

Winter 2012

TOUCHPAPER

The Newsletter of the Royal Gunpowder Mills Friends Association

Early Rocketry Part 2

Railway News

Badminton Club

War of the Worlds

Quizes and funnies

Letters:

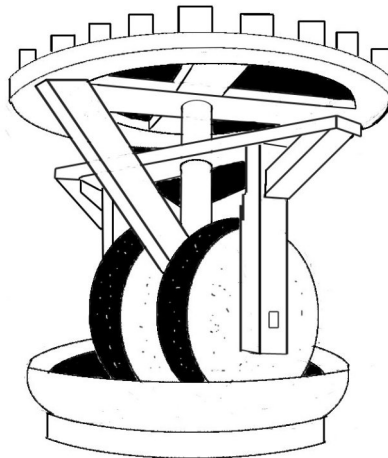
**Eric
Kendrew**

**Flash
Powder**

Obituaries:

Lynne Lennard

Enid Clay



Officers of the Friends Association

Chairman

John Wright
1 Albury Ride
Cheshunt
Herts EN8 8XE
Tel 01992 624210

Secretary

Len Stuart
13 Romeland
Waltham Abbey
Essex
EN9 1QZ

Treasurer

John Cook
63 Lakenheath
Southgate
London
N14 4RR

rgm.fa@virginmedia.com

All enquiries relating to this newsletter and articles should be addressed to:

Brian Clements
56 Park Road
Enfield
EN3 6SR

wargmfa@btinternet.com

Deadline for the next issue is 15th February 2013

Chairman's Chat

Two things of major importance have happened since the last Touchpaper.

First, and very sadly, Lynne Lennard passed away on 15th Sept after a long fight against cancer. The Mills will not be the same without her. An obituary is on page 22.

Second, Brian Harvey has finally retired after more than 10 years of hard work anywhere and everywhere on the site. On his last day, Friday 14th Sept, there was a big party in the cafe to celebrate his retirement. About 150 people were there and when Brian walked in the applause was enormous and went on for longer than I can remember for anybody else. After Brian had said a few words about his career (which seemed to involve shutting down companies he was working for) and his pleasure at having come to Waltham Abbey to work and not shut the place down when he left, presentations were given to him from the company, the railway group and the Friends.

From the Friends as a whole we gave him a case of red wine and from the Committee an Imp rocket motor and two books, one of Jim Lewis' books on the Lea Valley and Griff Rhys-Jones book on Rivers which contains a chapter on the River Lea. He appreciated, in one way at least, being given a rocket!

Lance Bourne is now General Manager but so far it has, not surprisingly, been impossible to replace Brian himself, even on a smaller scale.

The Committee all hope you have a Merry Christmas and a Happy New Year and that you enjoy this issue of Touchpaper.

John Wright

Editorial

In this issue we have part two of Les Tucker's introduction to rocketry; more will be revealed in the next issue. We have news of the two railways on site and an article on the badminton club.

There is a quiz on page 11 with the answers towards the back, no cheating!

Since it's the time to relax there are several collection of jokes, puns etc,

Finally you should find enclosed in the paper version, and as another attachment for the e-mail version, the renewal form for next year. It would be helpful if you could renew before losing your form. If by some chance you did not receive a form or you manage to lose it please get in touch.

Next year's AGM and Social event will be on the 17th May. More details and booking forms will be in the Spring issue, put the event in your diaries when you get them.

Whatever you do we hope you enjoy Christmas and have a very good New Year.

Brian Clements

Early Rocketry and Rocket Propellant Part 2

America - Robert Hutchings Goddard Theory becomes practice

Whilst the lonely theorists in Russia, Germany and France were producing their feats of theory a researcher in America was engaged in work which offered the prospect of practical success.

From an early age Robert Goddard had been fascinated by the upper atmosphere and the idea of investigating what was happening up there by sending sounding rockets up into the stratosphere and ionosphere.

What differentiated him from the theorists was the fact that as well at being adept at theory he also had great mechanical ability which he was able to turn to building experimental rockets in his own laboratory.

After gaining a doctorate whilst holding a research fellowship at Princeton University, he made extensive calculations and concluded that a rocket with a practicable fuel load could take a light load of instruments to great heights.

The first breakthrough came when he confirmed by practical experiment in a combustion chamber he had built that a rocket needs no air to push against it and would in fact develop more thrust when fired in an airless space, a vacuum.

