

# TERRORISM: Q & A

## COUNCIL ON FOREIGN RELATIONS

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## Loose Nukes

### What are “loose nukes”?

The term originally referred to poorly guarded nuclear weapons in the former Soviet Union that might tempt terrorists or criminals. Today, experts use the term to refer to nuclear weapons, materials, or know-how that could fall into the wrong hands. Areas of particular concern include the black market in uranium and plutonium, as well as the temptation for poorly paid former Soviet nuclear scientists to sell their skills to the highest bidder.

### In which countries are loose nukes a problem?

Mainly in Russia. Before its collapse in 1991, the Soviet Union had more than 27,000 nuclear weapons and enough weapons-grade plutonium and uranium on hand to triple that number. Since then, severe economic distress, rampant crime, and widespread corruption in Russia and other former Soviet countries have fed concerns in the West about loose nukes, underpaid nuclear scientists, and the smuggling of nuclear materials. And security at Russia's nuclear storage sites remains worrisome; only 40 percent of them are up to U.S. security standards.

The former Soviet republics of Ukraine, Belarus, and Kazakhstan—where the Soviets based many of their nuclear warheads—safely returned their Soviet nuclear weapons to post-communist Russia in the 1990s, but all three countries still have stockpiles of weapons-grade uranium and plutonium. Moreover, Ukraine and Kazakhstan have nuclear power plants whose byproducts could not be used to make a nuclear bomb but might still tempt terrorists trying to make a “dirty bomb” —a regular explosive laced with lower-grade radioactive material.

Some experts also worry about Pakistan, a relatively recent nuclear power and now a key coalition member in the war on terrorism with untested security systems, dozens of nuclear weapons, and many Islamist militants who sympathize with Osama bin Laden. The United States recently offered to help Pakistan improve its nuclear security measures. Pakistan reportedly began quietly accepting American help in early November 2001.

### Have any Russian nuclear weapons gone missing?

There have been no confirmed reports of missing or stolen former Soviet nuclear weapons. Still, there is ample evidence of a significant black market in nuclear materials. The International Atomic Energy Agency (IAEA) has reported 175 nuclear smuggling incidents since 1993, 18 of which involved highly enriched uranium, the key ingredient in an atomic bomb and the most dangerous product on the nuclear black market.

**Have terrorist organizations ever tried to obtain Russian nuclear weapons?**

Yes. Russian authorities say that in the past three years alone, they have broken up hundreds of nuclear-material smuggling deals. In October 2001, shortly after the World Trade Center attacks, a Russian nuclear official reported having foiled two separate incidents over the previous eight months in which terrorists had “staked out” a secret weapons storage site. In the 1990s, U.S. authorities discovered several al-Qaeda plots to obtain nuclear materials, and CIA Director George Tenet recently told the Senate Select Committee on Intelligence that Osama bin Laden had sought to “acquire or develop a nuclear device.”

**Could terrorists steal a Russian nuclear weapon?**

It's hard to say. Russian authorities say their nuclear weapons are under “safe and reliable” protection against a wide range of terrorist attacks. But Western analysts still worry that Russian security may be lax. And other Russian nuclear materials are less well-protected, including storage sites for an estimated 1,100 metric tons of highly enriched uranium and 160 metric tons of plutonium.

**How do governments protect their nuclear weapons?**

The United States protects its nuclear weapons with barriers, guards, surveillance cameras, motion sensors, and background checks on personnel. Several other nuclear powers—although not all—take similar precautions. Russia's security measures are much flimsier. Guards at nuclear weapons facilities have gone unpaid for months at a time, and even basic security arrangements such as fences, doors, and padlocks remain inadequate in many locations. Moreover, U.S. nuclear weapons are engineered with “built-in” security mechanisms to prevent unauthorized detonation. But we know very little about what sort of built-in safeguards there may be on Russia's or Pakistan's nuclear arsenals.

**Can Russia afford adequate security measures for its nuclear arsenal?**

The cash-strapped Russian government has relied on U.S. assistance to keep its nuclear arms safe. Since 1991, the United States has spent more than \$10 billion to improve security for Russian weapons, nuclear materials, personnel, and facilities.

