



# Research Report

Topic “How did gunpowder change warfare?”

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Guns and pistols are weapons that can be carried easily, and tanks and bombs can do a lot of harm. Then, missiles and nuclear bombs were invented. But all kinds of weapons have something in common that they all need, a thing called “gunpowder” to fire them. Gunpowder is a chemical thing that can create fire. Gunpowder was created in 1350 by a Chinese alchemist by accident.



Gunpowder, also known as black powder, to distinguish it from modern smokeless powder, is the earliest known chemical explosive. It consists of a mixture of sulfur, charcoal, and potassium nitrate. The liberation of oxygen by potassium nitrate causes the charcoal and sulfur to burn violently, and creates a large amount of heat and nitrogen. Black powder can reach above  $1000^{\circ}\text{C}$ , and the power after explode is extremely strong. Because it is highly sensitive easy to burn, so it is often used for quarrying, mining and road building.





Sulfur is a very common chemical element. Pure sulfur is a yellow crystal. It is often found near the volcanic areas. Sulfur is an important and essential element for all organisms, especially the components of most proteins. Charcoal is one of the main products of wood or wood raw materials that are pyrolyzed by incomplete combustion or under air. The impure carbonaceous material that retains the original structure of the wood, usually dark brown or black porous solid, is generally used for fuel, carbon, potassium nitrate (an ionic compound and has no molecular weight, so there is no molecular weight, only the formula). The appearance is transparent colorless or white powder, tasteless (depending on temperature, the higher the temperature, the higher the solubility, Among the chemical substances, the solubility change of potassium nitrate is quite obvious).



Gunpowder was created by accident. Chinese alchemist was creating medicine called “Elixir of life.” After that, China immediately became the strongest country, then the European came to China and traded with them. After they traded it from Chinese they brought it back to Europe and created new weapons that led the warfare to another realm. In the past, people needed lots of money for armour and a lot of time for training. After gunpowder spread all over the world, people started using guns instead of traditional weapons and caused more damages.

The elixir of life, also known as the immortal elixir, is sometimes equivalent to the philosopher's stone, a potion that is said to give the drinker eternal life and eternal youth. It is said that this elixir cures all diseases. Alchemists of different ages and cultures seek ways to develop panacea.

After gunpowder were created, people changed the way to rule people. They killed the people who was disobedience. Before gunpowder was added into the war, people didn't have so much desire to fight with others, but after gunpowder was added in, people fought more. Gunpowder was not only a turning point on war, it also changed the development of history.

Mongolia's three Western expeditions connect east and west. The last time expedition they used weapon that have gunpowder to destroy Europe. They also bring gunpowder to west. Then Europeans started to study gunpowder, they make gunpowder more powerful. They brought gunpowder back to China which is the connection of east and west. That is the way gunpowder transport.

In conclusion, gunpowder is a great creation, it changes the way people fight against, it's also changed history. If gunpowder wasn't created, we will not be so automatic, so even though gunpowder is a dangerous thing, but it makes our lives more easier.