At this point Goddard, by now an Assistant Professor, in 1916 wrote a report which was specifically directed to obtaining funding for an actual rocket. In it he set out his calculations, including demonstrating the determination of velocity, and therefore how

high the rocket will go before its fuel is consumed, based on mass ratio and exhaust speed. For the highest altitudes, drawing on the practice in existing life saving rockets he advanced the idea of the step rocket with a second stage being set off as the first reached its peak velocity. At this juncture Goddard's interest was confined to carrying meteorological instruments to heights greater than those being achieved by current sounding balloons. He was deeply interested in space travel but this prospect was beyond his theory at that time.

His report went the rounds of various scientific foundations without success until it reached the Smithsonian Institution in Washington. Here fortune favoured him and the Institution agreed the sum he requested, to be paid in stages as the project progressed.

Goddard's first action was to research a better combustion chamber for a dry fuelled rocket. The alternative was liquid fuel but this was considered impracticable. In order to achieve a steady thrust he concluded that the fuel would be stored separately from the combustion chamber, to be fed in at a predetermined rate, easier said than done. By then it was 1917, America was entering the War and the US Government was funding military research, including a grant to Goddard for the study of rockets as weapons. He was enabled to transfer his workshop to the Mount Wilson Observatory at Pasadena, California. As assistants he took with him two graduate students, C.N. Hickman and H.S. Parker. Almost 30 years later this was to have momentous consequences for Hickman and American rocketry.

A first model was built, feeding pellets of dry fuel into the combustion chamber in a kind of machine gun action, designed to be fired from a gun like a shell. This was found to be too complicated for military use. A second was produced, eighteen inches long, this time a short range weapon propelled by a solid stick of dynamite type fuel, designed to be fired from a light launching tube. The idea worked and was the basis for the standard US infantry anti-tank weapon of WW2. WW1 ended. The Government decided not to pursue rocketry studies

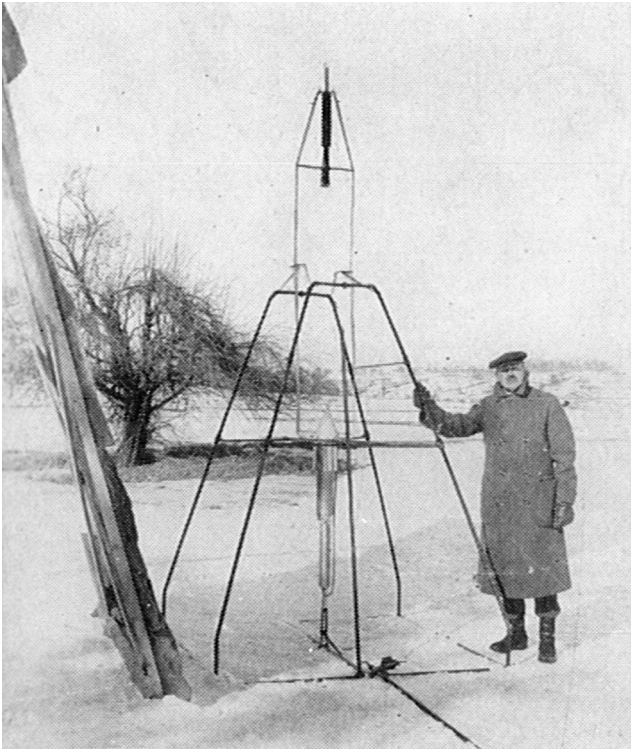
and Goddard returned to his civilian experimentation. In 1920 he produced a further report. This had several crucial features – proof that rockets operate at greater efficiency in a partial vacuum, a description of mechanisms for feeding dry charges into the combustion chamber, tables showing starting weights to achieve heights over 400 miles and momentarily for the first time including calculations demonstrating that a step rocket could attain a velocity high enough to escape the earth's gravity and 'fall onto the moon'.

Goddard was still encountering problems with the mechanism for feeding dry charges and he turned to the possibility of liquid fuel. This would require a separate oxygen source. He settled on liquid oxygen with petrol as fuel. To force these into the combustion chamber would require pressure. After two false starts he devised a system in which an 'alcohol stove' boiled the oxygen to produce pressure.

