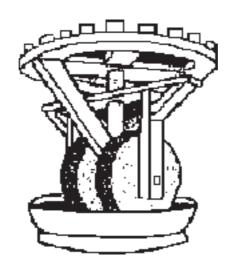
# Touchpaper

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



**MARCH 2008** 

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PLEASE NOTE: Deadline date for submissions to the

next issue is 15th May 2008



#### Editorials

As Some of you will be aware, this edition was produced after the sad death of Norman Paul. It was not until I started editing this and assisting our acting treasurer, Daphne Clements, that I realised just how much work Norman put in. He will be sadly missed.

I have kept very much to the format that Norman used as it is very difficult to improve on. However I have introduced one new item which you will find on page 19. I realised that I only read about my former colleagues at PERME when I see their obituary in Touchpaper. I would like to produce a series of profiles of former employees and I therefore bullied Dr Mike Healey into giving me my first profile.

I would be grateful for any more of these that people could supply me with. All I need is details of what you did at the establishment, what you did after and what you are doing now. A photograph would be nice, but not essential.

Please send me any feedback on this edition, anything you like or dislike about it. The only way I can find out if I am doing the job right (or wrong) is if you let me know.

Malcolm Bergh



#### **CHAIRMAN'S CHAT**

This is the first Touchpaper since the sad death of Norman Paul, its originator and editor for the whole of its existence so far. Norman was Touchpaper and so many other things as well. (See obituary on page 4). We will remember him for all these.

However we must now look to the future under the new editorship of Malcolm Bergh and I welcome him to the post. Please give him as much support as possible with articles, jokes and anything else for inclusion in future.

The two Pendulum Machines donated to us by the Health and Safety Executive at Buxton (previously Safety in Mines Research Establishment ) were formally handed over to us on 17th January by Dr Roland Wharton from HSE. He was very pleased to see the amount of refurbishment we had done and said that they looked better than he had ever seen them. The main part of the larger machine is a prototype siege mortar from 1856 weighing 5 tonnes. A second smaller cannon fired a standard mass of explosive into the mortar whose recoil is then measured. The second machine is smaller and works on a similar but not identical principle. Visitors will be able to see both machines fully refurbished when the season opens.

The Annual General Meeting and Reunion will go ahead on Friday 9th May as planned with the same arrangements as last year. Further details are on page 3). I look forward to seeing all who can make it to the AGM and Reunion. It will be possible to look round at least part of the site and see some of our new acquisitions.

John Wright

#### **2008 AGM and REUNION**

#### ANNUAL GENERAL MEETING

The Association AGM will be held in café of the Royal Gunpowder Mills on Friday 9th May 2008 commencing at 11.00.

Nominations for Committee Members and Officeholders should be sent to the Secretary at least two weeks prior to the meeting.

Any motions or amendments to the Constitution should be made in writing and be sent to the Secretary at least two weeks prior to the meeting.

#### **ANNUAL REUNION**

Following the AGM at the Gunpowder Mills on Friday 9th May we shall be holding our Annual Reunion.

This will start at midday with a buffet lunch served at around 12.30pm.

A bar will be available from 12.00 The cost has been held at £7 per head

MEMBERS WILL RECEIVE A SEPARATE BOOKING FORM WITH THIS ISSUE.

PLEASE NOTE THAT CARS MUST BE PARKED IN THE MAIN CAR PARK AT THE END OF BEAULIEU DRIVE. ENTRANCE TO THE SITE WILL BE SIGNPOSTED.

DURING THE AFTERNOON THE MAIN EXHIBITION, FILM AND OTHER FEATURES OF THE SITE WILL BE OPEN TO VIEW.



#### Norman Paul 1938-2008

Norman started work in 1956 as an analytical chemist at Enfield Rolling Mills before moving to the Explosives Research and Development Establishment in 1961, where I first met him the following year. He stayed at Waltham Abbey for 30 years. For about 15 years he continued developing his skills in analytical chemistry, part of the time working for me in Main Lab L122. He then moved into synthesis of new energetic materials for rocket motors, a field in which he made some very worthwhile contributions. We both had a particular affection for L122 in spite of its blue paint!

