

## Section 105

# A Note on Weapons & Equipment

## Introduction

In this note we cover the weapons which the Berkshires used and some of those which were used against them by the Germans. It also affords an opportunity to describe some other items of equipment which are referred to from time to time in the text.

It is divided up into subsections as follows:-

Clothing

Personal weapons carried by the Berkshires

Team weapons used by the Berkshires

German shells and missiles

Gas and anti-gas equipment

Personal medical supplies

Signalling equipment

Cooking equipment

What is not covered are the heavy weapons used by the artillery and motorised vehicles such as tanks and lorries.

The clothing and equipment worn and carried depended very much on circumstance. For example there were Marching Order and Fighting Order where the details of what had to be worn and carried were prescribed down to the minutest detail. Inspection parades were ruthless at exposing the slightest discrepancy.

The descriptions apply to the Royal Berkshires and variants such as the clothing for Scottish and Irish regiments are not included.

## Clothing

### Caps

The standard cap issued at the start of the war was the 1902 pattern stiff SD Cap. This was replaced by the softer 'Gor Blimey' version late in 1915 as it was much more suitable for trench warfare. Usually a regimental badge was worn at the front and occasionally at the side.

### Webbing

Webbing was there to support other equipment. Technically the term applied only to belts made of woven

cotton but in its more general sense it applies to leather belts and the Sam Browns worn by officers.

The basic webbing kit consisted of a waist belt with one or two shoulder straps which went diagonally across chest and back. The standard kit was of American design and manufacture and was introduced in 1908, made by the Mills Equipment Company. However they did not have sufficient manufacturing capacity to cope with the demand of the war so a modified 1914 pattern was developed which could be made in small workshops.

Ammunition pouches were built into the webbing. In the 1908 pattern there were two cartridge carriers each carrier had five pouches each pouch holding three chargers of 5 rounds each. In the 1914 pattern the carriers were replaced by two large pouches which held a 50 round cotton bandolier, the rounds being in 5 round chargers and there was an additional single charger pouch for immediate use. The 1914 pattern was designed initially for training purposes only, hoping that either the war would be over or production of the 1908 pattern would increase, it did but it nowhere near caught up with demand and most service battalions went abroad with 1914 patterns.

## Personal Weapons carried by the Berkshires

### The Lee-Enfield Rifle

The Lee-Enfield rifle was introduced well before the First World War and it was the Short Magazine mark III which was in general use. This was a greatly simplified version of what had been a fairly complicated weapon. It was sighted to 2000 yards and the man was expected to be able to fire at the rate of 15-20 rounds per minute. The magazine held five rounds but could be changed very rapidly. The record set in 1914 had a soldier firing 37 rounds in a minute scoring 22 bulls-eyes. The calibre was .303 inch.

As ammunition was in short supply, when battalions were at last issued with their rifles, they were also issued with a narrow tube which fitted into the barrel and reduced the calibre to .22. So, for most of the early training, a soldier would be firing .22 rounds rather than .303.

## Bayonets

The bayonet was a weapon which was particularly effective in close combat situations such as clearing trenches. In the words of lance corporal Jones 'They don't like it up 'em' was as true of the first world war as the Sudan campaign.

It was normally some 17½ inches long and kept in a scabbard on the left hand side. It had a hand grip which meant it could be used as a short stabbing sword but it was usually attached to the end of the Lee-Enfield rifle where it served somewhere between a sword and a pike.

One particular type of bayonet has a special relationship to the Royal Berkshires. It was a bayonet for an officers pistol which was invented by Captain Arthur Pritchard of the 2nd Battalion. He had been wounded in 1916 and while he was recuperating in England he approached Wilkinson Sword with the idea that they should manufacture his bayonet. but at the time they were fully contracted in making the 1907 type bayonet and cavalry swords so they turned him down. As a result he went to Greeners who changed the design slightly by using the tips of 1874 model Gras bayonets instead of the 1897 pattern sword.. Probably around 150 were made and sold privately to officers.

## Revolvers

Initially revolvers were issued only to officers but soon it became obvious that men forming part of a machine gun team could not carry their rifles and be efficient at the same time so the machine gunners were also issued with revolvers which they had to keep in a holster and which was attached to them by a lanyard.

