

On Her Majesty's Service

WASC 1760
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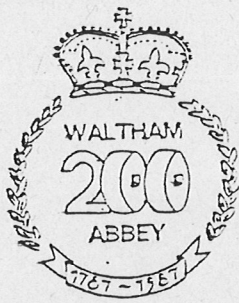
WASC 61110027 ONLY

1760

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WAI 455

1760/6 IN DISPLAY CASE ON
LIBRARY LANDINGS



RARDE WALTHAM ABBEY BICENTENARY YEAR PLANNER 1987

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Jan	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
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Apr	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	
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June	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	
July	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri
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Oct	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Nov	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	
Dec	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu

Key:

A PRESS DAY

B FAMILY OPEN DAY and FIREWORKS DISPLAY in evening

C EMPLOYEES LUNCH

D COCKTAIL EVENING

E BICETENARY DINNER

RARDE WALTHAM ABBEY BICENTENARY

SCHOOLS VISITS

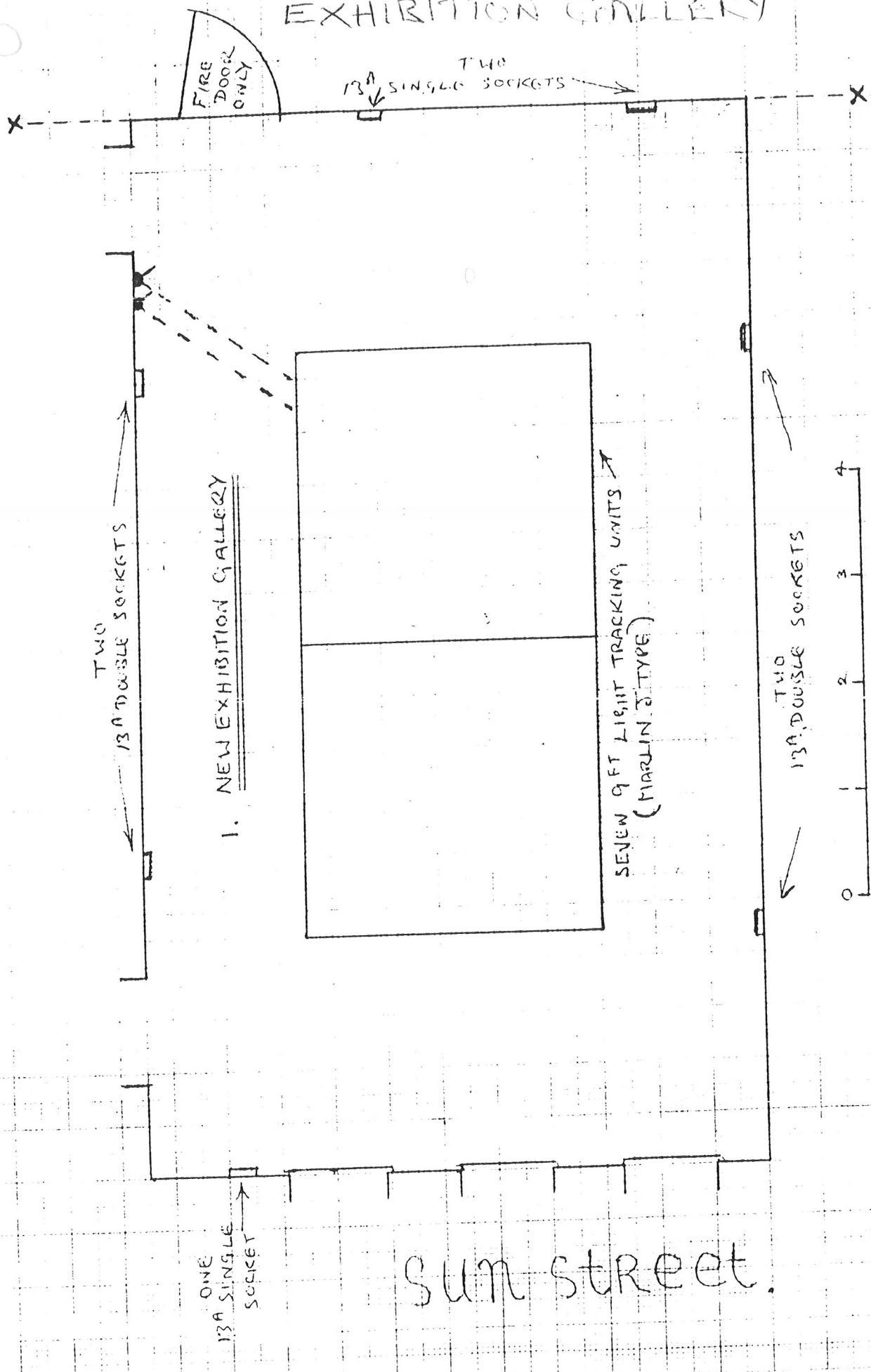
DATE	DAY	TIME	SCHOOL	ESCORT	LOCATION 1	LOCATION 2	LOCATION 3
15.9.87	Tuesday	10 am	Chingford School	Dick Morrell	Library	Bernie Downes (L153)	Newtons Pool
		2 pm	Davenant School (p)	Dick Morrell	Library	Frank Kirby (L166)	Burning Ground
16.9.87	Wednesday	10 am	Davenant School (p)	Sue Page	Library	Dave Debenham (L166)	Newtons Pool
		2 pm	Cheshunt School (p)	Sue Page	Library	Dave Debenham (L166)	Burning Ground
17.9.87	Thursday	10 am	Chingford School	Diane Howse	Library	Tony Cunliffe (L166)	Newtons Pool
		2 pm	Chingford School	Diane Howse	Library	Tony Cunliffe (L166)	Burning Ground
18.9.87	Friday	10 am	King Harold School	Bob Torry	Library	Tony Cunliffe (L166)	Newtons Pool
		2 pm	King Harold School	Bob Torry	Library	Frank Kirby (L166)	Burning Ground
21.9.87	Monday	10 am	King Harold School	Jean Hoffman	Library	Peter Maher (H10)	Newtons Pool
		2 pm	King Harold School	Jean Hoffman	Library	Sally Westlake (H10)	Burning Ground
22.9.87	Tuesday	10 am	Chingford School	Sharon Gumble	Library	Peter Maher (H10)	Newtons Pool
		2 pm	Chingford School	Sharon Gumble	Library	Sally Westlake (H10)	Burning Ground
24.9.87	Thursday	10 am	6th Form Centre, Loughton (p)	Bernie Downes	Library	Peter Maher (H10)	Newtons Pool
		2 pm	6th Form Centre, Loughton (p)	Bernie Downes	Library	Sally Westlake (H10)	Burning Ground
25.9.87	Friday	10 am	Chingford School	John Rowley	Library	Peter Maher (H10)	Newtons Pool
		2 pm	Chingford School	John Rowley	Library	Sally Westlake (H10)	Burning Ground

(p) denotes that this visit is provisional, full details have not yet been received

EPPING FOREST DISTRICT COUNCIL MUSEUM
EXHIBITION GALLERY

101
E34A

(PUBLIC LIBRARY TYPE)
ALL SUSPENDED CEILING 1 AND 2 ACUSTIC TILES 3- PLASTER BOARD.



SUM STREET.

DISTRIBUTION LIST

Dr A J Owen Hd/NP
Dr J Connor S/NP1
Dr J Jenkins S/NP2
Dr T Lewis S/NP4
Dr R Campbell ISRD

Mr N Parratt
Dr P Golding
Mr G Bagg
Mr M Farey
Dr A Davis
Mr M Bergh
Dr K Bascombe
Dr D Tod
Dr J Burgess
Mrs H Brown

Dr B Howes
~~Mr M McLaren~~
Mr R Morrell
Mr W Pember
Mr N Paul
Mr D Salter
Dr S Westlake

OPEN DAY 12TH SEPTEMBER 1987

You will all now be aware that by September 1987 the Waltham Abbey site will have been in State ownership and service for 200 years.

An Open Day is planned for Saturday 12th September 1987 to commemorate this Bicentennial, when the establishment will be open to the families of Waltham Abbey personnel. The Open Day will be preceded by a Press Day on Tuesday 8th September, when representatives of local and national newspapers and television will be invited to tour the establishment.

The main purpose of the Open Day is to allow the people who work in Waltham Abbey to show their families something of what goes on here; in addition it will also provide an opportunity, through the medium of the Press Day, to demonstrate the high level of expertise that exists at Waltham Abbey, and the contribution that we make to the National Defence.

Thus the most important aspect of Open Day will be exhibits from the various Sections; I have also invited the major Defence contractors to provide exhibits, which will demonstrate the significance of our work, and also, as the end users, the three Armed Services have been invited to put on displays.

The MOD Publicity Branch (DPF) have agreed to finance and provide some display boards for our exhibits; two will be available to each Section. Consequently you are asked to consider the nature of exhibits in the near future, so that these display boards may be ordered in good time. Any other display materials must be organised and provided by RARDE. I also need contributions to a commemorative brochure on RARDE Waltham Abbey, to be published by DPF. Would you provide a concise description of the work and responsibilities of your Sections, not more than 300 words, for inclusion in this handbook.

Many panels will be used in a display at the local Epping Forest Museum in September/October 1987, which precedes a special exhibition during December 1987 and January 1988, and therefore all displays and text should be understandable by a non-technical audience.

The subject and content of exhibits are a matter for the individual sections to decide; I would only suggest that these be chosen to reflect the work of as many personnel as is possible.

In addition to contributing to various other events, the members of the organising committee have agreed to act as local focus officers for the Open Day. Information will be channelled through them and they will also assist in the organisation of displays and resolution of any queries or problems that may arise.

Their names are:

Hilary Brown
Brian Hammant
Bernie Howes
'Mac' McLaren
Dick Morrell

Bill Pember
Norman Paul
Dave Salter
Sally Westlake

Finally the details that are available at this time:

Open Day : Saturday 12th September 1987

Establishment open to visitors from 1030 to 1700. Admission will be by ticket only. Application forms will be circulated later.

All displays and text should be 'Unclassified'.

Two display panels per Section; content required as soon as possible.

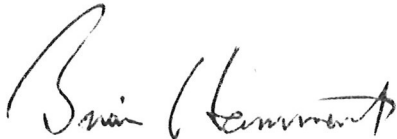
Contributions to souvenir brochure required as soon as possible.

Security clearance for all displays should be obtained in normal way; Mac in Library has necessary forms; please allow at least 3 months for processing ie apply before June 1987.

All displays will be on North Site.

Would the RARDE enclaves in RQ(WA) inform me of there requirements for accommodation, would any North Site groups contact me if they have spare room(s) which they could vacate for this brief period.

To make this event a success I need all the co-operation and positive support I can get - so please help me!



B HAMMANT
Ext 436
January 1987



BROCHURE SUB-COMMITTEE of the BICENTENARY COMMITTEE

Held: 4/3/87

Present: M McLaren, B Hammant and N Faul.

The following points were agreed:

1. Brochure to be A5 size.
2. Glossy white card cover with full colour logo with "Bicentenary" under. Above logo to be a suitable title yet to be decided. Unless really necessary inside front, inside back and outer back to be left unprinted.
3. p1 "Title page" to have "scroll" similar to that designed for the souvenir mug with title repeated under.
4. p2 Full picture of "Congreve" with caption.
5. Succeeding pages to be at least 50% pictorial with text kept down to a minimum.
6. History to be written as chapters with bolder type sub-headings; suggested divisions being:-
 - THE EARLY YEARS before Congreve, the "Takeover" and the "Operational Years" of Gunpowder production.
 - NEWER EXPLOSIVES starting with Guncotton in 1846, Cordite in 1891 and taking the story up to 1945.
 - RESEARCH ESTABLISHMENT from after the war to the present day.
 This being only a rough guide other sub headings may be necessary.
7. M McLaren to prepare a first draft.

