

## Building The H Bomb

"... offers the quickest way I know to acquire the basic historical background that we ought all to have." —Louis J. Halle, *Survival* This classic in the field of military history covers weaponry from Archimedes' catapult down to MIRV and the ABM, emphasizes the contributions of science to warfare, and includes an extensive new chapter on the weapons of the nuclear age.

Cohen focuses on a two-decade period from about 1950 until 1970, during which David Ben-Gurion's vision of making Israel a nuclear-weapon state was realized. He weaves together the story of the formative years of Israel's nuclear program, from the founding of the Israeli Atomic Energy Commission in 1952, to the alliance with France that gave Israel the sophisticated technology it needed, to the failure of American intelligence to identify the Dimona Project for what it was, to the negotiations between President Nixon and Prime Minister Meir that led to the current policy of secrecy. Cohen also analyzes the complex reasons Israel concealed its nuclear program - from concerns over the Arab reaction and the negative effect of the debate at home to consideration of America's commitment to nonproliferation.

Tells the story of the making of the H-bomb and reveals how it created a nuclear stalemate that lasted forty years.

"Nuclear weapons, since their conception, have been the subject of secrecy. In the months after the dropping of the atomic bombs on Hiroshima and Nagasaki, the American scientific establishment, the American

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government, and the American public all wrestled with what was called the "problem of secrecy," wondering not only whether secrecy was appropriate and effective as a means of controlling this new technology but also whether it was compatible with the country's core values. Out of a messy context of propaganda, confusion, spy scares, and the grave counsel of competing groups of scientists, what historian Alex Wellerstein calls a "new regime of secrecy" was put into place. It was unlike any other previous or since. Nuclear secrets were given their own unique legal designation in American law ("restricted data"), one that operates differently than all other forms of national security classification and exists to this day. Drawing on massive amounts of declassified files, including records released by the government for the first time at the author's request, *Restricted Data* is a narrative account of nuclear secrecy and the tensions and uncertainty that built as the Cold War continued. In the US, both science and democracy are pitted against nuclear secrecy, and this makes its history uniquely compelling and timely"--

The Oscar-shortlisted documentary *Command and Control*, directed by Robert Kenner, finds its origins in Eric Schlosser's book and continues to explore the little-known history of the management and safety concerns of America's nuclear arsenal. "Deeply reported, deeply frightening . . . a techno-thriller of the first order." —Los Angeles Times "A devastatingly lucid and detailed new history of nuclear weapons in the U.S. . . . fascinating." —Lev Grossman, *TIME Magazine* A myth-shattering exposé of America's nuclear weapons *Famed*

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investigative journalist Eric Schlosser digs deep to uncover secrets about the management of America's nuclear arsenal. A groundbreaking account of accidents, near misses, extraordinary heroism, and technological breakthroughs, *Command and Control* explores the dilemma that has existed since the dawn of the nuclear age: How do you deploy weapons of mass destruction without being destroyed by them? That question has never been resolved—and Schlosser reveals how the combination of human fallibility and technological complexity still poses a grave risk to mankind. While the harms of global warming increasingly dominate the news, the equally dangerous yet more immediate threat of nuclear weapons has been largely forgotten. Written with the vibrancy of a first-rate thriller, *Command and Control* interweaves the minute-by-minute story of an accident at a nuclear missile silo in rural Arkansas with a historical narrative that spans more than fifty years. It depicts the urgent effort by American scientists, policy makers, and military officers to ensure that nuclear weapons can't be stolen, sabotaged, used without permission, or detonated inadvertently. Schlosser also looks at the Cold War from a new perspective, offering history from the ground up, telling the stories of bomber pilots, missile commanders, maintenance crews, and other ordinary servicemen who risked their lives to avert a nuclear holocaust. At the heart of the book lies the struggle, amid the rolling hills and small farms of Damascus, Arkansas, to prevent the explosion of a ballistic missile carrying the most powerful nuclear warhead ever built by the United States. Drawing on

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recently declassified documents and interviews with people who designed and routinely handled nuclear weapons, *Command and Control* takes readers into a terrifying but fascinating world that, until now, has been largely hidden from view. Through the details of a single accident, Schlosser illustrates how an unlikely event can become unavoidable, how small risks can have terrible consequences, and how the most brilliant minds in the nation can only provide us with an illusion of control. Audacious, gripping, and unforgettable, *Command and Control* is a tour de force of investigative journalism, an eye-opening look at the dangers of America's nuclear age.

First published in 1976, *The Advisors* is an absorbing look at the technical, strategic, and human aspects of the great debate that led to the decision to build the first hydrogen bomb. Based on the author's own participation in Project Superbomb, on interviews with other participants, and on declassified documents, this book explains the complete background to this major acceleration of the nuclear arms race. For this reissue, the author has written a new Preface and Epilogue. The reissue also includes a recently declassified essay by Hans A. Bethe discussing the history of the H-bomb project from his unique vantage point as Director of the Theoretical Division at Los Alamos. He has revised the essay specifically for inclusion in this book.

*Hiroshima* is the story of six people--a clerk, a widowed seamstress, a physician, a Methodist minister, a young surgeon, and a German Catholic priest--who lived through the greatest single manmade disaster in history.

