

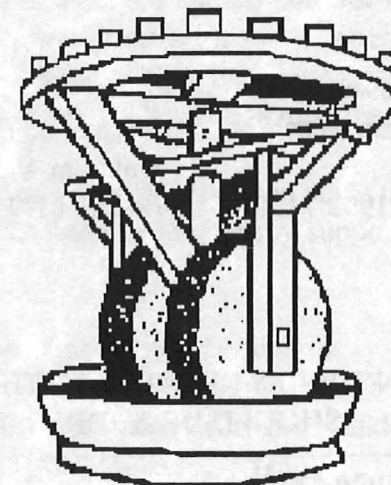
**ROYAL  
GUNPOWDER  
MILLS  
WALTHAM ABBEY**

'TOUCHPAPER' ©

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# **Touchpaper**

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



**DECEMBER  
2001**



## OFFICERS OF THE FRIENDS ASSOCIATION

### Chairman:

John Wright

1 Albury Drive  
Cheshunt

tel: 01992 624210

Herts EN8 8XE

### Secretary:

Richard Penfold

10 Thaxted Way  
Waltham Abbey

tel: 01992 712623

Essex EN9 1LQ

### Treasurer:

Jim Burgess

11 Quendon Drive  
Waltham Abbey

tel: 01992 713079

Essex EN9 1LQ

ALL ENQUIRIES RELATED TO THIS NEWSLETTER  
SHOULD BE ADDRESSED TO :

**Norman Paul**

**Touchpaper Editor**

24 Anglesey Close

Bishop's Stortford

Herts CM23 4PE

tel/fax: 01279 465568

e-mail: NPAUL24@aol.com

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



## EDITORIAL

Yes, I am still with you! This is my first editorial purely as Editor and not as Chairman. Your new Chairman is John Wright who has written a special message to you in this issue.

I will also continue to keep membership records as this ties in well with the database from which we send out the newsletter. One important change you should note for the future is that, on renewal, please send your form and payment direct to the Treasurer who will immediately bank it and pass the form to me for issue of membership cards and updating the database records.

I have enjoyed my stint as Chairman since the start of the Association and will continue to give my support to this worthwhile organisation.

Please keep the contributions coming in.

Wishing you all a very merry Christmas and with all best wishes for a happy and prosperous New Year.

Norman Paul





## ASSOCIATION MATTERS

### AGM REPORT

There was a good attendance at the AGM on 6th October held at the British Legion Hall, Waltham Abbey. The Treasurer's report showed an healthy balance of funds even allowing for expenditure on several capital items purchased by the Association and donated to the Operating Company.

The Constitution was amended allowing an increase in the number of Committee members from five to eight and the following were elected:

Frances Burgess	Brian Clements	Ernie Cooke
Bryan Howard	David Manners	Norman Paul
David Sims	Les Tucker	

The meeting also elected the three officers of the Association:

Chairman - John Wright  
Secretary - Richard Penfold  
Treasurer - Jim Burgess

Roy Atkins was re-elected and Ted O'Day elected as Honorary Auditors.

### REUNION REPORT

The 2001 Reunion was held at the British Legion Hall following the AGM and was well attended again this year with 110 members. Once again the Legion did us proud with excellent catering and very reasonably priced drinks at the bar. It would be difficult to find a better venue and there is, unfortunately, nowhere on the Site that we could hold such a successful event.

### CHRISTMAS CARDS

These were on sale at the Reunion and went very well. The actual picture was not that shown in the last issue. It was to be a joint venture with the Company who chose instead an old photograph of a 'Winter's Scene' at the Mills. The inside of the cards are blank as it was thought that they can then be used for other occasions. Cards have also been on sale in the site shop but at a higher price than from us! Postal sales have not gone so well this year and by the time you receive this issue it's probably getting a bit late for this Christmas. Any unsold cards will however be available throughout next year.



## A Message From the New Chairman

Taking over from Norman as chairman of the Friends is a daunting task. He has inspired others by his example and by the effort he has put in. I am very pleased that he will continue on the committee in charge of membership and as the editor of Touchpaper. Fortunately the Secretary, Richard Penfold, and Treasurer, Jim Burgess (ably assisted by Frances - or is it the other way round?) are continuing in office. Welcome to Brian Clements and Les Tucker as new committee members and to Ted O'Day as a new auditor joining Roy Atkins.

