Demystifying the Atomic Bomb:
The U.S. Strategic Bombing Survey Goes to Hiroshima and Nagasaki

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This dissertation seeks to explore how the studies in Hiroshima and Nagasaki by the U.S. Strategic Bombing Survey (USSBS) intertwine with its “early-surrender” conclusion, which argued that the atomic bombings of the two cities were indecisive in forcing Japan to surrender. Two of the three reports from USSBS Chairman’s Office—The Summary Report and Japan’s Struggle to End the War—contain the conclusion, which reads: “…certainly prior to 31 December 1945, and in all probability prior to 1 November 1945, Japan would have surrendered even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated.”

Since the reports’ publications in July 1946, the conclusion has been embraced by the so-called revisionist historians as evidence that supports their assertion that the atomic bomb was not necessary to end the war. In the meantime, even orthodox historians rarely reviewed it critically, partly because of the Survey’s prestige as a Presidential commission. This changed in 1995 when two historians published articles that cast doubts on the credibility of the conclusion.

In their articles, Robert P. Newman and Barton J. Bernstein argue, respectively, that the conclusion is unreliable and should not be trusted since it was probably determined against substantive evidence to the contrary; e.g., the evidence the Survey had collected and claimed their conclusion was based upon—interrogations of Japanese leaders. They assert that Paul H. Nitze, Vice Chairman of the Survey in the Pacific, who was the principal author of The Summary Report, had already arrived at the conclusion by the time he had landed in Japan.

By examining the preliminary and final reports of the USSBS divisions that studied in Hiroshima and Nagasaki, this dissertation seeks to determine if and how
these studies contributed to the formation of the conclusion. This research suggests that
the eight reports by the five USSBS study divisions—Physical Damage Division (PDD),
Urban Areas Division (UAD), Civilian Defense Division (CDD) and the Medical Division,
as well as the Moral Division—did not directly contribute to the formation of such a
hypothesis, as the conclusion was likely preconceived, as the preceding studies asserted.
However, with their counterfactual elements, they were used to support the conclusion.
Because these reports provided bases for The Effects of the Atomic Bombs on Hiroshima
and Nagasaki, a report from the USSBS Chairman’s Office, which was released before
two other Chairman’s reports, they thus paved the way for the conclusion to appear
consistent and to better fit in the reports.

In postwar America, two conflicting schools of thought in regard to the atomic
bomb appeared immediately after its first use—one that saw the atomic bomb as a
revolutionary weapon that ended the war and the other that deemed the new weapon as
indeed powerful, but ultimately just another bomb. The USSBS counterfactual
represented the latter, which was often pronounced by military officials who, for
example, feared that the new weapon might compromise their share of conventional
forces. This research also sheds light on the competition between The Effects of the
Atomic Bombs on Hiroshima and Nagasaki and the one by the Manhattan Engineer
District (MED), the latter of which represented the former school, to hold a contested
terrain over the narrative of the atomic bomb.

By excavating and weaving together mostly archival papers, this study
illuminates the transitions that took place in the United States in a brief period after the
war, before the country started to embrace the new weapon.
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<tr>
<td>AAF</td>
<td>Army Air Forces</td>
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<td>AFHRA</td>
<td>Air Force Historical Research Agency, Montgomery, AL</td>
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<td>CTS</td>
<td>Correspondence (&quot;Top Secret&quot;) of the Manhattan Engineer District, 1942-1946, microfilm publication M1109, Washington, D.C.: National Archives and Records Administration, 1980. (Microfilm accessed online via the Center for Research Libraries)</td>
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<td>FRUS</td>
<td>The Foreign Relations of the United States, Office of the Historians, US Department of State (Digital facsimile accessed online via the University of Wisconsin Digital Collections Center)</td>
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<td>HHA</td>
<td>Henry Harley Arnold papers, Library of Congress</td>
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<td>HSTL</td>
<td>Harry S. Truman Library, Independence, MO</td>
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<td>JCS</td>
<td>Joint Chiefs of Staff</td>
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<td>JSSC</td>
<td>Joint Strategic Survey Committee</td>
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<td>LRG</td>
<td>Leslie R. Groves papers, RG 200, NACP</td>
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<td>MED</td>
<td>Manhattan Engineer District</td>
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<td>MEDR</td>
<td>Manhattan Engineer District records, Records of the Army Corps of Engineers, RG 77, NACP</td>
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<tr>
<td>NACP</td>
<td>National Archives and Record Administration, College Park, MD</td>
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<tr>
<td>BNA</td>
<td>The National Archives, Kew, Richmond, UK</td>
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<tr>
<td>LC</td>
<td>Library of Congress</td>
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<tr>
<td>NASM</td>
<td>National Air and Space Museum, Smithsonian Institute</td>
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NHHC  Naval History and Heritage Command, Navy Yard, Washington, D.C.

NYT  *New York Times*

PHN  Paul H. Nitze papers, Library of Congress

RPP  Robert P. Patterson papers, Library of Congress

UMT  Universal Military Training

USSBS  United States Strategic Bombing Survey


WP  *Washington Post*
Introduction

Based on a detailed investigation of all the facts, and supported by the testimony of the surviving Japanese leaders involved, it is the Survey's opinion that certainly prior to 31 December 1945, and in all probability prior to 1 November 1945, Japan would have surrendered even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated.1

More than 1,000 Americans, not including the occupation forces, stayed in and traveled across Japan mostly from early October to December 1945 specifically to study the effects of aerial bombing during World War II. They were members of the United States Strategic Bombing Survey (USSBS), a Presidential commission led by a civilian board of directors. Some of its 109 reports and supporting documents remained classified in the US National Archives up to 1991.2 Yet, these reports have provided later studies on strategic bombing during World War II and the end of war with first-hand observations and incomparable data collected while Japanese cities were still "intact" from reconstruction.3


3 See, for example, Craven, Wesley Frank, and James Lea Cate, The Army Air Forces in World War II, 7 Vols., University of Chicago Press, 1948; Butow, Robert J. C., Japan's Decision to Surrender. CA: Stanford University Press, 1954. Military historian Philip S. Meilinger writes of USSBS as "the overwhelming authority of the Strategic Bombing Survey is unassailable. Nothing like it had ever been attempted after a war. The mountain of evidence obtained, the thousands of interviews conducted, the painstaking measurements taken, are simply too massive to refute." Meilinger, Philip S., Bomber: The Formation and Early Years of Strategic Air Command, Montgomery, AL: Air University Press, 2012, p. 62.
Over the last three quarters of a century, a conclusion included in two of its three reports on the Pacific War—*the Summary Report* and *Japan's Struggle to End the War*—released in July 1946 from the USSBS Chairman's Office, has assumed a unique and crucial position in the history of atomic bomb narratives.

The USSBS conclusion asserts that Japan would have surrendered in a matter of months had the atomic bomb not been dropped, and had Russia not entered the war—two events that have been often believed to have induced Japan's capitulation, or invasion on November 1, 1945, not been planned. Preceding studies named it as the “early-surrender hypothesis” or “counterfactual conclusions.” This hypothesis is unique because it has been often embraced by so-called revisionist historians, who have challenged President Harry S. Truman’s decision to drop the atomic bomb—the very same President who authorized the

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4 In this dissertation, I use the singular form to refer to the Survey's conclusion, whereas Barton J. Bernstein uses plural form as he analyzes it as two—one that discusses a probable surrender by Nov. 1 and the other a certain surrender by Dec. 31. Bernstein, Barton J., “Compelling Japan's Surrender Without the A-Bomb, Soviet Entry, or Invasion: Reconsidering the US Bombing Survey's Early-Surrender Conclusions,” *Journal of Strategic Studies*, Vol. 18, No. 2 (June 1995), pp. 103-105.

5 A number of newspapers at that time carried headlines that focused on the conclusion. For example, Leviero, Anthony H., “Japanese Defeat Laid to Air Attack: Bombing Survey Reports That Surrender would Have Come Without Atomic Bomb,” *NYT*, July 14, 1946, p. 13. For the media coverage of the report, see Folder: 000.75 Press Clippings USSBS Pacific Reports & Atomic bomb July 1946, Box 1, RG 243, NACP.


7 Newman, p. 167; Bernstein, “Compelling Japan's Surrender,” p. 101. They also use such expressions as “early-surrender conclusions,” “early-surrender counterfactuals,” “counterfactual proposition,” and “counterfactual contentions.” Gian P. Gentile calls the USSBS conclusion as “counterfactual speculation.” Because the Survey had to estimate what the production level of an industry would have been if strategic bombing attacks had not taken place to determine the effects of the strategic bombing on the industry, “speculations on events that might have happened in the past... were embedded in the American conceptual approach to strategic bombing.” The USSBS' evaluation methodology and conclusions were also shaped by the conception. Gentile, Gian P., *How Effective Is Strategic Bombing?: Lessons Learned From World War II to Kosovo*, NY: New York University Press, 2001, pp. 57-58.
This conclusion is crucial because it has scarcely been critically reviewed even by orthodox historians partly because of its prestige, and thus possibly has wielded much influence over public opinion. It is incomprehensible that something that goes against the

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official narrative had fit in the official reports in the first place, and remained largely unquestioned since then. It is even more so when we know the use of the atomic bomb has been an issue that touches a raw nerve in America.10

This was until 1995. In the year that marked the 50th anniversary of the atomic bombings, two historians published articles that cast doubt on the credibility of the early-surrender hypothesis.11 In their articles, Robert P. Newman and Barton J. Bernstein argue, respectively, that the conclusion is unreliable and should not be trusted since it was probably derived against all evidence to the contrary; e.g. the evidence the Survey had collected and claimed their conclusion was based upon.12 They assert Paul H. Nitze, Vice Chairman of the Survey in the Pacific, who was the principal author of the Summary Report, had already arrived at the conclusion by the time he had landed in Japan.13 Drawing on Nitze’s memoir, a biography and interviews with him, the two historians assert that the Vice Chairman wanted to vindicate his opinion.14 Nitze believed Japan was likely to surrender in

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a matter of months even without the atomic bomb, but his substitute plan for the bombing, which he recommended to the Truman Administration, was rejected.\textsuperscript{15}

Newman and Bernstein amply prove that the early-surrender hypothesis was not based on the evidence and was thus unreliable. Of approximately a dozen Japanese leaders interrogated who were influential in making decisions at the time of surrender,\textsuperscript{16} some actually mentioned that the atomic bombings provided them with an opportunity to surrender.\textsuperscript{17} Some military leaders said they were ready to fight to the end.\textsuperscript{18} But no one except Koichi Kido, Lord Keeper of the Privy Seal—the closest advisor to the Emperor—cited November 1, 1945, as the probable date by which Japan would have surrendered even without the atomic bomb or Russia’s entry into war. And that only came in response to a leading question by a Survey interrogator.\textsuperscript{19}

Bernstein also extensively examined the likelihood of Japan’s capitulation by each of the two dates—November 1 and December 31, 1945—respectively. He concludes that a

\begin{flushleft}
\textsuperscript{15} For the detail of this proposition, see the unpublished manuscript of Nitze’s autobiography. Chapter IV: The U.S. Strategic Bombing Survey, Draft No. 4, pp. 29-32, Folder 6, Box 64, Part II, PHN.

\textsuperscript{16} There is a list of 24 leaders in \textit{Japan’s Struggle to End the War}, 13 of which were actually interrogated by USSBS.


\textsuperscript{18} Statements of Shunroku Hata, Dec. 8, No. 522, Reel 9; Koshiro Oikawa, Dec. 1, No. 494, Reel 9; Tastuhiko Takashima, Nov. 24, No. 478, Reel 9; Torashiro Kawabe, Nov. 2, No. 447, Reel 9; Saburo Endo, Nov. 3, No. 279, Reel 8, all of \textit{Transcripts of Interrogations}. That being said, we should not take these remarks at face value, either, as they were only talking hypothetically. These military leaders, except Oikawa, are not included in the list of 24 leaders who were influential in making decisions.

\end{flushleft}
pre-November surrender would not likely have occurred, while “there is a likelihood—but far short of ‘certainty’—that Japan would have surrendered before the end of 1945.”20

Yet, questions still remain. The Survey made extensive studies on Hiroshima and Nagasaki as it was requested by President Truman to examine the effects of “all types of air attack,”21 by which it was deemed to include atomic bombing. While they could not study the impact of the planned invasion or the Russian entry into war, other than listening to what Japanese officials told them in the interrogations, the Survey analysts had seen the effects of the atomic bomb with their own eyes and collected substantial evidence in the affected areas. How do the results of these studies intertwine with the counterfactual conclusion? Did the Survey’s studies in Hiroshima and Nagasaki contribute in any way to the formation of the early-surrender hypothesis?

To explore these questions, I will approach the counterfactual conclusion from a different scope. I will examine the eight reports and their manuscripts prepared by the five divisions, among 15 study divisions in the Pacific Survey, that studied the effects of the atomic bomb. There are several studies on the USSBS or its early surrender hypothesis, including those I discussed above, but none of these delve into how the conclusion and the USSBS studies on the atomic bomb interplayed. Examining the early-surrender hypothesis

20 Bernstein, “Compelling Japan’s Surrender,” p. 105.
21 Letter to Franklin D’Olier from Harry S. Truman, Aug. 15, 1945, Folder: MISC Papers connected with USSBS, Box United States Strategic Bombing Survey, AFHRA; also in Folder 651, Box 1677, Official File, White House Central Files, 1945-53, Presidential Papers, HSTL.
only within the framework of the interrogations of Japanese leaders misses the significance of the Survey's studies in Japan.\textsuperscript{22}

My examination of these materials reveals these studies provided bases for the three reports from the Chairman's Office. Moreover, the results often demonstrate an orientation toward conclusions similar to the early surrender hypothesis. If the counterfactual conclusion was not supported by the interrogations of the Japanese leaders, it was supported by the Survey's studies on Hiroshima and Nagasaki. The reports of the five divisions and \textit{the Effects of Atomic Bombs on Hiroshima and Nagasaki} (Hereafter, the Chairman's a-bomb report),\textsuperscript{23} the first report released from the Chairman's Office in June 1946, paved the way for the counterfactual conclusion to fit into the two other Chairman's reports. These studies serve as evidence in support of the early-surrender hypothesis.

In his article, Bernstein points out that the counterfactual in the two Chairman's reports was not “systematically integrated into the narrative and analysis of these reports.”\textsuperscript{24} He also argues that their key paragraphs could have been deleted without readers noticing any gap, as it does not “flow logically from earlier parts of the reports.”\textsuperscript{25}

\textsuperscript{22} I was inspired to this viewpoint that led me to the main research questions in the previous paragraph when I read an article by Hattori, Masako, “Mobilizing American Youth for Total War: The Selective Training and Service Act of 1940,” \textit{Nanzan Review of American Studies}, Vol. 39 (2017), pp. 3-22. Arguing that U.S. mobilization for World War II was a process rather than an impromptu reaction to the Pearl Harbor attack, Hattori suggests that examining it “within the four-year time frame... misses the significance of these turbulent and transitional years in which the Depression was not yet overcome but the U.S. experience of World War II was drawing near.” (p. 4) The viewpoint brought a major breakthrough in this project. I thank Hattori for giving me this inspiration.


\textsuperscript{24} Bernstein, “Compelling Japan's Surrender,” p. 108.

\textsuperscript{25} \textit{Ibid.}, p. 108.
Perhaps it is true that the reports could be seen as complete even without the conclusion.

Still it seems to have no problem fitting in where it is “without readers noticing any gap,” as it basically repeats the assertion made in the preceding paragraph that the atomic bomb was unnecessary. This can be attested by the fact that no one had criticized these accounts over half a century.

And the accounts in the reports are more often consistent than inconsistent, and consistent with each other even in their inconsistencies. When compared with the Chairman’s a-bomb report, it is more obvious that these consistencies were synchronized. Because the Chairman’s a-bomb report and divisional reports laid the groundwork for the section of the effects of the atomic bomb in *the Summary Report* and *Japan’s Struggle to End the War*, naturally they supported each other, with their contents consistent with each other, including the early-surrender hypothesis.

It is rather difficult to distinguish the early-surrender conclusion alone as illogical with a few inconsistencies throughout the reports. It may sound a little odd because of the dates—31 December 1945 and 1 November 1945—that appear nowhere in earlier parts but only in this conclusion. Perhaps for the knowledgeable readers at the time, however,

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26 The assertion reads: “it seems clear that, even without the atomic bombing attacks, air supremacy over Japan could have exerted sufficient pressure to bring about unconditional surrender and obviate the need for invasion” (*Summary Report*, p. 26); “It seems clear, however, that air supremacy and its later exploitation over Japan proper was the major factor which determined the timing of Japan’s surrender and obviated any need for invasion.” (*Japan’s Struggle to End the War*, p. 13) In *Japan’s Struggle to End the War*, there is another sentence that argues the same end: “The Hiroshima and Nagasaki atomic bombs did not defeat Japan, nor by the testimony of the enemy leaders who ended the war did they persuade Japan to accept unconditional surrender.” (p. 12)

27 There is a mention of invasion as “the Kyushu beachheads in November 1945” in *Japan’s Struggle to End the War* (p. 16); still it does not include the specific date.
the meaning of the date November 1, 1945, was too obvious, that it did not need to be explained. Without the specific dates, though, the reports still discuss the threat of invasion, effects of the atomic bombs, and Soviet’s entry into war in a way that supports the conclusion.

This would support the supposition that the early-surrender hypothesis was not something that was conceived by one Survey director, who added the paragraph to the end of the two reports just to vindicate his own belief. Contrary to the assumption by the two historians that Nitze, the principal author of the Summary Report, was the sole guiding force of the conclusion, it is easier to see it as a result of cumulative efforts by the Survey executives and analysts who wrote the divisional reports. In an attempt to explore this thesis, I will analyze the counterfactual conclusion in relation to their studies of the effects of the atomic bomb, to which the Survey had devoted so much time and effort.

According to Nitze and his biographer, the USSBS vice chairman had embarked on the Pacific study with two preconceptions regarding the atomic bomb that 1) the bomb had been unnecessary; and 2) the bomb should be demystified and not treated as an absolute

28 It was the day when Operation Downfall, the Allied plan for the invasion of Japan, was supposed to be initiated.

29 USSBS Chairman's Office, Summary Report, pp. 16-17, 22-26; Idem., Japan's Struggle to End the War, pp. 8-13.

30 Bernstein implies the possibility of the Survey's organizational effort when he said "Nitze's, and the Survey's, analysis," but he does not discuss the particular topic in his article. Bernstein, “Compelling Japan's Surrender,” p. 128.
weapon. My study shows these perspectives were shared in other of the Survey’s reports on Hiroshima and Nagasaki.

While some of the results conformed to these preconceptions, there are traces indicating that the authors or reviewers of the reports may have just modified the results, to make them conform to their preconceptions—sometimes in contradiction to their initial results. It was this careful and meticulous job of accumulating evidence that prepared the way for the early-surrender hypothesis to fit into the two Chairman’s reports without too many inconsistencies. There is even a trace of the Survey’s attempt to include the counterfactual conclusion in the Chairman’s a-bomb report. The counterfactual conclusion was the nucleus of the USSBS Pacific Survey.

The narrative of the atomic bomb in the US immediately after the war was not as monolithic as it is now. Immediately after the atomic bomb was used against Japan, two schools of thought appeared: one that described the new weapon as revolutionary and decisive and which had brought Japan to her knees, and the other that saw the bomb as powerful but just another, larger bomb. This also explains why this conclusion stayed in the reports when all three reports from the USSBS Chairman’s Office were reviewed and published with full approval from President Truman, and the Departments of War, Navy, and State.

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32 Memorandum for Charles G. Ross from Edwin A. Locke, Jr., July 10, 1946, (Japan’s Struggle to End the War); Letter to E. A. Locke, Jr. from Walter Wilds, Secretary of USSBS, dated July 10, 1946 (for both Summary Report and Japan’s Struggle to End the War); Letter from Franklin D’Olier to the President, July 10, 1946; Memorandum for Charles G. Ross from Edwin A. Locke, Jr., July 15, 1946 (Summary Report); Memorandum to the President from Edwin A. Locke, Jr., June 21, 1946 (a-bomb Report), all in Folder 651, Box 1677, Official File, White House Central Files, 1945-53; Letter from Franklin D’Olier to the President, June 20, 1946; Letter from Walter Wilds to Edwin A. Locke, Jr., June 20, 1946, (a-bomb Report); Letter
What is “explosive”\textsuperscript{33} to the eyes of the later readers might not have been so for the contemporaries. The conclusion faced few outright criticisms when the reports were released.\textsuperscript{34} With no official narrative yet established and no policy on how to incorporate the atomic bomb into the arsenal yet decided, contemporary people appear to have accepted the early-surrender hypothesis as one opinion.

By exploring the narratives that came out following the first atomic attack on August 6, 1945, this dissertation also argues that the conclusion represented some of the America’s first responses to the emergence of the atomic bomb. It represents sentiments and notions among the US government leaders and military officials that appeared immediately after the end of the war that perceived: 1) the bomb as a threat to conventional forces, especially in the context of postwar military planning, and 2) an increasing need to counteract the initial media coverage, which they thought, had almost mystified the atomic bomb.

The atomic bomb posed a threat for conventional forces at a time when each of the three services of the Army, Navy and Army Air Forces (AAF) were competing to protect its

\textsuperscript{33} For example, Newman calls the conclusion “explosive,” “dogmatic,” “extreme” and “a... proposition of breathtaking scope.” Newman, pp. 168, 171. Gentile calls it “sweeping” (p. 3), and “striking” (p. 104).

\textsuperscript{34} The only exception I know of is the column by journalist David Lawrence, who, citing the conclusion, argued, “Such an assumption is exactly what the De Seversky school of thought has been saying in order to prove that air power should be in supreme command of our military and navy establishment.” The point of criticism, however, is aimed at its making light of other conventional armed forces of the Navy, Army and Marine Corps. It did not discuss the role of atomic bomb at all. “Report on Air Attack in War Against Japan,” \textit{New York Sun}, July 16, 1946, p. 19. The conclusion was welcomed by such an air enthusiast as Maj. Gen. Orvil A. Anderson, chief of USSBS Military Analysis Division. See memorandum “Summary Report, United States Strategic Bombing Survey,” from Anderson to the Secretary of War, July 11, 1946, Folder: 319.1A, Box 27, Entry 1, RG 243, NACP. This report was later reprinted as “A report for consideration of the reorganization of the armed forces—1946,” \textit{The Air Power Historian}, Vol. 5, No. 3 (July 1958), pp. 180-195.
vested interest or to obtain a larger share (or independence from the Army in the case of AAF) in the postwar military budget. The competition grew more heated with a view to the planned unification of the armed forces that would place three services of the Army, Navy and Air Force under the single Department of National Defense. In this context, the atomic bomb appeared as a powerful rival that might overshadow or disrupt traditional, conventional forces.

It was also somewhat natural among American leaders—both civilian and military—to view the bomb as “just another bomb” and to deny the revolutionary nature of the new weapon. This view, in addition to counteracting possible criticisms against the use of the bomb from both international and domestic critics, had come in part from fears that the public might revert to pre-war isolationism at the war’s end. Especially for those who promoted universal military training (UMT) to prepare the nation for the future, the bomb posed a threat as it justified opposition to the program that would require all young American males to receive one year of compulsory military training. These sentiments naturally led to downplaying the effects of the new weapon and the role it played in defeating Japan. This, as we all know, would gradually change and the United States would come to embrace nuclear weapons as a fundamental part of its arsenal.

As the father of the atomic bomb, the Manhattan Engineer District (MED), an Army branch that led the wartime project to develop the atomic bomb, had an interest in promoting another school of thought and its own report. This dissertation also reveals there

35 See Chapter I of this dissertation.
was a competition between the Survey and MED over which study should prevail as the official government report. With the MED's probable scrutiny, the process of formulating the Chairman's report on the effects of the atomic bomb had become a contested terrain for the two schools of thought. And it was this competition that may have reinforced the efforts on the Survey's part more to marshal the divisional reports to support the counterfactual conclusion.

In his 1993 paper, Bernstein discussed an effort on the authority's part to contest the terrain of the narrative of the atomic bomb, which led to the February 1947 article by Henry L. Stimson, wartime Secretary of War, that defended the use of the bomb. But, already, in the period leading up to that time, there was another, silent competition unfolding between USSBS and MED, over which narrative should prevail.

Preceding studies on USSBS predominantly discuss the aspect of the Pacific Survey in connection with the inter-service rivalry between the AAF and the Navy over who won the war with Japan. It is true there was a fierce competition between the armed services that originated even before the war, which was carried over to the postwar era. A careful examination of the relevant materials, however, demonstrates that the Pacific Survey was as much an issue of the atomic bomb versus conventional forces as that of the AAF versus


Navy. While some studies made a general or passing reference to this point, I will argue it had been one of defining elements for the Survey that led to the counterfactual hypothesis.

The use of the bomb, followed by Japan’s surrender, naturally attracted international attention. Many of the news stories that came out in the wake of the Hiroshima attack, together with the Japanese protest and propaganda, described the horror and the revolutionary power of the atomic bomb. This worried American officials who feared that this would give the public the wrong idea about the new weapon—that it could resolve all future conflicts. It had also likely aggravated the perception among the military of the bomb as a threat. The counterfactual conclusion represented the view held by many, including some Survey officials, that demystifying the bomb could counteract the media coverage that, they believed, was either influenced by Japanese propaganda or exaggerated the power and effects of the new weapon.

Such effects included those of radiation. No doubt the new weapon was revolutionary not only in the speed and magnitude of destructions it could cause but also because of this newly weaponized property. The frenzied initial popular reaction to the bomb was soon taken over by the stories of mysterious delayed deaths. While the Survey discussed the effects of radiation to an extent that had not been done before, it specifically denied the effects of residual radiation.

The conclusion was inevitably relevant to the question of whether the atomic bomb had been necessary to win the war. That some American leaders articulated after the war

that the atomic bomb was not necessary to defeat Japan had also likely helped the early-surrender conclusion sound persuasive and protected it from the critical scrutiny of orthodox historians.\textsuperscript{39} Describing the true nature of the atomic bomb and defining the strategic role it played in war are two different things. But because the Survey had an interest in describing both the effects and the role of the atomic bomb in limited terms, the results supported each other, making the early-surrender hypothesis sound more consistent and persuasive.

Whatever the motives and agendas the Survey may have had, its conclusion served as a litmus test that called forth this unsettling question that was never answered. In a way, it stood as a bastion deep inside the American mind against the widely held myth that Truman faced what J. Samuel Walker called “a categorical choice”\textsuperscript{40} between the atomic bomb and an invasion. This dissertation will not discuss the question of whether the atomic bomb had been necessary to bring Japan’s surrender. But it will look into a process where some of the primary narratives over the use of the bomb were formulated and incorporated into reports.

The atomic bomb ushered in a new era which required a revolutionary change in thinking. But few people were ready to accept that, and it took some time for Americans to


\textsuperscript{40} Walker, p. 5.
adapt themselves to the change. The Survey’s reports came precisely at the moment when America was making this transition, as leaders of the military forces started to claim the atomic bomb. In this dissertation, I would like to explore this moment.

The USSBS was established by Secretary of War Stimson in November 1944, pursuant to a directive from President Franklin D. Roosevelt to review the effects of strategic bombing against Germany.41 A group of civilian experts, including Franklin D’Olier, president of the Prudential Insurance Company, Henry Alexander, vice president of J. P. Morgan and Company, and Robert P. Russell, General Manager of Standard Oil Co., were selected to lead the Survey to conduct an impartial study in Europe. It was expected that such a study would benefit the planning of air attacks on Japan and the postwar defense establishment.42

World War II brought forth new weapons of destruction. Strategic bombing was one of them, although it is often eclipsed by the emergence of the atomic bomb.43 Strategic bombing is a form of warfare fought by long-range aircraft carrying bombs to an enemy’s “vital centers” to undermine its ability and will to fight. Advocated by air power enthusiasts first in the 1920s, this bombing method was finally adopted late in the war in December 1944, in the European Theater and in March 1945, in the Pacific Theater. The bombing of

41 Letter from Franklin Roosevelt to the Secretary of War, Sept. 9, 1944, Folder: 300.6(A) Administrative Directives USSBS (G-2 Files), Box 14, Entry 1, RG243, NACP. The same documents can also be found in Folder: MISC Papers connected with USSBS, Box: United States Strategic Bombing Survey, AFHRA.

42 MacIsaac, pp. 51-55.

43 Other inventions include radars, and V-1 and V-2 rocket missiles.
Japan also made full use of a new weapon—incendiary bombs made of petroleum designed to inflame wooden houses, a typical Japanese residence.44

The Survey was conceived by officials of the AAF who wanted to establish in the minds of the public, the power and effectiveness of strategic bombing at a time when the US government started to make postwar defense plans.45 Speaking on the need to promote air power, AAF Commanding General Henry H. Arnold said: “No American, sensitive to the lessons learned in the last five years, can fail to see the importance of public understanding of the meaning—for the well-being of our Country or for its undoing—of Air Power. It is important that this understanding be brought home to the greatest possible number of our countrymen... The wider the public recognition of the significance of these forces, the more secure the peace of the World and this Nation.”46 The AAF hoped to leverage the importance of air power to win independence from the Army and to take a bigger role in the country’s military establishment.47

Under the civilian directors, 13 divisions of three study groups—Military, Economic and Civilian—were organized and started to work in London in January 1945 before moving into Germany even before the cease-fire took place.48 At the peak time of July 21,


45 MacIsaac, pp. 1-50; Gentile, pp. 24-46.

46 Letter to Charles E. Wilson from H. H. Arnold, July 9, 1945, Jacket No. 12 Air Defense, Folder: 3 Military Official Nos. 11-15, Box 165, HHA.

47 Gentile, pp. 13-32.

48 MacIsaac, pp. 68-94.
1945, the number of Survey personnel in Europe was 1,287, including 1,116 from the military. The result of the European Survey produced 216 reports, published by May 1947.