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In vivid and indelible prose, Pulitzer Prize-winner John Hersey traces the stories of these half-dozen individuals from 8:15 a.m. on August 6, 1945, when Hiroshima was destroyed by the first atomic bomb ever dropped on a city, through the hours and days that followed. Almost four decades after the original publication of this celebrated book, Hersey went back to Hiroshima in search of the people whose stories he had told, and his account of what he discovered is now the eloquent and moving final chapter of Hiroshima.

At the end of World War II, J. Robert Oppenheimer was one of America's preeminent physicists. For his work as director of the Manhattan Project, he was awarded the Medal for Merit, the highest honor the U.S. government can bestow on a civilian. Yet, in 1953, Oppenheimer was denied security clearance amidst allegations that he was "more probably than not" an "agent of the Soviet Union." Determined to clear his name, he insisted on a hearing before the Atomic Energy Commission's Personnel Security Board. In the Matter of J. Robert Oppenheimer contains an edited and annotated transcript of the 1954 hearing, as well as the various reports resulting from it. Drawing on recently declassified FBI files, Richard Polenberg's introductory and concluding essays situate the hearing in the Cold War period, and his thoughtful analysis helps explain why the hearing was held, why it turned out as it did, and what that result meant, both for Oppenheimer and for the United States. Among the forty witnesses who testified were many who had played vitally important roles in the making of U.S. nuclear policy: Enrico Fermi, Hans Bethe, Edward Teller,

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Vannevar Bush, George F. Kennan, and Oppenheimer himself. The hearing provides valuable insights into the development of the atomic bomb and the postwar debate among scientists over the hydrogen bomb, the conflict between the foreign policy and military establishments over national defense, and the controversy over the proper standards to apply in assessing an individual's loyalty. It reveals as well the fears and anxieties that plagued America during the Cold War era.

Looks at the contributions of the thousands of women who worked at a secret uranium-enriching facility in Oak Ridge, Tennessee during World War II.

Outlines what it takes to make chemical, biological, and nuclear weapons; suggests who might be able to produce and use such weapons; and examines how effective countermeasures might be.

In April 1945, Pulitzer Prize-winning U.S. science journalist William L. Laurence was summoned to the secret Los Alamos laboratory in New Mexico by General Leslie Groves to serve as the official historian of the Manhattan Project. In this capacity he also served as author of many of the first official press releases about nuclear weapons, including some delivered by the Department of War and President Harry S. Truman. Laurence was the only journalist present at the Trinity test in July 1945, and beforehand prepared statements to be delivered in case the test ended in a disaster which killed those involved. As part of his work related to the Project, he also interviewed the airmen who flew on the mission to drop the atomic bomb on the city of Hiroshima, Japan. Laurence himself flew aboard the

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B-29 The Great Artiste, which served as a blast instrumentation aircraft, for the atomic bombing of Nagasaki. He visited the Test Able site at Bikini Atoll aboard the press ship, 'Appalachian,' for the bomb test on July 1, 1946. In his book *The Hell Bomb*, Laurence warns about the use of a cobalt bomb—a form of hydrogen bomb that, at the time of first publication in 1951, was still an untested device—which was engineered to produce a maximum amount of nuclear fallout. “I FIRST heard about the hydrogen bomb in the spring of 1945 in Los Alamos, New Mexico, where our scientists were putting the finishing touches on the model-T uranium, or plutonium, fission bomb. I learned to my astonishment that, in addition to this work, they were already considering preliminary designs for a hydrogen-fusion bomb, which in their lighter moments they called the “Super-duper” or just the “Super.” “I can still remember my shock and incredulity when I first heard about it [...]. Could anything be more powerful, I found myself thinking, than a weapon that, on paper at least, promised to release an explosive force of 20,000 tons of TNT?....”

This is a political history of nuclear weapons from the discovery of fission in 1938 to the nuclear train wreck that seems to loom in our future. It is an account of where those weapons came from, how the technology surprisingly and covertly spread, and who is likely to acquire those weapons next and most importantly why. The authors' examination of post Cold War national and geopolitical issues regarding nuclear proliferation and the effects of Chinese sponsorship of the Pakistani program

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is eye opening. The reckless “nuclear weapons programs for sale” exporting of technology by Pakistan is truly chilling, as is the on-again off-again North Korean nuclear weapons program.

Grappling with the Bomb is a history of Britain’s 1950s program to test the hydrogen bomb, code name Operation Grapple. In 1957–58, nine atmospheric nuclear tests were held at Malden Island and Christmas Island—today, part of the Pacific nation of Kiribati. Nearly 14,000 troops travelled to the central Pacific for the UK nuclear testing program—many are still living with the health and environmental consequences. Based on archival research and interviews with nuclear survivors, Grappling with the Bomb presents i-Kiribati woman Sui Kiritome, British pacifist Harold Steele, businessman James Burns, Fijian sailor Paul Ah Poy, English volunteers Mary and Billie Burgess and many other witnesses to Britain’s nuclear folly.

