



The use of radiological dispersal devices by terrorist groups

General Assembly 1



Shattered Vows: Tracing the Devastation Caused by
Violating Human Rights



Forum: General Assembly 1

Issue: The use of radiological dispersal devices by terrorist groups

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Introduction

The specter of terrorism has long cast a great shadow over global security, with its evolving tactics and relentless pursuit of destruction. Among the most detrimental developments in these tactics are the potential use of radiological dispersal devices (RDDs), also, in general terms, known as "dirty bombs". Therefore modern terrorism is not detected that easily, which poses many difficulties in detecting and preventing these attacks.

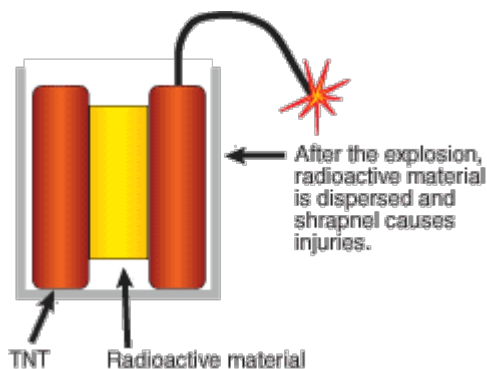
These devices, which combine conventional explosives with radioactive materials, are designed not so much to cause immediate casualties but to instil fear, contaminate property, and disrupt social and economic stability in the places they are dropped. We first will provide an overview of RDDs, including their composition, functioning, and the types of radioactive materials that can be used in such devices. We will also go into historical context, citing instances where terrorist groups have attempted or succeeded in using RDDs, and the lessons learned from these incidents. This will lead to an analysis of the potential physical, psychological, and economic impacts of an RDD attack, emphasizing the long-term consequences on affected populations and environments. RDDs pose many challenges in terms of prevention, detection, and response. This includes the difficulties in securing radioactive materials, the complexities of intelligence gathering on terrorist activities, and the strategies for emergency response and decontamination in the event of an RDD detonation.

Finally, we will propose a multi-faceted approach to combat the threat of RDDs, involving international cooperation, stringent control of radioactive materials, advanced technological solutions for detection and response, and effective communication strategies to manage the public's perception and fear in the wake of an RDD event.

Definition of Key Terms

Radiological dispersal devices

Radiological dispersal devices (RDDs) or “dirty bombs”, consist of explosives combined with radioactive material. These explosives are designed to disperse radioactive material over a large area. Rogue nations and/or terrorist groups do not face many problems in obtaining these materials, due to the many unsecured or unaccounted-for sources of radioactive material¹. The goal of RDDs is not to immediately kill bystanders of the attack, though this does happen due to the blast of the explosive. But the goal is to create psychological harm through panic and terror. The use of RDDs also results in an expensive cleanup and decontamination of the area, costing the government millions of dollars.



As seen in the image next to this text, an RDD is a simple bomb that takes little time to make. There are also many different forms of RDDs like aeroplanes, which disperse radioactive material over a larger area by dumping it. There are two types of radioactive combat; passive and active. Active is the use of explosions and does not result in many casualties.

While large numbers of people around the detonation of an RDD might become contaminated and require decontamination, few will be contaminated to a point that requires medical treatment.² With passive radioactive combat, many people do suffer, due to the fact that water and soil are contaminated with radioactive materials. It can take a while before this is noticed and many high dosages could be ingested.

Radioactive material and sicknesses

A radioactive atom means that the nucleus is unstable³. Due to this, they decay by sending out alpha, gamma, and beta particles. An alpha particle is very big, which means it does not easily pass through solid materials, but, due to its size, leaves a lot of damage. Beta particles are a little smaller than alpha particles, therefore they can pass through more materialism but are less detrimental to one's health. Gamma radiation is pure energy and therefore almost not dangerous to people. After being in contact with radiation, many things can happen. If there were many alpha particles, this can result in cancer due to damaged cells duplicating and this can take a short or long time, depending on the intensity. You can also

¹ [https://www.osha.gov/radiological-dispersal-devices#:~:text=Radiological%20dispersal%20devices%20\(RDD\)%2C,such%20as%20multiple%20city%2Dblocks.](https://www.osha.gov/radiological-dispersal-devices#:~:text=Radiological%20dispersal%20devices%20(RDD)%2C,such%20as%20multiple%20city%2Dblocks.)