As was to be expected revolver practice was required at frequent intervals but often had to be put off because of shortage of suitable ammunition. A rifle cartridge would be pressed into a sandbag giving a round target about the size of a sixpence. You then stood back 30 feet and aimed. If you scored a hit a sizable hole was blown in the sandbag. three hits out of five was considered quite good.

Many types of revolver were issued but after 1915 the typical one would be the Webley .455 calibre which held six rounds.

## Rifle Grenades

The rifle grenade was not standard issue except to specialised rifle grenadiers, however supplies often fell into the hands of ordinary riflemen. It consisted of a metal stick which went down inside the barrel of a standard rifle loaded with a blank cartridge. The other end was a round explosive head which was segmented to produce lots of shrapnel. The rifle was propped up at a steep angle and a pin removed to free a spinning vane which ensured the missile dropped nose first. A

calibrated quadrant attachment was used to set the range.

There were several types of rifle grenade. One variation was the length of the rod. With a long rod the charge accelerated the grenade smoothly but with short rods the explosion of the charge shot up the barrel and hit the rod with sudden force, often causing a jam and or splitting the barrel. The long rods however were awkward to carry around There were various means of priming the grenade. In some designs the pin was pulled out by being attached via a piece of wire to the end of the barrel. With the Mills bomb a clip was devised to hold the lever to the grenade until the moment of launching. This eventually led to the development of the cup launcher which did away with the need for the rifle.

The instruction for the no 11 grenade which was designed to be fired from older Lee Enfield and Lee Metford rifles read:-

- 1 Fit rod and secure it with the small securing screws
- 2 Gauge with plug and fit detonator
- 3 Insert rod in rifle and rest the butt on firm ground at the angle necessary for range
- 4 Remove safety pin and pull back the safety pin collar to disengage it from the vane wheel.
- 5 Insert a round of special blank.
- 6 Fire.

There was always the hazard that the rod attachment would penetrate the cap on the detonator when it was fitted and the men used a pencil to compare the depths to make sure it was safe. All this however took time and the rate of fire was quite slow. However the rifle grenade was a very accurate and effective weapon used especially against German mortar emplacements.

The several types of grenades were designated as follows:-

- 1 - This first model introduced in 1914 was quite a complex piece of machinery which was armed by inertia as the grenade was fired.
- 2 - Often known as the 7mm or Mexican grenade - much simpler than the type 1 and obtained initially from an export order for Mexico. It had a steel rod and a clip to engage the muzzle
- 3 - The Hale grenade was even more complicated than the type 1. It was armed in flight by the vanes and although expensive to manufacture went through 8 variants and was very successful. It had a 10 inch rod.
- 11 - variant of the type 3 for older rifles
- 15 - Ball grenade because of the spherical bomb used.
- 16 -

17 - designed by the Royal Laboratory and designated opera hat - never made the grade

20 - development of the type 3 which used a safety collar instead of the vanes to arm it. Introduced 1916

22 - Newton Pippins - much simpler than the type 3 and all made in France by Army workshops. most at Armentieres with a few at Hazebrouck. Its main advantage was that it could reach a range of 250 to 350 yards - nearly twice that of the type 3 family. It had 15 inch rods

24 - used a wax paper container for the ammonol and was less likely to explode prematurely otherwise similar to the type 20.

25 - Sangster - armed in flight with a good range and detonated when the grenade hit the ground. However it was not a commercial proposition as it required very precise engineering.

26 - intended for the West Spring gun it was used to fire phosphorous grenades

27 a rodded percussion grenade firing 13.5 oz of phosphorous.

28 - smoke grenade - developed to contain a variety of chemicals

29 - tear gas grenade

31 - day signal grenade had different coloured chemicals to produce the signal. - similar to the type 34.

32 - night signal grenade - differed from the day type in the content - fired a string of three stars suspended by a parachute. Fired vertically without a detonator - the shock of discharge forced the stroker into the cap.

34 - Egg - had an automatic igniter

35 had 15 inch rods

37 - superseded the type 27 with a cup discharger

38 - like type 32 but the stars changed colour on descent.

39 - Stewart - the war had ended by the time its development had been completed so it never saw service. They had an ingenious detonation mechanism which relied in the impact on hitting the ground - unfortunately it was not very effective on soft or muddy ground as it buried itself before exploding.

42 - replaced the type 31 with cup launching

43 - replaced type 32 with cup launching

44 - anti-tank grenade fired 11 oz of amatol - had 8 inch rod

45 - replaced type 38 with cup launching.

