Nuclear Terrorism: Published Literature Since 1992

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Titles of some articles and books on terrorists' potential use of nuclear materials are indeed foreboding:

"When Terrorists Go Nuclear"; "It's the Ultimate Nuclear Nightmare: Terrorist with the Bomb"; Time Bomb: How Terrorists and the Russian Mafia Threaten the World with a Nuclear Nightmare; "Arms Experts Fear Nuclear Blackmail"; Nuclear Terrorism: Rethinking the Unthinkable; “Nukes on the Loose: The End of the Cold War Has Made Nuclear Terror More Likely"; "When Terrorists Go Nuclear: The Ingredients and Information Have Never Been More Available"; "Be Very Afraid"; and "Smuggling of Nuclear Materials - Deadly Game."

Just how real is the threat and, most important, what can be done to combat or prevent it from occurring? These are vital questions not only for this country but also for the entire world's population. Scholars, scientists, government and military officials all have a pressing need to access and analyze the literature on this topic to produce and refine an effective and coherent security policy. This bibliography serves to fill that need by identifying and assembling in one place citations to the multitude of publications on this topic.

Much has been written about this topic in the open-source press. I used the research sources of a multitude of data bases, CD-ROMs and indexes, including those of the Rand Corporation, UCLA Library, National Defense University Library, Pentagon Library, Georgetown University Library, Combined Arms Research Library at Fort Leavenworth, the Center for Nonproliferation Studies at...
the Monterey Institute of International Studies and World Wide Web (WWW) sites.3
A large part of the literature on this topic addresses the security of nuclear weapons in the former Soviet Union (see Section I below). Other articles or books assess the threats posed by individuals, terrorist groups or even nations (see Sections II and III). Section IV compiles citations concerning the security of nuclear power plants. Of utmost importance, if the threat is real or imminent, what preventive or legal measures can world governments take to stave off this possibility or punish those responsible for it? Sections V and VI provide citations to articles addressing these issues. Section VII lists WWW sites dealing with nonproliferation issues and provides myriad links to other sites dealing with this issue. Following all the citations is a synopsis of publications that I believe are of special importance and relevance to Department of Defense and N.A.T.O. officials who are currently or will be working in the future to counter this threat.

Summary of Categories
Under each section, the citations are listed alphabetically by author, or by title if no author is given. Brief synopsis of many articles follow their citations.
I. Nuclear Weapons Security in the Former Soviet Union and Eastern Europe
II. Threat Assessments
III. Threats by Nation States
IV. Security of Nuclear Facilities
V. Countermeasures/Prevention
VI. Legal Aspects of the Problem
VII. World Wide Web Sites
Synopsis of Publications of Special Relevance to Defense Officials
I. Nuclear Weapons Security in the Former Soviet Union and Eastern Europe
Allison, Graham T., et al. *Avoiding Nuclear Anarchy: Containing the Threat of Loose Russian Nuclear Weapons and Fissile Material*. CSIA Studies in International Security, no. 12. Cambridge, MA: M.I.T. Press, 1996. Presents concerns that nuclear material from nuclear-warhead dismantlement in Russia will be released into a nuclear establishment ill-prepared to deal with it and that a resulting nuclear black market might bring about the collapse of the nuclear nonproliferation system based on the Nuclear Nonproliferation Treaty; provides several concrete proposals that Western governments and Russia's MinAtom should accomplish to solve the proliferation problem.


"Chelyabinsk: Special Unit Formed to Fight Nuclear Terrorism." ITAR-TASS, 14 April 1995, as translated in FBIS-SOV-95-073, 33. Unit formed in closed town of Ozyorsk, formerly Chelyabinsk.


"Even the CIA Does Not Know How Much Uranium Do We Have, and Neither Do We." *Russia & CIS Today*, 26 November 1993, 4-5. Estimated by Victor Mikhailov of the Ministry of Atomic Energy to be 1,200 metric tons; originally published in *Novaya gazeta*, 25 November 1993, 1.


Hughes, David. "Uranium Seizures Heighten Terrorism Concerns." *Aviation Week & Space Technology*, 3 April 1995, 63-64. Recent discoveries of smuggled uranium in the Czech Republic, Ukraine and other countries.