A study of nuclear warfare’s key role in triggering the post-World War II confrontation between the US and the USSR After a devastating world war, culminating in the obliteration of Hiroshima and Nagasaki, it was clear that the United States and the Soviet Union had to establish a cooperative order if the planet was to escape an atomic World War III. In this provocative study, Campbell Craig and Sergey Radchenko show how the atomic bomb pushed the United States and the Soviet Union not toward cooperation but toward deep bipolar confrontation. Joseph Stalin, sure that the Americans meant to deploy their new weapon against Russia and defeat socialism, would stop at nothing to build his own



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bomb. Harry Truman, initially willing to consider cooperation, discovered that its pursuit would mean political suicide, especially when news of Soviet atomic spies reached the public. Both superpowers, moreover, discerned a new reality of the atomic age: now, cooperation must be total. The dangers posed by the bomb meant that intermediate measures of international cooperation would protect no one. Yet no two nations in history were less prepared to pursue total cooperation than were the United States and the Soviet Union. The logic of the bomb pointed them toward immediate Cold War. "Sprightly and well-argued.... The complicated history of how the bomb influenced the start of the war has never been explored so well."—Lloyd Gardner, Rutgers University "An outstanding new interpretation of the origins of the Cold War that gives equal weight to American and Soviet perspectives on the conflict that shaped the contemporary world."—Geoffrey Roberts, author of *Stalin's Wars*

The history of Pakistan's nuclear program is the history of Pakistan. Fascinated with the new nuclear science, the young nation's leaders launched a nuclear energy program in 1956 and consciously interwove nuclear developments into the broader narrative of Pakistani nationalism. Then, impelled first by the 1965 and 1971 India-Pakistan Wars, and more urgently by India's first nuclear weapon test in 1974, Pakistani senior officials tapped into the country's pool of young nuclear scientists and engineers and molded them into a motivated cadre committed to building the 'ultimate weapon.' The tenacity of this group and the central place of its mission in

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Pakistan's national identity allowed the program to outlast the perennial political crises of the next 20 years, culminating in the test of a nuclear device in 1998. Written by a 30-year professional in the Pakistani Army who played a senior role formulating and advocating Pakistan's security policy on nuclear and conventional arms control, this book tells the compelling story of how and why Pakistan's government, scientists, and military, persevered in the face of a wide array of obstacles to acquire nuclear weapons. It lays out the conditions that sparked the shift from a peaceful quest to acquire nuclear energy into a full-fledged weapons program, details how the nuclear program was organized, reveals the role played by outside powers in nuclear decisions, and explains how Pakistani scientists overcome the many technical hurdles they encountered. Thanks to General Khan's unique insider perspective, it unveils and unravels the fascinating and turbulent interplay of personalities and organizations that took place and reveals how international opposition to the program only made it an even more significant issue of national resolve. Listen to a podcast of a related presentation by Feroz Khan at the Stanford Center for International Security and Cooperation.

After a tsunami destroyed the cooling system at Japan's Fukushima Nuclear Power Plant, triggering a meltdown, protesters around the world challenged the use of nuclear power. Germany announced it would close its plants by 2022. Although the ills of fossil fuels are better understood than ever, the threat of climate change has never aroused the same visceral dread or swift action.

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Spencer Weart dissects this paradox, demonstrating that a powerful web of images surrounding nuclear energy holds us captive, allowing fear, rather than facts, to drive our thinking and public policy. Building on his classic, *Nuclear Fear*, Weart follows nuclear imagery from its origins in the symbolism of medieval alchemy to its appearance in film and fiction. Long before nuclear fission was discovered, fantasies of the destroyed planet, the transforming ray, and the white city of the future took root in the popular imagination. At the turn of the twentieth century when limited facts about radioactivity became known, they produced a blurred picture upon which scientists and the public projected their hopes and fears. These fears were magnified during the Cold War, when mushroom clouds no longer needed to be imagined; they appeared on the evening news. Weart examines nuclear anxiety in sources as diverse as Alain Resnais's film *Hiroshima Mon Amour*, Cormac McCarthy's novel *The Road*, and the television show *The Simpsons*. Recognizing how much we remain in thrall to these setpieces of the imagination, Weart hopes, will help us resist manipulation from both sides of the nuclear debate.

The International Spy Museum's *Historian* takes us on a wild tour of missions and schemes that almost happened, but were ultimately deemed too dangerous, expensive, ahead of their time, or even certifiably insane. "Compulsively readable laugh out loud history." —Mary Roach, *New York Times* bestselling author of *Grunt* and *Stiff* In 1958, the U.S.

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Air Force nuked the moon as a show of military force. In 1967, the CIA sent live cats to spy on the Soviet government. In 1942, the British built a torpedo-proof aircraft carrier out of an iceberg. Of course, none of these things ever actually happened. But in *Nuking the Moon*, intelligence historian Vince Houghton proves that abandoned plans can be just as illuminating--and every bit as entertaining—as the ones that made it. Vividly capturing the fascinating stories of how twenty-one plans from WWII and the Cold War went from conception, planning, and testing to cancellation, Houghton explores what happens when innovation meets desperation: For every plan as good as D-Day, there's a scheme to strap bombs to bats or dig a spy tunnel underneath the Soviet embassy. Along the way, he reveals what each one tells us about twentieth-century history, the art of spycraft, military strategy, and famous figures like JFK, Castro, and Churchill. By turns terrifying and hilarious—but always riveting—this is the unique story of history left on the drawing board.