46 - replaced the type 44 with a cast explosive instead of amatol

## Mills Bomb

## Lemons

# Team Weapons used by the Berkshires

## Vickers Machine Gun

The Vickers Machine Gun was based upon the design of the Maxim after Alfred Vickers had bought the Maxim-Nordefeldt Company in 1892. The design had been greatly improved and the 1908 model was about half the weight of the original Maxim. When the war started the British Army had around 2000 Machine Guns but only about 100 were of the modern (1908) design. The War Office immediately ordered it into full scale production.

It was operated by a team of six men and was relatively light and compact to carry. It was also very reliable and accurate. The principal components were the tripod which weighed about 50 lbs and the gun itself which weighed about 28 lbs. Ammunition was fed in from a belt which could be joined together. The rate of fire was over 600 rounds per minute and when fixed firmly to its tripod there was little or no movement to upset the aim. It was water cooled and could fire continuously for long periods. The water was kept in a cylinder surrounding the barrel and as it fired, the water boiled and the steam was carried by a flexible rubber tube into a canvas bucket of water where it was condensed so that there was no cloud of steam to betray the gun's position.

Of the team of six, number one was the leader and fired the gun. number two fed the ammunition belts into the feed block and number three maintained the supply of ammunition to number 2. Numbers four to six were reserves and carriers although every member of the team was trained in all the jobs.[tcmg 39]

The procedures for going into action were exhaustively practised by the team. On the blow of a whistle Number one would dash forward with the tripod, released the ratchet held front legs so that they swung forward and secured them by tightening the ratchet handles. He then sat down and removed two metal pins from the head of the tripod. Number Two then placed the gun on top of the tripod and Number One stuck the pins back into position. Then Number three dashed forward carrying an ammunition box containing a canvas belt holding 250 rounds. Number Two then took the brass end of the belt and inserted it into the feed

block on the right hand side of the gun. Number One grabbed the tag end and pulled it through to the left hand side pulling the crank handle twice to complete the loading operation. A flick of the finger by Number One sprang the spring loaded rear sight into a vertical position. There was a spring loaded wheel which could be used to select from a series of pre-calibrated ranges. [tcmg 66]

Practise was hard and incessant and resulted in lots of cuts and scratches to hands. It was carried out blindfold and a lot of time was devoted to clearing blockages or other problems.

The guns were given a good servicing whilst in reserve. They were completely stripped down and cleaned with worn parts being replaced. A barrel has an average life of about 18,000 rounds, after this accuracy fell off and the barrel had to be replaced. A spare barrel was always kept in reserve.

### **Lewis Machine Gun**

The Lewis gun was also originally an American invention and had great advantages for the infantry as it was relatively light, reliable and easy to use. It had a rifle-like configuration with a circular magazine mounted on top: it was air cooled and came equipped with a tripod and adjustable sights.

It began to come into field use in early 1916 and was very popular with the troops, especially as by the time they began arriving in quantity, the heavy Maxim Machine Guns had been taken into the Machine Gun Corps which operated with a degree of independence.

### **Field Mortars**

The mortar which was used for the first months of the year fired a bomb known as a 'Toffee Apple' This had a rod of about an inch in diameter which fitted into the barrel of the mortar with a head about the size of a football at the other end. The missile weighed about 60 Lbs but could not compare in effectiveness with a 'Minnie' The stick often became detached and sailed back injuring British troops. [tcmg p40]

### **Stokes Mortar.**

The Stokes Mortar was a revolutionary weapon which could launch 9 missiles before the first had hit the ground [tcmg 40]

## **German Shells and Missiles**

Most German weapons, especially the shells, were given colloquial names by the British Army and it is generally by these names that men referred to them in diaries and letters home.

### **Black Marias**

These were 8 inch howitzer shells

### **Minenwerfers (Minnies)**

The minenwerfer (mine thrower) was a German mortar which hurled steel drums packed with high explosive and scrap metal. It sailed up into the air to a height of a hundred feet and more trailing a lighted fuse behind it.

The British troops had a few seconds to try and guess its trajectory and run away from the spot where it would fall. When it did strike its effects were devastating. A trench could be turned into a mass grave in an instant with men buried alive beneath the collapsing walls. Above ground the scrap metal would fly in all directions causing terrible injuries.

