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Subject Bibliography ADVANCED WEAPONS

Alexander, John B. Future War: Non-Lethal Weapons in Twenty-First-Century Warfare. New York: St. Martin's Press, 1999.
Call Number: U 795 .A43 1999
Abstract: Written by an expert on non-lethal and advanced weaponry. The work is divided into sections on the rationale of use (need), technologies, operational scenarios, the issues, and appendices. Specific technologies of interest covered are electromagnetic weapons, chemical options, acoustics, information warfare, and biological (antipersonnel and antimateriel).

Alexander, John B. and Charles "Sid" Heal. "Non-Lethal and Hyper-Lethal Weaponry." Robert J. Bunker, ed. Non-State Threats and Future Wars. London, UK: Frank Cass, 2003: 121-132.
Abstract: The article contains an introduction, a summary of emerging threats, a discussion of effects-based weapons and their policy issues, and a conclusion. Weapons covered include the Area Denial System (ADS), Advanced Tactical Laser (ATL), Magic Dust, and Big Gun.

Taylor, Travis S. et al. An Introduction to Planetary Defense: A Study of Modern Warfare Applied to Extra-Terrestrial Invasion. Boca Raton, FL: Brown Walker Press, 2006.
Call Number: UG 1530 .T39 2006
Abstract: This is a serious look at the strategy required to defend the earth against an invasion from an extraterrestrial opponent. It is a pragmatic, strategic assessment of what should be done to begin thinking about such an occurrence. The important and pertinent part of this work is the emphasis on the strategy of protection for national security, whatever the actual threat. The analysis of planning is what is of value to the reader, whether the opponent be Al Qaeda, a nation-state, or an extraterrestrial.

Armistead, ed. Leigh. Information Operations: Warfare and the Hard Reality of Soft Power. Washington, DC: Brassey's, 2004.
Call Number: U 163 .I52 2004
Abstract: This is a basic primer on the developing theory and associated doctrine of Information Operations (IO) in the context of nation state military operations. It describes the current organization, function, and doctrine of the United States and selected coalition partners. It uses several case studies on how IO is now recognized as a method of power. A recurring theme is the capability of information used at a local or tactical level to influence strategic action and decisions.

Beason, Ph.D., Doug. The E-Bomb: How America's New Directed Energy Weapons Will Change The Way Future Wars Will Be Fought. Cambridge, MA: Da Capo Press, 2005.
Call Number: UG486.5 .B4345 2005
Abstract: The best overview work currently available for law enforcement personnel on the topic of directed energy weapons (DEW). Clearly written by a scientist with a background in laser-technology physics and threat reduction. Provides an overview of directed energy issues—what it offers, what it is, its military effectiveness, and its problems—and then gets into specific treatments of high-power microwaves, high-energy lasers, and other major DEW programs. Specific systems discussed are the Active Denial System (ADS) and the Airborne Laser (ADL).

Borrello, Andrew. "Acoustic Force Technology." Tactical Response. Vol. 5, No. 3. (May-June 2007): 50-56.
Abstract: Provides a discussion of acoustic weapon technology and current developments in the field for law enforcement. Spotlights the Long Range Acoustic Device (LRAD) system. Also provides some insights into future acoustic weapons.

Bunker, Robert J. Five-Dimensional (Cyber) Warfighting. Carlisle, PA: Strategic Studies Institute, U.S. Army War College, March 10, 1998.
Internet: http://www.strategicstudiesinstitute.army.mil/ pdffiles/PUB233.pdf.
Abstract: The author expounds a scenario in which a future enemy (BlackFor) concedes that the U.S. Army's (BlueFor) superior technology, advanced weaponry, and proven record of success in recent military operations make it virtually invulnerable to conventional forms of symmetric attack. Therefore, BlackFor seeks asymmetric ways to obviate BlueFor's advantages. These ways include utilizing advanced battlespace, complex concepts and weapons technologies, and non-state forces and mercenaries.

Bunker, Robert J. "Radio Frequency Weapons: Issues and Potentials." The Journal of California Law Enforcement. Vol. 36, No. 1. (2002): 6-17.
Abstract: Provides law enforcement with an overview of radio frequency weapons (RFW) based on High Power Microwave (HPM) and Ultra Wide Band (UWB) devices. RFW dangers to electronics, target effects, law enforcement tactical use, criminal/opposing force tactical use, and RFW countermeasures are also provided.

Dando, Malcolm. A New Form of Warfare: The Rise of Non-Lethal Weapons. London: Potomac Books, 1997.
Call Number: U795 .D36 1996
Abstract: Begins with a basic overview of peacekeeping, non-lethal weapons (NLW), and the inhumane weapons convention. Value of the work is on the topic of psycho-chemical weapons such as BZ, EA-3834 (Glycolate), and fentanyls and the functioning of the human nervous system and brain chemistry. Discusses 21st arms control needs and a new type of potential arms race.

Dockery, Kevin. Future Weapons. New York: Berkeley Caliber, 2007.
Call Number: UF 500 .D68 2007
Abstract: A detailed review of the basics of the infantry rifle, pistol, and certain area weapons, beginning with World War I and ending in the present, with predictions of the next set of evolving small arms. The author shows how operational failures, usually stemming from inadequate weapons performance, lead to the evolutionary development of the next advanced weapon. The book contains extensive detail and includes the reasoning for the weapons taking their specific form and function.

