

Winter 2019

TOUCHPAPER

The Newsletter of the Royal Gunpowder Mills Friends Association
Registered Charity No. 1115237

**Update on Developments at Waltham Abbey
Royal Gunpowder Factory**

December Miscellany 2019

James Watt 30-1-1736 - 25-8-1819

Over 60's Quiz

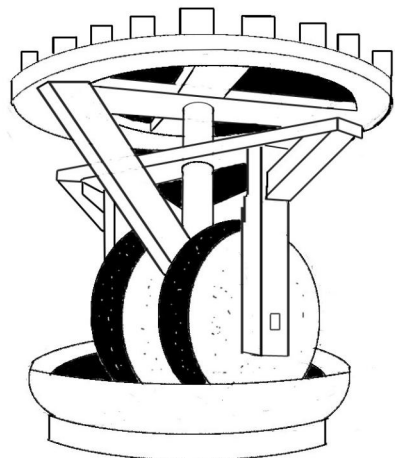
North Korea Part two

ERDE North Site in 1967 and 2018

A large iron pot

Obituaries:

**Malcolm Bergh
'Polly' Parratt**



Winter 2019

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Deadline for the next issue is 21st February 2020

Chairman's Chat

Here we are again with Christmas almost upon us. Due to the exceptionally wet weather activities on site have been limited these last months. We did get the green hut east side undercoated but as yet no top coat. Brian Clements has taken photos of many of the items manufactured by the Materials group. Collectively our memories are so poor that we will be publishing some photos soon to ask "what were they". The Guy Fawkes weekend was almost a washout on the Saturday but finally did get going and Sunday was very busy.

The big railway is now operational but few people have ventured that far up the site. We have to think how to attract more visitors up there to both the green hut and the railway.

Geoff Hooper has written a separate article about the future of the site and pre-empted much of what I would say. Since the trustees of the OpCo have reluctantly agreed to the PGL scheme the Foundation has verbally agreed the funding for the site for next year. As PGL have still to overcome the planning and lottery funding hurdles we do not expect much to change on site this coming year. A great many issues have yet to be settled but with good will these hopefully can be overcome.

Your previous chairman John Wright paid a last visit to the site this week. He is moving before the end of November to Chipping Norton. Since he no longer can drive a car I suspect we will see little of him in future. We all wish him well.

Lastly it is my pleasant duty to wish you all a Happy Christmas and New Year

Dave Sims

Editorial

Another year nearly over and thankfully I have enough material to complete the last issue; many thanks to all those who have contributed throughout the year. One regular missing is the Nature update from Julie Mathews; she has been very busy with other activities but has promised to contribute to the first issue next year.

Geoff Hooper has provided the latest news on the future of the site and we hope to have a good program for next year. Further news of the site future will appear in Touchpaper as we have new information that can be released.

The date for the AGM and social event has been booked with the Mills for 15th May 2020, so you can put that in your new diaries; further details and booking forms will be with the spring issue. Meanwhile you will receive a renewal for your 2020 subscription, I do hope you will wish to continue your membership as we are losing members and not recruiting many new members.

Finally I wish you all a Merry Christmas and a Happy New Year.

Brian Clements

Update on Developments at Waltham Abbey Royal Gunpowder Factory

As you are aware the site and visitor attraction has not been self-sufficient financially for many years and the Foundation Trust (FT) has made up the difference from the endowment fund. This has been and still is a drain on resources which could otherwise be used for the benefit of the site as a whole. In order to address this, the FT and the Operating Company (OpCo) agreed on the need for commercialisation which would generate sufficient funds to address this and more. OpCo had pursued the idea of regeneration of the site arising from adaptation of buildings east of the Queens Mead for commercial use but the FT had not wished to pursue the idea. In the event the only firm commitment to funding came from a residential educational facility for young people - PGL. Other organisations have expressed interest but not hard cash.

Following the refusal of planning permission for their previous scheme back in 2016, PGL reduced the size of their proposal by cutting back the number of guest and staff beds. They have also reduced the area of the site that they wish to utilise. This revised proposal meets most, but perhaps not all, of the objections raised by EFDC in 2016.