"Istochniki yadernoy opasnosti." [Sources of Nuclear Danger] *Segodnya*, 5 January 1994, 6. Includes a map showing risks at various nuclear power plants in Russia.


"Moscow Summit on Nuclear Security and Safety." International Affairs: A Russian Journal of World Politics, Diplomacy and International Relations 3 (1996), 1-64. A summary of the summit held in Moscow, 19-20 April 1996. Contains the following subsections: Russia's Position on Nuclear Issues; Declaration of the Moscow Summit; Program for Combating Nuclear Trafficking; Statement on Nuclear Test Ban Treaty; Statements on Ukraine and Middle East; B. Yeltsin and J. Chirac: Press Conference after the Summit; Russia and the World: Cooperation in the Nuclear Field; The Main Aspects of Nuclear Security; and Nuclear Power Plants in Russia.


"MVD General Reports No Theft of Nuclear Weapons Materials." Moscow INTERFAX in English, 10 October 1995, as reported in FBIS-SOV-95-196, 45-46. Interview with General Andrey Terekhov of the Russian Interior Ministry.

National Public Radio. "Nuclear Safety and Security in Russia." 4-part series, 16-19 April 1996. May be ordered under transcript #1847, segment #5; transcript #1848, segment #6; transcript #1849, segment #5; transcript #1850, segment 6.


"Nuclear Safeguard System Reliable, Costly." Krasnaya zvezda, 17 June 1995, 3, as translated in FBIS-TAC-95-014-L.


"Operation Sapphire." Maclean's, 5 December 1994, 35. Sale of uranium by Kazakhstan to the US to prevent terrorists' access.


leader sees no chance of this possibility because of strict security measures fully financed by the state.


"Poka chto ni odin yadernyy boyeprips v Rossii ne propadal i ne byl pokhishchen." [For Now Not One Nuclear Stockpile in Russia has been Lost or Stolen] *Yadernyy kontrol'* (May 1995), 9-14. Interview with Yevgeniy Maslin, director of the 12th Directorate of the Russian Ministry of Defense; asserts that Russia safely transports nuclear materials and that smuggling is no worse in Russia.


"Rossiyskiye militsionery i atomshchiki oprovergayut mify o `russkoy yadernoy mafii'." [Russian Police and Atomic Scientists Refute the Myths about the

"Russian Mafia can Steal Nuclear Materials." Reuters, 14 October 1995. Based on reports by "60 Minutes" and US News & World Report that 4 tons of beryllium and 19.8 pounds of cesium were stolen in 1993.

"Russian Security Chief Admits Nuclear Terrorism Danger." The Xinhua News Agency, 27 February 1996. Database Online; Available from Lexis-Nexis. Mikhail Barsukov states it is "quite possible" for terrorists to seize nuclear weapons.


"Some Security Problems with Nuclear Materials in Depots of Northern Fleet."


"U.S. and Russia May Share Intelligence Services." *New York Times*, 19 October 1992, A4(N), A6(L). Discussions that United States and Russia may pool intelligence information to fight nuclear proliferation, terrorism and drug smuggling.


"Yadernaya mafiya v Rossii: Pravda i mify." [Nuclear Mafia in Russia: Truth and Myths] *Vek*, 22-28 September 1995, 4-9. Gennadiy Yevstafev, director of the SVR, states that there is no evidence that Russian nuclear scientists are working in countries such as Libya and Iran.


**II. Threat Assessments**


"FIS' Yevstafyev on World Proliferation." Yadernyy kontrol' (January 1995), 12-15, as translated in JPRS-TAC-95-002, 99-104. Interview with the head of the Directorate for Arms Control and the Proliferation of Weapons of Mass Destruction at the Foreign Intelligence Service of Russia.


"German Study Casts Doubt on Terrorist Nuclear Bomb." Deutsche Presse-Agentur, 14 March 1995. Database Online; Available from Lexis-Nexis. Discusses the report Nuclear Terrorism: Facts and Fiction, which concludes that nuclear security in Russia appears far more stable than expected, that extremists are not interested in mass killings, and other assertions.

