

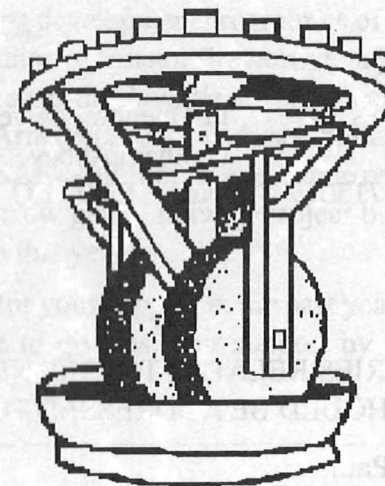
**ROYAL  
GUNPOWDER  
MILLS  
WALTHAM ABBEY**

'TOUCHPAPER' ©

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# **Touchpaper**

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



**JUNE  
2002**

## 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      tel/fax: 01279 465568  
Herts CM23 4PE      e-mail: NPAUL24@aol.com

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



## EDITORIAL

With the re-opening in March the Site is now in full swing with a full programme of weekend events as detailed in the last issue.

Visitor numbers are increasing but still below the original expectations, especially during weekdays.

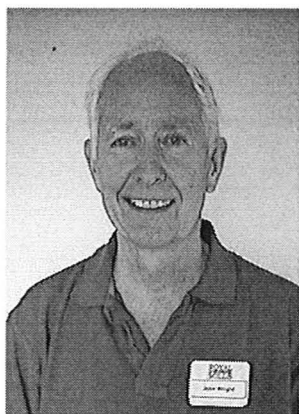
There is an on-going development programme of new attractions with the latest addition of a major fireworks exhibition and work started on a small arms display. We are also in negotiation with the Royal Small Arms Apprentices Association with a view to establishing an RSAF exhibition in site. Some progress is being made with the narrow gauge railway project but it is unlikely that this will open this year.

We thank you all for your support in the past year and hope that you will continue to give us your support by renewing your membership.

Norman Paul  
Editor



## CHAIRMAN'S NOTES



**T**he Site re-opened, after the winter break, on March 16th. Visitor numbers are increasing but they are very weather dependent and many more are needed. Please do come and bring your friends and family.

**T**here are several changes from last year, most notably the 'Fireworks Exhibition' in the old Chemical and Glassware Store (aka Charlie Carrington's Emporium). The building has now been renamed the "Spinks Gallery" in recognition of his chairmanship of the original Steering Committee and the Operating Company's first chairman. Members of the Association provided substantial assistance in helping to build and set up this exhibition under the expert guidance of the Site Director, Robert Taylor.

**P**rogress on the waterwheel has been delayed by the effort needed for the Fireworks exhibition but is now proceeding more rapidly. General gardening and tidying up on the site have also taken up much of the volunteers time. Dave Sims has been making cabinets to exhibit some of Brian Street's small arms collection.

### **A**s always MORE VOLUNTEERS ARE NEEDED

Please come and help - regular working parties are held on Wednesday and Friday mornings, meeting at The Lodge (the old Director's House) at 9.30 am.

John Wright

## ASSOCIATION MATTERS

### **SUBSCRIPTION RENEWAL**

The Association financial year ended on 31st May and annual subscriptions for the forthcoming 12 months are now due. Members will receive a renewal form with this issue. Please try and renew your subscription promptly and don't wait for the reminder. About one third have to be reminded each year!

We rely on your continued support to fund our volunteer work and to pay for Touchpaper.

### **ANNUAL GENERAL MEETING**

Advance 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.

Full details will be given in the September issue.

### **RE-UNION 2002**

As usual this will be held in the British Legion Hall following the AGM with full details in the September Touchpaper.

The cost this year will be £7 per head, which includes the usual buffet lunch.

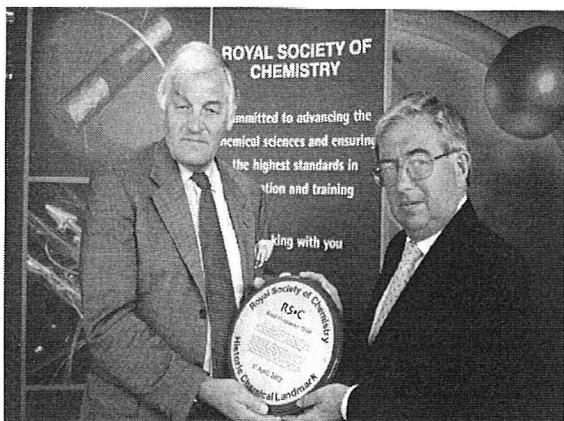
Why not book your place at the same time that you renew your membership?