When the establishment closed in 1991 he moved to the Royal Armament Research and Development at Fort Halsted in Kent, initially as Head of the Synthetic Chemistry Group and from 1996 until he retired in 1998 as Principal Resource Manager for DERA.

During his early years at Waltham Abbey he became a Graduate of the Royal Institute of Chemistry by part time study, not an easy route to a degree.

He was also active in local government from 1966 as a town councillor culminating in becoming deputy mayor of the Urban District Council in 1971-1972. For many years he was involved in the Powdermill Club and was chairman from 1987-1989.

He was also very knowledgeable about trees and wrote a booklet on all the species of trees on the Gunpowder Mills site.

One of his many other talents was for exceeding the Mills' speed limit by a greater margin than anyone else!

Many of us think the Friends might not have existed at all if it were not for Norman. He did an enormous amount to start it off and then to keep it going. We are very grateful to him and will miss him a great deal.

John Wright

#### **Bob Forbes**

I understand form the L.S.W. that Bob Forbes died late in 2007. He worked in ballistics under Dr Hodge and then under Geoff Stocks, retiring in the early 1980's to indulge his passion for gardening.

I recall that he had a generous nature and never failed to bring in a bottle of Glenlivet single malt whisky at Christmas to give the others in the section 'a wee dram'.

Richard Thomas said that he'd met Bob when they both worked at Van Hages Garden Centre and that although he had no compatibility with mechanical things, his knowledge of plants was unsurpassed. On reflection it seems a pity that a Senior Scientific Assistant could not have been in charge of landscape gardening on site, although the gardeners did an excellent job with plants and grass cutting without him.

**Brian Howard** 

#### Dennis Arthur Eldridge 1924 - 2008

We have learned recently of the death of Dennis Eldridge on the 24th January 2008.

He came to ERDE in October 1950 from the RAF, where he was a wireless operator and navigator on the Mosquito aircraft. He was a qualified electrician and joined the electronics section, working in H16. He was always known as Arthur Eldridge at ERDE as the electronics already had a Dennis (Dennis Mansell) when he joined. Arthur rose to the position of section head and retired from PERME in 1984.

I remember Arthur as a knowledgeable, experienced and very helpful section head. The support and assistance of him and his team made my work in running the computer section a lot easier.

Malcolm Bergh

#### **K** Boats



The photo is of a K4 submarine aground at Barrow while on acceptance trials in 1917.

In 1915 a new class of submarine was ordered by the Admiralty, unique in concept, as it was intended to be a fleet submarine, working with destroyers and battleships against the enemy and therefore designed to be the fastest boat of it's kind so as to keep up with a surface fleet.

he K class were a twin funnelled and twin boiler, steam turbine driven submarine, which, on the surface were capable of 24 knots. Submerged they ran on batteries like conventional subs, but I have not been able to find out their submerged speed.

The displacement on the surface was 2174 tons and 2814 tons submerged. The length was 341ft by 28ft on the beam. The main armament were four 4" guns and ten 18" and later 21" torpedo tubes believed to be six forward and four aft.

Armament varied from boat to boat though, for example K11 had two torpedo tubes amidships that were similar to that used on surface warships and were fired when surfaced.

In all ways the K class would only be surpassed in size and speed by the modern nuclear submarine. Fortunately the modern submarine doesn't sink as often.

Originally seventeen were commissioned between 1917 & 1923, but 16 were finally built and as you read on, you must ask yourself why the Admiralty actually persisted in the design for as long as they did. The problems were many with the design and handling. For example the steering had a habit of locking when put hard over.

First were the funnels, which on the order to dive, had to be retracted into the hull after first turning off the boilers, and then two water tight doors slid shut to seal the hull. Oh, and I forgot to mention the four air intakes for the boilers, again each vents had to be closed by electric motors by remote control from below deck, with the risk of debris washing into a door and jamming them. There were indicator lights to show if the doors were open or closed, but these seem to have been unreliable.