Before the Bomb, there were simply 'bombs', lower case. But it was the twentieth century, one hundred years of almost incredible scientific progress, that saw the birth of the Bomb, the human race's most powerful and most destructive discovery. In this magisterial and enthralling account, Gerard DeGroot gives us the life story of the Bomb, from its birth in the turn-of-the-century physics labs of Europe to a

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childhood in the New Mexico desert of the 1940s, from adolescence and early adulthood in Nagasaki and Bikini, Australia and Siberia to unsettling maturity in test sites and missile silos all over the globe. By turns horrific, awe-inspiring and blackly comic, *The Bomb* is never less than compelling. In this engaging scientific memoir, Kenneth Ford recounts the time when, in his mid-twenties, he was a member of the team that designed and built the first hydrogen bomb. He worked with — and relaxed with — scientific giants of that time such as Edward Teller, Enrico Fermi, Stan Ulam, John von Neumann, and John Wheeler, and here offers illuminating insights into the personalities, the strengths, and the quirks of these men. Well known for his ability to explain physics to nonspecialists, Ford also brings to life the physics of fission and fusion and provides a brief history of nuclear science from the discovery of radioactivity in 1896 to the ten-megaton explosion of “Mike” that obliterated a Pacific Island in 1952. Ford worked at both Los Alamos and Princeton's Project Matterhorn, and brings out Matterhorn's major, but previously unheralded contribution to the development of the H bomb. Outside the lab, he drove a battered Chevrolet around New Mexico, a bantam motorcycle across the country, and a British roadster around New Jersey. Part of the charm of Ford's book is the way in which he leavens his well-researched descriptions of the scientific work with

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brief tales of his life away from weapons.

The Anarchist Cookbook will shock, it will disturb, it will provoke. It places in historical perspective an era when "Turn on, Burn down, Blow up" are revolutionary slogans of the day. Says the author "This book... is not written for the members of fringe political groups, such as the Weatherman, or The Minutemen. Those radical groups don't need this book. They already know everything that's in here. If the real people of America, the silent majority, are going to survive, they must educate themselves. That is the purpose of this book." In what the author considers a survival guide, there is explicit information on the uses and effects of drugs, ranging from pot to heroin to peanuts. There is detailed advice concerning electronics, sabotage, and surveillance, with data on everything from bugs to scramblers. There is a comprehensive chapter on natural, non-lethal, and lethal weapons, running the gamut from cattle prods to sub-machine guns to bows and arrows.

For this edition (first in 1984), the editors have updated the collection of primary documents which tell the story of atomic energy in the US from the discovery of fission through the development of nuclear weapons, international proliferation, and attempts at control. The book also includes a new chapter, reflects on Chernobyl, Annotation copyrighted by Book News, Inc., Portland, OR

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A NEW YORK TIMES NOTABLE BOOK OF 2020

New York Times bestselling author Lesley M.M.

Blume reveals how one courageous American

reporter uncovered one of the deadliest cover-ups of

the 20th century—the true effects of the atom

bomb—potentially saving millions of lives. Just days

after the United States decimated Hiroshima and

Nagasaki with nuclear bombs, the Japanese

surrendered unconditionally. But even before the

surrender, the US government and military had

begun a secret propaganda and information

suppression campaign to hide the devastating nature

of these experimental weapons. The cover-up

intensified as Occupation forces closed the atomic

cities to Allied reporters, preventing leaks about the

horrific long-term effects of radiation which would kill

thousands during the months after the blast. For

nearly a year the cover-up worked—until New Yorker

journalist John Hersey got into Hiroshima and

managed to report the truth to the world. As Hersey

and his editors prepared his article for publication,

they kept the story secret—even from most of their

New Yorker colleagues. When the magazine

published “Hiroshima” in August 1946, it became an

instant global sensation, and inspired pervasive

horror about the hellish new threat that America had

unleashed. Since 1945, no nuclear weapons have

ever been deployed in war partly because Hersey

alerted the world to their true, devastating impact.

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This knowledge has remained among the greatest deterrents to using them since the end of World War II. Released on the 75th anniversary of the Hiroshima bombing, *Fallout* is an engrossing detective story, as well as an important piece of hidden history that shows how one heroic scoop saved—and can still save—the world.

This report describes the effects of the atomic bombs which were dropped on the Japanese cities of Hiroshima and Nagasaki, summarizing the information available on damage to structures, injuries to personnel, morale effect, etc.

In December of 1938, a chemist in a German laboratory made a shocking discovery: When placed next to radioactive material, a Uranium atom split in two. That simple discovery launched a scientific race that spanned 3 continents. In Great Britain and the United States, Soviet spies worked their way into the scientific community; in Norway, a commando force slipped behind enemy lines to attack German heavy-water manufacturing; and deep in the desert, one brilliant group of scientists was hidden away at Los Alamos. This is the story of the plotting, the risk-taking, the deceit, and genius that created the world's most formidable weapon. This is the story of the atomic bomb. *Bomb* is a 2012 National Book Awards finalist for Young People's Literature. *Bomb* is a 2012 Washington Post Best Kids Books of the Year title. *Bomb* is a 2013



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Newbery Honor book.

“Riveting and poignant . . . The Winter Fortress metamorphoses from engrossing history into a smashing thriller . . . Mr. Bascomb’s research and, especially, his storytelling skills are first-rate.”—The Wall Street Journal

“Weaving together his typically intense research and a riveting narrative, Neal Bascomb’s *The Winter Fortress* is a spellbinding piece of historical writing.” — Martin Dugard, author of *Into Africa* and co-author of the *Killing* series