### **Johnsons**

Johnsons (or Jack Johnsons) were a type of High Explosive shell, equivalent to the British 18 pounders, which, when they exploded, put out a cloud of oily black smoke. They were named after Jack Johnson, a black boxing champion.

### **Aerial Torpedoes**

### **Gas shells**

see under gas below

### **Whizz-Bangs**

This was a small high velocity shell roughly equivalent to the British 18-pounder. It got its name from the typical sound it made as it passed overhead. The saying was that if you heard 'Whiz-bang' you were safe, if you just heard the whiz then you were dead.'

### **Woolly Bears**

These were High Explosive shrapnel shells

## **Anti-gas Equipment**

### **Gas Masks**

When troops first went to France the only protection against gas was a piece of muslin holding a pad of cotton wool. Should a gas attack occur the men were ordered to urinate on the pad and bind it over nose and mouth.

By the time of Loos these pads had been replaced by gas helmets which consisted of nothing more than a flannel bag soaked in a chemical solution with a piece of mica to act as a window. The window soon misted

over and as the tails of the mask were supposed to be tucked into the mens clothing there was no air to breath and the masks were as good as useless. Nevertheless men were forced to wear them for up to three hours at a time.

## Respirators

Respirators were first introduced in 1915 and were worn on the chest ready to be pulled over the nose.

# Poison Gas

## Effects

Poison gases produce three basic effects:

**Lachrymatory**, which caused temporary blindness and inflamed tear ducts and respiratory passages; Generally speaking these do not cause permanent damage and are rarely fatal but they are greatly disabling and effectively prevent a soldier from doing his normal duty or fighting.

**Asphyxiant**, which cause the lungs to secrete water or otherwise render them incapable of absorbing oxygen. These gases could cause permanent damage and were occasionally lethal in high concentrations. Permanent damage was usually caused by the gases generating corrosive acids or other substances within the lungs and respiratory tract and hence causing permanent scarring.

**Corrosive** which inflict permanent burning of skin and internal membranes. Often the symptoms did not appear for several hours but the effects upon eyes, the respiratory tract and skin could be devastating. It was this class of gas which caused almost all the fatalities and which was the most feared as there was virtually no defence against it.

## Deployment

The individual gases were used by both sides but often had the unfortunate effect of affecting the deployers of the gas as well as the intended victims, especially when the wind direction changed suddenly. There were two principal methods of deployment:-

**The cylinder** - a metal cannister containing the gas under pressure. The gas was released by opening a valve.

**The Gas Shell** -These were similar to artillery shells and fired in the same way. However instead of being filled with explosive they contained a small gas cylinder and an small explosive charge. They were set to burst at about tree top height and spread a cloud of gas.

## Lachrymatory Gases

The first such gas used was **xylyl bromide**. This was

first deployed by the Germans on the eastern front. Apparently it was easily made and most usually deployed in gas shells. The primitive gas masks could provide effective protection.

**Chlorine** - had a considerable lachrymatory effect but was also an asphyxiant.

## Asphyxiants

The simplest was **chlorine** which was deployed in liquid form within a gas shell. When it burst the liquid turned into a low lying white cloud with a characteristic smell of new mown grass. When it came in contact with moisture it turned into hydrochloric acid whose effect on tear ducts was lachrymatory, however within the lungs it irritated the alveoli causing them to secrete liquid which eventually drowned the victim. At concentrations around 1:5000 (gas:air) it was usually fatal although such concentrations were quickly dispersed by the wind. The high concentrations caused laryngyl spasm and sudden death.

**Phosgene** or carbonyl chloride on the other hand was colourless and twice as toxic as chlorine. It had very similar effects.

**Diphosgene** was an oily liquid which hung in droplets in the air. Similar chemically to phosgene it was far more deadly and corrosive. This was first used by the Germans at Verdun in June 1916.

Protective masks and clothing provided limited protection from these gases but there was no simple antidotes.

## Corrosive Gases

Often known as blistering agents these were the most feared and deadly chemical weapons used in WW1. They were grouped into three main groups based upon their chemical constitution - mustards had a Sulphide constitution, Arsenicals had arsenic and urticants have a formic acid constituent.

