

WASC 1848

Police Station Profile

No. 24

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ROYAL ORDNANCE / RARDE
WALTHAM ABBEY

The Waltham Abbey establishment is located 20 miles north east of Central London and consists of two separate sites on opposite sides of the M25 London Orbital Motorway.

The North Site is occupied by the Royal Armament Research and Development Establishment (RARDE) and the South Site by Royal Ordnance (Explosives Division).

The twin sites cover an area of 465 acres, about 80-per cent of which is surrounded by the waters of the River Lee and its associated streams. The establishment also lies on the Greenwich meridian at 0 degrees longitude.

Constable Ray Hackett (above) takes a great interest in the history and wildlife of both the establishment and the town and he has compiled a comprehensive Profile of this ancient and unique station.

The work currently being carried out at Waltham Abbey includes studies of the compatibility, stability and hazard assessment of energetic materials, adhesion, mechanical properties of propellants and the use of composite materials in the design of weapon systems and the application of computational techniques. A far cry from the early years

when the primary function of Waltham Abbey was the manufacture of a single product - gunpowder.

The early years

Although gunpowder was first used by the English on the battlefield of Crécy in 1346 it was not produced in any great quantity until the middle of the 16th century.

Gunpowder production at this time was solely in the hands of private manufacturers with the exception of a small scale operation in the Tower of London.

Waltham Abbey's association with gunpowder is recorded as far back as 1561 during the reign of Queen Elizabeth I.

By 1660 the production of gunpowder had become an important local industry. In 1662 the Curate of Waltham Abbey, Dr. Thomas Fuller wrote: "It is questionable whether gunpowder be more profitable or dangerous. The mills in my Parish have been five times blown up within seven years but blessed be to God without the loss of one man's life."

The powdermills eventually came into the possession of the Walton family who later sold them to the Crown on 18th October 1787 for the sum of £10,000. The subsequent two hundred years have seen the site make a very important contribution to the defence of the Realm.

King Harold

Local legend maintains that the remains of King Harold and his brothers, Leofwin and Gurth, are buried in the grounds

of the old abbey at Waltham. King Harold founded the abbey (circa 1060) and a large stone behind the present church marks his last resting place. The Augustinian Order of Monks worshipped at the monastery and are said to have been the first people in England to manufacture gunpowder. For this reason, Waltham Abbey was to become the site of the most famous gunpowder factory in the country - The Royal Gunpowder Factory.

Guy Fawkes

Another local legend claims that Guy Fawkes purchased gunpowder from the mills at Waltham Abbey prior to his ill-fated attempt to destroy Parliament in 1605.

Unfortunately there is no solid documentary evidence to substantiate this claim. However, about 12 years ago a receipt was discovered in the Public Record Office which referred to 18 hundredweight of gunpowder purchased by a gentleman living near Waltham Abbey. The gunpowder was 'for his private use' and the receipt was dated 1605.

Guy and his fellow consprators often met in a 'safe house' just a short distance from Waltham Abbey and it is quite possible that local legend is correct.

Royal Gunpowder Factory

Having purchased the mills on behalf of the Crown (1787), Lieutenant General Sir William Congreve, Deputy Comptroller of the Royal Laboratory, spent a further £35,000 on repairs, improvements and extensions. It was not until February 1789 that the first batch of gunpowder was made for the Crown.

Congreve made rules covering safety, discipline and the production of gunpowder of uniform performance. The mills began to produce what was to become the finest quality gunpowder in the world.

Sir William was succeeded by his son, another William, as Comptroller and he continued his father's improvements and invented the 'granulating machine' which remained virtually unchanged in design for over 150 years. The young William Congreve is probably best known as the inventor of the military rocket system.

Although the military rocket was not very accurate it terrorised the enemy and had great incendiary value. It was used successfully in several campaigns including Boulogne 1806, Copenhagen 1807, Leipzig 1813 and Waterloo 1815. The use of rockets against Fort McHenry in 1814 is commemorated by the words 'the rockets' red glare' in the United States National Anthem.

Gunpowder production

During the Napoleonic Wars the annual production of gunpowder reached 25,000 barrels (about 1,100 tons) and it also saw the introduction of what was to become the definitive method of gunpowder production. This involved mixing saltpetre, sulphur and charcoal in certain proportions and then incorporating the subsequent mix under massive millstones. The resultant 'millcake' was then broken down and pressed before being granulated to the required size. A very dangerous process indeed!

