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THE CUTTING EDGE

Chuck Hansen, Editor

Number 6, July 1999

This is the 6th issue of the *Cutting Edge*, a periodic newsletter and "intelligence report" for current and prospective customers of *The Swords of Armageddon*. Our intention is to keep you advised of recent and little-known publications, document collections, research sources, and videotapes concerning Cold War topics, primarily nuclear weapons and weapons testing-related subjects (other Cold War subjects are also included).

RECENT PUBLICATIONS OF INTEREST

As we mentioned in Issue Number 1, a good source for several of the following books, and videos is an on-line Internet bookstore named Amazon.com at <http://www.amazon.com>. Do not -- repeat, do not -- contact Chukelea Publications for copies of items mentioned in this newsletter. We sell only *The Swords of Armageddon*.

Ackland, Len. 1999. ***Making a Real Killing: Rocky Flats and the Nuclear West***. University of New Mexico Press, Albuquerque, New Mexico. 296 p. ISBN 0-8263-1877-0.

Len Ackland, former editor of the *Bulletin of the Atomic Scientists*, has written a history of operations at Rocky Flats from 1952 to the present. An excerpt of the book appeared in the July/August 1999 issue of the *Bulletin*. UNM's phone number is 1-800-249-7737.

Arkin, William M. 1998. ***The Internet and Strategic Studies***. Center for Strategic Education, Paul H. Nitze School of Advanced International Studies, John Hopkins University, Washington, D.C. 83 p. paper. (For copies, call 202-663-5886).

Bill Arkin describes the Internet and methods of searching for sites related to military affairs and strategic studies.

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Appendices listing general search tools; national security megasites, catalogs and directories; and non-U.S. information sources are also included.

Benson, Robert Louis and Michael Warner (eds.). **VENONA: Soviet Espionage and the American Response, 1939-1957**. 1999. Aegean Park Press, Laguna Hills, California. 503 p. ISBN 0-89412-265-7.

Haynes, John Earl and Harvey Klehr. 1999. **VENONA: Decoding Soviet Espionage in America**. Yale University Press, New Haven, Connecticut. 487 p. ISBN 0-300-07771-8.

In *Dark Sun: The Making of the Atomic Bomb* (Simon & Schuster, New York, 1995), Richard Rhodes describes how, during World War II, the Soviet Union carted off literally airplane loads of classified diplomatic, scientific, and technological information, mostly as a result of one of the largest espionage networks ever organized by the Soviets. These two new titles explain how this mighty effort was mounted. The Benson/Warner book is a collection of decrypted Venona documents and five monographs which explore the ramifications of those messages. The Haynes/Klehr book puts the Venona documents into historical context, and describes industrial and atomic espionage.

Campbell, Richard H. 1998. **A Brief History of the Enola Gay**. National Atomic Museum Foundation, Albuquerque, New Mexico. Paper.

This is a 16-page chronology of the history of B-29-45-MO serial no. 44-86292 which achieved eternal immortality over Hiroshima on August 6, 1945. The Gay now resides at the Smithsonian's Paul E. Garber restoration facility in Silver Hill, Maryland, where it awaits completion of the proposed National Air & Space Museum annex at Dulles International Airport.

Cohen, Avner. 1998. **Israel and the Bomb**. Columbia University Press, New York. 470 p. ISBN 0-231-10482-0.

Although the author of this book lives in the U.S., he is an Israeli national and the Israeli government made a token effort to prevent publication of this history of the development of the so-called "Samson option," the modern Israeli nuclear weapons program. The Israeli nuclear weapons program has been aided at every turn by the U.S. government, from the illegal transfer of highly enriched weapons-grade uranium to Israel from a Pennsylvania enrichment facility during the Johnson administration; to the refusal of the U.S. to acknowledge a joint Israeli-South Africa atmospheric nuclear test in the South Atlantic late in 1979; and to the blind eye which the U.S. turns to Israeli nuclear developments in the fervent hope that they somehow serves as a stabilizing force in the Middle East.

Collins, Martin J. and the Division of Space History, National Air and Space Museum, Smithsonian Institution. 1999. **Space Race: The U.S.-U.S.S.R. Competition to Reach the Moon**. Pomegranate

Communications, Inc., Rohnert Park, California. 112 p. ISBN 0-7649-0905-3. Paper.

This year marks the 30th anniversary of the first landing of human beings on the moon, and the airwaves and bookstores have been filled with programs and books commemorating the event. Most of these documentaries and publications now argue that the "space race" was driven as much or more by Cold War rivalries than by scientific or military goals. This book was especially written to accompany a current National Air & Space Museum exhibit of U.S. and Soviet artifacts of the "moon race."