The USSBS was reorganized and sent to Japan after the country formally surrendered on August 15, 1945, this time at the request of President Truman. As many as 1,345 personnel—172 civilians, 513 officers and 675 enlisted—were in Japan at the peak time of November 25, just prior to their departure from Japan. The results of the Survey in Japan by its 17 divisions produced 109 reports, all published by July 1947.

The use of atomic bombs at the end of the Pacific War, however, complicated the plan for the postwar military forces. While a few in the AAF were quick to realize the advantage of being the only delivery system of the atomic bomb, it took time for others to grasp the implications of the new weapon. Even those visionary ones were careful, however, in presenting the bomb to the public, as it was feared that too much emphasis on the atomic

49 Strength of United States Strategic Bombing Survey Pacific Theater; Strength of United States Strategic Bombing Survey in all theaters, both in Box 33A, Entry 1, RG 243, NACP.

50 Ibid.

51 In addition to 15 study divisions, the Overall Economic Effects Staff produced one report and the Photo Intelligence Section of the G-2 Division produced 12 reports.


53 See Chapter I of this dissertation.

54 Arnold, for example, wished to have a careful treatment of the atomic bomb as a manifestation of air power in his final report to the Secretary of War. In response, the officer in charge of the report in the
bomb would jeopardize proposals for expanded conventional forces.55 The AAF, for example, planned to propose a 70-group air force that was based largely on non-atomic strategic-bombing missions.56

It is striking to find to what extent the early-surrender hypothesis had been accepted in the US. During the almost one year of heated debate over the planned atomic bomb exhibition at the Smithsonian Institute’s National Air and Space Museum (NASM) to mark the 50th anniversary of the end of the war, the USSBS conclusion included in the exhibition script had hardly become a point of controversy. For example, the Washington Post, which ran a series of articles mostly critical of the NASM exhibition, took up the counterfactual only once.57 And it was in the context that the Survey “based that claim...on the escalation of massive conventional firebombing like that which incinerated Tokyo March 9 and 10,

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Army Air Corps Office of Information Services suggested “to point out that the atomic bomb does not make future air way [sic] easy—that we can’t just have a few planes and drop a few atomic bombs to defeat any future enemy.” Memorandum from R. Proctor to Col. Bowman, Aug. 12, 1945; Memorandum for General H. H. Arnold from Lt. Col. Jo Chamberlin, Aug. 28, 1945, both in Folder 6, Box 178, HHA. The actual final report to the Secretary of War, published on Nov. 12, 1945, reads: “the epoch-opening fall of the atomic bombs on Hiroshima and Nagasaki did not cause the defeat of Japan, however large a part they may have played in assisting the Japanese decision to surrender. Japan was defeated already by the cumulative destruction of her capacity to make war... The atomic bombs were staggering in their destructive scope; but their unheard-of powers simply underlined the basic truth that our command of the air had already marked out every Japanese war installation or production facility for certain and complete destruction.” Arnold, et. al., “Third Report,” pp. 447-448.

55 Gentile, p. 137.

56 The plan for a 70-group Air Force (550,000 men) was set in August 1945 as a reduction from 78 groups in response to President Truman’s request to review the military’s requirements. The AAF’s manpower had been increased from 14,700 in 1932 to the wartime peak of 2,411,294 in March 1944. Wolk, Herman S., Planning and Organizing the Postwar Air Force, 1943-1947, Washington: Office of Air Force History, US Air Force, 1984, pp. 12, 62-63, 117.

57 Based on my research using the ProQuest Historical Newspapers Database (WP).
1945, killing thousands more than died from the atomic bomb in either Hiroshima or Nagasaki.”

Even Truman’s biographer, David McCullough, agreed to the possibility of war’s end before the scheduled invasion in November 1945. “As many would later argue, the Japanese might have surrendered before November and the scheduled invasion,” McCullough was cited in the Washington Post. “Conceivably, they could have been strangled by the naval blockade, forced to surrender by continued firebombing... But no one close to Truman was telling him not to use the new weapon.”

This all changed after the two scholars published their articles on the hypothesis in 1995. Many other scholars followed suit and stopped relying on the Survey’s conclusion. However, how should we explain the Americans’ acceptance of the USSBS view for almost half a century? This fact alone seems to demonstrate how prevalent the sentiments and notions from the brief period after the war had been in the US.


59 Ibid.

60 For example, Tsuyoshi Hasegawa used this point to support his argument that Soviet entry into the war, rather than the atomic bomb, brought Japan’s surrender. Hasegawa, p. 295. Samuel J. Walker sides with Bernstein and Newman, saying, “As always in dealing with counterfactuals, there is no way of proving or disproving the survey’s conclusion, but it cannot be viewed as definitive.” Walker, p. 100. Michael D. Gordin, notes, “As has been decisively argued in recent years, these reports are unreliable as to the impact strategic bombing and atomic bombing had on the Japanese elite and civilian morale.” Gordin, Five Days in August: How World War II Became a Nuclear War, Princeton University Press, 2007, note 8, p. 150. Another American scholar, a self-confessed leftist, told the author “several of us have shied away from using the Survey as a major part of our argument against the decision to use atomic bombs.” Email response to the author on Sept. 2, 2012.
More than 70 years after the completion of its activities, though, there are not many studies on the USSBS and its reports partly because some of its reports and relevant materials—documents and pictorial images—were classified upon publication, and the access to them remained restricted as they were moved to the National Archives when the commission was deactivated in 1947. The fuller picture of the Survey and the extent of its study only came out in 1976, when David MacIsaac published a history of the Survey.61

The former military history teacher at the U.S Air Force Academy in Colorado set out to conduct his own research when he found no satisfactory information available on the Survey after he first came across some of its reports in 1964.62 Taking advantage of the newly declassified records of the USSBS at the National Archives, MacIsaac completed the first book-length study in 1976, which was based on his dissertation submitted to Duke University in 1970.63

Interweaving the histories of strategic bombing in World War II and the development of the Survey, MacIsaac examined such questions as: what influenced the Survey’s deliberations, how well it had performed its task, and to what use was its work put. He disclosed that, during the course of the Pacific survey, there was an extensive

61 MacIsaac, *op. cit*.


inter-service wrangling between military members of USSBS over the question of which of
the AAF and the Navy deserves more credit for winning the war.\textsuperscript{64}

Both Presidents Roosevelt and Truman considered USSBS’s study to be valuable in
connection with “post-war planning for the future development and employment of the
nation’s armed forces.”\textsuperscript{65} Its conclusion was expected to give leverage for a larger share of
the post-war defense budget by the armed services.\textsuperscript{66} After all, MacIsaac concluded, the
reports of the Survey did not play an important role in the military, likely because the
emergence of the atomic bomb had made them obsolete.\textsuperscript{67}

Gordon Daniels followed MacIsaac in 1981 when he published a guide to the USSBS
reports, which number 325 volumes in total.\textsuperscript{68} The introduction of the guide consists of
article-length histories of the aerial bombing and USSBS, in which the leading British
scholar of Japanese studies relied heavily on MacIsaac’s work.

Because the establishment of the Survey came from the necessity “for an
authoritative, unbiased, factual analysis of bombing effects,”\textsuperscript{69} and its results actually did

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\textsuperscript{64} MacIsaac, pp. 119-133.
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\textsuperscript{65} Letter to Franklin D’Olier from Harry S. Truman, Aug. 15, 1945; Letter to Henry L. Stimson from
Franklin Roosevelt, Sept. 16, 1944, both in Folder: 300.6(A) Administrative Directives USSBS (G-2 Files),
Box 14, Entry 1, RG243, NACP. The same documents can also be found in Folder: MISC Papers connected
with USSBS, Box: United States Strategic Bombing Survey, AFHRA.
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\textsuperscript{66} MacIsaac, pp. 108-109, 120-121.
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\textsuperscript{67} MacIsaac, pp. 165-166.
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\textsuperscript{68} Daniels, Gordon, ed., Introduction to \textit{A Guide to the Reports of the United States Strategic Bombing
Survey}, London: Royal Historical Society Guides & Handbooks 12, 1981, , pp. xvi-xxvi. Although the last
numbers of volumes for the European and the Pacific surveys stand 208 and 108, respectively, there are
nine volumes with the same number (e.g., Nos. 71 and 71a), bringing the total to 216 and 109,
respectively.
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\textsuperscript{69} MacIsaac, p. 20.
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not always endorse strategic bombing. Maclsaac’s discussion evolved on the presumption that the Survey did provide a fair and objective study. Daniels agreed with Maclsaac, saying its reports “treated the role of strategic bombing with square objectivity, free from service malice,” which made them “pioneering statements on the history of major military aspects of the Second World War.” Daniels highly praised the USSBS, saying, “despite this side-stage thunder the activities of the survey in the Pacific were an impressive model of businesslike military organisation and what it can achieve.”

These earlier studies also supported the early-surrender hypothesis. Maclsaac, for example, concurred with the conclusion, saying “there can be little question that even without the atomic bombs the Japanese government would have sued for peace prior to the home islands’ being invaded.” Comparing it with the conclusion of the European Survey, which discussed both the failures and the successes of strategic bombing, Daniels called the Pacific Survey conclusion “parallel verdict on Japanese defeat,” in that it emphasized “the inability of Japan to continue resistance beyond the end of 1945, even without the use of atomic weapons.”

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70 Ibid., pp. 141-151.
71 Daniels, p.xxv.
72 Ibid., p. xxv.
73 Maclsaac, p. 106.
74 Daniels, p.xxv.
75 Ibid., p.xxv.
As was the case of the literature on the decision to drop the atomic bomb, it might have been natural that these earlier studies, which came out in the aftermath of the Vietnam War, likely shared revisionist sentiments in their interpretations. But we have to note that the revisionist interpretations often rely on the USSBS conclusion. It was this acceptance without question of the early-surrender hypothesis that Newman and Bernstein challenged in their 1995 articles.

In 2001, a quarter century after MacIsaac’s, another book-length study on USSBS came out. Through his extensive and thorough research of archival records, Gian P. Gentile, an active duty army officer and American history teacher at West Point, analyzed the concept of strategic bombing, methods, practices, and end-results—reports—of the Survey, as well as the contemporary thoughts and intentions of the parties involved. While building on MacIsaac’s work, Gentile challenged the preceding study, arguing that since the Survey’s framework for analysis had already been established by the AAF to meet its postwar interests before civilian directors began their evaluation, “a truly impartial and unbiased report... was never really a possibility.”

While he fervently supported the discussions on the early-surrender hypothesis made by Bernstein and Newman, Gentile also discusses how the narrative comfortably fit

76 According to Sadao Asada, a Japanese scholar of American diplomatic history, the revelation of the mistakes in Vietnam War had helped revisionist historians also turn to the American policies during the early stage of the Cold War. 麻田貞雄,「冷戦の起源と修正主義研究～アメリカの場合」『国際問題』、第 170 号（1974 年）、pp. 2, 8.

77 Gentile, op. cit.

78 Ibid., pp. 5, 190.
into the interests of these military men, who wanted to claim credit for winning the war—either by conventional bombing or naval blockade around the Japanese home islands.\textsuperscript{79} Gentile did not set out to examine, but he made an important assumption that Survey members formed a consensus around Nitze’s early-surrender counterfactual.\textsuperscript{80} This dissertation will discuss how this assumed consensus evolved into the conclusion.

Though not focused on USSBS, there are also a couple of works that discuss the USSBS and its conclusion. In 1981, Gregg Herken’s \textit{The Winning Weapon} presented a compelling narrative of how American politics and military incorporated nuclear weapons into their post-war policies.\textsuperscript{81} Making extensive use of declassified materials, he examined the atomic diplomacy that he called \textit{Pax Atomica} that extends from 1945 to 1950 and encompasses Soviet-American relations and international control of atomic energy. Herken discussed USSBS and its early-surrender hypothesis in a chapter where he addressed the military mindset that was responsible for the slow integration of the new weapon into their strategic planning. There he showed how the Survey’s conclusion fit comfortably with the old-school roles of the Navy, Army and the AAF, which each military arm tried to protect in a conscious effort in relation to the bomb.\textsuperscript{82}

\textsuperscript{79} \textit{Ibid.}, pp. 114-120.

\textsuperscript{80} \textit{Ibid.}, pp. 117-118. It seems strange, therefore, that Gentile singles out the conclusion as “incorrect” (p. 3).

\textsuperscript{81} Herken, \textit{The Winning Weapon}.

\textsuperscript{82} \textit{Ibid.}, Chapter 10, pp. 195-217.
Tami Davis Biddle devoted a little over 10 pages to USSBS and its reports in a chapter of her book that discusses the development of British and American strategic bombing since World War I. Sharing many of the views of preceding studies, Biddle illuminated the inconsistent and equivocal nature of the Survey's findings. These inconsistencies were inherent for the Survey, Biddle asserts, as: “The nature of the USSBS, with so many different reports under the control of so many different individuals, meant that it would be large, unwieldy, and comprised of a variety of opinions—some radically at odds with one another—regarding the contribution of strategic bombing to the war effort.” While her main focus is placed on the European theater, where the Combined Bomber Offensive with the British took place, Biddle also refers to the counterfactual as an example of such an inconsistency in the Pacific Survey reports.

A long-time instructor pilot at the Air Force Academy, and a planner on the Air Staff at the Pentagon during Operation Desert Storm, military historian Philip S. Meilinger produced a concise, yet clear picture of the huge undertakings of USSBS in a 15-page section of his book. His analysis of the results of the Survey in the two theaters, woven into the history of the military strategy and the development of aircrafts and the US Air Forces demonstrates the difficulties of the new technique and of the Survey's work that did not always meet AAF's expectations. However, with its “unassailable” authority, Meilinger ascertains, the Survey

83 Biddle, Rhetoric and Reality in Air Warfare, pp. 270-282.
84 Ibid., p. 272.
85 Ibid., pp. 278-279.
86 Meilinger, op. cit.
provided airmen with “the unimpeachable evidence they needed to carry on the fight for institutional independence.”\(^87\) John A. Lauder, in his 1974 journal article, analyzes the results of both the European and Pacific Surveys and discusses possible applications of the results to contemporary defense policy.\(^88\) Steward Halsey Ross and John M. Curatola also devote a chapter of their books to USSBS, respectively, but their discussions are focused on the development of the strategic bombing in general.\(^89\)

The Roosevelt administration started to plan postwar national defense during World War II. The ongoing war prevented the full-fledged discussion on the matter; however, it was doubtlessly the president’s intention to expand the role of air forces in the future. While the initial conception of the postwar survey of strategic bombing came from the air arm, it was this background that helped the USSBS to eventually win the authority of being organized under the presidential directive. It was expected that the findings of the survey would contribute to the future development of the United States armed forces.\(^90\)

With the lessons of previous wars and consequent demobilization, it was believed that the country should maintain a sufficient military posture after the war through UMT, which would keep all the young men of a certain age in a state of readiness for combat

\(^87\) Ibid., p. 62.


\(^90\) MacIsaac, pp. 1-50; Gentile, pp. 24-46.
deployment. Unlike World War I, which was fought under the banner of “the war to end all wars,” World War II was one to prepare for the next war, as American leaders were determined not to repeat the mistake their predecessors made after World War I: returning to isolationism. When the war ended, Truman inherited this policy and led the administration’s legislative efforts.91

These efforts, however, were hardly rewarding. The attempt to unify the armed forces experienced bitter disputes due to inter-service rivalry. The UMT legislation never came to pass because of the lack of public support, which rapidly dwindled after the war. The advent of the atomic bomb and the changing international climate also complicated the situation. The administration, without a definitive nuclear doctrine, continued to develop nuclear weapons while it talked to the public about the possible introduction of an international agreement to ban nuclear weapons.92

The USSBS reports came out just as America was struggling to grasp the meaning of the atomic era. Domestic legislation to control atomic energy was initiated on October 3, 1945, when a bill was introduced in both houses of Congress.93 This effort would eventually lead to the enactment of the Atomic Energy Act in the summer of 1946, which


would establish the US Atomic Energy Commission in January 1947. On the other hand, its plan for international control of atomic energy would end up in failure at the United Nations Atomic Energy Commission. In the meantime, the plan for the first nuclear test after the war at Bikini Atoll—Operation Crossroads—would be carried out to measure the weapon’s effects on a naval fleet, amid the controversy over the unification of military forces.

Responding to his own query of why “the reports of the Survey were, on the whole, ignored,” Maclsaac concluded, “the atomic bombs had the effect of turning the Survey’s reports into instant ancient history.” But as we will see in the following chapters, the USSBS Pacific Survey was as much about the atomic bomb as about conventional forces. It was, as Gentile points out, “prepared more to shape the future than to assess the past.” It was also an unparalleled field study of the atomic bomb in terms of the timing and scale, which has been and will continue to be referred to by succeeding studies, and that does not justify Maclsaac’s evolution theory. I will argue it was rather the notion that discredited the atomic bomb as “just another bomb” that is associated with the Survey, which buried it under the veil of history.

In this dissertation, I will attempt to reconstruct the time and space where the Survey conducted their studies of the atomic bomb, and examine how the Survey attempted

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94 Ibid., pp. 428-455, 482-530.
95 Ibid., pp. 455-481, 531-533.
96 Maclsaac, p. 165.
97 Gentile, pp. 3-4.
to determine the effects of the new weapon. I will also explore if and how the Survey incorporated these studies into its conclusion. In spite of all the criticisms about it, the Survey’s early-surrender hypothesis is worth discussing, as it points to America’s struggles before finally embracing the bomb, which have been long forgotten.

Chapter I examines the two conflicting schools of thought in regarding to the atomic bomb that were being adopted in the US after the war: one that considers the bomb as a revolutionary weapon, the other that considers it just another bomb. I will examine the sentiment on the bomb in the US military and its inner circles at that time with a view toward post-war military reorganizations and UMT that they hoped to institute.

In Chapter II, the organization of the Survey in the Pacific and the footsteps of five USSBS divisions that worked in Hiroshima and Nagasaki are traced. In contrast to the European survey, the Pacific survey inevitably became the center of gravity among those who had interests in what brought Japan to her knees when it was requested to study the effects of all types of air attack. The first-ever-uses of the atomic bomb in action brought several post-war study parties to Japan. The part the Survey played of all these groups and the extent of its studies on the effects of the atomic bomb is brought into relief. The chapter also attempts to reconstruct the time the USSBS divisions spent in the two cities, including what they saw and what they heard. Details are presented about how they proceeded with their studies that would culminate into eight reports from the standpoints of their various fields of expertise.
Chapter III attempts to shed light on the arguments each of three divisions—the Physical Damage Division, the Urban Areas Division and the Civilian Defense Division—among the five divisions that worked in the atomized cities had tried to make in their reports and to identify whatever agendas or motives they had had behind those arguments. Through examining the changes to the narratives made in the transition from draft reports to published reports, it brings into view how each division wanted to present the effects of the atomic bomb.

In Chapter IV, the Survey’s narrative of the effects of the radiation from the atomic bomb will be examined. To do this, I will focus on the report of the Medical Division. This examination will reveal part of the Survey’s motives to demystify the atomic bomb and also the issue of national security and information control regarding the atomic bomb. I will analyze what was discussed and what was not discussed, and why.

Chapter V addresses how the eight reports of the five USSBS divisions on Hiroshima and Nagasaki culminated into the Chairman’s a-bomb report, published in June 1946. I will especially look into the report of the Morale Division as it transformed into one in support of the counterfactual conclusion. This Chapter also illuminates how the Chairman’s a-bomb report had become a contested terrain of the two conflicting schools of thought in regard to the atomic bomb. This Chapter also briefly discusses the counterfactual hypothesis in the two other reports from the Chairman’s Office.

In Chapter VI, the significance of the USSBS’ atomic bomb report is considered in light of international and domestic contexts. The report was brought into a diplomatic arena
when the British Chiefs of Staff proposed its US counterpart to simultaneously release their reports. This development inevitably placed in the report the authenticity and the capacity of an official government report, and prompted another contested terrain—over publicity—when General Leslie R. Groves, Commander of Manhattan Project, increasingly wanted to have his report released as such. It would also bring in a shift in the armed forces from one that detests the bomb to another that embraces the bomb. In the Conclusion, I will bring together the meaning of the USSBS and its counterfactual hypothesis.

The early-surrender hypothesis may have been preconceived by the Survey executives. And the individual studies in Hiroshima and Nagasaki by the Survey divisions may not have directly contributed to the formation of the conclusion. The studies, however, demonstrate a shared sense of the need in general among those who prepared the reports to demystify the atomic bomb, and to support such a narrative. It also represented sentiments and notions among the US government leaders and military officials that appeared immediately after the end of the war, which have been long forgotten. The USSBS conclusion, thus, is a symbolic legacy from the past.
Chapter I

A Revolutionary Weapon or Just Another Bomb?

The B-29s and not the atomic bomb won the war. Possibly, but, as great-grandmother would have said, the latter helped just “a smidgin.”

It is a super weapon, the first super weapon... Unquestionably some of those who declare that it is just another weapon are cynics and, what is far worse, some of them have muscle-bound brains. A few civilians and soldiers have grown old in the practice of military concepts of bygone days and with age has come an inability to grasp something entirely outside their experience.

The visits by President Barack Obama and Secretary of State John Kerry to Hiroshima on the occasions of the G-7 Summit in Ise-Shima, Japan, in May 2016 and the Foreign Ministers meeting in April of that year, attracted much attention—perhaps more than the conference itself. No sitting president of the United States, which wielded atomic blows against Japan, or members of his administration had ever visited the Peace Park, a symbol of the city that suffered one of the blows. On the other hand, few people know the fact that an incumbent member of the Truman Administration had visited the area around the Ground Zero merely five months after the end of World War II, before it became the peace park.

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2 Bradley Dewey, “The Atomic Bomb and Common Sense,” speech at a general meeting of the American Chemical Society, Sept. 11, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP.

3 Not a member of US administration, but the Speaker of the House Nancy Pelosi did visit Hiroshima in 2008.
His name is Robert P. Patterson, the Secretary of War who succeeded the position from Henry L. Stimson in September 1945. Patterson visited Hiroshima on January 10, 1946, as a part of his one-month tour of American occupied areas in Asia and Europe during which he stayed in Japan for nine days.4

Leaving Washington, D.C. on December 30, Patterson arrived at the Atsugi Airfield, Kanagawa Prefecture, on January 4 via Hawaii and Guam. Having inspected occupation forces in Tokyo and Sendai, Miyagi Prefecture, he visited Sugamo Prison on January 8 where suspected war criminals—former Japanese leaders—were being detained. He left for Kyoto that night on board a night train and inspected American facilities in Osaka and Kobe the next morning. He then took another night train bound for Kure where he inspected the base of the former Japanese Imperial Navy, from which he left for a short excursion to Hiroshima. There he visited a hospital where a-bomb survivors were being treated and drove around the city. He flew back to Tokyo later that day.5

He described his impression of the city in his diary he kept during the trip, which is surprisingly terse and brief:

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4 Transcript of Press Conference of Secretary of War, January 28, 1946, Folder: Press Conferences, Box 21; Itinerary for visit by Secretary of War, Jan. 8, 1946, Folder: Trip Overseas, Box 23, both in RPP.

5 Press Conference Statement of the Secretary of War, Jan. 11, 1946; Diary of Trip Around the World, both in Folder: Trip Overseas, Box 23, RPP.
Seversky is right. Despite the general leveling of everything by blast and fire, the modern concrete buildings remained standing, —burned out but still standing.

Japanese returning and building little shacks, as in other cities.6

By “Seversky,” he referred to Alexander P. de Seversky, an air strategist and inventor who had visited the city in October 1945. Born in Tbilisi, Russia, in 1894, de Seversky served in the Imperial Russian Navy as a pilot during World War I. In 1918, when he was 23, he was selected as an assistant naval attaché in the Russian Naval Aviation Mission to the United States. He remained in the US and made his living working as an inspector of aircraft for the US Army and private companies. He became a US citizen in 1927 and established an aircraft manufacturing company in 1931. De Seversky started to appear in newspapers in early 1939 after he returned from his six-month business trip to Europe. What he said at that time proved predictive of the upcoming war. He had become a darling of the media after Walt Disney Productions produced an animated documentary feature film based on his 1942 book, Victory through Air Power.7

It is unknown how Patterson and de Seversky met. The oldest correspondence between de Seversky and Patterson, in the possession of the Library of Congress, is dated

6 Diary of Trip Around the World, Folder: Trip Overseas, Box 23, RPP.

June 21, 1944. They became increasingly close as Patterson concurred with the ideas on postwar defense de Seversky discussed in his magazine articles that he sent to Patterson.8

After his return from the European theater, where he worked as a special consultant for the Secretary of War from April 5 to August 28, 1945, de Seversky left the US on September 26, this time for Japan under occupation.9 He arrived in Tokyo on October 13, and stayed in the country for the next month,10 during which he stayed in Hiroshima and Nagasaki for two days, respectively, inspecting the damages and interviewing survivors.11

In his report to Patterson, de Seversky wrote on Hiroshima as follows:

Most important, concrete buildings, even in the very heart of the bomb explosions remained erect, though most of them were gutted by the spreading fire. ...Everywhere, including the immediate area of the explosion, there were... the typical debris of a fire.

In short, there were no visible effects different in nature from those caused by ordinary

8 For the correspondences they exchanged, see Folder: de Seversky, Maj. Alex P., Box 15, RPP.
9 Report of Major Alexander P. de Seversky to the Secretary of War, Sept. 27, 1945, Folder: de Seversky, Maj. Alex P., Box 15, RPP. He was appointed at the request of Patterson. Letter from Patterson to Carl A. Spaatz, April 5, 1945, Box 228, Carl A. Spaatz Papers, LC.
11 According to the diary he kept during his trip, de Seversky arrived in Hiroshima on Oct. 24 and in Nagasaki on Oct. 26. Folder 7: Pacific Theater of Operations - Special Consult to the Secretary of War, Box 222, Alexander de Seversky Papers, Cradle of Aviation Museum, Garden City, Long Island, NY.
incendiary bombing and the physical picture presented by the two cities was precisely the same as in Japanese cities destroyed by ordinary bombs.\textsuperscript{12}

It is apparent that Patterson was following suit with de Seversky in his diary on Hiroshima. We find neither fear nor awe of the new weapon in these accounts. Instead, they regarded the atomic bomb as just another bomb. This is totally different from the official narrative—first put forth by Patterson’s predecessor in his article in February 1947\textsuperscript{13}—that deems the bomb as a “revolutionary”\textsuperscript{14} weapon that has rendered on the Japanese ”an effective shock”\textsuperscript{15} sufficient to enforce surrender.

The narrative of the atomic bomb in the US immediately after the war was not as monolithic as it became. Many military leaders, for example, did not hesitate to say that the atomic bomb was not necessary to end the war.\textsuperscript{16} When it came to the effects of the bomb, some people argued that the bomb was different from conventional weapons and that it was revolutionary, while others said it was powerful but just another bomb.\textsuperscript{17}


\textsuperscript{14} \textit{Ibid.}, p. 105.

\textsuperscript{15} \textit{Ibid.}, p. 101.


Some in the latter group were compelled to act to counteract what they called “Japanese propaganda” that pointed to the cruelty of the bombing and the mysterious effect of the new weapon: radiation. Others were alarmed at the narrative that viewed the bomb as a super weapon because they were afraid it might lead to a possible loss of interest in preparedness and to a possible resurrection of isolationism among the American public. And others, like some military officials, were alarmed by the new weapon as it might compromise the *raison de’etre* of their conventional forces.

In this chapter, I examine the first responses of American officials and military leaders to the atomic bomb. I explore the nature and backdrop of the two different schools of thought in regard to the atomic bomb that were articulated immediately after the first atomic attacks, and attempt to analyze how they tried to cope with the new weapon.

This examination will prove essential in understanding how the United States Strategic Bombing Survey (USSBS) came to its counterfactual conclusion, which asserted that Japan bomb, as she presupposes that it was only then that nuclear weapons were viewed as decisive. Michael D. Gordin notes that President Truman and other leaders did not view the bomb as special, as we see now, at first, but only gradually. He argues that the weapon was a new element, of which full effects were not known, and that they were not sure if it would win the war. He does not pay attention to the conflicting views, other than that of the Army Air Forces (AAF) who wanted to leverage the bomb for their independence. See chapters 3 & 6 of Gordin, *Five Days in August: How World War II Became a Nuclear War*, Princeton University Press, 2007. Gregg Herken briefly discusses military’s discounting the notion that the bomb had revolutionized warfare in the early stage after WWII. Herken, *Winning Weapon: The Atomic Bomb in the Cold War 1945-1950*, Princeton University Press, 1981, pp. 195-217. Herken cites in another book he authored Paul H. Nitze speaking of three contending schools of thoughts within the military and in the country at large. Herken, *Counsels of War*, expanded ed., New York: Oxford University Press, 1987, pp. 46-47. This chapter builds on Herken’s work.

would have surrendered had the atomic bomb not been dropped, Russia not entered the war, or invasion not been planned.

In doing so, I focus on de Seversky because his reactions to the new weapon, although extreme, typified one of the schools of thought. A number of contemporary people appear to have shared his ideas to some extent. He also articulated in detail the reasons why he thought the way he did. It will help us understand the narrative space developed at that time.

For a brief period after the war, there was a moment when the atomic bomb was considered as a direct threat—not necessarily in the sense its power would require international control, but a threat posed to conventional arms and the tradition of citizen soldiers. Often buried under the image of elation in the public it generated for supposedly ending the war, the bomb had also brought a dilemma to some of the US leaders on how to protect its conventional forces and traditional military preparedness. In this sense, it was an issue of the atomic bomb versus conventional forces. This notion would be echoed in the USSBS reports.

Two Schools of Thought

Many of the newspaper stories in the wake of the bombing of Hiroshima showed awe and admiration to the new weapon, described as “special,” “epoch-making” and “revolutionary.”19 They glorified the Manhattan Engineer District (MED), which developed

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19 Analysis of newspaper articles by the author. Also, Gordin, *Five Days in August*, pp. 111-112.
the weapon, and scientists who helped the development.20 William L. Laurence, a *New York Times* science writer who worked as the propagandist for MED, certainly provided a decisive twist to the public's initial image of the atomic bomb.21 Scientists also openly spoke of the effects of the atomic bomb as a warning for the future.22 Not everyone was happy with these tones, however.

