

Demolitions.

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EXPLOSIVES.

Definition.—By the term Explosive is meant a substance which, when heated or subjected to violent shock, decomposes violently with a large increase in bulk and usually a great development of heat.

Gunpowder.

Is the only low explosive used in the service. It is composed of a mixture of nitrate of soda or potash 75 per cent, charcoal 15 per cent and sulphur 10 per cent.

Gunpowder was first used by the Moors in 1300 and remained as the standard powder until about 1880. It is a relatively weak explosive increasing in bulk 275 to 1. It is safe against shock, has a heaving property and is used largely for demolitions and mines where moderate force suffices and smoke is not objectionable.

Guncotton.

Nitro Cellulose is made by nitrating cellulose (cotton or wood fibre). It is by far the most useful and important of the explosives used in the service for demolitions.

For field service, it is supplied in the form of slabs saturated with from 15 to 20 per cent of water (Mark I slabs weigh 15 oz and measure 6" x 3" x 1 3/8"). Guncotton was discovered in 1832 and developed for military use in 1863. It is a very powerful high explosive, increasing in bulk about 1000 to 1 and leaving no solid residue. When damp or wet it is perfectly safe against shock less than that of a very powerful detonator and can be cut by a saw with safety. It has a cutting effect owing to the extreme localisation of the force of explosion.

Cordite.

Is a modified form of blasting gelatin developed and introduced in 1886, consists of 37 per cent nitro glycerine, 58 per cent guncotton, and 5 per cent vaseline. It is manufactured in the form of threads, strings and tubes. Its explosive force is about 1050 to 1 and is remarkably smokeless but develops a very high temperature on explosion. When used for demolitions it is detonated and it is not essential to have it dry. It is safe to handle and will not detonate very readily.

Nitro Glycerine.

Was discovered in 1847 and developed as an explosive in 1860. Pure glycerine is treated with a strong mixture of nitric and sulphuric acids and is, for practical purposes, mixed with absorbents, themselves either explosive or inert.

It is a very powerful explosive, increasing in bulk about 1100 to 1 and leaves no solid residue. It is more sensitive than guncotton and cannot be handled wet, so that it is not so serviceable for military purposes. It will also freeze at about 45 degrees F.

Dynamite

Is the generic name of a vast number of nitro-glycerine explosives, which may be divided into two great classes, viz:—1. Dynamites with an inert base as an absorbent and—2. Dynamites with an active, explosive base. (Charcoal, gunpowder, guncotton, etc.).

Dynamite No. 1. Commercial dynamite made up into small cartridges

WE VOTE FOR VERSE THREE.

Said the shoe to the stocking,

"I'll put a hole in you."

Said the stocking to the shoe,

"I'll be darned if you."

Said the tree to the brook,

"I'll fall on you,"

Said the brook to the tree,

"I'll be damned if you do."

Said the lad to the lass,

"I'll put my arm around you,"

Said the lass to the lad,

"I'll be held if you do."

wrapped in parchment. Freezes at 40 degrees F. It is more sensitive to a blow than any other form of nitro-glycerine explosive, and has a force of explosion just less than that of guncotton.

Dynamite No. 2 is milder and slower than No. 1. Has a black colour and has the characteristics of gunpowder on explosion.

Blasting Gelatine is about 50 per cent stronger than dynamite, is very sensible to friction but is not affected by moisture or water. It is made up in cartridges similar to dynamite.

Nitro Toluol

Is made by nitrating toluol, the result being tri-nitro-toluol (commonly known as T.N.T.). It is a very powerful high explosive and is mainly used in shells. This explosive has been known for many years but has only recently been employed as a shell constituent.

Ammatol

Is a powder consisting of 80 per cent of Ammonium Nitrate and 20 per cent T. N. T. It is safe to handle but must be kept dry. It is largely used for mines and hand grenades.

Ammonal

This powder contains from 65 to 90 per cent of ammonium nitrate, 5 to 15 per cent of Aluminium and in most cases about 15 per cent of T. N. T. with a small amount of charcoal.

It is exceptionally safe to handle, but it has to be protected against moisture and is largely used for land mines and hand grenades.

Other Explosives

Monobel, Sabulite, Blasture and Fermite are manufactured and used in the service. They are all high explosives used for mines and grenades and in each case moisture has a deterrent effect.

FUZES.

In order that explosives may be detonated with safety to the firers some means by which the charge can be ignited from a distance are employed. Charges may be fired either electrically or by burning fuze.

For firing without electricity certain service fuzes are used.

Safety Fuze No. 9

Consists of flax spun and twisted into a cord with a column of fine gunpowder in the centre, the flax is covered with gutta-percha and has an exterior coating of tape and varnish. It burns at the rate of about four feet per minute and will burn under water at a depth of 90 feet after 24 hours immersion.

Instantaneous Fuze Mark III

Consists of a strand of quick-match enclosed in flax and several layers of waterproof tape with a linen thread snaked on the outside.

It burns at the rate of 30 yards per second (practically instantaneously) and will burn after 48 hours immersion in water. It is orange coloured.

Jointing

Joints between fuzes are made by cutting and splicing. Both fuzes should be cut so as to expose the quick-match or powder. These should then be spliced together with string and a little powder or guncotton placed between the surfaces so united. A piece of stick should be used as a splint. The joint can be made waterproof by being wrapped around with indiarubber tape.

For the purpose of joining several fuzes to one fuze the joints can be made on the square with diagonal lashing of string.

Junction Boxes

For firing several charges simultaneously, a junction box is provided with holes cut through the sides for the several fuzes to enter. The box is filled with powder in which the ends of all the fuzes are buried.

Portfires

For lighting fuzes portfires are supplied. These burn at the rate of one inch per minute and can be extinguished by knocking against the foot. Slow-matches and Fuzes are also used for lighting fuzes.

CONGRATULATIONS.

"Knots and Lashings" extends its hearty congratulations to:—

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