World's first liquid fuelled rocket ascent

On 16th March 1926 Goddard took his trial rocket to a field on the farm of Miss Effie Ward at Auburn, Massachusetts. It had a two foot motor and overall with fuel tanks was ten feet high. To ignite the motor involved turning on the oxygen and fuel taps and applying a blowlamp to the top of the rocket. Judiciously attaching the blowlamp to a pole, Goddard ignited the motor. The rocket surged upwards with a roar. Two and a half seconds later its fuel was exhausted and it fell to earth. It had covered a distance of 184 feet at 60 miles per hour. The world's first liquid fuelled rocket ascent had been achieved.

The goal remained the carrying of meteorological instruments and by 1929 he had advanced to the stage of a 60 foot launch tower from which he sent up a rocket carrying a barometer, a thermometer and a recording camera which would trip a parachute via its shutter release. The experiment was a complete success with the instruments landing unbroken. By this time Goddard's work was attracting considerable press publicity and the wealthy Daniel Guggenheim offered funding for further work via the Guggenheim Foundation. This enabled a move to a desert test ground near Roswell, New Mexico with a full scale research centre and workshop.



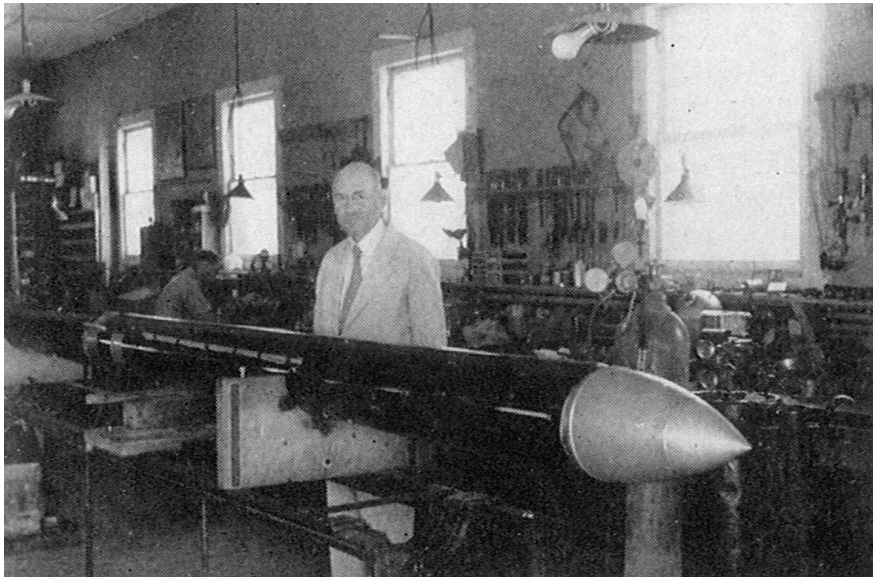
R.H.Goddard with the the world's first liquid fuelled rocket to achieve an ascent, on 16 March 1926

The next few years were devoted to cracking the problem of satisfactorily steering the rocket. Large fins attached to the rear of the rocket were unsuccessful. Goddard then correctly deduced that the steering medium would have to involve placing small moveable vanes directly in the exhaust blast deflecting it to one side or the other. But how to control the vanes; a gyroscope appeared to be the answer, but first attempts failed. Pendulum control was then tried, again without success. After many trials he finally succeeded in perfecting gyroscope control.

Problem number two was the question of forcing the fuel into the combustion chamber. An inert gas such as nitrogen under high pressure had been used, but this had the disadvantage that the whole system is under that high pressure and therefore the tanks

containing it had to be very strong and heavy, imposing a weight penalty. The answer was to design pumps made as light as possible, which meant in its turn that the oxidant and fuel, no longer under high pressure could be contained in lighter tanks.

The next problem was how to prevent the chamber and nozzle being destroyed by the heat of the motor. Lining the combustion chamber with heat-resistant clays, the refractory material used to protect blast furnaces, was unsuccessful. Water cooling would add too much weight, air cooling would be insufficient. Finally Goddard concluded that the only way to cool a rocket motor would be to use its own fuel. The method he devised was to allow an excess of oxidant or fuel to be introduced along the walls of the of the combustion chamber creating a thin film protecting the metal from the heat of the blast. Prophetically this was the system used in the V2.



R.H.Goddard with one of the rockets which he built at Roswell, New Mexico ca.1939

He was now achieving his dream of a high altitude meteorological instrument carrying rocket, but by now war was threatening. In 1941 Pearl Harbour brought the US into the War and the Government revived its interest in rocketry, which had completely lapsed after WW1. From a standing start by 1945 the US Army was spending 150million dollars a year on rockets and the Navy eight times as much.

