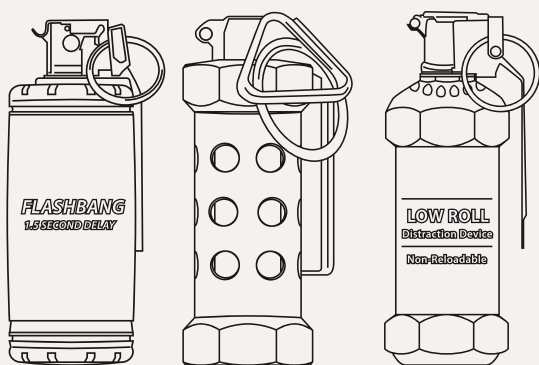


# DISORIENTATION DEVICES

Disorientation devices, also known as concussion grenades, flash-bangs, or stun grenades, are weapons that create a loud explosion and/or a very bright flash of light. While their stated objective is to cause disorientation and a sense of panic, the potential for blast injuries caused by overpressure or from fragments of the grenade is disproportionately high, and could lead to severe injuries, permanent disabilities or death.

## How they work

Disorientation devices are pyrotechnic grenades that use a combination of light, sound, and sometimes impact to distract or confuse individuals. Fundamentally explosive in nature, they carry similar hazards to any handheld explosive device.



## Deployment mechanism

Most disorientation devices take the form of handheld grenades, and are thrown at groups or individuals in order to disperse crowds.

Some disorientation devices, such as aerial warning/signalling munitions or specialty munitions found in the VENOM system, are fired as projectiles from grenade launchers. While they are designed to be fired over crowds, they can cause blunt force trauma when fired directly at individuals.



## Common types

### FLASH-BANG GRENADES

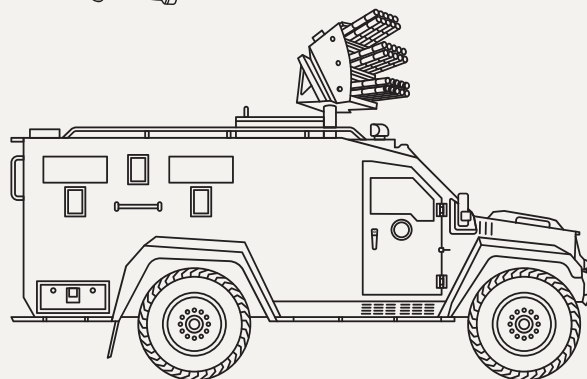
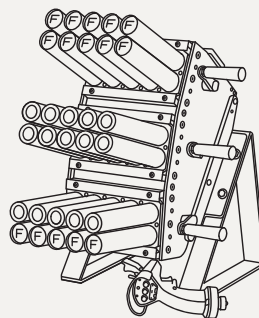
Flash-bang grenades combine light and sound to produce a disorienting effect. Upon deflagration of a pyrotechnic powder, typically magnesium, a bright flash and/or loud (160-180 dB) report is produced. These weapons are contained within a rigid grenade body and are not designed to fragment.

### “BLAST-BALL,” “STINGBALL” OR “STINGER” GRENADES

These consist of a combustible charge encased in a frangible housing. Combustion is violent and causes a loud report, and often causes parts of the case to travel as shrapnel. Some devices are designed specifically to fragment on detonation, often carrying a payload of rubber or plastic pellets.

### “HYBRID” DISORIENTATION DEVICES

These contain not only a pyrotechnic component but also a chemical component



## DISORIENTATION DEVICES

### Health Impacts

Disorientation devices burn extremely hot. When deflagration occurs in close proximity to a person, life-threatening burns are possible. The intense sound and pressure produced by stun grenades risks middle-ear injury and permanent hearing loss. Cased explosive devices generate shrapnel, which can produce blunt and penetrating impact injuries. Explosive devices may produce blast injuries from overpressure, especially when detonated near an individual. Direct impact injuries are a risk with any device that is deployed as a projectile.



LIFE-THREATENING  
BURNS



MIDDLE-EAR  
INJURY



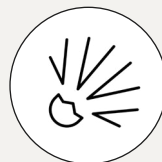
PENETRATING  
IMPACT INJURIES



DEATH

### Variables that can exacerbate injuries

Grenades that detonate, rather than deflagrate, generating greater pressures and higher risk of shrapnel.



DETONATION



OVERHAND  
THROWS



FIRING BLINDLY INTO  
CROWDS

Overhand throws, where the grenade is lobbed on a trajectory at or above head level, risk detonations near the upper torso or head, where resultant injuries may prove life threatening.

Severe injuries appear to occur more often when grenades are thrown or fired "blindly," either into buildings or into the midst of a crowd.

### Policy recommendations

- » Deploying stun grenades into crowds, or directly at individuals, should be prohibited.
- » The use of disorientation devices for crowd dispersal is inappropriate and often causes serious injury.
- » Quality control and regulation of disorientation devices is poor and requires significant attention.

**When deflagration occurs in close proximity to a person, *life-threatening burns are possible.***