PRIVATE VIEW

"A GUNPOWDER PLOT "

PROGRAMME

Epping Forest District Museum, Monday 7th December 1987 6.00-7.00pm

6.00 pm Private View opens

6.15 pm Official party arrives:

- i. Chairman of Epping Forest District Council
Cllr. R Amanet and Mrs Amanet.
- ii. Cllr. I Abbey, Chairman of EFDC Libraries,
Arts & Museum Sub Committee
- iii. Cllr. M Aldworth, Chairman of the EFDC Leisure Committee
- iv. Dr A J Owen, Head of the Royal Armament Research
and Development Establishment, Waltham Abbey
- v. Mr M McLaren, RARDE
- vi. Mr B Hammant, RARDE
- vii. Mr N Paul, Chairman of Bicentenary Committee RARDE

6.15 pm-
6.30 pm Official party look around exhibition

6.30 pm Call to order

6.30 pm Chairman of Council welcomes guests to the exhibition and
introduces Dr Owen, who will make a brief speech opening
the Exhibition

6.35 pm Speech by Dr A J Owen

6.45 pm Cllr Abbey thanks Dr Owen

6.50 pm Official part of evening ends

Press will be invited to attend at 6.30 pm for photographs

7.30 pm Private View ends



PRESS ANNOUNCEMENT

ROYAL ARMAMENT RESEARCH AND DEVELOPMENT ESTABLISHMENT WALTHAM ABBEY BICENTENARY 1787-1987

The Royal Armament Research and Development Establishment (RARDE) at Waltham Abbey is celebrating the site's 200-year continuous contribution to Crown service with a programme of Bicentenary events during September and October 1987.

The programme begins with an Open Day for employees, their families and invited guests to be held on Saturday, 12 September. There will be static displays of scientific work of the present Establishment and an historical display covering the site's activities during the last 200 years. Additionally there will be special demonstrations of underwater explosions, smokes and flares, and by the Establishment's Police Dogs. A brass band concert will take place in the afternoon.

A commemorative Bicentenary brochure has been produced which reviews the important contributions made by the site to the country's defence over two centuries.

The Open Day will be followed in the evening by a fireworks display and a barbeque.

The final event of the Bicentenary programme will be a formal dinner held at the Establishment on Friday, 30 October, at which the principal guest will be the Lord Trefgarne, Minister of State for Defence Procurement.

It is intended to make the Open Day display more accessible locally by staging it as an exhibition in the Epping Forest District Museum for an 8-week period beginning on 8 December 1987.



Epping Forest District Council

District Recreation Department
J.W. Burgess, M.I.L.A.M. D.L.C. (HONS)

E34
25 Hemnall Street,
EPPING, ESSEX.
CM16 4LX

Telephone: Epping 77344

If telephoning please ask for Miss K Carver..... Ext 2176

Your Ref:

Mr M McLaren
Archivist
Royal Arnament Research & Development
Establishment
Powdermill Lane
Waltham Abbey
Essex EN9 1AX

Our Ref: R/KC/FJE

Date: 13th November 1986

Dear Mr McLaren

Proposed Exhibition: Epping Forest District Museum
Bicentenary of Government Purchase of Gunpowder Mills, W Abbey

I write in reference to our meeting concerning the proposed exhibition. You will recall that the following points were agreed.

- 1) Exhibition will be held at this Museum for a period of 8 weeks, December 1987 to January 1988, opening in the week beginning December 8th 1987.
- 2) Exhibition to be mounted in new exhibition gallery and on landing approaching gallery. Show cases and marler haley screens to be available as required.
- 3) The landing display area will be made available to you September/October 1986 to "trail" the exhibition.
- 4) Exhibition to be designed and constructed by M.O.D. designers and scientific staff with aid of Museum curatorial staff if/when required.
- 5) Cost of exhibition construction to be borne by M.O.D. Public Relations Department (Details of budgets to be finalised with Mr Laurie Phillips, Assistant Chief of Public Relations).
- 6) Exhibition content to consist of 2 dimension visual material, archival material, 3 dimensional objects and possibly a video presentation.
- 7) M.O.D. will contribute to cost of exhibition poster (estimated cost £300) and/or may be able to undertake design and printing. Museum staff to approve input and design.
- 8) M.O.D. to provide an exhibition handout for free distribution to visitors, estimated 500-750 copies.
- 9) Museum will sell exhibition related merchandise on a sale or return basis taking a commission of 15%.
- 10) M.O.D. will contribute towards cost of refreshments of private view for opening of exhibition.

cont.....

11) A Wilson and K Carver to visit R.A.R.D.E. and examine potential objects for inclusion in exhibition.

I think that covers everything we discussed; if you require any further information please do not hesitate to contact me.

Both Alisdair and I are looking forward to having this exhibition at the Museum. I am sure it will generate a great deal of interest in the town.

With best wishes.

Yours sincerely

A handwritten signature in cursive script that reads "Kate Carver".

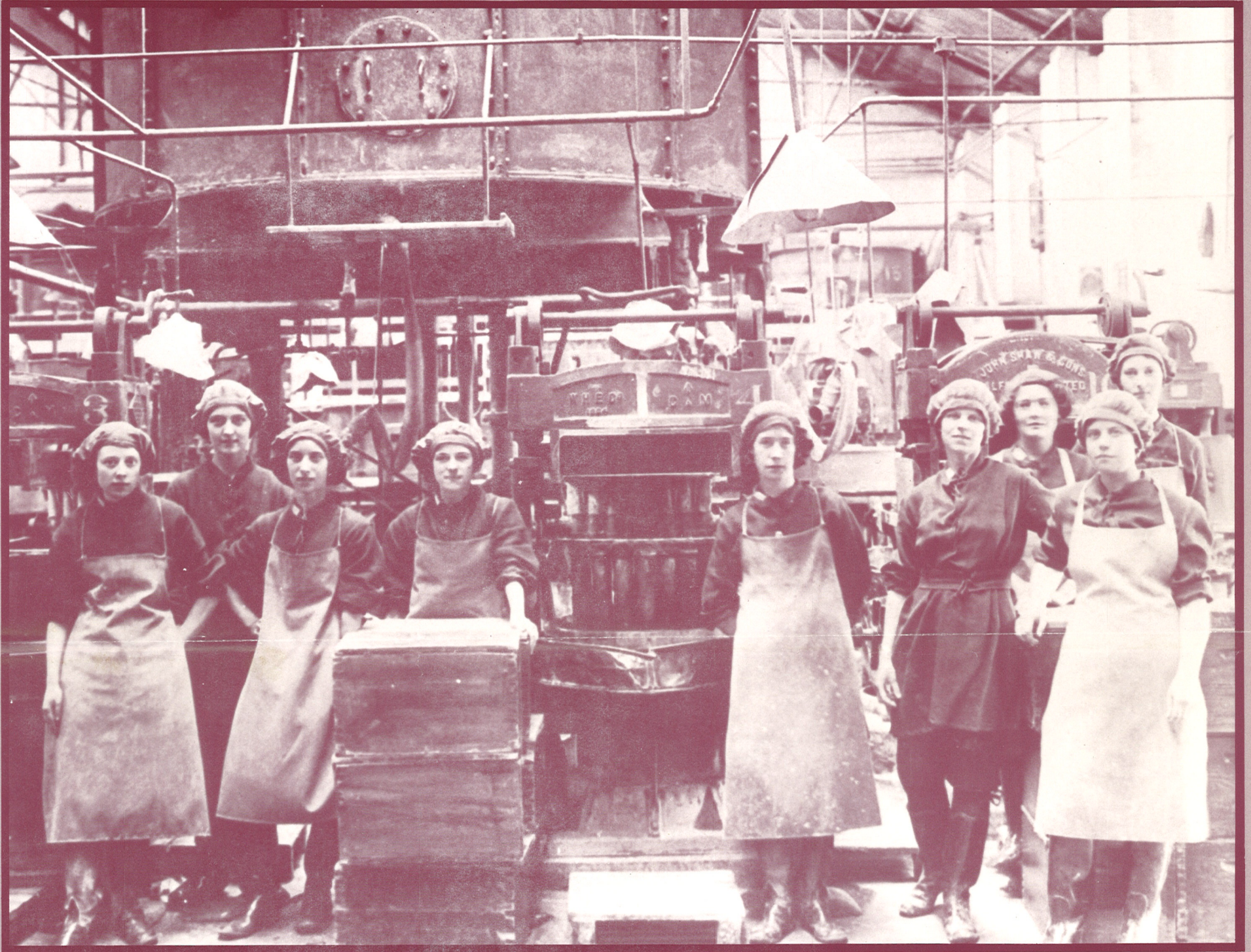
KATE CARVER
MUSEUM & ARTS OFFICER

c.c. Dr K Bascombe
Mr B Hammond

A GUNPOWDER PLOT

A bicentenary review of the activities of the site of the early powder mills at Waltham Abbey which were acquired for Crown Service in 1787

December 8th 1987 — January 31st 1988



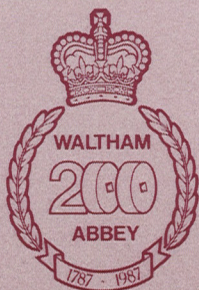
EPPING FOREST DISTRICT MUSEUM  39/41 Sun St., Waltham Abbey

Open: Friday — Monday 2-5pm
Tuesday 12-5pm

Closed December 25th — December 28th 1987
and January 1st 1988

ADMISSION FREE

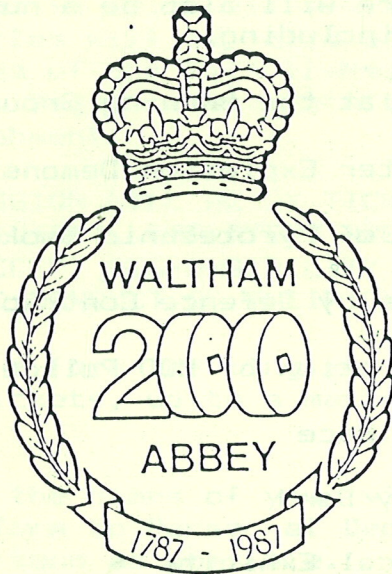
 Epping Forest District Council



A loan exhibition from the Royal Armament Research and Development Establishment

Mr McEwen

PARADE WALTHAM ABBEY
B I C E N T E N A R Y



FAMILY OPEN DAY

Saturday 12th September

THE WALTHAM ABBEY OPEN DAY

Arrangements are progressing, slowly but surely, for the OPEN DAY on SATURDAY 12th SEPTEMBER.

The main purpose of this event is so that you may show your family and friends what you do, where you do it and how you do it. I am, of course, referring to work!

In addition to displays by the various Sections there will also be a number of other attractions including:

- * Display at the Burning Ground
- * Underwater Explosion Demonstration
- * Display of Pyrotechnic Smokes & Flares
- * Exhibits by Defence Contractors
- * Demonstration by MOD Police Dogs
- * Balloon Race
- * Military Band
- * Historical Exhibits

A free, souvenir brochure is being prepared and other souvenir items will be on sale.