My particular concern at the moment is about volunteers and the ways in which we can help the company to maintain and improve the site and make it more attractive to visitors. At the committee meeting on the 29th October a list of projects for prioritisation and agreement with the company was generated. These projects are intended to be started, and in some cases finished, during the closed months (1st November to 16th March).

To make worthwhile progress a lot of volunteer effort will be required and I ask all Friends living within a reasonable distance to come and assist as much as possible. This can be on a very informal basis; come along on Friday mornings, meeting at 9.30 in the Lodge, or on a more formal basis as part of the company's volunteer scheme (thereby gaining free admission to the site both on and off duty).

Talk to any member of the committee or just turn up on a Friday. We all enjoy it and find it very worthwhile. My thanks to those who already do provide this much needed assistance.

With best wishes to all Friends for Christmas and the New Year,

John Wright  
Chairman

## SITE NEWS

The Site closed for the winter months at the end of October with a special family weekend culminating in a fireworks display on late Sunday afternoon.

### Visitor Numbers Lower than Expected

After a delayed opening, due to the Foot & Mouth pandemic, visitor numbers were disappointingly lower than predicted but picked up as the year progressed. Most of the special weekend events went very well with good visitor attendance but most weekdays saw little activity. On some days the weather was not conducive to visiting such an open air site and when it was hot ( Yes we did have some very hot, muggy days) it seemed that it was too hot for some people. Nevertheless, almost without exception, those who came thought it a well worthwhile visit and were very impressed with the site. To get repeat visits next year the site needs more attractions and these are being planned for but, 'Catch 22', the money required necessitates more visitors! One major attraction planned for the very near future (hopefully next year) is the establishment of a narrow gauge railway track. We have the rolling stock and some rails but now need the sleepers (in short supply after the F&M outbreak) and a lot of hard work. We'll keep you in touch with developments.

### An Educational Success

A major success story has been the Schools Visit Programme run by Gillian Norris. The scarcity of visitors during the weekdays has been made up by the very large number of school visits as part of their educational curriculum. These visits will continue during the closed season.

### Future Programme and Publicity

Because of uncertainty on opening at the start of the year the special events programme could not be fully finalised and some proposed events had to be changed. This didn't help with publicity, which was on a very tight budget anyway. Next year's programme is already being negotiated and a major publicity campaign is planned. Lindsay Berry, the Publicity Officer, has had a difficult time but has coped well with the resources at hand. Unfortunately she has recently left the Company to work for a theatre group, an area in which she has a great interest and we wish her well in her new job. A new Publicity Officer will be appointed in the near future.

## A VICTORIAN CHRISTMAS

Although the site is now closed until the 16th March 2002 it will open for a special Christmas event on the 15th - 16th December from 11.00 to 16.00.

This is a children's event where they can travel back in time to meet Victorian characters, take part in Christmas arts and crafts and follow a magical trail to collect a present from Father Christmas himself.

Entry Price is £5 per child (accompanying adults free).

Entry is by pre-booked children's ticket only.

Tickets do not include entry to the Exhibitions which will be closed.

Call 01992 707 354

## VISITS DURING THE CLOSED SEASON

Although the Site is closed to the general public the Company will arrange a Winter Group Package exclusively for group visits during the winter months.

A typical schedule(open to negotiation) could be:

**Start** 10.30 with an **Introductory Talk** followed by **Morning Coffee** at 11.00. Time to see the **Exhibition** until 12.30 when a **Three Course Lunch** is served. At 13.30 a **Guided Tour** followed by **Free Time** to look around before **Departure** at 15.30.

All this for an inclusive price of £12.50 per head for Adults and £10 per head for children. Maximum number in group 50, Minimum 10.

For further details contact the group bookings office on 01992 707 350 or write to:

Royal Gunpowder Mills, Beaulieu Drive, Waltham Abbey, Essex, EN9 1JY

## Some Thought on Congreve Rockets

It is well known that the gunpowder made at Waltham Abbey under the supervision of William Congreve was superior to that made elsewhere. Cannons using Waltham Abbey powder demonstrated the superiority of this propellant in both range and reproducibility. It is strange therefore that Congreve rockets had a reputation for erratic behaviour using the same powder, which may explain the British Army's preference for the gun rather than the artillery rocket up to modern times.