Funding from the National Lottery Heritage Fund (HF) will be required to support any development of the site, as well as funding from the FT. HF has made it plain that they need both the FT and OpCo to support any scheme put forward for a grant, otherwise the application will fail. This has led to detailed negotiations between the FT and OpCo; also governance issues have been discussed. Following an initial impasse between the OpCo and the FT this summer, the Company Board has worked very hard to get the best deal for the site, its employees, Friends and other volunteers as it could from the FT.

A deal has been struck which, although not ideal, is the best available to secure the future of the site. The PGL scheme in its smaller form will go ahead provided that sufficient funding can be obtained. Basically, the site will then have two tenants; the OpCo and PGL. OpCo has verbally agreed with the FT on which buildings, areas of land and access routes it requires in order to sustain and improve the visitor attraction; however some common areas which are required by both the Company and PGL are still under discussion. The Company will have the rest of the site including essentially all of the visitor attraction. Much of the fine detail is still to be worked out but one thing is certain; there will be changes.

The Company is very grateful for the invaluable support to the site and the Company that the Friends Association has provided, and it hopes that you will embrace the coming changes in order to ensure the future of The Royal Gunpowder Mills.

Geoff Hooper

Congratulations to fellow retirees Bob Brown, Chris Evans, and Kim Henshaw as we all retired on St Andrew's day November 30th 1989. Only 30 years ago!

Bryan Howard

December Miscellany 2019

Following last year's Touchpaper Winter edition practice, this is a totally random selection of snippets encountered over the year, nothing whatsoever to do with gunpowder.

Georgian Life

This 1764 press cutting of a letter to the Caledonian Mercury (1) was originally contributed by Chris Sumner to the Waltham Abbey History Society Newsletter.

It provides a delightful vignette of Georgian life Tom Jones style, at least for a fortunate few, - a curate who was happy to share with a gentleman traveler, pursuing 'the diversions of the season', a duck, bottle of port, and saucy tales of the night time exploits of 'jolly Friars' from Waltham Abbey whose dedication to the rigours of abbey life seemed less than total, and an eccentric squire whose idea of honouring King Harold was to get his guests literally blind drunk in front of the King's supposed coffin.

It is believed the custom is not now followed by the King Harold Society.

The one about the squire is possibly true and the one about Henry VIII just might be?

Below is a letter which was published in *The Caledonian Mercury*, 26
September 1764

(Note- This is in old sript with 'S's looking like 'F's.)

To the P R I N T E R.

S I R,

BEING the other day on Epping Forrest, to pursue the diversions of the season, I slept at a village in that neighbourhood, and that I might not spend a solitary evening, I prevailed on the Curate of the parish to partake of a duck and a bottle of Port, who gave me the following anecdotes concerning Waltham Abbey, a small town on the Forrest.

I.

Formerly this Abbey was tenanted by a number of jolly Friars, who used to make frequent excursions by moon-light to visit a nunnery at Cheshunt, which is distant about two miles from Waltham. — Harry the VIIIth, who heard of this, and envied the luxurious enjoyments of these holy *Inamoratos*, was once ill-natured enough to spoil their sport; for being a hunting on the Forrest, he contrived, with his courtiers, to place toils in the way, from Waltham to Cheshunt, by which means he caught five brace of bald-heads in one night.

II.

Between thirty and forty years ago, the manor house of Waltham Abbey was inhabited by the famous Bumper, "Squire Jones.—In digging to enlarge his cellar, the body of King Harold was found, as evidently appeared from HAROLDUS REX inscribed on the lid of the coffin.—Jones thought he could not do greater honour to the corpse, than by placing it at the head of the cellar where it had been interred; and whenever any of his friends were led by curiosity to see it, he made them offer libations to the memory of the deceased, till they could not see it.

Yours, &c.

1. The Caledonian Mercury was a Scottish newspaper, probably launched during the Scottish Enlightenment as a vehicle for political and literary criticism. It would be interesting to know why the correspondent chose this newspaper, unless he had travelled from Scotland.

Lunches Past ... Times Past

The lunch time recollections of Bryan Howard and Peter Stone in the Winter 2018 and Spring 2019 Touchpapers brought to mind other fondly remembered lunch times now passing into history.

In the early 1950's the regional office of a certain governmental organization lay in a sleepy market town which was just about catching up with the early 20th. Century, with the attitudes of many of the local farmers still owing much to the times when the splendidly named Bathsheba Everdene so scandalized the corn exchange.

Head office in London seemed a faraway place.