Light refreshments and bar will be available but if you want something more substantial, why not bring a picnic and make a day of it?

The Establishment will be open to visitors from 10.30 until 17.00.

There will of course, have to be some restrictions since RARDE is engaged in Classified and often hazardous work.

Consequently, there will be "NO ENTRY" to some areas and, as usual, smoking will only be permitted in designated areas. Cameras are not allowed but an official photographer will be in attendance and it will be possible for certain prints to be made available at a later date. There will be well defined car parking areas in which all visitors must park and no vehicles will be allowed to move in the main area of the Establishment during the open period. Dogs are not permitted within the Establishment.

ADMISSION WILL BE BY TICKET ONLY
AND INDIVIDUAL EMPLOYEES ARE EXPECTED
TO ACCEPT RESPONSIBILITY FOR THE
GOOD CONDUCT OF THEIR GUESTS.

Attached is a form inviting you to apply now for guest tickets, up to a maximum of 6 per employee.

Please list the names of your visitors and return the form to Personnel Department RARDE WA as soon as possible.

Any subsequent changes in your party should be notified as soon as possible and, in any event, no later than 4th September.

A FULL PROGRAMME OF EVENTS AND TIMES
WILL BE ISSUED TO ALL TICKET HOLDERS.

FINALLY, we do need some help to make the Establishment look presentable for your guests. If you are prepared to spare a Saturday morning or some time in the evening to do some cleaning up and general face-lifting, then please tick the appropriate box on your ticket order form.

P.S. WHY NOT ROUND OF THE DAY AT THE SPECIAL CELEBRATORY FIREWORKS AND BARBECUE EVENING TO BE HELD IN THE MAIN HALL.

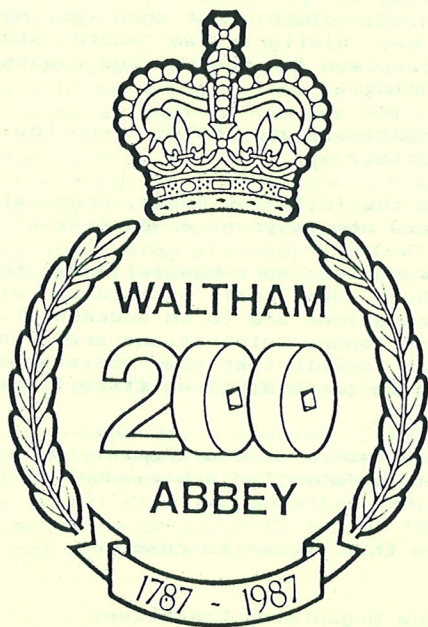
THERE WILL LIVE ENTERTAINMENT PLUS AN OPPORTUNITY FOR SOME DANCING.

THIS EVENT IS BEING RUN BY THE SOCIAL AND SPORTS CLUB AND DETAILS WILL BE CIRCULATED THROUGH IT'S NORMAL CHANNELS NEARER THE DATE.

Mr A. Mc Laren

BARDE WALTHAM ABBEY

B I C E N T E N A R Y



NEWSLETTER

MARCH 1987

BICENTENARY CELEBRATIONS

TO ALL STAFF AT WALTHAM ABBEY

This publication is to give you more detailed information on the events and other activities that are planned for this year.

Events have been planned so as to give maximum coverage and maximum opportunity for both official and family involvement.

You have already been advised of the main events and these are described here in greater detail. In addition to the special events there will be a fairly comprehensive range of publicity and souvenir items available. The latter items are being actively pursued and in the near future we hope to have samples in hand for your inspection. To this end we would like some indication of what you would be willing to purchase. We are not asking for definite orders at this juncture; just some feeling for what the response is likely to be. Similarly, we would also like some indication of the response for the various events to assist us with some forward planning.

It will assist us greatly if you would return the questionnaire at the end of this booklet.

As you will see from the following pages, preparations are well advanced and all we need now is your co-operation and support.

Until now the burden of work has fallen on the Bicentenary Organising Committee but additional assistance will be needed from staff if the celebrations are to be successful. If you agree with us that the Bicentenary Celebrations are a very worthwhile venture and are willing to volunteer your assistance then please contact any member of the organising committee listed below.

We are celebrating 200 years of Government Ownership of this historic site at Waltham Abbey, an achievement that few, if any, other sites can match.

Please help us to make this a year to remember.

The Organising Committee:

Norman Paul
Malcolm McLaren
Dave Salter
Hilary Brown
Dick Morrell

Brian Hammant
Bill Pember
Sally Westlake
David Elder
Bernie Howes

17th MARCH 1987

T H E E V E N T S

PRESS DAY - MONDAY 7th SEPTEMBER

This is an opportunity for members of the national and local press to visit the Site. In addition to exhibitions and displays by the various sections at Waltham Abbey there will be a strong historical element and some participation by outside Defence contractors. There will be staff involvement at each section level.

FAMILY OPEN DAY - SATURDAY 12th SEPTEMBER

For all staff and families. This will be by invitation and nearer the date you will be asked to nominate your guests. There will obviously have to be a limit to numbers and a maximum of 6 per employee has been set. The Establishment will be open from 10am until 5pm and during the day, in addition to the various exhibits, a number of special demonstrations are planned.

The Defence contractors displays will also be available and negotiations are being made for some Services exhibits. An MDP Dog Demonstrations is also being planned. The Conference Hall and Function Bar of the Club will be open throughout the day.

FIREWORKS & BBQ - SATURDAY 7th SEPTEMBER

On the evening of the open Day a special Celebratory Display of Fireworks will be held together with a Barbeque and some live entertainment in the Conference Hall. This event will be run in conjunction with the Social Club and an entry fee will have to be charged. This is expected to be about £2 a head for adults and £1 for children and is not restricted to staff.

EMPLOYEES LUNCH - WEDNESDAY 23rd SEPTEMBER

For all employees. To be held in the Conference Hall. It's a bit like a Christmas Party except it's in September. We expect some funds to be made available for this to pay for a buffet and wine but any additional drinks will have to be purchased over the bar. It's a way of saying thankyou to all the staff and we hope that you will all attend.

E V E N T S

COCKTAIL EVENING - FRIDAY 2nd OCTOBER

Designed for official guests, ex-Establishment members still in service elsewhere and you and your spouse. Arrangements are in hand for an army band to "Beat the Retreat" at this event - a sight well worth seeing! A buffet will be provided and special "Gunpowder Plot" RARDE Cocktails will be served. All staff will be invited to attend but some charge will be levied. As yet we don't know how much.

BICENTENARY BALL - SATURDAY 17th OCTOBER

A special Dance is being held in conjunction with the Social Club. The dance band that has been booked for this event is "Midnight Sound" which has always proved to be a very popular band at previous Club functions. Further details of this event will be publicised through the Social Club.

FORMAL DINNER - THURSDAY 22nd OCTOBER

This is the highlight of the celebrations. A full formal dinner to be held in the Conference hall and Club Bar on the date at which; 200 years ago, the Government Ownership began.

Official guests will be present and, once again, provision has been made for staff and their spouses to attend. This will not be a cheap affair (maybe £8 - £10 a head) but we hope all staff will seriously consider this "once in a lifetime" event.

AS YOU CAN SEE FROM THE ABOVE, THERE IS SOMETHING FOR EVERYONE;
WE HOPE YOU WILL ALL ATTEND AS MANY OF THE EVENTS AS POSSIBLE.

P U B L I C I T Y

BICENTENARY LOGO

A special bicentenary Logo has been officially approved and adopted, as shown on the front cover.

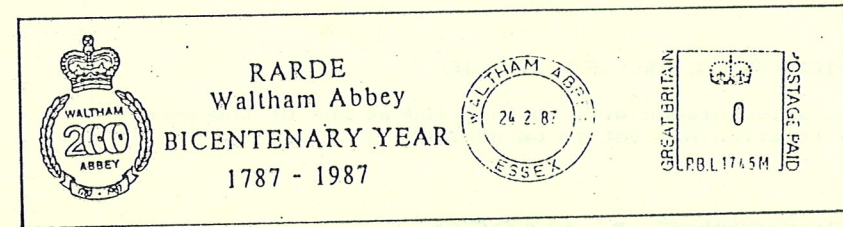
EXHIBITION

A special exhibition will be displayed in the local Town Library/Museum Complex towards the end of the year.

LETTER HEADING ETC.

Special headed notepaper and compliment slips, bearing the Bicentenary Logo have been prepared by the printing section at the Fort Halstead and is obtainable from Waltham Abbey Admin.

In addition, a special franking stamp has been ordered and all postal mail leaving the Establishment will bear this special logo during the year:



SOUVENIR ITEMS

A range of souvenir items is being prepared.

BROCHURE - A commemorative brochure will be available at the Open Day which will detail the history of the site from 1787 to the present day.

STICK-ON BADGES - Self-adhesive coloured badges of the logo will be available from September.

MUGS, TIES, SCARVES & T-SHIRTS
These items will be on sale towards the middle of the year. Samples will be available for viewing within the next few weeks and orders can be taken. A further notice will be issued when the samples have been received.

PICTURES - A selection of suitable prints and pictures are to be made available for sale and it is possible for these to be framed at around £6 each.

POSTCARDS - Suitable prints are also being prepared for sets of commemorative postcards.

OTHER ACTIVITIES

SCHOOL VISITS

To capitalise on the tremendous amount of effort being put into the Press and Open Days a series of local school visits will also be arranged during this period. This shouldn't involve staff in any additional display effort but may, of course, require your co-operation on the visit days.

TREE PLANTING

A commemorative tree will be planted in the Establishment on the Family Open Day. A copper beech has been chosen and will be planted on the corner by the old North Site Surgery.

COMMEMORATIVE PLAQUE

A commemorative plaque will be unveiled at one of the events though it's location has yet to be decided.

TV PROGRAMME & VIDEO

Approaches have been made for an historical feature programme to be made but, as yet, nothing has been forthcoming. This is still being pursued but as a fall-back a "home video" is being considered.

EVEN AT THIS STAGE IN OUR PREPARATIONS THE COMMITTEE ARE WILLING TO CONSIDER ANY ADDITIONAL IDEAS YOU MAY HAVE.

Questionnaire	Open Day	+ 4 guests
	Fireworks	5 tickets
	Lunch	✓
	Cocktails	✓ + 1
	Dinner	✓ + 1
	Pot Mugs	4
	Ch Mugs	4
	Ties	3

QUESTIONNAIRE

IT WILL HELP THE ORGANISING COMMITTEE IF YOU COULD
TAKE THE TIME TO FILL IN AND RETURN THIS QUESTIONNAIRE.

I intend to support the following events:

FAMILY OPEN DAY Yes/No
If Yes approx. No. guests (max 6)

FIREWORKS/BBQ Yes/ No
If Yes approx. No. tickets required

EMPLOYEES LUNCH Yes/No

COCKTAIL EVENING Yes/No Spouse: Yes/No

FORMAL DINNER Yes/No Spouse: Yes/No

I would be interested in purchasing souvenir items:

POTTERY MUGS (approx. £1-25) No.

CHINA MUGS (approx. £1-75) No.

TIES (approx. £3-50) No.

SCARVES (approx. £5-00) No.

T-SHIRTS (£2-50 - £3-50 depending on size)

 childrens 28" No.

 Small No.

 Medium No.

 Large No.

 Extra Large No.