² <https://remm.hhs.gov/rdd.htm>

³

[https://wwwn.cdc.gov/tsp/substances/ToxChemicalListing.aspx?toxid=27#:~:text=Radionuclides%20\(or%20radioactive%20materials\)%20are,to%20protons%20or%20the%20reverse\).](https://wwwn.cdc.gov/tsp/substances/ToxChemicalListing.aspx?toxid=27#:~:text=Radionuclides%20(or%20radioactive%20materials)%20are,to%20protons%20or%20the%20reverse).)



get radiation sickness (Acute Radiation Syndrome or ARS). This occurs after an extremely high dosage of ionizing radiation (radiation with enough energy to ionize other atoms) in a short period. But, luckily, this does not occur often⁴. If people are exposed to passive radioactive combat for a couple of months to years, chronic radiation syndrome (CRS) can occur. This can lead to the shutting down of organs and senses after a long period.

Modern terrorism

Modern terrorism is a form of political violence characterized by non-state actors who employ unconventional methods to achieve ideological, religious, or political goals, often targeting civilians and non-combatants. It represents a departure from traditional forms of warfare, relying on tactics that instil fear and disrupt societies rather than engaging in conventional military conflicts.

Chechen rebels planned to use an RDD in 1995 by burying a container of cesium-137 in Moscow's Izmailovsky Park. Although the plot was cancelled before execution, it shows the intention of terrorist groups to utilize RDDs for their psychological impact and potential long-term consequences.

In 2002, individuals with ties to a paramilitary group were arrested in Georgia for attempting to sell a small amount of weapons-grade uranium. While not a full RDD, this incident underscored the alarming possibility of terrorists gaining access to highly radioactive materials for nefarious purposes.

While the actual use of RDDs in acts of terrorism has been limited, the threat looms large due to the relatively simple construction of such devices and the potential for widespread panic and economic disruption. The instances mentioned underscore the need for continuous vigilance, international cooperation, and effective counterterrorism measures to prevent the ability to get and use RDDs by terrorist entities.

⁴ https://en.wikipedia.org/wiki/Acute_radiation_syndrome



General Overview

The use of radiological dispersal devices by terrorist groups represents a complex and multifaceted threat, intertwining the physical dangers with the psychological impacts of terrorism. RDDs are not weapons of mass destruction in the traditional sense but are designed to create panic, terror, and a sense of ultimate power.

An RDD typically combines a conventional explosive, like dynamite or C4, with radioactive material, which can range from hospital waste to more dangerous isotopes like cesium-137 or cobalt-60. The construction of these devices is alarmingly straightforward, as many of the radioactive materials are relatively accessible in medical, industrial, or academic settings. Upon detonation, the explosion disperses the radioactive material over a potentially large area, depending on the amount and type of explosive and radioactive material used.

The psychological impact of RDDs is immense and their primary effect. The fear of the results and long-term effects of radiation exposure can lead to widespread panic, significant economic repercussions, and lasting social trauma. This psychological weapon aspect is attractive to terrorists as it amplifies the impact of their actions far beyond the immediate physical damage caused by the device.

While the actual use of RDDs by terrorist groups has been limited, there have been several plots and attempts, as mentioned before. These incidents highlight the interest terrorist groups have in using RDDs and underscore the importance of vigilance and preparedness.

In summary, the threat of RDDs lies more in their psychological impact and potential for causing long-term disruption than in their immediate lethality. Their accessibility and the widespread fear of radiation make them an attractive tool for terrorists seeking to instigate fear, economic harm, and chaos. Understanding and addressing this threat requires not just physical safeguards and emergency preparedness but also effective communication strategies to manage public perception and response in the event of an RDD attack.



