



Combating Nuclear Terrorism

Lessons from Aum Shinrikyo, Al Qaeda, and the Kinshasa Reactor

- RAND RESEARCH AREAS
- CHILD POLICY
- CIVIL JUSTICE
- EDUCATION
- ENERGY AND ENVIRONMENT
- HEALTH AND HEALTH CARE
- INTERNATIONAL AFFAIRS
- NATIONAL SECURITY
- POPULATION AND AGING
- PUBLIC SAFETY
- SCIENCE AND TECHNOLOGY
- SUBSTANCE ABUSE
- TERRORISM AND HOMELAND SECURITY
- TRANSPORTATION AND INFRASTRUCTURE

The threat of terrorist groups acquiring nuclear weapons or material is greater today than ever before. Subnational groups such as al Qaeda and the Aum Shinrikyo religious cult have had both the motivation and the resources to purchase or build nuclear weapons. Similarly, the nuclear weapons inventory and production complex of the former Soviet Union and elsewhere remain a vast potential source of supply. If successful, nuclear-armed terrorists would pose a grave threat to U.S. national security and to the United States' friends and allies.

To develop an effective strategy to prevent nuclear terrorism, the United States needs a thorough understanding of how terrorists have attempted to acquire nuclear capabilities in the past. Fortunately, few groups have made a systematic effort to make, buy, or steal nuclear weapons or materials. Within this relatively small set, three cases stand out as instructive: Aum Shinrikyo's attempt to purchase nuclear weapons from high-level Russian officials in the 1990s, al Qaeda's alleged efforts to purchase nuclear weapons and material from various sources throughout the 1990s, and the 1970s theft of nuclear material from the Kinshasa research reactor in the Congo and attempt to sell it on the illicit market in the 1990s. RAND Project AIR FORCE (PAF) studied these cases to better understand the supply and demand for nuclear materials and why these attempts failed. Researchers reached two major conclusions:

Nuclear Acquisition Remains Relatively Difficult for Terrorist Groups

Acquiring a nuclear weapon requires access to specialized material and a high level of technical expertise that has historically been beyond the reach of terrorist groups. Throughout the 1990s, Aum Shinrikyo tried without success to hire Russian nuclear experts, to purchase Russian nuclear technology and data, to mine uranium, and to steal sensitive nuclear power plant information. These efforts were thwarted by Russian officials' refusal to cooperate and by the lack of technical expertise within the group. Similarly, al Qaeda has been exposed to numerous scams involving the sale of radiological waste and other non-weapons-grade material. These difficulties may lead terrorists to conclude that nuclear acquisition is too difficult and too expensive to pursue.

Controlling Access to Nuclear Material Is Key to Preventing Future Terrorist Acquisition

Despite the difficulty of terrorist groups acquiring nuclear material, the United States and its friends and allies should take greater steps to control the supply side of the nuclear marketplace. Even with inspections and safeguards, the International Atomic Energy Agency could not prevent the disappearance of two reactor rods from the Kinshasa research reactor in the Congo in the 1970s. One of these rods appeared on the black market in the 1990s. The other rod may yet wind up in the hands of terrorists, who could extract enriched uranium for a nuclear weapon. This case suggests that the United States and the international community should make strengthening the control of nuclear material a high priority in the fight against nuclear terrorism. ■

This product is part of the RAND Corporation research brief series. RAND research briefs present policy-oriented summaries of individual published, peer-reviewed documents or of a body of published work.

Corporate Headquarters
1776 Main Street
P.O. Box 2138
Santa Monica, California
90407-2138
Tel 310.393.0411
Fax 310.393.4818

© RAND 2005

This research brief describes work done for RAND Project AIR FORCE and documented in *Aum Shinrikyo, Al Qaeda, and the Kinshasa Reactor: Implications of Three Case Studies for Combating Nuclear Terrorism* by Sara Daly, John Parachini, and William Rosenau, DB-458-AF, 2005, 87 pages, ISBN: 0-8330-3761-7. Copies of this research brief and the complete report on which it is based are available from RAND Distribution Services (phone: 310-451-7002; toll free: 877-584-8642; or email: order@rand.org) or online at www.rand.org/publications/DB/DB458/. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

RAND Offices Santa Monica • Washington • Pittsburgh • New York • Doha • Berlin • Cambridge • Leiden



PROJECT AIR FORCE

CHILD POLICY
CIVIL JUSTICE
EDUCATION
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INTERNATIONAL AFFAIRS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
SUBSTANCE ABUSE
TERRORISM AND
HOMELAND SECURITY
TRANSPORTATION AND
INFRASTRUCTURE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

This product is part of the RAND Corporation research brief series. RAND research briefs present policy-oriented summaries of individual published, peer-reviewed documents or of a body of published work.

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND

[Browse Books & Publications](#)

[Make a charitable contribution](#)

For More Information

Visit RAND at www.rand.org

Explore [RAND Project AIR FORCE](#)

View [document details](#)

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use.