At this point events took a completely unforeseen turn, in which Goddard unwittingly influenced the entire US rocket programme. As far as direct work was concerned he spent the War working with the Navy on a variety of rocket matters, such as further improving pumps, rocket assisted take-off etc. However entirely separate from this his 1917 graduate assistant C.N. Hickman had been working for the Bell Telephone Laboratories. His superior Dr. F.B. Jewett was appointed to a senior post in the new National Defense Research Committee and Hickman remembering his days with Goddard wrote to Jewett with a report on his work. This resulted in Hickman being appointed to head a section in the NDRC – called Section H after Hickman, which became the starting point for the ultimately massive US rocket development programme.

Goddard had never enjoyed good health, but had driven himself relentlessly and he died in 1945, following a throat operation.

Whilst the German effort in military rocketry led them to a commanding position, the fact remains that almost all of the solutions which they had arrived at were also achieved by Robert Goddard and he richly deserves the title of one of the fathers of rocketry, in the last year of his life still dedicated to solving ‘the most fascinating problem in applied physics’.

However this was by no means the whole early American rocketry story. From initial obscurity another group was forging a path to great things.

To be continued.

Les Tucker

War Office Papers Released

“Destruction of Waltham Abbey Powder Mills”

On visiting an observatory in Ottershaw Herbert George a "well-known astronomer" witnessed an explosion on the surface of the planet Mars, one of a series of such events that aroused much interest in the scientific community. A little time later, a "meteor" was seen landing on Horsell Common, near London.

Herbert George a writer of speculative scientific articles wrote “No one would have believed in the last years of the nineteenth century that this world was being watched keenly and closely by intelligences greater than man's and yet as mortal as his own;”

Panicked ensued “not only along the road through Barnet, but also through Edgware and Waltham Abbey, and along the roads eastward to Southend and Shoeburyness, and south of the Thames to Deal and Broadstairs, poured the same frantic rout.”

Three fugitives “reached Chelmsford, and there a body of inhabitants, calling itself the Committee of Public Supply, seized a pony as provisions, and would give nothing in exchange for it. Here there were rumours of Martians at Epping, and news of the destruction of Waltham Abbey Powder Mills in a vain attempt to blow up one of the invaders.”

“The Martians have been assembling: towering three-legged "fighting-machines" armed with the Heat-Ray and a chemical weapon: "the black smoke". More cylinders land across the English countryside and a frantic mass evacuation of London begins; one of the tripods is destroyed in the Shepperton battle by an artillery barrage and two more are brought down in Tillingham Bay by the torpedo ram HMS Thunder Child before the vessel is sunk”

Herbert George “travelled into a deserted London where he discovered that both the red weed and the Martians themselves have abruptly succumbed to terrestrial pathogenic bacteria, to which they have no immunity.”

WELL!!! New Yorkers believed the Orson Welles radio broadcast back in October 1938.

Extracts from (Herbert George) H.G. Wells, "The War of the Worlds."



Ray Stelzner.

For those with Internet access the complete book may be read at:

<http://www.gutenberg.org/files/36/36-h/36-h.htm>

or:

<http://www.fourmilab.ch/etexts/www/warworlds/warw.html>

The complete works of H G Wells at:

<http://kamita.com/misc/wells/hgwells.pdf>

Find the elements

1. American coin
2. A planet
3. Mobile phone network
4. Law enforcer
5. Associated with Myrrh
6. Bismarck and Thatcher
7. London theatre
8. Mancunian cocktail ingredient
9. Footprint obsession
10. Associated with old lace
11. Californian valley
12. Rattled by collectors
13. Olympic runner-up
14. Model of Ford car
15. Can't swim?
16. Russian spy eliminator
17. A blonde
18. Laughing gas
19. Should be interred
20. Airship rock band

Answers

on Page 25

Bryan Howard

Railway News

I don't know if the reader is aware, but a new building has appeared at the 2'-6" railway, where a new carriage shed (83A) is being completed. The main frame of the building is made up of the frame from the old Heron hide on the Burning Ground Boardwalk, with a heavy duty plastic covering, and sliding doors at each end to allow rolling stock to be moved in and out.

83B is still the main workshop, with 83A being a storage area and occasional workshop.



The photos show the finishing touches being applied to the building by the railway team, two new ballast wagons which have been built on old Bishopton rolling stock plus views of 83A. Also there is a Sea Mine (not live of course) that was used by the navy's mine disposal teams for training purposes.

