The Manhattan Project

A Documentary Introduction to the Atomic Age

Michael B. Stoff Jonathan F. Fanton R. Hal Williams



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Edited by

Michael B. Stoff
The University of Texas at Austin

Jonathan F. Fanton New School For Social Research

R. Hal Williams
Southern Methodist University



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About the Editors

MICHAEL B. STOFF is Associate Professor of History at the University of Texas at Austin, where he directs the honors program in history. The recipient of a Ph.D. from Yale University, he wrote *Oil, War, and American Security: The Search for a National Policy on Foreign Oil, 1941–1947* and is coauthor of *Nation of Nations: A Narrative History of the American Republic.* He recently received the President's Associates Teaching Excellence Award at the University of Texas at Austin.

JONATHAN F. FANTON received his Ph.D. from Yale University and is Professor of History at the New School for Social Research.

R. HAL WILLIAMS, Professor of History At Southern Methodist University, received his Ph.D. from Yale University in 1968. His books include *The Democratic Party and California Politics*, 1880-1896 (1973); Years of Decision: American Politics in the 1890s (1975); and America: Past and Present (1984). In addition to receiving awards for outstanding teaching at both Yale and SMU, Williams has received grants from the American Philosophical Society and the National Endowment for the Humanities. He is currently working on a biography of James G. Blaine, the late nineteenth century presidential candidate, Speaker of the House and Secretary of State.

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Chronology, 1938-1945

Atomic Developments

1938

December

Nuclear fission

discovered in Germany.

1939

August 2

Albert Einstein writes President Roosevelt of need for an American atomic bomb project.

October 21First meeting of President's advisory committee on uranium.

<u>1940</u>

1941

War Developments

September 29

Munich Pact, ceding

Sudetenland of

Czechoslovakia to Germany,

signed.

August 23

German-Russian nonaggresion

pact signed.

August 24

British-Polish mutual

assistance pact signed.

September 1

Germany invades Poland,

setting off Second World War.

June 22

France surrenders to Germany.

Summer-Fall

Battle of Britain.

September 2

American destroyers ex-

changed for British bases.

September 27

Germany, Italy, and Japan

sign Tripartite Pact, creating

Triple Alliance.

March 11

Congress approves lend-

lease assistance to aid

Allies.

Atomic Developments

War Developments

1941 cont'd		April 13	Russian-Japanes five-year neutrality pact signed.
		June 22	Germany invades Russia.
		December 7	Japanese attack American base at Pearl Harbor.
		December 8	United States declares war on Japan.
		December 11	Germany declares war on United States.
1040		May 6	Fall of the Philippines to Japanese.
<u>1942</u>			
September 17	Leslie R. Groves appointed military chief of newly created Manhattan Engineer District (MED).		
December 2	Scientists under Enrico Fermi produce first self- sustaining chain reaction.		
1943			
		January 14-23	Casablanca conference: Roosevelt and Churchill announce policy of "un- conditional surrender."
		May 13	Surrender of Axis forces in North Africa.
August 14-24	Quebec Conference: Roosevelt and Churchill negotiate Quebec Agreement.	September 8	Surrender of Italy.
September 18	Roosevelt and Churchill meet at Hyde Park and agree on atomic policy.		

November 22-26

Cairo conference: Roosevelt, Churchill, and Chiang Kai-shek meet to discuss postwar far

eastern policy.

Chronology

Atomic Developments War Developments 1943 cont'd November 28-Teheran conference: First December 7 wartime meeting of "BigThree" (Roosevelt, Churchill, and Stalin), who agree on Anglo-American invasion of western Europe and on postwar international security organization. 1944 June 6 Allied invasion of Normandy, France (D day). December 16-26 Battle of the Bulge. 1945 February 4-9 Yalta conference: Roosevelt, Churchill, and Stalin meet for extensive planning for postwar Europe and Asia; Stalin promises Russian entry into war against Japan two or three months after defeat of Germany. April 7 Japanese Prime Minister Suzuki forms new cabinetto bring war to end. April 25 Secretary of War Stimson April 12 informs Truman of Roosevelt dies; Truman becomes President. Manhattan Project. May 7 Surrender of Germany. May 9 Interim Committee to advise President on atomic weapons holds first meeting. June 12 Franck Report is delivered to office of secretary of war, and its

substance is communicated to Scientific Advisory Panel.