As soon as these articles began to appear, generals and admirals of the Army and the Navy started to discount these tones and to trivialize the new weapon.23 Admiral Chester W. Nimitz, for example, told the press on September 21, 1945, "It's just another weapon and we still must rely on sea power."24 In his speech in Washington, D.C. almost two weeks later, Nimitz repeated the phrase, adding, "Japan would have surrendered without an invasion regardless of the atomic bomb or Russia's entry into the war."25

In addition to the recognition that Japan had already been defeated by the summer of 1945, there was the rise in the perceived threat by the narrative that the war was a

20 See the front page of the Aug. 6, 1945, edition of any newspapers in the US.

21 See Sept. 26-29, and Oct. 1, 3-5, 8-9, 1945, editions of *NYT*, for example, for Laurence stories on Manhattan Project.


23 Online newspaper database (WP, *NYT*, *Baltimore Sun* and DC Metropolitan newspapers) search with such key phrases as "just another bomb" or "just another weapon" for 1945-1946 editions detected dozens of articles with such individuals as Adm. Chester W. Nimitz, Gen. George C. Kenney, Gen. George C. Marshall, and Adm. Oswald S. Colclough, as well as Gen. Henry H. Arnold, and Gen. Curtis E. LeMay, pronouncing such opinions.


“scientists’ war,” acutely felt by conventional armed forces. With the end of the war, the military budget should certainly be reduced. Discussion for the unification of the armed forces was about to start and each service was striving to appeal to the public about its contributions during the war. Under such circumstances, it was natural for the military leaders to regard the atomic bomb as another, perhaps the most formidable, rival in the ongoing competition for their shares in the upcoming postwar reorganization. This would change as time passed. Yet, for some time after the war, the military tended to downplay the effects of the atomic bomb. And this narrative often led to the conclusion that “the atomic bomb did not end the war.”

There were also other factors that helped to form this narrative. For example, in order to counteract Tokyo’s propaganda campaign, Washington suppressed not only descriptions of atomic horrors and radiation diseases, but also expressions that attributed the Allies’ victory to the atomic bomb. “That the atomic bomb, more than Russia’s entry

26 Together with the invention of the radar, it has been said, “Radar won the war; the atom bomb ended.”


28 Those newspaper articles in the Note 23 above show that these two phrases “just another bomb” and “the atomic bomb did not win the war” often used in combination. For the discussion of the military’s initial stances against the bomb, see Gentile, Gian P., How Effective Is Strategic Bombing?: Lessons Learned From World War II to Kosovo, New York: New York University Press, 2001, pp. 137-142.

29 For American censorship of atomic bomb, see Braw, Monica, The Atomic Bomb Suppressed: American Censorship in Occupied Japan, New York: M. E. Sharp, 1991. In the very first case of suppression by the Supreme Commander for the Allied Powers (SCAP), the Japanese news agency Domei was closed for 24 hours in September 1945 for having written that, “if it had not been for the atomic bomb, Japan would
into the war, compelled Japan to surrender as she did on August 15 instead of waging a showdown battle on the Japanese mainland is a justifiable conclusion drawn after one sees what used to be Hiroshima city.”  

The first paragraph in a newspaper article written by Leslie Nakashima, a second-generation Japanese American from Honolulu, which was distributed by United Press on August 27, 1945, never appeared in any US newspapers.

In order to pay respect to American servicemen who lost their lives and made so much sacrifice throughout the war, Truman and other American officials did not forget to speak humbly about the role the atomic bomb played. Secretary of State James F. Byrnes, for example, denied that the atomic bomb knocked Japan out of war when he said, “Japanese knew that they were beaten before the first atomic bomb was dropped.” He told a reporter that he “could not say what had motivated the Japanese surrender,” but believed that “the men who had fought the war up to that point in the Pacific and Asia deserved full credit for victory.”

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31 Nakashima, after working as a staff writer for Honolulu Star Bulletin, joined the Tokyo Bureau of United Press in 1940. Caught in Japan by the outbreak of war, he gave up his American citizenship and worked for Japan’s Domei News Agency during the war. He wrote the article on Hiroshima where he visited a week after the bombing to seek out his mother, was filed for dispatch through UP on Aug. 27, 1945.

32 The story appeared in numerous newspapers across the US on Aug. 31, including Honolulu Star Bulletin (pp. 1, 4), Los Angeles Times (p. 2), NYT (p. 4), and Atlanta Constitution (pp. 1, 10).

33 Lifton and Mitchell, Hiroshima in America, pp. 239-241.


35 Ibid., pp. 1, 4.
Truman’s official announcement of the use of the atomic bomb on Hiroshima on August 6, 1945, and many of the following news reports used the frame of reference to conventional weapon materials, which analogized the destructiveness of the atomic bomb with that of conventional bombs in tonnage. This also helped the atomic bomb appear to be merely a bigger bomb and obscured the issue of radiation. All these likely contributed to the narrative that the atomic bomb is powerful but just another bomb.

When we take the one and half year period from August 1945 to February 1947, there were three schools of thought in general: two sharing almost the same period of one year until the summer of 1946—one that described the bomb as an awful and revolutionary weapon, which was represented by the earlier official US announcements and statements by American scientists who were involved in the atomic bomb development. The other downplayed the effects of the bomb that had likely come out to counteract the first school and criticisms.

The third school, aimed at counteracting the second school, mostly appeared after July 1946, when the two atomic bomb tests conducted at Bikini Atoll failed to live up to the

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37 Some critics argue that the American leaders also used the atomic bomb as “just another bomb.” “The bombing of cities was already deeply ingrained in American doctrine by the end of World War II. The leap to atomic bombing was simply not that great. To many air officers—and to many in the political leadership—the atomic bomb was just another weapon. More efficient certainly, but not really that different.” Guerrier, Steven W., review of The Rise of American Air Power: The Creation of Armageddon by Michael S. Sherry, Social Science Quarterly, Vol. 69, No. 1 (March 1988), pp. 232.
expectations of the public—at least until more facts about the fallout came out later.38 In this narrative, government officials, scientists and other experts, as well as some informed military leaders, tried to display the atomic bomb as an absolute weapon in their speech and writings.39

There are even traces of the Army’s manipulation of the press to that end. An article in the Saturday Evening Post in July 1946, for example, which was written at the behest of the War Department,40 reads: “The experts [of the General Staff] smile wanly at those who assert that the atomic bomb is ‘just another bomb.’ They describe it, rather, as being ‘revolutionary in a sense that the world has not known since the discovery of fire.’”41 The article did not forget to remind the readers of hope: the bomb could be useful as deterrence against aggressors by the threat of retaliation.42

“Now as a result [of the tests], many of us fear that the pendulum of public interest has swung in the other direction and that the man on the street is underestimating atomic

38 Boyer, pp. 82-92; Lifton and Mitchell, pp. 83-86.


40 Memorandum for the Secretary of War from John H. Ohly, July 30, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP.

41 Alsop, Joseph, and Alsop Stewart, “Your Flesh Should Creep,” July 13, 1946, Saturday Evening Post, p. 44.

42 Ibid., p. 47.
weapons just as he overestimated them after Hiroshima and Nagasaki and before Bikini,” said Bradley Dewey, president of the American Chemical Society, in his speech in Chicago on September 11, 1946. “The fate of our country, indeed of the whole world,” he continued, “may well depend upon a proper understanding of the destructive power of nuclear fission. It is my purpose here to try to put the atomic bomb in its proper frame of reference; to take it out of the realms of fantasy and into the field of hard-headed sense.”

The narrative of Patterson and de Seversky typifies the second school—an effort to calm the perceived overestimation of the new weapon. De Seversky was at the forefront. For example, in a press conference held in Tokyo on November 2, 1945, after his visits to Hiroshima and Nagasaki, de Seversky claimed that the bomb “could kill no more people than a regular 10-ton bomb if dropped on United States cities,” and “200 Superfortresses could have done as much damage to Hiroshima and Nagasaki as the atomic bomb.”

The remark contradicts the initial announcement on the use of the bomb by President Harry S. Truman. In his statement released by the White House on August 6, 1945, Truman stated the atomic bomb dropped on Hiroshima had more power than 20,000 tons

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43 Dewey, Bradley, “The Atomic Bomb and Common Sense,” speech for the American Chemical Society held in Chicago, Sept. 11, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP. Dewey was a member of both the Joint Chiefs of Staff Board and the Presidential commission to evaluate the effects of the Bikini tests.


46 “Seversky Limits Atom Bomb Power,” NYT, p. 4.

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of T.N.T.47 De Seversky, however, refuted this. “From the view of total energy generated, this may be correct... What concerns us is the portion which achieves effective demolition. From that point of view, the 20,000 figure is reduced immediately to 200.”48 He also stated that “Potential destruction on one type of objective does not necessarily apply to another type,” arguing that “flimsy and dry-rotted” Hiroshima couldn’t compare with a “steel-and-concrete” city in the US.49

Such a statement was met at once with criticisms in the US, as de Seversky had expected.50 What did he intend with such remarks? In a report to the Secretary of War, he said: “I did not ‘underrate’ the atomic bomb, nor raise doubts about its significance for the future of warfare. ...But the character of the destruction did not even resemble the popular notions generally held on the subject.”51

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49 Ibid., p. 11.

50 For example, see “Seversky Is Contradicted,” NYT, Nov. 7, 1945, p. 14; “For Bomb Test on ‘City’; Compton Would Build Artificial Area—Scores Seversky View,” NYT, Apr. 9, 1946, p. 16; Libbey, pp. 240-241. Also, see dozens of newspaper articles on de Seversky’s article in Folder 42: “Atomic Bomb Hysteria,” Reader’s Digest Report to Sec. Of War Patterson on Bombing of Hiroshima & Nagasaki, Box 262, Alexander de Seversky Papers, Cradle of Aviation Museum, Garden City, Long Island, NY.

The “popular notions generally held” likely referred to the first school of thoughts that described the bomb as revolutionary weapon. Such notions had been added by the Japanese media campaign.\(^{52}\) The Japanese government articulated the inhumane effects of the atomic bomb in an official protest on August 11, 1945.\(^{53}\) Radio Tokyo, the Japanese propaganda broadcast to the US, also disseminated stories of the horror of radiation sickness. These included those of who only suffered mild injuries but later developed nausea and other symptoms and eventually died, as well as of the rescue workers who entered the city after the bombing and suffered from various sickness and ill health.\(^{54}\) The US government denied the presence of fatal and lingering radiation and its effects, calling it Japanese propaganda “to win sympathy from their conquerors and to play on possibly divided opinion among the Allies.”\(^{55}\)

Still it was not the horror of radiation sickness that disturbed de Seversky. Having suspected the presence of radiation, he sounded chagrined in his report when he could not

\(^{52}\) Japanese historian Satoru Ubuki calls this as an “all-out campaign against atomic bombs.” According to Ubuki, it was aimed at encouraging revenge among the public until Aug. 15, 1945. After its surrender, it was used to blame the defeat on the atomic bomb on the home front and to appeal to the international society to absolve the country of the responsibility for the war. These efforts, however, were blocked when the Allied Forces occupying Japan introduced censorship in September.  宇吹聡『ヒロシマ戦後史-被爆体験はどう受けとめられてきたか』（岩波書店、2015 年）、pp.4-5.

\(^{53}\) Memorandum from Swiss Legation in charge of Japanese interests, urgent cable, communication from the Japanese government, FRUS, 1945, Vol. VI, pp. 472-473. Part of the protest reads: “…the damage extends over a great area and that combatant and non-combatant men and women, old and young, are massacred without discrimination by the atmospheric pressure of the explosion, as well as by the radiant heat which results therefrom… there is involved a bomb having the most cruel [sic] effects humanity has ever known…”

\(^{54}\) For example, Blakeslee, Howard W., “480,000 Japs Left Dead, Wounded, Homeless By 2 Atom Bombs; Many Dying from Burns, Delayed Deaths Believed Due to Blast-Freed Rays,” WP, Aug. 23, 1945, pp. 1-2; “Japanese Stress Hiroshima ‘Horror’,” NYT, Aug. 25, 1945, p. 3.

\(^{55}\) “Japanese Stress Hiroshima ‘Horror’,” NYT, Aug. 25, 1945, p. 3.
find any traces of the invisible poisoning. Rather, he was concerned that the unparalleled power and effectivity of the bomb be emphasized with such expressions as the city or its people being “obliterated,” “perished,” “disintegrated,” or “vaporized.” These expressions were often found in announcements made by the AAF immediately after the atomic bombing and reports by the correspondents who visited Hiroshima and Nagasaki in early September, as well as other newspaper and magazine articles that followed.

De Seversky called these accounts “pseudo-scientific fairy tales” and argued “there was no evaporation of human beings or steel or wood, no melting and boiling of matter other than the usual kind in great conflagration.” “All these claims,” he added, “are pure invention, the product of imaginations inflamed by atomic publicity.” For the reason why such propaganda prevailed, de Seversky stated:

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56 “I could not find any victims, nor could I get any first-hand information from doctors, nurses or hospital attendants to whom I talked. Since the New Mexico experiment proved beyond any doubt the presence of radio-activity in an atomic explosion, such cases should have taken place in the two Japanese cities unless the bombs explode so high that its effect was greatly reduced.” De Seversky’s Report on Pacific Air Power, p. 8; Supplementary Report, p. 9; idem, “Atomic Bomb Hysteria,” p. 124. De Seversky’s belief in the presence of radioactive effects of the atomic bomb later drew his attention more to the potential of the weapon. “Indeed, the atom explosive might be described as a three-in-one bomb, since it produces, for its weight, not only greater heat and greater blast but emits poison in the form of death-dealing gamma rays.” Letter to Robert P. Patterson from Alexander P. de Seversky, Oct. 4, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1947-July 24, 1947, Box 1, Entry 106, RG 107, NACP.

57 Letter from Alexander P. de Seversky to Dewitt Wallace, June 18, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1947-July 24, 1947, Box 1, RG 107, NACP.

58 See Chapter IV of this dissertation.


60 Supplementary Report, p. 2.

61 Supplementary Report, pp. 7-8.
The atom bomb fitted propaganda purposes. To isolationists it seemed final proof that...

with our head start in atomic energy and our superior know-how, we were safe. The internationalists, on the other hand, tried to intimidate us by reminding us that we had no monopoly on science. Everyone could manufacture the atomic bomb, they said, and if we didn’t play ball we would be destroyed. ...I do not believe that the revolution has already taken place and that we should surrender all our normal faculties to a kind of atomic frenzy.62

In the backdrop of de Seversky’s account, however, lay a sense of crisis that the public might settle for the security guaranteed by the atomic bomb and give up their responsibilities to actively defend their country. Believing that the nation’s security lies in her people’s resolve to stand up against an enemy, de Seversky found any exaggerations of the bomb’s power dangerous. “When a well-known [sic] writer on military matters asserts that national preparedness has been reduced simply to a race for stockpiles of atomic bombs, he is in the realm of absurdity... We must extricate ourselves from the paradoxical position into which we have been driven by wild exaggeration of the potentials of the atomic bomb.”63


63 Letter to Patterson from de Seversky, Oct. 7, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Oct. 7, 194-July 24, 1947, Box 1, Entry 106, RG 107, NACP.
Patterson shared de Seversky’s view. What they had in common was the fear that the American society might go back to the prewar isolationism where there was no preparedness—what they thought was a mistake the US made after World War I—on the ground that now they have the atomic bomb, they could depend on it for the country’s security.

**Effect on Postwar National Security**

In retrospect, the atomic bomb changed warfare. But people could not adapt themselves to these changes overnight. Perhaps de Seversky was the most extreme and staunchest; however, there were many others who had had difficulties accepting the fact.

General George C. Marshall, Army Chief of Staff, for example, told Congress on September 25, “In the atomic bomb we see a dreadful force, but it is merely another force.” And he added, “The fundamental requirements of conducting successful war have not changed any more than they were altered by the discovery of gunpowder, the submarine, gas, tanks, or planes.” Believing that men in uniform were the greatest weapons of war, Marshall did not want to sacrifice manpower for the atomic bomb.

64 Patterson to de Seversky, Oct. 23, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1947-Jul 24, 1947, Box 1, Entry 106, RG 107, NACP.


Dewey, head of the American Chemical Society, was right when he said: "The atomic bomb has introduced into the pattern of war factors so new, so contrary to the thinking of the past and so vast in terms of death and destruction that it is no wonder that our minds are slow to grasp in its entirety the military implications of the dawn of the atomic age."  

The emergence of the atomic bomb posed a serious problem for the military, especially at a time when plans for the postwar defense programs—namely, unification of the armed services and universal military training (UMT)—were being discussed.

Unification of the armed services had been talked about since the end of World War I, but the latest plan was first suggested in 1943 by the Army Chief of Staff Marshall who felt the current system of two departments under separate secretaries had created unnecessary duplication of functions and delayed decision-making.

What the Army envisioned was three services of the Army, Navy and Air Forces in a single department of defense under a civilian secretary. The ensuing discussion grew heated especially between the Navy, a traditional branch of the military, which opposed the plan out of fear that it might lose its vested interest, and AAF, working independently in practice during World War II but technically still a subordinate agency of the War Department, wanted to achieve a formal independence after the war. The discussion was


postponed until after the war when it became even more heated. The struggle and compromise, however, would come to fruition through the National Security Act of 1947, which created a National Military Establishment headed by a civilian Secretary of Defense with three executive departments of Army, Navy and Air Force.\footnote{Hammond, Organizing for Defense, pp. 186-226; Caraley, The Politics of Military Unification, pp. 247-269; Legere, Unification of the Armed Forces, pp. 304-361.}

UMT was proposed to provide sufficient protection in the event of future conflict. The program was intended that all males of a certain age become subjects of compulsory training for a certain period, upon completion of which they would be in a general reserve, eligible for conscription in the event of war. It was considered as an essential component of peacetime preparedness for the emerging national security state.\footnote{John Sager, “Universal Military Training and the Struggle to Define American Identity During the Cold War,” Federal History, Issue 5 (January 2013), pp. 58-60. For postwar UMT, see, also, Sherry, Preparing for the Next War; Gerhardt, James M., The Draft and Public Policy: Issues in Military Manpower Procurement, 1945-1970, Columbus; OH, Ohio State University Press, 1971; Chapter 51 & 52, Holley, I. B., Jr., General John M. Palmer, Citizen Soldiers, and the Army of a Democracy, Westport, CT, Greenwood Press, 1982; Chambers, John Whiteclay, To Raise an Army: The Draft Comes to Modern America, Free Press, 1987; Hogan, A Cross of Iron. In his speech in Congress on Oct. 23, 1945, President Truman recommended that all males upon graduating from high school or turning 18 enter one-year of training; then become a member of the General Reserve for six years. After that he should be placed in a secondary reserve status. “Address Before a Joint Session of Congress on Universal Military Training,” Public Papers of the Presidents, Harry S. Truman 1945-1953, HSTL.}

UMT originates in a training program for college men, which was first conducted in 1913 by the Army under General Leonard Wood.\footnote{Kington, Donald M., Forgotten Summers: The Story of the Citizens’ Military Training Camps, 1921-1940, San Francisco: Two Decades Publishing, 1995, p. 1.} The program inspired young Eastern elites, who grew increasingly concerned about the preparedness of the country with the outbreak of World War I in Europe, to organize a similar program for men of their age—men in their late...
twenties and thirties.\textsuperscript{74} The founders of the business men’s camp, known as the “Plattsburgers,”\textsuperscript{75} included Grenville Clark, a Wall Street lawyer, Elihu Root, Jr., elder son of former Secretaries of Army and State, and Theodore Roosevelt, Jr., eldest son of the former President of the United States.\textsuperscript{76}

The Plattsburgers formed the Military Training Camps Association (MTCA) and became a driving force behind the establishment of the Selective Service Act of 1917, the country’s first nationwide draft system. Yet, it had always been a universal military training that they wanted. The MTCA vigorously campaigned for a UMT; however, their attempt to have the compulsory program adopted in the National Defense Act of 1920 failed, as it could not survive the post-war isolationist and pacifist sentiments.\textsuperscript{77}

The situation seemed to have changed following the outbreak of World War II. The MTCA’s renewed endeavor came to fruition with the passage of the Selective Service Act in September 1940, which established the first peacetime draft in the country’s history.\textsuperscript{78} In 1943, the Army proposed introducing an UMT as part of its postwar planning, and the Joint Chiefs of Staff (JCS) agreed to the idea.\textsuperscript{79} President Franklin Roosevelt, in his final State of

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\textsuperscript{75} It was named after the site in northern New York State where the camp took place.

\textsuperscript{76} Clifford, \textit{The Citizen Soldiers}, p. 54.

\textsuperscript{77} \textit{Ibid.}, pp. 224-227, 262-295. MCTA organized Citizens’ Military Training Camps (CMTC), one-months military training program for youth, during the summer from 1921-1940 based on the provision in the act that authorized the Secretary of War to maintain schools or camps. Kington, \textit{Forgotten Summers}, pp. 6-16.


\textsuperscript{79} Sherry, \textit{Preparing for the Next War}, pp. 21-22.
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the Union Address in January 1945, articulated the necessity of introducing UMT.80 While opposition was still strong especially among socialists and pacifists, public opinion surveys showed a majority of the public supporting the proposal.81 The Select Committee on Post-War Military Policy of the House of Representatives, headed by Clifton A. Woodrum, conducted extensive hearings on the question in June 1945, and released a report that recommended Congress to institute the program.82

The prospect of UMT might have seemed optimistic at this stage.83 However, it would never become a law. As soon as the atomic bomb was dropped, opponents of the bill did not miss the opportunity to take advantage of the new force. During the hearings at the House Committee on Military Affairs that began in November 1945, some opponents of UMT argued that the atomic bomb had rendered it unnecessary.84

80 Roosevelt said, “I am clear in my own mind that, as an essential factor in the maintenance of peace in the future, we must have universal military training after this war...” “Annual Message on the State of the Union,” January 6, 1945, Rosenman, Samuel I., ed., The Public Papers and Addresses of Franklin D. Roosevelt, 13: pp. 502-503.


83 The military was mostly in agreement with UMT and was concerned about the possible change of the public's mood even before the end of the war. For example, Secretary of the Navy Forrestal wrote in December 1944, that “[t]he idea that this question [UMT] will get consideration when the war is over is, I believe, illusory. We as a nation go back to sleep very quickly. We don’t like war, we don’t like the thought of it, and we certainly don’t like preparing for it during peace...If such a law is not enacted now I believe it never will be.” Letter to Richard C. Lilly from James Forrestal, Dec. 8, 1944, Folder 38: Lilly, Richard C 1941-1944, Box 30, James V. Forrestal Papers, Mudd Manuscript Library, Princeton University.

Domestic legislation to control atomic energy was initiated on October 3, 1945, when a bill was introduced in both houses of Congress. This effort would eventually lead to the Atomic Energy Act on August 1, 1946, and the establishment of the US Atomic Energy Commission in January 1947. The US was also quick to act toward establishing the United Nations Atomic Energy Commission in January 1946, although its plan to control international development of atomic energy would end in failure.

Discussions to incorporate the atomic bomb into the country's military strategy, however, were long coming. The atomic bomb had become a hot potato not only to the proponents of UMT, but also to the Army who supported the early legislation of a unification bill. Hearings on the bill at the Senate Committee on Military Affairs started on October 17, 1945, however, the Navy tried to suspend the deliberations citing this new element.

Navy Secretary James V. Forrestal, who had requested in May 1944 that the discussions on the issue be pending until the end of the war, now urged the President to set up a civilian commission to look into the advisability of merging the armed forces. He demanded this especially in relation with the atomic bomb and to wait for its

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86 Ibid., pp. 428-455, 482-530.

87 Ibid., pp. 455-481, 531-533.

recommendations to Congress before moving further. In a speech on November 19, 1945, Forrestal asserted, “I do not see how we can decide now on unification or any other organizational change in the armed forces when we still have not determined the effect of new weapons on our military problems.” And he asked, “If we reorganized the armed forces today, how do we know that the new organization will conform to the potentialities of new weapons?”

Discussions within the JCS started when Army Chief of Staff Marshall requested on August 18, 1945, “a concerted viewpoint of the military on the over-all effect of this new weapon on warfare and military organization.” Despite the shared sense of urgency among military policy makers to act on the issue, it progressed only slowly. It is apparent that the discussions were controlled by what Gregg Herken called “a conscious effort on their part to reach a compromise in thinking about the bomb that would neither threaten the raison d’etre of one service nor show favoritism to any other.”

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89 Statement by James V. Forrestal in a speech at a luncheon of the Detroit Economic Club, before an audience of 1,300, Nov. 19, 1945, in Sidney M. Shalett, “Forrestal Urges a Study of Merger, Led by Baruch,” NYT, Nov. 20, 1945, pp. 1, 8. He suggested that July 1, 1946, be fixed as a deadline for the commission to submit its recommendations to Congress.

90 Ibid., p. 8.

91 Ibid., p. 8. President Truman after all would not buy Forrestal's proposal and recommend the adoption of legislation combining the Army and the Navy Departments into one single department of national defense in his message to Congress on Dec. 19, 1945. “Special Message to the Congress Recommending the Establishment of a Department of National Defense,” Public Papers of the Presidents, Harry S. Truman 1945-1953, HSTL.

92 Memorandum by the Chief of Staff, U.S. Army, “Over-all Effect of Atomic Bomb on Warfare and Military Organization,” J.C.S. 1477, Aug. 18, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also in Reel 1, Strategic Issues, Section 1, Atomic Weapons, Records of the Joint Chiefs of Staff, Part II, 1946-1953, University Publication of America, Frederick: MD (Hereafter, JCS, Part II, Section 1, Reel 1).

93 Herken, Winning Weapon, pp. 208-209.
Discussion at the JCS

In its first draft recommendation dated October 30, 1945, the Joint Strategic Survey Committee (JSSC), senior policy advisory group to JCS consisting of three officers, stressed the importance of readiness for immediate defense.94 The “Over-all Effect of Atomic Bomb on Warfare and Military Organization” also called for “striking first” against the source of threatened attack. This recommendation was based on the following assumptions: that there is no defense against the atomic bomb; that the US was estimated to be at least five years ahead of other nations in atomic energy development; and that the supply of the bombs would probably always be limited.95

What is striking about this draft report was that, even though it acknowledged an element of surprise and the magnitude of destruction the atomic bomb would render, its discussion rather focused on the maintenance of the country’s conventional forces. The 18-page report states: “Widespread discussion of the atomic bomb has created a popular belief that the advent of the bomb renders obsolescent the roles of ground, naval and air forces as we now know them. Every appropriate step should be taken to correct this


95 Ibid., p. 3, 5, 9, 14, 16, J.C.S. 1477/1, Oct. 30, 1945. In order to prepare the report, JSSC and other JCS agencies, including the Joint Staff Planners (JSP), Joint War Plans Committee, and Joint Committee on New Weapons and Equipment (JNW), had a meeting on Aug. 22, which was joined by General Leslie R. Groves, to learn about the atomic bomb. See “Effect of Foreseeable New Developments and Countermeasures on A Post-War Strategic Concept and Plan (J.W.P.C. 394/1/M)” in the same folder.
popular misconception, lest it develop to proportions prejudicial to national security.”

Noting its revolutionary nature, the report defined the atomic bomb “but one of the several tremendous advances in scientific warfare which have developed as a direct result of the concentration of scientific and production brains during world War II” in its concluding paragraph.

Overshadowed by the implication of the advent of the atomic bomb in future warfare, this attitude of organizational immobilization did not apparently attract the attention of readers at this time. The underlying sentiment to protect the raison d’etre of their conventional forces was shared by top military officials, including Dwight D. Eisenhower, who had succeeded Marshall as the Army Chief of Staff in November 1945. On December 6, 1945, Eisenhower recommended that the report be sent to the Secretaries of War and Navy as it was.

Two weeks later, however, Eisenhower, in a sudden change of mind and with a sense of urgency, requested that JSSC revise the previous report, saying, “the presentation is not sufficiently persuasive and comprehensive to handle the specific problem pertaining to

96 Ibid., pp. 4, 7, 12, 15-16.

97 Ibid., p. 18.

98 John J. McCloy, Assistant Secretary of War, dissented to accept the report, saying it is not an entirely adequate treatment of the subject. But he did not articulate the reason. Memorandum for the Chief of Staff, Nov. 24, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP.

99 Eisenhower, however, noted that the report was not discussing the “present strategic advantage which the United States enjoys with respect to the atomic bomb.” He also requested JSSC to continue its study with the recent development in mind, of the discussion over the exchange of information at the tripartite conference between President Truman, and Prime Ministers Attlee and King. Memorandum by the Chief of Staff, “Over-all Effect of Atomic Bomb on Warfare and Military Organization,” J.C.S. 1477/2, Dec. 6, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also in JCS, Part II, Section 1, Reel 1.
atomic energy with which the services are bound to be faced in public in the future.” He specifically emphasized the necessity to focus on atomic weapons at a time when Congress had started its deliberation on atomic energy, and the November 15 Truman-Atlee-King Declaration that called for the creation of the UN Atomic Energy Commission. 

Eisenhower’s memorandum also demanded JCCS to study such problems as the size and composition of military forces, UMT and intelligence organization.

Wilton B. Persons, Chief of the Army’s Legislative and Liaison Division, encouraged Eisenhower to take such actions, referring to an increasing Congressional pressure on the military to “demonstrate the extent to which the possibilities of atomic warfare has been taken into account in the preparation of their postwar plans.” Persons believed the Navy’s obstruction to the merger plan raised the Congress’ suspicion that the military might still be clinging to their pre-atomic plans. He recommended that the War Department prepare its own analysis of the atomic bomb’s effect upon its postwar plans and for future

100 Memorandum by the Chief of Staff, J.C.S. 1477/3, Dec. 20, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; and also in JCS, Part II, Section 1, Reel 1. The deadline for the new report was set on Jan. 7, 1946. It is unknown if JSSC had actually sent the previous report to the Secretaries of War and Navy.