Name Section

PLEASE NOTE: THIS IS NOT AN ORDER FORM.

INFORMATION IS REQUIRED TO
HELP WITH BULK ORDERING.

PLEASE RETURN THIS QUESTIONNAIRE
AS SOON AS POSSIBLE TO NORMAN PAUL G 432.

Mr. H. Chaven

RARDE

Waltham Abbey



December 1987

Now that the Bicentenary year draws to a close the Organising Committee would like to express their thanks to all staff who gave their support to the various events that were organised during the year.

Among the many congratulations received there has been a sense of surprise that such a relatively small establishment could plan and follow through such a programme with such an obvious degree of success. This has been entirely due to the enthusiasm and commitment of all staff concerned.

The Social Club undertook the financing of the main souvenir items and our thanks to the Club for their support. Monies raised from the sale of miscellaneous items, after payment of various expenses, is in the region of £200 and this will be donated to the D H Richards Memorial Fund of the Macromolecular Society.

Although the official programme is now complete you may wish to know that the Waltham Abbey Museum is currently showing an exhibition of the bicentenary material, entitled

"A Gunpowder Plot"

during December and January.

*With Best Wishes for
a Merry Christmas
and our hopes for a
Happy New Year*

The Bicentenary Committee

The Deed of Release of the Powder Mills

Although the deed is dated 1795
William Congreve had taken over
the Mills for the Crown in 1787

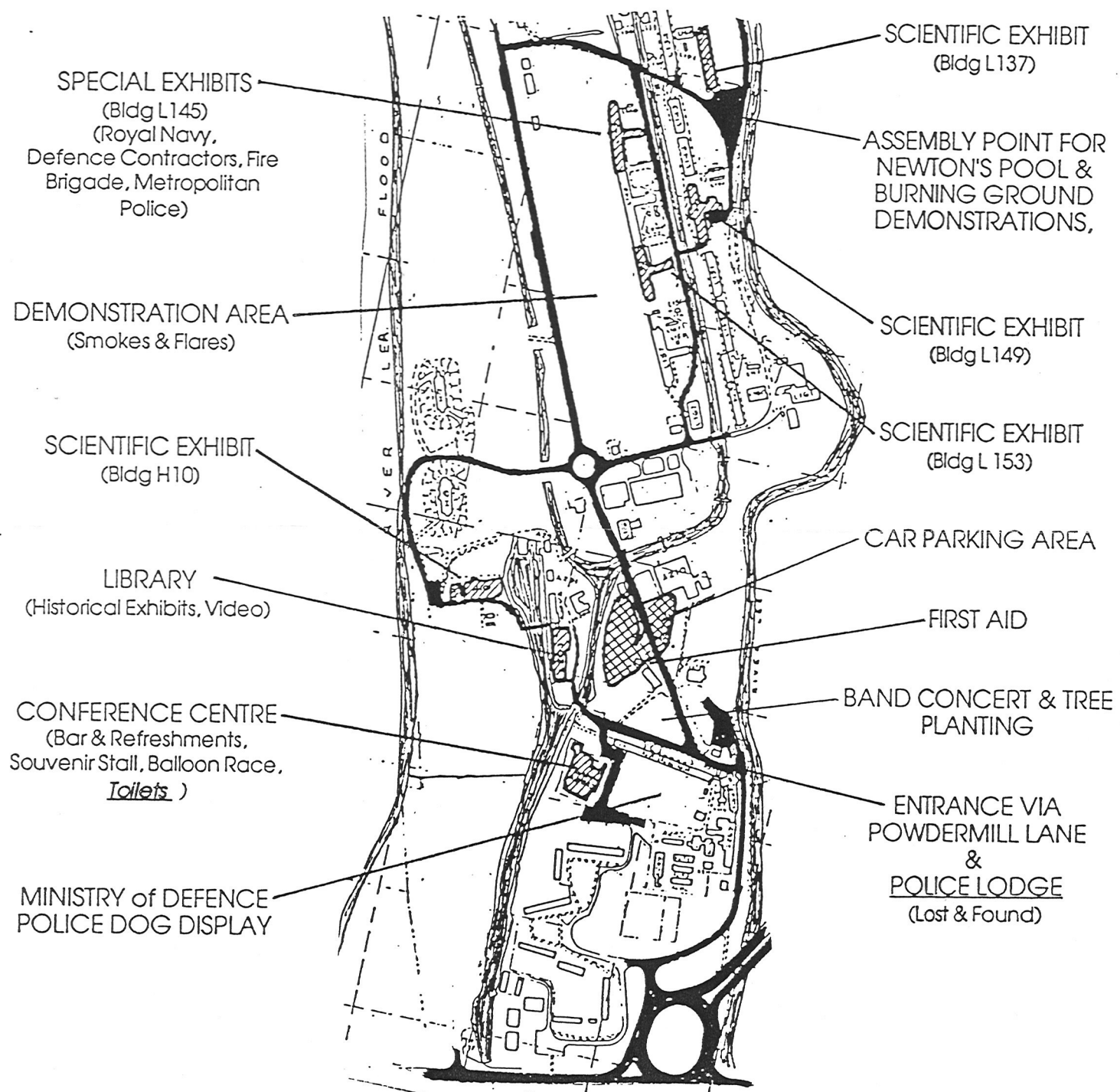
R A R D E WALTHAM



BICENTENARY

OPEN DAY

Saturday 12th
September



Welcome to the Waltham Abbey Bicentenary Family Open Day.

The Site here at Waltham Abbey was taken into Government Ownership 200 years ago for the production of gunpowder for the Crown. There have been many changes since that time and the current Establishment is now part of the Royal Armament Research and Development Establishment.

Because of the nature of the work carried out here, the Establishment is normally closed to the general public but, on this special occasion, we hope to give you some indication of the type of work that is carried out. There will be exhibits by the various scientific sections including a special historical exhibition. An area has also been set aside for exhibits by various commercial defence contractors and a special exhibit by courtesy of the Royal Navy.

As well as the static displays there will be a number of special demonstrations and events which are detailed in the timetable opposite. Demonstrations on the Burning Ground and Underwater Explosions at Newton's Pool will be run at intervals throughout the day.

A bar and light refreshments will be available in the Conference Centre where the special souvenirs will also be on sale.

We hope that you will enjoy
your day with us.

PROGRAMME

- 10.30 Gates open for Visitors.
- 11.00 Bar Opens.
- 12.00 Band Concert.
Ware Brass.
- 14.00 Display of Smokes & Flares.
Pyrotechnics Division,
Fort Halstead.
- 15.00 Police Dog Display.
Ministry of Defence,
Waltham Abbey.
- 16.00 Tree planting Ceremony
by Mrs Baynam.
- 16.00 Bar Closes.
- 16.30 Warning Hooter.
- 17.00 Gates Close.

PROGRAMME NOTE

For safety reasons the numbers that can be accommodated at the Burning ground and Newton's Pool demonstrations are restricted and it may not be possible for all visitors to attend. Transport and guides will pick up parties adjacent to Building L137 at set times which will be notified on a board. Visitors wishing to attend should assemble at the waiting point shown on the map.

RULES

In the interests of safety and security visitors must comply with the normal Establishment rules and observe all No Entry signs. The following regulations should be noted.

CARS: Visitors cars must be parked as directed by the MDP. Driving is not permitted within the Establishment unless entering or leaving.

SMOKING: Smoking is not permitted in the open but may be permitted in some buildings (please observe signs).

CAMERAS: Cameras are NOT allowed into the Establishment.

ALCOHOL: Alcohol is not permitted inside the Establishment.

RADIOS: Although cars fitted with CB radios, radio-telephones etc. may park inside the Establishment, under no circumstances are these to be used.

ANIMALS: Pets or other animals are not allowed into the Establishment.

BAGS ETC. MUST NOT be left unattended.

Employees are reminded that they are responsible for their guests and are asked to keep their parties together.

Certain areas will be closed and should not be entered.

RARDE
WALTHAM
ABBNEY
OPEN DAY

PROGRAMME ADDITIONS

1. The local Essex County Fire Brigade will give a special demonstration near the Long Walk Display Area commencing at about 13.30.

2. Preceding the Display of Smokes and Flares at 14.00 hours there will also be a display of an FH70 Gun by the 27th Field Regiment, Royal Artillery, adjacent to the Smokes and Flares display area.

RARDE
WALTHAM ABBEY



OPEN DAY PASS

No. 330

PLEASE NOTE:

This temporary pass is for the sole use of the person to whom it is issued and **MUST** be worn throughout the visit.

REMEMBER

Whilst in the Establishment:

NO Cameras

NO Radios

NO Dogs

Bags etc MUST not be left unattended

NO SMOKING except in designated areas

MEETING OF THE BICENTENARY COMMITTEE

REMINDER OF MEETING

The **LAST** meeting of the Bicentenary Committee will be held in the A231 Conference Room on:

Friday 20th November, commencing at 11am.

Refreshments will be served.

PLEASE MAKE EVERY EFFORT TO ATTEND
THIS FINAL MEETING



EPPING FOREST DISTRICT COUNCIL



You are invited to attend a private view of

"A GUNPOWDER PLOT"

A bicentenary review of the activities of the site of the early powder mills at Waltham Abbey which were acquired for Crown Service in 1787.

Monday 7th December

6.00 pm - 7.30pm

at the

Epping Forest District Museum
39/41 Sun Street, Waltham Abbey, Essex
Telephone - Lea Valley 716882

Refreshments supplied courtesy of the RARDE "Powdermill Club"

R.S.V.P.

Admit Two

MR McLAREN

PARDE WALTHAM ABBEY

B I C E N T E N A R Y



NEWSLETTER

Number 3

AUGUST 1987

TO ALL STAFF AT WALTHAM ABBEY

FINAL PROGRAMME!

OPEN DAY Saturday 12th September

If you have applied for tickets for this event you will be receiving them within the next week or so. If you haven't yet applied but do wish to come then please hurry up! Please note that we need to be advised of any changes in your party as soon as possible.

FIREWORKS & BBQ Evening of Sat 12th Sept.

This event is being run by the Social Club and a notice and booking form has recently been circulated. Early booking is advised as the event is expected to be over subscribed.

EMPLOYEES LUNCH Wed 22nd September

Open to ALL employees at Waltham Abbey free of charge ! This will be a Buffet Lunch including wine in the Club Hall. The bar will be open but you will have to pay for your own drinks. A booking form is attached. Please complete and send to Sally Westlake (H10)

AS SOON AS POSSIBLE

FORMAL DINNER NOW ON "FRIDAY 30th OCTOBER"

This is last planned event which we hope you will support. The principal speaker will be Lord Trethgarne Minister of State for Defence Procurement. Many old, ex-members of the Establishment have also been invited.

Cost of the Dinner is £11 per head and a booking form is attached which should be returned to Personnel WA.

TICKET ORDER FORM

NAME M McLAREN

BRANCH TA

TEL. EXTN 256

PLEASE SEND ME 5 (*) TICKETS FOR THE OPEN DAY

(* Not more than 6)

The Names of my Guests are:

- 1. MRS DM McLAREN
- 2. MISS FM McLAREN
- 3. MR FR McLAREN
- 4. MISS JM McLAREN
- 5. MR MR McLAREN
- 6.

RETURN TO: PERSONNEL DEPARTMENT
RARDE WALTHAM ABBEY

As soon as possible please.

