


On Her Majesty's Service

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Scope

March 1974

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'ROFs - 400 years of history'

ROFs — 400 YEA

The present 11 active factories under the control of the Managing Director Royal Ordnance Factories comprise a modern manufacturing organisation which in its earlier years was located at three basic centres — Waltham Abbey, Enfield and Woolwich — and grew to as many as 50 factories during The Second World War.

This historical article by **KELVIN McFADYEN** traces the path of the organisation since its earliest days.

The organisation that grew from small beginnings to 50 factories in World War II

THE COLLECTIVE TITLE of "Royal" was bestowed on the ordnance factories by King George V in December, 1930, but the roots of the organisation can be traced back almost 400 years to the reign of Queen Elizabeth.

The Waltham Abbey Powder Mills, later known as the Royal Gunpowder Factory, were in existence in 1662. There is, however, a reference — by one Thomas Lee in 1563 — that his father had worked in a mill at Waltham for the manufacture of gunpowder.

In those days the Mills were privately owned and remained so until 1787, when one John Walton was paid the sum of £10,000 by the Government for his interest in them.

Although the Waltham Mills quite rightly laid claims to be the oldest manufacturing plant, it is said that the first Royal Gunpowder Factory described as such was at Faversham, Kent. There some privately owned mills were taken over by the Government about 1767.

Faversham remained in production until 1934, when it was closed because of its vulnerable position on the Kent coast.

Cordite

The factory at Waltham went from strength to strength under Government control. At the beginning of the first World War production of cordite was increased from 26 to 140 tons a week, no mean achievement in those days.

After 1918, production at Waltham declined and an increasing amount of development and experimental work was undertaken. The factory was responsible for a very large part of the work on RDX and its family of explosives.

The time was to come, however, when Waltham could no longer fulfil the production needs of the time and new factories had to be built to take over its role. Waltham was finally closed in 1945, having survived the second World War virtually unscathed despite its vulnerable position.

Now, as the Explosives Research and Development Establishment, the spirit and traditions of Waltham remain. Although no longer part of the ROF it works in close conjunction with its present day successors at Bishopton and Bridgwater.

More modern

Just down the road from Waltham Abbey, by the River Lea,

stands another of the original three — the Royal Small Arms Factory at Enfield. But its history is much more modern than the other two.

Until 1811 small arms had been produced for the Services by private industry. Because of a slowness to respond to wartime needs, the Government decided to establish a factory of their own for the production of the Service musket, the "Brown Bess." This factory, at Enfield Lock, later became known as the Royal Arms Mills.

As a result of the lessons learned in the Crimean War, it was decided that the Army should be better equipped in future. The principle of the "rifled" musket was known and the buildings at Enfield provided a convenient nucleus for new works. They were used for the development and production of the rifle.

This rifle — which took the factory's name — was acknowledged as the finest weapon of its day and was the father of the famous Lee-Enfield rifle, which

THE ROYAL FOUNDRY, WOOL



lasted for some 50 years with only minor modifications.

The naming of a rifle after the factory started a tradition that persists to this day. Thus, in an Enfield product, you will often find some allusion, usually the EN of Enfield, to the factory's name. Prime examples of this are the Bren, Aden and Rarden guns.

Across the Thames, in south-east London, is the site of probably the most famous and historic of all the ordnance factories. The growth of the Royal Arsenal

Woolwich can be traced from the site's beginnings as a defence emplacement in 1588, when the Spanish Armada threatened our shores.

"Tower Place"

Formerly called Woolwich Warren, because of its large rabbit population, the Arsenal grew from an amalgam of establishments transferred there for various reasons. After a visit from George III in 1805, the Warren

acquired the name "Royal Arsenal," as befitted the site's activities.

The building known as "Tower Place," the seat of the Master Gunner of England, later became the official residence of the Lieutenant General of the Ordnance. Thus the nucleus of the Arsenal grew up piecemeal.

Although the proving of guns had taken place at Woolwich for many years, the first manufacturing department to be established there was the Royal Gun Carriage

SCENES FROM 1750 — THE AMMUNITION



Mixing powder in the Royal Laboratory.