For a rocket to be reliable it must have a propelling charge that does not break up or crack since this causes an increase in gas production and in some cases could lead to a pressure burst. How did Congreve compact a granular powder to form a non-cracking charge?

Having made a well-compacted charge it had to remain in that state during transport and when fired in battle. There is a well known saying that "Only a cannon ball is 'soldier proof'" so it wouldn't be surprising that a brittle propellant might arrive at a battlefield in a less than ideal condition. Unless the venturi were sealed then ingress of moisture would make ignition very chancy, particularly for naval uses.

How was the propellant lit? A slow match might itself be unreliable since it would have to generate enough gas to help the propellant achieve a working pressure of, say, 4MPa (580 psi) - this is a guess based on knowledge of modern rocket operating pressures.

From this superficial consideration of the factors involved it is amazing that the Congreve rocket worked at all. How often did they reach their target? How often did the charge fail to ignite? We shall probably never know as soldiers in the heat of battle wouldn't have seen the collection of statistics as the most important thing in life.

Would it be possible to make a Congreve rocket more reliable now in the light of modern appreciation of internal rocket ballistics using only materials available in the early 19th century? In hindsight I feel we should take our hats off to William Congreve for trying to produce a good reliable artillery rocket at that time.

Bryan Howard

*In defence of Congreve, his rockets had considerable successes at a number of both land and sea engagements and later improvements in the civil version used for sea rescue line carrying must have shown much greater accuracy than some of the earliest versions. As far as ignition and reliability goes it is doubtful whether improvements were necessary - you have only to see some of the large pyrotechnic rockets that are used today to realise that our appreciation of internal ballistics has failed to make any impact on rockets propelled by gunpowder. I believe that, for logistic reasons, the army preferred guns that could fire repeatedly rather than one-shot rockets.*

Editor

## LISTED BUILDINGS AT THE ROYAL GUNPOWDER MILLS

by Les Tucker

### PART IV CORDITE BUILDINGS

This issue deals with listed buildings associated with cordite production. A synopsis of the development of cordite production follows:

#### Pre cordite - Gunpowder

The 19th century was an era of accelerating economic, manufacturing and trade activity with increasing rivalry between the Great Powers. Demand for gunpowder similarly increased in both the civil and military fields. In the military application, advances in metallurgy applied to iron and the new steels had enabled the manufacture of larger guns requiring not only larger charges but more specialised powders with a controlled rate of burning. This led to major developments in powder technology in the form of pellet or shaped powders, moulded prismatic powders and 'brown' powders. These new requirements resulted in a significant expansion of production facilities at the Mills in the late 1870's, together with new canal links. At that time it would have appeared that the natural based gunpowder would be the world explosive and military propellant for the foreseeable future. However, the new science of applied chemistry had already laid the foundations for massive change at the end of the century. Pressure for improvements in quality, performance and explosive power was constant. In the military sphere there was also growing demand for a 'smokeless powder' which led scientists to explore the possibility of replacing the natural based gunpowder with new chemically based materials.

#### Guncotton - from 1864

The foundation of chemically based explosive manufacture is the process of nitration - the replacing of hydrogen in a molecule with nitro groups. Around 1845 a Swiss chemist, Professor Schonbein of Basle, discovered a variety of nitrocellulose (NC) by the action of nitric and sulphuric acids on cotton and this was called Guncotton. Its explosive power was soon recognised but a series of explosions in many countries caused its manufacture to be dropped. Then, in 1865, Frederick Abel at Woolwich developed vital improvements making its manufacture and use practicable. He discovered that previous accidents were due to the imperfect washing of the material after nitration leading to severe instability and introduced a washing process which was put in place at the Mills. The civil explosives industry quickly 'cottoned on' to the commercial possibilities and many of the Waltham Abbey Mills processing improvements were widely disseminated throughout the industry. In the military the new material became widely used in torpedoes, mines, demolition charges and for shell filling. Guncotton continued as an important military explosive into WWII and in 1940 the Mills were producing 120 tons per week.



At the same time it was hoped that guncotton could be granulated to provide a superior replacement for gunpowder but these hopes were not fulfilled. Guncotton was found to be too explosive in force and gunpowder continued its dominance. However, demand for a 'smokeless powder' continued

Nitroglycerine (NG) - from 1863

Prepared by the action of nitric and sulphuric acids on glycerine this was first made by the Italian Sobrero in 1846. Although of much greater power than any other explosive it was a sensitive and unpredictable liquid and in early manufacture many devastating accidents occurred. It was the Swedish chemist, Alfred Nobel, who 'tamed' NG by absorbing it into an inert clay (kieselguhr) which reduced its sensitivity. This he termed 'Dynamite' and the material came into widespread use.