In 1942, the Nazis were racing to complete the first atomic bomb. All they needed was a single, incredibly rare ingredient: heavy water, which was produced solely at Norway’s Vemork plant. Under threat of death, Vemork’s engineers pushed production into overdrive. If the Allies could not destroy the plant, they feared the Nazis would soon be in possession of the most dangerous weapon the world had ever seen. But how would the Allied forces reach the castle fortress, set on a precipitous gorge in one of the coldest, most inhospitable places on earth? Based on a trove of top-secret documents and never-before-seen diaries and letters of the saboteurs, *The Winter Fortress* is an arresting chronicle of a brilliant scientist, a band of spies on skis, perilous survival in the wild, Gestapo manhunts, and a last-minute operation that would alter the course of the war. “A taut and peerlessly told adventure story full of thrills, derring-do and heart-stopping tension.” — Seattle Times

“Told with both historical and scientific accuracy . . . this book has rocketed into my pantheon of the top suspense-filled stories about [World War II], along with *The 900 Days* and *The Colditz Story*.” —

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Ethan Siegel, Forbes

Building the H Bomb A Personal History World Scientific  
IN THE NEWS Podcast — Building the H Bomb: A  
Personal History Hosted by Milt Rosenberg (1590  
WCGO), 25 June 2015 Building the H-Bomb: The Big  
Idea APS News, June 2015 (Volume 24, Number 6)  
Behind the Making of a Super Bomb The Washington  
Post, 22 May 2015 Hydrogen Bomb Physicist's Book  
Runs Afoul of Energy Department The New York Times,  
23 March 2015 More In this engaging scientific memoir,  
Kenneth Ford recounts the time when, in his mid-  
twenties, he was a member of the team that designed  
and built the first hydrogen bomb. He worked with — and  
relaxed with — scientific giants of that time such as  
Edward Teller, Enrico Fermi, Stan Ulam, John von  
Neumann, and John Wheeler, and here offers  
illuminating insights into the personalities, the strengths,  
and the quirks of these men. Well known for his ability to  
explain physics to nonspecialists, Ford also brings to life  
the physics of fission and fusion and provides a brief  
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scientific work with brief tales of his life away from weapons. Contents: The Big Idea The Protagonists The Choice The Scientists, the Officials, and the President Nuclear Energy Some Physics Going West A New World The Classical Super Calculating and Testing Constructing Matterhorn Academia Cowers New Mexico, New York, and New Jersey The Garwin Design Climbing Matterhorn More Than a Boy Readership: A memoir for general readership in the history of science. Key Features: It contains real physics, clearly presented for non-specialists Combining historical scholarship and his own recollections, the author offers important insights into the people and the work that led to the first H bomb Personal anecdotes enliven the book Keywords: Nuclear Weapons; Atomic Weapons; H Bomb; Thermonuclear Weapons; Nuclear Physics; Nuclear History; Thermonuclear History; Los Alamos; Edward Teller; Stanislaw Ulam; John Wheeler; Project Matterhorn Reviews: "It was a great treat to read a book that's well-written, informative, and gets the science right. It is these personal recollections and descriptions; the fact that it is a personal and first-hand account of a unique time in history and a remarkable scientific and technical achievement that made this book so enthralling. This is an engaging account of a young scientist involved in a remarkable project." P Andrew Karam The Ohio State University "Ford's book is a valuable resource for anyone interested in the history of the H bomb and its role in the Cold War, and in how that work affected the life and career of an individual involved." Physics Today "Personal memories are the

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book's greatest strength. Ford doesn't glorify, or apologize for, his work on the H-bomb. He simply tells it as it was. As a result, this is an engagingly human glimpse into the world of physics in the US in the early 1950s." *Physics World*

WINNER OF THE PULITZER PRIZE FOR NONFICTION

• "The definitive biography" (*Newsweek*) of J. Robert Oppenheimer, one of the iconic figures of the twentieth century, a brilliant physicist who led the effort to build the atomic bomb for his country in a time of war, and who later found himself confronting the moral consequences of scientific progress. In this magisterial, acclaimed biography twenty-five years in the making, Kai Bird and Martin Sherwin capture Oppenheimer's life and times, from his early career to his central role in the Cold War. This is biography and history at its finest, riveting and deeply informative. "A masterful account of Oppenheimer's rise and fall, set in the context of the turbulent decades of America's own transformation. It is a tour de force." —*Los Angeles Times Book Review*

Edward Teller is perhaps best known for his belief in freedom through strong defense. But this extraordinary memoir at last reveals the man behind the headlines--passionate and humorous, devoted and loyal. Never before has Teller told his story as fully as he does here. We learn his true position on everything from the bombing of Japan to the pursuit of weapons research in the post-war years. In clear and compelling prose, Teller chronicles the people and events that shaped him as a scientist, beginning with his early love of music and math, and continuing with his study of quantum physics

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under Werner Heisenberg. He also describes his relationships with some of the century's greatest minds--Einstein, Bohr, Fermi, Szilard, von Neumann--and offers an honest assessment of the development of the atomic and hydrogen bombs, the founding of Lawrence Livermore Laboratory, and his complicated relationship with J. Robert Oppenheimer. Rich and humanizing, this candid memoir describes the events that led Edward Teller to be honored or abhorred, and provides a fascinating perspective on the ability of a single individual to affect the course of history.

This book, written with unique access to official archives, tells the secret story of Britain's H-bomb - the scientific and strategic background, the government's policy decision, the work of the remarkable men who created the bomb, the four weapon trials at a remote Pacific atoll in 1957-58, and the historic consequences.