## ROYAL SOCIETY OF CHEMISTRY

### LANDMARK AWARD

The Royal Society of Chemistry National Historic Landmarks programme highlights sites around the UK where important chemical breakthroughs have been made. The Royal Gunpowder Mills has been awarded a Landmark commemorating the research and development that has taken place here and is only the 4th such award in the UK.

A plaque commemorating this award was presented to the chairman, Trevor Knapp, on 17th April by Dr David Giachardi CChem FRSC, Secretary General and Chief Executive of the RSC.



The plaque inscription reads:

*"For over 300 years explosives and propellants were developed on this site. Work performed here has been influential in the development of the Bouncing Bomb, Kevlar and Ejector Seat technology. Established in the mid 1660's and bought by the Crown in 1787 the Mills had an international reputation for their production methods and quality. By the 20th century the Mills were producing and researching new explosives and propellants such as cordite and TNT. In 1948 the Mills ceased production but carried out research until 1991."*

A number of ex-employees were present at the ceremony, not least of whom was Jim Jeacocke, who as a RSC member was instrumental in nominating the Site for this award.

Pictured here( from the left):

Robert Taylor (Site Director), Dr Jim Jeacocke and his wife Peggy, Trevor Knapp (Board Chairman), Dr Giachardi (RSC) and Geoff Hooper (last Director of the Establishment).

In front are pupils from King Harold School dressed as 'Powder Monkeys'.



## ANOTHER PRANK

I think that it's about time that we had another of what our editor calls 'staff pranks'.

This one was perpetrated by Eric Speller (sadly no longer with us) and myself on one of the guncotton acid factory foremen.

Standard issue for the foremen was an army greatcoat and, over time, the acid fumes gave the brass buttons a dark green patina. Thus, the foreman was almost perfectly camouflaged on his tour of the factory at night, as malefactors soon found out.

Eric and I were in 'Dad's Army' and one night, armed with a button stick and tin of Brasso, we went into the foremen's changing room, found the appropriate coat and cleaned the top button at the front until it gleamed like a headlight.

It was a moonlight night and the moonlight glinting on the button enabled him to be seen at 100 yards, much to the delight of the men.

The next morning, just as dawn was breaking, he came into the laboratory asking for a sample of nitrating acid saying " the acid made the button dark and an application would do so again".

I tried to point out that it was the years of acid fume that had changed the colour of the buttons and that the application of fresh acid would either dissolve the button or burn a hole in his coat - It did both!

Jim Jeacocke

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*Don't leave it all up to Jim. I'm sure that there are many more such anecdotes from ex-workers. Ed.*

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## LIGHT THE BLUE TOUCHPAPER

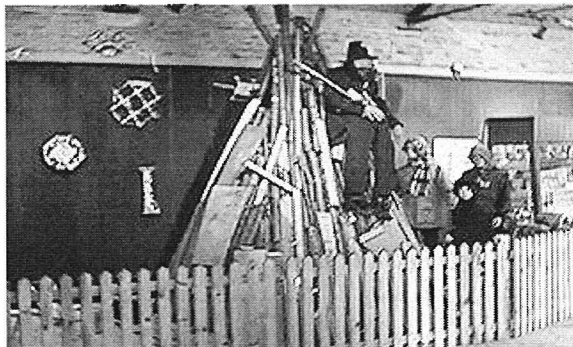


**REPLICA FIREWORKS SHOP**  
(built by Dave Sims and John Wright)

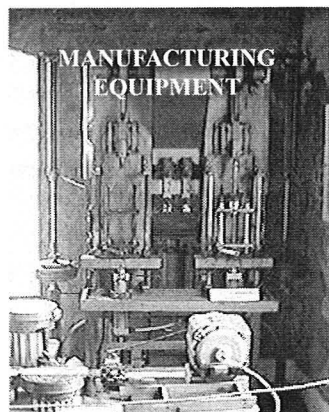
The exhibition details the history of fireworks and the manufacturing companies. Most of these manufacturers have now disappeared and nearly all fireworks are now imported from the Far East.

The collection includes a vast range of fireworks, posters and programmes for firework displays.

A bonfire party scene is recreated with large garden fireworks from the late 20th century.



