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How Hand Grenades Work

Anti-personnel weapons

Believe it or not, hand grenades have been invented more than 1.000 years ago by the Chinese people as an application for gunpowder. Europeans on the other hand have been somehow lazier and developed hand grenades for warfare purposes as late as the 16th century, when gunpowder started becoming popular in military operations. Some of the first hand grenades were basically made out of a hollow metal container filled with gunpowder. A wick would ensure the role of detonator and timer. Once the wick was lit, soldiers would throw the grenade towards the enemy.However, this simple design would also make them extremely dangerous and come the 18th century hand grenades were already loosing ground on the battlefield. The arrival of the 20th century saw the coming of the First World War and hand grenades started becoming widely spread due to the mechanical ignition system, which made them practical and safe. Today hand grenades are basically indispensable in modern warfare.The design of the hand grenade hasn't changed too much over the years, except for the fact that the mechanical ignition system made it much safer. It's basically a small bomb destined for short ranges. Some variations from the design may render hand grenades that either produce a loud bang and a stunning flash of light or release toxic gases, that create screens and even spread fires.The ignition system for hand grenades is usually time-delay based, allowing the person throwing it to take cover.**Construction and operation**The most common design involves a serrated cast iron shell containing an explosive material. The central region of the grenade houses the ignition system consisting of the striker pin, percussion cap, chemical delay and finally, the detonator. The ignition safety system ensures that the hand grenade is not lit accidentally. Once the safety pin is removed and the strike lever released, the striker hits the percussion cap that lights the chemical delay, which ultimately activates the detonator.The problem with time-delay detonators is that the delay time may often vary between two to six seconds, in which case it could give the enemy an opportunity to counterattack. This is why sometimes soldiers may often make use of grenades that explode on impact.