



Terrorist Use of Nuclear Blast

Depending on how sophisticated the terrorist or terrorist organization is, a nuclear device either can be detonated—resulting in an explosion creating intense heat, light, radiation, pressure, and spread of radioactive material—or, if the attempted detonation is unsuccessful, the conventional high-explosives portion of the nuclear device could still explode—spreading the radioactive nuclear material. Nuclear devices can range from a weapon carried by an intercontinental missile to, theoretically, at least, a bomb small enough to be carried by an individual. A “suitcase bomb” blast, though not as great as that of a military nuclear weapon, still could be very destructive. Experts believe that a large, strategic nuclear attack on the United States is unlikely these days. Other scenarios also are unlikely—the materials are expensive and the technology is complicated. However, terrorists and rogue states can be resourceful and unpredictable.

Potential targets for a nuclear blast attack include the following:

- Strategic military bases and missile sites
- Government centers such as national and state capitals
- Major ports and airfields
- Financial and industrial centers
- Important transportation and communication centers
- Petroleum refineries and electrical power plants

What Happens

A nuclear blast creates a fireball that vaporizes surrounding material and carries it aloft in the familiar “mushroom cloud.” At ground level, it causes widespread destruction and fires. The vapor cloud condenses into radioactive dust (“fallout”) that can travel long distances and contaminate whatever it settles on. The nature and extent of these hazards depend on the characteristics of the bomb, where it detonates, and weather conditions.

A nuclear blast can immediately kill or injure people in range through force, heat, or flying debris. People partially protected by distance or shielding can be blinded or burned. Other effects may be delayed, and their seriousness

depends on the type and amount of radiation absorbed by the body (the dose) and the exposure pathway (what organs and tissues receive this dose). The longer the exposure to radioactive materials and radiation, the greater the dose. People close enough to the blast to receive large doses of external radiation could develop radiation sickness and die within days or months. External exposure to lower doses of radiation and internal exposure from breathing air or eating food contaminated with radioactive fallout could lead to an increased risk of developing cancer and other health effects later on.

Fallout from a nuclear detonation remains radioactive for a period of

time; however, approximately 99% of the radioactivity is gone in the first two weeks. (Fallout from a radioactive dispersion device—a conventional explosion spreading other types of radioactive material incapable of producing a nuclear detonation—would last longer.) The presence of radioactive material cannot be seen, smelled, or detected by normal senses. It can be detected only by using sensitive monitoring devices. Monitoring can project the arrival of radioactive fallout from a distant blast. Such predictions would be announced through official warning channels, but any increase in the buildup of gritty surface dust and dirt would be reason to take protective measures.



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How to Prepare

- 1 **Stay informed.** ALL Marines (active duty and Reserve), civil service, and contractor personnel with a NIPR computer account—verify and update official contact information populated in the **Marine Corps Enterprise Mass Notification System (eMNS)** by information found in the Global Address List (GAL), and self-register all cell phones, home phone, email addresses, etc. in eMNS. Registration of personal information enhances Marine Corps Installations' ability to rapidly provide emergency information and changes to the base's operating status during non-working hours and wherever you are.
- 2 Find out whether buildings in your area have been built as blast shelters or designated as fallout shelters. If not, make your own list of potential shelters near work and home, including interior areas of large buildings and basements, subways, and tunnels. If you live or work in a large building, talk to management about the safest place in the building for sheltering and about stocking emergency supplies.
- 3 Make a written emergency plan that includes evacuation routes.
- 4 Make an emergency communication plan in case family members are separated.
- 5 Build an emergency kit. If you become aware of heightened threat, increase your supplies to last for up to two weeks.
- 6 The three keys to protection from radiation and fallout are time, distance, and shielding:
 - » Distance—The farther you are from the blast and radioactive fallout, the lower the dose to your body.
 - » Shielding—The heavier and denser the materials are between you and the radiation or radioactive fallout, the lower the dose to your body.
 - » Time—The less time spent exposed to radiation and radioactive fallout, the lower the dose to your body.
- 7 Report suspicious activity at www.USMCEagleEyes.org.

What to Do

- If a nuclear attack is anticipated, those near likely targets could decide or be advised to evacuate.
- In the event of **evacuation**—
 - » Listen to the radio or television for official instructions and information about procedures, routes, and shelters.
 - » Take an emergency supply kit.
 - » Consider neighbors who may need help.
- If a **nuclear blast occurs** with no warning or too little time to get out of the area—
 - » Shelter-in-place—Take cover immediately as far below ground as possible. Any protection is better than none at all. The more distance from the detonation, the more intervening shielding, and the less time spent in radioactive areas, the better.
 - » Take your emergency kit, if possible.
 - » To keep out radioactive dust, close doors, windows, and vents and turn off ventilation systems. These actions are typically called “sheltering-in-place.”
 - » Stay put and use radio, TV, or the Internet to get official information and instructions.
 - If you are **caught outside** by a nuclear blast—
 - » The time it takes the heat and shock waves to arrive depends on your distance from the detonation. Take cover behind anything that might offer protection from the blast, lie flat on the ground, and cover your head and hands. Use any available cloth as a breathing filter.
 - » Don't look at the flash or fireball—they can blind you.
 - » No matter how far you are from the blast site, take shelter from fallout as soon as you can, upwind if possible.
 - » Before entering shelter, dust off, keeping your mouth and nose covered. As soon as possible, shed contaminated clothing and wash your hair and skin.

Set your own course through any hazard: stay informed, make a plan, build a kit. Live Ready Marine Corps.



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- **After a nuclear blast**, most fallout would occur in the first 24 hours, near and downwind from the blast. People in most affected areas could be allowed out of shelter within a few days and, if necessary, evacuated to unaffected areas. Those in the areas with highest radiation levels might have to shelter for up to a month. If you must be outside where radioactive fallout is a concern—
 - » Clean and cover any open wounds on your body.
 - » Cover your mouth and nose with a damp towel.
 - » Use stored food and drinking water, not fresh food or open water.

Where to Find Additional Information

- Department of Homeland Security (Ready.gov) & FEMA—www.ready.gov/nuclear-blast