For this Golden Jubilee Year the Mills is staging a new major exhibition about the history and manufacture of fireworks. This exhibition is based on an extraordinary firework collection built up by Maurice Evans, together with firework making equipment from the Black Cat firework factory in Huddersfield (formerly Standard Fireworks).



Courtesy of Black Cat Fireworks

## FIREWORKS - A NEW EXHIBITION

The garden bonfire exhibit contrasts with a modern display laid out as if celebrating the Jubilee. Large mortars, which propel star shells into the air, along with batteries of rockets and roman candles, surround the finale; a set piece of the profile of her Majesty the Queen.



The histories of gunpowder and fireworks are closely intertwined. In Britain, gunpowder is forever associated with Guy Fawkes and The Gunpowder Plot of 1605. Although military uses of gunpowder were most important, fireworks using gunpowder were developed for use in celebrations and gunpowder continues to be one of the main ingredients of fireworks today.

### TRIBUTE TO DON SPINKS: THE OPENING OF THE 'SPINKS GALLERY'



This major new exhibition was formally opened on 8th May in the old Chemical and Glassware Store. At the opening of the exhibition the building was renamed as the 'Spinks Gallery' to acknowledge the work done by Don Spinks in setting up the Site. He was the chairman of the original Steering Committee and the Operating Company's first Board Chairman.

## Donald Laurence Hodge 1903 - 2001

*Don Hodge, our most senior member, died on 6th December last year at the age of 98. His son, Adrian, has kindly provided us with a copy of a biography he has prepared for the family and we reproduce extracts here.*



Don first attended Oxford Gardens School and went on to the Latymer Upper School in Edmonton where he was a pupil during the First World War. He discovered an aptitude for science and, on leaving school got a job in the chemical laboratory of a gas works. He continued his studies at night school and obtained a first class degree in chemistry from London University as an extra mural student. He then became a post-graduate student at Imperial College, supported by a London County Council grant. He studied under Prof. George Finch and was awarded a Ph.D. in 1930. His thesis was "Gaseous Combustion in Electric Discharges. The Effect of Moisture upon the Cathodic Combustion of Carbonic Oxide Detonating Gas". On the strength of his Ph.D. Don was awarded a travelling scholarship and thought to continue his studies in America but decided to go to Darmstadt in Germany where he enrolled on a post graduate course in fuel chemistry. In those days each German university had several students' unions and it was expected that members would fence until an 'honourable' wound had been given or received. Only in the catholic union was it forbidden to duel and fencing was replaced by tennis, so Don became a catholic for the duration of his stay.

While in Germany Don was able to explore the country by bicycle. He cycled from Darmstadt to Bayreuth to attend the Wagner opera festival but was prevented from entering the Festspielhaus because he had no evening clothes. For cycling Don had bought some new shorts and a brown short sleeved shirt and was surprised by how many Nazi salutes and Heil Hitlers his new 'uniform' invited. Germany was becoming uncomfortable and Don decided to return to England. After his return Prof. Finch introduced him to the senior scientist of the Woolwich Arsenal Research Department. Don became a research chemist and remained in Government service until his retirement. As war became ever more likely during the thirties, research into new explosives was undertaken at Woolwich. Don was part of the team, which developed RDX, a plastic explosive, which later became well known as Semtex. He also was involved with the development of military rockets powered by cordite. The British Army had used rockets since the eighteenth century, but they were notoriously unreliable. If a reliable and predictable fuel could be found, the rocket would become a valuable weapon. One of the more entertaining weapons which Don was involved with was the Indian Rope Trick, or IRT. This consisted of a rocket attached to a long wire, which was itself attached to a parachute and was intended as an anti-aircraft weapon. The rocket, after reaching the desired height, deployed the wire and parachute. A passing aeroplane became entangled with the wire, which, pulled by the parachute, detonated a bomb. The device was successfully used in anger on only one occasion. During the development of the IRT Don and his colleagues were stationed, for a time, on the firing ranges at Cardigan Bay. Although the rocket motors were predictable, once the parachutes were deployed the devices were at the mercy of the wind and caused havoc with the local telephone system, when they became entangled in the wires.

During wartime Marjorie, who had just left school, became a lab. assistant at Woolwich. She was employed as Don's technician, and after a while their relationship developed into something more, despite the difference of 21 years in their ages.

In 1947 they married and their honeymoon was spent rowing on the Thames. The next year I (Adrian) arrived and there were three generations living in the house in Ealing. During this time Don's department at Woolwich had been transferred to the Royal Gunpowder Factory at Waltham Abbey. For a while Don commuted across London every day. My earliest memory dates from this time. It is of Don arriving at home with a kitten tucked in to the collar of his raincoat. I believe that he had carried it all the way on the train from Waltham Abbey.