After learning of atomic physics, H. G. Wells began to think of its potential impact on human society. In *The World Set Free*, atomic energy causes massive unemployment, shaking the already fragile social order. The ambitious powers of the world decide to seize the opportunity to compete for dominance, and a world war breaks out, echoing the looming Great War about to ignite in 1914. Waking to the catastrophe, humanity begins the hard search for a way into a better future. The novel traces a soldier, an ex-king, a despot, and a sage through a profound transformation of human society, and we gain a window into Wells' own thoughts and hopes along the way. With one prophetic stroke, Wells gives

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the first detailed depiction of atomic energy and its potential destructive power, and predicts the use of the air power in modern warfare. He may have even directly influenced the development of nuclear weapons, as the physicist Leó Szilárd, shortly after reading the novel in 1932, then conceived of harnessing the neutron chain reaction critical to the development of the atom bomb. This book is part of the Standard Ebooks project, which produces free public domain ebooks.

A pioneering political-scientific history. . . . Lucidly composed, meticulously documented, and handsomely presented. The Annals A fascinating and compelling story of the beginnings of the Chinese nuclear weapon program. Arms Control Today"

Catch-22 with radiation. Area 51 meets Dr. Strangelove. Except it really happened. The Atomic Times is the absolutely insane, incredibly f\*cked-up, but true, eyewitness story of what happened on a tiny island in the South Pacific when over 1600 young soldiers (including me) were turned into atomic guinea pigs by the Department of Defense. The 1,612 soldiers stationed at the headquarters island (including me, a draftee) were there to "observe" this nuclear test series, called Operation Redwing. Wearing only T-shirts and shorts and without any other protective gear while Army brass and nuclear scientists wore Hazmat suits, we were exposed to radiation and fallout. Operation Redwing, the biggest and baddest of America's atmospheric nuclear weapons test regimes, mixed saber rattling with mad science, while overlooking the cataclysmic human, geopolitical and ecological effects. But mostly, it just messed with guys' heads. Major Maxwell, who put Safety First, Second and Third. Except when he didn't. Berko, the wise-cracking

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Brooklyn Dodgers fan forced to cope with the H-bomb and his mother's cookies. Tony, who thought military spit and polish plus uncompromising willpower made him an exception. Carl Duncan, who clung to his girlfriend's photos and a dangerous secret. Major Vanish, who did just that. In THE ATOMIC TIMES, Michael Harris welcomes readers into the U.S. Army's nuclear family where the F-words were Fallout and Fireball. In a distinctive narrative voice, Harris describes his H-bomb year with unforgettable imagery and insight into the ways isolation and isotopes change men for better—and for worse. A New York Times bestseller and a Pulitzer Prize nominee, THE ATOMIC TIMES was originally published in hardcover by Random House. "A gripping memoir leavened by humor, loyalty and pride of accomplishment. A tribute to the resilience, courage and patriotism of the American soldier." —Henry Kissinger "Harris' frank and disturbing descriptions of the criminally irresponsible proceedings on Eniwetok, and the physical and mental pain he and others endured, constitute shocking additions to atomic history. Amazingly enough, given his ordeal, Harris remains healthy." --Booklist "An entertaining read in the bloodline of Catch-22, Harris achieves the oddest of victories: a funny, optimistic story about the H-bomb. Harris uses a chatty, dead-pan voice that highlights the horrifying absurdity of life on the island: the use of Geiger counters to monitor scrambled eggs' radiation level, three-eyed fish swimming in the lagoon, corroded, permanently open windows that fail to keep out the radioactive fall-out and men whose toenails glow in the dark." --Publisher's Weekly From the author: Three-eyed fish swimming in the lagoon. Men whose toenails glow in the dark. Operation Redwing where the F words were Fallout and Fireball. In 1956, I was an army draftee sent to the Marshall Islands to watch 17 H-bomb tests. An "observer," the Army called it. In plain English: a human guinea pig. I knew at the

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time that the experience could make a fascinating book, and I wrote a novel based on it while I was still there. The problem was that Eniwetok was a security post. There were signs everywhere impressing on us that the work going on (I mopped floors, typed, filed requisitions and wrote movie reviews for the island newspaper “All the news that fits we print”) was Top Secret. “What you do here, what you see here, what you hear here, when you leave here leave it here.” I was afraid they would confiscate the manuscript if they found it but a buddy who left Eniwetok before I did concealed the pages in his luggage. When he got back to the States, he mailed those pages to my father so I had what turned out to be a very rough draft. What was wrong with the book? Let me count the ways. I didn’t know how to write action, plot and character. I did know how to leave out everything interesting that was happening around me. Back in the States after my discharge, I thought about writing Version #2 but for ten years, I had nightmares about the H-bomb almost every night. I survived the radiation (unlike some of my friends), but the memories were also a formidable foe. I tried to forget and more or less succeeded. My perspective gradually changed over the years and I began to remember what I had tried to forget: We were told we had to wear high density goggles during the tests to avoid losing our sight but the shipment of goggles never arrived—the requisition was cancelled to make room for new furniture for the colonel's house. We were told we had to stand with our backs to the blast—again to prevent blindness. But the first H-bomb ever dropped from a plane missed its target, and the detonation took place in front of us and our unprotected eyes. Servicemen were sent to Ground Zero wearing only shorts and sneakers and worked side by side with scientists dressed in RadSafe suits. The exposed military men developed severe radiation burns and many died. The big breakthrough