Major Parties Involved

IAEA

While the IAEA has worked toward improving the security of radioactive sources long before the September 11 attacks, the IAEA moved quickly after this date to increase its efforts to prevent these materials from becoming tools of radiological terror. IAEA Director General Mohamed ElBaradei has spoken often about the need for a “cradle-to-grave” protection system for radioactive materials. While the IAEA and several Member States have striven to establish such a system, more thinking and work are still required to develop an integrated, layered, and cooperative defence system for radioactive source security.⁵

Major human rights organizations

Various human rights organizations actively engage in addressing the threat of dirty bombs by terrorist groups. International organizations like Amnesty International, Human Rights Watch, and the International Federation for Human Rights (FIDH), and National Institute for NCP Protection play vital roles in monitoring and advocating for human rights in the context of security challenges. These organizations often collaborate with governmental bodies, international agencies, and other non-governmental organizations to promote policies and practices that balance security concerns with the protection of human rights. Additionally, organizations specializing in disarmament and non-proliferation, such as the International Campaign to Abolish Nuclear Weapons (ICAN), focus on preventing the use of nuclear materials in unconventional weapons and contribute to global efforts to strengthen arms control agreements. The involvement of these diverse human rights organizations is essential in shaping a comprehensive and rights-based response to the threat of dirty bombs, ensuring that security measures are implemented without compromising fundamental human rights principles.⁶

The United Nations

The United Nations (UN) plays a significant role in addressing the threat of dirty bombs, which combine conventional explosives with radioactive materials, particularly through its various agencies and mechanisms. The International Atomic Energy Agency (IAEA), a specialized agency of the UN, is crucial in this context. The IAEA focuses on nuclear safety,

⁵ <https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull45-1/45102091216.pdf>

⁶ *National Institute for Nuclear, Chemical and biological protection*. RadoNorm. (n.d.). <https://www.radonorm.eu/participants/national-institute-for-nuclear-chemical-and-biological-protection/>



security, and non-proliferation, working to prevent the illicit trafficking of radioactive materials and promoting measures to safeguard nuclear and radiological sources.⁷

The UN Security Council also addresses issues related to terrorism, including the potential use of dirty bombs, by adopting resolutions that emphasize the importance of international cooperation in preventing the proliferation of weapons of mass destruction.⁸ Moreover, the UN promotes a broader framework that incorporates human rights considerations into counter-terrorism efforts. The United Nations Office of Counter-Terrorism (UNOCT) works towards a comprehensive approach that respects human rights and the rule of law, recognizing that effective counter-terrorism measures must be in line with international human rights standards.⁹

In addressing the threat of dirty bombs, the UN encourages member states to strengthen their legal frameworks, enhance border controls, and collaborate on intelligence-sharing to prevent the acquisition and use of radioactive materials by terrorist groups. The UN's influence is instrumental in fostering a coordinated and multilateral response to the complex challenges posed by the potential use of dirty bombs, emphasizing the importance of international cooperation, intelligence-sharing, and adherence to human rights principles.

⁷ Security of Radioactive Sources. (2003). https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1165_web.pdf

⁸ *Ukraine publications*. Security Council Report. (n.d.). <https://www.securitycouncilreport.org/ukraine/>

⁹ United Nations. (n.d.). *Chemical, biological, radiological and nuclear terrorism | Office of Counter-Terrorism*. United Nations. <https://www.un.org/counterterrorism/chemical-biological-radiological-nuclear-terrorism>



Timeline of Events

1996

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) is adopted by the United Nations General Assembly. While primarily focused on banning all nuclear explosions for both civilian and military purposes, it contributes to global efforts to prevent the spread of nuclear weapons and materials.

2002

The United Nations establishes the UN Security Council Counter-Terrorism Committee (CTC) to enhance member states' efforts in preventing and combating terrorism, including the potential use of unconventional weapons.

2005

The IAEA publishes the Code of Conduct on the Safety and Security of Radioactive Sources, providing guidance on preventing unauthorized access to and malicious use of radioactive materials.

2007

The G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction is launched, with a focus on securing and eliminating weapons of mass destruction, including efforts to prevent the acquisition of such materials by non-state actors.

2012

The United Nations Conference on the Arms Trade Treaty addresses the international trade in conventional arms. While not specific to dirty bombs, the treaty aims to prevent the diversion of arms to unauthorized users, including terrorists.

2016



The Nuclear Security Summit, held in Washington, D.C., marks the fourth and final summit dedicated to enhancing the security of nuclear materials globally and preventing nuclear terrorism.

2017

The United Nations Security Council adopts Resolution 2325, emphasizing the need to prevent terrorists from acquiring weapons of mass destruction, including nuclear, chemical, and biological weapons.

2019

The IAEA hosts the International Conference on Nuclear Security, providing a platform for discussions on strengthening the international community's efforts to prevent nuclear terrorism through enhanced nuclear security measures.