Melting metal in the Royal Laboratory.

YARS OF HISTORY

The day the King came!

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WOOLWICH



Factory. From its humble beginnings as a storehouse for ships' carriages in the early 17th century, the carriage factory began operations in 1688.

A few years later in 1696 the Royal Laboratory, which was responsible for the supply of ammunition, was established at Woolwich, having been transferred from Greenwich.

The final main department to be established at Woolwich was the Royal Foundry, later known as the Royal Gun Factory.

It can be said that this department owed its existence in part to an accident. From 1704 to 1716 all guns required by the Government were cast at a foundry at Moorfields, in the City of London, owned by one Matthew Bagley.

In 1716 some guns captured by the Duke of Marlborough were ordered to be used in the manufacture of new ordnance and on May 10 that year a distinguished gathering assembled to watch the operation.

When all was ready, pouring commenced; but the dampness of the mould and consequent generation of steam caused the metal to fly with terrible results and 17 were killed, including Mr. Bagley and his son. Many others were injured.

The "confabulation" that followed resulted in an order being made for the building of a suitable gun foundry at Woolwich.

Hey-day

The Arsenal — which comprised a collection of factories and workshops — grew in size and importance, enjoying its hey-day during the two World Wars. However, for various reasons, the importance of the arsenal as a manufacturing centre declined. It was eventually closed as such in 1967, some of its functions being transferred to other ROFs.

This, however, is only part of the story of the evolution of the ROFs. Armaments became more sophisticated, private industry entered the field, and by the latter part of the 19th century the private armament industry was considerable.

The coming of World War I demonstrated to the Government that much greater public participation in this field was desirable. But private industry was unable to cope with the extended requirements of more modern warfare; and it was decided that the ROFs should assume a more important role in war production than ever before.

No new Ordnance factories were built, but the capacities of Waltham, Woolwich and Enfield

were substantially increased. Some new National Munitions Factories were, however, built during the war.

When the second World War loomed on the horizon, the full potential of the ROFs was realised and an expanded organisation put into effect.

In 1935 the Royal Ordnance Factories went on a war footing. New factories sprang up rapidly. By 1939 some 25 factories were in production; three years later there were 50.

Wartime for the ROFs not only brought expansion but, as in other fields, displays of bravery and among awards made to ROF personnel were a George Cross and 15 George Medals.