June 22 Japanese Supreme War Council approves effort to negotiate

peace and to seek Russian

mediation.

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Atomic Developments

<u>1945 cont'd</u>			
July 16	Successful test of atomic bomb at	July 12	Japanese Foreign Minister Togo instructs Ambassador Sato in Moscow to implore Russians to mediate end to war.
	Alamogordo, New Mexico.	July 17- August 2	Potsdam Conference: First wartime meeting of Truman, Stalin, and Churchill (replaced by Attlee); inconclusive talks about postwar settlements; on July 24, Truman informs Stalin that United States has developed a "new weapon of unusual destructive force."
July 25	General Carl Spaatz, commander of U.S. Strategic Air Force, receives directive from Truman ordering 509 Composite Group to "deliver its first special bomb as soon as weather will permit visual bombing after about 3 August 1945."	July 26 July 28	Potsdam Declaration is issued. Japanese Prime Minister Suzuki calls Potsdam Declaration "unworthy of notice."
August 6	Uranium bomb (Little Boy) is dropped on Hiroshima.	August 8	Russia declares war on Japan
August 9	Plutonium bomb (Fat Man) is dropped on Nagasaki.	August 10	and invades Manchuria the next day. Japan offers to surrender.

August 14

August 30

September 2

Japan accepts Allied terms of

U.S. occupation forces land in

Formal surrender of Japan.

surrender.

Japan.

War Developments

Major Characters

Anderson, John Chemist by training, director of the Imperial Chemical Company and Lord

President of the British Council.

Arneson, R. Gordon Lieutenant in U.S. Army and recording secretary of Interim Committee.

Arnold, Henry H. (Hap) General in the U.S. Army and commander of the U.S. Army Air Corps.

Attlee, Clement British prime minister elected during the Potsdam conference in the summer of

1945.

Bard, Ralph A. Under secretary of the Navy and member of the S-1 Interim Committee.

Barkley, Alben Democratic senator from Kentucky and Senate majority leader (1937-1946); later

became Vice President.

Bohr, Niels Danish physicist.

Bundy, Harvey H. Special assistant to Secretary of War Henry L. Stimson.

Bush, Vannevar Director of the OSRD (1941-1946) and president of the Carnegie Institution.

Byrnes, James F. Director of the Office of War Mobilization (1943-1945), adviser to Presidents

Roosevelt and Truman, and secretary of state (1945-1947).

Cherwell, Lord

(Frederick Lindemann)

Personal science adviser to Churchill.

Chiang Kai-shek Leader of the Chinese Nationalists.

Churchill, Sir Winston Prime minister of Great Britain (1940-1945; 1951-1955).

Clayton, William L. Assistant secretary of state and member of the Interim Committee.

Compton, Arthur H. Nobel prize-winning physicist (1927), professor of physics at the University of

Chicago, and, during the war, director of the "Metallurgical Laboratory" at the University of Chicago and a member of the Scientific Advisory Panel to the

Interim Committee.

Compton, Karl T. President of the Massachusetts Institute of Technology and chief of field service

in the OSRD.

Conant, James B. Assistant to Vannevar Bush, president of Harvard University, and chairman of

the National Defense Research Committee (1941-1946), later known as OSRD.

de Gaulle, Charles Leader of the Free French.

Einstein, Albert Nobel prize-winning physicist (1921) driven from Germany and stripped of his

citizenship in 1933. Became an American citizen in 1940.