**Mustard gas** - Dichloroethyl sulphide was first used by the Germans against the British at Ypres in July 1917. It is a light oily liquid with a light brown to yellowish colour. It was very persistent and could hang around for upwards of 36 hours before it ceased to be deadly. The effects were delayed and it was often several hours before the full horror dawned on the victim. It reacted slowly with human tissue causing blistering and burning and was especially damaging on contact with eyes and the respiratory tract. The longer term effects were necrosis of the skin, haemorrhaging of the airways and thus the victim fell to respiratory failure, bacterial infection or a general failure of the immune system. There was no antidote or cure and all that could be done was to reduce potential damage by decontamination. Victims often lingered on for several years but death came in the end. Protective clothing offered some protection to the skin and the masks could reduce the

effect on eyes and respiratory tract.

**Lewisite** was an American development which would penetrate most protective clothing and was highly toxic. Its effect were quite immediate, unlike mustard gas. Thus when a man was affected he knew it immediately and a palliative could be applied to minimise the effects. Lewisite itself was dichloro-2-chlorovinyl arsine and the British developed an anti-Lewisite known as 2,3 dimercapto - 1 propanol. When lesions were treated the corrosive effects could be stopped and the long term damage minimised.

**Urticiants** were similar to the substances which cause rashes from bee and nettle stings except that they would be applied in massive dosages and cause traumatic shock to the victims including heart failure.

## Personal Medical Supplies

Every man carried a field dressing which was sewn into the right front flap of his tunic.

## Signalling Equipment

## Cooking Equipment

## Other Equipment

### Entrenching tool

This came in two parts, a metal head and a wooden stock. The latter was usually attached to the scabbard and the former was carried in a pouch attached to his webbing. It usually stuck up behind man's neck and afforded some slight protection.

The main purpose of the tool was to enable the man to dig himself into the ground to afford himself some shelter.

### Wire cutters

This was attached to the top of the rifle barrel opposite the bayonet attachment. there were a pair of jaws in the open position but when the rifle was pushed against a piece of wire the jaws closed shut to cut the wire.

### Haversack

This was a canvas bag carried on the back and contained:-

- a groundsheet
- a cape

a tin mug (upside down) containing a spare pair of socks

a hold-all

The hold all in its turn contained:-

A sewing kit

knife

fork

spoon

razor (usually a cut-throat)

shaving brush

comb

tin opener

cloth for cleaning the rifle

Also attached to the back of the haversack was a bag containing the uneaten portion of today's rations and a set of D-shaped mess tins. The net result was that when in full battle order any attempt to move silently was impossible.

### Mills Webb

This was a series of pouches strapped to a man's chest which could carry 150 rounds of SAA (small arms ammunition)

### Bandolier

This was a long cotton sack with pouches which contained spare ammunition. It went over one shoulder and under the opposite arm. It was imperative that this was the last piece of equipment put on so it could be taken off quickly and used by other than the man who carried it.

### Puttees

These were strips of woolen material which covered the gap between the boots and the trousers and were meant to keep the lower leg warm and dry. They were remarkably effective in cold dry weather but once they got wet they stayed wet and could be most uncomfortable.

### Water Bottle

Each man carried a two pint water bottle on his right side. However it was more likely to contain cold tea, wine or diluted rum.

### ID Tags

Each man carried two ID tags made of vulcanised fibre. One was circular and the other octagonal. They were attached to a cord and worn around the neck. They

carried the man's name, number, religion and unit (battalion) If a man was killed the circular tag would be removed and added to other personal possessions for return to relatives. The octagonal tag was left on for identification purposes. Often a body was given only a temporary burial with no above ground markings but too often the tags had rotted away before the body could be finally laid to rest. Soldiers could buy aluminium tags which neither rotten nor burned but they were just as likely to get detached and lost.

### **Pay Book**

Every soldier had to carry his pay book (AB 64) inside the top left hand pocket of his tunic, along with his will, qualifications and record of inoculations.

### **Grenades**

Two grenades were supposed to be carried in the top right hand pocket of the tunic. However these were usually replaced with pencils, postcards tobacco and pipes.

### **Blankets**

In theory soldiers were supposed to have a blanket from October to March but they were usually too awkward to carry.

### **Periscopes**

These were fairly simple pieces of equipment consisting of a pair of mirrors in a small rectangular tube. They were used to peer over the top of a trench without exposing one's head. They were heavily advertised in local newspapers as an ideal gift for ones loved ones in the field.

## **Sources**

*Journal of Arms and Armour Society* (March 1993)

*Soldier* magazine (November 1998)