Accidents

Accidents during the 19th century were both frequent and major. On 13th April 1843 ten men died in an explosion, in June 1870 five more, in August 1890 another two were killed and in 1893 a further nine. Many minor accidents over the years have resulted in serious injury.

The possession of contraband items such as matches or tobacco within the confines of the mills was a serious offence. Employees found in possession of such items would be dismissed immediately. Contractors were expected to sack any of their staff who broke the contraband regulations.

Even today, the possession of contraband in certain parts of the factory is considered a very serious offence. The manufacture of gunpowder has always been fraught with danger and although safety procedures were strictly adhered to, it was always feared that just one tiny spark could prove fatal.

Decline of gunpowder

For years the entire production of the mills had been gunpowder but by the middle of the 19th century there was a growing interest in two new explosive products - guncotton and nitroglycerine.

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 production was increased to 250 tons per year by 1872, and eventually exceeded 2,000 tons per year by 1908.

Nitroglycerine, a liquid explosive, was extruded with guncotton and mineral jelly and then formed into cords by Abel's Explosives Committee in 1890. These powerful new materials were manufactured in bulk and by 1901 a new cordite factory was in operation to the south of the town of Waltham Abbey.

The importance of the role of gunpowder as an explosive and as a propellant declined with the introduction of materials such as cordite. As a result of this, the existing gunpowder mills were converted to cordite processing.

virtually
The age of gunpowder had [^]gone forever.

Two World Wars

During the First World War, the Royal Gunpowder Factory was the only Government-owned manufacturing site of explosives. It employed over 5,000 people, half of them women.

After 1918, employment and production were reduced but effort on experimental work was increased, leading to the development of newer and safer processes and the discovery of even more powerful materials. This rundown of production was reversed in 1933 when the international situation deteriorated and the RGPF was placed on standby for full wartime output.

At the outbreak of the Second World War the RGPF was the country's major explosives producer and as such became a prime target for enemy air attack. It was dangerous enough to work in an explosives factory without the threat of air raids.

The continuous production of the high explosive RDX was maintained however.

There were many 'close shaves' as the Luftwaffe tried its best to stop production. The nitroglycerine plant had a lucky escape when a V2 rocket struck the town a quarter of a mile away causing horrendous damage and injury.

Post-war

After the war the RGPF eventually ceased production and in July 1945 it closed. Two days later it re-opened as an experimental station of the Armament Research Department.

This later became the Explosives Research and Development Establishment (ERDE) in 1948. Further changes in organisation led it to become the Propellants Explosives & Rocket Motor Establishment (PERME) in 1977.

In 1984 the site at Waltham Abbey was divided into the two separate parts which we know today. The Royal Ordnance site (South Site) is now closed and is being returned to civilian use.

Site of Special Scientific Interest

In 1986 the Nature Conservancy Council declared part of the old RGPF \approx a Site of Special Scientific Interest (SSSI) under Section 28 of the Wildlife & Countryside Act 1981. The Waltham Abbey site not only contains a wealth of historical interest but also an abundance of flora and fauna.

The Waltham Abbey SSSI is described as 'an area of woodland on damp alluvial soil overlying glacial gravel in the valley of the River Lee.' The woodland has largely generated from coppice stools and is dominated by alder, ash, sycamore, poplar and crack willow.

The ground flora is dominated by common nettle, ground ivy and butterbur.

squirrels,

Rabbits, foxes and fallow and muntjac deer are commonly seen throughout the site and most species of British birds and mammals are represented. The site supports the largest heronry in Essex - with over a dozen breeding pairs.

What was once The Royal Gunpowder Factory is now dense woodland and all that remains is but an echo of its past greatness. William Fitzgerald said it all in an article in the Strand Magazine (1895): "The tremendous energy that lay dormant in every building oppressed us, even though that energy slept behind massive traverses and walls ten feet thick; so we came away."

Early policing

The middle of the 18th century was a time of worsening international relations, this being the reason for the Crown's purchase of the mills. Without gunpowder a war would be lost; without gunpowder the nation could not defend itself from its enemies. The fear of sabotage by enemy agents was very real.

Security of the mills was of paramount importance and initially process workers were employed to carry out the task. Until 1860 all security patrols were conducted on an overtime basis - a shilling's extra pay for four hours work after completing an eight-hour shift. The patrols were paraded at the Grand Watch House and told of their 'beats' by the 'Rounders' whom they had to meet every hour whilst on patrol.