Blasting Gelatine - from 1886

In 1875 Nobel introduced 'blasting gelatine' in which soluble NC was gelatinised by NG.

Smokeless Powders - from 1886

Poudre B 1886

In 1886 the French developed 'Poudre B' made by gelatinising guncotton with ether-alcohol and working the paste into a dry horn like material. Although not perfect it could be regarded as the first practicable smokeless powder.

Ballistite 1887

Nobel's blasting gelatine was too powerful for use as a military propellant but in 1887 he patented Ballistite as a propellant, it being a mixture of soluble NC, NG and camphor as plasticiser.

CORDITE 1889

The French achievement had caused considerable interest, if not anxiety, in the British military and in 1888 an Explosives Committee was set up under Sir Frederick Abel to investigate the potential of NG based material as a service propellant. Within a year, in 1889, they had patented 'Cordite' with insoluble NC, NG and mineral jelly using acetone as solvent. This was termed Cordite Mark I and had a composition of NG 58%, NC 37%, Mineral Jelly 5%. The process involved forcing the material through a die while in a plastic state to produce strands or cords - hence the name Cordite. The patent process had passed through murky waters, including an action for infringement by Nobel - The Times termed it 'The Cordite Scandal'§ In 1901 Cordite MD (Modified) became the standard service propellant, practically reversing the previous composition to NG 30%, NC 65%, Mineral Jelly 5%, the purpose being to reduce barrel erosion.

The development of and introduction of cordite into service was meteoric. It removed entirely the need for the brown and moulded powders which a short time before had seem so advanced. By 1890 land south of the town had been purchased to allow for the necessary expansion with the Mark I cordite becoming the standard rifle propellant in 1891. By 1898 the North Site in conjunction with the new South Site were producing guncotton and nitroglycerine and was predominantly a cordite factory.

During WWI Cordite RD (Research Department) B was developed using ether-alcohol solvent in place of the scarce acetone. Prior to WWI the Mills cordite output was 26 tons per week. Within a year of the start of the war this had risen to 140 tons and by 1916 to 200 tons.

Important development work continued at the Mills after WWI. In 1933 Cordite W (Waltham) was developed with replacement of mineral jelly by 'carbamite', a more efficient stabiliser. Although earlier grades had been termed 'smokeless powders', pressure from the military for enhanced smokeless and flashness qualities has intensified. Following research at Woolwich, from 1928 the Mills had been evaluating compositions containing picrite (nitroguanidine) and by WWII a formulation including 55% picrite had almost completely eliminated flash and smoke.

**LISTED CORDITE BUILDINGS AT WALTHAM ABBEY**

As outlined above the change to cordite at the end of the 19th century involved substantial conversion of gunpowder buildings. In broad overview terms the cordite manufacturing process had elements similar to gunpowder - incorporation, pressing, drying, blending.

The listed buildings which performed updated cordite functions were:

INCORPORATION AND PRESSING		
	<u>Gunpowder</u>	<u>Cordite</u>
L145 Group F	Incorporating	Incorporating
L148 Group G	Incorporating	Incorporating
L149 Group E	Incorporating	Incorporating
L153 Group D	Incorporating	Press House
L157 Group C	Incorporating	Press House

**DRYING**

After pressing, the cordite was moved to drying stoves, either wound on to reels for small diameter cords or the larger diameter cut to required lengths. Hot air, heated by steam pipes was blown around the buildings. After drying the reels were moved to a

§ It is proposed to continue this series with a set of historical notes on subjects such as the above after the listed buildings and other important structures have been dealt with.

Reeling House for winding into 60 strand ropes to ensure an average uniform quality. Larger size cords were blended by hand.

#### L167 REEL DRYING STOVE Grade 2 listed - built 1889

This building, built originally as a charcoal store for gunpowder lies to the south of the Group C steam mills.

