



## Glossary of Useful Terms

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**Barrage:** A particular variety of shellfire, where artillery is directed in lines of fire. A creeping barrage provides a moving curtain of fire in front of advancing infantry. There are several variations, but all are basically intended to cover areas of ground with shellfire, in one or a series of lines. Barrages are intended as neutralizing fire, to suppress defenders (although inflicting a certain level of personnel casualties) rather than specifically to destroy materiel or defenses.

**Bombardment:** A program of target engagement. A bombardment might vary from an attack on a single target to a lengthy engagement of multiple targets over hours or even days. The aim of a bombardment is to cause both physical damage and to lower the enemy's morale. In this book, the term bombardment is used to describe artillery fire occurring before a ground attack is launched; thus "preliminary bombardment" and "bombardment" are virtually synonymous.

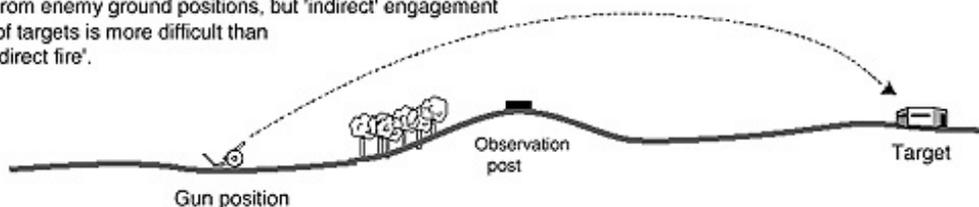
**Charge:** The specific package of propellant used to achieve a given muzzle velocity (MV) from a weapon. Guns typically have two or three charges, whereas howitzers may have four-six charges. The lowest charge produces the lowest MV; each incremental charge provides an increase in MV and hence an increase in range. In World War I, field guns fired fixed ammunition (the projectile and propellant were joined together by a metal cartridge case) and only larger caliber guns (five inches and up) used separate charges; essentially all howitzers used separate charges.

**Counter-preparation:** The tactic of firing a defensive bombardment onto enemy positions shortly before an anticipated attack. Timing was important, because if the defender fired too soon they would disclose their own battery positions while not seriously disrupting the attacking infantry. If the defender fired too late, the enemy infantry would already have advanced and the trenches would be empty.

**Covered positions/open positions:** Covered positions are those used for indirect fire (see below), and are usually behind hills and/or woods because these provide screening from enemy ground observers, though not from air observers. Open positions for direct fire (see below) are those in view of enemy observers; because of the obvious risk, these positions tend to be selected only when direct fire is considered necessary for the accurate engagement of a small target, such as a pillbox or observation post. Semi-covered positions are those close behind some protective cover which protected the gun and crew members from direct fire and allowed direct observation, but in which the smoke or flash of the weapon's firing could be seen.

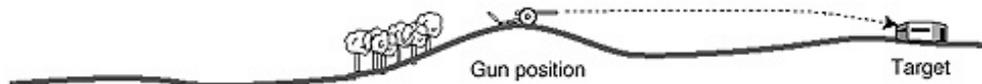
### ARTILLERY IN COVERED POSITION

Guns concealed behind crest (woods, etc) cannot be seen from enemy ground positions, but 'indirect' engagement of targets is more difficult than 'direct fire'.



### ARTILLERY IN DIRECT FIRE POSITION

Guns able to 'see' the target directly, making direct fire engagement of targets quicker and easier to control, but artillery becomes vulnerable to enemy direct fire.