Davies, Peter E. and Tony Thornborough. 1998. **Boeing B-52 Stratofortress**. The Crowood Press Ltd., Ramsbury, Marlborough, Wiltshire, England. 176 p. ISBN 1-86126-113-6.

This summer marks the 44th year of military service of the Boeing B-52, and no American bomber has ever served longer. By the time the *Stratofortress* is retired sometime during the middle of the 21st century, the aircraft will have served for almost 90 years. This small hardbound book is the latest title concerning this famous bomber and it includes the latest information on new weapons and electronic systems carried aboard the B-52.

The Department of Energy has released the fifth edition of **"Drawing Back the Curtain of Secrecy: Restricted Data Declassification Decisions, 1946 to the Present"** (RDD-5, January 1, 1999). RDD-5 contains 39 changes incorporating declassification decisions made since January 1, 1998, and also includes 90 changes incorporating historical declassification actions discovered or confirmed since RDD-4 was published a year ago.

Fitzpatrick, Anne. 1998. **Igniting the Light Elements: The Los Alamos Thermonuclear Weapons Project, 1942-1952**. Ph.D. thesis submitted to the Virginia Polytechnic Institute and State University. 329 p. Paper.

This lengthy thesis has many parallels to Sybil Francis' 1996 doctoral thesis, *Warhead Politics: Livermore and the Competitive System of Nuclear Weapon Design* (Massachusetts Institute of Technology, Cambridge, Massachusetts) in that it is based almost entirely on still-classified documents; it was prepared with the cooperation of one of the two U.S. weapons labs; and that it was written by a non-physicist. Fitzpatrick cites several recently-published open sources -- including Richard Rhodes' 1995 *Dark Sun* and the *Swords of Armageddon* -- as foils for her focus on the technical, social, political, and human problems that nuclear weapons scientists faced while pursuing the "Super." (Ms. Fitzpatrick's thesis is currently on "restricted" distribution,

which means that it will be unavailable from either Virginia Polytechnic Institute or University Microfilms for a year or two. The thesis will be available from Los Alamos National Laboratory as a report, possibly by late summer of this year.)

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A side note: Ms. Francis' thesis, available since 1996 from MIT Microfilm Reproduction Laboratory (Bldg. 14-0551, MIT, Cambridge, MA 02139, 617-253-5668), is also available now in microfilm or paper from the National Technical Information Service in Springfield, Virginia. The NTIS order number is DE96014192INZ; to order, contact the NTIS Sales Desk at 1-800-553-6847, or by fax to 1-703-321-8547, or by e-mail to orders@ntis.fedworld.gov.

Gsponer, André and Jean Pierre Hurni. 1999. **Fourth Generation Nuclear Weapons: The Physical Principles of Thermonuclear Explosives, Inertial Confinement Fusion, and the Quest for Fourth Generation Nuclear Weapons**. Independent Scientific Research Institute, Geneva, Switzerland. 211 p. ISBN 3-933071-02-X. Paper.

This is the fifth edition of a paper originally presented at a scientific conference in China in September 1997; an earlier edition was reviewed in Issue #5 of *The Cutting Edge*. The authors examine the prospects of developing fourth-generation nuclear weapons in the context of a Comprehensive Test Ban Treaty. The book includes chapters on the physical principles of thermonuclear explosives; nuclear weapons development under the CTBT; nuclear weapons applications of inertial confinement fusion; and fourth-generation nuclear weapons. Available from INESAP, c/o IANUS, Hochschulstr. 10 Darmstadt University of Technology, D-64289 Darmstadt, Germany, fax: 011 49 6151 16 6309; e-mail: ianus@hrzpub.tu-darmstadt.te.

Hammel, Edward F. 1998. **Plutonium Metallurgy at Los Alamos, 1943-1945**. Los Alamos Historical Society, Los Alamos, New Mexico. ISBN 0-941-23220-4.

This is an account of wartime work on plutonium metallurgy at LASL. The book is based on newly-declassified documents, about 100 of which are included in the volume.

Harvey, Brian. 1998. **The Chinese Space Programme: From Conception to Future Capabilities**. John Wiley & Sons, New York. 181 p. ISBN 0-471-97588-5.

Recent revelations and claims that China has benefited enormously from espionage and illegal technology transfer make this book mandatory reading. The author traces the development of Chinese rocketry, especially the consequences of the ill-advised McCarthy-era expulsion of Chinese physics, engineering, and chemistry students from the U.S.; many of these individuals went on to become the brains of the Chinese missiles and space program.