In 1952 we moved to Monkswood Avenue, Waltham Abbey. This was a new house, on an estate, built for Ministry of Defence civilian employees. Our new neighbours became our friends and many have remained so over the years. The garden at Monkswood Avenue was bare land when we moved in. Don and Marjorie set out a lawn, flower borders and rows of fruit trees. All methodically planted and trained according to the Royal Horticultural Society's handbook. Don made concrete paths and laid land drains. Marjorie said that he was more an engineer than a gardener.



1953 was coronation year. Street parties were held and silly games played. How surprised I was to see my own father, with his face covered in flour, lifting apples from a barrel with his teeth during a sort of relay race.



In 1963 the family moved to Epping and, in 1968 Don retired and was awarded the MBE having worked to the age of 66 in order to help to support me; by now a struggling medical student at Glasgow University.

### Rocket scientist is honoured

**F**OR his top secret work on military rockets an Epping scientist was this week made a Member of the British Empire.

Dr Donald L. Hodge, of Severus Field, Epping, former chief experimental officer at the Explosives Research and Development Establishment at Waltham Abbey received his award from Queen Elizabeth, the Queen Mother, on Tuesday.

With him to Buckingham Palace went his wife Marjorie, who teaches Russian at Loughton High School, and his son Adrian, a medical student at Glasgow university.

Dr. Hodge has been in government service for 35 years—turning down an offer to join the "brain drain" to America shortly after he qualified as a research chemist.

He retired this week and hopes to have more time for his main hobby, sailing.



■ Dr Donald Hodge ★ (661)



**at Buckingham Palace  
Marjorie, Don and Adrian**

Don was fortunate in his health, but when Marjorie became ill, they sold their house in Epping and moved to Norwich to be nearer Adrian, Lynne and the two granddaughters. For a couple of happy years they became involved with the next generation, having the girls to stay overnight and playing board games. But this was not to last and Marjorie died in 1994 at the age of 69.

Don remained fiercely independent for the next three years, cooking for himself and doing his own laundry despite being over ninety. He and I visited Dartmouth during this time and he was able to look once more on the shop by the quay where he had spent childhood holidays. When he became frail he moved into a nursing home in Swanton Morley. He had ambitions to achieve his century, but died after a short illness at the age of 98.

My lasting memories of my father will be of his love for me, shown when he came immediately to see me at school when he learned that I was unhappy. Usually he concealed his emotions, which I think was a product of the age in which he grew up, but on that occasion I could feel his love. He expected intellectual rigour and would challenge any sloppy argument. He could appear to be always serious, but he enjoyed Sgt Bilko and the Top Cat TV cartoon. He never dwelt on the past and even in old age was more interested in speculation about the future than in reminiscence. He planted a cherry tree in his garden when he was ninety, even though he was unlikely to taste its fruit. And he was always interested in the goings on of all the branches of his family. Whenever I visited him, towards the end of his life, his first question was always "What are your family doing today?"

Adrian Hodge

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## SOCIAL HISTORY

Both the Association and the Company get many letters and e-mails from people researching their ancestors requesting information on names of ex-workers and their conditions of work.

Such information is sparse as most old records are not accessible but we hope to build up a better picture in the future. Funnily enough we have most information from 1787-8, when a number of workers were transferred from the Faversham Mills, supplied by Arthur Percival of the Faversham Society.

John Vernon has previously given us valuable data from the 1851 census records of Waltham Abbey and Cheshunt.

If you have any information we would be pleased to add it to our database.

## Gunpowder Detonation:

My last article on acetone sparked a rather unusual reaction from one of our members who 'buttonholed' me with the exclamation "Gunpowder doesn't detonate!" I was puzzled by this as I couldn't remember ever claiming that it did. On re-reading the March Touchpaper I realised that it was the article about the Congreve Rocket in which John Wright had stated that the gunpowder warhead 'detonated', which was being disputed.

Since then the question of whether or not gunpowder can burn to detonation has provoked some heated discussions. Everyone agrees that if confined, gunpowder explodes; but does it detonate?

Gunpowder must be close to the energy threshold below which it is not possible to achieve detonation. Apart from energy considerations other factors, such as particle size, compaction and confinement would affect flame spread, burning velocity and detonation potential.

Your comments and/or references to past work would be appreciated. Until then we'll continue to say that gunpowder can 'explode'.