Heron, Charles M. Probable Trends in Terrorism in Western Europe. Monterey, CA: Naval Postgraduate School, December 1992. Covers topics such as sources of terrorism, nuclear weapons materials, the Single European Act of 1993, separatist movements, cooperative efforts to combat terrorism and other topics; available from NTIS.

Hoffman, Bruce. "Responding to Terrorism Across the Technological Spectrum." Terrorism and Political Violence (Autumn 1994), 366-90. Analyzes three salient trends in terrorism including the rise of "amateur" groups, the simplicity of the weapons and the growing sophistication of "professional" groups.


Jenkins, Brian M. "The Limits of Terror: Constraints on the Escalation of Violence." Harvard International Review (Summer 1995), 44-45+. Argues there is no evidence that any terrorist groups have tried to obtain nuclear material and that using radioactive substances as a contaminant or hoaxes are more realistic threats.

________. "No market for Sellers of Plutonium." Los Angeles Times, 11 November 1994, B7. States that terrorists do not have the large finances required to build a bomb.


"Little Boys: Nuclear Weapons." Economist, 27 August 1994, 72. A smaller amount of plutonium needed to explode a nuclear bomb could lead to attempts by countries or terrorist groups to build nuclear bombs.

Loehmer, Andrew. "The Nuclear Dimension." Terrorism and Political Violence (Summer 1993), 48-69. Concludes that in the near term, future chemical or biological terrorism is more likely.

Longworth, R.C. "Doomsday Clock May be Ticking in 2 Time Zones." Chicago Tribune, 8 December 1995, 1. Suggestions for another clock to show the danger of small-scale nuclear wars or nuclear terrorism.


Online; Available from Dialog, Federal News Service, 00163886. Witnesses included Paul Goble, Retired General William Odom and David Osias of the CIA.


Marrs, Robert W. Nuclear Terrorism: Rethinking the Unthinkable. Monterey, CA: Naval Postgraduate School, December 1994. Asserts that a terrorist demand exists and that a preventive campaign be established; available from NTIS.


"New Nightmare for Old?" New Scientist, 27 August 1994, 3. Discusses the possibility of terrorism replacing the old nuclear fears.


Roos, John G. "Ultimate Nightmare" Armed Forces Journal International (October 1995), 67-68+. Assesses terrorism with the use of nuclear, biological or chemical weapons.


Simon, Jeffrey D. "Time for a New Look at Terrorism." USA Today, 7 December 1994, A11. Describes the ease with which terrorists can acquire NBC materials.


Vaught, James W. Jr. The Emergence of the Nuclear Industry and Associated Crime. Wright-Patterson AFB, OH: Air Force Institute of Technology, August 1991. Examines in Chapter 2 past crimes associated with the nuclear industry such as spies, terrorists and insider crimes.
______. "Who Will Buy?" New York Times, 21 August 1994, sec. 4, 1. Discusses lack of strategies to prevent easy access to nuclear materials, the motive of money, and other issues.
______. "The Real Threat of Nuclear Smuggling." Scientific American (January 1996), 40-44. Contends that little is being done to contain the problem of smuggling these materials.

III. Threats by Nation States
Deutch, John M. "The New Nuclear Threat." Foreign 71 (Fall 1992), 120-34. Surveys problems of nuclear proliferation, especially in Iraq, Algeria, and North Korea.


Murphy, Kim. "'Rogue Nation' or Terrorist Poses Serious Nuclear Threat, Perry Says; In Cairo, the Defense Secretary Expresses Fear that Weapons-Control Programs in the Middle East Could be Unraveling." Los Angeles Times, 9 January 1995, A4.


IV. Security of Nuclear Facilities and Weapons

"All Eyes on Imposter-Proof Protection." Nuclear Engineering International (June 1990), 54. Description of the EyeDentify security system.


"Clinton Announces Widened Iranian Trade Embargo; Cites Iran's Terror Links and Nuclear Aspirations." Facts on File, 4 May 1995, 313-14.


Noel, James L. "Getting Ahead on Tactical Response Training at American Utilities." Nuclear Engineering International (June 1990), 52-4.


Nuclear Regulatory Commission plans to ensure security at nuclear power plants.


"Vehicle Intrusion Systems Going up at Nuclear Plants." Nuclear News (September 1995), 36.