The next problem was the sheer size of the boat (by the way, in Admiralty parlance all submarines are boats), as they were apparently very unpredictable when diving, with an unfortunate habit of once dived, of not wanting to surface again or not wanting to dive in the first place. The fleet concept was also a problem, as even a large submarine like the K boat, still has a low profile on the water, so collisions were common when on patrol with surface ships.

One of the worst incidents was the battle of May Island. May Island is a small spit of rock in the mouth of the Firth of Forth and on the 31st January 1918 the ships based on the Forth were ordered to sail at dusk to rendezvous in the North Sea with a flotilla from Scapa Flow for a exercise. It was a misty night and unknown to the Squadron from the Forth, there were a group of Mine Sweepers operating from their base at May Island.

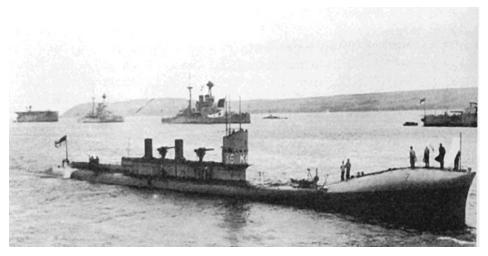
Proceeding at 22 knots K14 has to put the helm hard over to avoid one of the Sweepers and the helm promptly jambs (as they were prone to do), taking her across the bow of K22.

K14 suffers minor damage and return to port.

Coming up behind the Inflexible also hits K22 who manages to limp back to port. Light Cruiser Fearless hits and sinks K17 with the loss of all the crew.

Trying to avoid the above mayhem K6 and then K7 hit K4, which sinks with K7 saving only eight of the crew. This debacle cost the lives of 103 officers & men.

During the first world war only one K class submarine saw action firing a salvo of torpedoes at a U Boat without success.



K6 at Invergordon with the fleet in 1920. Note the aircraft carrier Argus in the background. Lord Louis Mountbatten served as a midshipman for a short while on K6.

To give some idea of how unreliable they were, here is their record.

K1 Commissioned 1917 & sunk after collision with K4 with the loss of all hands in 1917.

K2 Commissioned 1917 & scrapped 1926.

K3 Commissioned 1917 badly damaged hitting the seabed in 1918, repaired & scrapped 1920.

K4 Commissioned 1917 & sunk in collision with K6 with the loss of all hands in 1918.

K5 Commissioned 1917 & lost with all hands on exercise in 1921. K6 to K12 Commissioned 1917 & variously scrapped between 1919 & 1926.

K13 Commissioned 1917 & sank on acceptance trials 1917 with a loss of 34 crew and shipyard workers, raised and re-commissioned as K22 in October 1917 and Scrapped 1926.

K22 damaged in same incident which saw the loss of K17 & K4 in 1918.

K14 Commissioned 1918 & damaged by K22 in same year. Scrapped 1925.

K15 Commissioned 1918 & sank in Portsmouth harbour without any injury or death in 1921, raised and beached and finally scrapped in 1923.

K16 commissioned 1918 & scrapped 1923.

K17 Commissioned 1918 & sunk in collision with HMS Fearless, with the loss of all hands in 1918.

K18 Commissioned 1917 converted to M1 & sunk in collision with Swedish vessel SS Vidar with loss of all hands in 1925.

K19 Commissioned 1918 converted to M2 as a seaplane carrier and sunk on exercise with the loss of all 62 hands in 1932 while surfacing to launch the seaplane.

K20 Commissioned 1920 converted to M3 and scrapped in 1932.

K21 to be converted to M4 but order cancelled.

K23, 24, 25, 27 & 28 order cancelled.

K26 Commissioned 1923 & scrapped 1931.

The above list gives no real clue to the horror of sailing in these boats. They were prone to accidents such as K3's throughout their service and it is remarkable that more lives were not lost and by the 1920 they were a very unpopular posting.

The M class were Diesel/Electric submarines based on a shortened hull of the K class with a displacement of 1619 tons surfaced & 1977 tons dived. They were 295ft long and 24ft on the beam. M1's armament was a 12" naval gun on the foredeck and four 21" torpedo tubes. M2 had it's gun removed and a watertight hanger built on the foredeck from which to launch a seaplane. It sank on exercise while surfacing to launch the seaplane. M3's armament believed to be same as M1.