The 7 1/4" railway had a minor disaster recently, when a deer became entangled in a bag of ballast material, and in its attempt to get free, dragged the bag over the track damaging the track and bed but fortunately, with John Miles help, repairs were soon made. The deer was freed by some expert marksmanship, when the Deer Warden shot away part of the antler to release him from the bag, so there was a happy ending all round.

A second battery loco has been added to the fleet, but needs some work to get it into working order. It's an odd little loco of 0-4-0 wheel arrangement and has the potential to make an interesting back-up to the main loco which is of 0-6-0 wheel arrangement.



Harvey & Garry have started building me a platform so that the public can board the carriages more easily, as the ground in the station area is very uneven. A third railway carriage is nearing completion and by the time you read this, should be in service.

John Wilson of “Uncle John’s Railway”.

Hell Explained by a Chemistry Student

The following is an actual question given on a University of Washington chemistry mid term.

The answer by one student was so "profound" that the professor shared it with colleagues, via the Internet, which is, of course, why we now have the pleasure of enjoying it as well :

Bonus Question: Is Hell exothermic (gives off heat) or endothermic (absorbs heat)?

Most of the students wrote proofs of their beliefs using Boyle's Law (gas cools when it expands and heats when it is compressed) or some variant.

One student, however, wrote the following:

First, we need to know how the mass of Hell is changing in time. So we need to know the rate at which souls are moving into Hell and the rate at which they are leaving. I think that we can safely assume that once a soul gets to Hell, it will not leave. Therefore, no souls are leaving. As for how many souls are entering Hell, let's look at the different religions that exist in the world today.

Most of these religions state that if you are not a member of their religion, you will go to Hell. Since there is more than one of these religions and since people do not belong to more than one religion, we can project that all souls go to Hell. With birth and death rates as they are, we can expect the number of souls in Hell to increase exponentially. Now, we look at the rate of change of the volume in Hell because Boyle's Law states that in order for the temperature and pressure in Hell to stay the same, the volume of Hell has to expand proportionately as souls are added.

This gives two possibilities:

1. If Hell is expanding at a slower rate than the rate at which souls enter Hell, then the temperature and pressure in Hell will increase until all Hell breaks loose.
2. If Hell is expanding at a rate faster than the increase of souls in Hell, then the temperature and pressure will drop until Hell freezes over.

So which is it?

If we accept the postulate given to me by Teresa during my Freshman year that, "It will be a cold day in Hell before I sleep with you," and take into account the fact that I slept with her last night, then number two must be true, and thus I am sure that Hell is exothermic and has already frozen over. The corollary of this theory is that since Hell has frozen over, it follows that it is not accepting any more souls and is therefore, extinct.....leaving only Heaven, thereby proving the existence of a divine being which explains why, last night, Teresa kept shouting "Oh my God."

THIS STUDENT RECEIVED AN A+

A nice story but not quite true!

The original was written by Paul Darwin Foote, a scientist noted for his pioneering work in the field of high temperature measurement, and dates to about 1920.

See the entry on Snopes at:

<http://www.snopes.com/college/exam/hell.asp>

Powdermills Badminton Club

It is now 40 years since the Powdermill Badminton Club moved from playing in the Victoria Hall to the Sports Centre next to King Harold School.

In that time many things have changed, wooden steel shaft racquets that were liable to break have been superseded by lightweight carbon fibre ones. Feather shuttles became too costly so we adopted plastic shuttles only to revert back to feathers now that Chinese ones are more durable and cheaper when bought from Hong Kong via the internet,

Even the members have changed radically and we now look like a good advert for United Nations! BT is represented by two working and one retired players. The Treasurer worked at RSAF before it closed while the Chairman is a non-player (me).

The Christmas party and the summer barbeque (the latter held in Albury Ride) are always well supported.

Norman Paul's stepson, Simon Winfield, occasionally visits us with his partner to run everyone ragged.

The Sports Centre closed its bar so we normally retire to the Queen's Head which you may recall is known locally as 'The Bloomers'.

B C Howard.

Letters to Touchpaper

I was saddened to read of the passing of Eric Kendrew.