#### H7 REEL DRYING STOVE Grade 2 listed - built 1904

This is now the entrance building to the Mills. It was built, along with a duplicate reel drying stove H8, to service the expanding cordite output of the Mills. It is set within a substantial earth traverse for blast deflection upwards in the vent of explosion. A tramway system led into the building entering through vertical facing wall with concrete revetments. Experience of earlier incidents had led to the conclusion that such earthworks were superior as traverses to the solid mass concrete previously employed. The tramways ran to loading porches. These drying stoves were 'Danger Buildings' and, to prevent dust and grit entering, the porches were protected by a red painted barrier board. On stepping over the barrier board anyone entering the building had to put on special leather overshoes.

The purpose of drying was to remove remaining moisture and to drive off the acetone solvent employed in the incorporation. This scarce and valuable product was therefore lost to the air in vapour form. At the Mills R. Robertson and W. Rintoul devised a method of acetone recovery in which the air and acetone vapour were drawn across a sodium bisulphite solution with which the acetone reacted to form an insoluble bisulphite compound from which the acetone could be recovered. The necessary plant was initiated in 1906. H7 would probably have included an acetone recovery system from this date.

**Having introduced a major change in power technology in the mid 19th century, at the end of the century the Mills, over a very short space of time, managed a total change in the technology and nature of its main product; from a basis of natural ingredients (saltpetre, sulphur and charcoal) for gunpowder, to the chemical base nitroglycerine and nitrocellulose for cordite, with all the implications this carried. New unfamiliar plant, conversion of old plant and buildings, new manufacturing, materials handling, revised safety procedures, training of staff, new laboratory and testing procedures etc. - an impressive achievement.**



## MORE ABOUT CONKERS AND ACETONE

I found Bryan Howard's article in the last issue most interesting. This subject was brought to my attention some years ago when I was on the committee of the Hungerford Historical Association. The chairperson was a teacher who had taught in the White Waltham area and presented me with an article headed "Chestnuts" which she had come across that confirms the story.

Some years ago the Maidenhead Archaeological & Historical Society carried out a survey of documents for the parish of White Waltham. One of the finds was the Log Book of the Parish School that gave a reference to the children being given a day off on 22nd October 1918 to gather horse chestnuts for the Ministry of Munitions. Further research ascertained that these were used in a fermentation process invented by Chaim Weizman for the production of acetone to be used in the manufacture of cordite.

But where did all those horse chestnuts go? The first large scale trials were made at a factory in Kings Lynn in 1917 which had been commandeered by the Government and would seem to be the destination of the White Waltham chestnuts.

At the end of the war the plant was closed and the children of White Waltham, and elsewhere, reverted to the more traditional use for conkers.

I do, however, wonder about Bryan's assertion that "South Site had 2 acetone recovery plants during WWII but that they were not available in 1914-18". My feeling is that the reverse was most likely the case. I 'booked' the Building Works Dept. at the South Site from 1938 until 1941 and, in my job, travelled extensively around the site. The Acetone Recovery plant was housed in a large building situated on the western extremities of the South Site. Each day I could see it from the towpath of the Lee Canal on my way to work from Enfield Lock. It was said, in those days, that it had been closed since the end of WWI. I am fairly confident it was still closed when I moved to Bridgwater in August 1942. The galvanised piping linking the cordite stoves to the recovery building looked in poor condition then. Does anyone know if acetone recovery was imperative in WWII and, if so, how and where it was accomplished?

Arthur Wilson

## CONKERS, ACETONE AND ETHER

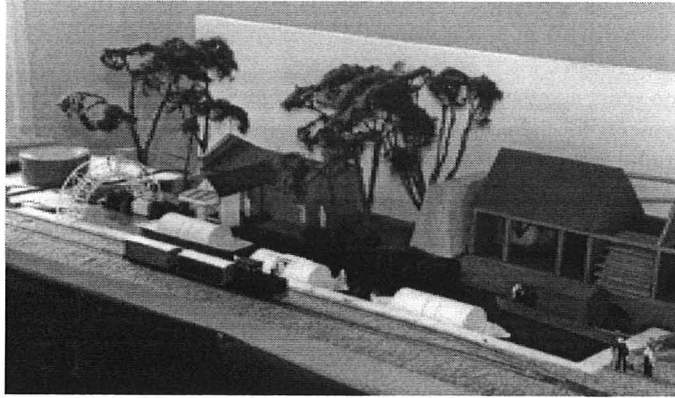
Further to Bryan Howard's letter in the last issue - Apart from seeking alternative methods of acetone production an alternative grade of cordite - RD(Research Dept.) B was developed.