I AM WILLING TO HELP IN THE PREPARATION FOR THE OPEN DAY

✓

B. HAMMANT
X 436

(but no transport)

Mr McLaren



BICENTENARY DINNER

FRIDAY 30th OCTOBER 1987

Special Guest:

Lord Trefgarne
Minister of State for Defence Procurement

Dress: Informal/Lounge Suit

Time: 7.00 for 7.30pm

Venue: Social & Sports Club/Conference Centre
Waltham Abbey North Site

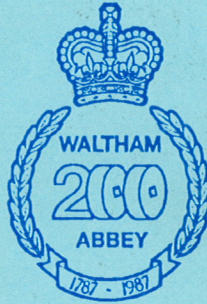
(Please note that access will be via
the Main Police Gate, Powdermill Lane)

Some tickets are still available to any member of
Staff and guest from Admin Building A231.

Cost: £11 per head

PLEASE APPLY IMMEDIATELY - NUMBERS LIMITED

RARDE WALTHAM ABBEY



BICENTENARY

DINNER

30th OCTOBER 1987

GRACE – Dr A J Owen

ooOoo

*THE LOYAL TOAST
proposed by Dr A C Baynham
Director RARDE*

ooOoo

*TOAST TO THE ESTABLISHMENT
proposed by Lord Trefgarne
Minister of State for Defence Procurement*

ooOoo

*REPLY
by Dr A C Baynham
Director RARDE*

ooOoo

*COMMEMORATIVE PLAQUE
Unveiled by Lord Trefgarne*

ooOoo

*Music by
The Mark Graystone Three*

MENU

Melon Balls in Port

ooOoo

*Beef Bourguinonne
Boiled New Potatoes
Whole Green Beans
Cauliflower garnished
with Butter & Breadcrumbs*

ooOoo

Raspberry Pavlova

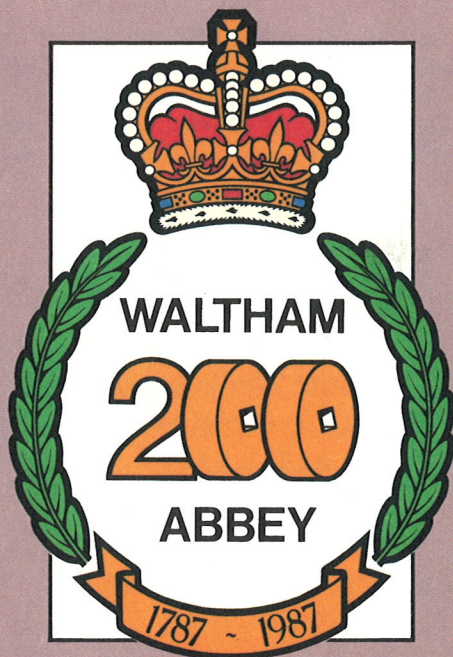
ooOoo

Cheeseboard

ooOoo

Coffee, Petit Fours





EXPLOSIVES—OHMS
BICENTENARY



EXPLOSIVES—OHMS



In 1787 Sir William Congreve made successful proposals for the purchase of the Powder Mills at Waltham Abbey for the Crown.

During the 200 years since then the site has made important contributions to the defence of the Realm.

*Royal Powder Mills
Royal Gunpowder Factory
1787–1945*



*Experimental Station
of Armament Research Department
1945–1946*



*Chemical Research
& Development Department
1946–1947*



*Chemical Research
& Development Establishment
1948*



*Explosives Research
& Development Establishment
1948–1977*

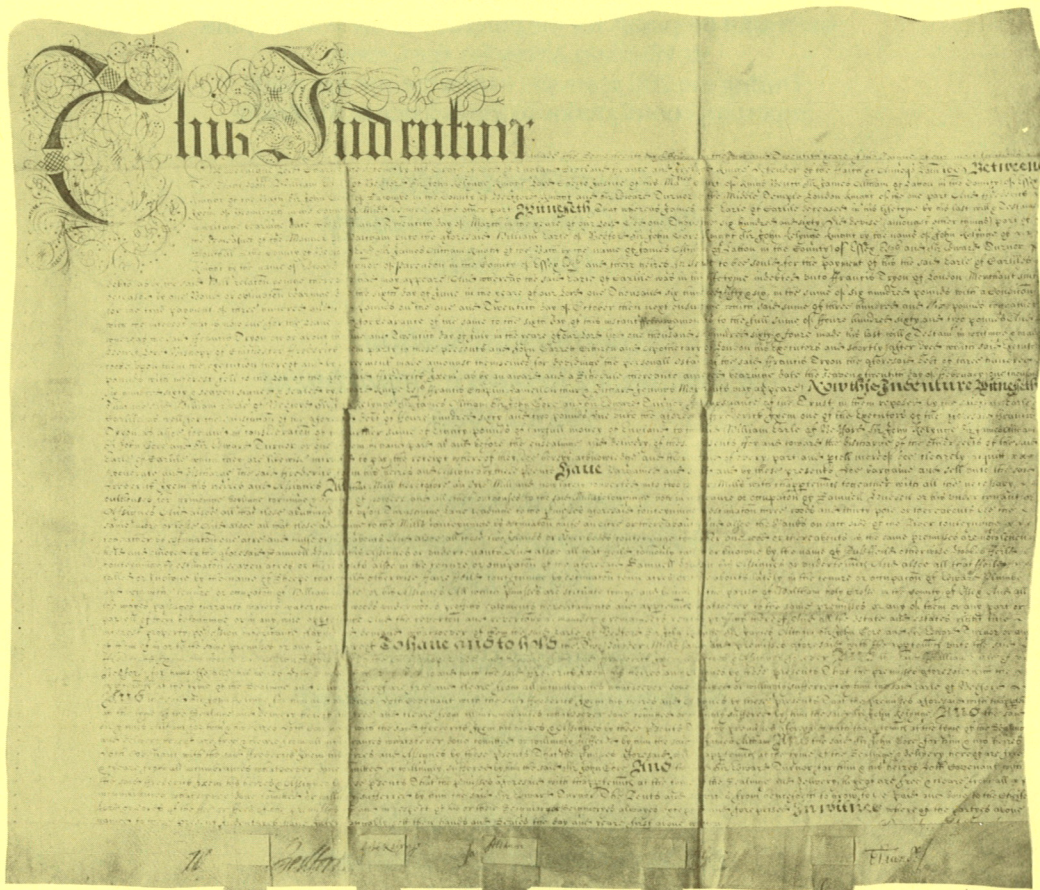


*Propellants, Explosives
& Rocket Motor Establishment
1977–1984*



*Royal Armament Research
& Development Establishment
1984–1987
onwards*

THE EARLY YEARS



Above
The title deed to the Powder Mills - 1669
Opposite
John Walton's Powder Mills on the site in 1735

Although gunpowder was used for the first time on the battlefield by the English at Crecy in 1346, it was not produced in this country in any great quantity until the middle of the 16th century when powder mills were established mostly in the south east of England. With the exception of a small scale operation in the Tower of London the entire gunpowder industry was in the hands of private manufacturers.

The mills at Waltham Abbey were no exception

and were first operated by Samuel and Ralph Hudson from the middle of the 17th century to about 1700. The extent of their undertaking is to be gleaned from a title deed of 1669 which refers to two powder mills and outhouses for "grinding, boylinge, corninge and dryinge of powder". The mills then passed into the hands of the Walton family who improved the processes by engaging the services of John Smeaton to design water-powered edge-runner incorporating mills to replace

the more hazardous stamp mills which operated on a pestle and mortar principle. Edge-runner mills worked by horses were also in use at this time.

At a time of deteriorating international relations in the second half of the 18th century the Government sought to control at least part of the production and purchased the mills at Faversham in Kent. Other private manufacturers protested that they could make better and cheaper powder than the Government



John Walton Esq. Proprietor of these Mills this Plate is humbly dedicated by his Obedient humble Servant J Farmer

THE ROYAL GUNPOWDER FACTORY



but this was disputed by William Congreve, the Deputy Comptroller of the Royal Laboratory at Woolwich. So successful was he in his representations that negotiations were begun for the purchase of the Waltham Abbey powder mills from John Walton.



Above
Lt Gen Sir William Congreve, 1st Baronet
Top Right
Sir William Congreve, 2nd Baronet
Bottom Right
Saltpetre refining by recrystallisation

“Yesterday went to the Powder Mills at Waltham Abbey with Mr Walton, and had the said Mills and appurtenances thereunto belonging delivered to me for His Majestys Service”.

With these words William Congreve informed the Duke of Richmond, Master General of Ordnance, that he had taken possession of the Waltham Abbey Powder Mills for the Crown on 18 October 1787.

John Walton was paid £10,000 for the Mills but Congreve spent another £35,000 on repairs, improvements and extensions.

Congreve invited William Newton (remembered today in “Newtons Pool”) to become Master Worker and employed Daniel Cornish, a carpenter, to recruit the best of Walton’s millmen and labourers. The repairs, extensions and the recruitment and training of the workforce all took time and it was not until February 1789 that the first powder was made. Congreve issued a set of rules covering safety and discipline which, together with processes designed to produce a product of uniform performance, formed the basis of the improvement in quality and cost of the powder from the



Royal Mills. Congreve was able to justify his earlier actions by publishing a statement of accounts in 1811 to show that even after deducting the £45,000 expended on the mills a saving of over £50,000 had been made. Further, he demonstrated the advantages of the improvements he had introduced in a series of trials on Marlborough Downs where 10-inch shells were fired by 9 lb lots of gunpowder from different makers including six private merchants. That from the Royal Gunpowder Factory had the greatest range of 4,430 yards exceeding its closest private rival by 160 yards and most of the others by over 500 yards.

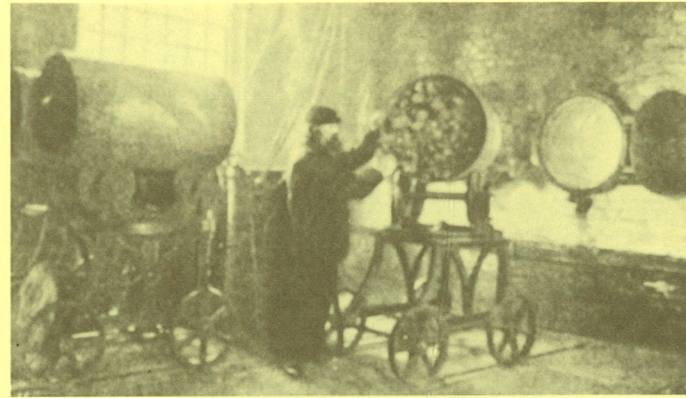
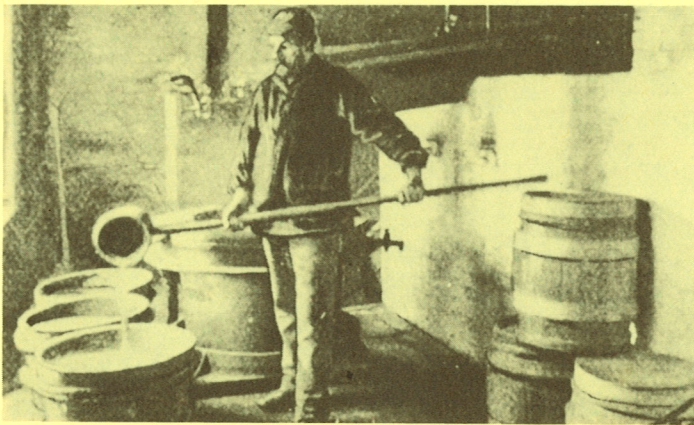
Sir William Congreve was succeeded as 2nd Baronet and Comptroller of the Royal Laboratory by his

son, another William, who continued his father's improvements and invented the granulating machine which remained virtually unchanged in design for over one and a half centuries. He is probably better known for his development of the gunpowder rocket for military purposes. Although having terror and incendiary value as its qualities rather than accuracy, the Congreve rocket was used in several campaigns including Boulogne 1806, Copenhagen 1807, Leipzig 1813 and Waterloo 1815. Its use against Fort McHenry in 1814 is commemorated by the wording "the rockets' red glare" in the United States' national anthem.