102 Ibid. Title of the study was now changed to “Effect of Atomic Weapons on National Security and Post-War Military Plans.”

103 Memorandum for Deputy Chief of Staff from Wilton B. Persons, Dec. 14, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP.

104 Ibid.
warfare, and present it to Congress as soon as it returns from the holiday recess.\textsuperscript{105} Otherwise, Persons noted, it might “seriously endanger the success of its [the Army’s] legislative program.”\textsuperscript{106}

By “its legislative program,” Persons likely meant the unification bill. It is noteworthy how the Army’s concern over the success of its merger plan had influenced its course of action. Eisenhower requested the Army’s Operations Division to study the effect of atomic energy on military thought and overall organization now and in the future. He hoped it would provide the members of the Congressional Military Affairs Committees with a sound basis for their thoughts on the subject.\textsuperscript{107}

With the recommendations of Admiral Nimitz, JCS’s Navy member, who considered the scope of Eisenhower’s suggested study too broad to complete in just two weeks, JCS modified the directive. JCS then requested JSSC to work in collaboration with the Joint Staff Planners (JSP)\textsuperscript{108} and Leslie R. Groves, Commander of the Manhattan Engineer District, on a statement about the effect of atomic weapons on national security and military organization,

\textsuperscript{105} What Persons suggested as a presentation to Congress culminated into a statement by Patterson at Senate Special Committee on Atomic Energy on Feb. 14, 1946. Memorandum for the Chief of Staff from Patterson, Dec. 13, 1945; Memorandum for General Eisenhower from Wilton B. Persons, Dec. 12, 1945, both in Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP.

\textsuperscript{106} Memorandum for Deputy Chief of Staff from Wilton B. Persons, Dec. 14, 1945.

\textsuperscript{107} Memorandum for General Hull, OPD, from J. W. Bowen, Dec. 15, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec12, Box 572, Entry 421, RG165, NACP. They continued to discuss the military implications of a United Nations commission on atomic energy after the JCS report. This made Groves appointed as the representative of the Joint Chiefs of Staff to provide military guidance to Bernard Baruch, United States Representative on the UN Commission on Atomic Energy. See Sec 6-A, Box 570, Entry 421, RG165, NACP.

\textsuperscript{108} JSP was the principal planning agency for JCS with two senior members—one from the Navy and the other from the Army.
which would form the basis for statements by military personnel on the subject before Congress when and if necessary.¹⁰⁹

The five-page Statement of “Effect of Atomic Weapons on National Security and Military Organization” was completed on January 12, 1946.¹¹⁰ Despite all suggestions, it did not differ much from the previous report, except that it now included: “counteroffensive,” a defensive measure to protect the country by defeating the enemy that had caused the war.¹¹¹

Interestingly, the shortness of the new statement made the military emphasis on conventional forces more conspicuous. Referring to atomic weapons, the report assumed “their limitation in number, the efficacy of defensive measures and above all the stamina of the enemy may preclude the accomplishment of the decision of the war by their means alone.”¹¹² Its theme was: “the advent of the atomic bomb does not justify the elimination of the existing military forces.”¹¹³ With substantial modifications of equipment and tactics,

¹⁰⁹ Directive, References: J.C.S. 1477/4, J.C.S. 1567/11, SM-4585, Dec. 29, 1945; Memorandum by the Chief of Naval Operations, References: J.C.S. 1477, J.C.S. 1567/11, Dec. 24, 1945, both in Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP. The deadline for the draft was also extended until Jan. 12.


¹¹¹ Ibid., p. 28. Also, the US was now estimated as five to ten years ahead in the technological advancement (instead of “at least five years” in the previous report).

¹¹² Ibid., p. 28.

¹¹³ Ibid., p. 28.
conventional forces would still play a major role not only in seizing advance bases but also in waging a counteroffensive against the enemy.\textsuperscript{114} It inevitably invited criticism.

In his memorandum for the Chief of Staff, Howard C. Petersen, who recently succeeded John J. McCloy as Assistant Secretary of War, pointed out that “The general tone of the paper is one of depreciation of the bomb and its possible effects. ...gives the impression of an attempt to play down the bomb's potentialities.”\textsuperscript{115} Petersen was afraid that the statement could be used to claim, “the Army’s chief concern with the bomb is that it may reduce the size of the military establishment.”\textsuperscript{116} He thus suggested Eisenhower give Congress an affirmative analysis of the implications of the new weapon.\textsuperscript{117}

The January 12 statement disturbed Eisenhower as well.\textsuperscript{118} He echoed Petersen’s point and added, “the overall tone seems... to insist unnecessarily strongly that the conventional Armed Services will not be eliminated.”\textsuperscript{119} “The general tone of the statement might therefore be misconstrued by Congress and the public, and be looked upon as... an unwillingness under any circumstances to reduce the size of the military establishment.”\textsuperscript{120}

\textsuperscript{114} Ibid., pp. 28-30.

\textsuperscript{115} Memorandum for the Chief of Staff, “JCS 1477/5,” Jan. 15, 1946, Folder: Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP.

\textsuperscript{116} Ibid.

\textsuperscript{117} Ibid.

\textsuperscript{118} It is unknown whether Eisenhower had held such view before he received the memorandum from Petersen, or he was pointed to that view only by reading Petersen’s memorandum.

\textsuperscript{119} Memorandum by the Chief of staff, U.S. Army, attached to Note by the Secretaries, J.C.S. 1477/6, Jan. 21, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also in JCS, Part II, Section 1, Reel 1.

\textsuperscript{120} Ibid.
Eisenhower pointed out that the statement was taking “a negative or defensive approach” and suggested that it should take “an affirmative analysis of these implications and of lines of development which could profitably be followed to improve our armed forces.”\textsuperscript{121}

Understanding the complex nature of the issue and difficulties to write with limited knowledge, Eisenhower attached to his memorandum a draft statement on the atomic bomb that was presented to him earlier, hoping it would help the JSSC to revise their statement.\textsuperscript{122} It is uncertain if Eisenhower knew this, but this “Statement on the Atomic Bomb and Its Effect on the Army” was written by Groves, which would later be sent to the US delegation to the UN Atomic Energy Commission as \textit{Our Army of the Future—As Influenced by Atomic Weapons}.\textsuperscript{123}

The third draft that came out on February 6 did not resemble earlier versions at all.\textsuperscript{124} It still noted the importance of all the conventional forces and military training in a reserved tone; yet, it articulated that the atomic bomb would be the core of the military

\textsuperscript{121} Ibid.

\textsuperscript{122} Draft “Statement on the Atomic Bomb and Its Effect on the Army,” Appendix to 1477/6, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also, in JCS, Part II, Section 1, Reel 1.


\textsuperscript{124} “Statement of Effect of Atomic Weapons on National Security and Military Organization,” J.C.S. 1477/7, Feb. 6, 1946, Folder: Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also in JCS, Part II, Section 1, Reel 1.
arsenal of the future, saying that the country should be moving to bring forth the “best kind of armed forces to build around the all-powerful atomic weapons.” 125

It is apparent that authors of the JSSC statement consulted Grove’s statement extensively. Elements of the atomic general’s writing can be found everywhere. The most distinctive is the first paragraph that reads:

The atomic bomb dropped on Japan had two primary effects: first, the accelerated ending of the war with the probable saving of thousands of lives; and second, a profound revolution in military thought. The atomic bomb is a tremendous advance over other weapons and may influence warfare far more than did gunpowder or the airplane. 126

It is interesting to find what reactions this statement had evoked from the AAF and the Navy representatives in the JCS. Criticizing the aforementioned paragraph, Gen. Carl A. Spaatz, who had just taken his place as the AAF Commanding General after Henry H. Arnold, argued that the wording of the first part was “subject to the misinterpretation that the Japanese Empire was defeated and its capability to continue the war was destroyed solely


126 “Statement of Effect of Atomic Weapons on National Security and Military Organization,” J.C.S. 1477/7, p. 1. Part of Groves original statement reads: “The atomic bombs dropped on Japan had two primary effects: first, the sudden ending of the war with the consequent saving of the lives of thousands of our men; and second, a profound revolution in military thought. The atomic bomb is a terrifying advance over other weapons. It will influence warfare far more than did gunpowder or the airplane.” Appendix to Memorandum by the Chief of staff, U.S. Army, attached to Note by the Secretaries, J.C.S. 1477/6, Jan. 21, 1946, p. 41, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP.
by the two atomic bombs which fell on Hiroshima and Nagasaki."127 He proposed a new wording, “although the Japanese had already initiated diplomatic action leading to surrender, the actual ending of the war was accelerated with the probable saving of thousands of lives.”128 Admiral Nimitz, Chief of Naval Operations, supported Spaatz's new wording, in addition, suggested replacing the word “revolution” in the second half of the paragraph with “changes.”129

Spaatz’ suggestion, however, was not accepted after all. General George A. Lincoln, who was coordinating the draft with other military branches, explained that “The implication that the atomic bombs were dropped on people who had already sued for peace should not be included in a paper prepared for release to the public.”130 After most of the other changes suggested by Spaatz and Nimitz were approved by the JCS, the “Statement of Effect of Atomic Weapons on National Security and Military Organization” was finalized and circulated on March 31, 1946.131

127 Memorandum by the Commanding General, Army Air Forces, J.C.S. 1477/8, Feb. 23, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also in JCS, Part II, Section 1, Reel 1.

128 Ibid. In addition, he suggested adding a paragraph that demanded an ability to initiate an immediate counter-offensive that can travel great distance once attacked by an enemy. Spaatz’s opinion was also likely shared by Gen. Curtis LeMay, as one memorandum attached states, “Through Gen. Everest’s efforts, Gen. Spaatz has overruled Gen. LeMay’s strong view on including the objectionable phrase. LeMay’s stand is, of course, based on a “bombers won the war” viewpoint.” Memorandum for General Lincoln from C. H. Bonesteel, Feb. 27, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP.

129 Memorandum by the Chief of Naval Operations, J.C.S. 1477/9, March 13, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also in JCS, Part II, Section 1, Reel 1. In addition, he suggested changing part of Spaatz’ added paragraph to demand in more general terms to maintain forces capable of immediate retaliation.

130 Memorandum for the Acting Chief of Staff from G.A. Lincoln, Feb. 27, 1946; Memorandum for the Chief of Staff, April 2, 1946, both in Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP. Lincoln also noted that General Spaatz agreed to the inadvisability of using the quoted phrase.

131 J.C.S. 1477/10, March 31, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 2, Box 566, Entry 421, RG165, NACP; also in JCS, Part II, Section 1, Reel 1.
De Seversky and USSBS

What we have seen above was the initial reactions among military leaders to the atomic bomb and part of its transition. In the attitudes of Spaatz and Nimitz, we find something close to a united front. There is a lot of literature on the postwar military reorganization, which predominantly focuses on the Navy versus AAF rivalry. The emergence of a powerful weapon, however, made them rally against the bomb before they found its place in their arsenal.

During his presidency, Eisenhower would embrace the bomb and expand the stockpile of nuclear weapons. It is an irony that Eisenhower, who criticized the JSSC for depreciating the atomic bomb, would start insisting that nuclear weapons should be regarded as “simply another weapon in our arsenal” after he assumed office as President of the United States.

It is not known how widely JCS’ statement was circulated. It appears all these exchanges of opinion over the statement made during the course were shared only on a limited basis even within the military circles. Despite what was agreed to in the JCS, the

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132 See Note 27 of this Chapter.

133 Tannenwald, The Nuclear Taboo, pp. 141-142.

134 Ibid., p. 146. The difference with his earlier attitude is that in the latter context Eisenhower was actually interested in using it. See Chapter 4 of Tannenwald, The Nuclear Taboo.

135 Eisenhower recommended that J.C.S. 1477/1 be furnished to the Secretary of War and the Secretary of the Navy, but such a recommendation was not made for latter reports. Memorandum by the Chief of Staff, U.S. Army, J.C.S. 1477/2, Dec. 6, 1945, p. 20, JCS, Part II, Section 1, Reel 1. George Juskalian of the Office of the Secretary of the Army Chief of Staff suggested the report not to be furnished to the secretaries (Juskalian did not specify the reason). Eisenhower obviously sided with Lincoln who argued
narrative to downplay the effects of the atomic bomb would continue to be shared by military officials.

That attitude would also be seen even among civilian officials in the years to come. In the 1950s, for example, part of the policies of the Federal Civil Defense Administration (FCDA), which promoted “duck and cover” air raid drills and encouraged the construction of bomb shelters, was designed to alleviate people’s fear of the atomic bomb and to make it look like just another weapon. The two narratives—the revolutionary weapon school and the just another bomb school—had influenced the public’s perceptions of the bomb, which would swing from one end of the spectrum to the other, as each would rise and fall interchangeably.

In 1949, Hanson W. Baldwin, the New York Times military editor, noted: “Americans are suffering these days from a great delusion—a delusion about the atom.” He explained that there two misconceptions that are blinding Americans—(1) that the atomic bomb insures complete security, and (2) that secrecy means security. The first misconception, he said, “stems from a notion that the bomb is the absolute weapon. The almost mystical awe with which the power of the atomic bomb has been painted by many writers, plus the

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dread and horror of a new unknown—radioactivity—contributes to this myth." "Bikini, carefully evaluated," Baldwin continued, "should have lifted some of the curtain of mystery. For these tests... bring the bomb into proper proportion as a terrible weapon, more than just another bomb, but a finite, not an infinite, weapon."138

This misconception was exactly what de Seversky was fighting against. But because of his aggressive tone of writing, he was considered radical and dangerous.139 His often-derogatory declarations of the air supremacy, which had already angered the Navy,140 eventually distanced him even from the airmen whom he passionately supported. The AAF, which would gradually accept the atomic bomb as an edge against other forces,141 as it was


139 For example, the official history of the Manhattan Engineer District notes: "Although the evidence shown that Major de Seversky was endeavoring to correct what he considered misconceptions in the minds of the general public, it also shows that he was mistaken himself and that his efforts were actually tending to misrepresent the facts and to underrate dangerously the power of the atomic bomb." MED History, "Investigation of the After Effects of the Bombing in Japan," p. 43. Bernard Brodie, a military strategist, noted, "Major de Seversky did in fact inspect the ruins of Hiroshima; but a great many others also did so, and those others seem well-nigh unanimous in regarding the Major's view as preposterous." Brodie, "War in the Atomic Age," Brodie, ed., The Absolute Weapon, p. 25. Dewey, the chemist, implicitly criticized Seversky's argument, saying, "You have heard... Hiroshima and Nagasaki were lightly built cities; cities of flimsy buildings which were... "push-overs" for the atomic bomb, and that it would not be effective against our cities. This is a ridiculous statement." Dewey, Bradley, "The Atomic Bomb and Common Sense," speech at a general meeting of the American Chemical Society held in Chicago, Sept. 11, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP. A minute-taker of the USSBS daily staff meeting, wrote of de Seversky's examination of the two cities, "superficial." Minutes of Staff Meetings—3 November 1945, Headquarters, U.S. Strategic Bombing Survey (Pacific), Folder: 337 Conferences, Military & Naval & Others, Box 37, Entry 1, RG 243, NACP.

140 De Seversky had written articles in which he argued the rise of air power had made the Navy obsolete. See, for example, De Seversky, "The Twilight of Sea Power," The American Mercury, Vol. 52, No. 210 (June 1941), pp. 647-657; idem, "Navies are Finished," The American Mercury, Vol. 62, No. 266 (February 1946), pp. 135-143.

141 Herken specifies that it was after spring 1947 that the atomic bomb was recognized as the centerpiece of American security (The Winning Weapon, p. 196). According to Bret J. Cillessen, the Air Force embraced the atomic bomb as another bomb ever since its first use in August 1945, as they believed in great strength as a deterrence of war ("Embracing the Bomb," p. 97). Tannenwald agrees with this, saying, "the bomb did not usher in any military or moral revolution" for the Air Force (The Nuclear Taboo, p. 95). Cillessen also asserts that the Air Force leaders supported the atomic bombings of the two
the only military arm with the capability to deliver the bomb, also started to find him too troublesome.142

When Patterson requested to have de Seversky observe the Bikini test, the air strategist was admitted to represent the Secretary of War only on condition that he would not act as press correspondent but solely to report to the Secretary.143 In response to his request for classified information on the Bikini tests that he placed through Patterson, General Spaatz not only declined the request but also reminded Patterson of the difficult situation created by de Seversky with his remarks and articles on the atomic bomb. Spaatz wrote:

Since the data from the Bikini Tests are in the hands of eminently qualified persons who are working on it under careful security control, it would appear unnecessary to employ an additional agency, and especially one which might compromise the security of the bomb. Major Seversky’s observations will be a valuable contribution to the information now on hand. But it is recommended that he render his report for cities from the beginning (pp. 97, 99). But it contradicts with the narrative that “the atomic bomb did not win the war,” as we saw earlier in this chapter.

142 Yet, de Seversky would continue to hold the position of consultant for the Secretary of War (and after the enactment of the National Security Act of 1947 for the chief of staff of the US Air Force) for more than a quarter of a century. Libbey, p. 230.

143 Memorandum to the Joint Chiefs of Staff from Patterson, June 25, 1946; Memorandum for the Secretary of War from Howard C. Petersen, June 22, 1946, both in Folder: Chief of Staff General Correspondence June 1–June 30, 1946, Box 250 General Correspondence, Carl A. Spaatz Papers, LC; Memorandum for General Spaatz from Patterson, June 20, 1946; Cabled message for Seversky from Secretary of War, July 5, 1946; Memorandum for the Joint Chiefs of Staff from Patterson, July 5, 1946; Memorandum for the Secretary of War from Ira C. Eaker, July 5, 1946, all in Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1944–July 24, 1947, Box 1, RG 107, NACP; Memorandum by the Chief of Staff, US Army, July 10, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec. 4-D, Box 569; Memorandums for the Chief of Staff, June 26, July 9 & 11, 1946; all in Folder: ABC 471.6 Atom (17 Aug 45) Sec. 4-C, Box 568, all in Entry No. 421, RG165, NACP.
consideration, along with all other data, by the agencies already established for the purpose; and that he not be supplied with the data he requests and commissioned thereby by implication to make an independent, and possibly controversial, analysis.144

In a letter to Patterson in October 1946, de Seversky claimed that Operations Crossroad confirmed his impressions at Hiroshima and Nagasaki: “though large and unprecedentedly [sic] destructive, it was a force of measurable dimensions, with know [sic] potentials and known limitations. “As sheer panic subsides,” he continued, “the American people are beginning to recognize that fact.”145 He then discussed where the nation’s security should be heading: “Faith in ourselves and our military good sense, in our ability to achieve and maintain an edge of military superiority within the new situation created by the atomic explosive, must be restored.”146

While de Seversky was an extreme example, as we have seen, a number of people actually shared his idea to some extent. The USSBS reports would also include some accounts that were similar to those of the Russian inventor. Probably having early access to the Survey’s text, de Seversky could take advantage of the Survey’s authoritative power to justify his view.

144 Memorandum for the Secretary of War from Carl Spaatz, Oct. 22, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP.

145 Letter to Robert P. Patterson from Alexander P. de Seversky, Oct. 4, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP.

146 Ibid.
Writing in rebuttal to an article that criticized him, de Seversky told the publisher of the *Reader's Digest*, the magazine that carried his controversial article: “I am fully confident that when the official report of the U. S. Strategic Bomb [sic] Survey is made public its air experts will substantiate my figure of 200”147(B-29s with conventional bombs, which would do the same damage the atomic bomb did to Hiroshima). In, *The Effect of the Atomic Bombs on Hiroshima and Nagasaki*, the first report from USSBS Chairman’s Office to be released on June 30, 1946, the analysts would use the figure 210 (B-29s),148 which was far smaller than 730 that Thomas Farrell, deputy to Leslie R. Groves, revealed in his statement to Congress on February 15, 1946.149

Robert Littell, an editor of the *Reader’s Digest*, who wrote the article in rebuttal of the de Seversky’s article published three months earlier, referred to the USSBS experts as unanimously and often violently taking issue with de Seversky’s estimate.150 For example, he cited Paul H. Nitze, USSBS vice chairman, referring to de Seversky statement as

147 Letter from Alexander P. de Seversky to Dewitt Wallace, June 18, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP; De Seversky, “Atomic Bomb Hysteria,” p. 122. Although in a separate mission from USSBS, de Seversky sometimes joined the Survey activities while he was in Japan, e.g. several interrogations of Japanese leaders, perhaps through his connection with Orvil A. Anderson, military advisor and the chief of the USSBS Military Analysis Division. De Seversky joined the interrogations of Rear Admiral Toshitane Takata (Nov. 1, frames 50-53, Roll 1), Lt. General Torashiro Kawabe (Nov. 2, frames 54-59, Roll 2), Lt. General Saburo Endo (Nov. 3, frames 572-585, Roll 3), Shintaro Motora, former president of Mitsubishi Heavy Industries (Nov. 3, frames 1221-1223, Roll 5). Interrogations of Japanese Leaders and Responses to Questionnaires, 1945-1946 (M1654), 9-vol. microfilms, RG243, NACP.


“completely out of the realm of any reasonable relationship.” Littell also referred to the USSBS analysts believing de Seversky’s article “dangerously minimized the menace of atomic bombing and tended to lull people into a false sense of security at a critical time.”

If Littell’s assertion was sound, his judgment and expectation for USSBS and their work might have been wrong. There certainly were analysts who considered de Seversky’s argument nonsense. Looking from the vantage point of seven decades later, however, we will find more similarities in the USSBS reports than differences with de Seversky’s. Despite what he told Littell of de Seversky, Nitze would appear to see it as his task to demystify the bomb, just like de Seversky, treating it as another bomb rather than the absolute weapon.

The same was true for military leaders. Talking to a group of female magazine writers and editors at the Pentagon on June 5, 1946, Spaatz, for example, emphasized the importance of maintaining an Air Force at full strength. Explaining the Polar Concept, which referred to possible future military exchanges between U.S. bases and Soviet targets, using the

151 Ibid., p. 128.
152 Ibid., p. 125.
153 A minute taker of USSBS staff meeting on Nov. 3, when de Seversky gave the USSBS personnel a recital of some of the results of his personal investigations, wrote: “He made a superficial examination of the effects of the atomic bomb and stated he could see no difference in damage it cause, as compared with high explosive bombs dropped on their targets.” Minutes of Staff Meeting—3 November 1945, Headquarters, U. S. Strategic Bombing Survey (Pacific), Folder: 337 Conferences, Military & Naval & Others, Box 37, Entry 1, RG 243, NACP.
154 Libbey also notes the similarity between the strategist's observations and the USSBS analysis in the European Survey, saying, “to a surprising degree, his views mirrored the results of the survey teams.” Libbey, pp. 223, 230.
shortest, most direct, and least defended routes, the very same individual, who criticized de Seversky for making controversial analysis, compared one atomic bomb with 100 B-29 missions.156

Conclusion

The narrative of the atomic bomb in the wake of the war was not monolithic. Some American leaders avoided referring to it as a winning weapon. Some were even eloquent in expressing that the atomic bomb was just another bomb. In the backdrop of these actions likely lie several motives: they feared international criticisms for using a weapon that could destroy an entire city; Some were compelled to counteract Japanese propaganda that pointed to the cruelty of the bombing and the mysterious effect of the new weapon; Some others were also concerned about domestic sentiments—e.g., possible return to isolationism.

For the military, the atomic bomb emerged as a threat to the conventional forces. Military leaders were afraid that the bomb would jeopardize the ongoing discussions on the postwar reorganizations of the armed forces—namely, the unification of the armed services and UMT—when the competition among each service had become intense. The discussions at JCS demonstrated the difficulties the military faced in defining the place of the new weapon before they would embrace it as part of their arsenal.

156 General Spaatz, “Air Force Requirements,” June 5, 1946, pp. 12-16, Diary-June 1946, Box 27, Carl Spaatz Papers, LC. The luncheon for the women editors was joined Robert P. Patterson and Dwight D. Eisenhower. Draft for Talk by secretary of War Patterson Before Luncheon Group of Women Magazine Writers, June 5, June 4, 1946; Presentation by Chief of Staff Before Women Magazine Writers, June 5, 1946, both in Folder: Diary-June 1946, Box 27, Carl Spaatz Papers, LC; Entry of June 5, 1946, appointment books, Box 98, RPP.
In such circumstances, the military tended to downplay the effects of the atomic bomb. And this narrative was often intertwined with the conclusion that the atomic bomb did not end the war.
Chapter II

U. S. Strategic Bombing Survey Goes to the Pacific

The story of the atomic bomb and HIROSHIMA will long occupy the minds of the civilized world. Never before in the history of humanity has a community been hit by such a catastrophe. It can be said without exaggeration that no matter what terms are used to explain the extent of damage caused by this one bomb and no matter how adroitly they are used, any statement regarding the havoc created at HIROSHIMA would be an understatement. Yet, should one attempt to do it justice through a complete and documented description, the reader could still not conceive of the magnitude of the destruction, both in human lives and property, because of the lack of a parallel with which to make a comparison.¹

When the first atomic bombs were used against Japan in August 1945, the effects of the new weapon inevitably became the focus of international attention and curiosity—How powerful is the new weapon? What are its effects on cities and their residents? As soon as occupation forces poured into Japan two weeks after her capitulation on August 15, journalists competed to make their way to Hiroshima and Nagasaki, the two cities that suffered the first atomic blows, in hopes of providing the very first coverage. "No story was of more importance than a visit to Hiroshima...we were determined to get to Hiroshima ahead of other correspondents," William H. Lawrence of the New York Times, one of about a dozen American correspondents who visited Hiroshima on September 3, recalled in his memoir.²

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² Lawrence, Bill, Six Presidents, Too Many Wars, NY: Saturday Review Press, 1972, p. 137. Lawrence was on a press tour organized by the United States Strategic Air Forces in the Pacific. See Chapter IV of this dissertation.
Not only journalists but also scientists, military officials and other experts in many fields, rushed to the cities. From September to December 1945, seven survey missions are known to have worked in Japan; the Special Manhattan Engineer District Investigating Group (Hereafter, “MED Group”), Office of the Chief Surgeon of the General Headquarters, U.S. Armed Forces in the Pacific (GHQ Group), Naval Technical Mission to Japan (NavTechJap), and the British Mission to Japan, as well as the United States Strategic Bombing Survey (USSBS), Postwar Scientific Intelligence Mission to Japan led by physicist Karl T. Compton (Compton-Moreland Group) and Army Air Forces' Scientific Advisory Group, directed by world-famous aerospace engineer Theodore von Karman (von Karman Commission).

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3 For its background and activities, see MED History, “Investigation of the After Effects of the Bombing in Japan,” Chapter 6, Volume 4, Book 1, Reel 1, Manhattan Project: Official History and Documents, University Publications of America, 1977.


7 Originally flew into Manila in early August 1945 to establish a new Pacific Branch of the Office of Scientific Research and Development (PBOSRD) to help the armed forces on the use of new science-based weapons systems, Compton instead went to Japan to conduct a study to access Japan's scientific and technical capabilities when the PBOSRD plan was cancelled due to the end of war. Compton and his colleague Edward L. Moreland investigated Japanese work on chemical warfare, aeronautics, military medicine and atomic energy under Moreland's Scientific and Technical Advisory Staff Section of General Headquarters. Home, R. W. & Morris F. Low, “Postwar Scientific Intelligence Mission to Japan,” The History of Science Society, Vol. 84, No. 3 (1993), pp. 527-537.

Some groups had duplicated their functions and they often cooperated with each other “in order that all intelligence units could profit from the disclosures obtained by each.”\(^9\) The GHQ Group took over the work the MED Group had left unfinished,\(^10\) so too was the Special Intelligence Group of the NavTechJap employed to complete the work USSBS left uncompleted.\(^11\) The NavTechJap also built on a quick survey of the Japanese organization for scientific research and development the Compton-Moreland Group had conducted.\(^12\)

Of these seven, the MED Group and the GHQ Group, together with the NavTechJap’s Bureau of Medicine and Survey,\(^13\) comprised the Joint Commission for the Investigation of the Effects of the Atomic Bomb in Japan (Hereafter, “The Joint Commission”).\(^14\) The Joint Commission and the British Mission were predominantly engaged in analysis of the military effects of the atomic bomb.\(^15\) They were motivated by a belief, which Col. Ashley W. Oughterson, a member of GHQ Group’s medical corps, expressed as follows: “A study of the effects of the two atomic bombs used in Japan is of vital importance to our country. This


\(^{11}\) Slocum, “The Naval Technical Mission to Japan,” p. 3.

\(^{12}\) Ibid., p. 5.

\(^{13}\) Slocum, who joined NavTechJapan first as Liaison Officer to G-2, SCAP, and later became the mission’s Chief, wrote, “A special target of considerable interest at the time involved the medical effects of atomic bombing.” Slocum, p. 3.

\(^{14}\) The Commission would eventually publish the most authoritative report on medical effects of the atomic bomb: the Six-volume Report of the Joint Commission.

\(^{15}\) British scientists were said to be interested in passive defense, “while the service personnel are generally interested in active defense measures.” Incoming message from Hurley to Nitze, Oct. 20, 1945, Folder: 664-Incoming Message (USASTAF) October 1945, Box 151, RG243, NACP.
unique opportunity may not again be offered until another world war. Plans for recording all of the available data, therefore, should receive first priority."\(^{16}\)

This sense of importance and urgency to study the effects of the atomic bomb was also shared by USSBS, which was requested, this time, by President Truman to examine "the effects of all types of air attack."\(^{17}\) For example, of its four regional headquarters in Japan,\(^{18}\) establishments of those in Hiroshima and Nagasaki were prioritized over those in Osaka and Nagoya, with larger numbers of personnel assigned to those areas.\(^{19}\) Contrary to what Historian Barton J. Bernstein notes,\(^{20}\) the issue of the atomic bomb had become intrinsically the Survey's central task in the Pacific, as Paul H. Nitze, a Vice Chairman for the Pacific Survey, stated "Obviously the atomic bomb was a new element in Japan which warranted a great deal of attention."\(^{21}\)

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\(^{17}\) Letter to Franklin D'Olier from Harry S. Truman, Aug. 15, 1945, Folder: MISC Papers connected with USSBS, Box United States Strategic Bombing Survey, AFHRA; also in Folder 651, Box 1677, Official File, White House Central Files, 1945-53, Presidential Papers, HSTL.

