

Penetration Table.

The following table gives the maximum penetration of the pointed bullet in various materials (any rifle):—

Steel plate, best hard	$\frac{7}{16}$ in.
" ord. mild or wrought iron	$\frac{3}{4}$ "
Shingle	6 "
Coal, hard	9 "
Sand (confined)	18 "
Brickwork (cement mortar)	9 "
" (lime mortar)	14 "
Hard wood	38 "
Earth (unrammed)	40 "
Soft wood	58 "
Clay	60 "
Dry turf or peat	80 "

In order to obtain proof cover a percentage must be added to above figures.

Ramming earth reduces its resisting power.

Dangerous Space.

Is the distance between the first catch and the first graze. Its extent depends upon:—

- Firer's position,
- Height of the object,
- Flatness of the trajectory,
- Conformation of the ground.

Dangerous space decreases as the range increases.

Barometric Pressure and Temperature.

Rifles are sighted for the following conditions:—

- Normal barometer, 30 inches.
- Normal thermometer, 60 degrees.
- Still air.
- Horizontal line of sight.

When the barometer rises or the thermometer falls more elevation is required, and conversely, when the barometer falls or the thermometer rises less elevation is required.

To correct:—

For every inch the barometer rises or falls add or deduct $1\frac{1}{2}$ yards per 100 yards of range.

For every degree the thermometer rises or falls add or deduct $1/10$ th of a yard per 100 yards of range.

The barometer falls 1 inch for every 1000 feet altitude.

Ammunition.

A shrapnel shell contains 374 bullets of a total weight of nearly nine pounds. The width of the area of ground struck by the bullets of an effective shrapnel shell is about 25 yards. The length of the forward spread of the bullets at effective range is about 200 yards.

The radius of the explosion of a high explosive shell is about 25 yards.

Mark VII .303 Cartridge weighs 386 grains.

Bullet (cupro-nickel envelope) weighs 174 grs.

Charge, Cordite M.D.T. 39 grs.

Muzzle velocity, 2440 feet per second.

Cordite—Its constituent parts consist of:—

Guncotton, 65%; Nitro-glycerine, 30%; Mineral jelly, 5%.

Its chief advantages over gunpowder are:—

- It is practically smokeless,
- It is not affected by dampness,
- It will keep indefinitely,
- It is slow burning and will not explode unless the gases are confined.

Ammunition Supply in the Field (Infantry).

Every infantryman carries 120 rounds ammunition.

Regimental ammunition reserve carries 100 rnds. per man.

Art. Brigade ammunition reserve carries 80 rnds. per man.

Divisional Ammunition Column carries 50 rnds. per man.

At the ammunition supply park there should be at least 100 rounds per man.

All reinforcing troops must carry extra ammunition into the firing line.