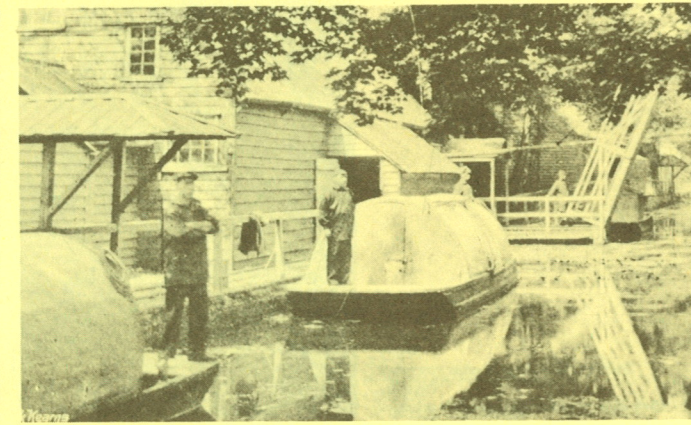
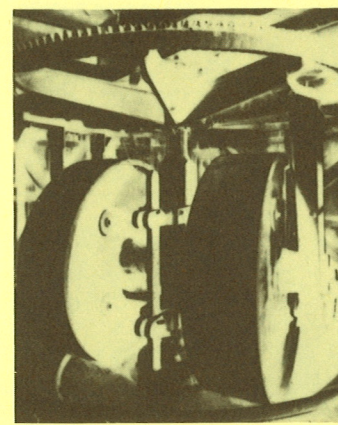
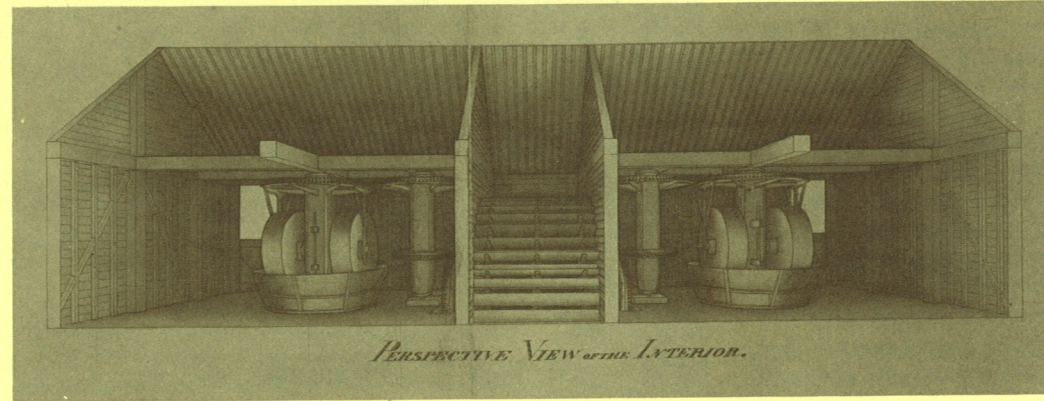
The Congreve era at the Royal Gunpowder Factory included the years of the Napoleonic Wars during

which production mounted to an annual rate of 25,000 barrels, or about 1100 tons. It also saw the introduction of what became the definitive method of production. Gunpowder, an intimate mixture of saltpetre, sulphur and charcoal, was prepared by mixing the purified ingredients in the proportions 75, 10, 15 and incorporating the mixture under massive edge-runner millstones. The mill cake was then broken down and pressed before being granulated to the required size. The grains were dried, dusted, and glazed to improve the durability, stored in barrels ready for use and transported by sailing barge to the magazines at Woolwich and Purfleet.

For decades the entire production of the Factory had been gunpowder but by the middle of the 19th century there was a growing interest in two new explosives: guncotton and nitroglycerine.



Bottom far left
Sulphur refining by distillation
Opposite
Charcoal burning
Centre
Water-powered gunpowder incorporating mills
-1830
Bottom left
Edge-runner millstones
Bottom right
Powder boats on the Millhead Stream

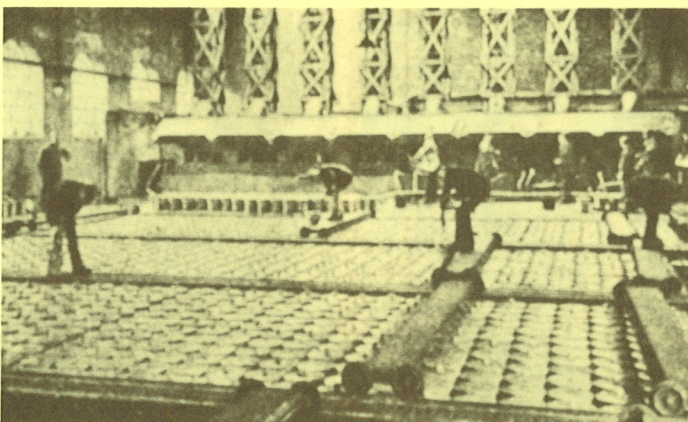


THE NEW ERA OF EXPLOSIVES

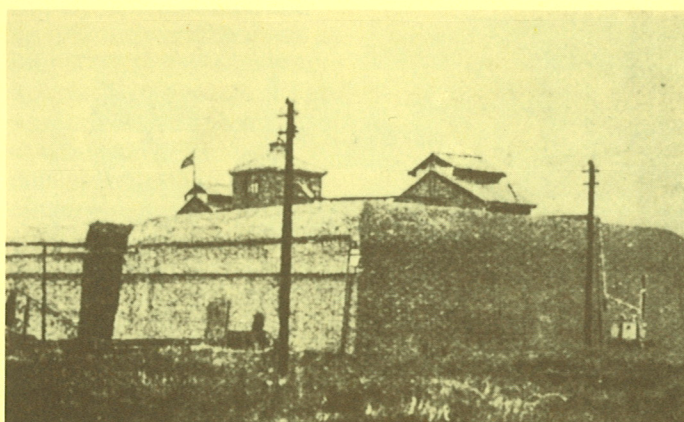
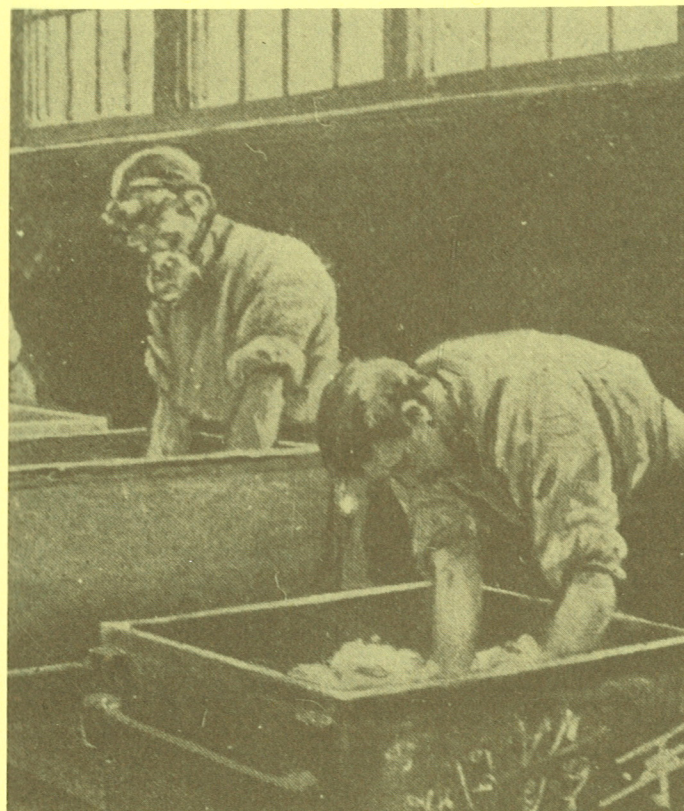


The new era of explosives began in 1846 when Schonbein of Basle, after earlier experiments by Pelouze, developed the production of guncotton as a commercial explosive.

Guncotton was prepared by the action of nitrating acids on raw cotton but unfortunately Schonbein's process did not include the vital stabilising stage and was doomed to disaster. Following serious explosions the commercial production was halted. Later the process improvements which had been introduced by the Austrians were continued by the British Government when, in 1863, Sir Frederick Abel, the War Office Chemist, set up an experimental plant at Waltham Abbey for the production of guncotton. The plant was successful and the product stable with



Above
Picking cotton for guncotton processing
Opposite
Early dipping process for guncotton nitration



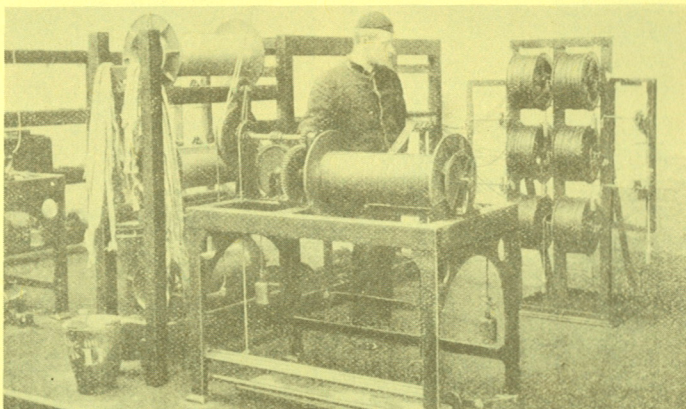
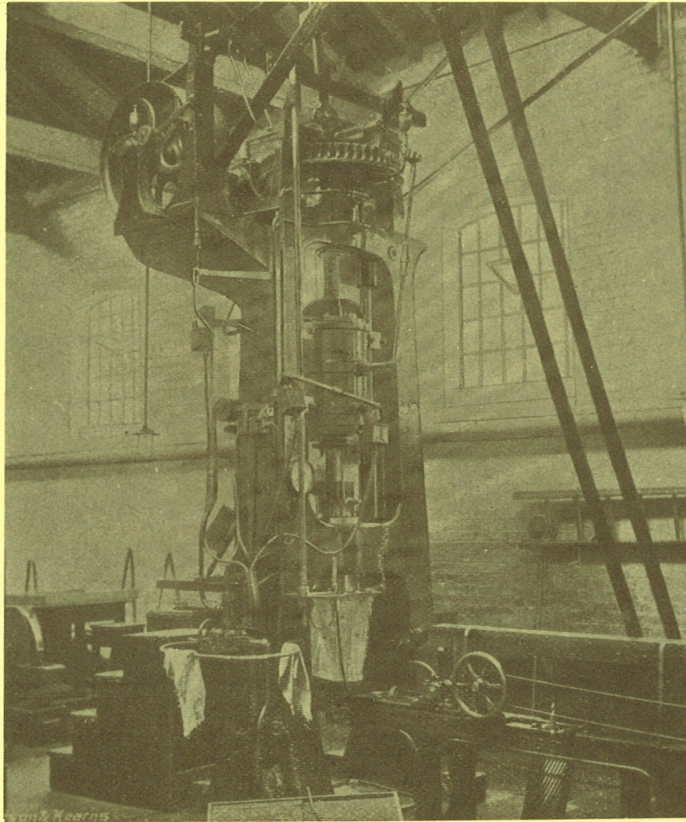
the result that production was increased to 250 tons per annum in 1872. Eventually this level of production was to prove inadequate and in 1885 a new site was acquired at Quinton Hill on the southern side of Waltham Abbey for the construction of an even larger capacity plant. More improvements followed including the introduction of the displacement plant at the nitration stage and by 1908 output had increased to about 2000 tons per annum.