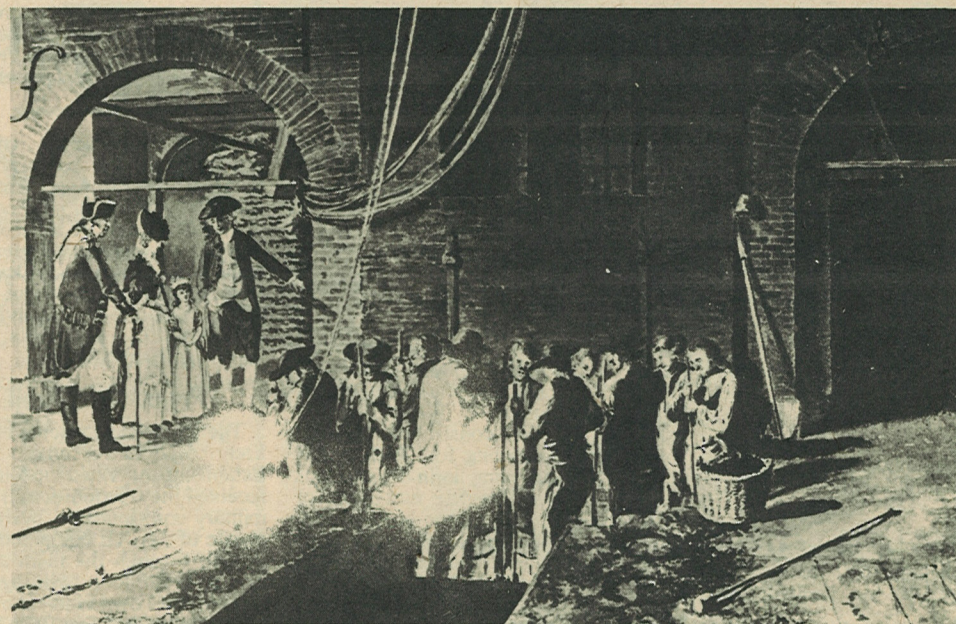
Reactivated

After World War II the number of factories was steadily reduced — apart from the period of the Korean War, when three former factories were reactivated. Peacetime circumstances are met by 11 active factories.

The post-war closure of ROFs was not, however, undertaken wholesale. Britain had to begin to rebuild and the ROFs, ever ready to accept a challenge, turned part of their attention away from munitions to civil work.

With little modification to the factories and tooling, the ROFs began to produce a wide range of articles from railway wagons to fertilizers, from gas and electric cookers to coal mining machinery; from prefabricated house parts to internal combustion engines.

Although an organisation steeped in history and tradition, the ROFs are at the forefront when innovations and new thinking are required. They are currently at the beginning of a new era. Following a Report of a Committee chaired by Sir John Mallabar, and a subsequent study of their future role by Sir Derek Rayner when he was the Chief Executive (PE), they are becoming even more commercially orientated. They are likely to become the first organization within a Government Department to adopt a Trading Fund.



King George III (extreme left) pictured on a visit to the Royal Foundry Woolwich on July 9, 1773.

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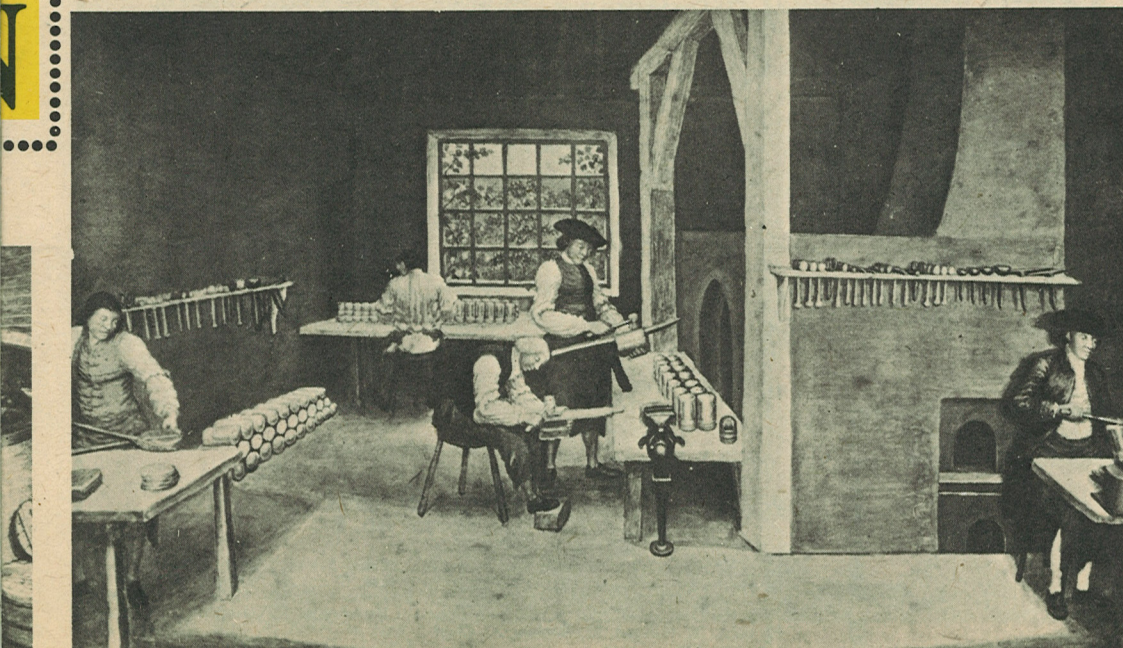
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Making charges in the Royal Laboratory.