**Since September 11, is the United States spending more to keep Russia's nuclear arms secure?**

Yes. Although the Bush administration originally planned to cut spending on such programs, it has embraced “threat-reduction” initiatives since September 11. The White House's 2003 budget includes a record \$1.2 billion for nonproliferation efforts, up a third from 2002. Of that amount, \$800 million will go to programs in Russia, a 17 percent increase from 2002. At a G-8 economic summit in June 2002, the world's wealthiest countries pledged together to match a U.S. pledge to spend \$10 billion over the coming decade to help secure and reduce Russia's biological, chemical, and nuclear arsenal. In exchange, Russian President Vladimir Putin agreed to grant the European donors auditing authority and full access to Russian labs and disposal sites.

## **What has the United States done to help ensure the security of Russian nuclear weapons?**

After the Soviet collapse, the United States started numerous programs to help reduce the threat of loose Russian nukes, either by guarding them better or destroying them. For example, at Russian nuclear storage facilities for both bombs and weapons-grade uranium and plutonium, the United States has helped pay for reinforced steel doors, improved perimeter fences, and motion detectors. Thanks in part to other U.S. programs, since 1991 Russia has deactivated 5,779 nuclear warheads, destroyed 439 ballistic missiles, and eliminated hundreds of bombers and missile launchers. But nuclear experts say that far more must be done. A January 2001 bipartisan congressional “report card” on these programs called for spending \$30 billion over the next ten years—more than three times the current figure.

## **Have terrorists tried to buy off Russian nuclear scientists?**

Yes. In the early 1990s, the Japanese doomsday cult Aum Shinrikyo tried—and failed—to recruit physics students from Moscow State University and some of the notoriously underpaid scientists working at Russian nuclear facilities. And in October 2000, a Russian security official said that the Taliban had tried unsuccessfully to recruit a former Soviet nuclear expert for work in Afghanistan. In response, the United States has funded programs such as the International Science and Technology Center in Moscow, which provides nonmilitary work opportunities for weapons scientists from former Soviet countries.

## **Has nuclear fuel ever been smuggled out of Russia?**

Yes. In 1994, Czech authorities intercepted nearly three kilograms of highly enriched uranium—15 percent of the mass necessary to make a nuclear bomb—stored in a car on a busy Prague street. Officials suspected that the material had been stolen from an engineering institute southwest of Moscow and arrested the three men in the car—a Czech, a Ukrainian, and a Belorussian, all with backgrounds in the nuclear field. Unlike the Prague incident, most of the 175 nuclear smuggling cases reported by the IAEA since 1993 involved natural, non-enriched uranium, which could not produce an atomic weapon but could be stuffed into a “dirty bomb.”

## **Could terrorists steal the Russian “suitcase bombs” allegedly manufactured during the Cold War?**

We don’t know—and we don’t know whether there even are any such devices. In 1997, Aleksandr Lebed, a former Russian general and political rival of then Russian President Boris Yeltsin, made the headline-grabbing announcement that several dozen Soviet-era nuclear “suitcase bombs” had gone missing. Reportedly built in the 1970s, these miniature devices were said to weigh less than 100 pounds and fit in a typical attaché case. But Russian authorities vigorously denied that any nuclear weapons had gone missing and insisted that no “suitcase bombs” had ever been built in the first place. Experts still don’t know the true story. Some suspect that the Russian government has not been completely candid about the existence of suitcase bombs; others say they never existed.

## **Could terrorists steal Russian “tactical” nuclear weapons, such as mines, torpedoes, or short-range missiles?**

Probably not. Russia has thousands of such battlefield nuclear weapons, but stealing such devices would not be easy. Still, experts do seriously worry about the prospect. Compared to their city-killing strategic counterparts, tactical nuclear weapons are smaller, less powerful, more numerous, and easier to smuggle or steal. Tactical nuclear weapons might also have weaker (or no) built-in safeguards against unauthorized detonation. And because battlefield nukes have never been subject to a formal arms-reduction treaty with monitoring and transparency measures, experts cannot be sure how rigorously Russia inventories and protects its tactical stockpile.

**What kind of damage could a terrorist organization do with a nuclear weapon?**

Enormous damage. If successfully detonated, a small nuclear weapon would cause the sort of destruction seen at Hiroshima or Nagasaki. With larger, more modern weapons, which are hundreds to thousands of times more powerful, the results would be much worse. Experts predict that human casualties would vary dramatically depending on the bomb's yield, the height above the ground at which it was detonated, and weather conditions. One worst-case scenario simulation estimated that a one-megaton explosion—equivalent to a million tons of TNT—in Detroit could kill 250,000 people, injure half a million more, and flatten all buildings within a 1.7 mile radius.

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