The nitrocellulose in the standard service cordite (MD) was high nitrogen (12.8%) and only soluble to a limited extent in ether-alcohol, requiring acetone as solvent - insoluble NC. An alternative grade of nitrocellulose (12.2%) was soluble in ether-alcohol - soluble NC. Ether-alcohol did not suffer from the supply problems of acetone and 'soluble' NC was used to make RDB cordite. By 1916 the shortage of acetone was such that RDB was used for all large cordite at Waltham Abbey.

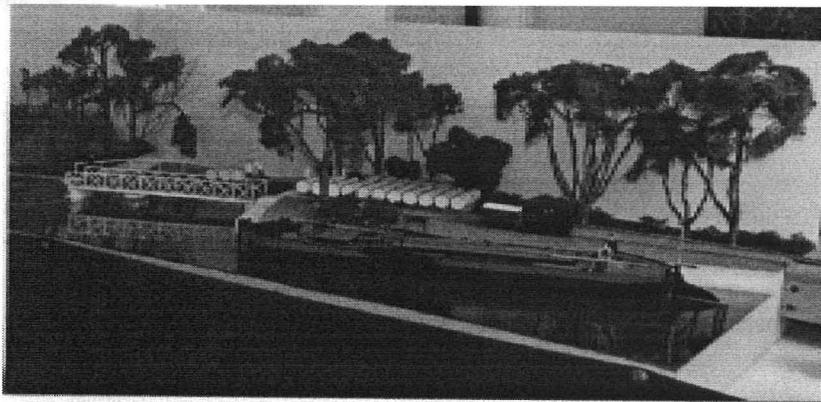
The mineral jelly store (L165) was also used as an ether store with a pipeline leading from it.  
Les Tucker

## MODEL RAILWAY ON SITE

For the 40's weekend, 15/16 September, we set up my model railway which depicts several RGPF locations as they were between 1917 and 1943. We had very much appreciated assistance from Brian Clements, Richard Penfold and Dick Barber, a friend of ours we had not seen for 23 years! We explained to visitors how the model related to what they could see on the site.



When the niece of Norman Blay asked if I knew him, I pointed out where his office had been in the tower of L145. She took photographs of the model and the real L145 to take to him. Later when Les Cole's son came, he said Norman used to give Les a lift into work! Many other visitors told us of family members who had worked at RGPF. There were over 1,000 visitors, perfect weather and a great atmosphere. The construction of the model had been hard work at times but this weekend made it all worthwhile.



Several of the Site staff and WARGM Trustees were interested in having the layout as a permanent exhibit on site and we hope this might be arranged at some time. For those who missed it and who live "up North" its next outing will be at a model railway exhibition in Chapel-en-le-Frith, Derbyshire on 23/24 February 2002.

Tony and Beryl Barratt

[8]

*pictures by Terry Griffiths*

*The following article was sent in a few months ago and I have forgotten who sent it - my apologies to who ever it was (Ed.)*

## The Corporate Mind

Here is a look into the corporate mind that is very interesting, educational, historical, completely true and hysterical, all at the same time:

The US standard railroad gauge (width between rails) is 4 feet 8.5 inches.

*That's a very odd number. Why was that gauge used?*

Because that's the way they built them in England and the US railroads were built by English expatriates. *Why did the English build them like that?*

Because the first rail lines were built by the same people who built the pre-railroad tramways and that's the gauge they used. *Why did 'they' use that gauge then?*

Because the people who built the tramways used the same jigs and tools that were used for building wagons which used that wheel spacing.

*Okay! But why did the wagons have that particular odd wheel spacing?*

Well, if they tried to use any other spacing the wagon wheels would break on some of the old, long distance roads in England because that's the spacing of the wheel ruts.

*So who built those old rutted roads?*

The first long distance roads in Europe (and England) were built by Imperial Rome for their legions. The roads have been used ever since. *And the ruts in the roads?*

Roman war chariots first formed the initial ruts which everyone else had to match for fear of destroying their wagon wheels. Since the chariots were made for (or by) Imperial Rome they were all alike in the matter of wheel spacing. The United States standard railway gauge of 4 feet 8.5 inches therefore derives from the original specification for a Roman war chariot.

