

[Terrorism Q&A Web site](#)

Dirty bombs

What is a "dirty bomb"?

A "dirty bomb," also known as a radiological weapon, is a conventional explosive such as dynamite that has been packaged with radioactive material, which scatters when the bomb goes off. A dirty bomb kills or injures through the initial blast of the conventional explosive and by airborne radiation and contamination -- hence the term "dirty." Such bombs could be miniature devices or as big as a truck bomb.

How much expertise does it take to make a dirty bomb?

Not much more than it takes to make a conventional bomb. No special assembly is required; the regular explosive would simply disperse the radioactive material packed into the bomb. The hard part is acquiring the radioactive material, not building the bomb. The Washington Post reported in March 2002 that the Bush administration's consensus view was that Osama bin Laden's al Qaeda terrorist network probably had such often-stolen radioactive contaminants as strontium 90 and cesium 137, which could be used to make a dirty bomb.

Indeed, the relative ease of constructing such weapons makes them a particularly worrisome threat, counterterrorist experts say. Even so, expertise matters. Not all dirty bombs are equally dangerous: the cruder the weapon, the less damage caused. We don't know if terrorists could handle and detonate high-grade radioactive material without fatally injuring themselves first.

Is a dirty bomb a nuclear weapon?

No. Nuclear weapons involve a complex nuclear-fission reaction and are thousands of times more devastating.

Is a dirty bomb a weapon of mass destruction?

Yes, but perhaps more in its capacity to cause terror and disruption than its ability to inflict heavy casualties, experts say. Depending on the sophistication of the bomb, wind conditions, and the speed with which the area of the attack was evacuated, the number of deaths and injuries from a dirty bomb explosion might not be substantially greater than from a conventional bomb explosion. But panic over radioactivity and evacuation measures could snarl a city. Moreover, the area struck would be off-limits for at least several months during cleanup efforts, which could paralyze a local economy and reinforce public fears about being near a radioactive area.

Has a dirty bomb ever been used?

No. According to a U.N. report, Iraq tested a one-ton radiological bomb in 1987 but gave up on the idea because the radiation levels it generated were not deadly enough.

Which radioactive materials could be used to make a dirty bomb?

Many types of radioactive materials with military, industrial, or medical applications could be used in a dirty bomb. Weapons-grade plutonium or uranium, as well as freshly spent nuclear fuel, would be the most deadly but are also the hardest to obtain and handle. Medical supplies such as radium or certain cesium isotopes, used in cancer treatments and X-ray machines, could be used, although they generally would be less dangerous. As little as a measuring cup's worth of radioactive material would be needed, but experts say that such small amounts would be unlikely to cause severe harm, especially if scattered over a wide area.

Do terrorists have such radioactive substances?

It's hard to say, but some experts think they might, and many experts worry that determined terrorists could acquire them. The International Atomic Energy Agency, a Vienna-based division of the United Nations, has documented almost 400 cases of trafficking in nuclear or radiological materials since 1993. Many such supplies are subject to few controls or are poorly guarded, particularly in the former Soviet Union. Reports also have cited weak protection of spent fuel at U.S. nuclear facilities; other experts worry about the security of the nuclear facilities in Pakistan, India, and other developing countries.

For more on dirty bombs, [click here](#).