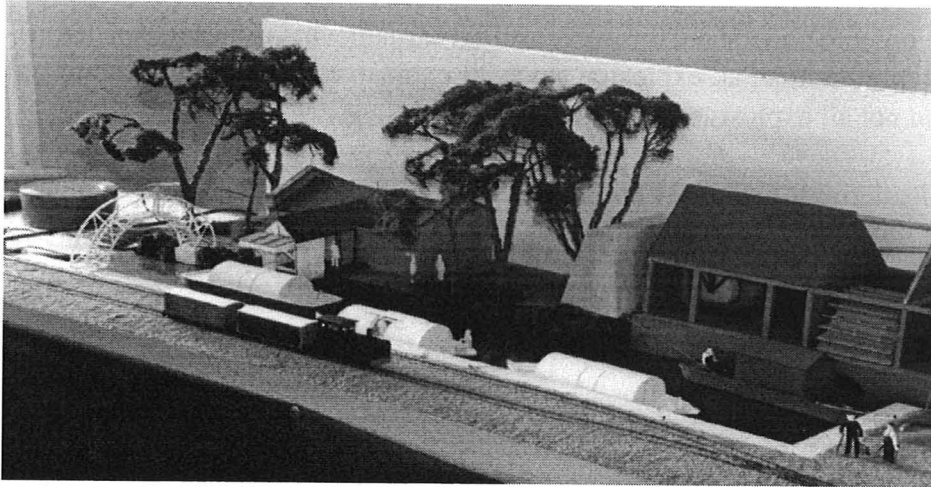
References:

1. 'Explosives', Rudolf Meyer, Verlag Chemie, Weinheim & New York, (1977)
2. 'Chemistry & Technology of Explosives', T. Urbanski, Vol III, Pergammon, (1967)

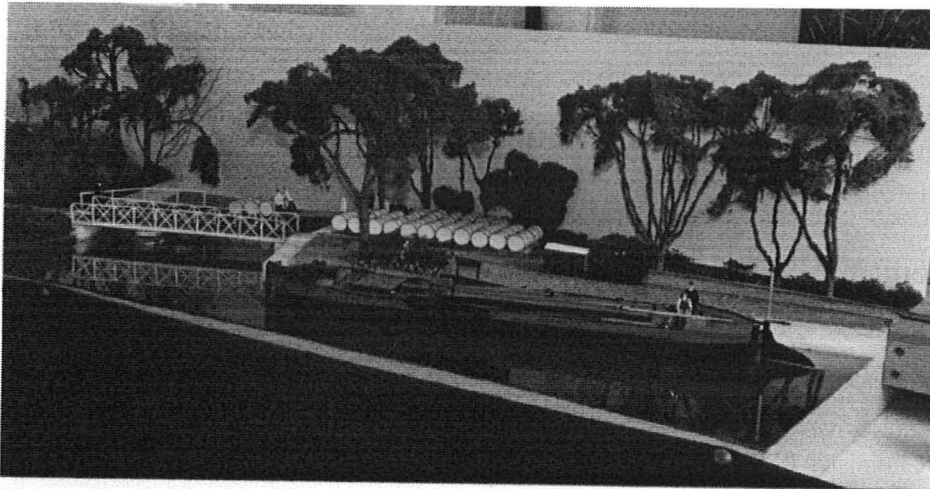


MODEL RAILWAY

Tony Barratt's beautiful and detailed model railway, incorporating many different aspects of the Site is now on display in L168 which is dedicated to the various forms of transport used on the Site.



This was briefly displayed on Site last year by Tony but was then shown at various modelling exhibitions elsewhere. Although on loan we hope this will become a permanent feature here.



This splendid model shows so many aspects of the Site as it was in the late 1800's and Tony is to be congratulated on such a splendid effort.

We have read, with very great interest, the article by Adrian Hodge in the last issue. We certainly didn't realise that Donald Hodge was part of what you once called the "Latymer Mafia".

We are members of the Latymer Old Students Association and I am sure that the editor of their magazine would be very interested to publish a 'potted' version of the article, provided Adrian Hodge agrees. I intend to write a short piece on the 'Mafia' for that magazine and, in due course, will send a copy for Touchpaper.

Jim Jeacocke.