Specifications and bureaucracies live forever! So the next time you are handed a specification and wonder what 'horse's rear' came up with it you may be exactly right because the Roman chariots were made just wide enough to accommodate the back ends of two horses! Thus we have the answer to the original question.

*Thankyou.*

Ah! But now a twist to the story:

When we see a Space Shuttle sitting on the launch pad there are 2 big solid rocket boosters attached. These are made by Thiokol in Utah and the engineers who designed them really wanted them to be fatter but they had to be shipped, you've guessed it, by rail. The line from the factory ran through a tunnel and the tunnel is only slightly wider than the track and the track about as wide as two horses' behinds. So, the major design feature of what is arguably the world's most advanced transportation system was determined over two thousand years ago by the width of a Horses's Rear!



# TOUCH

## A Day to Remember:

"What would you like you do for your 50th birthday?" asked my husband as the big day loomed ever closer. I plumped for a trip in a hot air balloon and the booking was duly made for the 20th July. As the flights are totally weather dependent there were a few false starts but we finally got airborne on 9th September.

After the long time necessary for inflation we climbed into the wicker basket with a mixture of excitement and apprehension, Slowly and gently we ascended until the people on the ground became tiny dots. We travelled for about an hour in a south westerly direction from Norwich. The pilot pointed out places of interest and told us how dependent he is on the goodwill of farmers who allow him to land in their fields. Apparently most livestock take no notice except for pigs which are easily panicked so we have to fly at 2000 ft over pig farms.

As landing time approached we were reminded by the pilot to bend our knees, lean against the compartment walls and hang on tight. He told us that the first bump will not be the last, or the hardest! No joke - Bang! We crash into the ground, the basket is over on its side, the balloon, still inflated, pulls us up again across the field. Bang! We hit the ground again, skidding across the stubble and finally come to rest. We scrambled out and helped the crew deflate the balloon and pack it onto a waiting trailer.

We drank a well earned glass of champagne and received certificates to record our bravery before being driven back to Norwich.

Altogether a day to remember - Thanks Brian!

Sandra Day

## The Black Hole - A possible explanation:

I have been thinking about Jim Hawkin's article on the 'Black Hole' in Newton's Pool in the June 2001 issue and have a probable explanation.

All the process water from the nitroglycerine plant ended up in Newton's Pool. The plant had been in operation for many years and, during the war, was in virtually continuous operation. NG is slightly soluble in water and process water tends to be warm. It was reasoned that when this entered the cold water of the pool it would separate out and fall to the bottom. For this reason, every Saturday morning, a small charge (probably a 1g guncotton primer made in the Factory) was detonated in the pool with the object of destroying any separated NG. This procedure was performed for many weeks, months (? years) with no apparent result; the charge being set off in roughly the same place each time. Until one Saturday when, for some reason, it was dropped in a different place and fired. There was a mighty roar and Newton's Pool spread itself over the landscape. The subsequent enquiry suggested that there could have been a depression in the bottom of the pool into which the NG had been gravitating for some time and that this was now somewhat deeper!

Jim Jeacocke

# BYTES

## ERIC TRIST

I recently heard that Eric Trist died in mid-September aged 94. I first met Eric in August 1949 when I was given an office in the ERDE Propellant Factory at Woolwich, an arrangement which Eric looked on unfavourably since I was not on his staff. Matters did not improve when, a few months later, he found me drilling holes in one of his "good teak benches". The ice was only broken when he later heard me singing a snatch of Gilbert and Sullivan. At the end of 1956, with his deputy Stan Dawson, we marked the closure of the Propellant Factory with a visit to Sadlers Wells Opera with refreshment before, during and after, in the Shakespeare's Head just across the road. I saw less of Eric after the transfer to Waltham. During his time in charge of the Woolwich Factory its main task was to develop the new breed of "platonised" cordites. Fifty years on a number of the formulations devised then still find service in missiles and, notably, in aircraft escape systems including seat ejectors. I dare say that Eric would have been too modest to take any of the credit for this success but, as in the case of the teak bench, he would be wrong.

Eric Baker

## Update from the Antipodes:

I still always look forward to receiving 'Touchpaper'. Congratulations on 'opening to the public' - it must be an exciting time for all. I will be sure to visit next time I am over in 2003. Having now retired I am thoroughly enjoy my new freedom and wonder how I ever found time to work!