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XVIII Major Charcters

Engel, Albert J. Republican congressman from Michigan (1935-1951) and member of House

Subcommittee on Military Appropriations.

Farrell, Thomas F. Brigadier general in the U.S. Army, deputy of General Leslie Groves, and

director, along with Groves, of the Target Committee.

Fermi, Enrico Italian-born physicist, Nobel prize winner (1938), professor of physics at

Columbia University (1935-1945), the first to achieve a sustained chain reaction

(1942), and director of research at the "Metallurgical Laboratory."

Forrestal, James V. Secretary of the Navy (1944-1947) and member of the "Committee of Three."

Franck, James: German chemist and Nobel laureate (1925); during the war associate director of

the chemistry division of Metlab.

Frankfurter, Felix Supreme Court justice (1939-1962) and confidant of President Franklin

Roosevelt.

Grew, Joseph Under secretary of state (1944-1945) and member, along with Secretary of the

Navy James Forrestal and Secretary of War Henry Stimson, of the "Committee

of Three".

Groves, Leslie R. Brigadier general in the U.S. Army in charge of the Manhattan Project.

Hachiya, Michihiko Physician and victim of Hiroshima bombing.

Halifax, Earl of

(Edward Frederick Lindley Wood) British ambassador to the United States.

Harriman, William Averill American ambassador to Russia (1943-1946).

Harrison, George L. President of New York Life Insurance Company serving during the war as

special assistant to Secretary of War Henry Stimson.

Hirohito Emperor of Japan.

Hopkins, Harry Special assistant to President Roosevelt.

Joliot-Curie, Frederic French physicist whose seminal work on fission contributed to the creation of the

Manhattan Project.

King, Ernest J. Fleet admiral in the U.S. Navy, first commander-in-chief of the U.S. fleet (1941),

chief of naval operations (1942-1945), and a vital member of the joint chiefs of

staff during the war.

Konoye, Prince Fumimaro Special envoy for the Emperor of Japan.

Lawrence, Ernest Orlando Nobel prize-winning physicist (1939), director of the Radiation Laboratory at the

University of California at Berkeley (1936-1958), and member of the Scientific

Advisory Panel to the Interim Committee.

Leahy, William D. Admiral serving as chief liaison officer to the joint chiefs of staff.

Lovett, Robert A. Assistant secretary of war for air (1941-1945).

Lowe, Frank Brigadier general assigned as executive officer to the Senate's Special

Committee Investigating the National Defense Program.

MacArthur, Douglas General of the U.S. Army, supreme commander of forces in the southwestern

Pacific and later of the Allied forces during the occupation of Japan (1945-1951).

McCormack, John Democratic congressman from Massachusetts (1928-1971) and, during the war,

House majority leader.

Major Charcters XIX

Marshall, George C. Army chief of staff (1939-1945).

Martin, Joseph Republican congressman from Massachusetts (1925-1967) and leader of the

Republican minority in the House of Representatives.

May, Andrew Jackson Democratic congressman from Kentucky (1931-1947) and chairman of the

House Committee on Military Affairs.

Murray, Philip Successor to John L. Lewis as president of Congress of Industrial Organizations

(1940) and, two years later, militant president of the United Steel Workers of

America (1942-1952).

Nimitz, Chester Fleet admiral of the U.S. Navy and head of naval fighting forces in the Pacific.

Oppenheimer, J. Robert American physicist and director of the atomic energy research project at

Los Alamos, New Mexico (1942-1945). Later chairman of the General Advisory

Committee of the A.E.C. (1947-1953).

Patterson, Robert P. Under secretary of war (1940-1945); later secretary of war.

Purnell, William R. Rear admiral in the U.S. Navy and member of the Military Policy Committee.

Ramsey, Norman F. Physicist from Columbia University and member of the Target Committee.

Rayburn, Sam Democratic congressman from Texas and speaker of the House of

Representatives (1940-1946, 1949-1961).

Roosevelt, Franklin D. President of the United States (1933-1945).