Sorry I haven't been to the reunions for the past 2 years. It was beginning to get difficult to manage the travelling out and back in one day from Dorset. Not because I'm unfit, but simply the travel hassle these days by public transport or the alternative of using the car round the motorways. I've been in Dorset some 22-23 years since I retired from Aldermaston (and remarrying). Sadly, my second wife died last year, aged only 65.

So I've had two new 'lives' since leaving Waltham Abbey!

Our son Paul (my fourth) is now 25 and completed a Masters degree in Civil Eng. with 1st class honours from Imperial College. He has a job lined up this September in Cambridge after the last year spent globetrotting.

Jim Smith

Sadly, I have to report that Kath Saunders died in Northampton General Hospital on 8th April this year. For us it was a sad occasion when, a few days later, we met her family, mainly from the Lea Valley area, and her friends to attend the funeral. Her husband, Fred, died in 1988, about eight years after they retired to Northampton to be near a son and his family. Both Kath and Fred had worked at Waltham Abbey in the ERDE days. They were active members of the Social and Sports Club where they had many friends who will be pleased to know that Kath parted with dignity and knowing the love of those who had shared her life.

Dorothy & Victor Clifford

PLEASE REMEMBER

**DEADLINE FOR THE
December 2002 ISSUE:
15th November 2002**

**ALL CONTRIBUTIONS
WELCOME**

CYRIL BECK 1929 - 2002



Cyril Beck died in the John Radcliffe Hospital, Oxford on 16 July at the age of 73. Cyril spent the greater part of his career working with or directing work on explosives for both conventional and nuclear weapons. His early years were spent at RARDE, Fort Halstead and Woolwich then in the early 1970s he was promoted to the post of Superintendent of Explosives, at ERDE, Waltham Abbey, being responsible for programmes on the research and development of primary and secondary explosives and their safety qualification. In this role his relationship with his erstwhile colleagues

at RARDE who were his prime customers was challenging as he was keen to promote new ideas in explosives formulation development at Waltham Abbey whilst they were somewhat more conservative. During his time at Waltham he did much to enhance the good relationships that existed between the Establishment and the Ordnance Board, and the US, Canadian and Australian Laboratories and British Universities. He was also involved in studies to move the work from Waltham to the Atomic Weapons Establishment (AWE), Aldermaston-a move which never happened.

In 1980 Cyril was transferred to AWE to lead the Explosives Branch which at that time was one of the largest scientific Superintendencies in the MoD with responsibilities for research, development, production, and In-Service support of the energetic materials and small explosive devices such as detonators used in UK nuclear warheads. Members of his group played a vital role in the preparation and firing of underground nuclear test devices in the USA.

He retired in 1988 and continued his interests in explosives through consultancies with private companies, membership of the Energetic Materials Research Committee which scrutinised the quality and scope of MoD research into energetic materials and as an external examiner for M.Sc. students at the Royal Military School of Science. Cyril had a refreshing attitude to the petty bureaucracy and always sought to create a climate which encouraged his staff to develop their own ideas and strengths. However, he did not hesitate to take up a strong leadership role and give direction when necessary.

Cyril had many interests outside of work-he was a good cook and was celebrated for the exceptionally good spreads laid on for his Christmas lunches at AWE. Bee keeping was a pastime which unfortunately he had to give up on medical grounds many years ago. His interests in honey led him to make mead which in turn generated a passion for beer and wine making. In addition to his skill as an amateur wine maker his palate was considered by his peers to be one of the best in the country. As a member of the National Guild of Wine and Beer judges, he was in regular demand for judging a wide variety of shows ranging from National and Regional shows to modest local events. One of his most notable achievements was to judge with one other, 120 liqueurs produced by amateurs at a show and live to tell the tale! He was also a judge of meads at the national honey show. In addition he took part in many commercial tastings and in search of greater knowledge and experience he visited vineyards in the USA, Australia and South Africa as well as France. He became President of the Reading Wine Circle and played a major role in the Mid Wessex Federation, not only judging their shows but also setting up a training programme for the development of Federation Judges.