V. Countermeasures/Prevention


Bukharin, Oleg A. "Soft Landing for Bomb Uranium." Bulletin of the Atomic Scientists (September-October 1993), 44-49. US agrees to purchase 500 tons of highly enriched uranium from Russia.


"CIA Chief Warns of Nuclear Diversion from Russia." Agence France Presse, 20 March 1996. Database Online; Available from Lexis-Nexis. Deutch outlines steps that should be taken to avert a "crisis of enormous proportions" from nuclear terrorism.


Henry, Patrick. "Russia, G-7 Agree on Total Nuclear Test Ban." Moscow Times, 12 April 1996. Database Online; Available from Lexis-Nexis. Participants also agree to create a program to prevent illicit trafficking of nuclear weapons.


"IAEA to Create Data Bank to Combat Nuclear Smuggling." AFP in English, 3 November 1994, as reported in JPRS-TND-94-020, 42-43. International Atomic Energy Agency on prevention of smuggling from the former Soviet Republics.


Kimery, Anthony L. "Your Life May Depend on the Woman from NEST." Insight on the News, 23 October 1995, 12-14. Describes the work of the NEST.


Dribbling Aid to Russia. " Bulletin of the Atomic Scientists (July/August 1993), 39-42. Discusses Nunn-Lugar legislation to reduce nuclear weapons.


"NATO Seeks Coordinated Effort on Nuclear Smuggling." Press Association in English, 19 August 1994, as reported in FBIS-WEU-94-162, 1.


Perry, William J. "'We Cannot Always Rely on Deterrence,'" *Aviation Week & Space Technology*, 27 May 1996, 66. Calls for both active and passive US defense strategies to combat terroristic use of weapons of mass destruction.


"Rossiiskiye i Amerikanskiye uchenyye pridumali sposob borby s kontrabandoy yadernykh materialov." [Russian and American Scientists Have Devised a Method for Fighting Nuclear Materials Contraband] *Izvestiya*, 6 November 1994, 2. Scientists from the United States and Russia working to develop a technique of "fingerprinting" nuclear materials for tracing their origin.


Wolf, Franklin R. Of Carrots and Sticks or Air Power as a Nonproliferation Tool. Maxwell AFB, AL: Air University, July 1994. Proposes institutionalizing force options into nonproliferation enforcement, ideally as part of Chapter 7 enforcement actions under the authority of the UN Security Council.

VI. Legal Aspects of the Problem


"First Committee: Post-Cold-War Nuclear Security Issues Debated in Disarmament Forum." UN Chronicle (March 1995), 76-77. Discusses the opinion of the International Court of Justice on the threat or use of nuclear weapons.


**VII. World Wide Web Sites**

Two of the most useful and informative sites are described below and contain a multitude of links to other related sites.

The Center "was created at the Monterey Institute of International Studies (MIIS) by Dr. William C. Potter to confront the serious threat of international proliferation of nuclear, missile, biological, chemical and advanced conventional weapons. The CNS provides research tools, analysis, training and education on nonproliferation issues to scholars and policy makers from around the world. Since its inception in 1989, the CNS has grown into the leading US center for training and research specifically on nonproliferation issues."

This site contains a list of CNS projects, publications (full-text) and access by subscription only to numerous databases maintained by CNS. The feature "CNS User's Guide to Nonproliferation Research on the Internet" is an extensive guide to related sites. This site's "Top Ten Sites for Nonproliferation Research" is especially useful for analysts researching this topic for the first time.


The Nuclear Control Institute "is an independent research and advocacy center specializing in problems of nuclear proliferation." It is a nonpartisan and nonprofit organization monitoring nuclear activities worldwide and pursuing "strategies to halt the spread and reverse the growth of nuclear arms." In particular, it focuses on the "urgency of eliminating A-bomb materials-plutonium and highly enriched uranium-from civilian nuclear power and research programs."

This institute has an especially useful area titled "Special Section Nuclear Terrorism Threat: How to Prevent It," which contains the following subsections: "Could Terrorists Build an A-Bomb with Stolen Materials?"; "Are Nuclear Reactors Vulnerable to Truck Bombs?"; "Are International Safeguards Effective in Plutonium Plants?"; "Is There a Nuclear Black Market?"; and "Valuable Links."