The office comprised professionally qualified personnel whose duties involved a lot of travelling about in the area, supported by some clerical staff in the office.

In this set up discipline was shall we say lax. By accident or design the posting had gradually attracted professionals who were perhaps less than totally dedicated to Victorian work ethics.

Having passed a grueling professional course they considered they could now enjoy the fruits of their labours and pass the rest of their career in a relaxed manner, leaving time to pursue a wide variety of outside rural interests. Some had acquired the status of 'characters' and all had nicknames as was still the custom then.

Consequently in that atmosphere there had arisen certain working procedures which did not figure in any official manuals. Wisely the man at the top did not interfere with them as long as the work was done somehow. To interfere would have provoked a severe backlash.

One of the most hallowed was Market Day rest and recreation. In those days farmers still came in to town on Market Day to transact business and buy and sell animals. Inevitably after the cut and thrust of the morning they looked for refreshment and the licensing hours were extended on Market Days.

Not surprisingly the atmosphere in the pubs on those days was convivial. This situation had not escaped the professionals and an office procedure had evolved in which on Market Days they would foregather and at the earliest possible moment repair to the pubs, remaining there until expiry of the licensing hours to enjoy their well earned relaxation in what was an increasingly convivial atmosphere.

The office was approached by a sloping drive overlooked by the office of the clerical staff. They could only look on in impotent rage (the extended hours largesse was not extended to them) as the professionals, who were by this time in an extremely jovial state, staggered back up the drive to their office and dozed off until leaving time.

The peak of joviality was reached at the last Market Day before Christmas when spirited renditions of well known English choral works not appearing in any hymnals were attempted and ancient folk rituals such as the swearing of eternal friendship were performed.

O happy band of brothers, where are you all now.

Reprehensible behavior and long ago swept away. Realistically you couldn't run the country like this, but nevertheless Happy Days, Happy Days

Les Tucker

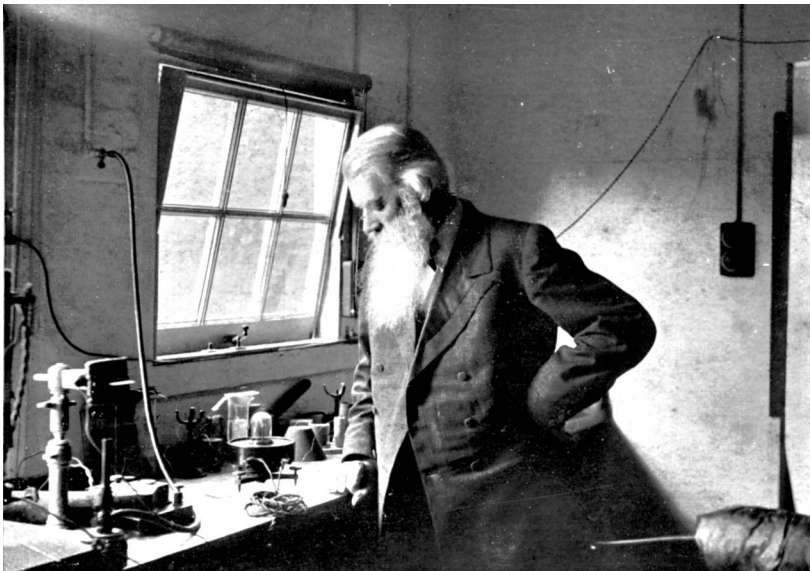
Joseph Swan

The Winter 2018 Touchpaper edition catalogued some brave technological tries which for some reason or other did not in the end succeed.

But for every disappointed inventor in his garret there was a countervailing success.

One such was Joseph Swan – an appealing inventor.

From an early age Swan had exhibited an intense interest in the world around him and his life became one of investigation and scientific experiment. This interest did not wane and in Swan's case it brought fame, fortune and honours.



Sir Joseph Swan in his lab.

Swan had a prodigious list of inventions to his credit.

He is best known for the incandescent electric light bulb (Edison also claimed this, but Swan introduced the cellulose carbon filament, based on nitrocellulose).

Swan had a particular interest in chemistry and many of his other inventions were in photography – he held over seventy patents in this field, including a feasible process for carbon paper enabling photographic prints to be made; he invented the dry plate process and bromide paper.