\(^{18}\) The selection of these four cities was considered to provide "wide dispersion of all major features of our division study, such as fire, medical, important manufacturing, warning systems, shelters, evacuation, reconstruction, as well as added interest harbor facilities." Outgoing Message from COMGENUSASTAF to Marshall-for Mcnamee USSBS, Folder: 664 Outgoing Messages (USSBS) Tokyo August-September 1945, Box 153, RG 243, NACP.

\(^{19}\) The operation orders set Hiroshima and Nagasaki headquarters to be open on Oct. 8 and 12 with 34 and 33 personnel, while Osaka and Nagoya on Oct. 18 and 19th with 28 and "at least 10" personnel, respectively. "Operation Orders & Areas," Folder: 300.4 Orders-Operations (USSBS) Tokyo."Operations orders," Folder: 300.4-E Operations (USSBS) Tokyo, both in Box 12, Entry 1, RG 243, NACP. The actual number of personnel and the dates of opening each headquarter eventually changed.

\(^{20}\) Bernstein states, "The issue of the atomic bomb, as construed by the Survey, was not its central task, and only a few reports focused heavily upon issues of the bomb." Bernstein, "Compelling Japan's Surrender Without the A-bomb, Soviet Entry, or Invasion," p. 106.

\(^{21}\) Statement by Paul H. Nitze in the Hearings before the Senate Special Committee on Atomic Energy, 79th Cong., February 15, 1946, p. 515.
But why did Truman assign this undertaking to USSBS? Unfortunately, so far no evidence has been found pointing to what led the president to this decision.\textsuperscript{22} The Chairman’s a-bomb report reads: “The news of the dropping of the atomic bombs gave a new urgency to this project, for a study of the air war against Japan clearly involved new weapons and new possibilities of concentration of attack that might qualify or even change the conclusions and recommendations of the Survey as to the effectiveness and policy of employment of air power. The directors of the Survey, therefore, decided to exhaustively examine the effects of the atomic bombs, so that the full impact on Japan and the implications of its results could be confidently analyzed.”\textsuperscript{23}

In his memoire, Nitze noted that other than the examination of the effects of all types of air attacks, Truman wanted USSBS to address four questions: 1) the reasons why Japan attacked Pearl Harbor, 2) how Japan arrived at its decision to surrender, 3) the effects of the atomic bomb, and 4) the Survey’s recommendations for the postwar reorganization of the American armed forces.\textsuperscript{24} Three of these four questions could not be discussed without the atomic bomb. The Survey inevitably had to focus on its effects.

In this chapter, I attempt to show how extensive and significant were the Survey’s studies in Hiroshima and Nagasaki. I also examine how the analysts of five USSBS divisions

\textsuperscript{22} As to the reason why Arnold asked the Survey to conduct a similar evaluation of airfare in the Pacific theater to the one in Europe, MacIsaac speculates that 1) better the D’Olier group than some unknown quantity; 2) it might seem strange to some interested parties (Congress, newspapermen, members of the other armed services) if the D’Olier group were not invited to complete the task already begun. MacIsaac, David, Strategic Bombing in world War II: The Story of the United States Strategic Bombing Survey, New York: Garland Publishing, 1976, p. 109.

\textsuperscript{23} Chairman’s a-bomb report, p. 1.

\textsuperscript{24} Nitze, From Hiroshima to Glasnost, p. 37. The letter from Truman, inviting D’Olier as the Chairman of the Pacific Survey, does not mention these four questions.
carried out their studies and what difficulties they faced in the two cities. This chapter is designed not to present original arguments but to understand what these analysts experienced, which is indispensable to analyze the counterfactual conclusion.

In doing this, I will reconstruct the time spent and spaces they explored in the two cities, because what they went through is synonymous with the effects of the atomic bomb. Reliving the bombing through the words of the survivors and studying the ruins, they had become the first people to fully comprehend the result of atomic attack. Those reports written by the five divisions would provide the foundation for the Chairman’s a-bomb report. And that would also prepare the way for the two other reports from the Chairman’s Office—*The Summary Report and Japan’s Struggle to End the War*—both of which contain the early-surrender hypothesis.

**Preparing for the Pacific Survey**

Most of the Survey’s civilian directors were still in London, busy writing reports of the European Survey,25 on August 15, 1945, when President Truman requested Franklin D’Olier, USSBS Chairman, to continue their work in the Pacific, upon Japan’s surrender.26 Yet, the preparation for the Pacific Survey had already begun since D’Olier accepted continuing the job after Henry H. Arnold, Commanding General of the Army Air Forces

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26 Letter to Franklin D’Olier from Harry S. Truman, Aug. 15, 1945, Folder: 300.6(A) Administrative Directives USSBS (G-2 Files), Box 14, Entry 1, RG243, NACP. The same documents can also be found in Folder: MISC Papers connected with USSBS, Box United States Strategic Bombing Survey, AFHRA.
(AAF), unofficially sounded him out when they met in Washington DC in early July. In his July 4th telephone conversation with Henry Alexander, another USSBS Vice Chairman in the Pacific Survey, D'Olier was proud, saying that Arnold “is so greatly impressed with the work of the survey that he talked it over with Admiral Nimitz and General MacArthur. They all three were very anxious to have the survey take on Japan in the same way we handled Germany.”

In the last week of July, two AAF officers started to make tentative plans for the Pacific Survey on instruction from the Chairman to recruit personnel who would be needed in Japan. While civilian directors could not leave for the Pacific immediately in order to complete the European reports, some 10 USSBS military personnel left the West Coast on August 29, arriving in Tokyo on September 6 via Guam as the Survey’s advance party.

27 Memorandum to Richard E. Byrd from Richard Reeve, Aug. 1, 1945, Folder: 300.6-P Intelligence Branch August 1945 to Present Date, Box 19, Entry 4, RG 243, NACP.

28 Record of Telephone Conference, July 4, 1945, Box 22, Entry 1, RG 243, NACP.

29 Beveridge, James, History of the U.S. Strategic Bombing Survey (Pacific) 1945-1946, Wilmington, Delaware: Scholarly Resources, 1992 (Hereafter, Beveridge, Pacific), p. 1. The two officials were Brig. Gen. Edgar P. Sorenson and Lt. Col. William Strickland. Beveridge was the official historian of the Survey who belonged to the G-2 Section of the Service Division. His writing is more of a record of the USSBS’ members and their activities.

30 A member of Naval Analysis Division informed Ofstie that the delay “is a result of extreme pressure from the Secretary of War for early completion of the German report.” Letter to Admiral Ofstie from James A. Field, Jr., Sept. 7, 1945, Folder: Letter File 1945 Incoming, Box 2 Ralph Ofstie Papers, NHHC.

31 Cablegram from Commander in Chief, US Army Forces, Pacific Advance, Yokohama, to War Department, Sept. 13, 1945, Boxes 149; Cablegram from D'Olier to Spaatz, Aug. 30, 1945, Box 156, both in Entry 4, RG 243; Memorandum for General Norstad from G. C. Jamison, Sept. 1, 1945, Folder: D'Olier Committee (2), Box 20, Papers of Lauris Norstad, 1930-87, Dwight D. Eisenhower Library, Abilene, KS.
group included Rear Admiral Ralph A. Ofstie, a former US Naval attaché in Tokyo who was appointed as one of the Pacific Survey's five-member Board of Military Advisors.32

While Ofstie returned to Guam to consult with Chester W. Nimitz, Commander in Chief, US Pacific Fleet, for the arrangements for Survey personnel, Brigadier General Grandison Gardner, an AAF commander, remained in Japan to continue preparations.33 Gardner, joined the advance party in Guam, opened the headquarters on the 7th floor of the Meiji Seimei Building in Tokyo and started to organize the preliminary survey. A telegram reporting the arrival of Ofstie and Gardner reads: "Many records destroyed but Japanese cooperative in the reconstruction of statistical and other records."34

By September 12, the Survey had devised a tentative organizational chart that consisted of three study groups—Military Studies, Economic Studies, and Civilian Studies—analogous to the European Survey. By early November, the organization took its final form with three divisions of Military Analysis, Naval Analysis and Physical Damage in the Military Studies group, nine divisions of 1) Aircraft, 2) Basic Materials, 3) Capital Goods, Equipment, and Construction, 4) Electric Power, 5) Manpower, Food, and Civilian Supplies, 6) Military Supplies, 7) Oil and Chemical, 8) Transportation, and 9) Urban Areas in the Economic Studies group, and three divisions of Morale, Medical and Civilian Defense in the

32 Four other Military Advisors were Grandison Gardner (AAF), Leslie R. Groves (MED), Orvil A. Anderson (AAF), and William F. Marquat (GHQ). Personnel Order No. 1, Oct. 4, 1945, Folder 300.4-F Personnel Orders, Box 12, Entry 1, RG 243, USSBS ROR.

33 Beveridge, *Pacific*, p. 11.

34 Cablegram from Commander in Chief, US Army Forces, Pacific Advance, Yokohama, for Franklin D’Olier at War Department, Sept. 13, 1945, Box 149, Entry 4, RG 243, NACP; MacIsaac, pp. 111-112.
Civilian Studies group (See the organizational chart below).35 The nine economic studies divisions were coordinated by the Overall Economic Effects Staff to prevent overlapping in their reports.36

In addition to these 15 study divisions, the Survey was facilitated with the Service Division, consisting of four general staff sections of G-1 (personnel), G-2 (intelligence), G-3 (operations) and G-4 (supply), that was to supply logistical support to the executives and study divisions.37 More than 200 interpreters—one-third to one-half of which were Nisei army personnel—the Survey desperately needed were recruited and assigned to each division and regional headquarters by G-2.38 The section also took charge of arranging the interrogations of more than 700 Japanese leaders.39

35 Beveridge, Pacific, pp. 5-8. The Oil & Chemical Division replaced Oil Division, Urban Areas Division replaced Area Studies Division, and Military Supplies Division replaced Munitions Division, respectively.

36 Beveridge, Pacific, pp. 132-135. The staff also conducted its own study and published a report: The Effects of Strategic Bombing on Japan’s War Economy, Washington, D.C.: GPO, 1946. Somehow the report has “division” in its author name in the title pages, instead of “staff.”

37 The Photo Intelligence Section of the G-2 also released 12 reports.

38 Ibid., p. 24. The four regional headquarters were operated by G-3.

The number of the Pacific Survey personnel, 541 as of October 11, 1945, would increase to 1,345—172 civilians, 513 officers and 675 enlisted—on November 25, just

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40 Beveridge, Pacific, Appendix p. 5.
before their departure from Japan. Of all the post-war study groups that worked in Japan, USSBS was the largest. They would be engaged in 204 operations in total, working 70 hours a week without holidays.

While some Survey directors in Europe left for civilian life, others stayed for the Pacific Survey, mostly as directors, as new comers filled the positions of division chiefs.

Paul H. Nitze, Chief of the Equipment and Utilities Division in the European Survey, now assumed the position of a Vice Chairman.

41 It was larger than the European Survey, which marked 1287, including 1116 military personnel, at the peak time of July 21 by 58. The strength of United States Strategic Bombing Survey Pacific Theater; Strength of United States Strategic Bombing Survey in all theaters, both in Box 33A, Entry 1, RG 243, NACP.

42 The sizes of other groups were: NavTechjap, 330 as of Nov. 1; British Mission, 16, including one Indian and one Canadian; the Compton-Moreland Group, 10; the MED Group, about 50; von Karman commission, nine. Slocum, p. 2; Report on Scientific Intelligence Survey in Japan, p. 10; British Mission to Japan, p. iv; MED History, “Investigation of the After Effects of the Bombing in Japan,” pp. 4-7; Incoming Message to ADFEAF Tokyo from COMFEAF, Oct. 31, 1945, Folder: 664-Incoming Messages (USSBS) Oct.-Nov. 1945 [2 of 2], Box 155, Entry 4, RG 243, NACP.

43 Teletype Conference held on Nov. 22, 1945, Folder: 664-Tokyo Teletype Conversations, Box 156, Entry 4, RG 243, NACP.

44 Those who left include George Ball, a lawyer who was the Chief of the Area Studies and Transportation Divisions, and Robert P. Russell, General Manager of Standard Oil Co. who was the Chief of the Oil Division in Europe. In the European Survey, most of the directors also worked as division chiefs. For example, Harry Bowman, Theodore P. Wright, and J. Kenneth Galbraith, Fred Searls, Jr., Col. Frank McNamee and Dr. Rensis Likert were chiefs of divisions of Physical Damage, Aircraft, Overall Economic Effects, Munitions, Civil Defense, and Morale, respectively. Although strongly hoped for by other directors and chairman to participate even for such a short period as of 10 days or two weeks, Henry Alexander could not make it. But he played a substantial part in preparation of the Pacific Survey. Incoming Message, Oct. 21, Folder: 664-Incoming Message (USSBS), Box 155; Cablegrams dated Aug. 20, 31, and Oct. 26, 1945, Folder: 664 Cablegrams (incomings), Pacific, 1945 Aug.-Dec. [3 of 3], Box 149, both in Entry 4, RG 243, NACP.

45 Having won the trusts of D’Olier and Alexander, Nitze had already assumed a leading role in the European Survey. He became the acting Chairman when the two left for the theater headquarters and was appointed as Deputy Vice Chairman on May 1, 1945. Personnel Order No. 1, Oct. 4, 1945, Folder: 300.4-F Personnel Orders, Box 12; Staff Announcements, Oct. 5, 1945, Folder: 300.4-G Orders-USAF (Pacific); Memorandum to all personnel, May 1, 1945, Folder: 300.6 Administrative Memorandums, both in Box 13, all in Entry 1, RG 243, NACP; Memorandum by H. C. Alexander, dated March 9, 1945, Folder 8, Box 165, PHN.
Nitze was an investment banker before going into public service. A graduate of Harvard University, he joined Dillon, Read & Co. in 1929 and became vice president in 1939. He was called to Washington in 1940 by James V. Forrestal, company president who was servicing President Franklin Roosevelt as a special assistant. Nitze worked as chief of the Metals and Minerals Branch of the Board of Economic Warfare and director of foreign procurement and development for the Foreign Economic Administration before joining the Survey in Europe. At the age of 38, Nitze had become a seasoned analyst of strategic bombing by the time he arrived in Japan.

Having left Washington DC on September 13, Nitze arrived in Japan on September 26. As soon as he arrived, Nitze started to work energetically. The cablegram he sent to D’Olier in Washington on October 10 reads as follows:

General administration of survey well organized and functioning smoothly except for the shortage of stenographic help which we hope you are alleviating. ... Receiving excellent cooperation from theatre headquarters, air forces and navy. Have secured central Japanese economic planning records and are having them translated... Japanese

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46 Forrestal was appointed to Undersecretary of the Navy in August 1940 and succeeded Frank Knox as Secretary of the Navy when the latter died from a heart attack in May 1944.


48 Travel Orders, dated Sept. 5, 1945; Amendment to Travel Orders, dated Sept. 11, 1945; Amendment to Travel Orders, dated Oct. 12, 1945, all in Folder 5, Box 165, PHN.
language difficulties causing some delays, but cooperation of all parties including Japanese good. ...Hope to complete work in Japan most divisions by 1 December.49

To operate in the Pacific, the Survey was technically placed under General Douglas MacArthur, Supreme Commander of the Allied forces in the Pacific.50 His cooperation and understanding was indispensable.51 For this purpose, George C. Marshall, the Army Chief of Staff, sent a memorandum to MacArthur on August 18 to request that the Survey be furnished with the necessary funds and other resources.52 MacArthur, after meeting with D’Olier and Nitze, also agreed to become one of the Survey’s military advisors in late October, and sent General William F. Marquet, head of the GHQ’s Economics and Science Section, to USSBS as his representative.53

49 Outgoing Message from USASTAF ADVON SENDS FOR USSBS, TOKYO to WARCOS FOR D’OLIER, Oct. 10, 1945, Box 150, Entry 4, RG 243, NACP.

50 The USSBS activities were authorized by GHQ on Oct. 4. Letter of authority, Oct. 4, 1945, Folder: 300.4-E Orders-Operations (USSBS) Tokyo, Box 12, Entry 1, RG 243; Letter from Henry L. Stimson to Franklin D’Olier, Nov. 3, 1944, Folder: 300.6(A) Administrative Directives USSBS (G-2 Files), Box 14, Entry 1, RG243, NACP.

51 For administrative purpose, USSBS was attached to USASTAF. Cablegram from Radio Guam to War Department, Nov. 26, 1945, Folder: 664 Cablegrams (incomings), Pacific, 1945 Aug.-Dec. [3 of 3], Box 149; Outgoing Message from USASTAF SENDS FOR USSBS; TOKYO, to WARCOS FOR D’OLIER, USSBS, dated Oct. 1, 1945, Folder: 664 Outgoing Message (USASTAF) October 1945 [2 of 2], Box 149, both in Entry 4, RG 243, NACP.

52 Memorandum for CINCAFAC, Aug. 18, 1945, Folder: 300.6-P Intelligence Branch August 1945 to Present Date, Box 19, Entry 4, RG 243, NACP. MacArthur was accommodating, however, he requested that all plans for selection of locations in Japan subject to approval and facilities of CINCAFAC and hold the survey until such time as he is firmly established in Japan. Cablegram from COMGENUSASTAF to COMGENAIR, Aug. 29, 1945, Folder: 664 Cablegrams (incomings), Pacific, 1945 Aug.-Dec. [3 of 3], Box 149, Entry 4, RG 243; Daily Activity Report, from Norstad to Arnold, Sept. 1, 1945, Folder: OPD 319.1 (12 Feb 45) SEC2, Box 121, RG 341, NACP. In the meantime, a cablegram informing MacArthur of the size of personnel of the Survey was sent from Spaatz, commanding general of the US Army Strategic Air Forces in Guam on Aug. 17, 1945. Box 150, Entry 4, RG 243, NACP.

A provision was also made for direct communication between the Chairman of the Survey and the Secretaries of War and Navy, the Commanding General of the AAF and the Deputy Chief of Naval Air Operations “without going through ordinary military channels.”\textsuperscript{54}

The Survey, in return, was willing to contribute to the whole operation of the occupation, supplying information collected by each division to various agencies of the General Headquarters, Reparations Commission and War Crimes Commission.\textsuperscript{55}

The arrival of the USS Ancon, in Tokyo Bay on October 2, to provide additional accommodations and other facilities,\textsuperscript{56} “set up the Survey in Japan in full swing of operations.”\textsuperscript{57} The 14,000-ton ocean liner brought from Guam 239 Survey personnel, 51,000 pounds of supplies and equipment, including more than 100 motor vehicles.\textsuperscript{58} Four regional headquarters were also eventually established: Hiroshima HQ opened on the second floor of the Hiroshima Higashi Police Station on October 8 with 25 personnel, Osaka HQ at the Ishihara Building on October 13 with 21 personnel, Nagasaki HQ at the Mitsubishi

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\begin{itemize}
\item \textsuperscript{54} Beveridge, \textit{Pacific}, p. 10.
\item \textsuperscript{55} \textit{Ibid.}, pp. 21-22.
\item \textsuperscript{56} The USS Ancon was anchored in Saipan, after attending the Surrender Ceremony in Tokyo, when an order to go back to Tokyo arrived on Sept. 28. It provided billets for some 230 personnel. Ancon Cablegram, September 29, 1945, Box 153, Entry 4; Boyle, Hal, "USS Ancon, Navy’s Hero Ship is Sailing Soon Toward Home," Oct. 31, 1945, Folder: 000.7 Press, Information, Giving out of, Box 1, Entry 1, both in RG243; WWII War Diaries, Box 567, RG38, NACP; Beveridge, \textit{Pacific}, pp. 21-22, 85.
\item \textsuperscript{57} Beveridge, \textit{Pacific}, p. 14.
\item \textsuperscript{58} Organizational Roster, Sept. 24, 1945, Folder: 322 Activation & Organization of USSBS 1945 & 1946-1947, Box 34, Entry 1, RG 243, NACP; Beveridge, \textit{Pacific}, pp. 13, 28.
\end{itemize}
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Torpedo Factory on October 15 with 14 personnel, and the Nagoya HQ on the eighth floor of the Asahi Press Building on October 17 with 18 personnel.59

For Hiroshima and Nagasaki, where there was an acute shortage of accommodations, USS Sims and USS Barr were sent to Hiro Bay and Nagasaki Bay, respectively, to provide billets and mess.60 In the meantime, D'Olier, together with three civilian directors and analyst,61 left Washington on October 16, arriving in Tokyo on October 24 after staying in Guam for three days due to bad weather.62

Unlike the European Survey, which focused more on the economic effects of the strategic bombing,63 the Pacific Survey was made to focus on the physical effects of the bombings because of Truman's directive to examine the effects of “all types of air attack.” James Beveridge, the official USSBS historian, noted that the Physical Damage Division (PDD) in Japan had “probably the most important, and certainly the most spectacular, task of all the divisions working in the Pacific Theater.”64 That is because an investigation of the

59 Beveridge, Pacific, pp. 69-86. Whereas Nagasaki HQ's was scheduled to open on Oct.12, it was delayed due to bad weather that got HQ ships stuck near Tokyo.

60 Incoming Message from 6th Army to CORPS INFO CINCAFPC ADV, Oct. 13, 1945, Box 156, Entry 4, RG243, NACP.

61 They were Prof. Harry L. Bowman, director of the Physical Damage Division (PDD), Dr. Monroe E. Spaght, director of the Oil and Chemical Division, and Dr. LeRoy A. Brothers, an engineer who was appointed the head of the PDD’s Analysis Branch.


63 A memorandum that listed “Results to be obtained by the U.S. Strategic bombing Survey,” which represented the interest of the Joint Target Group placed priority on economic survey. Memorandum on Assessment of Damage by Air Bombardment in the European Theater, Nov. 10, 1944, Box 17, Entry 1, RG243, NACP.

64 Beveridge, Pacific, p. 116.
damage wrought by the atomic bomb rested largely on the shoulders of the division. The PDD’s size in Japan was almost 2.5 times bigger than that in Europe with more than 150 members, including 40 engineers, 10 photo interpreters, 11 ordnance experts, and 10 fire damage experts, as well as six operations analysts, 20 interpreters, and 45 draftsmen.65

According to Beveridge, the Pacific Survey distinguished itself from the one in Europe in two respects. One was the very fact that it was to study “all types of air attack,” which included the other elements than bombing by the AAF—namely, naval air attacks and atomic bombing. The other was that—because of the fact—it had inevitably become a joint Army-Navy mission.66 While the Navy was far from a newcomer in a genuine sense—it had several personnel in the European Survey in agreement with the Army67—its full membership in the Pacific Survey would turn the Pacific Survey into a stage of fierce

65 Ibid., p. 116; Beveridge, James, History of the U.S. Strategic Bombing Survey (European) 1944-1945, Wilmington, Delaware: Scholarly Resources, 1992, p. 252. While PDD in the European Survey secured 130 personnel, in the beginning, the size was eventually less than halved. There was criticism in the division toward economy-centrism policy. See, for example, letter to Harry L. Bowman from John W. Beretta, May 1, 1945, Folder: 319.4 Preparation of Reports (USSBS) 1 May to Present Date, Box 28, Entry 1, RG 243, NACP.

66 The Army and the Navy provided 60 percent and 40 percent, respectively, of the 850 military personnel among a total of 1,150 in the Pacific Survey. Many of them belonged to the US Sixth and Eighth Armies and the Navy’s Fifth Fleet. Beveridge, Pacific, p. 4; Statement by Vice Admiral Dewitt C. Ramsey, Senate Committee on Military Affairs, Department of Armed Forces, Department of Military Security, 79th Congress, 1st Session, Dec. 14, 1945, p. 613.

67 Commander Richard Reeve, happened to be D’Olier’s son-in-law, was first a member of the Secretariat and later became Deputy Chief of G-3 in the European Survey. Lieutenant Commander Walter W. Wilds, in a capacity of a Navy representative of the Joint Target Group, joined the European Survey on May 26, 1945, as Navy Liaison Officer. Wilds took over the position of Charles C. Cabot in August 1945 and became the Survey’s Secretary in the Pacific. These Navy personnel were arranged to transfer to USSBS through Rear Admiral Richard E. Byrd, who was assigned to USSBS as its Naval member immediately after the Survey’s establishment. Letter to Earnest J. King from George Marshall, Nov. 3, 1944, Folder: 322 Activation, Organization of USSBS, Box 35, Entry 1, RG 243; Letter to General Marshall from Admiral E. J. King, Nov. 10, 1944, Folder: Strategic Bombing Survey Correspondence, Box 7, Papers of Rear Admiral Richard E. Byrd, 1942-1945, Entry 12, RG38, both of NACP; Letter to Franklin D’Olier from R. E. Byrd, May 15, 1945, Folder 4, Box 166, PHN; Beveridge, Pacific, p. 31.
rivalry between the Army—especially its Air Forces—and the Navy. Just like the AAF, which conceived the idea for USSBS, the Navy also wanted to take advantage of the Survey to strengthen its hold on the public and the decision-makers in view of the postwar military reorganization.

In his memorandum to naval and marine corps personnel in USSBS who were arriving in Japan, Ofstie emphasized the importance of the upcoming assignment: “The result of the Survey’s effort, after evaluation by the appropriate senior members, may well be the basis for major decisions respecting our post-war national security. This may include the form of our military-naval organization, the relative ‘weight’ of our respective armed forces—ground, sea, and air, and the means of integrating all forces to the one end of national preparedness.”68 “This imposes a grave responsibility on all personnel selected for the job,”69 he added.

The AAF and the Navy representatives would compete literally over every word used in each other’s reports the USSBS was to publish in the future for credit in winning the war.70 But it was not only the AAF versus Navy feud that USSBS would have to deal with. Studying the effects of atomic bombs meant it would also have to cope with the Army’s Manhattan Engineer District. This would eventually make the Survey and its reports bound

68 Memorandum for Naval and Marine Corps Personnel Associated with the Naval Analysis Division of the U.S. Strategic Bombing Survey (Japan), Sept. 16, 1945, Folder: 300.6 Administrative Memoranda (USSBS HQ Pacific), Fox 13 Box 2 Office of the Chairman General Correspondence 1944-1947, RG 243, NACP; also frames 1276-1277, Roll 1, USSBS ROR.

69 Ibid.

70 For more detail of the competition between the two, see MacIsaac, pp. 108-114, 124-130; and Gentile, How Effective Is Strategic Bombing?, pp. 108-114, 124-130.
by a new and still unknown element—information control under the name of national security.

**Cooperation with the Manhattan Project**

When he learned for the first time on August 22, 1945, that a civilian commission would be conducting a survey in Hiroshima and Nagasaki, Leslie R. Groves, commander of the Manhattan Project, responded with a deep suspicion toward the people of the Survey and their qualifications. A man of discerning eyes for foes and friends, Groves called Dr. E. Bright Wilson, a member of Los Alamos Review Committee established in 1943, for information on USSBS Vice Chairman Alexander, whom he was to meet the next day. Wilson promised to check and advise on this issue in time for the meeting, but Grove’s intuition was that he should “indoctrinate them (USSBS personnel) to stay away from our targets.”

The next morning, the Harvard chemist suggested to Groves that he should instead accept them, noting “while they haven’t had the best people it’s only because best people are tied up in other things but they know who they are and are sure they will get them

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72 Entry of Aug. 22, 1945, Diaries, Box 3, Entry 7, LRG.

73 *Ibid.* The entry reads “5:10 pm Maj McIntyre of Col Fisher’s office called Gen Groves: re: Made an appointment for Gen Groves to see Mr. Alexander tomorrow at 9:30 to indoctrinate them to stay away from our targets.” It is apparent that Groves did not want any other surveys but only his own take place in Hiroshima and Nagasaki. He even grew so concerned about Karl Compton’s mission when Farrell reported from Guam that Compton’s assignment would be “more or less duplicating that given Gen Farrell,” and called Vannevar Bush for explanation. See Entry of Aug. 28, 1945, Diaries, Box 3, Entry 7, LRG.
now…”74 Groves, still unsure how to deal with them, called Rear Admiral William Purnell to ask if he had heard of a survey of which an admiral named Ofstie was a member. The naval representative of the Military Policy Committee, established in September 1942 to supervise the development of the new weapon, told Groves he was not familiar with Ofstie but knew of the existence of such a group. In response, Groves told Purnell to indoctrinate Ofstie, who would arrive in Guam later the week with an advance group he would be leading, regarding security issues.75

The meeting with Alexander later that day went quite satisfactory for Groves. He secured a pledge from Alexander to have everything the Survey would write “on certain subjects” cleared through Grove’s office.76 It was likely that by this time Groves had found the Survey to be useful. The MED Group consisted of less than 50 personnel mostly from the Manhattan Engineering District, who were of primarily medical and scientific expertise.77 They were to stay in the affected areas for a limited time as Groves “wished to obtain a quick preliminary report on the after effects of the bombings.”78

74 Entry of Aug. 23, 1945, Diaries, Box 3, Entry 7, LRG.

75 Ibid.

76 Ibid. The appointment with Alexander was set at 9:30 in the morning according to the diaries, but it was apparently delayed for some reason.

77 MED History lists 10 medical officers (including Col. Stafford L. Warren, Chief of the Medical Section of the Manhattan District), five engineer officers, 12 enlisted trained in first aid and radiation measurements, two civilian scientists, three military officer (including Gen. Farrell Brig.Gen. James B. Newman, Jr.), an intelligence unit consisting of six personnel, two AAF bomb damage assessment officers, one engineer officer, two AAF enlisted from the 509th group and two Nisei interpreters. MED History, “Investigation of the After Effects of the Bombing in Japan,” pp. 1-7.