Sachs, Alexander Russian-born Lehman Corporation economist instrumental in the creation of the

advisory committee on uranium.

Smith, Harold Director of the Bureau of the Budget.

Spaatz, Carl Commanding general of the United States Strategic Air Forces.

Stalin, Joseph Premier of Russia.

Stimson, Henry L. Secretary of war (1940-1945).

Suzuki, Kantaro Japanese prime minister who came to power in April 1945.

Szilard, Leo Hungarian-born physicist, developer (along with Enrico Fermi) of the chain

reaction system, and during the war, a member of Metlab.

Taber, John Republican congressman from New York (1923-1963) and member of the House

Committee on Military Appropriations.

Thomas, Elbert Democratic senator from Utah (1933-1951) and chairman of the Senate

Subcommittee on Military Appropriations.

Togo, Shigenori Foreign minister of the Suzuki government in Japan.

Truman, Harry S. Democratic senator from Missouri (1934-1944) and, for most of the war,

chairman of the Senate's Special Committee Investigating the National Defense Program. Elected Vice President in 1944 and elevated to the presidency upon

the death of Franklin Roosevelt on April 12, 1944.

Urey, Harold C. Nobel prize-winning (1934) professor of chemistry at Columbia (1934-1945) and

research director of the Manhattan Project (1942-1945).

Wallace, Henry W. Vice President of the United States (1941-1945); secretary of commerce (1945).

White, Wallace Republican senator from Maine (1931-1949) and leader of the Republican

minority in the Senate.

Preface

Good history begins with a good story, and there is none better than the story of the Manhattan Project. It contains all the elements of high drama: an earth-shaking discovery; a desperate race for life or death; a climax that changed human affairs—all played out on a global stage in the most fearsome war ever waged.

No novelist could have created a more exciting plot or, for that matter, more memorable characters. There are the scientists, who stand at the very center of the Manhattan Project, seeking to penetrate the inner structure of the atom. In it, they find a bewitching beauty, but when its energy is unleashed, when its eager inventors confront the bomb's incredible destructiveness, they recoil. Albert Einstein gropes for the right English words to urge the President to make a Uranium bomb, then, years afterward, disowns the creation in disgust. Danish physicist Niels Bohr travels across the Atlantic to enlist the aid of scientists, only later to repeat the journey with dark prophecies of an arms race. J. Robert Oppenheimer drives himself to exhaustion to solve the puzzle of how to sustain an explosive nuclear reaction. Yet as he watches the first atomic fireball rise from the New Mexican desert, he thinks only of death and destruction.

One step removed, possessing a different kind of power, are the bureaucrats. They, too, must readjust their calculations as the atomic bomb changes the hand they hold. At first they imagine the weapon as nothing more than a big bomb. But soon they realize that the quantitative jump they can imagine so easily is, in fact, a frightening qualitative leap. Leslie Groves—soldier, super organizer, master of the Manhattan Project—literally sees as much. He lies near the test site, burying his face in the sand, awe-struck at the blast. It is brighter than anything he has ever beheld, brighter than the sun, like "several suns at midday." Secretary of War Henry Stimson, eighty years old and ill, sees a new danger in the weapon on which he has hung so many hopes. It is a double-edged sword, he warns, "a Frankenstein which would eat us up or . . . a project 'by which the peace of the world would be helped in becoming secure.' "

Farthest from the sunburst at ground zero but at the center of political power are the Presidents. They control a weapon whose astonishing force they have never seen but whose use, they slowly realize, will change everything. Franklin Roosevelt decides to build the bomb but refuses to say whether he will use it. With the project near completion, he dies unexpectedly, before the device can be tested. Four months later, as the war with Japan draws to a close, Harry Truman faces a terrible choice—to drop a bomb that may vaporize a city or to rely on a conventional invasion that may cost millions of lives. Still a novice President, he nevertheless appreciates the stakes implied by the "possession of a weapon that would not only revolutionize war but could alter the course of history and civilization."