Reflecting dual interest in electricity and chemistry – electro chemistry, his inventions led to for example – a photo electric meter, fire alarms, miners safety lamp, production of gold leaf by electrodeposition.

His development of the carbon filament for electric lights involving extruding nitrocellulose through fine dies producing artificial fibre strands which were then carbonized led to development of the first commercial process for synthetic fibre – rayon, producing ‘artificial silk’. Swan did not himself pursue this, but there are accounts of his wife developing and exhibiting fabrics from the fibre and the idea was certainly later taken up by the French.

Swan was leading a busy and happy life when tragedy struck, not unfamiliar in Victorian families. In the same year he lost his wife and two boys to illness, leaving two children. In the aftermath his wife’s sister kept house for him. Eventually they decided to get married. There was one hurdle to be surmounted – such a marriage would have been illegal under English law. Undaunted the intrepid couple in Gretna Green style travelled to Switzerland where they were married legally, going on to produce five children. Who said the Victorians were dull!

There is a final charming byway in Swan's technological history.

The Savoy Theatre was the first public building to be lit entirely by electricity, with lights by Swan's company. Before the staging of the operetta *Iolanthe* at the Savoy the impresario D'Oyly Carte asked Swan if it would be feasible to develop miniature lights, technically electric star lights, to be worn by the lead fairies. The ever inventive Swan obliged. with the lights entwined in the fairies' flowing hair, powered by a small battery worn on the shoulder concealed by the hair. They were a resounding twinkling success, even to the extent of being worn on the dresses of women of fashion.



Iolanthe Fairy Lights

The Press immediately christened them 'fairy lights'. Subsequently fairy lights with their glitter have brought pleasure to generations. They were quickly adopted for Christmas trees, but this idea is down to the Americans.

Swan is justly remembered for the electric light and his many other inventions, but it would still be a pleasant epitaph to remember him as the 'Father of the Fairy Light'

Les Tucker

James Watt 30-1-1736 - 25-8-1819



This year is the bicentenary year of the death of James Watt. Couldn't let it pass without some mention.

The Man who brought Power and changed the World James Watt

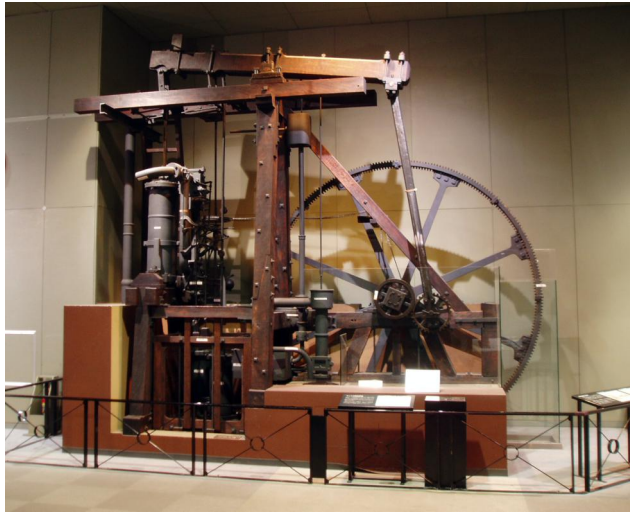
After years of experimentation to improve the Newcomen type atmospheric engine. Watt patented in 1781 the first efficient rotative steam engine.

The Newcomen engine did valuable work, but suffered from consuming uneconomic very large quantities of coal and using only steam at

atmospheric pressure. Crucially it was only reciprocating, i.e. it could not directly produce rotary movement.

Watt is sometimes better remembered for the concept of the separate condenser, patented in 1769. Whilst this undoubtedly was a vital advance in increasing the efficiency and economy of the steam engine, it was still an intermediate advance; its beam action was still limited mainly to acting as a pump to drain mines or for water to turn water wheels.

The first stages of the Industrial Revolution had passed, but the breakthrough to the final stage came with the patenting by Watt of his rotative engine, providing for the first time reliable and economic power for rotative machines – what had been a relatively simple mainly pumping device became a high technology prime mover.



James Watt Rotative Steam Engine

Providers of capital were quick to realize that these engines could be concentrated in large 'factories' independent of the vagaries of water power and combined with workers concentrated in the centre produce very profitably large quantities of goods – the textile industry the most obvious. The final stage of the process termed the Industrial Revolution had started, creating two classes of society – the capitalists owning the factories and on the other hand the workers and growing managerial class.