Synopsis of Publications of Special Relevance to Defense Officials

This section highlights previously cited publications that I deem especially important and relevant to defense officials. Detailed abstracts follow each of the citations.

Three studies produced by the Center for Counterproliferation Research of the National Defense University are especially useful in assessing the impact on the
three branches of the US Armed Forces in dealing with weapons of mass destruction:


The stated objectives of the workshop proceedings are "to heighten the awareness within key sectors of the Navy-Marine Corps team of the rising impact on naval operations and naval capabilities of the global proliferation of nuclear, biological and chemical weapons and associated technologies. The workshops emphasize the practical, operational issues associated with battle group and expeditionary naval operations mounted within a joint operational context in collaboration with allies and local, friendly military forces." Highlights of some ideas produced by the workshop include the following:

- The nuclear, biological and chemical threat faced by the fleet is serious and growing. The biological and chemical warfare threats are especially acute.
- Fleet nuclear, biological and chemical readiness has been substantially eroded.
- On balance, naval forces bring significant strengths to operations in a nuclear, biological and chemical environment.

A key near-term requirement is the development of an interactive gaming method to enable operational commanders, planners and key policy officials to improve their understanding of operational tactics in a nuclear, biological and chemical environment.


This report discusses initiatives aimed at coping with an adversary's possession and potential use of nuclear, biological and chemical and missiles, to include improved passive and active defenses, accelerated development of counterforce and command, control, computers and intelligence capabilities. Workshop
participants concluded that a number of closely related conceptual, doctrinal, organizational, training, equipment, intelligence, operational and planning issues dealing with this threat have not been addressed satisfactorily. A sampling of these issues includes the following:

- Effective theater air and missile defenses are crucial to protecting air bases from nuclear, biological and chemical attack and ensuring sustained air operations.
- Overseas air bases do not have the resources or people to support identification, location and early warning of biological or chemical warfare attacks.
- Insufficient individual protective equipment is available for sustained operations and there is need for a collective protection capability.
- Air Force intelligence collection requirements and efforts need to place greater emphasis on adversary nuclear, biological and chemical capabilities, operational concepts and employment doctrines.

Part II of the report contains a description of the war game, and part III provides an extensive list of participants' recommendations.


The four-part workshop focuses on the challenges presented to US Army units in combat and noncombat operations by the proliferation of nuclear, biological and chemical weapons and missiles. Its principal objectives are "to enhance the understanding of the participants on emerging proliferation threats and problems, to assess the Army's posture in addressing these challenges and to assist workshop participants in developing potential responses and undertaking future developments."

Workshop 1, Establishing the Baseline. Examines current intelligence estimates of the proliferation threat worldwide, US government policies, joint military approaches and initiatives, ongoing research and an overview of the Army's
applicable doctrine, concepts and programs. This part of the workshop produced six key observations.

Workshop 2, Research and Development. Focuses on proliferation-relevant Army programs; progress in developing both active and passive defense capabilities; a counterproliferation planning and analysis tool; and the emerging results of the Joint Staff's Counterproliferation Missions and Functions Review. This workshop contains seven key observations.

Workshop 3, Unit Operations. Focuses on the impact of nuclear, biological and chemical proliferation on the operations of combat units at corps and division levels. It discusses the US Army Chemical School; dismounted Battle Space Battle Lab; Army Chief of Staff guidance; studies of operations in nuclear, biological and chemical environments; and doctrine, training, leader development, and requirements for organizations, materiel and individual soldier capabilities.

Workshop 4, Shaping the Future. Focuses on policy and strategy for the future; concepts and doctrine for the future, and requirements for the future.

Beres, Louis Rene. "Preventing Nuclear Terrorism against the United States: 10 Vital Questions." Special Warfare (August 1996), 22-29. Few publications have appeared for policy makers who must create a strategy for dealing with nuclear terrorism. To achieve a fuller understanding of the risk calculations that terrorist organizations make and the factors most likely to affect those calculations, the author postulates 10 questions to ask, such as, "Are the risk calculations made by terrorist groups affected by their particular relations with host states?" and "Would the implementation of effective measures to counter nuclear terrorism require special patterns of international cooperation, and how might such patterns be created?". Also discussed is the role of special operations forces in coordinated preemption operations in this country and abroad.