John Wilson

#### Rocket and Space 2008.

As part of the attractions 2008 events programme the Royal Gunpowder Mills will be hosting a Rocket & Space event on the 21 & 22 June 2008. This event will include exhibitions and a range of talks and discussion sessions associated with the work of Waltham Abbey in the subject area from the earliest days. It is intended to include such topics as propellants, rockets, explosives and pyrotechnics in the programme.

This event will appeal to both the general public as well as those versed in the subject. One of the aims of the event will be to further both the networking and knowledge base of those researchers and historians working in the field.

As well as all the normal activities and exhibitions on site the attractions for the weekend include:

- Rocket Building workshops Ever wanted to build and fly a
  rocket this is your chance! Whether you fancy building air powered rockets or the "real thing" this is your chance.
- Small Rocket launching up to B-class motors by the Black Knights Rocket Club
- Solid Propellant Rocket motors will be being static fired both days, a rare chance to see static firings. An experience normally not available to the public!
- Hybrid Rocket Engine firing. An unusual type of Rocket engine
  of the type used in the world famous Space Ship One will be
  static fired and available to view and discuss!
- Want to know more about the Solar System? Jerry Stone will be running 30 minute workshops over the weekend

#### Speakers/Talks

- The Archaeology and Architecture of England's Rocket Test Sites - by Wayne Cocroft of English Heritage. Discover where rockets were tested in England and what remains may still be found.
- The Secrets of Rocket Science by Ian Johnston
- We're All Going To Die! The threat from Near-Earth Objects by Jerry Stone, one of the leading speakers on space exploration.
- Hellmuth Walterwerke Kiel, 1945 Hydrogen Peroxide: V1, V2, Rockets, Bombs, Planes and Submarines by Shamus Reddin
- Leaving Earth Riding a Rocket into Space by Dave Shayler, Fellow of the British Interplanetary Society (Saturday 21st only)
- At Home in Space Eating, Drinking, Going to the Toilet, and Being Sick! by Dave Shayler, Fellow of the British Interplanetary Society (Sunday 22nd only)

#### **Traders/Exhibitors**

- British Interplanetary Society
- Rocket Motors, Friends Association
- BAE Systems, Glascoed
- Astro Info Service Ltd.
  - Information, research, publications, presentations and workshops on the human exploration of space.
- The 16 Regt Royal Artillery will be displaying the new cut away Rapier Missile recently presented by the MBDA
- Automobile Association
   Emergency vehicle breakdown cover

Over the weekend it is hoped that a number of authors who have written on the subject of UK rockets and missiles will be available on site to talk to visitors and sign copies of their books. Finally for the younger visitors and maybe for the not so young, members of the 501st Legion, the UK Garrison, (Star Wars Re-enactors) will be on site. Always assuming that they aren't called away to a Galaxy Far Far Away that is!

On top of all the above members of the Friends Association will be on site over the weekend to talk about their Rocketry Exhibition, this will give visitors the opportunity to meet these unsung heroes of the Cold War. Would you like to be part of what is our first Rocket & Space event? To find out more on how you can help please contact Liz Went on 01992 707340 or email **ewent@royalgunpowdermills.com** 

Enclosed with this edition of your Touch Paper is a flyer about the event and further details can be found on our website @ www.royalgunpow-dermills.com

We do hope that you will be able to join us for this fun packed weekend.