Did Watt's development therefore change the world? Well, not quite on his own. The Industrial Revolution also required the development of a national water transport system and a financial system which could handle the capital involved.

Also, Watt did have quite a lot of luck. His engine could be applied particularly in the textile industry where a number of significant advances had been made, such as the spinning jenny, which were capable of economic production in large quantity. He also benefitted from the expertise of the manufacturers of the components of his engine - for instance his engine required cylinder boring to tolerances which could be produced by only one boring machine in Britain - at the factory of John Wilkinson.

Finally Watt was lucky in the people with whom he worked at various stages – Prof. Black for heat theories, John Roebuck of the famous Carron Ironworks who supported him in the move from laboratory to industrial process, and finally Matthew Boulton, his ultimate business partner who sustained him in times of setback and despondency and had the facilities, long term vision and business acumen and not least financial resources necessary to succeed.

However none of this would have been possible without Watt's genius and tenacity, and he could be regarded as the man who triggered the Industrial Revolution and therefore one of the great men of all time.

Les Tucker

A Word of Thanks

And finally a word of thanks to all those who worked so tirelessly and gave so generously of their time in the long running negotiations on the future of the Mills, from what was a very adverse negotiating position, to achieve the present settlement

Les Tucker

Over 60's Quiz

(correct answer will give the total below.)

		£	s	d
1	A hair style			
2	RONILF (anagram)			
3	This wasn't a bicycle made for two			
4	A young kangaroo			
5	Hit repeatedly			
6	A way to mend a broken tooth			
7	A musical film and song			
8	Girl's name			
9	Jil... who starred in Coronation Street and Eastenders			
10	Carreras & Domingo			
11	A hard, non-metallic mineral			
12	Converts hide to leather			
13	A wren was on this coin			
	<i>Total</i>	<i>£35</i>	<i>9s</i>	<i>3d</i>

North Korea Part two

Monday 11th October, 2010

We had an early start, away by 0800 to Kaesong and on to Panmunjom on the border with South Korea. We travelled on the Unification Road, a concrete motorway, which was beginning the break up. Very straight road, perfect runway as Helen pointed out. Also there was no traffic on it. Quite a few tunnels and bridges over valleys, all of dubious workmanship.

As we drove into the Demilitarised Zone we had to give up our passports before going through a narrow cutting with huge concrete blocks on each side ready to be thrown down to block tanks coming through. At the border I felt as though I had wandered into a James Bond film, blue huts in a row between two buildings, one North, one South bristling with cameras, aerials and antennae. We were allowed into one of the blue huts and photos

were taken of everyone astride the border, which ran through the huts. I'm not sure how long we were in there but after a while the South Korean soldiers started moving towards us, so I guess it was time to go.



**Helen with one foot in
North and one in South
Korea**

We had a traditional lunch at Kaesong, some very interesting food, no idea what most of it was, but I do remember acorns came into it somewhere. Kaesong is a 'traditional village' hotel with courtyard houses supposedly 200 years old. They did look beautiful, but a lot of the village was built of concrete.



Traditional Courtyard House at the historic village

On our way back to the coach we came across a lot of elderly people in traditional dress having a party and dancing. Apparently it was a national holiday and these folk had come in from an outlying village. Before we knew it we were all dancing with them. Great fun! They all wanted their photos taken and wanted copies, unfortunately not possible. Had a bit of a job to get away from them and back to the coach, they were all so friendly.



Our next visit was the Koreo Museum at the ancient capital of Korea. In the museum they had a replica of the interior of the tomb of King Kongmin, really interesting, particularly as after the visit to the museum we went to see the actual tombs of the King and his Queen. They are situated on a hillside with wonderful views of the mountains. Apparently about two thirds of North Korea is mountainous which means little land for cultivation.



14th Century Tombs

On our way back to Pyongyang we stopped at a service station on the motorway, it reminded us all of Forton services on the M6, there was a bridge across the road with rooms in it, all totally empty. The service consisted of a table in the yard with hot water in a flask for coffee or tea. No petrol station.

We stopped one more time just outside Pyongyang so that we could take photographs of the Reunification Monument which straddles the road. It is a twenty metre high statue of two ladies reaching across to each other. Back to the hotel, supper and bed. We were going to stay at another hotel the following night, so had to pack a bag for that as it was going to be another early start.