Special Constable

In 1846, at the request of the Ordnance Board, a Special Constable was employed. Unlike the security patrols he was not a process worker and he had the powers of Constable within the confines of the factory and the powers of Special Constable outside.

The Metropolitan Police took over the policing of the mills on 1st April 1860. Their duties included internal security patrols, control of entry and exit and, most important of all, contraband searches.

By 1871 there was a Police Barracks situated adjacent to the Main Police Office in Powdermill Lane. The Main Police Office has been in continuous use from 1860 to the present day and is believed to be the oldest police office still in use in the Metropolitan Police area.

Escort duties

During the First World War, Special Constables were employed to escort the many sailing barges carrying explosives between

Waltham Abbey and Woolwich Arsenal and their duties included opening and closing the many lock gates on the River Lee. By 1923 the Metropolitan Police had relinquished the task of policing the RGPF and the job was taken over by the Departmental Constabulary who policed the mills throughout World War II, being assisted by units of the Local Defence Volunteers and the Regular Army.

The RGPF was vital to the war effort and sabotage was still as great a threat as it had been during the Napoleonic Wars.

In 1971, amalgamation of the Departmental Constabularies meant that policing was the responsibility of MDP.

The MDP task

The MDP role at Waltham Abbey is primarily one of security and general policing since the closure of Royal Ordnance and the run-down of RARDE. The security task is as important today as it was in the early days of the RGPF. The threat is still real.

The MDP complement of one Inspector, one Sergeant and 16 Constables is tasked to police both ROF and RARDE during the run-down programme. These figures include a Dog Section of three handlers and three Security Arm True dogs.

The Senior Police Officer, Inspector Rex Wrixon, and his deputy, Sergeant Peter Tingle, are in an unusual position as they have to deal with two different administration systems as RCF and RARDE are two separate entities.

MDP carry out regular patrols of the associated married quarters at Waltham Abbey as well as patrols of the ten-mile fence line.

Personalities

No MDP officer is more at home at Waltham Abbey than Constable Ken Hicks. Ken, a gifted musician who plays bass tuba in the MDP Band, was actually born ^{in a house} within the Royal Gunpowder Factory.

Constable Malcolm Ashby is a member of the Force rugby team (hooker).

This duo also hold high office (Treasurer and Chairman respectively) in the establishment Social Club. It is unfortunate that the current situation sees the Club slowly running down but in the past it has supported and encouraged not only the usual snooker and darts but has also catered for the more genteel pastimes of chess, bridge, sailing and croquet!

Ghosts

Waltham Abbey presents an extremely pleasant environment in which to work - unless you are afraid of ghosts. Whilst there are no headless apparitions or mysterious 'grey ladies' the North Site does boast a certain building which is to be carefully avoided by police patrols once the sun has set.

The entrance door to this 200-year old building is flanked ^{two} by ancient cannons and the coat of arms ~~above the door~~ on the wall

contains a hideous grinning gargoyle looking down. The building, once a residence, stands unoccupied now but in years long past it must have been a very pleasant place.

In the early 80s, contractors renovating the building found a large snake embedded into the plaster above the entrance door. They disposed of it - and then strange things began to happen. Panes of glass would shatter for no obvious reason, work tools would suddenly move of their own accord or disappear, only to reappear in another room. Noises and footsteps were heard in empty rooms and lights would be seen glowing at strange hours in the locked house.

The contractors refused to work alone in the building and always vacated it before dusk. Police dogs shied away and one officer who entered the building to check strange lights claimed that as he ran out of the place, something had followed him down the stairs.

It has now come to light that in the 17th and 18th centuries, to protect ones house from the devil, a snake would be killed at the full moon and then nailed above the door.

Had the contractors, in their ignorance, thrown away the very thing that had protected that house for all those years? Who knows? The house is still empty at the time of writing this profile and it stands silent and alone, shrouded in mist from the river.

End of an era

With the closure of Royal Ordnance and the run-down of RARDE, four hundred years of history will have passed since the production of that first batch of gunpowder at Waltham Abbey.

Over the years, tens of thousands of people have entered the powdermills to work for the defence of their country and it is sincerely hoped that when the site is eventually returned to civilian use ~~that~~ the Royal Gunpowder Factory will be commemorated in some way.

It is also hoped that the Site of Special Scientific Interest will continue to be regarded for what it truly is. A unique place that not only contains many species of plants and animals but also, buried in its woodland, the last remains of what was the Royal Gunpowder Factory.