2021

The UN continues discussions on counterterrorism, including efforts to prevent the proliferation of weapons of mass destruction. Member states highlight the importance of international cooperation in addressing evolving security challenges.



Previous attempts to solve the issue

Although there haven't been specific United Nations Security Council (UNSC) resolutions solely focused on dirty bombs, there are broader resolutions addressing nuclear terrorism, the proliferation of weapons of mass destruction (WMDs), and the importance of preventing non-state actors from acquiring and using such weapons. Some relevant resolutions include:

UNSC Resolution 1540 (2004): This resolution emphasizes the prevention of the proliferation of nuclear, chemical, and biological weapons and their means of delivery. It calls on all member states to adopt and enforce measures to prevent the spread of WMDs to non-state actors.

UNSC Resolution 1887 (2009): While not specifically addressing dirty bombs, this resolution reaffirms the commitment to prevent the proliferation of nuclear weapons and their acquisition by non-state actors. It discusses the importance of strengthening the global nuclear security architecture.

UNSC Resolution 2325 (2016): This resolution highlights the need to prevent terrorists from acquiring weapons of mass destruction, including nuclear, chemical, and biological weapons. It underscores the importance of international cooperation in addressing the evolving threats.

UNSC Resolution 2370 (2017): This resolution focuses on preventing the proliferation of weapons of mass destruction and their means of delivery to non-state actors. It emphasizes the role of the UN in coordinating efforts to address these threats.



Possible solutions

- *International Cooperation:* Strengthening international collaboration among nations, intelligence agencies, and law enforcement is essential. Sharing information and intelligence related to the illicit trafficking of radioactive materials helps prevent their acquisition by terrorists.
- *Nuclear Security Measures:* Implementing robust nuclear security measures at facilities that handle radioactive materials is crucial. This includes securing and monitoring storage sites, transportation routes, and borders to prevent unauthorized access.
- *Legislation and Regulation:* Enacting and enforcing stringent national and international laws and regulations that govern the handling, transportation, and storage of radioactive materials helps prevent their diversion for malicious purposes. This includes penalties for illicit trafficking and unauthorized possession.
- *Radiological Source Security:* Focusing on the security of radiological sources, such as medical and industrial devices containing radioactive materials, is essential. Implementing measures to track, secure, and, if possible, replace high-risk sources helps reduce the vulnerability to dirty bomb threats.
- *Public Awareness and Education:* Raising public awareness about the dangers of dirty bombs and the importance of reporting suspicious activities can contribute to early detection and prevention. Public education campaigns can empower communities to be vigilant and proactive in preventing terrorism.
- *International Conventions and Treaties:* Adhering to and strengthening international conventions and treaties related to nuclear security, non-proliferation, and counter-terrorism is crucial. Agreements such as the International Convention for the Suppression of Acts of Nuclear Terrorism set the legal framework for addressing these threats.
- *Capacity Building:* Providing technical assistance and capacity-building support to countries with less advanced nuclear security infrastructure helps enhance their ability to secure radioactive materials and prevent their illicit use.



- *Technology Development:* Investing in research and development of advanced technologies for detecting and tracking radioactive materials can improve the ability to identify and prevent potential threats.
- *Coordination with International Organizations:* Collaborating with international organizations, such as the International Atomic Energy Agency (IAEA) and INTERPOL, helps ensure a coordinated and comprehensive global response to the threat of dirty bombs.
- *Emergency Response Planning:* Developing and regularly updating emergency response plans at national and local levels prepares authorities to respond effectively in the event of a dirty bomb incident, minimizing the impact on public safety and the environment.



Important documents

<https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull45-1/45102091216.pdf>

<https://remm.hhs.gov/rdd.htm>

https://international-review.icrc.org/sites/default/files/irrc_859_5.pdf

https://www.fema.gov/sites/default/files/documents/fema_rd-planning-guidance-for-responding-to-and-recovering-from-radiological-dispersal-device-rdd-incidents.pdf

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https://www.unodc.org/uploads/icsant/documents/Articles/Article_for_CBRNE_rev2_0022.pdf

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[biological-radiological-nuclear-terrorism](https://www.un.org/counterterrorism/chemical-biological-radiological-nuclear-terrorism)



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