He was in my Explosives Performance Section up to the time of my retirement in 1982, and by then was the Establishment's acknowledged expert in all aspects of high speed photography. At various times, he ran the Beckman & Whitley 189 high speed framing camera facility which was situated in the firing chamber situated just off the track to New Hill, the B & W vacuum streak camera facility which was in another firing chamber on New Hill itself, and then the underwater explosives testing facility at Newton's Pool

Whilst the photography at this latter site was mainly of the oscilloscope traces from the underwater pressure transducers, Eric was able to produce some stunning photographs of the spectacular 30 foot high plumes from the detonation of the 8 lb charges which were the largest then allowed. One of these photographs, suitably framed, still resides on my bedroom wall.

I think those that run the entertainments at the present day 'Gunpowder Mills' site are missing what would be a great attraction at Newton's Pool. To witness the results of an underwater explosion - to see the eruption of the plume, to feel the spray on the face, and to feel the tremor of the ground under the feet, would surely prove to be a very popular demonstration. It would require little more than re-installation of the rig used to suspend the charges and the provision of suitable seating and standing areas around the Pool.

Jim Hawkins.

Flash Powder and the Hindenburg

Coincidences, coincidences. Virtually simultaneously with MC Black's letter on flash powder the Archive had an enquiry from a TV researcher testing conspiracy theories on the 1930's Hindenburg airship disaster.

In connection with what might have caused the explosion he was enquiring about the availability of non military explosives and said that what he called theatrical flash powder had been mentioned, used in plays where a flash of light of some sort was required.

This might have stemmed from the account of an eye witness who said he had seen a flash of light from the airship just before the explosion.

Amazingly there were survivors. Most had burns. The 1930's burns treatment was picric acid. This material had a very versatile life - from use as a yellow dye, later a brewers' secret ingredient to impart taste to their bitter beers, also popular with fishermen for dyeing the feathers of fishing flies, then the British shell filling explosive Lyddite and finally a burns treatment.

Les Tucker

All is Golden Word Search



AGE

BROWN

EAGLE

FINGER

GOOSE

HELLO

INGOT

MEAN

OPPORTUNITY

RETRIEVER

ROD

SILENCE

SUN

YEARS

BOY

CREST

EYE

GIRLS

HANDSHAKE

HIGHLIGHTS

JUBILEE

MINE

PARACHUTE

RIBBON

SHOT

STARS

SYRUP

How does Moses make his tea? Hebrews it.
Venison for dinner again? Oh deer!
A cartoonist was found dead in his home. Details are sketchy.
I used to be a banker, but then I lost interest.
Haunted French pancakes give me the crêpes.
England has no kidney bank, but it does have a Liverpool.
I tried to catch some fog, but I mist.
They told me I had type-A blood, but it was a Type-O.
I changed my iPod's name to Titanic. It's syncing now.
Jokes about German sausage are the wurst.
I know a guy who's addicted to brake fluid, but he says he can stop any time.
I stayed up all night to see where the sun went, and then it dawned on me.
This girl said she recognized me from the vegetarian club, but I'd never met herbivore.
When chemists die, they barium.
I'm reading a book about anti-gravity. I just can't put it down.
I did a theatrical performance about puns. It was a play on words.
PMS jokes aren't funny; period...
Why were the Indians here first? They had reservations.
We're going on a class trip to the Coca-Cola factory. I hope there's no pop quiz.
I didn't like my beard at first. Then it grew on me.
Did you hear about the cross-eyed teacher who lost her job because she couldn't control her pupils?
When you get a bladder infection urine trouble.
Broken pencils are pointless.
What do you call a dinosaur with an extensive vocabulary? A thesaurus.
I dropped out of communism class because of lousy Marx.
All the toilets in New York's police stations have been stolen. The police have nothing to go on.
I got a job at a bakery because I kneaded dough.
Velcro - what a rip off!

Answers to Elements Quiz

1. Nickel
2. Mercury
3. Oxygen (O₂)
4. Copper
5. Gold
6. Iron (Iron Chancellor and Iron lady)
7. Palladium
8. Nitrogen (Liquid N₂ cocktail ingredient)
9. Carbon
10. Arsenic (play Arsenic and Old Lace)
11. Silicon
12. Tin
13. Silver
14. Titanium (Model of Focus or Fiesta)
15. Zinc
16. Polonium
17. Platinum
18. Helium (He, He)
19. Barium (Bury 'em)
20. Lead (Led Zeppelin)

Obituary

Lynne Lennard

2nd February 1961 - 15th September 2012



We have been saddened by the death of Lynne who was a tower of strength in helping to set up and run The Royal Gunpowder Mills.