Nitroglycerine, a liquid explosive, first made by Sobrero in 1847 by the action of nitrating acids on glycerine and developed by Alfred Nobel, was an ingredient in a propellant composition devised by Sir Frederick Abel's Explosives Committee in 1890. With the other ingredients, guncotton and mineral jelly, it formed a

Above
Hand mixing of cordite dough
Opposite
The nitroglycerine factory

mixture which could be extruded into cords – Cordite. After the construction of a nitroglycerine factory on Quinton Hill, production of Cordite Mark I began in 1891. As with guncotton, improvements and extensions followed and another piece of land to the south of Quinton Hill was purchased for the new cordite factory in 1901.

The importance of the role of gunpowder, both as an explosive and as a propellant, declined with the introduction of guncotton and cordite. As a result the steam-powered gunpowder mills on the North Site were converted to cordite processing.



Above
Massive press for extruding cordite into cords
Opposite
Blending cordite by multiple winding
Top right
Col Sir Frederic Nathan, Superintendent RGPF
1900-1909
Bottom right
Women workers employed on improved production
processes—1917

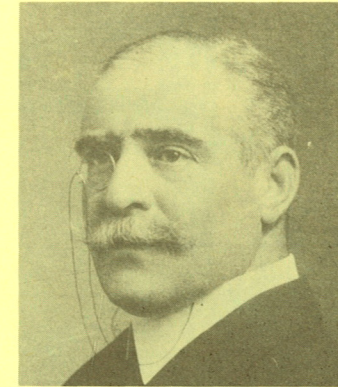
THE RGPF IN THE 20TH CENTURY



The first decade of the 20th century saw the introduction, under the direction of Colonel Sir Frederic Nathan, of a number of significant advances in the processing of guncotton and cordite, including the solvent recovery process for the recovery of acetone from the stoving of cordite, the acid concentration process for waste acid, the redesign of the nitration process in the manufacture of NG and the displacement process for the manufacture of guncotton. A plant was also set up for the small scale manufacture of tetryl, a booster explosive.

The benefits of these advances were very much in evidence during the early years of the First World War when the Royal Gunpowder Factory remained the only Government manufacturing site. Both production and employment mounted and by 1917 the workforce was over 5000, half of whom were women. A special bus service was introduced to bring the women workers from the railway stations and from outlying districts in Essex. For two and a half years the RGPF was operating on a “round the clock” basis seven days a week.

Eventually other Factories were set up elsewhere and not only did Waltham Abbey



Guncotton nitration by displacement process



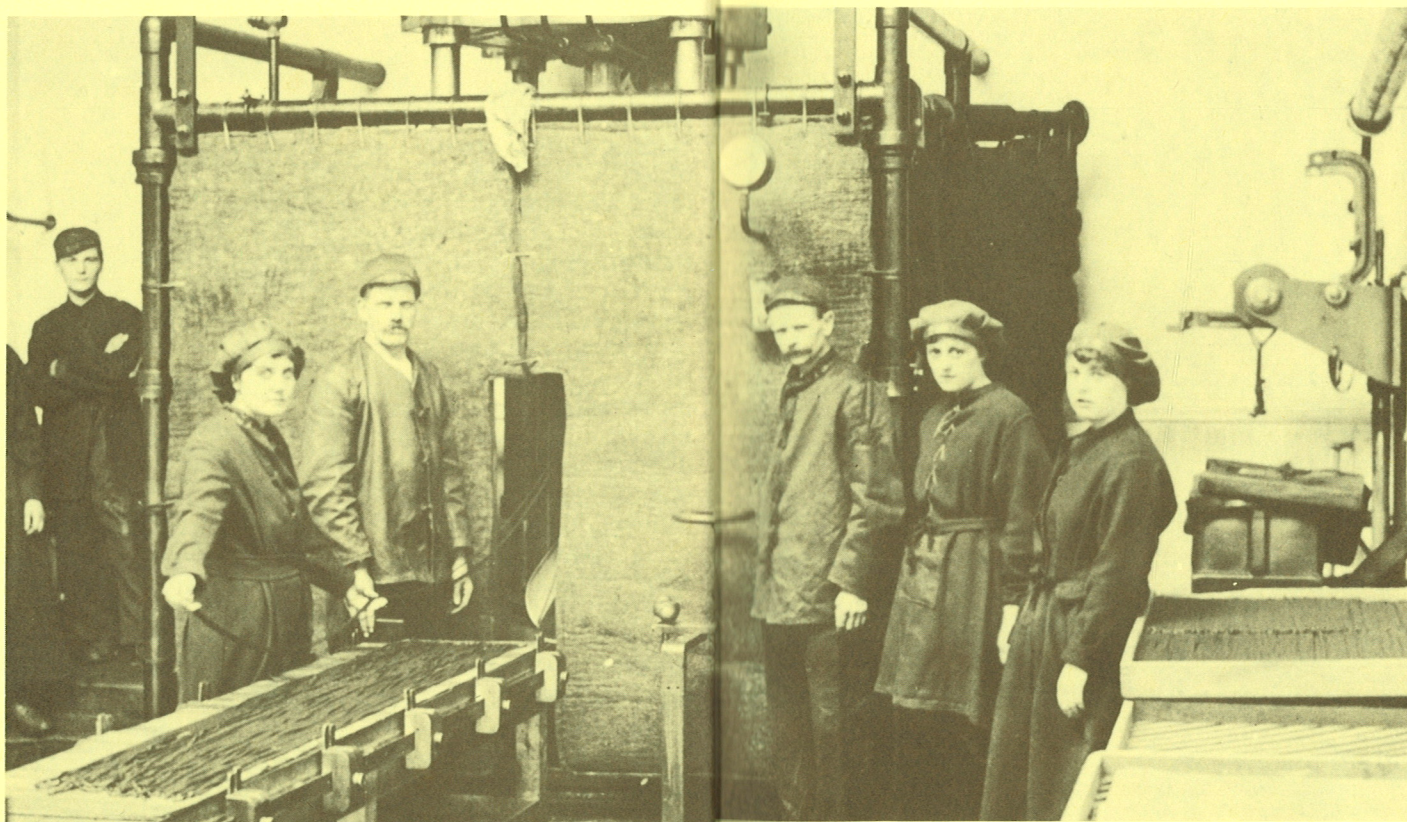
Guncotton pulping

provide essential training for explosives workers elsewhere but many of the RGPF staff were transferred to supervise the new operations.

After the First World War both employment and production were reduced but effort on experimental and investigative work was increased which led to the development of solventless cordite, SR227 and RD202 fuze powders, picrite as an ingredient for flashless propellants, a continuous process for TNT, acid concentration plants and Cordite W which contained carbanite.

The rundown of production was reversed in 1933 when it was decided, because of the international situation, that the factory should be put into a complete state of readiness for full war-time output. The most important process which was introduced during this period was the production of the high explosive RDX by the nitration of hexamine. After initial investigation at the Research Department, Woolwich, plant was installed at Quinton Hill for its manufacture which began early in 1939.

As in 1914, when war was declared in 1939 the RGPF was for two years in the forefront of explosives



production until new factories could be erected and made operational. As the larger factories came on stream the processes were gradually transferred and the contribution of the RGPF declined with RDX and tetryl remaining as its principal products.

After the war the Royal Gunpowder Factory closed in July 1945 but not before the area had been surveyed by staff from the Armament Research Department as a site for its explosives research activities.

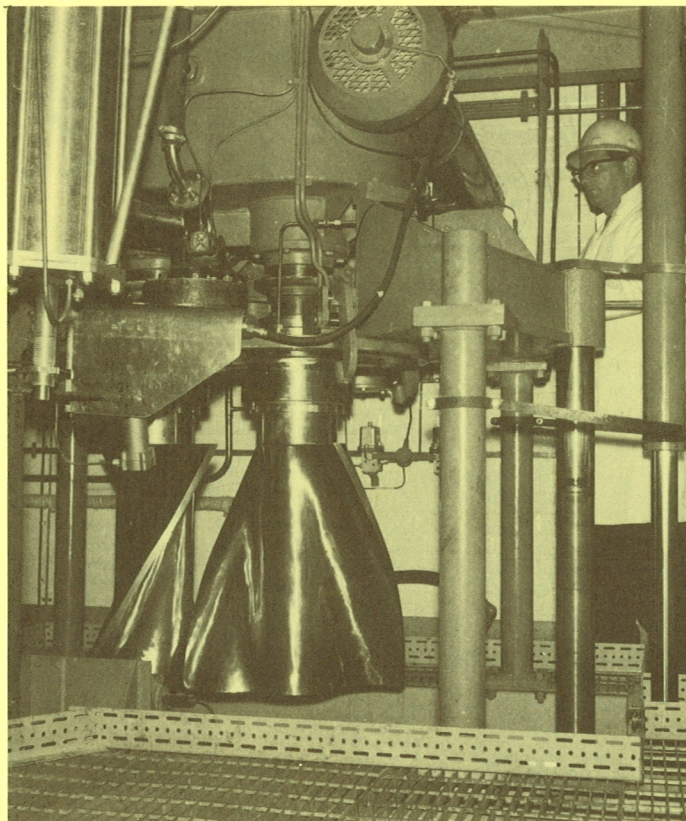
Centre
Extruding cordite strands
Bottom left
Transporting cordite to the drying stoves on the narrow-gauge railway
Below
The ruins of the last gunpowder mills - 1941

THE RESEARCH & DEVELOPMENT ESTABLISHMENT



Although the RGPF closed on 28th July 1945 the site reopened on 30th July 1945 as an experimental station of the Armament Research Department with the aim of setting up a separate organisation for research into explosives and intermediates from the fundamental stages to pilot scale production.

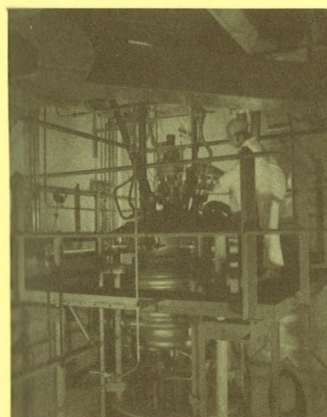
This came into existence on 1 October 1946 as the Chemical Research and Development Department with a nucleus of staff drawn from the Armament Research Department and with a programme which encompassed the fields of liquid propellant systems, plastic rocket propellants, colloidal rocket propellants, colloidal gun propellants, high explosives and intermediates, initiators, small arms and mortar propellants, unorthodox propellant systems, chemical engineering, materials including compatibility and non-metallic materials, chemical analysis and climatic trials. Each item of the research programme had a direct relationship to Service problems. The conversion of production buildings into research laboratories and buildings for process research took time but rehabilitation progressed and gradually the staff forming the



new establishment were transferred from Woolwich.