Cottrell, Scott. "Identifying the Separate Governmental Agency Roles and Tasks in Countering the Proliferation of Weapons of Mass Destruction Among Nonstate Actors (Terrorists) During Each Phase of the Counterproliferation Process." MMAS thesis, US Army Command and General Staff College, Fort Leavenworth, Kansas, 1997. This thesis by Major Cottrell, United States Marine Corps, identifies the threat posed by nonstate actors/terrorists wielding weapons of mass destruction and defines the roles of the separate governmental agencies during each phase of the counterproliferation process. It also makes judgments as to whether current interagency relationships are adequate to counter this threat. [Available on DTIC Summer 1997].

Krause, Joachim. "Proliferation Risks and Their Strategic Relevance: What Role for NATO?" Survival (Summer 1995), 135-148. The article discusses NATO's June 1994 publication Policy Framework on Proliferation of Weapons of Mass Destruction which placed concern about proliferation of these weapons high on its agenda (see NATO Review, June 1994). NATO's publication assessed two categories of risk—weapons of mass destruction threats to Western armed forces operating in out-of-area missions and direct attacks against Western Europe by rogue nations. The author calls for reviewing other threats not envisioned in this document, which in turn will lead to adjustments in nuclear, biological and chemical defense, force structures and doctrines. His additional threats to consider include shifts in regional power balances, danger of accidents, erosion of international norms and systems of order, regional instabilities fueled by proliferation, and others.

Ruehle, Michael. "NATO and the Coming Proliferation Threat." Comparative Strategy (July-September 1994), 313-20. The author, a senior planning officer in the Political Affairs Division of NATO, discusses those areas where a NATO role could be developed in the longer term to prevent and counter proliferation. He suggests various levels of a NATO contribution to what he calls an "assertive nonproliferation policy." At the basic level preventive diplomacy using military
means would be used to defuse proliferation incentives at the core. Another level of an assertive nonproliferation policy would entail enforcing international sanctions against proliferators. The third level would involve offensive military action against the weapons or production facilities of the proliferating state, as in the Gulf War, in pursuing a state's weapons of mass destruction program during the initial phases of a war. A fourth level is ballistic missile defense which is being carried out in several ways.

US Congress. Senate. Committee on Governmental Affairs. Permanent Subcommittee on Investigations. Global Proliferation of Weapons of Mass Destruction: Illicit Trafficking of Nuclear Materials: Hearings before the Permanent Subcommittee on Investigations of the Committee on Governmental Affairs. 104th Cong., 2d sess., 13, 20, 22 and 27 March 1996. These hearings, conducted by Senators Roth and Nunn, include testimonies by John Deutch of the CIA and Ambassador Rolf Ekeus of the UN Special Commission. The addendum to the hearings includes very informative documents by numerous specialists in the field. Among others they include:

"The Threat of Nuclear Diversion: The Intelligence Community Response."
"Chronology of Nuclear Smuggling Incidents."
"Nuclear Nonproliferation: U.S. Efforts to Help Newly Independent States Improve Their Nuclear Material Controls."
"The Nuclear Black Market."
"Scientists, Engineers and Proliferation of Weapons Technology."
"Weapons, Proliferation and Organized Crime: Russian Military Dimensions."
"Reducing the Threat of Nuclear, Biological and Chemical Proliferation and Terrorism."

The hearing of 27 March concentrates on responses to domestic terrorism and includes presentations by the Federal Emergency Management Agency (FEMA), FBI, NEST, Department of Defense and other agencies.

If tomorrow morning the world awakens to the realization of the specter of nuclear, biological or chemical terrorism, will US and international planning be
adequate and coordinated enough to respond? With so many agencies and nations involved in countering this threat, will each entity know its precise role and be able to act on it in a moment's notice in a coordinated and efficient manner? More important, are all agencies involved doing enough collectively now to prevent this threat from ever being realized? Reading, evaluating and acting on problem areas and solutions set forth in the publications listed above will help formulate the most effective strategies to counter this worldwide threat.

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