Lynne was born in Wales and moved to Waltham Abbey when her father, Dai Mathias, was promoted and moved to Waltham Abbey as a Safety Officer when she was 14.

She joined P1 branch in 1979. Her first job was charge machining with three others, then rolling propellant sheets from dry paste. After that she was extracting NG from dynamite with warm water in the wet mix area.

After hurting her back she moved to the control room in the fire station on light duties. The fire service was part of the Safety

Section under Bert Betts and Lynne always spoke highly of him. She was helping with paper work and issuing safety certificates and remained in the Safety Section until South Site ceased working in 1989.

Lynne was kept on to administer the day to day running of the Site for Ed Andrews with whom she enjoyed working. Terry Steadman and Alan Heath will also recall those days when a number of commercial firms rented buildings until 1998 when the Site finally closed.

Lynne, never one to shirk responsibility, then moved to the North Site library to oversee the remediation by Royal Ordnance and helped 'Civix' to set up the Site as we know it today.

Lynne loved animals and was distressed by the need to cull the deer on Site. She will be sorely missed by her remaining dogs.

The funeral was held at the Epping Forest Woodland Burial Park which is very tranquil and the buildings are built using natural materials from sustainable sources. We met in the car park, so many people representing all the different interests in Lynne's life. At the appointed time we all walked towards the Woodland Hall which is set in a clearing when we heard the unmistakable sound of a Merlin engine. Looking up we saw the Hawker Hurricane piloted by Peter Teichman flying quite low criss-crossing the sky. Several of us found it a very moving tribute to Lynne.

The service was a wonderful celebration of Lynne's life. As she left we were asked to stand and clap to the song Sherry Baby from "The Jersey Boys". We all did our best.

Our sympathy goes to her husband Alan.

Bryan Howard and Daphne Clements

Enid Rosemary Clay

11th November 1920 –20th October 2012

Enid was born into the Berry family of Waltham Abbey and her brother and father both worked at the “Factory”. During the war Enid herself worked in the stores office there and remained very fond of the place all her life. Indeed she met her second husband Norman Clay there.

Enid’s first husband Gordon Nielsen was killed in 1943 before the birth of his daughter. As he was serving in the RAF with a Bomber Squadron when he was killed, in a training exercise, Enid had a keen interest in the building of the Bomber Command Memorial in Green Park. Despite her increasing frailty, Enid managed to get to see it in person just a short time before her death.

In 2005 after Enid’s niece, Nila Monckton, introduced her and her memoirs to Lynne Lennard at the Royal Gunpowder Mills, Enid became an enthusiastic “Friend”. Her book, “I Remember”, was on sale at the Mills, the Tourist Office, Waltham Abbey Museum and a bookshop in Epping.

She very much enjoyed talking to Les Tucker and maintained a network of old friends who shared many of her early memories. After her book was published she continued to keep in touch with many people, including several family members overseas. When her health prevented her from getting about physically she relied even more on her telephone. If she wanted to know the answer to a question she had an enormous number of people to choose from who would happily supply any information she required. To receive one of her calls could be a challenge but she never minded being referred on to a better informed person! Brian and I very much enjoyed our friendship with Enid.

Her funeral was held at Welwyn Hatfield Lawn Cemetery followed by her burial. The sun shone on us all.

Daphne Clements

Guidelines for submission of copy

As a guide approximately 400 words fit a single A5 page without illustrations, it generally helps to include a separate image to break up the text, so if you have an image(s) please include it(them) although we may be able to find something.

Text may be sent as emails or attached to emails as plain text or Word documents. Pictures should be sent as separate images, either jpg or png although other formats may be useable. If images are included in Word documents more effort is required to separate them and there is a reduction in quality so please send images separately if possible. Paper originals should be scanned at 300dpi, digital photos can be resized to 1200 x 900 or larger, full size pictures from modern cameras are bigger than necessary and waste time uploading and downloading.

Pictures should be in colour if possible, they may only appear as grey scale in print but this is to keep costs down, normally they will be in colour in the electronic version.

We are happy to receive paper copies of text and pictures but cannot guarantee their return, if you cannot send items by email consider bringing them into the Mills or passing them to someone who does come in or can email them.

Finally please be sensitive to copyright rules.

Events at the Royal Gunpowder Mills

For information visit the Web Site:

<http://www.royalgunpowdermills.com/whats-on-and-events/>

Brian Clements.