Peter Pearce Melbourne, Australia

## Food For Thought:

The winner of an American competition for the most improbable research was:

### ANTI-GRAVITY

Drop a cat - it always lands on its feet. Drop some toast which invariably lands butter side up. Therefore strap toast to cat's back, butter side up. When dropped the 2 opposing forces will cause it to hover. If enough toast-laden felines were used they could form the basis of a high speed monorail system.

A response from a reader said that "it's the butter that's responsible and it works equally well on crackers! So why not dispense with the toast and just butter the cats?"

Dave Salter

## DONATE MODEL RAILWAY ITEMS TO THE FRIENDS

I have started a scheme to sell donated model railway items for charities and monies raised from any items donated by members of the Friends Association will go towards Friends on site projects. Please search your attic, cellars and cupboards. If you are able to donate any items, also books and videos on railway subjects. Please contact Tony Barratt, Tel: 01663 750357, or e-mail: barratt2@tinyworld.co.uk.

## PLEASE REMEMBER

DEADLINE FOR THE  
MARCH 2002 ISSUE:  
15th February 2002

## RECENT PUBLICATIONS

### **London's Lea Valley - MORE SECRETS REVEALED**

by Jim Lewis

In his first book, London's Lea Valley: Britain's Best Kept Secret, well known local historian, Dr Jim Lewis, revealed the many technological discoveries that took place in the Lea Valley. In this new book, "More Secrets Revealed" he continues to uncover many more Lea Valley 'firsts'. The book was launched at the beginning of November at Myddleton House, headquarters of the Lee Valley Regional Park. This companion volume to his first book is a worthwhile sequel at a reasonable price of £14.99. You can, however, order the book, post free, from the publishers at the special price of £12.50. Thoroughly recommended.

Apply to: Phillimore & Co. Ltd, Shopwyke Manor Barn, Chichester, West Sussex, England, PO20 6BG.

Please note that both volumes can be obtained at the special price of £25.

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### **Waltham Abbey through the 20th Century**

A new publication by local man Philip Pennell

The small historic town of Waltham Abbey although much expanded in the 20th century, has preserved that most valuable of assets - a strong sense of community. But: What have been the changes for the people in the 1900's?

How have the increased population been housed?

What have been the developments in local employment?

What changes in health care and what became of the two hospitals?

How have the schools changed during 100 years?

Who were some of the local people that influenced events?

Some of the answers are in this record. Its extensive text is supported by many photographs and illustrations drawn from a variety of sources and will stand as a record which future generations may find interesting.

At a cost of £9.95 it will be on sale locally at; Epping Forest District Museum, Lee Valley Park Information Centre, Tourist Information Centre, Waltham Abbey Library, Waltham Abbey Stationers or direct from the author at 4, Woodbrook Gardens, Waltham Abbey, Essex, EN9 3DA. Orders from addresses in Waltham Abbey will be delivered without charge, please send £9.95 with order. For addresses outside Waltham Abbey please add £1.50 p&p.

## THE RSAF ISLAND CENTRE

**The Royal Small Arms Factory at Enfield Lock had a long association with the Royal Gunpowder Factory sharing a common boundary and, at one time, had a common director. There are records of materials shipped to and from the Small Arms Factory by the Powdermill Mill sailing barges in the 19th century. Later on when water transport was replaced by railway the Mills narrow gauge track ran into the RSAF site for transfer to standard gauge wagons using a spur to the main Lea Valley railway line.**

**From the early days of the Mills as a Research and Development Establishment there was an active Social & Sports Club as there was at the RSAF. Many joint social events were held and friendly sporting matches and competitions. Most notably of these was the annual rifle shooting competition for which we still hold in our archives a splendid silver shield.**

**Engineering apprentices at the RGPF also spent their first year training at the RSAF which had a major reputation as a training centre. Springing from this a RSAF Apprentices Association was formed and is still very active with several hundred members. Like the Mills the RSAF site was also closed down but, they were not so fortunate and virtually the whole site has been redeveloped.**

**We are in touch with their association and the Operating Company have been persuaded to agree, in principle, to an RSAF exhibition on the Waltham Abbey Site adding to the attraction. This is dependent on the selection of an uncontaminated building and the re-establishment of some basic services and must await the necessary finances.**

**Until then you might like to visit the 'Island Centre' development at the end of Ordnance Road in Enfield where one of few original buildings contains a walkway through to the development and currently contains an excellent pictorial display recording the history of this 'sister' site.**