Jacobsen, Meyers, et. al. 1997. **Convair B-36: A Comprehensive History of America's "Big Stick"**. Schiffer Publishing, Ltd., Atglen, Pennsylvania. 400 p. ISBN 0-7643-0530-1.

This is a new "definitive" B-36 history; Chuck Hansen is the author of the chapters concerning the bomber's defensive and

offensive weaponry. Other chapters describe the development, deployment, operation, and retirement of this massive and unique aircraft.

McCartney, Scott. 1999. **ENIAC: The Triumphs and Tragedies of the World's First Computer**. Walker and Company, New York. 262 p. ISBN 0-8027-1348-3.

The title of this volume is a little misleading, in that the ENIAC was not the world's first "computer" per se; it was, however, the world's first programmable digital serial-processing electronic computer. The authors include brief references to Los Alamos usage of the ENIAC and also discuss development of the EDVAC and UNIVAC, and the lengthy battle by the ENIAC's designers against claims that many of its architectural features were invented elsewhere.

Rhea, John (ed.). 1995. **Roads to Space: An Oral History of the Soviet Space Program**. Aviation Week/McGraw-Hill Companies, New York. 513 p. ISBN 0-07-607095-6.

This is an English-language translation of a three-volume oral history originally compiled in Moscow, Russia in 1993. In it, 34 veterans of the Soviet space program describe how the Soviet Union, devastated and impoverished at the end of World War II, rose from the ashes to launch not only the world's first ICBM, but also the first space satellite (which the U.S. could have launched two years earlier in 1955) and the first man to orbit the earth. The book includes many heretofore undisclosed details of the development of early Soviet rockets and space vehicles.

Seaborg, Glenn T. 1998. **A Chemist in the White House: From the Manhattan Project to the End of the Cold War**. American Chemical Society, Washington, D.C. 341 p. ISBN 0-8412-3347-0.

The late Glenn Seaborg chronicles his government service between 1942 and 1991, using daily entries from his voluminous personal journals. He discusses weapons issues ranging from his discovery of plutonium to the Comprehensive Test Ban Treaty.

Stoff, Michael B., et. al. 1991. **The Manhattan Project: A Documentary Introduction to the Atomic Age**. McGraw-Hill, Inc., New York. ISBN 0-07-557209-5. Paper.

Originally published in hardcover, this compilation of seminal documents concerning the early U.S. atomic weapons program is now available in a paperback. Subjects covered include the creation of the Manhattan Project and plans to use the bomb.

Weinstein, Allen, and Alexander Vassiliev. 1999. **The Haunted Wood: Soviet Espionage in America -- The Stalin Era**. Random House, New York. 402 p. ISBN 0-679-45724-0.

German Goncharov's articles in the November 1996 issue of *Physics Today* (see *The Cutting Edge*, Issue #1, December 1996) about the

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Soviet H-bomb revealed clearly that classified U.S. documents on the American thermonuclear program continued to leak to Russia even after Klaus Fuchs left the United States in mid-1946; these materials were taken by other Soviet spies working at Los Alamos or elsewhere within the Atomic Energy Commission. This new book includes two chapters devoted to the wartime flow of atomic weapon secrets to the Soviet Union from agents working in Chicago, Oak Ridge, Hanford, Berkeley, and Los Alamos.

West, Nigel and Tsarev, Oleg. 1999. ***The Crown Jewels: The British Secrets at the Heart of the KGB Archives***. Yale University Press, New Haven, Connecticut. 384 p. ISBN 0-300-07806-4.

After the British Mission was sent home from Los Alamos in 1946, U.S. security officials breathed a premature sigh of relief. When Klaus Fuchs, a member of the Mission who had returned to England to work on the U.K. nuclear weapons program, was unmasked as a Soviet spy, exchanges of scientific and military information between the U.S. and U.K. nuclear weapons programs fell into a long, deep "freeze" for several years. West's new book shows just how thoroughly the British intelligence, military, and weapons research establishments were infiltrated and compromised by British subjects working as Soviet spies. West concentrates on the so-called "Cambridge Five:" John Cairncross, Guy Burgess, Kim Philby, Donald MacLean, and Anthony Blount. (For a while, MacLean had direct access to the headquarters of the U.S. Atomic Energy Commission.)

Wheeler, John Archibald. 1998. ***Geons, Black Holes, and Quantum Foam: A Life in Physics***. W. W. Norton & Company, New York. ISBN 0-393-04642-7.