#### **EVENTS 2008**

- **26/27 April** Napoleonic Association
- 3/4/5 May VE Day with the Grace Spitfire on Bank Holiday Monday
- **17/18 May** Steam Fair 2008
- 24/25/26 May Regia Anglorum, Saxon and Norman re enactment
- **7/8 June** English Civil War (by the Sealed Knot Society)
- **14/15 June** The Die Hards re-enactment 21/22 June Rocket & Space (new)
- 5/6 July Multi Period re-enactment
- 12/13 July Medieval Jousting Display, Knights of Royal Arkley
- 19/20 July Victorian Experience, family activity event
- **26/27 July** English Civil War (by the ECW Society)
- 2/3 August Medieval Siege Society
- 9/10 August Classic Vehicle Show
- 16/17 August American Civil War re-enactment
- 23/24/25 August The Legend of Robin Hood, Golden EagleArchers
- **6/7 September** Essex Militia, Living History
- 13/14 September Home Front, Family Activities
- **20/21 September** WWI Display
- **27/28 September** Guy Fawkes Experience (Last weekend of the 2008 season)

#### **EVENTS**

The weekend of the 15th/16th December saw a very well attended Victorian Christmas event.



We can see above that a children's favorite decided to drop in, while below two distinguished Victorian gentlemen are demonstrating advances in photography in Victorian times.



#### **EVENTS**

Not really an event , but the formal handing over of the two Pendulum Machines donated to us by the Health and Safety Executive at Buxton.



Dr John Wright and Dr Roland Wharton from the Health and Safety Executive.

I had hoped to have more photographs, but unfortunately the ones from the professional photographer have not yet arrived.



[15]

#### **Extract from the Archive Image Collection No. 3**

#### archive reference WAI 1474

Floods have been in the news recently. The photo opposite graphically illustrates what used to be a not uncommon occurrence at the Mills.

It is captioned;

#### **Flooding PERME North Site**

**Thursday 12-1-78** 

#### View looking towards Main Lab from near roundabout

The cartoon opposite is the first page of a leaving testimonial, with around 180 signatures, for George Smith, who joined in 1910 aged 14 and retired in 1957.

A poignant reminder of the times he lived through is an entry in his career summary which reads :

'Continuation Classes at Tottenham Polytechnic were taken in Chemistry and Mathematics in years 1911, 1912 and 1913 and compulsorily abandoned in 1914 on the duties at R.G.F. being made 12 hours daily. '

He appeared to be something of an entrepreneur and figured in an item in the Friends Trials and Tribulations booklet. Does anyone know if the car was of any particular significance and what model. If so please write to the Editor, together with any reminiscences you might have of George.

#### Les Tucker

Honorary Archivist





#### **TOUCH BYTES**

#### "Jammy Dodger" Retires

Our warmest congratulations go to 'Ike' Eichkoff on his retirement on the 18th January 2008. This fact came to light during the visit of Dr. Roland Wharton to Waltham Abbey to 'unveil', if that's the right word, the Ballistic Pendulum and Mortar on the 17th January.

Now that Ike's retired with time on his hands we look forward to seeing him and Jo at Waltham Abbey more often and expect to hear news from the wild west.

As one of the most sociable members of ERDE with a weakness for Jammy Dodgers at meetings, I recall that he used to 'detox' on a diet of Grapefruit and hard-boiled eggs.

**Brian Howard** 

The Friends are currently compiling an updated guide to the buildings in PERME and would like to hear from anybody who can help them out. Just let us know what building you worked in and what work was done there. Please contact the editor if you can help.

#### **Electronic Touchpaper**

Those of you receiving the electronic version of Touchpaper might like to know that we have back copies of this version from 2003 onwards. Anyone wanting back copies please contact me via email.

Malcolm Bergh

### DON'T FORGET DEADLINE FOR THE JUNE 2008 ISSUE: 15th May 2008

#### **Profiles**



Dr Mike Healey OBE

Mike joined ERDE 12 SEPT 1966 with a PhD from the University of Birmingham as an old style SO.

He worked for Richard Wallace on gun propellants and cartridge cases for 1 year and then for Jack Powling on Combustion Sectionfor 2 years. In 1970 he transferred to Les Phillips on Polaris Main Motor Service Life and worked on various studies of long term stability of propellants. In 1976 he transferred to P1 to take over from John Gooding on his retirement doing Ordnance Board Trials and then also took over responsibility for the research programme on both Cast and Extruded Double Base propellants.

He was tranferred back from Royal Ordnance to Mod on 31 Dec 1984 and took over Paul Collins section on Primary explosives. He moved to Fort Halstead in 1986 as Head of the Combined Section(Primary Explosives, Detonators and Fuses).

