



# TERRORISM PROJECT

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## What if the Terrorists Go Nuclear?

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[\*View Standard Version\*](#)

As the United States proceeds with its war on terrorism, one of the darkest clouds hanging over the campaign is the question of whether the perpetrators of the Sept. 11 horrors could strike again, this time with nuclear weapons.

It seems doubtful that U.S. intelligence can definitively answer this question. Absent perfect foresight, one can nonetheless outline some of the plausible threats and identify the range of U.S. responses that could reduce the exposure of citizens and troops to nuclear attack.

### Threat Scenarios

#### *A Dirty Bomb*

The most accessible nuclear device for any terrorist would be a radiological dispersion bomb. This so-called 'dirty bomb' would consist of waste by-products from nuclear reactors wrapped in conventional explosives, which upon detonation would spew deadly radioactive particles into the environment. This is an expedient weapon, in that radioactive waste material is relatively easy to obtain. Radioactive waste is widely found throughout the world, and in general is not as well guarded as actual nuclear weapons.

In the United States, radioactive waste is located at more than 70 commercial nuclear power sites in 31 states. Enormous quantities also exist overseas — in Europe and Japan in particular. Tons of wastes are transported long distances, including between continents (Japan to Europe and back).

In Russia, security for nuclear waste is especially poor, and the potential for diversion and actual use by Islamic radicals has been shown to be very real indeed. In 1996, Islamic rebels from the break-away province of Chechnya planted, but did not detonate, such a device in Moscow's Izmailovo park to demonstrate Russia's vulnerability. This dirty bomb consisted of a deadly brew of dynamite and one of the highly radioactive by-products of nuclear fission — Cesium 137.

Extreme versions of such gamma-ray emitting bombs, such as a dynamite-laden casket of spent fuel from a nuclear power plant, would not kill quite as many people as died on Sept. 11. worst-case calculation for an explosion in downtown Manhattan during noontime: more than 2,000 deaths and many thousands more suffering from radiation poisoning. Treatment of those exposed would be greatly hampered by inadequate medical facilities and training. The United States has only a single hospital emergency room dedicated to treating patients exposed to radiation hazards, at Oak Ridge, Tenn.

A credible threat to explode such a bomb in a U.S. city could have a powerful impact on the conduct of U.S. foreign and military policy, and could possibly have a paralyzing effect. Not only would the potential loss of life be considerable, but also the prospect of mass evacuation of dense urban centers would loom large in the minds of policy-makers.

### *Attack on Nuclear Power Plants*

A terrorist attack on a commercial nuclear power plant with a commercial jet or heavy munitions could have a similar affect to a radiological bomb, and cause far greater casualties. If such an attack were to cause either a meltdown of the reactor core (similar to the Chernobyl disaster), or a dispersal of the spent fuel waste on the site, extensive casualties could be expected. In such an instance, the power plant would be the source of the radiological contamination, and the plane or armament would be the explosive mechanism for spreading lethal radiation over large areas.

### *Diversion of Nuclear Material or Weapons*

The threat from radiological dispersion dims in comparison to the possibility that terrorists could build or obtain an actual atomic bomb. An explosion of even low yield could kill hundreds of thousands of people. A relatively small bomb, say 15-kilotons, detonated in Manhattan could immediately kill upwards of 100,000 inhabitants, followed by a comparable number of deaths in the lingering aftermath.

Fortunately, bomb-grade nuclear fissile material (highly enriched uranium or plutonium) is relatively heavily guarded in most, if not all, nuclear weapon states.

Nonetheless, the possibility of diversion remains. Massive quantities of fissile material exist around the world. Sophisticated terrorists could fairly readily design and fabricate a workable atomic bomb once they manage to acquire the precious deadly ingredients (the Hiroshima bomb which used a simple gun-barrel design is the prime example).

## Russia

A primary source of diverted weapons or material could be Russia. No Russian bombs have been officially reported missing, and Russian authorities maintain that no nuclear material has been lost. Rather, the outstanding question is whether a bomb, or fissile material in sufficient quantity to make one, has disappeared without Moscow's knowledge. While few outside observers dispute this, none are privy to the raw data that could validate or refute the Russian claim.

One concern long has been the allegations voiced by the former Secretary of the Russian Security Council, Gen. Alexander Lebed. After conducting an exhaustive inventory of Russian nuclear weapons in the 1990s, he found that 84 "suitcase" nuclear bombs had vanished from the Russian arsenal.