In 1948 the title was changed to the Explosives Research and Development Establishment (ERDE). The following years saw modifications in the research programme as the Establishment responded to Service requirements. The work on liquid propellants was transferred to the Rocket Propulsion Establishment

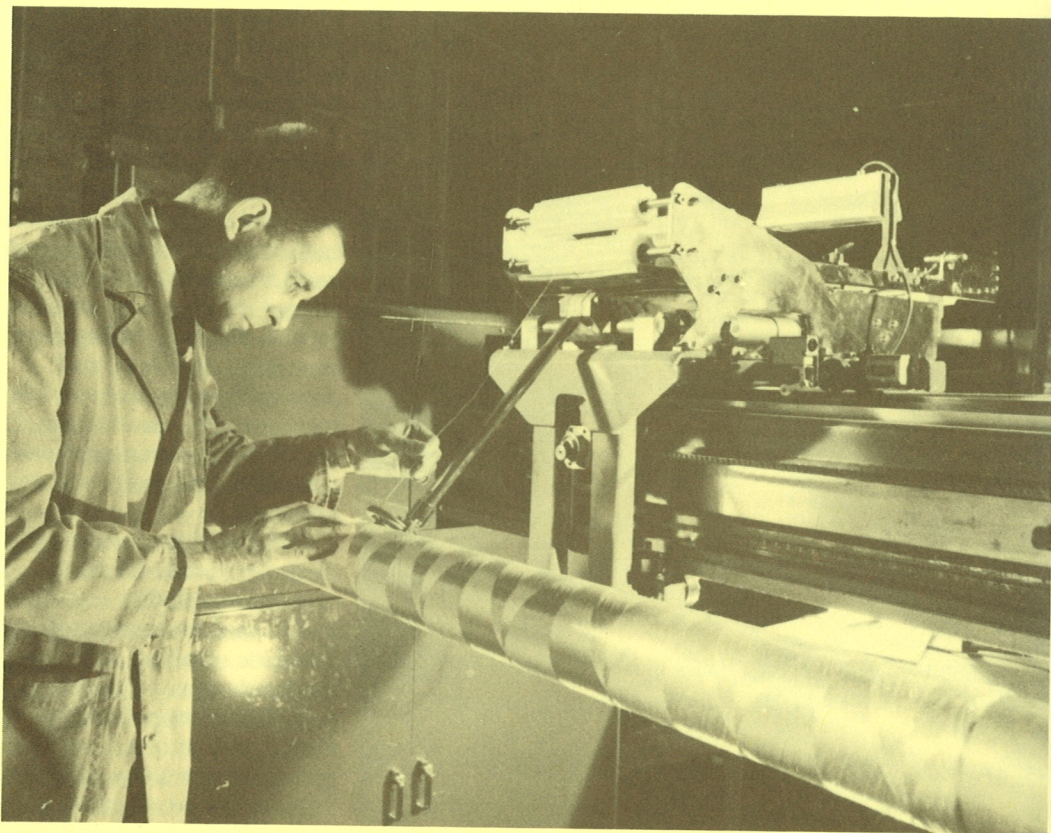
(RPE) at Westcott and work on new composite propellants and composite materials was introduced. After several years of close association, ERDE at Waltham Abbey and RPE at Westcott were merged in 1973 and another reorganisation in 1977 led to the creation of the Propellants, Explosives and Rocket Motor Establishment (PERME). Work continued on the integrated PERME programme until 1984



when as part of a scheme to privatise the Royal Ordnance Factories the site at Waltham Abbey was divided between the Royal Armament Research and Development Establishment (RARDE) and what is now the Royal Ordnance plc. Once again the research programme has been modified to meet the revised requirements and, for RARDE Waltham Abbey, now covers the chemistry and physics of energetic materials together with research into associated chemical processes and polymeric and composite materials.

The work currently being carried out includes studies of the compatibility, stability and hazard assessment of energetic materials, adhesion, mechanical properties of propellants, propellant formulation studies, composite propellant chemistry, studies of environmental effects on materials and components, chemical synthesis of energetic materials and ingredients, pilot plant studies, the use of composite and polymeric materials in the designs of weapon systems, and the application of computational techniques.

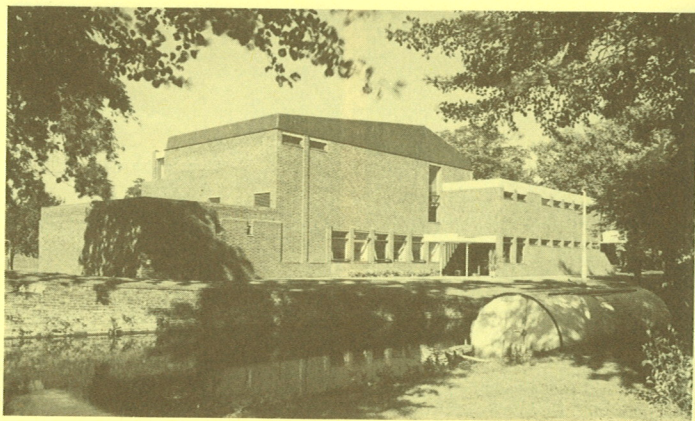
Top left
Large scale mixer for composite propellants
Top
Underwater testing of explosives
Bottom left
Process optimisation of strategic chemicals
Opposite
Solid propellant gas analysis techniques



The area retained in Government ownership as RARDE Waltham Abbey is that part which includes the site of the Royal Powder Mills which were acquired by Sir William Congreve in 1787.

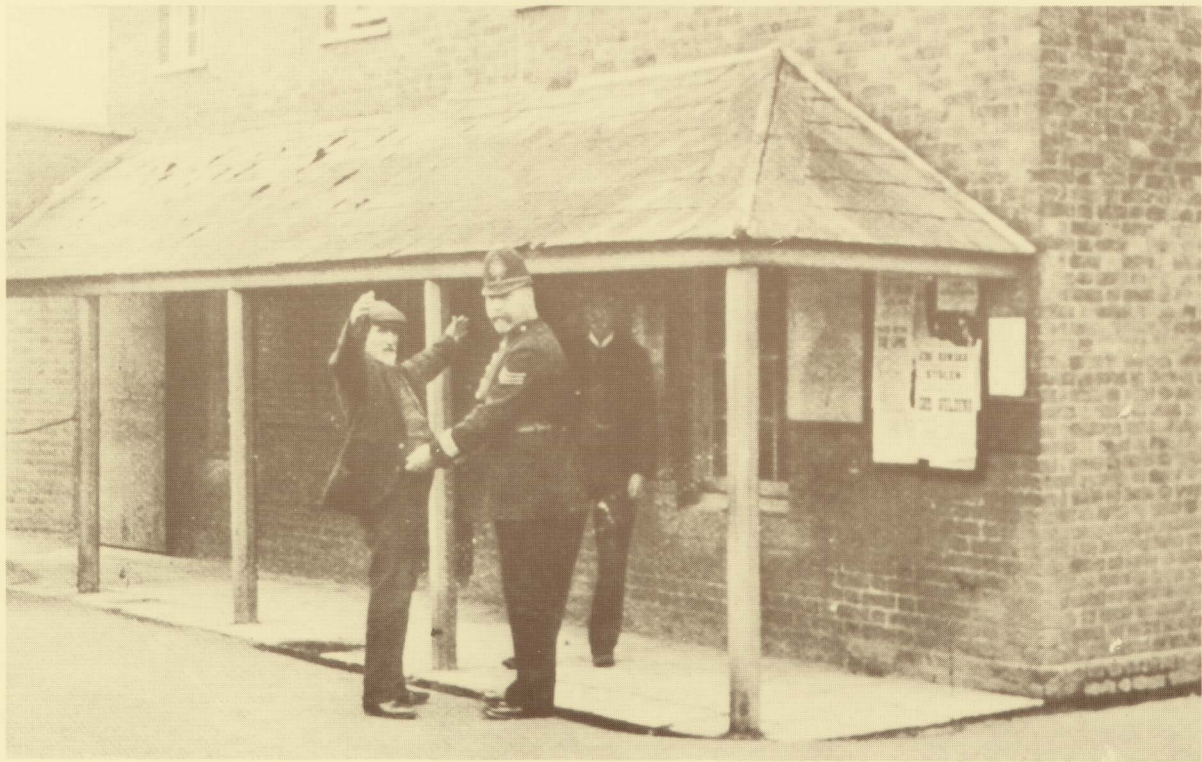
It is this continuous contribution to Crown service that forms the basis of the Bicentenary celebration.

Above
Filament winding of composite rocket motor cases
Opposite
The Library and Lecture Theatre



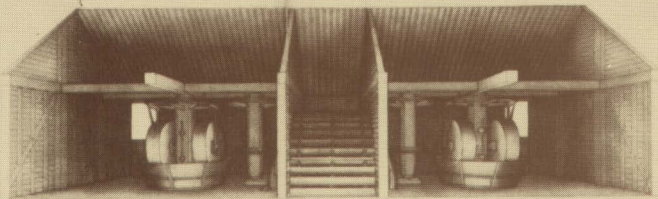


*Women workers operating the guncotton pulping plant.
Royal Gunpowder Factory, Waltham Abbey, 1917.*

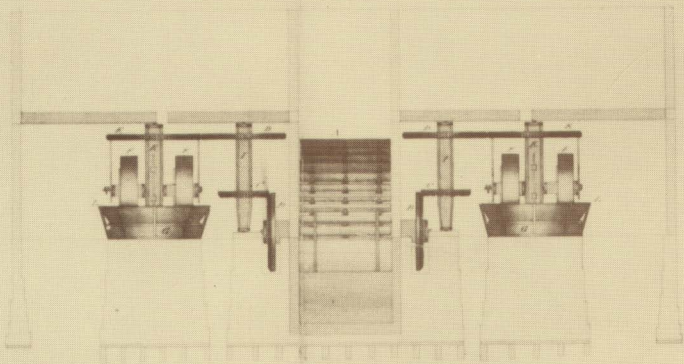


*A police search for matches and other dangerous materials.
Royal Gunpowder Factory, Waltham Abbey, 1899.*

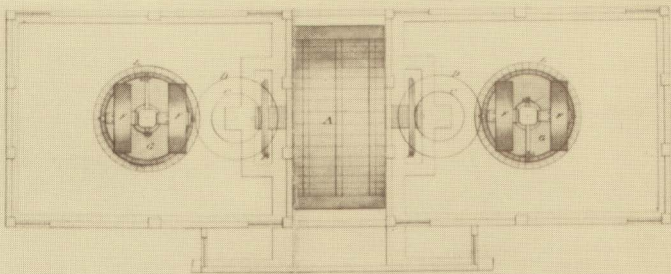
N^o 7
Drawings of a Gunpowder Mill.



PERSPECTIVE VIEW OF THE EXTERIOR.



GEOMETRICAL SECTION



Ground Plan.

Scale of 1/2" = 1' on each side

W. & A. G. S.

*Gunpowder incorporating mills.
Royal Gunpowder Factory, Waltham Abbey, ca 1830.*



*Transporting cordite on the narrow-gauge railway.
Royal Gunpowder Factory, Waltham Abbey, 1917.*



*Powder mills and boats on the Millhead Stream.
Royal Gunpowder Factory, Waltham Abbey, 1899.*



*The Factory Fire Brigade.
Royal Gunpowder Factory, Waltham Abbey, ca 1890.*