It would be reasonable for Groves to imagine having USSBS take over the MED Group’s work after they left Japan. While one of its purposes—ascertaining that any possible effects from radioactivity on American troops be avoided—might be achieved in a short time, the other purpose—obtaining information concerning the structural and medical effects of the atomic bombings—would likely take time. An AAF record reads: “One matter of prime importance is the investigation of results of the two atomic bombs. General Groves has two special parties engaged in this work, so Mr. Alexander was put into touch with him without delay. Between them, the line of demarcation of their respective survey efforts was clearly drawn.” The line seems drawn between the medical study by MED Group, and structural or physical study by USSBS. Groves now wanted to cooperate with USSBS, and “cabled relevant personnel requesting they assist Alexander’s people in any way they can.”

Perhaps Wilson, when he talked with Groves over the phone that morning to advise him of “the Damage Assessment set-up,” also suggested to Groves to make use of the Survey since the MED Group was apparently short of engineers qualified to analyze structural damages. Whether or not he had this in mind, Wilson promised to send Groves the list of questions to be studied (see “Table A” below), comprised of 12 items, many of which concerned structural damages. Groves incorporated the list in a cable to his deputy

79 Daily Activity Report, from Norstad to Arnold, Sept. 1, 1945, Box 121, RG 341, NACP.

80 Entry of Aug. 23, 1945, Diaries, Box 3, Entry 7, LRG. Yasuo Nakagawa, a Japanese professor of engineering, referred to the study of the medical aspects by the Joint Commission that would inherit the work of the MED Group as “a match” of the USSBS’ physical damage study. 中川保雄「広島・長崎の原爆放射線影響研究—急性死・急性障害の過少評価」『科学誌研究』通号 157 (1986 年 5 月)、p.22.

81 Entry of Aug. 23, 1945, Diaries, Box 3, Entry 7, LRG.
Brig. General Thomas Farrell, and told him to bring these 12 items to the attention of his
bomb damage assessment personnel and to coordinate with Ofstie's spearhead group.\(^8\)

**Table A.**

<table>
<thead>
<tr>
<th>Item 1</th>
<th>Establish limits of Effects of Bomb Period</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Of various degrees of damages.</td>
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</table>

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<thead>
<tr>
<th>Item 2</th>
<th>Study remaining industrial plants within limits of attack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A. Structural characterization</td>
</tr>
<tr>
<td></td>
<td>B. Occupancy</td>
</tr>
<tr>
<td></td>
<td>C. Amount and type of damage to building and contents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item 3</th>
<th>Study all standing fire resistive buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A. Structural characteristics</td>
</tr>
<tr>
<td></td>
<td>B. Occupancy</td>
</tr>
<tr>
<td></td>
<td>C. Amount and type of damage to building and contents</td>
</tr>
<tr>
<td></td>
<td>D. To what extent concrete and steel work in these buildings are affected by bomb beyond what can be seen on photocover.</td>
</tr>
</tbody>
</table>

| Item 4 | Study walls, fire walls and other remaining masonry to determine amount of blast and shielding of blast effects of bombs period |

| Item 5 | Was water in the moat, etc., evaporated or drained by A.C., Item E, was heat sufficient to evaporate substantial amounts? Was blast sufficient to cause any serious waves? |

| Item 6 | Check for evidence for blast along periphery and determine whether by bomb or secondary explosions. |

| Item 7 | Examine fire damage at periphery to determine if caused by radiation or hot gases. Determine why fire stopped, e.g., whether any different from normal stopping at fire break [sic]. Was there any effect of shielding from radiation? |

| Item 8 | Was Combustion of building instantaneous or normal? |

| Item 9 | Was the peculiar debris at bridges the result of blast, or is it ashes? |

| Item 10 | Estimate duration of blast and duration of fires. |

| Item 11 | Study effect of explosion on steel structures, steel frame buildings, railroad tracks. |

| Item 12 | Check with JTG for Pre-attack and post-attack mosaics and building construction analysis sheets, etc. which should be very helpful in field. |

\(^8\) Top Secret Cablegram from Groves to Farrell, Aug. 25, 1945, Folder: 664-Incoming Messages August-September 1945 Army Sources, Box 156, Entry 4, RG 243, NACP.
As soon as the MED Group arrived in Japan, arrangements were made with the GHQ Group to share the information to be obtained through their respective investigations and to produce a joint medical report.\textsuperscript{83} The Joint Commission was established by MacArthur’s directive, and it was formalized that the GHQ Group and NavTechJap, together with the Japanese Research Council, would continue the study of medical effects in the framework of the Joint Commission.\textsuperscript{84}

In the meantime, the MED Group and USSBS were making arrangements of their studies. On August 28, Groves mentioned to Purnell “the whole mission is tied in with Alexander and Ofstie’s group.”\textsuperscript{85} Groves appointment book at the National Archives does not contain any entries about a meeting with D’Olier or Bowman. However, it is likely that they met or talked with Groves before they departed for Japan on October 16. D’Olier, for example, cabled Gardner on August 30, requesting him to “contact gen Thomas Farrell at Guam to whom communications have been sent by Gen Groves.”\textsuperscript{86} Perhaps as a result of the discussion with Ofstie or Gardner, Farrell approved three men from USSBS to work with the MED mission.\textsuperscript{87}

\textsuperscript{83} Liebow, pp. 38-41. The agreement was concluded in a conference held on Sept. 4 in Tokyo.

\textsuperscript{84} MED History, “Investigation of the After Effects of the Bombing in Japan,” pp. 10-11, 39; Liebow, pp. 41-42.

\textsuperscript{85} Entry of Aug. 28, 1945, Diaries, Box 3, Entry 7, LRG.

\textsuperscript{86} Cablegram from D’Olier signed WARACOS to Spaatz for Gardner, Aug. 30, 1945, Boxes 153, 156, Entry 4, RG 243, NACP.

\textsuperscript{87} Incoming Message from COMGEN to CINCPAC ADV HQ, Sept. 11, 1945, Folder: 664 Incoming Teletypes (Pacific), Box 156, Entry 4, RG 243, NACP.
The emerging partnership with the Manhattan Project had surely invigorated USSBS directors, especially Bowman, in charge of PDD. “Bowman Anxious to get his 2 Teams into Hiroshima and Nagasaki Immediately,” read a cablegram sent on September 25 from Charles Hurley, USSBS executive officer in Washington, to Gardner in Tokyo.88 Bowman’s request to send 35 personnel, including 20 enlisted men, comprising six draughtsman, two stenographers, four photographers, four interpreters and four drivers, be sent to Hiroshima and Nagasaki, respectively, for six weeks was not wholly fulfilled due to the lack of human resources in general among USSBS.89 That shortage, however, would eventually be supplemented by the 16-member British Mission to Japan, which would be placed under PDD.90 Leaving Washington on October 20, the British, divided into two groups, would be staying in both Hiroshima and Nagasaki for 15 days each.91


90 Of the 16, two with Ph.D., one D.Sc., one M.D., one engineer, two architects and five with B.Sc. Memorandum by the United States Chiefs of Staff; Letter to Franklin D'Olier from Robert P. Patterson, Sept. 26, 1945; Memorandums to Frank A. McNamee to T. U. Rolfe, Oct. 1, 12 & 31, 1945; Memorandum from Frank A. McNamee to Gardner and Nitze, Oct. 19, 1945, all in Folder: 091.1 Governments-Coordinating with USSBS, Box 3, Entry 1; Incoming Message from Hurley, WARCOS, to Nitze, COMGENUSASTAF, undated, Folder: 664 Incoming Message (USASTAF) October 1945, Box 149, Entry 4, both of RG 243, NACP. See also Amendment No. 2 to Operations Order No. 34, Nov. 9, 1945, Folder: Orders-Operation (USSBS) Tokyo, Box 12; Secret Memorandum from McNamee to Gardner and Nitze, Oct. 19, 1945, Folder: 310.1 Office Administration & Organization (Business Methods & Procedures), Box 21, all in Entry 1, RG 243, NACP.

91 Operation Order No. 34, Folder: 300.4 Orders-Operations (USSBS) Tokyo, Box 12, Entry 1; Cablegram from Washington (HURLEY) to CINCAFPAC ADV, COMGENUSASTAF ADV (FOR NITZE), Oct. 20, 1945, Box 151, Entry 4, both of RG 243, NACP.
Two of the three USSBS men participated in the MED mission from September 11,\textsuperscript{92} Majors Forrest J. Sanborn and George P. Guill, also raised the sense of urgency when they suggested on October 1 that the Survey teams be dispatched immediately to Hiroshima and Nagasaki. “These officers had just returned from those cities and were of the opinion no time should be lost by Survey teams in getting a study under way, particularly the medical study section,” said the record of the day’s meeting.\textsuperscript{93}

It is unclear what the two Army officers saw in the atomized cities or why they urged the medical studies in the areas. While roughly one third of the Survey’s some 200 operations in the Pacific took place either in Hiroshima, Nagasaki, or both,\textsuperscript{94} one can find few personal accounts describing what its members found in the cities or what impression they had of the results of the bombing among dozens of boxes in the archives.

It is not difficult to imagine what they found. The time they visited the cities—late September 1945—is categorized as the sub-chronic phase of the mid-acute phase of radiation sickness in a medical term, when such symptoms as epilation, vomiting, and

\textsuperscript{92} Incoming Message from Kirkpatric to Thomas Farrell, Sept. 10, 1945, Folder: 10 Atomic Bomb Mission #1, Box 785-11, RG331; Incoming Messages from USASTAF to Gardner, both dated Sept. 10, 1945, Folder: Folder: 664 Incoming Teletypes (Pacific), Box 156, Entry 4, RG 243, NACP. Sanborn would be in charge of fire study in Hiroshima as a member of PDD’s Field Team 1 and Guill an ordnance officer in PDD’s Field Team 2 in charge of Nagasaki. The other was Lt. Richard Grassy of the Naval Analysis Division. Outgoing Message from COMGENUSASTAF to UASTAF ADVON for Gardner, Sept. 20, 1945, Folder: 664 Outgoing Messages (USSBS) Tokyo August-September 1945, Boxes 153, 156, Entry 4; Letter to Franklin D’Olier from J. B. Warden, Sept. 12, 1945, Folder 319.4 Preparation of Reports (USSBS) 1 May to Present Date, Box 28, Entry 1, both of RG 243, NACP.

\textsuperscript{93} Minutes of Staff Meeting—1 October 1945, U. S. Strategic Bombing Survey Tokyo, Folder: 337 Conferences, Military & Naval & Others, Box 37, Entry 1, RG 243, NACP.

\textsuperscript{94} “Operation Orders & Areas,” Folder: 300.4 Orders-Operations (USSBS) Tokyo; “Operations orders,” Folder: 300.4-E Operations (USSBS) Tokyo, both in Box 12, Entry 1, RG 243, NACP.
diarrhea could be seen. The Effects of the Atomic Bomb on Hiroshima and Nagasaki, a 160-minute black/white documentary film produced by a Japanese documentary film production company Nichiei vividly portrays people with those symptoms, which its cameramen captured in late September 1945. The American officers must have seen patients with these symptoms in the Red Cross Hospital in Hiroshima, Omura Navy Hospital near Nagasaki, and other facilities.

One might think that military professionalism prevented them from showing emotions. It might also be true that the civilian members avoided discussing their feelings and impressions on severe damages out of respect for their military cohorts. When the civilian members discussed them, it appears that they only did so with the callous and unemotional observations of scientists.

For example, D’Olier and Nitze left almost no contemporary account of what they saw or felt in early November during their inspection tour of the cities where the USSBS

95 Medical Effects of the Nagasaki Atomic Bombing, Atomic Bomb Disease Institute, Nagasaki University, 1995, pp. 4-5.

96 The filming project was initiated by the Japanese government but was suspended in October by the SCAP. The filming was resumed and compilation completed under the supervision of the USSBS Motion Picture Project. The film can be viewed online at the NACP Web pages. About the Japanese film, see, for example, Nornes, Abe Mark, “The Body at the Center: The Effects of Atomic Bomb on Hiroshima and Nagasaki,” in Mick Broderick, ed., Hibakusha Cinema: Hiroshima, Nagasaki and the Nuclear Image in Japanese Film, NY: Routledge, 1996, pp. 120-159; Shigesawa, Atsuko, “From the STINKO to the USSBS Motion Picture Project: Daniel A. Mc Govern and the Army Air Forces’ First Atomic Bomb Films,” The Kobe Gaidai Ronso (Kobe City University Journal), Vol. 67, No. 3 (Nov. 2017), pp. 107-130.


98 According to Robert Jacobs, there were many diaries kept by medical professionals that were published later that show their feelings.
regional headquarters were located. The two, together with three military personnel, took a night train from the Tokyo Station on November 2 for Kyoto and stayed in Osaka the night of November 3. They left for Nagasaki the next day on board a seaplane from Wakayama. After spending the night onboard the USS Barr off the coast of Nagasaki Bay, they left for the USS Sims anchored in Hiro Bay onboard the seaplane, from where they traveled to Hiroshima by vehicles. They left Hiroshima that evening and arrived in Osaka and Nagoya on November 6, before going back to Tokyo.100

There is a very limited record of the trip. In the meeting on November 8 that they attended for the first time after coming back to Tokyo, D’Olier and Nitze “outlined some of the highlights of their trip to the regional headquarters...They mentioned briefly a visit with General Krueger; their impression of the effect of the atomic bomb, with particular emphasis on effects of the flash, and a comparison of the blast damage at Hiroshima and Nagasaki.”102 Prof. Bowman, who also visited these cities a few days later with Brothers and Galbraith, was cited in the record of the November 10 meeting: “He [Bowman]...

99 They were Commander Richard Reeve, Lt Col D. A. Alberti and Lt. commander Walter Wilds, USSBS secretary.

100 Outgoing Message from COMGEN USASTAF ADVON FOR USSBS, TOKUO to CG SIXTH ARMY, Nov. 1, 1945, Folder: 664 Outgoing Message (USA STAF) December 1945 [2 of 2], Box 149; Outgoing Message from USS ANCON for USSBS, Tokyo, to USS BARR, Nov. 2, 1945; Outgoing Message from USS ANCON for USSBS, Tokyo to CTU 50.2.1, Nov. 2, 1945, both in Folder: 664 Outgoing Messages (ANCON) November 1945 [2 of 2], Box 152; Incoming Message from USS BARR to USS SIM, Nov. 4, 1945; Incoming Message from USS SIMS to USS ANON for USSBS, Tokyo, Nov. 5, 1945, both in Folder: 664-Incoming Messages (USBS) Tokyo Oct-Dec. 1945 [2of 3], Box 153, all in Entry 4; Operation Order No. 49, Nov 2, 1945, Folder: 300.4 Orders-Operations (USBS) Tokyo, Box 12, Entry 1, all in RG 243, NACP. D’Olier and some directors of the Survey, including Nitze, Galbraith and Gen. Anderson, also toured battle areas in Southern Pacific on Nov. 20-25. Beveridge, Pacific, pp. 20-21.

101 Krueger was the Commander of the Sixth Army headquartered in Kyoto.

102 Minutes of Staff Meeting—8 November 1945, Headquarters, U. S. Strategic Bombing Survey (Pacific), Folder: 337 Conferences, Military & Naval & Others, Box 37, Entry 1, RG 243, NACP.
described the topography, type of buildings, effect of flash, and effect of the blast at both locations. Considerable time was spent on a description of flash effects. It was his opinion that the blast effect at Nagasaki was greater than at Hiroshima. He also stated there was no evidence of an underground effect.”

Other than that, there is no detail of how they described their personal views, how they compared the damage with those of other cities that suffered the conventional bombings, or how they found the human casualties in the two cities. It seems they either never discussed it openly, or the records have likely been destroyed, or it was not recorded in the first place. Perhaps all of these were true. It appears that the Survey did not want to impress the public with the effects of the atomic bomb. In his memoire, Nitze confessed that the Survey’s task was to show the public the bomb’s limitations.

At that time newspapers in the United States were filled with speculation, some of it proclaiming the atomic bomb to be of limitless power—the ultimate weapon. The survey’s task was to measure as precisely as possible the exact effects of the two bombs—in other words, to put calipers on the problem so that people back home would have a factual frame of reference within which to draw conclusions about the bomb’s true capabilities as well as its limitations.104

103 Minutes of Staff Meeting—10 November 1945, Headquarters, U. S. Strategic Bombing Survey (Pacific), Folder: 337 Conferences, Military & Naval & Others, Box 37, Entry 1, RG 243, NACP.

104 Nitze, From Hiroshima to Glasnost, p. 42.
More than four decades after he visited Hiroshima and Nagasaki, Nitze seems to still be holding on to the same position. He discusses the houses that remained standing and people on the trains who survived thanks to the closed windows. We will see more of this attitude of minimizing the effects of the atomic bomb across the Survey’s reports in the following chapters.

The plutonium bomb used on Nagasaki was more powerful and considered to have made the uranium bomb used on Hiroshima obsolete. When the Survey opened their regional headquarters in the two cities by the middle of October, however, Hiroshima was found to provide a better visual display of the effects. The affected area in Hiroshima was entirely flat and the hills surrounding the city did not interfere with the effects of the bomb, while in Nagasaki, the hills protected many structures that would otherwise have suffered more severe damage.

Nagasaki, on the other hand, would attract attention when it was found that some people in the tunnel shelters, even almost immediately below the point of burst, survived

105 Ibid., pp. 42-43.

106 “First Atomic Bomb Already Obsolete,” NYT, Aug. 12, 1945, p. 28. For example, a cablegram from COMGENUSASTAF to McNamee dated Sept. 25, 1945, suggested Civilian Defense Division conduct research in Tokyo, Nagoya, Kobe-Osaka, Kyoto, and Nagasaki—but not Hiroshima. It said, “You may elect to send small group by air lift for brief examination of Hiroshima, but that type of bombing is better illustrated in all its phases at Nagasaki.” Cablegram from COMGENUSASTAF to McNamee, Sept. 25, 1945, Box 153, Entry 4, RG 243, NACP.

107 “Hiroshima was an excellent test target for the atomic bomb.” PDD, Report on Physical Damage in Japan (Hereafter, PDD, Japan), p. 201. “the energy of the Nagasaki explosion was greater than the energy of the Hiroshima explosion, yet...figures show that the effects in terms of total casualties were considerably greater in Hiroshima.” MED History, "Investigation of the After Effects of the Bombing in Japan." (p. 12) Yet, some survey organizations and USSBS divisions prioritized Nagasaki. “Since the NAGASAKI bomb was more powerful than the one at HIROSHIMA, and of the type more likely to be used in the future, we chose to concentrate our studies chiefly on it.” U.S. NavTechJap, Atomic Bombs, Hiroshima and Nagasaki, Article 1, Medical Aspect, December 1945, p. 5.
the bombing. This phenomenon would be used to argue that the atomic disaster would be survivable. Thus, both cities were important subjects for the Survey.

The Survey Goes to Hiroshima and Nagasaki

Of the 15 study divisions operated in Japan, four divisions—Physical Damage, Civilian Defense, Medical and Urban Areas—studied the effects of the atomic bomb from the perspective of their own expertise. In addition, the Morale Division conducted interviews of Japanese citizens with a special attention to those in Hiroshima and Nagasaki. In addition, the Morale Division conducted interviews of Japanese citizens with a special attention to those in Hiroshima and Nagasaki.

While the Hiroshima Headquarters was established on October 8, full-fledged activities only started on October 14; the next day the USS Sims arrived in Hiro Bay, off the coast near Kure. Assigned to USSBS on October 4, the ship left Tokyo Bay on October 11 after being loaded with 10 jeeps and seven trailers, as well as 12 members of PDD Team No. 1 led by Major Sanborn and four-party group of the Civil Defense Division Team No. 1 led by Lt. Col. W. H. Frederick. Hiroshima then was still off limits to military personnel and that

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108 PDD, Effects of the Atomic Bomb on Hiroshima, Japan (Hereafter, PDD, Hiroshima); idem., Effects of the Atomic Bomb on Nagasaki, Japan (Hereafter, PDD, Nagasaki); CDD, Field Report Covering Air Raid Protection and Allied Subjects, Nagasaki (Hereafter, CDD, Nagasaki); CDD, Hiroshima; Medical Division, The Effects of Atomic Bomb on Health and Medical Services in Hiroshima and Nagasaki (Hereafter, Medical Division, Hiroshima and Nagasaki); UAD, The Effects of Air Attack on the City of Nagasaki (Hereafter, UAD, Nagasaki); idem., Effects of Air Attack on the City of Hiroshima (Hereafter, UAD, Hiroshima).

109 Morale Division, The Effects of Strategic Bombing on Japanese Morale. Most of other divisions also sent a group of personnel to either one or both atomized cities at certain point to complete their study. Report No. 3f(1) List of USSBS teams and personnel in Nagasaki compiled by G-2, Roll 53, USSBS ROR; “Operation Orders & Areas,” Folder: 300.4 Orders-Operations (USSBS) Tokyo; “Operations orders,” Folder: 300.4-E Operations (USSBS) Tokyo, both in Box 12, Entry 1, RG 243, NACP.

110 WWII War Diaries, Boxes 620 & 1452, RG 39, NACP; Beveridge, Pacific, pp. 117-118, 210. The arrivals of the ships to regional HQs were delayed due to bad weather.
survey members had to obtain passes to the city from the occupation forces’ 41st Division Headquarters in Hiro, a town some 20 kilometers southeast of Hiroshima.111

According to Beveridge, work conditions at Hiroshima were the worst in the Survey.112 Every day, the members had to commute 20 miles (32 kilometers) from the ship—anchored 2,000 feet (600 meters) off shore—to their headquarters—the Hiroshima Higashi Police Station, housed in a bank building in the center of Hiroshima—taking one hour and fifteen minutes in boats and jeeps. The actual working day for the members in the city was thus limited from 9:30 am to 4 pm.113 The number of personnel in the care of the regional headquarters had increased to 114 by early November, and to alleviate the conditions, the USS Haines was sent on November 11 to help accommodate them.114

The USS Barr, assigned to Nagasaki, left Yokosuka Bay in the late afternoon of October 12 after being loaded with 10 jeeps, seven trailers, 6 drums of 80 octane gasoline, as well as food enough to feed 80 people, arriving in Nagasaki two days later.115 On board were Major W. W. Schoolcraft and four other naval enlisted men who were in charge of the service group for the ship’s operation, as well as Major Dragnet along with 14 of his PDD’s


112 Beveridge, Pacific, p. 80.

113 Hiroshima Bay had not been cleared of mines. Even after Japanese mine-sweepers cleared the passage into Kure harbor and Hiroshima Bay, the U.S. Navy did not declare the area open to American vessels. Letter to E. D. Stanley, Jr., from Roscoe Pickett, Jr., Oct. 16, 1945, Folder: 319.5 Reports—Field Team Status 1May 45 to present date, Box 30, Entry 1, RG 243 NACP; PDD, Hiroshima, Vol. 1, p. 63.

114 Beveridge, Pacific, p. 80; Statement by Paul H. Nitze in the Hearings before the Senate Special Committee on Atomic Energy, 79th Cong., February 15, 1946, p. 515.

115 WWII War Diaries, Box 620, RG 39, NACP.
Field Team No. 2. At the peak of operations in November, 136 persons were staying in Nagasaki, and the USS Reeves, which arrived on October 27, served the Survey members until November 25, the last day of the Survey in Nagasaki. The Nagasaki HQ was opened in the office building of the Mitsubishi Torpedo Plant No. 1, located on the coast of Nagasaki Bay.

In the following, I examine the organizations and activities of each of the five divisions that conducted studies on the effects of the atomic bomb. Limited accounts reveal the high likelihood that the USSBS analysts thoroughly understood the effects of the atomic bomb through the words of the survivors and by inspecting the ruins themselves.

**<Physical Damage Division>**

PDD’s Team No.1 in charge of Hiroshima was comprised of 23 people—15 officers, seven enlisted men, and one civilian. In addition, the regional HQ provided the team with four officers and 11 enlisted men, responsible for supplies, rations, and transportation, as well as photography and intelligence. PDD’s Team No. 2 in charge of Nagasaki was comprised of 21 people—13 officers and eight enlisted men. In addition, a group of six personnel in charge of photography was provided by the Nagasaki Regional HQ. The teams in Hiroshima and Nagasaki were largest of the 15 PDD teams that were dispatched to

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116 WWII War Diaries, Box 620, RG 39, NACP; Report No. 3 of List of USSBS teams and personnel in Nagasaki compiled by G-2, Roll 53, USSBS ROR.

117 Beveridge, Pacific, pp. 82-83.

118 PDD, Hiroshima, Vol. 1, pp. 8, 62. The civilian was Dr. M. Ernest Hall who served as an interpreter. Beveridge, Pacific, p. 118.

cities across the country—e.g. Team No. 3 in Osaka consisted of 13 people, Team No. 5 for Nagoya had 18, and Team No. 6 in Tokyo had 12.\(^{120}\)

PDD’s overall goal in Japan was to measure the extent of the damage inflicted by all types of bombs dropped on Japan to buildings, machine tools, and bridges, as well as to transportation and other utilities, including electric power and gas supply systems. For this purpose, it studied 64 major cities across the country except for Hokkaido and Okinawa,\(^{121}\) and 20 specific targets of high explosive bombs, including aircraft plants and other war-related industries, which had been attacked with approximately 6,500 tons of high explosive bombs.\(^{122}\) It also aimed to “establish in proper perspective the relationship of the atomic bomb to other weapons by comparisons of relative effectiveness.”\(^{123}\)

PDD teams in Hiroshima and Nagasaki were designed specifically to collect, analyze and evaluate data pertaining to damage caused by the atomic bomb. They also made field examinations and inspections of the damage. The subjects included 173 remaining building structures ranging in distance 400 to 9,400 feet (130 to 3130 meters) from Ground Zero (GZ) and 57 bridges ranging in distance 260 to 15,600 feet (90 to 5,200 meters) from GZ in Hiroshima,\(^{124}\) and a total of 567 remaining structures—286 public buildings and 281

\(^{120}\) Beveridge, *Pacific*, pp. 125-126.

\(^{121}\) The number excludes atomized cities. PDD, *Japan*, pp. 36-38.

\(^{122}\) PDD, *Japan*, p. 5. For the list of targets, see pp. 21-23.


\(^{124}\) PDD, *Hiroshima*, Vol. I, p. 16; Vol. III, p. 29. Building No. 1 was Japan Red Cross Office Building located 700 feet from GZ, No. 2 was Hiroshima Chamber of Commerce 800 feet from GZ, No. 3 Hiroshima Electric Railway Co. Substation 900 from GZ, No. 4 City of Hiroshima Commercial Display Building, currently known as A-Bomb Dome, 400 feet from GZ and Shima Surgical Hospital 100 feet from GZ No. 5. The data of each building from No. 1 to No. 135 is found in Appendix A in PDD, *Hiroshima, vol. II*, pp. 133-630. This
industrial installations that extended 6,000 feet (2 kilometers) to the north and 20,000 feet (6.6 kilometers) to the south from the GZ—and all of the 35 bridges within 7,650 feet (2.5 kilometers) from GZ in Nagasaki. They gathered statistical and documentary material, including Japanese accounts of the atomic bomb attack and damage assessment. The teams also interviewed hundreds of municipal and prefectural officers, as well as ordinary people who survived the explosion. The two teams stayed in the cities for almost the whole time in which each regional HQs operated.

<Urban Areas Division>

The Urban Areas Division (UAD) was designed to determine the effects of bombing on individual communities with particular emphasis on economic factors. The division attempted to evaluate the ability of cities to contribute to the Japanese war effort and to recover from the disaster of the bombing. It tried to find how much war-essential productive capacity could have been recovered under continued wartime conditions, and

way of numbering the building in accordance with their distance from the GZ apparently made things easier for members and visitors. Beveridge attributes the success of the Survey's work in Hiroshima to "the splendid pioneering work" of Major Joe F. Bangham, who replaced Major Sanborn as the team chief in the middle of October. Bangham numbered, in large painted figures, the bridges and buildings of the city that were the chief targets of investigation, starting from ground zero, and made a map with the numbers, which was of "immense value to other teams and visiting individuals of the Survey. Beveridge, Pacific, pp. 79-80.

125 PDD, Nagasaki, Vol. I, p. 99; Vol. II, p. 5; Vol. III, p. 90. The data of each building and bridge can also be found in the three volumes.


127 Memorandum "Briefing of Field Teams," Nov. 3, 1945, Roll 303A; 60h(2) Preliminary report, Preliminary report as of March 20, 1946, UAD, Urban Area Study of the Atomic Bomb Attack on Hiroshima, 6 August 1945, Roll 304, both in USSBS ROR.
also how much raw materials would have been available for reconstruction.\textsuperscript{128} The division consisted of 45 personnel and was led by Jack W. Lydman, former Military Intelligence Service personnel who became a target specialist for the 20\textsuperscript{th} Air Force in the Marianas at the last stage of war with Japan.\textsuperscript{129}

The division chose six of the largest cities—Tokyo, Yokohama, Kawasaki, Nagoya, Osaka, and Kobe—from among 66 cities that suffered major conventional aerial bombings by B-29s as subjects for detailed study. These six cities were attacked before the last three months of the war. It also studied Kyoto, an ancient capital that was spared heavy bombing, as well as Hiroshima and Nagasaki, for comparative purpose.\textsuperscript{130} Eight field teams were organized, three for the Tokyo area, two for Nagoya, one for Osaka, one for Chugoku Region, which took charge of Hiroshima, and the other for Kyushu Region, which covered Nagasaki.\textsuperscript{131}

Most of the members of the field team for the Kyushu region—five out of seven—left Tokyo for Nagasaki on October 23 on board the USS Reeves.\textsuperscript{132} Of these, two moved to Hiroshima on November 7 via Fukuoka, who were joined the next day by two personnel

\textsuperscript{128} UAD, \textit{Nagasaki}, p. 5.