The prevailing judgment among Western experts is that Russia may have lost track of the paper trail for any number of bombs, but that the bombs themselves probably have been dismantled or tucked away in storage, rather than having been stolen. The infamous Russian accounting system using hand receipts stored in shoe boxes provides ample grist for this theory.

While there is no reason to doubt the sincerity of the Russian military and civilian leaders who have shouldered the custodial duties for Russian nuclear weapons, it is nonetheless possible that Russian nuclear security has been compromised from the inside without detection.

As noted, such a bomb could be transported to the United States inside one of the countless containers arriving at American ports every day. This avenue seems especially easy to arrange by bin Laden's *al Qaeda* network, which has extensive business connections around the world. Such a container could accommodate a good-

sized atomic bomb, which could be detonated in a harbor. Or it could be unloaded and carted off in a small truck or van to any destination in the lower 48 states. Indeed, once unloaded from a ship, one of Russia's 'missing' suitcase bombs, which are thought to weigh some 60 pounds and measure the size of a small refrigerator, practically could be carried as a back-pack by a strong person.

Disconcertingly, it is conceivable that Russia may have built even smaller bombs, comparable to the truly attaché-class atomic bomb secretly built by the United States in the late 1970s. This U.S. bomb design was so compact and lightweight that it could have been covertly transported as innocent hand-luggage by any reasonably strong individual. In fact, a replica — with proxy nuclear material and conventional explosives in place of the real stuff — was disguised as a briefcase, and actually hand-carried on commercial airline flights from California to Washington in the early 1980s.

## Pakistan

Another potential source of diversion is the Pakistani nuclear arsenal, estimated to number around 30-50 atomic bombs with explosive yields ranging from 1 to 15 kilotons. The weapons are probably assembled at Wah (50 miles from Afghanistan), and are stored primarily at Sargodha near a missile complex close to the border with India and only about 250 miles from Afghanistan. Pakistan's military government is walking a tightrope between pressure from the Bush administration on one side and anti-American Islamic militants on the other. Growing street opposition from the latter could certainly de-stabilize or even topple the regime, and in the midst of such dissolution, the weakening of nuclear security would inevitably occur. The ranks of government and military personnel are also fairly riddled with sympathizers of the radical Islamic faction, posing a distinct risk of insiders colluding to spirit away a bomb or two for bin Laden or other terrorists.

In any case, control over Pakistan's arsenal could all too readily buckle in a serious crisis inside the country. Pakistani weapons are believed to lack sophisticated locks and other safeguards to prevent their unauthorized use. Loose nukes in the region would have unpredictable consequences, almost all of which would militate against the U.S. cause, not to mention the safety of U.S. forces dispatched there.

## U.S. Responses

With such a panoply of possible threats, there are a number of actions that could be taken in the near term to shore up nuclear security.

### *Pakistan*

The Pakistani situation, in particular, deserves careful monitoring — using surveillance and intelligence assets in the region. The U.S. government could urge Pakistani authorities to further consolidate and/or disable their nuclear devices, and beef up security around storage sites — and even offer security equipment and guards. In fact, the U.S. government should be prepared to provide arsenal security even without Islamabad's permission if emergency circumstances dictate.

The U.S. government also could begin drawing up contingency plans to 'rescue' the arsenal if the need arises. U.S. Special Operations forces should be kept on high alert for quick, covert insertion to the sites to disable or even re-locate weapons to prevent their capture by unauthorized persons. It must be noted, however, that inserting commandos on short notice to gain control over the arsenal would put them in considerable jeopardy, and disarming the weapons could be dangerous indeed.

Pakistani weapons are believed to have quite primitive safety devices — they almost certainly lack the "one-point" safety design of U.S. weapons — which means that a Pakistani nuclear weapon could more easily detonate if subjected to conventional firefights between soldiers using grenades or similar munitions.

Therefore, it would be highly desirable for nuclear experts from the Department of Energy to accompany any military troops in such a scenario. DoE nuclear response teams, known as Nuclear Emergency Search Teams (NEST), are formed in a crisis from nearly 1,000 highly trained and knowledgeable individuals, and could be dispatched to the region to assist in locating and disarming any weapons. The teams and their equipment, some on alert staging out of Nellis Air Force Base in Nevada, know the design of Pakistani weapons (based on defector reports), and could x-ray the weapons and devise a disabling procedure on the spot. Compared to the military's commandos, these experienced civilian teams would stand a better chance of blowing up the triggering mechanisms on Pakistani weapons without causing the bomb to go off.