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came when enough years had passed and I had overcome the anger and the self-pity resulting from the knowledge that I and the men who served with me had been used as guinea pigs in a recklessly dangerous and potentially deadly experiment. At last I had the perspective to understand my nuclear year in its many dimensions and capture the tragedy and the black humor that came along with 17 H-bomb explosions. In addition, certain significant external realities had changed. Top Secret documents about Operation Redwing had been declassified. I learned new details about the test known as Tewa: the fallout lasted for three days and the radiation levels exceeded 3.9 Roentgens, the MPE (Maximum Permissible Exposure). Three ships were rushed to Eniwetok to evacuate personnel but were ordered back after the military raised the MPE to 7. That, they reasoned, ensured everyone's safety. I made contact with other atomic veterans who told me about their own experiences and in some cases sent me copies of letters written to their families during the tests. As we talked, we also laughed: about officers who claimed Eniwetok was a one year paid vacation; about the officer who guarded the political purity of the daily island newspaper by deleting "pinko propaganda," including a speech by President Eisenhower. By now, Ruth knew the material almost as well as I did and provided crucial perspective and detailed editing expertise. At last, I was able to pull all the strands together. After 50 years, I was able write the book I had wanted to in the beginning. Having struggled to write a memoir for so long and having been asked for advice by others contemplating writing a memoir, I can pass along a bit of what I learned along the way. Make sure you have enough distance from the experience to have perspective on what happened. Exposure to radiation and the resulting reactions—anger, terror, incredulity—produce powerful emotions that take time to process. Figure out how to use (or

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keep away) from your own intense feelings. In the case of the H-Bomb tests, anger and self-pity were emotions to stay away from. So was the hope of somehow getting “revenge.” Sometimes the unexpected works. For me, finding humor in a tragic situation—the abject military incompetence in planning and executing the H-Bomb tests—freed my memory and allowed me to write about horrific experiences. Figure out (most likely by trial and error) how much or how little of yourself you want to reveal. Keywords: memoir, veterans, H-bomb, US Army, black humor, dark humor, military memoir, nuclear bombs, radiation, fission, fusion, fallout, danger, suspense, atomic bombs, hydrogen bombs, H-bomb, South Pacific, Eniwetok, Marshall Islands

Perhaps no scientific development has shaped the course of modern history as much as the harnessing of nuclear energy. Yet the twentieth century might have turned out differently had greater influence over this technology been exercised by Great Britain, whose scientists were at the forefront of research into nuclear weapons at the beginning of World War II. As award-winning biographer and science writer Graham Farmelo describes in *Churchill's Bomb*, the British set out to investigate the possibility of building nuclear weapons before their American colleagues. But when scientists in Britain first discovered a way to build an atomic bomb, Prime Minister Winston Churchill did not make the most of his country's lead and was slow to realize the Bomb's strategic implications. This was odd—he prided himself on recognizing the military potential of new science and, in the 1920s and 1930s, had repeatedly pointed out that nuclear weapons would likely be developed soon. In developing the Bomb, however, he marginalized some of his country's most brilliant scientists, choosing to rely mainly on the counsel of his friend Frederick Lindemann, an Oxford physicist with often wayward judgment. Churchill also failed to capitalize on Franklin

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Roosevelt's generous offer to work jointly on the Bomb, and ultimately ceded Britain's initiative to the Americans, whose successful development and deployment of the Bomb placed the United States in a position of supreme power at the dawn of the nuclear age. After the war, President Truman and his administration refused to acknowledge a secret cooperation agreement forged by Churchill and Roosevelt and froze Britain out of nuclear development, leaving Britain to make its own way. Dismayed, Churchill worked to restore the relationship. Churchill came to be terrified by the possibility of thermonuclear war, and emerged as a pioneer of détente in the early stages of the Cold War. Contrasting Churchill's often inattentive leadership with Franklin Roosevelt's decisiveness, Churchill's Bomb reveals the secret history of the weapon that transformed modern geopolitics.

The classic and "utterly engrossing" study of Stalin's pursuit of a nuclear bomb during the Cold War by the renowned political scientist and historian (Foreign Affairs). For forty years the U.S.-Russian nuclear arms race dominated world politics, yet the Soviet nuclear establishment was shrouded in secrecy. Then, shortly after the collapse of the Soviet Union, David Holloway pulled back the Iron Curtain with his "marvelous, groundbreaking study" Stalin and the Bomb (The New Yorker). How did the Soviet Union build its atomic and hydrogen bombs? What role did espionage play? How did the American atomic monopoly affect Stalin's foreign policy? What was the relationship between Soviet nuclear scientists and the country's political leaders? David Holloway answers these questions by tracing the dramatic story of Soviet nuclear policy from developments in physics in the 1920s to the testing of the hydrogen bomb and the emergence of nuclear deterrence in the mid-1950s. This magisterial history throws light on Soviet policy at the height of the Cold War, illuminates a central element of the Stalinist