Wheeler, who headed the Matterhorn-B project at Princeton which made significant contributions to the success of the first U.S. thermonuclear test in 1952, recounts his life from 1911 to the present. He describes only briefly his weapons work for the U.S. Atomic Energy Commission, but recounts at length his other physics research and teaching.

RECENT ARTICLES OF INTEREST

The April/May 1999 issue of ***Arms Control Today***, published by the Arms Control Association in Washington, D.C. contains several articles critical of the controversial Cox report on alleged Chinese nuclear weapons espionage and illegal technology transfer. The issue also contains excerpts from the report.

A new Cold War historical series, the ***Journal of Cold War Studies***, became available from MIT Press early this year. Articles in this publication are based on newly-declassified documents; authors examine both newly uncovered revelations and re-examine previously-studied subjects in light of new information. Subscriptions are available from the Harvard Project on Cold War Studies, Davis Center, 1737 Cambridge St., Cambridge, MA 02138; e-mail hpcws@fas.harvard.edu.

RECENT VIDEOS OF INTEREST

Peter Kuran, whose *Trinity and Beyond: The Atomic Bomb Movie* was reviewed in Issue #1 of *The Cutting Edge*, has produced a new film entitled ***Atomic Journeys: Welcome to Ground Zero***, a cinematic tour of various U.S. continental nuclear test sites from Alaska to Mississippi. ISBN 1-58565-1541-9. Available from VCE Inc., in Sylmar, CA, phone 1-818-367-9187 or 1-800-242-9627.

The Public Broadcasting System televised earlier this year a two-hour documentary, ***Race for the Superbomb***, as part of PBS' *American Experience* series. The video, based in part on Richard Rhodes' *Dark Sun*, includes interviews with many of the participants on both sides of the Iron Curtain, and also features much new information uncovered since Rhodes' book was published.

The historical office of the China Lake Naval Air Weapons Center has issued a new videotape entitled ***East of Easton: The Story of the China Lake Propulsion Laboratories***, a filmed history of the development of explosives and rocket propellants and rocket engines at Inyokern since World War II. A short segment on the Salt Wells Pilot Plant, which made explosive charges for the *Fat Man* implosion bombs, is also included. The video may be ordered from the China Lake Museum Foundation, P. O. Box 217, Ridgecrest, CA 93556-0217; phone 760-939-3530. The China Lake Museum Foundation Web page is at <http://www.navwcwpns.navy.mil/clmf/frontpage.html>.

FORTHCOMING PUBLICATIONS, VIDEOS & DOCUMENT COLLECTIONS

A new edition of DOE's NVO-209, ***United States Nuclear Tests, July 1945 through September 1992***, is being prepared. This revised edition will include the recently-declassified list of hydronuclear tests conducted by the U.S. during the 1958-1961 test moratorium. The document will also list the lab sponsors and exact geographical coordinates and Greenwich Mean zero-time for each test, along with the NTS area and hole/tunnel in which the test was conducted. These additions will bring this document more in line with recent publications of the Natural Resources Defense Council and other public service groups.

Filmmaker Peter Kuran is preparing for release in August or September 1999 a new video entitled ***Nukes in Space: The Rainbow Bombs*** which will depict U.S. high-altitude nuclear tests during Operations HARDTACK Phase I in 1958 and DOMINIC Phase I in 1962.

David K. Stumpf, author of *REGULUS: The Forgotten Weapon* (Turner Publishing Company, Paducah, Kentucky, 1996; reviewed in Issue #1 of *The Cutting Edge*) has completed an encyclopedic history of the **TITAN I/II ICBM**; the book will be published by the University of Arkansas Press and is due in May 2000.

Russian journalist Gennady Gorelik has written **a biography of the late Andrei Sakharov**; an excerpt appeared in the March 1999 issue of *Scientific American* magazine. The book will be published in English in the U.S. by W. H. Freeman and Company.

To mark the 50th anniversary of the takeover of China, the Peoples' Republic of China is planning to release on October 1 of this year a feature film about its first atomic bomb program. The movie, entitled ***Birth of the Chinese A-Bomb***, was filmed in the Lop Nor area of Xinjiang province, where the first Chinese nuclear bomb was detonated in October 1964. The film makes use of formerly confidential documents and "digital effects."

Milwaukee photographer/researcher John Coster-Mullen has completed a draft manuscript tentatively entitled ***Atom Bombs: The Unauthorized Top Secret Inside Story of Little Boy and Fat Man*** and is now seeking a publisher. The extensively-annotated book is based on newly-declassified documents and many interviews with participants in the Los Alamos program to develop the first U.S. atomic weapons.