Denning, Dorothy E. Information Warfare & Security. Reading, MA: Addison-Wesley Professional, 1998.
Call Number: U 163 .D46 1999
Abstract: This extensive work by a recognized expert in the field of computer security is a baseline book for understanding past, present and emerging forms of information warfare. The theory is based on a set of components of the information world network and the offensive and defensive interplay that occurs around this interactive manipulation of information. Described in a succinct but detailed manner, the book provides both a framework for understanding and for decision making in the evaluation of the potential and power of information management.

Edwards, John. The Geeks of War: The Secretive Labs And Brilliant Minds Behind Tomorrow's Warfare Technologies. New York: American Management Association, 2005.
Call Number: U 393 .E38 2005
Abstract: A veteran journalist focusing on emerging trends in technology characterizes and categorizes the advanced research of federal labs, academia, and industry in support of the Department of Defense. Edwards sorts these defense technologies into tactical systems, information, biotechnology, transportation, security and protective equipment. Much of the research has potential crossover to law enforcement and other industries. The author offers proof that the disaggregated method of American invention produces better results than other more organized approaches.

Giri, D.V. High-power Electromagnetic Radiators: Nonlethal Weapons and Other Applications. Cambridge, MA: Harvard University Press, 2004.
Call Number: U 795 .G6577 2004
Abstract: Focused on impulse-like electromagnetic-pulsed radiators for weapons and transient radars. The work is divided in chapters on weaponry progression, nonlethal systems, electromagnetic NLW technologies, high-power microwaves (HPM), meso and hyperband systems, optical, acoustic, and chemical NLW technologies, and a final summary. Contains some advanced scientific formulas but the work is still readable.

Hall, J. Storrs. Nanofuture: What's Next For Nanotechnology. Amherst, NY: Prometheus Books, 2005.
Call Number: T 174.7 .H35 2005
Abstract: J. Storrs Hall, Ph.D., sets a foundation for understanding nanotechnology and then predicts where the research and application of the technology will go, based on current research and the most probable applications. Readers do not need a solid background in science to understand the explanations, but should have an interest in science to profit from the reading. It is clear, pragmatic, and interesting. Storrs speculates on the social reaction as nanotechnology develops and advances beyond the tipping point.

Ratner, Daniel and Mark A. Ratner. Nanotechnology and Homeland Security: New Weapons for New Wars. Upper Saddle River, NJ: Prentice Hall PTR, 2004.
Call Number: UA 927 .R38 2004
Abstract: The authors focus on first giving a clear description of what nanotechnology is, how it was conceived by the imminent physicist Feynman and where it has gone in research since inception. Then, with direct example and clear explanation, the Ratners describe how nanotechnology research in materials, sensors, biomedical structure, energy, optics and fabrication can be used for homeland protection.

Sullivan, John P. et al. Jane's Unconventional Weapons Response Handbook. Alexandria, VA: Jane's Information Group, 2002.
Call Number: HV6431 .J35 2002
Abstract: The work, prepared by subject matter experts on unconventional weaponry and response, provides an excellent overview of this topic for law enforcement readers. The work is broken down into sections on strategic overview, pre-incident planning, weapon types (IEDs, projected IEDs, conventional military, radiological, lasers, radio-frequency, and non-lethal), incident response, post-incident management, case studies, and appendices.

Weinberger, Sharon. Imaginary Weapons: A Journey Through the Pentagon's Scientific Underworld. New York: Nation Books, 2006.
Call Number: UF 503 .W46 2006
Abstract: A story of combined human interest and scientific development that describes the pursuit of a high risk weapons technology by the Departments of Defense and Energy that may not be possible. The author, a regular reporter for the Washington Post on issues of aerospace and defense, tracks the discovery, support, and attempted development of a not-yet-proven weapon technology. This skeptical description of personalities, politics, and on-the-edge science journals the difficulties and disappointments of championing unproven science that is wrong, or if correct, cannot be proven and repeated by current scientific capability.

Wilson, Clay. High Altitude Electromagnetic Pulse (HEMP) and High Power Microwave (HMP) Devices: Threat Assessments. CRS Report for Congress. Washington, DC: Congressional Research Service, August 20, 2004.
Internet: www.fas.org/sgp/crs/natsec/RL32544.pdf.
Abstract: Provides an overview of the disruptive effects of electromagnetic pulse weapons to electronic devices and how HEMP and HPM devices differ in both construction and use. Highlights hardening against electronic disruption, military

applications, and the capabilities of foreign nations and terrorist use potentials in the policy analysis section.

Wilson, Daniel H. How to Survive a Robot Uprising. New York: Bloomsbury Publishing, 2005
Call Number: PN 6231 .R58 W55 2005
Abstract: The tongue-in-cheek title of this succinct tome belies its purpose: To educate those unfamiliar with current and future robotic research on the mechanics and methods of robot technology. The result is an understanding of the how robots are built to work and the relevant limitations and possibilities, not unfettered science fiction. Using humor, the author gives a tutorial on reality of robot research and utility.

Compiled by Dr. Robert J. Bunker and Matt Begert, 9/07