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system, and puts into perspective the tragic legacy of this program?environmental damage, a vast network of institutes and factories, and a huge stockpile of unwanted weapons. The #1 national bestselling “riveting” (The New York Times), “propulsive” (Time) behind-the-scenes account “that reads like a tense thriller” (The Washington Post) of the 116 days leading up to the American attack on Hiroshima by veteran journalist and anchor of Fox News Sunday, Chris Wallace. April 12, 1945: After years of bloody conflict in Europe and the Pacific, America is stunned by news of President Franklin D. Roosevelt’s death. In an instant, Vice President Harry Truman, who has been kept out of war planning and knows nothing of the top-secret Manhattan Project to develop the world’s first atomic bomb, must assume command of a nation at war on multiple continents—and confront one of the most consequential decisions in history. Countdown 1945 tells the gripping true story of the turbulent days, weeks, and months to follow, leading up to August 6, 1945, when Truman gives the order to drop the bomb on Hiroshima. In Countdown 1945, Chris Wallace, the veteran journalist and anchor of Fox News Sunday, takes readers inside the minds of the iconic and elusive figures who join the quest for the bomb, each for different reasons: the legendary Albert Einstein, who eventually calls his vocal support for the atomic bomb “the one great mistake in my life”; lead researcher J. Robert “Oppie” Oppenheimer and the Soviet spies who secretly infiltrate his team; the fiercely competitive pilots of the plane selected to drop the bomb; and many more. Perhaps most of all, Countdown 1945 is the story of an untested new president confronting a decision that he knows will change the world forever. But more than a book about the atomic bomb, Countdown 1945 is also an unforgettable account of the lives of ordinary American and Japanese civilians in wartime—from “Calutron Girls” like Ruth Sisson in Oak Ridge, Tennessee,

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to ten-year-old Hiroshima resident Hideko Tamura, who survives the blast at ground zero but loses her mother and later immigrates to the United States, where she lives to this day—as well as American soldiers fighting in the Pacific, waiting in fear for the order to launch a possible invasion of Japan. Told with vigor, intelligence, and humanity, Countdown 1945 is the definitive account of one of the most significant moments in history.

Here, for the first time, in a brilliant, panoramic portrait by the Pulitzer Prize-winning author of *The Making of the Atomic Bomb*, is the definitive, often shocking story of the politics and the science behind the development of the hydrogen bomb and the birth of the Cold War. Based on secret files in the United States and the former Soviet Union, this monumental work of history discloses how and why the United States decided to create the bomb that would dominate world politics for more than forty years.

From New York Times bestselling author Sam Kean comes the gripping, untold story of a renegade group of scientists and spies determined to keep Adolf Hitler from obtaining the ultimate prize: a nuclear bomb. Scientists have always kept secrets. But rarely have the secrets been as vital as they were during World War II. In the middle of building an atomic bomb, the leaders of the Manhattan Project were alarmed to learn that Nazi Germany was far outpacing the Allies in nuclear weapons research. Hitler, with just a few pounds of uranium, would have the capability to reverse the entire D-Day operation and conquer Europe. So they assembled a rough and motley crew of geniuses -- dubbed the Alsos Mission -- and sent them careening into Axis territory to spy on, sabotage, and even assassinate members of Nazi Germany's feared Uranium Club. The details of the mission rival the finest spy thriller, but what makes this story sing is the incredible cast of characters -- both heroes and rogues

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alike -- including: Moe Bergm, the major league catcher who abandoned the game for a career as a multilingual international spy; the strangest fellow to ever play professional baseball. Werner Heisenberg, the Nobel Prize-winning physicist credited as the discoverer of quantum mechanics; a key contributor to the Nazi's atomic bomb project and the primary target of the Alsos mission. Colonel Boris Pash, a high school science teacher and veteran of the Russian Revolution who fled the Soviet Union with a deep disdain for Communists and who later led the Alsos mission. Joe Kennedy Jr., the charismatic, thrill-seeking older brother of JFK whose need for adventure led him to volunteer for the most dangerous missions the Navy had to offer. Samuel Goudsmit, a washed-up physics prodigy who spent his life hunting Nazi scientists -- and his parents, who had been swept into a concentration camp -- across the globe. Irène and Frederic Joliot-Curie, a physics Nobel-Prize winning power couple who used their unassuming status as scientists to become active members of the resistance. Thrust into the dark world of international espionage, these scientists and soldiers played a vital and largely untold role in turning back one of the darkest tides in human history.

Chapters cover Edward Teller's role in the J. Robert Oppenheimer hearings; nuclear power policy; nuclear winter; Strategic Defense Initiative; the defense of Israel.

Twenty-five years after its initial publication, *The Making of the Atomic Bomb* remains the definitive history of nuclear weapons and the Manhattan Project. From the turn-of-the-century discovery of nuclear energy to the dropping of the first bombs on Japan, Richard Rhodes's Pulitzer Prize-winning book details the science, the people, and the socio-political realities that led to the development of the atomic bomb. This sweeping account begins in the 19th century, with the discovery of nuclear fission, and continues to World War

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Two and the Americans' race to beat Hitler's Nazis. That competition launched the Manhattan Project and the nearly overnight construction of a vast military-industrial complex that culminated in the fateful dropping of the first bombs on Hiroshima and Nagasaki. Reading like a character-driven suspense novel, the book introduces the players in this saga of physics, politics, and human psychology—from FDR and Einstein to the visionary scientists who pioneered quantum theory and the application of thermonuclear fission, including Planck, Szilard, Bohr, Oppenheimer, Fermi, Teller, Meitner, von Neumann, and Lawrence. From nuclear power's earliest foreshadowing in the work of H.G. Wells to the bright glare of Trinity at Alamogordo and the arms race of the Cold War, this dread invention forever changed the course of human history, and *The Making of The Atomic Bomb* provides a panoramic backdrop for that story. Richard Rhodes's ability to craft compelling biographical portraits is matched only by his rigorous scholarship. Told in rich human, political, and scientific detail that any reader can follow, *The Making of the Atomic Bomb* is a thought-provoking and masterful work.

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