In 1951 he married Chris and they celebrated their Golden Wedding anniversary in July 2001. Their two children, David and Kate were born in 1957 and 1959. It was not long before he took on greater responsibilities at AWE being promoted to Head of Chemistry and Explosives Division; a large Division which included the Weapons, Nuclear and Analytical chemistry branches as well as his former Explosives branch. He also became an active and valuable member of Senior Establishment committees whose remit included warhead development, In-Service support, research and safety. He did much to deepen the special relationship between the USA and the UK on nuclear warhead research. Cyril was deeply devoted to supporting secondary education in London. Through the Senate of the University of London he became involved, from 1972 onwards, with the Central Foundation Schools in London becoming Chairman of Governors for more than 20 years. His endeavours were recognised by being made a Freeman of the City of London.

YOUR HELP NEEDED!

Along with the Waltham Abbey Historical Society, the Royal Gunpowder Mills are looking for volunteers who could spare some time, to help collate information on the people associated with the site. Peter Huggins has acquired masses of information over the years, from the Public Records Office and along with other details from the studies of the late Ray Cassidy, there are a number of areas that would be useful to look at including

GUNPOWDER WORKERS

To collate and list the workers between 1787 and 1900 using copies of the data available e.g. 1825 valuation document, 1825 Parish records showing Board of Ordnance ownership, 1842 Tithe details, Poor rate books between 1840 and 1900 and documents collated from Ray Cassidy's study of poverty between 1787 and 1834.

ADOPT A FAMILY

There are many families who had generations working at the Royal Gunpowder Mills and some who just had interesting pasts. Perhaps you could organise the information on one family and produce a family tree. Examples of these families are the Knowlers (Samuel and Henry who came from Faversham in 1787), Turnhams, Drayson (what was the connection between William and Frederick?), Newton (William, who came from Faversham was a horticulturist and was responsible for a special type of cabbage!).

DIRECTORY OF SUPERINTENDENTS/DIRECTORS

To produce a potted history of the backgrounds and details of the Superintendents and Directors of the site from 1787 to when it closed in 1991, would make a valuable reference.

MAPS

Collate and cataloguing the various maps over the years to document the history and changes of the site would complement all the other information produced.

RECORDS

If you have access to a PC and could type some information into a usable format, perhaps onto a database that could be sorted in the future, there are a number of listings and documents that would be easier to use if they were in a readable format! Now that the site is open, there are enquiries about people who worked there. As a result of this work, it may be possible to publish some of the listings produced, which may help to answer these questions. The Historical Society Millennium projects, typed sheets available in A4 wallets are a simple and effective way of making these facts readily accessible and may be one way of producing the information.

So if you have the enthusiasm for carrying out one of the above tasks and time on your hands, please help to capture some of the past and contact the Royal Gunpowder Mills:

Cathy Morton Lloyd (Visitor Services Manager) Tel: 01992 707360
e mail: cmortonlloyd@royalgunpowdermills.com (or in my absence, please leave a message with Claire Millington Tel: 01992 707370 e mail: info@royalgunpowdermills.com)

WHEELCHAIR(S) NEEDED

"We didn't know it was such a big site" is a regular comment from visitors. Some people find it beneficial to borrow a wheelchair and with an increasing number of requests, we would very much like to hear from anyone who would be willing to donate an extra one.

Apart from the Wildlife Tower (which has only a staircase to the top of the old accumulator tower) wheelchairs can access all the site (even the Land Train).

Other facilities include an induction loop and transcript of the film in the theatre, an audio tape and large print copy of the guide book. Also by prior arrangement, it may be possible to arrange for an interpreter for those who use sign language.

If you'd like more information to get the most out of the site, please request a copy of the "Access for All" leaflet or if you are willing to donate a wheelchair that you no longer require, contact Claire Millington on 01992 707370

or email at info@royalgunpowdermills.com

PUBLICITY - HELP WANTED

As a basis for approaches to journalists, the Mills is keen to identify recollections from any Friends who may have been involved in influential developments in explosives or rocket science, especially if these could be said to have had an impact on present-day technologies.

This is a chance to help the Mills exploit the goodwill of those features journalists with heritage interests who are looking for original angles to write about the site. Just jot down a brief outline of your experience in the first instance and forward it to Optimus Public Relations, which is co-ordinating the project.

Send to: Sarah Lloyd
Optimus PR
Weltech Centre
Ridgeway
Welwyn Garden City
AL7 2AA

Or email: sarah@optimuspr.co.uk