In 1986 he joined the Operational Analysis Branch as Project Officer Divisional War Game and studied Air Ground Interactions on the Battle-field. He then moved onto MOD Main Building in 1989 to join D Science Land as Desk Officer for Battlefield Aviation in support of the Attack Helicopter purchase.

In 1993 they decided to set up a series of Research Technology Packages and as the only man in Main Building who could write the chemical formulae of NG and RDX on paper he was appointed customer for TP6 as it was known.

In 2000 he negotiated an early retirement deal and was sent to the palace to receive an OBE. He worked as a self employed consultant for the Defence Scientific Advisory council for a time and then finally retired from it all in Dec 2006.He now devotes his days to helping hs wife cope with the house and seeing how many holidays he can squeeze out of his pension. Last June he did the Moscow to St Petersburg waterways cruise and was fascinated after studying WW3 in 86/87, to walk across Red Square as a carefree tourist.

#### **JOKES**

#### **ABOUT DIETS**

#### supplied by Dave Sims and culled from the internet

#### The Pasta Diet and Your Health ITALIAN PASTA DIET -- IT REALLY WORKS !!

- 1.. You walka pasta da bakery.
- 2.. You walka pasta da candy store.
- 3.. You walka pasta da Ice Cream shop.
- 4... You walka pasta da table and fridge.

#### You will lose weight!

A great way to lose weight is to eat while you are naked and standing in front of a mirror. Restaurants will almost always throw you out before you can eat too much.

- And... For those of you who watch what you eat, here's the final one on nutrition and health. It's a relief to know the truth after all those conflicting nutritional studies.
- 1. The Japanese eat very little fat and suffer fewer heart attacks than Americans.
- 2. The Mexicans eat a lot of fat and suffer fewer heart attacks than Americans.
- 3. The Chinese drink very little red wine and suffer fewer heart attacks than Americans.
- 4. The Italians drink a lot of red wine and suffer fewer heart attacks than Americans.
- 5. The Germans drink a lot of beers and eat lots of sausages and fats and suffer fewer heart attacks than Americans.

CONCLUSION Eat and drink what you like. Speaking English is apparently what kills you.

#### Noah and the Ark 2008 style

In the year 2008, Noah was living in England when the Lord came unto him and said, "Once again, the earth has become too wicked to continue. Build another Ark and save two of every living thing. You have six months before I will start the unending rain for 40 days and 40 nights." Six months later, the Lord looked down and saw Noah weeping in his garden,but no Ark. "Noah", He roared, "I'm about to start the rain! Where is the Ark?"

"Forgive me Lord", begged Noah "but things have been difficult. I needed Building Regulations approval because the Ark was over 30 square metres. I've been arguing with the Fire Brigade about the need for a sprinkler system. My neighbours claim that I should have obtained planning permission for building the Ark in my garden because it is a development of the site even though in my opinion it is a temporary structure, but the roof is too high.

"The Local Area Access Group complained that my ramp was going to be too steep and the inside of the Ark wasn't fully accessible. Getting the wood has been another problem. All the decent trees have Tree Preservation Orders on them and we live in a Site of Special Scientific Interest set up in order to preserve the Spotted Owl. I tried to convince them that I needed the wood to save the owls - but no go!

"When I started gathering the animals, the RSPCA sued me for intending to confine wild animals without the proper paperwork. The County Council, the Environment Agency and the Rivers Authority have ruled that 1 can't build the Ark until they've conducted an Environmental Impact Study on your proposed flood. The Trade Unions insist that I can't use my Sons to build the Ark; I can only employ members of the Shipbuilding and Allied Trades union. Finally, Customs and Excise have seized all my assets, claiming I am going to attempt to leave the country illegally with endangered species.

"So, forgive me Lord, but it will take me at least another term years 10 finish this Ark. "Suddenly the skies cleared, the sun began to shine and a rainbow stretched across the sky. "No need for me to destroy the world after all," observed God. "The government's beaten me to it,"

# ROYAL GUNPOWDER MILLS WALTHAM ABBEY

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