Bryan Howard

P.S. According to Jim Lewis's book 1, acetone fermentation trials were conducted in the Lea Valley at Nicholsons Gin distillery - how appropriate - so that's what gives gin its unique flavour!

*We hope to give a definitive answer to the gunpowder question in the next issue. Ed.*

## Stirred Memories:

Seeing the photograph of the Main Lab staff of 1943 in the March 2002 Touchpaper brought back many memories for me.

Jim was Best Man at the weddings of both Les Cole and George Whitbread. Les Cole was also the Best Man at our own wedding in 1944 and we still have the beautiful wine glasses which were his gift to us.

Norman Blay and Cyril Povey were in my form at the Latymer school.

I also remember Allan ? whom I passed when cycling to work while I was in the Land Army (At a tomato growing nursery in Upshire). His pyjama trouser bottoms showing below stouter outer garments always drew my attention!

Peggy Jeacocke

## Whatever Next ?

I recently came across a new Group V element called 'SULFUR'. My reaction to this is, if SULFUR why not FOSFORUS!

We really should resist this creeping Americanisation and phight phire with phire. In future we might visit the state of Phlorida and visit the cities of Filadelfia and Foenix. If we're not careful 'pH' will become just plain 'F'.

Bryan Howard

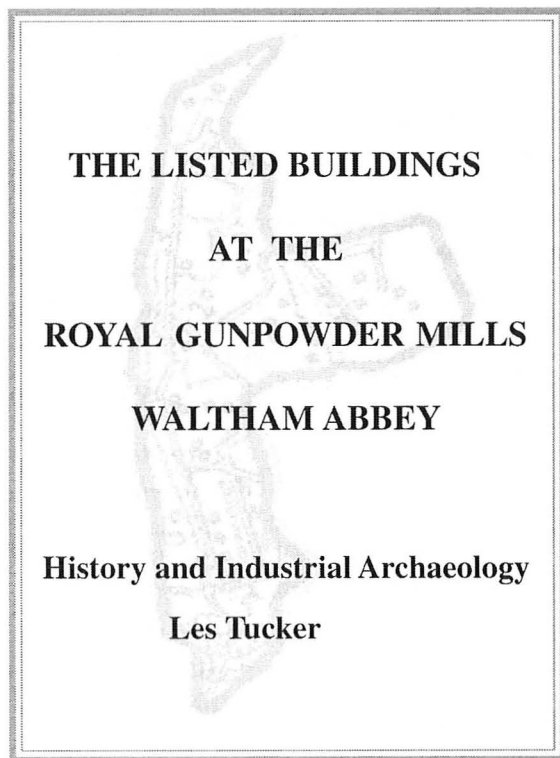
**PLEASE REMEMBER**

**DEADLINE FOR THE  
September 2002 ISSUE:  
15th August 2002**

## ASSOCIATION PUBLICATION

Following the last part of Les Tucker's articles on the Listed Buildings it was decided to collate these and publish as a stand alone booklet for general sale. These have now been on sale in the Site Shop at £2 each and we are pleased to say that over 100 have already been sold out of a print run of 500.

**We are now offering these to members at a cost price of £1 and they can be ordered, through the Treasurer, at the same time as you renew your membership.**



Our thanks to Les Tucker for his scholarship and hard work in researching this booklet. The value of the work has been recognised by the Company who will be using extracts from the booklet to set up explanatory panels inside the actual listed buildings on site.

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**This is the first in a series of publications which the Association hope to develop in the future on a number of themes.**

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## VOLUNTEERING OPPORTUNITIES



An Invitation from  
**Cathy Morton Lloyd**  
Visitor Services Manager

A group of hard working Friends continue to provide invaluable and practical help to the Site which is greatly appreciated by the Operating Company.

As the summer season approaches and the Site gets busier with visitors, there are also opportunities to help throughout the week.

Have you got a few hours to spare per week to volunteer?

**Help is required with:-**

- Stewarding the new exhibitions - "Light the Blue Touchpaper" and "Farewell to Arms".
- Stewarding the Wildlife Tower and periodically walking around the Burning Ground area.
- Stewarding the Incorporating Mill in L157.
- Land train tour guides.
- Gardening, grass cutting and general grounds maintenance work.
- Maintenance - we're particularly looking for trained plumbers, electricians, etc.
- Conservation work in the woodland.

If you would like to know more or sign up to help, please contact CLAIRE MILLINGTON on 01992 707370