Preface

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Such a story and such characters have long fascinated historians. They have told the tale scores of times and analyzed it over and over again. In their hands, the Manhattan Project has served as a lens through which to examine the triumphs and tensions of the Grand Alliance, the seeds of the cold war, and the emergence of a powerful new trinity—government, industry, and science.

This version is different. It covers many of the same themes but relies on raw documents to do it. The story unfolds in the words of those who were there. They speak with their own voices and from their own points of view. Sometimes their message is discreet and personal, conveyed in a diary entry or a letter. Sometimes it is broad and corporate, communicated through a position paper, the minutes of a committee meeting, or the results of a survey. Thus, this collection serves a dual purpose: to tell the story of an important wartime episode, the Manhattan Project, from as many perspectives and in as much detail as space permits; and to give readers the chance to do some history on their own, using the evidence in its most original form.

By piecing together the story and puzzling out its meaning, readers can begin to understand not just the Manhattan Project but history itself. They can be their own historians as they confront the sources and try to make sense of them. In the process, they may gain some valuable insights: that history is not a static record of past things but a creative act; that historians are not mere "messengers from the past," shuttling back to the future with news of what happened long ago, but detectives and analysts, ferreting out information, making assessments, and searching for meaning.

Some explanation of strategies, organization, and the division of labors is in order. The present book originated in a collection of documents assembled by Jonathan F. Fanton and R. Hal Williams for a history course at Yale University. Source books often cover several events, presenting only a few documents for each. This book contains a large number of documents that follow a single episode from start to finish. The documents lead to no particular conclusion but leave room for readers to arrive at conclusions of their own.

It took Fanton and Williams countless hours to track down the original group of documents. Encyclopedic coverage was never the goal. The Manhattan Project has generated enough material to fill a library, and to cover it in detail would require more space than was available. Instead, adequacy, balance, and variety governed the search. There are enough documents here to tell the story, at least in its rough outlines and from several points of view.

Over the years, succeeding generations of instructors inherited the collection and added documents to it. When Michael Stoff received it, the manuscript had grown to nearly 400 pages. He added still more documents and spent the next several years shaping them into a book. That entailed removing about half of the documents, dividing them into seven sections, writing a general introduction and seven historiographical essays, and creating a timeline, cast of characters, bibliography, and set of maps. (In the college edition, he also prepared groups of study questions to guide students through the documents.)

For the sake of clarity, the documents are arranged in chronological order and not in order of their discovery. Arranging the documents, like selecting them, risks the charge of cutting the historical record to suit interpretive tastes. The hope is that the wieldiness of the collection and the coherence it achieves outweigh any risk. Great care, moreover, has been taken to avoid emphasizing any single interpretation.

To distinguish the collection still further, the intention was to have the documents photographed so readers could encounter them just as historians do. Unfortunately, that process took far too long. Worse still, many of the photographs turned out to be illegible. To preserve the look of the originals, the collection instead relies on meticulously reproduced facsimiles. Whenever possible, these reproductions duplicate the originals, including even typographical and spelling errors. A few of the documents are typeset, but most are near-exact reproductions. In many cases the documents have been tinted to achieve the look of age. Four typewriters from the 1940s, keyed to the original typefaces, were used to recreate diary entries, letters, memoranda, reports, cables, and minutes of committee meetings. The letterheads, classification stamps, even the marginal notations and signatures have been reproduced.

The result is a unique collection that presents a representative sample of the evidence as historians themselves encounter it. The facsimiles even offer a taste of the illicit pleasures available in the course of the historian's working day. Who, after all, can turn away from a letter or memorandum, worn brown with time, bearing a "Top Secret" stamp or the initials of a high-ranking official? There is a seductiveness in watching fallible men and women come into possession of immense power, all under the cloak of secrecy. That seductiveness—even of watching the drama, to say nothing of acting in it—should perhaps give us all pause.

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