\textsuperscript{129} UAD Program, Folder: 314.7 USSBS Urban Areas Division History, Box 25, Entry 1, RG 243; Beveridge, \textit{Pacific}, p. 162.

\textsuperscript{130} The division, after all, investigated a total of 39 cities from Kyushu to Hokkaido. UAD, \textit{The Effects of Air Attack on Japanese Urban Economy: Summary Report} (Hereafter, UAD, \textit{Japan}), p. iv.


\textsuperscript{132} Operations Order No. 18, Oct. 23, 1945; Amendment No. 1 to Operations Order No. 18, Oct. 24, 1945, Folder: 300.4-E Operations (USSBS) Tokyo, Box 12, Entry 1, RG 243; Beveridge, \textit{Pacific}, p. 163.
who flew from Tokyo by seaplane, now creating a team for the Chugoku Region.\textsuperscript{133} They
started their study in Hiroshima on November 9 by visiting the commerce and industry
section of the regional government, where officials agreed to distribute and collect
questionnaires for the Americans. They eventually provided the Japanese with 500
questionnaires for all the government agencies and industrial establishments with 50 or
more employees in the four cities of Hiroshima, Kure/Hiro, Okayama and Shimonoseki. The
answered questionnaires were collected by November 25.\textsuperscript{134}

While they were in Hiroshima, the team also interviewed 71 representatives of
various local government offices and industries, including the five largest war plants, from
November 12-29.\textsuperscript{135} In addition, they asked Genshin Takano, governor of Hiroshima at the
time of the atomic attack who had become Superintendent General of the Tokyo
Metropolitan Police after the war, for his views and obtained a copy of his August 21 report
submitted to the Japanese government and military.\textsuperscript{136} After completing their study in
Shimonoseki and Kure they left Hiroshima for Okayama on November 29, where they spent
the next day to study the area and Kurashiki before leaving for Tokyo in the evening.\textsuperscript{137}

\textsuperscript{133} Amendment No. 5 to Operations Order No. 18, Nov. 6, 1945, Folder: 300.4-E Operations (USSBS)
Tokyo, Box 12, Entry 1, RG 243; Beveridge, \textit{Pacific}, p. 163. Of the four, two were language personnel.

\textsuperscript{134} In case of Hiroshima City, the team selected industries employing 50 or more workers within the city
limits or 250 or more workers within the urban area.

\textsuperscript{135} Appendix B, UAD, \textit{Hiroshima}, p. 51-52; summary of the interviews of 48 people can be found in the
Report No. 60h(6), Roll 304, USSBS ROR.

\textsuperscript{136} Appendix B, UAD, \textit{Hiroshima}, p. 51-52; Nov. 12 entry of the Daily Diary, USSBS Urban Areas Division
Hiroshima Team, 60h(3) Air Defense and Matters Concerning Damages from Air Raid of 6 August 1945,
Roll 304, USSBS ROR.

\textsuperscript{137} Entries of Nov. 29-30 of the Daily Diary, USSBS Urban Areas Section Hiroshima Team, 60a(3) Field
Team Operations, Roll 304, USSBS ROR.
There is no record of the daily activities of the field team in charge of the Kyushu Region, which now consisted of four people. Still the records show that three of them worked in Nagasaki and were engaged in interviews of 25 individuals in Nagasaki, which took place from November 9 to December 5.  

Because four Mitsubishi companies—Mitsubishi Electrical Equipment Works, Mitsubishi Arms Works, Mitsubishi Steel Works and Mitsubishi Dockyard—employed 85-90 percent of the city’s labor force and supported the living of 75 percent of the population, 18 of the interviewees were executives of these Mitsubishi companies. Other interviewees included Governor Wakamatsu Nagano, and Mayor Jukichi Okada, as well as officials of the prefectural police, fire department and air defense section.

<Civilian Defense Division>

The Civilian Defense Division (CDD) aimed to study Japanese civilian defense and air-raid protection organization, its operation, and equipment as well as the degree of success it achieved in its efforts to prevent damage to human lives and property by enemy air raids. It collected documents and interviewed Japanese officials for information regarding Japanese laws and regulations, civilian defense agencies, air raid warning system, and more.  

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138 Report No. 59f Interviews, Roll 303A, USSBS ROR.  
139 UAD, Nagasaki, p. 4.  
140 Report No. 59f Interviews, Roll 303A, USSBS ROR.  
141 Ibid.
firefighting/fire prevention methods and emergency medical services.\textsuperscript{142} The division consisted of 44 personnel, mostly from the AAF, which was divided into two teams that studied cities of Tokyo, Hiroshima, Osaka, Kobe, Kyoto, Nagasaki, and Nagoya.\textsuperscript{143}

Hiroshima and Nagasaki posed a special importance for the division because its investigation was expected to contribute to postwar civilian protection planning in the United States. “The experience and conduct of the citizens of Hiroshima and Nagasaki in the atomic bomb raids” should be helpful in studying “effective means to minimize the loss of life” with respect to planning shelter protection, emergency medical care, fire-fighting, rescue, and emergency food units.\textsuperscript{144}

CDD’s Team No. 1 started their study in Hiroshima on October 14. Joined a few days later by two fire protection and prevention experts, the six-member team made inspections of the bombed-out city and interviewed officials in charge of civil defense before leaving Hiroshima on October 23 for Osaka.\textsuperscript{145} CDD’s Team No. 2 conducted their study in Nagasaki on November 11-16, 1945.\textsuperscript{146} There were 23 people in the team, including fire and shelter

\begin{footnotesize}
\textsuperscript{142} CDD, \textit{Final Report Covering Air-Raid Protection and Allied Subjects in Japan} (Hereafter, CDD, \textit{Japan}), p. 15.

\textsuperscript{143} Beveridge, \textit{Pacific}, pp. 209-214; USSBS Civilian Defense Division, Report No. 10a(2) draft, Final Report, p. i, Roll 73, USSBS ROR.

\textsuperscript{144} CDD, \textit{Japan}, p. 15.

\textsuperscript{145} Those interviewed included an engineer who worked for the city’s planning department, acting chief of the Hiroshima Fire Department and chief of the East Side Fire Department, Hiroshima. Cablegram from USASTAF ADVON to D’Olier, Oct. 9, 1945, Folder: 664 Cablegrams (incoming), Pacific, 1945 Aug-Dec. [3 of 3], Box 149; also in Box 150 & 152, Entry 4, RG 243; Report No. 9a Civil Defense Division, Hiroshima Field Report, Nov. 15, 1945, Roll 73, USSBS ROR; Beveridge, \textit{Pacific}, p. 210.

\end{footnotesize}
protection experts—almost four times larger than the Team No. 1.\textsuperscript{147} The story of people who survived the atomic attack in shelters fascinated CDD members. In addition to five Nagasaki officials in charge of civilian defense,\textsuperscript{148} the team interviewed eight people who were in five tunnel-type shelters at the time of the explosion and made a detailed study of the shelters.\textsuperscript{149}

\textit{<Medical Division>}

The Medical Division, split off as an independent division from a branch of the Morale Division in Europe, consisted of 14 people—seven from the Public Health Service, including Dr. Lewis R. Thompson, division chief, who was assistant surgeon general of the U.S. Public Health Service and former Director of the National Institute of Health, and three officers and four enlisted men from the Army.\textsuperscript{150} They interviewed Japanese physicians and public health authorities of a number of cities and prefectures, with a special focus on Tokyo, Yokohama, Osaka, Kobe and Kyoto,\textsuperscript{151} as well as Hiroshima and Nagasaki. The purpose of the interviews was to determine the effects of the war and strategic bombing on public

\textsuperscript{147} Letter to Nitze from J. B. Warden, Oct. 15, 1945, frames 1233-1235, Roll 1, USSBS ROR; Beveridge, \textit{Pacific}, p. 211.

\textsuperscript{148} Those interviewed included incumbent chief, second chief, and former chief of fire department, chief of the water police department, chief of the water department. Exhibit B List of officials interviewed in Nagasaki City, CDD, \textit{Nagasaki}, p. 98.

\textsuperscript{149} Exhibit H: List of names of persons interviewed, who were in shelters at time of atomic bomb explosion, CDD, \textit{Nagasaki}, p. 115.

\textsuperscript{150} Medical Division, \textit{The Effects of Bombing on Health and Medical Services in Japan} (Hereafter, Medical Division, \textit{Japan}), p. 1.

\textsuperscript{151} The first four suffered highest percent of built-up areas destroyed—56 in Kobe, 50.8 in Tokyo, 44 in Yokohama, and 37 in Osaka—among cities with populations of more than 500,000. Kyoto was selected for comparative purpose. Medical Division, \textit{Japan}, pp. 1, 242-244.
health, sanitary and nutritional status. Among the five teams dispatched to regional headquarters, Field Team No. 1, consisted of five people, and Field Team No. 2, consisted of four people, left Tokyo on November 4 for Nagasaki and Hiroshima, respectively, and spent five days studying the areas.

In Nagasaki, Field Team No. 1 visited Japanese officials at the prefectural Health Office for information on the condition of infectious diseases and industrial health during the war. They also met members of the Joint Commission, including Lieutenant Col. George V. LeRoy at Omura Naval Hospital, for the ongoing study of the casualties of the atomic bomb. Field Team No. 2 also interviewed both Japanese officials and American experts, including Takemaru Kitajima, chief of health department, Hiroshima Prefecture, and Averill A. Liebow, a member of the Joint Commission. Dr. Luther L. Terry, member of Field Team No 2, in particular, joined the Commission for three days from November 7, working at Ujina Hospital and visiting various clinics in the city.

152 Medical Division, Japan, p. 65.

153 Medical Division, Hiroshima and Nagasaki, p. 1; Beveridge, Pacific, p. 205. According to an operations order, Field Team No. 1, consisting of four people and was to leave Tokyo on Nov. 5, was to be joined by another member on Nov. 7. Operation Orders Nos. 56-57, Nov. 4, 1945; Amendment No. 1 to Operation Order No. 56, Nov. 6, 1945, Folder: Orders-Operations (USSBS) Tokyo, Box 12, Entry 1, RG 243, NACP.

154 Interrogation of officials of Nagasaki Prefectural health department on incidence of infectious diseases in Nagasaki ken and shi, Report No. 13c(2)(d), Nov. 8, 1945, frames 674-675, Roll 92, USSBS ROR.

155 Interrogation of Lieutenant Colonel H [sic]. V. LeRoy, Report No. 13c(2)(c), Nov. 7, 1945, frames 666-673; Notes of conferences of Dr. R. H. Flinn on various diseases, Report No. 13c(2)(g), frames 684-685, both in Roll 92; Progress Report of Medical Division, Nov. 25, 1945, Report No. 1c(1), frames 566-586, 753-772, Roll 7, USSBS ROR.

156 Notes on interview with Dr. Takemaru Kitajima, Report No. 13c(2)(b), Nov. 6, 1945, frames 664-665; Notes on interview with Lieutenant Colonel Averill A. Liebow of joint Army commission for atomic bomb investigation, Report No. 13c(2)(a), Nov. 9, 1945, frames 657-663, both in Roll 92, USSBS ROR. The division members also interviewed Col. Ashley W. Oughterson in Tokyo and Ryojun Kinoshita, Head of the Department of Pathology, at Osaka University, who treated patients from atomized cities. Notes re
While their predecessors in the European Survey focused on the examination of casualties of the bombing and war, the Medical Division in Japan focused more on the study of the organization of public health and medical services in Japan, people's health condition, and the nutritional state during the wartime in general. The division’s report on Hiroshima and Nagasaki explains the change as follows:

At the time the Medical Division of the Survey entered Japan the two groups [Joint Commission and NavTechJap Group] were in the midst of their investigation. Since investigation along the same line by the Medical Division of Survey would have been needless repetition and since so little time was available, it was decided that no detailed study would be made by this group. Consequently, it was decided that the Medical Division would investigate the medical and sanitation aspects which were not being covered by the other groups and would look into the nature of the casualties only superficially.

Perhaps, it was part of the demarcation deal arranged by Groves and the Survey Vice Chairman Alexander, which we saw earlier in this chapter. But as scientists, it was

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158 Medical Division, *Japan*, p. 1.

159 Medical Division, *Hiroshima and Nagasaki*, p. 21.

160 See the part, “Cooperation with the Manhattan Project,” of this chapter.
natural that the Medical Division members were interested in the effects of the atomic bomb on the human body, and they seem to have succeeded in getting themselves involved in the study. Fortunately, "the Navy group and the Joint Commission cooperated with the Survey to the greatest extent and made all of their records available for examination."\footnote{161}

\textit{<Morale Division>}

The Morale Division was the largest of all the USSBS study divisions in the Pacific with some 200 personnel, including 97 interviewers—nearly all Nisei Japanese Americans,\footnote{162} — 20 field team personnel and 11 drivers.\footnote{163} Tasked to survey the morale of the wartime Japanese civilian population—one of the targets of the strategic bombing,\footnote{164} — the personnel were divided into 42 teams, of which 32 teams conducted studies and

\footnote{161 \textit{Ibid}, p. 21. Beveridge wrote about this cooperation as follows: "While in Japan the division cooperated well with the medical group of the British Bombing Research Mission and there was a mutually helpful exchange of data. Considerable material was supplied by the Survey's experts to the medical groups of the occupying forces, and there was also liaison with the Surgeon General's and the Navy's investigation groups." Beveridge, \textit{Pacific}, pp. 206-207.}

\footnote{162 \textit{Part of the interpreters of the Japanese language were civilians, many of whom were Americans of Japanese descent who worked during the war for the Office of Strategic Services (OSS), which was dissolved on Oct. 1, 1945. Memorandum to D'Olier from William J. Donovan, Sept. 14, 1945, Folder: 310.1 Office Administration & Organization, Box 21, Entry 1; Incoming Message from Washington to theater commanders, Oct. 1, 1945, Folder: 664-Incoming Messages (FEAF & GHQ) Oct. 1945-Mar. 1946 [1 of 2], Box 156; Incoming Message from Hurley signed WARCOS to COMGEN USASTAF for Nitze, Oct. 29, 1945, Folder: 664-Incoming Message (ISSBS), Box 155, both of Entry 4, all of RG 243, NACP. Report No. 14a(18) Instructions and notes on machine coding, Roll 93, USSBS ROR, lists 109 names as interviewers.}}

\footnote{163 \textit{Beveridge, Pacific}, p. 181. Meanwhile, most of the key members of the Morale Division were psychologists, sociologists, and anthropologists. Beveridge, \textit{Pacific}, pp. 189-202.}

\footnote{164 \textit{For this reason, those who served in the armed forces in the Greater East Asia war were excluded from the sample interviewees. Morale Division, \textit{The Effects of Strategic Bombing on Japanese Morale}, Washington, D.C.: GPO, 1947, p. 11.}}
interviews from November 10 to December 29 in 60 cities and towns across the country, excluding Hokkaido, Shikoku, and southeastern Kyushu.\textsuperscript{165}

The division listed a total of 4,120 sample individuals—ages of 16 and 70 years—from population lists they collected from neighborhood associations, rice rationing records (used to distribute food rationing) or local police population registers in 29 urban cities and 23 rural towns, as well as Hiroshima and Nagasaki, and six towns in their immediate vicinity.\textsuperscript{167} The division also conducted interrogations of local and central government officials and intellectuals.\textsuperscript{168}

The biggest problem for the division was finding the sample individuals in the places of their alleged residences since Japanese address were “often mysterious even to the local population.”\textsuperscript{169} Many of them, especially those in urban areas, had migrated to other places between the date of the list sampled and the arrival of interview teams, and the division could not interview slightly over 20 percent of persons listed as samples.\textsuperscript{170} After all, the cross-section survey totaled 3,135 interviews—1,928 in urban areas and 959 in rural areas,

\textsuperscript{165} Morale Division, p. 11; Beveridge, \textit{Pacific}, pp. 181-200.

\textsuperscript{166} Report No. 14a(16), Various instructions and supplements for sampling, Estimated Work Load by Regions, Roll 93, USSBS ROR.

\textsuperscript{167} They first divided the number of households by sampling ratio designated to each city and then by drawing every 10\textsuperscript{th} eligible individual in the list of households. Report No. 14a(14) Instruction for sampling within designated areas, Oct. 25, 1945, p. 6; Report No. 14a(6) Design of the Sample Survey to Measure the Effects of bombing on Japanese Morale; Report No. 14a(22) Actual interviews per sample point, all in Roll 93, USSBS ROR; Morale Division, pp. 11, 196.

\textsuperscript{168} Morale Division, p. 11.

\textsuperscript{169} Report No. 14a(16), Various instructions and supplements for sampling, Random Impressions of a Contact Man, p. 3, Roll 93, USSBS ROR.

\textsuperscript{170} Teletype Conference between Fisher, Truman, Huey, and Nisselson, held on Dec. 14, 1945, Folder: 664-Tokyo Teletype Conversations, Box 156, Entry 4, RG 243, NACP.
where there were extremely light or no bomb damage, and 248 in Hiroshima, Nagasaki, and their vicinities.\textsuperscript{171} The respondents were told, at the beginning, “anything they say will neither be linked to their names nor used by anyone in Japan.”\textsuperscript{172} The division interviewed seven people a day on average, of which two on average were audio recorded.\textsuperscript{173}

Table 2. Typical questions for the interviews of Japanese civilians

<table>
<thead>
<tr>
<th>No.</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>In regard to the way your leaders conducted the war, what did you think of it during the war?</td>
</tr>
<tr>
<td>16</td>
<td>As the war wore on, did you ever begin to have doubts that Japan would win?</td>
</tr>
<tr>
<td>17</td>
<td>When did you first feel certain that Japan could not attain sure victory?</td>
</tr>
<tr>
<td>18</td>
<td>Did you at any time during the war come to a point where you felt you could not go on with the war?</td>
</tr>
<tr>
<td>19</td>
<td>How did you feel when you heard that Japan had given up the war?</td>
</tr>
<tr>
<td>22, 22A</td>
<td>In your opinion, what changes should occur in Japan in the future? What about the Emperor?</td>
</tr>
<tr>
<td>31</td>
<td>What did you think about the atomic bomb?</td>
</tr>
<tr>
<td>38</td>
<td>What kind of bomb do you think is worse—incendiary or explosive?</td>
</tr>
</tbody>
</table>

In addition to several questions to determine the identities of the respondents, there were 35 questions regarding the war and their life during the war (See Table 2 above).\textsuperscript{174}

For those who lived in bombed areas during the war, six more questions regarding their

\textsuperscript{171} Report No. 14a(22) Actual interviews per sample point; Report No. 14a(26), both in Roll 93, USSBS ROR.

\textsuperscript{172} Morale Division, p. 167.

\textsuperscript{173} Teletype Conversation between D. B. Truman, Lt. G. H. H. Huey and B. R. Fisher held on Nov. 22, 1945; Undated teletype conversation, both in Folder: 664-Tokyo Teletype Conversations, Box 156, Entry 4, RG 243. According to Beveridge, the ratio of recording was “about one in every ten interviews.” Beveridge, \textit{Pacific}, p. 201. These recordings are also available as part of the USSBS collection at NACP.

\textsuperscript{174} Morale Division, pp. 162-163.
experiences were asked. For those who evacuated from their own communities or those
whose household evacuated from their communities because of the bombing, there were
nine more questions regarding their experiences and thoughts on the decision. For those
whose communities had evacuees from other communities, there were also sets of four or
five different questions.175

Of the 129 interviews conducted by teams in Hiroshima, 63 took place in rural areas
of Kabe, Tomo, and Hera in Hiroshima Prefecture.176 Of the 119 interviews conducted by
teams in Nagasaki, 57 took place in rural areas of Mogi, Tokita, and Yamada in Nagasaki
Prefecture.177 A total of 27 members in four teams worked at some point from November
20 to December 12 in Hiroshima and a total of 31 members in four teams worked during
the period extending from October 26 to December 16 in Nagasaki.178 The division’s work
in the atomized cities turned out to be one of the most difficult among all the USSBS
activities in Japan. Dr. Horace B. English, professor of psychology at Ohio State University,179
who was engaged in interviews in Nagasaki as an interrogator, recorded as follows:

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175 Ibid, pp. 164-166.

176 Kabe and Tomo were in Asa Gun (English equivalent to “County”) and Hara in Saeki Gun. Interviews
took place mostly in town halls in these towns. Interviews in Hiroshima took place either in Tomoe Hotel
or Higashi Police station. Report No. 14c Hiroshima Report on Sampling, Roll 94; Report No. 14a(12)
Sampling instructions for Hiroshima Rural Area, Nov. 28, 1945, p. 1, Roll 92, USSBS ROR.

177 Mogi and Tokitsu were in Nishisonogi Gun, and Yamada was in Minami Takaki Gun. Interviews in
Nagasaki took place in Nagasaki College of Industrial Management, 1.8 miles southwest of the GZ. Report
No. 14a(22) Actual Interviews per Sample Point, Roll 93; Report No. 14f(23)(c) Nagasaki Background
Report, Roll 126, USSBS ROR.

178 Beveridge, Pacific, pp. 193-197.

179 Report No. 3f(2) USSBS Key personnel who investigated the effects of the atomic bombings of
Hiroshima and Nagasaki, Roll 53, USSBS ROR.
Contacts, as might be expected, were very difficult to make. Many on the sample list were died or evacuated. All were hard to find and the percent of “no shows” was larger than our experiences elsewhere... We had inadequate transportation at first and hence respondents were often late. (The streets were also pretty bad and some respondents in the city lived miles up into the country hills.) And our first two contact men fell ill. All in all, then, we finished comparatively few interviews for the time spent, much fewer than would have been expected... 180

Other divisions had faced similar problems. PDD, for example, faced difficulties finding the right people. "Attempts to interrogate witnesses who were actually in the city when the disaster occurred were made difficult by the extremely high loss of life and by the immediate dispersal of survivors to the outlying areas," 181 its Hiroshima report reads. “Although many persons volunteered information, it was established by questioning that very few of them had actually been in the city at the time of the detonation. Moreover, it was difficult to trace specific persons as possible sources of information, since they had either been killed or no record of their whereabouts was available." 182

The bulk of records of both government and private industries had been destroyed by the bombing, and by the following typhoon on September 17, 1945, 183 in case of

180 Report No. 14f(23)(c) Nagasaki: Background report, Roll 126, USSBS ROR.
182 Ibid., pp. 62-63.
183 The typhoon resulted in 2,012 people, including 11 members of a scientific survey team from the Kyoto University, being either killed or missing. Hiroshima Prefecture, Sengo Goju-nen Hiroshima
Hiroshima, or on orders of the military at the time of the surrender. Many of the key Japanese personnel were killed by the atomic bomb. The Survey could only depend on the interviews they had with whatever remaining Japanese officials or survivors they could find. “In order to appreciate the conditions at the time of the blast and immediately thereafter,” the Medical Division’s report reads, “it will be well to reconstruct the scene in Hiroshima as best it can be determined from talking with survivors.”

The Survey also based much of the data in its reports on the atomic bomb attacks on accounts prepared by Japanese agencies or scientists because “no details on the attack preparations, approach to the target, dropping the bomb, elements of the explosive or method of detonation of the bomb” were available. Therefore, it was necessary to describe the attack as experienced and reported by the Japanese themselves.

It is likely that those interrogated by the Survey analysts comprised of the most prominent individuals in the field available. And what they heard has been a collection of witness accounts of the atomic bomb of an unparalleled quality. Of course, not everything made it into their final reports. The final reports only cite these accounts in a fragmentary fashion or presented them in summarized forms. Most of the USSBS final reports hardly

Kensei-no-Ayumi (50 years of postwar footsteps of Hiroshima Prefecture), Tokyo: Gyosei, 1996, pp. 4-6. 〔広島県『戦後五十年広島県政のあゆみ』〕


185 Medical Division, Hiroshima and Nagasaki, p. 3.

186 PDD, Hiroshima, Vol. I, pp. 10, 84. It does not explain why they were not available, but it can be easily assumed that they were secret. It was likely that even among USSBS divisions certain information could not be shared. For example, UAD used data for the height of the epicenter of explosion from a report of the Japanese scientific team, while PDD had obtained the information by their own measurement. UAD, Nagasaki, p. 12.
deviate from their line of mechanical observation. Yet, we can still find certain human aspects of the effects being presented graphically in some of the reports:

Many people were trapped in the debris of buildings demolished by the explosion and could not be extricated before being burned, casualties were of unprecedented proportions... Those who were engaged in clearance and evacuation activities suffered very heavy casualties. It is estimated that over 20,000 of the killed and missing were school children.¹⁸⁷

All of the persons outside of the shelter were burned to death and an examination of their bodies indicated that all clothing had been burned off, flesh was charred and burned off in many places, tongue were hanging out, and eyeballs and teeth were knocked out as if from heavy pressure.¹⁸⁸

The extent and authenticity of the devastation were reinforced by the firsthand eyewitness accounts of the Survey members themselves:

The atomic bomb completely paralyzed the clearance and repair arrangements, and recovery measures were possible only by bringing in day laborers from surrounding towns on a commercial rather than a mutual aid basis and putting them to work with picks and shovels under police supervision. Technical workers familiar with water

¹⁸⁷ UAD, Hiroshima, p. 20.

¹⁸⁸ CDD, Nagasaki, p. 70.
installations and other public utility facilities were so scattered by the atomic bomb incident that services were inoperative for several weeks. Specifically, restoration measures were still in process of completion throughout the damaged area 3 months after the atomic incident.189

People wandered aimlessly about the ruins, and only a few shacks had been built as evidence or reoccupation of the city... Leaking water pipes were seen all over the city with no evidence of any attention. It was reported that following the bombing several days were required for disposal of the dead and then they were simply piled into heaps and burned without attempts at identification or enumeration. Street cars [sic] were burned as a method of cremating the bodies within. All in all, there appeared to be no organization and no initiative.190

The data they collected were “based in part on estimates of varying reliability.”191 Yet the Survey believed what they heard from Japanese reliable in general for their reports to be based on, and was confident, as “there is every reason to believe, however, that all basic conclusions are in accord with the fact.”192

189 CDD, Nagasaki, p. 48.
190 Medical Division, Hiroshima and Nagasaki, p. 19.
191 UAD, Hiroshima, p. 51.
192 Ibid, p. 51. PDD also states “the information gathered is accurate and reliable.” (Hiroshima, Vol. I, p. 63)
Dr. English, who complained about the conditions in Nagasaki, also saw the bright side of the project. “The interviewers, while not an easy group to administer, were serious in their desire to do a good job and competent in their Japanese. Moreover our respondents were on the whole a good lot to interview,” he said. “I do not suppose we got all that could have been gotten,” he added, “what we got I think is reasonably reliable and useful.”

The regional HQ in Hiroshima and Nagasaki were closed on November 28 and 25, respectively. The USS Sims left Hiroshima on November 26 with 31 officers and 177 enlisted personnel. The USS Haines left Hiroshima with 45 Survey personnel, arriving in Guam on Dec. 5. The USS Barr left Nagasaki on November 25 with Major Schoolcraft and his 12 service team members. She arrived at San Diego on December 19 via Hawaii after leaving Yokosuka on December 1, where she loaded a total of seven officers and 102 enlisted men. The USS Reeves left Nagasaki for the East Coast on November 26 with 88 passengers. The Ancon, loaded with 555 personnel, departed Tokyo Bay on Nov. 30, arriving in San Francisco on December 14.

193 Report No. 14f(23)(c) Nagasaki: Background report, Roll 126, USSBS ROR.

194 Amendment to All Outstanding Operations Orders, U. S. Strategic Bombing Survey (Pacific), Nov. 19, 1945, Folder: 300.4-E Operations (USSBS) Tokyo, Box 12, Entry 1, RG 243; Beveridge, Pacific, p. 80.

195 WWII War Diaries, Box 1452, RG 39, NACP.

196 Beveridge, Pacific, p. 88.

197 WWII War Diaries, Box 620, RG 39, NACP.

198 WWII War Diaries, Box 1369, RG 39, NACP.

199 WWII War Diaries, Box 567, RG 39, NACP; Beveridge, Pacific, p. 84.
D'Olier and Nitze, of 102 personnel to be reassigned to remaining USSBS work in
Washington DC and Virginia, departed Tokyo by air on the morning of December 5.200
Others decided to stay in Japan, mostly to be reassigned to the GHQ.201 The Tokyo HQ was
closed on January 15, leaving only the Liaison Office and the Motion Picture Project still
operating. 202 All USSBS activities ceased when the liaison office was closed on April 2,
1946.203

Conclusion

The atomic bomb had dominated a significant part of the USSBS Pacific Survey when
it was requested to examine “the effects of all types of air attack.” The Survey devoted a
considerable amount of its resources to the studies of the atomic bomb. Just like journalists
who competed to get to the two cities, USSBS knew the meaning of conducting firsthand,
early investigations: not only would it be the very first occasion to learn the true effects of

200 Outgoing Message from USASTAF ADVON FOR USSASBS, TOKYO to USSBS HQ, San Francisco,
California, Dec. 5, 1945, Box 151, Entry 4; Memorandum "Authorization for Personnel" from Frank A.
McNamee, Jr. to Chief of Staff, War Department, Dec. 19, 1945, Folder: 319.7 Report (Progress personnel),
Box 31, Entry 1, both in RG 243, NACP.

201 See Folder: 300.4-G Orders-USAF (Pacific), Box 25; Memorandum "Authorization for Personnel" from
Frank A. McNamee, Jr. to Chief of Staff, War Department, Dec. 19, 1945, Folder: 319.7 Report (Progress
personnel), Box 31; Folder: 300.4-E Operations (USSBS) Tokyo; Personnel Orders No. 8 &11, Nov. 2, 23,
1945, Folder: 300.4-F Personnel Order, both of Box 12, all in Entry 1, RG 243, NACP.

202 Incoming Classified Messages, Jan. 14, Feb. 12, 1946, Entry 4, RG 243. For the activities of the USSBS
Motion Picture Project, see Shigesawa, Atsuko, “From the STINKO to the USSBS Motion Picture Project:
Daniel A. McGovern and the Army Air Forces’ first atomic bomb films,” Kobe City University Journal,
Vol. 67, No. 3 (November 2017), pp. 107-130.