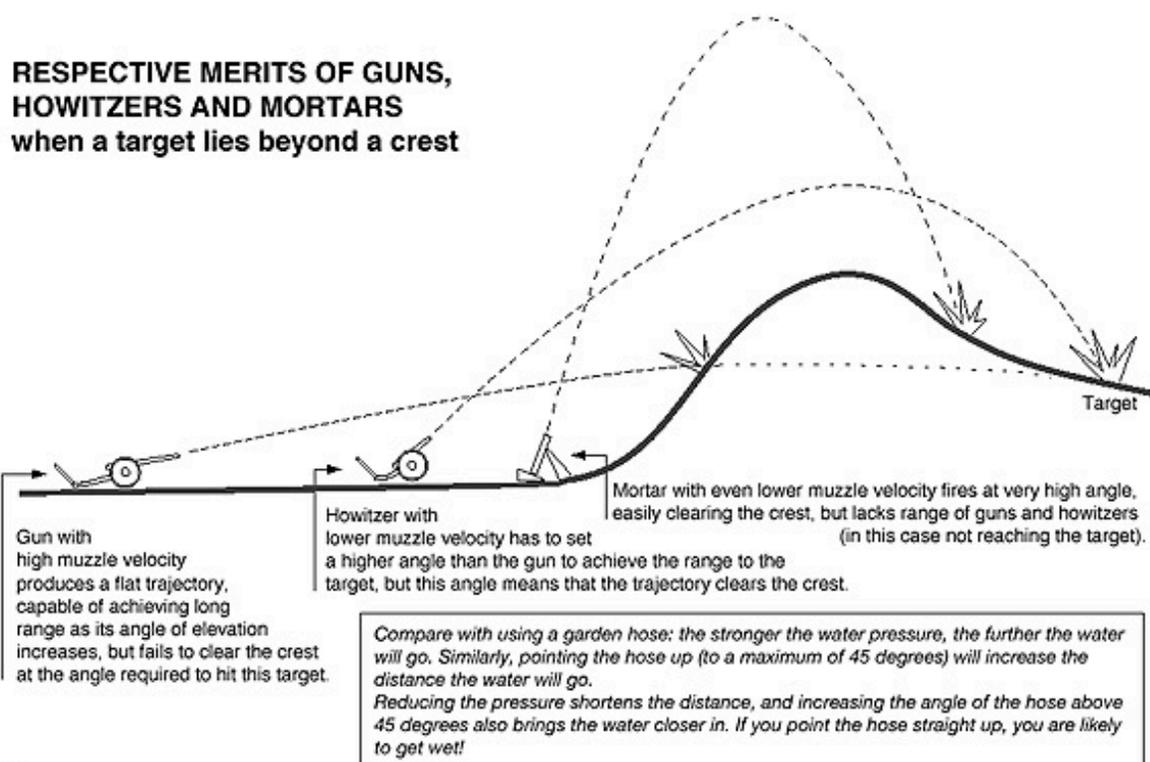


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**Direct fire:** Term used to describe situations where the gun/howitzer is aimed at targets that can be seen from the weapon. This was the normal method of fire up to the end of the nineteenth century, and in modern warfare it is still typically used by tanks, but is used by artillery only when absolutely necessary, e.g. when gun positions are under attack or to engage pinpoint targets. It is simpler to apply than indirect fire (see below).

**Flash Spotting:** A procedure employing specialist observers who look as deep as possible into the enemy's rear areas, reporting the bearing (direction) of the muzzle flashes of enemy guns. These data are collated to provide intersections indicating the locations of the guns.

**Gun:** A generic term for weapons using chemical propellants to deliver projectiles, but commonly used to describe weapons that employ stronger charges than howitzers (see below) to achieve greater ranges at similar angles of fire. Guns tend to have long barrels and use few charges.



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**Howitzer:** Weapons that employ weaker charges than guns to fire shells, commonly used to ensure that the projectile clears intervening obstacles (e.g. high ground) between the weapon and the target. Howitzers usually have relatively short barrels and use multiple charges.

**Indirect fire:** The normal method of artillery fire since the early twentieth century, which involves engaging targets that are out of sight of the gun positions. Indirect fire provides the advantage of protection from observed fire and allows flexibility in siting, but it is inherently more difficult to apply accurately and requires a more complex fire control system.