Nila Monckton

Gunpowder Manufacture

Mike Evans' two part article on the last manufacture of gunpowder on South Site made interesting reading.

I understand that the commissioning of the plant was delayed because the special charcoal, generously supplied by ICI Ardeer, had found its use on local barbeques.

A replacement was urgently required and the variety of Alder most suitable was to be found at Wicken Fen Nature Reserve which was not allowed to be touched. However a generous donation for the upkeep of the reserve allowed some of the precious timber to be liberated.

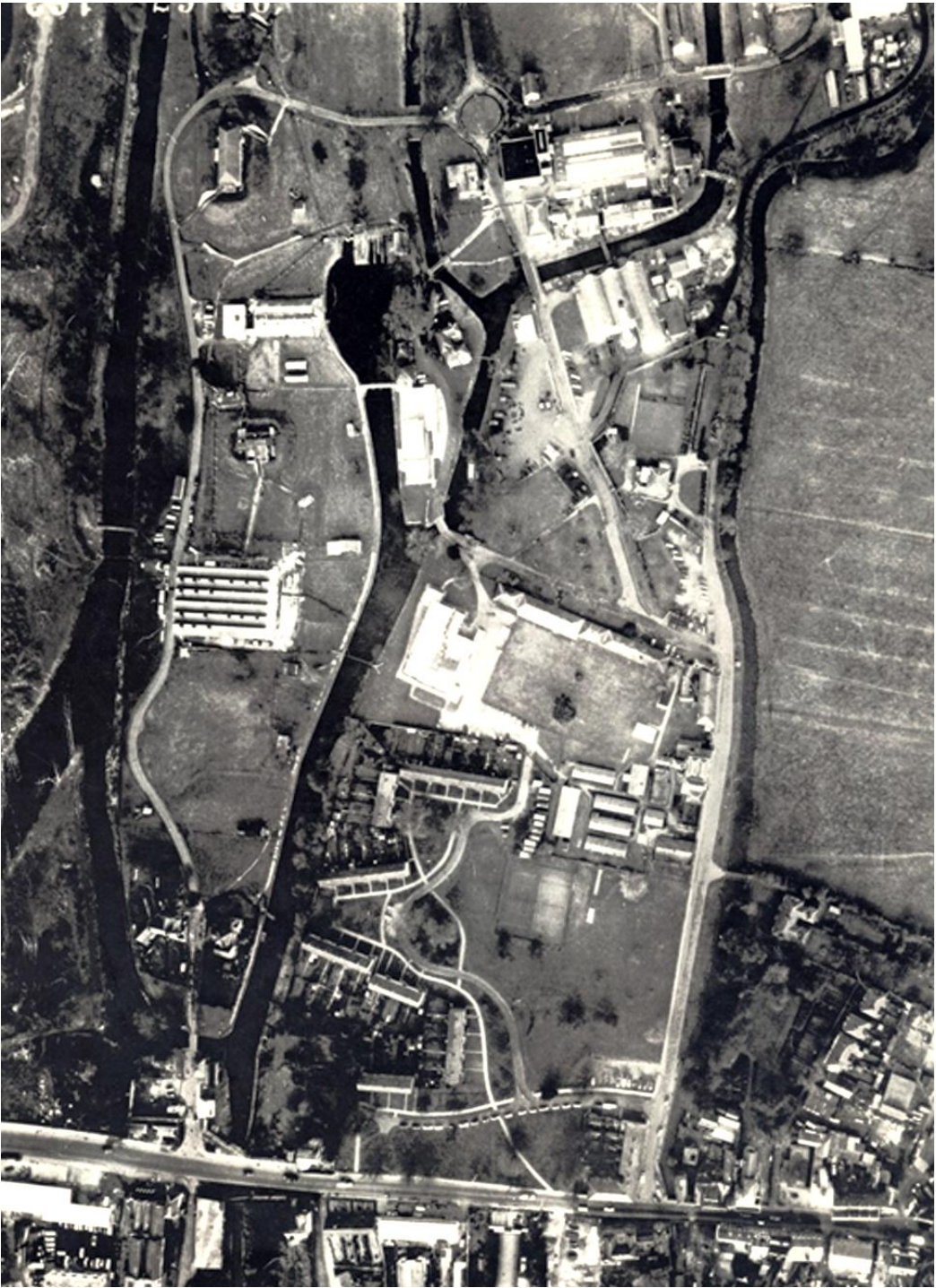
B C Howard

ERDE North Site in 1967 and 2018

These are aerial photographs of the North Site. The first was taken, we believe, in 1967. Things looked rather different then from now; witness the second photograph from 2018. The 1967 picture was taken before the roundabout and the town centre relief road had been built and when Powdermill Lane abutted Highbridge Street with a terrace of firemen's cottages at the junction. Moving north from there, Walton Gardens looks very much as today, but all the single storey buildings in the admin area have gone; having been demolished to make way for new housing. Also gone is the North Site canteen, latterly the "new" Social Club (from 1980 onwards). To the left of the picture is the Beaulieu Drive development which saw the demolition of the two hospitals, latterly occupied by the families of Jim Hawkins and George Saville respectively. H16 is gone, formerly home to the glass-blowers (Frank Branfield and Bill Corthine) and the electronics folks (Arthur Eldridge, Alan Short and Dennis Mansell) amongst others, also H10 which housed the computer that Daphne Clements and Wendy Day used to drive. The Library/Lecture Theatre and Walton House are as is, and the sharp-eyed of you will spot a powder barge in the canal immediately adjacent to the library in the 1967 photograph. It remained there for many years thereafter. The Hills development has taken over much to the right of that, with only the former Director's house (the Lodge) and the Boiler House remaining. The former Transport Office and Surgery are now under the Hills car park. Up by the roundabout much is as it is now, with the exception of the demolition of the telephone exchange just south west of the roundabout and the substantial building (L169) on what is now the "Slab". The various buildings on that location have had a chequered history, the first being a powder mill destroyed by explosion in 1861.