Another option for response in a crisis would be for such a joint military-civilian insertion mission to link up with a Russian counterpart to conduct search and disable missions together in the region. The mutual benefits would be considerable, and such a joint U.S.-Russian operation would have lasting positive effects on future cooperation.

### *Russia*

Joint operations between Russia and the United States could also be undertaken inside Russia itself to deal with a nuclear crisis. Russia's crack "Vypel," nuclear counter-terrorist commando units, could work closely with U.S. Special Operations forces, augmented with a bilateral NEST group to respond to emergencies requiring the securing and disposing of real or dirty nuclear bombs. Tactical operational cooperation could be further enhanced by breaking new ground in intelligence sharing.

The likelihood that the Russian mafia would be involved in aiding terrorists in any theft of atomic or radiological bombs suggests that joint intelligence should also focus on criminal organizations in Russia. This is primarily a mission for the FBI/CIA and its Russian counterparts, but some joint military intelligence could also be necessary in emergency tactical situations.

The pivotal role of Russia in the arena of 'loose nukes' and terrorism highlights the wisdom of the Cooperative Threat Reduction Program undertaken by the United States during the past decade. Popularly known as the Nunn-Lugar program, after its original congressional sponsors, this effort has significantly strengthened the security of Russian nuclear weapons and fissile materials, as well as throughout the former Soviet Union.

However, there is a long way to go to bring Russian nuclear security up to international standards. Much more effort and resources need to be devoted to securing Russian nuclear weapons in storage at 123 sites in Russia, and nuclear waste that could be fashioned into radiological bombs. The reach of Nunn-Lugar has been limited, in part because of disagreements between the parties about access to facilities and sites. It is now clear that Russia and the United States should work harder to overcome their differences and press ahead with the Nunn-Lugar agenda. A long list of priorities for the future can be drawn from some excellent studies of the program's strengths and weaknesses; for example, several recent efforts by the Russian American Nuclear Security Advisory Council (RANSAC).

### *Within the United States*

The first steps to mitigate the possibility of nuclear terrorism would be serious and rapid effort to build intelligence capabilities that might warn of a potential attack, and as explained above, to take actions aimed at shoring up possible sources of nuclear material.

In the meantime, increased monitoring at ports also must continue and be intensified, despite the negative ramifications on international trade. Inspection of containers up to Sept. 11 has been rather cursory, and infrequent. This is changing, just as already the U.S. government and airlines are scrambling to beef up airline and airport security.

Some of the additional security measures would include those exported to Russia under the Nunn-Lugar program. A prime example is the transfer of nuclear materials detectors to Russia, which were then emplaced at strategic border crossings, ports and airports to detect diversion. The U.S. government might consider the use of such equipment at similar American locations, particularly ports, as a method to detect and intercept materials being smuggled into the country.

In addition, there are a number of methods to increase security around nuclear power plants that already are being discussed by U.S. authorities and nuclear plant operators, such as expanding the perimeters of restricted airspace. Such measures should be implemented as rapidly as possible.

Finally, NEST operations would go into effect if a credible threat of a dirty bomb or a full-fledged nuclear weapon were to manifest itself. If the information available would allow the U.S. teams to locate the city affected, hundreds of team members would fan out along a matrix of the threat region to detect the bomb. Carrying gamma- and neutron-detectors inside carrying cases to preserve secrecy, the NEST members would cover the suspect area on foot, in vans and helicopters — going in and out of buildings hoping to register the tell-tale signals of a hidden bomb. Once found, the bomb is x-rayed, "sniffed" and otherwise analyzed to determine its characteristics.

Obviously, intelligence that helps localize the bomb is the main key to success. Just as obviously, intelligence of such quality is seldom available — as proven on Sept. 11. Such a search could be truly looking for a needle in a haystack, as detection normally would succeed only if the detectors come within a few feet or so of the hidden bomb.

Disabling a bomb is easy by comparison. A radiological bomb might be surrounded by a tent enclosure several tens of feet in height and width, then filled with a special foam to contain the deadly radioactive material (such as Cesium 137) if the bomb explodes during further defusing attempts. For a nuclear device, a set of options for disabling the weapon are available including using explosives to wreck the bomb's wiring to prevent the triggering of the nuclear detonators.

Because of the difficulty inherent in finding a nuclear weapon once it entered the country, near-term U.S. response efforts would be best focused on prevention and intervention to secure possible sources of nuclear terrorism.

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