**Lifting barrage, creeping barrage:** The two main types of barrage used by the BEF. The lifting

barrage was intended to have shells hit a German trench until just before the British troops arrived at that trench, then lift to the next trench line. It economized on ammunition, but required fairly complicated calculations for each gun to hit its target, and failed in its mission if the Germans had troops located between trench lines. The creeping barrage was a later development of the lifting barrage, where the lines of fire moved across the landscape--regardless of German positions--at a rate calculated to stay just ahead of the friendly troops. It required more shells, but was technically simpler to fire and covered all enemy positions.

**Mortar:** Weapons that use angles of fire greater than 45 degrees to achieve both crest clearance (c.f. howitzer) and a steep angle of descent, useful in attacking trenches. Mortars reach shorter ranges than either guns or howitzers and tend to be much cheaper and simpler than either.

**Mounted Branch:** Another term for the Royal Horse and Field Artillery; Dismounted Branch refers to the Royal Garrison Artillery

**Predicted fire:** A method of engaging targets without prior registration (see below). It provided a considerable element of surprise, but its success depended not only on accurate target information but also on the availability of up-to-date meteorological data and accurately calibrated weapons so that the effects of barrel wear, wind speed and direction, air temperature, relative humidity, and charge temperature could all be factored in before firing.

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**Register/registration:** The procedure of adjusting the fire of guns onto their targets by observation, and recording (hence "registering") the final data of elevation and deflection needed to hit particular targets. This meant that, if the climate conditions were roughly similar between the time the targets were registered and a subsequent bombardment, the targets should be hit a second time. The disadvantage of this procedure was that the enemy could calculate the quantity of artillery in a sector, could divine some of the plan of bombardment, and could take countermeasures.

**Shrapnel:** An artillery shell filled with lead balls and a small bursting charge in the base that propelled the balls forward, acting like a shotgun cartridge. It was usually time-fused to burst 10-20 feet in the air (although a percussion fuse could be used) and was most effective against personnel and horses in the open. It was the main shell used by the Royal Artillery before the war, and remained so for field guns.

**Sound Ranging:** A method of target location that involves microphones surveyed into bases, typically employing six-eight microphones in a line along the front. These record the sound waves from the firing of enemy batteries as blips on photographic film. By correlating the blips of several microphones, and knowing the locations of the recording stations and the atmospheric conditions affecting the movement of sound waves, it is possible to locate the firing battery's position. It is also possible to direct fire onto enemy positions by correlating the blips of friendly shells bursting, though this method was not often employed.

**Terminal ballistics:** The projectile's effect on its target, concerned mainly with the patterns of shrapnel dispersal or shell fragmentation at a given range.

**Types of artillery (horse, field, medium, heavy, siege):** Terms used to categorize the different types of artillery by the type of guns they used. Horse artillery used light, fast-moving guns to move swiftly to reinforce critical situations; its speed of deployment meant it was often linked to the support of cavalry. Field artillery was the standard support for infantry, using guns and howitzers firing shells weighing (typically) 15-35 pounds. Medium artillery (typically firing 60-100 pound shells) and heavy artillery (shells over 100 pounds) provided greater impact at the expense of mobility, and were used as reinforcing weapons, controlled at divisional or higher headquarters. In the British Army there was no official designation of medium artillery; the term heavy artillery was only used for 4.7" and 60-pounder guns. Siege artillery was the official term for all artillery with the field army over five-inch caliber.

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**Zone call:** The procedure of assigning code letters and numbers to particular sectors, and also to particular enemy activity. This permitted patrolling aircraft to send brief and readily understood messages describing enemy activity. As an example, instead of sending the Morse message "four enemy guns now firing from the northeast edge of Peanut Wood," an aircraft could send "4 NF" with a map reference. This sort of standardization made it possible for any batteries in any sector to work with any aircraft observer.

["The Infantry cannot do with a gun less": The Place of the Artillery in the British Expeditionary Force, 1914-1918](#)