It was probably rebuilt as a cordite building and after WW2 was used by Dickie Doe for oxidant preparation and storage of empty rocket motor cases from 1945 until 1952. It subsequently became home for various Building Works Department activities; there was a carpentry shop and Sam Burnage had an electrical workshop therein. The building was demolished some considerable time later; can anyone recall exactly when?

Geoff Hooper





Obituaries

Malcolm Bergh 1948 – 2019



Malcolm first came to ERDE as a student as part of his degree course. Later he returned to run the Computer Department in H10. He oversaw the removal of the Elliott 903 computer, “Ferdinand” and the installation of the Hewlett Packard.

Subsequently, Malcolm worked in London for a while before moving to

RAE Farnborough where he remained until his retirement.

He succeeded Norman Paul as Editor of Touchpaper in 2007, a post he held until 2010.

Daphne Clements

‘Polly’ Noel Parratt

Older readers will be saddened to learn of the death of Polly in September and that of his wife a fortnight later. Both were in their late 80’s.

Polly’s career as a youngster began in the early 50’s at RAE Farnborough when he joined the Plastics and Structures Group headed by James Gordon working on reinforced plastics as alternatives to aluminium alloys for aircraft. Over the years Polly acquired a London University BSc. and subsequently a Masters Degree in Glass Technology in the States.

His work was interrupted several times by upheavals (not of his making), necessitating a change of location of research premises and house - RAE Farnborough - Hinxton Hall - ERDE Waltham Abbey and finally to RARDE Fort Halstead where he was awarded a Special Merit post. Somehow, he found time to write a definitive volume on Reinforced Materials Technology. Whilst at Hinxton he married Margaret (also a scientist) and they had a child named Liz, now much involved with Westminster’s antics.

The secular funeral, attended by about 90 friends and relations was held at the Kent and Sussex Crematorium on the 8th October, a relatively cheerful gathering typified by a Fats Waller song between the Tributes and Tom Lehrer singing ‘The Elements’.

Chris Evans

We have just heard that Margaret Brown has died after a short illness, we hope to have an obituary in the next issue.

Quiz Answers

		£	s	d
1	Bob	0	1	0
2	florin	0	2	0
3	penny farthing	0	0	1 $\frac{1}{4}$
4	joey	0	0	3
5	pound	1	0	0
6	crown	0	5	0
7	half a sixpence	0	0	3
8	penny	0	0	1
9	halfpenny	0	0	0 $\frac{1}{2}$
10	two tenors	20	0	0
11	stone	14	0	0
12	tanner	0	0	6
13	farthing	0	0	0 $\frac{1}{4}$
	Total	35	9	3

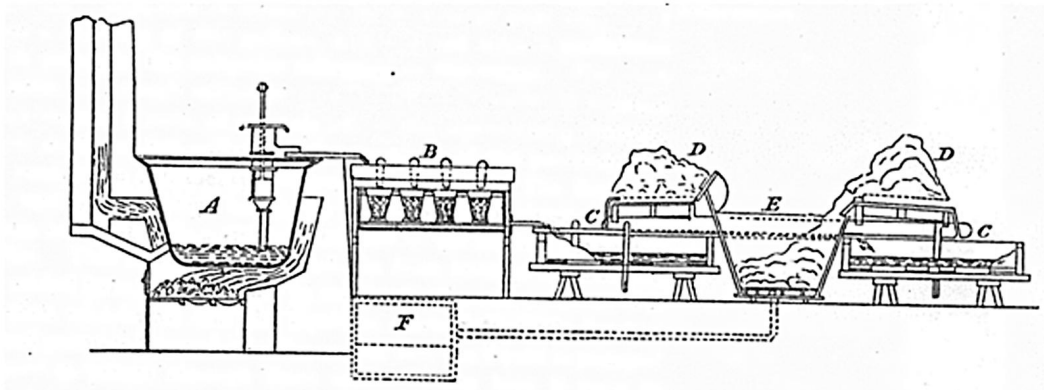
For those of you who do not read the editorial (and I do not blame you) please complete the renewal form and return with appropriate payment. The AGM and social event will be on 15th May 2020, details and booking forms should be with the Spring issue in March.

Ed.

A large iron pot



Outside building A201 - the Mixing House, which is adjacent to the Library and opposite Walton House, you will see a large iron vessel, but what is it and what was it used for? The answer is that it was a component part of a process for the refinement of saltpetre, one of the three ingredients of gunpowder. Much of the saltpetre used at Waltham Abbey was imported from India, always containing a considerable amount of impurity and requiring to be refined before use.



The diagram shows that process and the large iron pot is A. This has a capacity of some 500 gallons and it is fitted with a perforated false bottom which prevented the saltpetre from adhering to the vessel. About 25 hundredweight of crude saltpetre was loaded into A, to which was added 280 gallons of liquid recovered from the purification process. A fire was lit under the vessel and in two hours the liquid boiled and the saltpetre dissolved into the liquid. Just before it boiled a thick scum rose to the surface consisting mainly of impurities. This was skimmed off and cold water was added to induce fresh scum to form, this also being removed. The fire was then withdrawn and the liquid was allowed to settle for two hours. Thereafter a hand pump was lowered into the vessel and the liquid pumped into a series of filters B, where it passed through linen cloth. From here it ran into shallow copper crystallizing troughs C. As it cooled down the liquid was kept stirred in order to make the saltpetre separate into small crystals which did not contain as much liquid as large ones. The saltpetre "flour" as it formed was drawn up on to an inclined draining

platform D, and from there it passed to a washing vat E. After the temperature had fallen to about 32°C (90°F) the solution was no longer stirred and any crystals that formed after that were treated as crude saltpetre for subsequent refinement. The washing vat E was about 6 feet long by 4 feet wide and 3 feet 6 inches deep. It was fitted with a false bottom made of wood with small holes bored in it. Below the false bottom was a plug which could be removed to allow the washings to flow away. First the charge was washed with 70 gallons of water sprinkled over it by means of a rose, the plug being left out so that the washings could drain away to a liquor tank F. After draining for half an hour the plug was inserted and the saltpetre was covered in fresh water, which, after standing for half an hour, was also allowed to drain into F. Finally the salt was washed with 100 gallons of water, the plug remaining out. The saltpetre was then allowed to drain overnight and it was then taken to a storehouse to dry out. After three days the moisture content had fallen to between 3 and 5 percent. The liquor recovered from the various stages of the process was boiled down to a quarter of their original volume. The solution was filtered and allowed to crystallize. The crystals generated in this way were treated as rough saltpetre which could be subsequently used as feedstock. The overall refinement process was originally developed at Waltham Abbey but was adopted in France, Germany and elsewhere using substantially the same equipment configuration.

Geoff Hooper



Mills in snow March 2018