203 "Tokyo Liaison [sic] Office," United States Strategic Bombing Survey, Gravelly Point, VA, to all division
chiefs, April 16, 1946, Folder: 300.4-G Orders-USAF (Pacific), Box 13, Entry 1, RG 243. The Motion Picture
Project continued until the middle of June 1946. U.S. Air Force Oral History with Lieutenant Colonel
Daniel A. McGovern, p. 120, AFHRA.
the new weapon, but also that the Survey’s results could shape the future of the national security.

Because of the consequent conditions of the cities, which they experienced physically in person, the Survey teams understood the power of the atomic bomb. Although the time they spent in those cities was limited—from four days to less than two months—and despite of the difficulties that came from the destructions by the bombing, they could and did take advantage of the existing records and sources to the fullest for their purpose.
Chapter III

Denial of the Atomic Bomb: Formulating Divisional Reports

At first sight, the havoc caused by the atomic bombs in Hiroshima and Nagasaki seemed incredible, and such was the reaction of most observers who had the opportunity to make only cursory inspections of the two cities. The incidents provided field days for American newspapers, and their almost hysterical accounts proclaimed a new era in the science of warfare—all means and methods of combat up to that time had immediately become obsolete.¹

In the previous chapter, I cited some of the accounts of the effects of the atomic bomb recorded by the Survey. While its records of activities lacked personal views on the part of the Survey members about the effects of the atomic bomb, these accounts at least described the terrific power of the bomb as the Survey members themselves witnessed the results of the effects. What, then, did the results of their studies—eight reports in total—actually say?

In this chapter, I examine six of these reports, which were compiled by three of the five divisions that studied in Hiroshima and Nagasaki—the Physical Damage Division (PDD), the Urban Areas Division (UAD), and the Civilian Defense Division (CDD). I attempt to analyze how they presented the effects of the atomic bomb in their reports. To do this, I compare their published reports to their draft reports, as well as look into the materials they collected and the memorandums they prepared. It would be useful to look back the process that culminated into the published reports to determine how they arrived at such

¹ Atomic Bomb Report, Report No. 1c(8), frames 68, 299, Roll 12, USSBS ROR. A similar account is found in a draft, Report 10ww(1) Special Atomic Bomb Report on Japanese Civilian Defense Forces for Inclusion in the Over-All Report of the United States Strategic Bombing Survey, 5 February 1946, pp. 1-4, Roll 80, USSBS ROR.
conclusions. Since the nature and scope of the studies by the Medical Division and Morale Division differed from the three divisions, I will discuss their work separately in the following chapters.

My examination reveals these three divisions shared similar interests in: (1) to ascribe Japan's surrender to conventional fighting methods; and/or (2) to demystify the effects of the atomic bomb—just like those preconceptions Paul H. Nitze, a Survey Vice Chairman, had had. The latter includes an effort to understate civilian casualties and to emphasize human survivability. The first interest can also be found in other reports of the Pacific Survey.

Each division and each team in charge of one of the two cities would appear to have different interests. But their efforts would often point to the same direction: presenting the atomic bomb as a force with limitation. Some of the Survey analysts would not even hesitate to modify texts and figures to conform to these interests. On the other hand, we would also

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2 By this, I refer to conventional bombing of the Japanese home islands and the anti-shipping campaign. The AAF launched aerial mining campaign in April 1945, but since it came late in the war, when the Survey refers to anti-shipping, it often means the naval campaign against Japanese merchant shipping, using submarines. For the mine campaign, see Military Analysis Division, Air Campaigns of the Pacific War (July 1947), pp. 53-54.

3 See Introduction of this dissertation.

4 They include: Transportation Division, The War Against Japanese Transportation, 1941-45 (May 1947), Over-All Economic Effects Division, The Effects of Strategic Bombing on Japan’s War Economy (December 1946); Manpower, Food, and Civilian Supplies Division, Japanese Wartime Standard of Living and Utilization of Manpower (January 1947); UAD, Effects of Air Attack on Japanese Urban Economy, summary report (March 1947): Naval Analysis Division, Campaign of the Pacific War (July 1947). The Transportation Division report reads: “It is possible that the social and political effects of the transportation attack would have been as effective in forcing a Japanese surrender as were the methods actually employed” (p. 12). Military Analysis Division’s Air Campaigns of the Pacific War (July 1947) purports to demonstrate AAF’s claim of having won the war simply by its air power, which attests to how the Survey became the battleground between the AAF and the Navy for a larger share in the postwar military reorganization. For the discussion on the report and the inter-service rivalry inside the Survey, see McIsaac, pp. 119-135; Gentile, pp. 104-130.
find conflicting accounts—that express awe of the bomb and the other that deny the awe—in these reports, as they were yet to understand the military and political implications of the atomic bomb.

While preceding studies look upon Paul H. Nitze, one of the Survey’s Vice Chairman in the Pacific, as the sole engineer to include the early-surrender hypothesis in the two Chairman’s reports, these divisions display tendencies to adopt narratives that deny the role of the atomic bomb in ending the war, which support the counterfactual conclusion.

These reports would serve as the base of the Chairman’s a-bomb. It was in this way that these reports laid the groundwork for the counterfactual conclusion to fit in the two other reports from the Chairman’s Office that would follow.

**Physical Damage Division (PDD)**

PDD’s atomic bomb reports are the most voluminous of all the Pacific Survey reports—1081-page, three-volume *Effects of the Atomic Bomb on Hiroshima, Japan,* and 1030-page, three-volume *Effects of the Atomic Bomb on Nagasaki, Japan.* They discuss in detail the effects of the bomb—heat, blasts, and fire—and the extent of the destruction it

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6 Many of these pages were devoted to the data and photos of each structure.
had caused on structures—173 in Hiroshima and 567 in Nagasaki. The division also studied the effects on machine tools, bridges, services and utilities, and stacks.

The division examined the degree of damages to the structures in accordance with their distances from Ground Zero (GZ), and the materials of which they were built, as well as the design and quality of the constructions. By doing this, it presented pictures of physical destruction inflicted on the two cities by the atomic bomb in a comprehensive manner.

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7 They were 87 reinforced-concrete/steel-frame construction, four composite steel-reinforced/concrete-frame buildings, 50 load-bearing brick-wall structures, 19 wood-frame buildings. “The 173 buildings in this study included virtually every reinforced-concrete, every steel-frame and every load-bearing, brick-wall building from GZ to a distance beyond which there was no further effective damage.” PDD, Hiroshima, Vol. I, p. 16; Vol. II, p. 97.


9 Those inside 19 one-story buildings (11 wood-frame, five steel-frame, three load-bearing, brick-wall structures), which were located 1600-9000 feet from Ground Zero (Hereafter, GZ) in Hiroshima, and 1,834 machines and approximately 450 pieces of major equipment contained in buildings within a radium of 6,500 feet from GZ in Nagasaki. PDD, Hiroshima, Vol. III, pp. 4-6; PDD; PDD, Nagasaki, Vol. II, pp. 4-87.


11 Electric railway and bus system, national railway system, electric generating/distribution system, and telephone communication system, as well as water supply system, and sanitary/storm sewer system. PDD, Hiroshima, Vol. III, pp. 146-306; PDD, Nagasaki, Vol. II, pp. 268-348.


13 USSBS apparently was the first to use the words Ground Zero for the point on the ground, above which the bomb exploded. It is interesting to note how prevalent the coinage has become over the years. The Joint Commission used “ground center” instead. Medical Report of the Joint Commission for the Investigation of the effects of the Atomic Bomb in Japan (Hereafter, “Report of the Joint Commission”), Vol. V, April 19, 1951, p. 3.
The atomic bomb destroyed areas of approximately 9.5 square miles (25 square kilometers) in Hiroshima and 1.8 square miles (4.7 square kilometers) in Nagasaki.\textsuperscript{14} In Hiroshima, glass windows were broken up to 8 miles (13 kilometers).\textsuperscript{15} In Nagasaki, superficial and minor damage were found as far as 19,000 feet (5.8 kilometers) from GZ.\textsuperscript{16} The “unprecedentedly powerful and effective blast” caused complete demolition of dwellings and other structures within a radius of 5/8 mile (1 kilometer) and various degrees of damage to other structures within a radius of 2 ½ miles (4 kilometers) from GZ, respectively.\textsuperscript{17}

The detonation was followed by fire, which spread, burning as far as two miles (3.2 kilometers) in radius from GZ for as long as three days in Nagasaki.\textsuperscript{18} In addition, fire storms developed in Hiroshima, running toward the city center from all points at the velocity of at least 30 to 40 miles (48 to 64 kilometers) per hour for a couple of hours after the explosion.\textsuperscript{19} “Virtually,” PDD’s Nagasaki report noted, “all living creatures within 5/8 mile (1 kilometer) radius of GZ died instantly from blast pressure and heat, and burns were

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\begin{itemize}
\item \textsuperscript{15} PDD, \textit{Hiroshima}, Vol. I, p. 9.
\item \textsuperscript{17} PDD, \textit{Nagasaki}, Vol. I, p. 11; Vol. III, p. 125.
\item \textsuperscript{18} PDD, \textit{Nagasaki}, Vol. I, pp. 11-12.
\item \textsuperscript{19} PDD, \textit{Hiroshima}, Vol. I, p. 14; Vol. II, p. 34.
\end{itemize}
\end{flushleft}
inflicted on persons in exposed places as far as 5.6 miles (9 kilometers) from GZ.”20

(Conversions into kilometers added)

Within a radius of 1,500 feet (450 meters) of GZ in Hiroshima, cars and buses caught fire immediately on the side facing GZ and they were blown by blast nine meters from where they were originally standing. Buses were totally damaged at 4,000 feet (1.2 kilometers) from GZ and heavily damaged at 5,500 feet (1.7 kilometers) from GZ.21 Damage to distribution system, equipment and other facilities caused an 80 percent reduction in the use of electricity from that of the pre-bombing period.22

While these accounts are terrifying enough, these PDD reports are characterized by the absence of the most abhorrent images of the atomic bombing—sweeping destruction of people and their environment. While they predominantly discuss surviving buildings and other structure, they appear to avoid referring to the residents and their dwellings located at the center of the affected area.23

The reports provide thorough data on the relations of the long axis of the buildings to GZ, and the shielding effect of hills or man-made structures,24 each with design diagrams and photographs taken from various angles. However, they hardly discuss how many

20 PDD, Nagasaki, Vol. I, p. 11; Vol. III, p. 125. This is almost the only account that referred to the aspect of the human destruction in the division’s reports.


23 The Nagasaki report seems to display more accurate and objective pictures of people and their dwellings in the city.

24 PDD, Nagasaki, Vol. I, p. 14. Its conclusion on vulnerability by materials follows this account. The report also mentions, in the previous page, that the degree of damage also depended on the quality and workmanship of the construction. The more concrete conclusion is found on page 23.
people were inside the buildings and what happened to these people or to the majority of these buildings unless it remained standing. Other than as witnesses of the phenomena that took place at the time of the bombing, the local population often appears only as figures—numbers of the population and casualties—or as cases of interest.

For example, the report talked about conditions of fabric upholstery of chairs, a wood door and a cotton jacket worn by a nurse, all found at the Red Cross Hospital in Hiroshima. While it described in detail the extent or degree of the burns these subjects received, it did not discuss how many nurses, doctors, and patients were in the hospital and what happened to them. It merely mentioned: “The nurse who had worn the jacket was severely injured by the blast and was not available for questioning.” “It was stated that her body was not burned through the coat,” it added.

The report also talked about 10 schoolboys who had been in schoolyards about 6,200 and 7,000 feet from the point of burst, respectively, but only referred to how portions of their faces that had been directly exposed to rays of the bomb were burned. It also discussed how dark colors on a white kimono were charred and fell out, but white part was not affected. It mentioned a number of such kimonos that were available to examine in a

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25 In a preliminary report, there was a reference to people in buildings. But the whole paragraph was deleted likely because of its mention of the shielding effects of buildings against radiation. See Chapter IV of this dissertation.

26 “The dead were estimated at 70,000, with an equal number injured.” (PDD, Hiroshima, Vol. I, p. 9) “Within the fire perimeter thousands were killed immediately by the bomb and thousands more were injured—many critically.” (PDD, Hiroshima, Vol. II, p. 40.) “Attempts to interrogate witnesses who were actually in the city when the disaster occurred were made difficult by the extremely high loss of life...” (PDD, Hiroshima, Vol. I, p. 62)


28 Ibid., p. 24.
hospital, but it never talked about women who were wearing those kimonos. People hardly appear as occupants of the buildings. Nor were their houses included as subjects of analysis, either.

Table 1. Analysis of the Building No. 4 in Hiroshima

This tendency to disregard houses can be found from the earliest draft. In its draft report of the entire Japanese study completed likely early February 1946, the division

29 Ibid., p. 24.

30 An exception was the numbers of employees at utility facilities—such as railway, electricity, and telephone operators—who were killed or injured at work. PDD, Hiroshima, Vol. III, pp. 171, 188, 212, 213, 222.


32 PDD, Hiroshima, Vol. II, p. 145. This structure is now being called the a-bomb dome.
discusses that there were “many banks, insurance, and commercial buildings, mostly of reinforced concrete construction” in the area of the blast in Hiroshima. “A few near Zero Point,” it added, “obviously of poor construction, were badly damaged by blast but the majority stood up remarkably well.”

As a physical-damage study, it is understandable that they did not focus on people. The effects on human beings were being addressed by other divisions or groups. Yet why disregard dwellings?

The fact is that PDD did not even try to determine the extent of damages to houses.

In the PDD’s Hiroshima report, there is one reference to the total number of buildings damaged in the city, rough figures that barely gives one a vague idea on the number of houses destroyed—“Approximately 60,000 of 90,000 buildings over an area of 9.5 square

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33 PDD, “Preliminary Findings,” Report No. 3c(28), frames 1339, undated (likely early February), Roll 52, USSBS ROR.

34 Ibid.

35 A later preliminary report makes it clear by saying; “Other divisions of this Survey and other organizations have made detail studies of the effects of the atomic bomb on personnel.” Physical Damage from the Atomic Bomb, Preliminary not checked, p. 1, Report No. 92a, Preliminary atomic bomb report, Roll 326A; Report No. 92f(1)(b), p. 25, Roll 327, USSBS ROR. The effects of the atomic bomb on the people who were inside buildings near GZ were thoroughly examined by the Joint Commission. Report of the Joint Commission”, Vol. VI, pp. 120-256.

36 A memorandum for the USSBS Secretariat from PDD on a manuscript of the Chairman’s a-bomb report reads: “PDD Team 1 does not know where the figure of 98.4 per cent of all residential construction within the city was destroyed or severely damaged was obtained. We did not try to determine this figure and can only protest that the figure is believed to be seriously in error. Similarly it is felt that the use of the term factory for what were in the majority of cases merely home work-shops employing one or possibly two men gives a serious misimpression of the importance of the city to the industrial economy of Japan. This is particularly true since only the small shops in Hiroshima were destroyed and the major factories producing by far the majority of goods were undamaged. Consequently this paragraph gives a distinctly false impression.” (Underlines added)
miles were totally or severely damaged." It's Nagasaki report just cited figures from a Japanese report.

Both Hiroshima and Nagasaki reports discussed the bomb's effects on the dwellings to a certain extent. The Nagasaki report, for example, included dwellings in the analysis of the urban area fire damage. It reads: residential-type buildings "at GZ and for approximately 4,000 feet around it were completely demolished by the blast of the bomb, the resulting debris covering almost the entire area, masking such details as streets and buildings." But these discussions were all in general, collective terms and it did not include individual dwellings as subjects of its analysis as other structures—industrial structures and public buildings—each of which was analyzed in detail.

It might be that the Survey could not investigate these houses in the first place since they were obliterated without much trace. The reports, as a result, hardly remind readers.

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37 PDD, Hiroshima, Vol. I, p. 9. It is unknown how the Survey obtained this estimate, but it is in accord with figures in the reports prepared by the Japanese authorities. The report by Hiroshima Governor estimated the total number of buildings destroyed as 67,860. Another report by Lt. Col. Kakuzo Oya recorded total number of houses destroyed at 61,825. Japanese atomic bomb report for the city of Hiroshima, Japan, made by the Governor, Hiroshima Prefecture, Aug. 21, 1945, Report No. 92f(1)(c), p. 5, frame 52; The Atomic Bombing of Hiroshima and Nagasaki by Lt. Col. Oya, Report No. 92f(1)(j), p. 8, frame 252, both of Roll 327, USSBS ROR.


40 PDD, Nagasaki, Vol. III, pp. 119-120.

41 PDD, Nagasaki, Vol. I, pp. 44-46. It is followed by: "Nearly all residential buildings within 8,000 feet of GZ had collapsed, the completeness of their destruction decreasing gradually until at the outer edge of this area the damage could not be distinguished from that caused by a high wind."

42 These analyses can be found in PDD, Nagasaki, Vol. I, pp. 97-417; Vol. II, pp. 5-265.

43 It is possible that the Survey analysts had excluded residences from the subjects of investigation even during the planning stage as it was expected that Japanese houses would be completely destroyed as they were increasingly made targets of strategic bombing especially since March 1945 when operations by Very Heavy Bombers (VHB) of the Twentieth Air Force started, targeting enemy's vital centers with
of the fact that they were there. With all the eloquent photo images of crumbled concrete structures and melted steel-frames, readers are almost made to believe that the buildings studied were the ones worst affected. However, the fact is that they were the ones that survived. Without any visual evidence, readers hardly realize that there were also houses. These invisible buildings, in fact, accounted for more than 80 percent of all the buildings in the city.\textsuperscript{44}

It is true that the American air raids, especially incendiary ones, were conducted on the presupposition that Japanese dwellings were weak and flammable.\textsuperscript{45} So it is no wonder if the PDD analysts did not expect to see these houses. Yet, it seems a little odd for PDD not to pay attention to dwellings when other USSBS divisions were interested in the extent of damages to houses.\textsuperscript{46} They should want to determine the extent of damages to houses all the more if the attack was aimed at cities, which encompass residential areas, probably a more common practice in future wars.\textsuperscript{47}

\textsuperscript{44} According to UAD, there were 40,009 residential buildings among a total of 50,160 buildings in the city, of which 82.4 percent was destroyed. Of all the buildings 40,653 or 81.1 percent were completely destroyed, 8,396 or 16.7 percent were severely damaged, and 1,111 or 2.2 percent were slightly damaged. UAD, \textit{Hiroshima}, pp. 4, 19, 39; Report No. 60f(1) Number of Buildings, Roll 304, USSBS ROR.

\textsuperscript{45} For the incendiary bombings, see, for example, Craven and Cate, \textit{The Army Air Forces in World War II}, Vol. V, Chicago, IL: University of Chicago Press, 1953, pp. 608-702.

\textsuperscript{46} UAD, for example, tried to determine the extent of damages by the atomic bomb to houses. See Note 44 above. The Morale Division discusses the housing shortage caused by the incendiary bombing and the proportion of evacuees who left because their houses had been destroyed, as well as the effects destruction of houses by the bombing had brought to people. Morale Division, \textit{The Effects of Strategic Bombing on Japanese Morale}, pp. 226, 230-231.

\textsuperscript{47} While attacks on the defenseless population of cities and great industrial centers had been suggested as the method of destroying the enemy’s will to make war by air power strategists since 1910s, it was not adopted by the US government until the late stage of World War II because of the popular notion that it
It is important to note that PDD intentionally studied what survived the atomic bomb, rather than what was destroyed by the atomic bomb. That was one of the purposes of the Survey. An earlier preliminary draft made this stance clear. “It is the opinion of this Team,” PDD’s team for Hiroshima reads, “that in planning for the future the facts bared and the lessons learned by the Hiroshima investigation into the characteristics and extent of physical damage from the atomic bomb can be of inestimable value in minimizing the vulnerability of our cities to air-burst atomic bomb.”

It is apparent PDD’s report was aimed at preparing America for future nuclear warfare. This also explains why the division included the number of casualties at utilities facilities in the report.

In fulfilling this purpose, PDD tried not to construct their study on the Japanese dwellings, which they called “primitive construction.” They were to look at public and municipal buildings, almost all of which were of modern design, and were “comparable with those found in cities of the same size in America or Europe.”

was inhuman. With the progress of war, however, the US started to attack cities in Germany as legitimate strategic targets in December 1944 and it was predominantly discriminate area bombings against cities in Japan that it adopted after March 1945. American leaders predicted it would be a surprise attack using the atomic bomb in the future war. For the development of strategy bombings against cities, see, for example, Biddle, Tami Davis, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas About Strategic Bombing, 1914-1945*, New Jersey: Princeton University Press, 2002; Schaffer Ronald, *Wings of Judgment: American Bombing in World War II*, New York: Oxford University Press, 1988.

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48 Probable effects on other targets, Report No. 92f(1)(b), frame 31, Roll 327, USSBS ROR.

49 See Note 30 of this chapter.

50 PDD, *Nagasaki*, Vol. II, p. 5. This is totally inconsistent with the finding of the same report. In another part, the same Nagasaki report values highly of the Japanese carpentry, saying: “Japanese residences... are usually framed in relatively heavy timbers, as compared with American residential practice, and are characterized by careful hand-made joints between framing [sic] members, producing, at least to some degree, an inherent resistance to structural damage by blast.” (Vol. III, pp. 133-134.) It concluded, however, these wooden houses are highly vulnerable to fire.

structures in considerable detail “since they offered excellent evidence from which the
effectiveness of the bomb against occidental construction might be deduced.”[52]

This idea, however, carries its own contradictions. Basing their studies on buildings
of modern design would only help larger cities in the US. The division in another report had
acknowledged that the older industrial sections and a large amount of the domestic area in
American and European cities could be compared with Hiroshima and other Japanese
urban centers, and would make ideal targets of the nuclear attacks.[53]

It is unknown why PDD avoided determining the extent of damages to houses. It
seems to refute its own purpose of making a fair and objective study. Part of the division’s
mission was to “present scientific facts derived from a methodical appraisal of the effects of
the new weapon,” about which “many accounts, often fantastic and at times hysterical, have
been written.”[54] While most of the accounts in the PDD reports seem to live up to this
mission, they are also characterized by awkward inconsistencies created by different
narratives: one of awe of the atomic bomb and the other that denies the awe.

For example, while the reports blamed flimsy Japanese carpentry,[55] as well as the
low quality and lack of training or experience of firemen in Japan,[56] for the damages, it also

53 PDD, Hiroshima, Vol. II, p. 128. The Nagasaki report also stated that the public utility systems in
Nagasaki were comparable in many respects with those in smaller American cities with a population of
about 30,000. PDD, Nagasaki, Vol. II, p. 268. The situation in Nagasaki might be different, but the
Hiroshima report also revealed the effectiveness of the bomb against industrial construction could not be
evaluated “because of the lack of modern industrial plants in the area damaged.”
55 The Hiroshima report reads: “The practice [of Japanese carpenters] ... placed their residential
construction far below American standards of strength, rigidity, and weather tightness” (Vol. I, pp. 12,
divulged: “No modern fire department as presently constituted could have coped with the
general disaster and holocaust which befell the city of Hiroshima” at when “over 80 percent
of the ‘on-duty’ firemen were incapacitated or killed.” The streets were blocked by
demolished building and their broken contents, which covered fire hydrants and barred the
access by fire apparatus.

Such an inconsistent attitude is also found in its view on passive defense. The
division tried to assure readers that an atomic bomb attack could be defended against when
it argued: “shelters designed to protect against radiation and strong enough to resist
collapse of the building should be provided for the protection of personnel.” On the other
hand, it also noted “little or nothing could be done through the medium of passive defense
to protect these sections (industrial and residential sections) from almost complete
devastation by a determined atomic-bomb attack.” (Words in parenthesis added)

Discussing surviving structures, rather than those completely devastated, would
also serve to deny the awe. Perhaps such an effort was driven by a notion to counteract
initial news reports that depicted the bomb as an ultimate weapon. A preliminary PDD draft

107); “The light weight, slender columns, and weak mortise and tenon joints were points of weakness
which rendered the Japanese residence highly vulnerable to damage by blast.” (Vol. I, p. 115)

57 PDD, Hiroshima, Vol. II, p. 7. A similar account is also found in p. 19 of the same volume.
reads: “It is clear that despite the awesome power of the bomb and the unprecedented blotch of devastation left in its wake, it has limitations. Wise planning can decrease the bomb’s destructiveness by taking advantage of the limitations as established by this report.”62 (Underline added)

Yet, reading the reports makes it doubtful if they were successful in establishing the limitations. The authors of the draft themselves seem to have been awed by the power of the bomb. Just before this passage, the section “Casualties” reads as follows: “the city lost almost 60 per cent [sic] of its 245,000 citizens. Since 184,000 of the population were estimated to be in the congested 4-square mile center of the city, which received the most deadly effects of the bomb, the casualty rate in this area probably exceeded 30,000 per square mile, of which one-half were killed.”63 This part, as well as the above account on the limitations, was not included in the published reports; yet, in the published reports we can still find a few gloomy and apocalyptic images that haunted the PDD analysts:

It killed and injured persons in numbers beyond precedent in the history of destruction by a single man-made weapon.64

Studies... strongly indicate that an atomic-bomb attack against occidental cities would result in tremendous loss of life, collapse and destruction of most of the wood-frame

62 Probable effects on other targets, Report No. 92f(1)(b), frame 31, Roll 327, USSBS ROR.

63 Probable effects on other targets, Report No. 92f(1)(b), frame 31, Roll 327, USSBS ROR. This part cannot be found in the published reports.

64 PDD, Hiroshima, Vol. I, p. 27.
buildings and load-bearing, brick-wall buildings, and almost complete disruption of exposed and congested transportation, service and utilities systems.65

These disturbing accounts appear to demonstrate the dilemma of the USSBS analysts who were confronted with the revolutionary power of the atomic bomb—especially when they could not have come up with any tangible and applicable countermeasures against the weapon.66

Inconsistencies also came from difference of ideas among authors about the strategic value of the new weapon.67 For example, in one section of the Hiroshima report, authors articulated that the central part of Hiroshima was “a poor target for the atomic bomb” as “all large industrial plants were located on the outskirts.”68 On the other hand, in another section, authors argued, the city was “an excellent test target for the atomic bomb” from a fire standpoint because it was densely built up over broad, flat terrain.69 The report


66 “2. Atomic Bomb Defense,” pp. 27-28, PDD, Hiroshima, Vol. I; “X. Conclusions and Recommendations,” pp. 41-42; “VI. Comments and Conclusions,” p. 134, both of PDD, Nagasaki, Vol. III. The report sounds hopeful, though they did not include any tangible protective measures. “It is believed that sufficient data are contained herein to provide ample source material for assisting greatly in estimating the potentialities of future atomic bomb attacks and for devising necessary and adequate protective measures.” “Only by profiting from the lessons of the past and by experimenting with future possibilities can planners design structures which will reduce to a comparative minimum the effects of an atomic bomb attack on the industrial and economic life of the United States.” (both in PDD, Nagasaki, Vol. I, p. 1)

67 It is unknown who wrote which part of the Hiroshima report. Personnel in charge of each part of the Nagasaki report, see PDD, Nagasaki, Vol. I., p. 100; Vol. II, pp. 6, 270; Vol. III, pp. 10, 90, 121. For the entire members of the PDD Field Team 2 in charge of the Nagasaki report, see PDD, Nagasaki, Vol. I, p. 24. For the members of the PDD Field Team 1 in charge of the Hiroshima report, see PDD, Hiroshima, Vol. I, p. 62. See, also, Beveridge, Pacific, pp. 117-121.

68 PDD, Hiroshima, Vol. III, pp. 5, 11. The account is “from the standpoint of damage to machine tools,” but it applies to any other structures and objects.

argued, “the atomic bomb would constitute an extremely efficient and effective weapon for carrying out urban attacks” on American and European cities.\textsuperscript{70} “The devastation of Hiroshima by both blast and fire was adequate evidence of its effectiveness against Japanese urban centers,”\textsuperscript{71} it added.

These characteristics of the PDD reports—absence of houses and their residents, and inconsistencies between different narratives—are also found in the Chairman’s reports. It is difficult to conclude if PDD had actually downplayed the effects of the atomic bomb even from these conflicting accounts. Unlike UAD and CDD that I discuss later in this chapter, PDD does not seem to have engaged itself with overt or blatant actions to conform the results to their objectives. What we know, however, is that PDD as a division was willing to present the bomb as “another bomb.” Its report on entire Japan reads:

All in all, the atomic bomb was so much more destructive for its size and weight than any other known bomb that any attempt to minimize it would be not only futile but impossible. It is believed, however, that the colorful and dire predictions of early observers, predictions based on cursory and incomplete study can be toned down considerably in the light of current, available information. For example, it is interesting to note that the wasted areas of Hiroshima and Nagasaki did not differ materially, at

\textsuperscript{70} PDD, \textit{Hiroshima}, Vol. II, p. 128.

\textsuperscript{71} \textit{Ibid.}, p. 128.
least in outward appearances, from those of Japanese cities, such as Tokyo, ravaged by incendiary attacks.72

PDD report argued, the bomb was bigger and the damage it caused was more extensive and widespread; however, “the type of physical damage caused by the atomic bomb was not unusual and was what might well be expected, considering the established physical laws governing the effects of blast pressures.”73 One might be surprised to find how similar this narrative is to the argument made by Russian inventor Alexander de Seversky.74

PDD’s role might also have been larger than what we imagine. Likely as part of the deal—the demarcation—arranged by Groves and USSBS executive, the result of PDD’s study was to be used by the Joint Commission. In some of the sections of the commission’s reports that were classified as restricted, we find PDD’s elaborate job of recording in the floor plans of various structures, such details as the thicknesses of walls and floors, which must have been indispensable to calculate the shielding effects of these buildings.75 PDD’s data was also extensively used in the MED Group’s report.76

72 PDD, Japan, p. 155.
73 Ibid, p. 155.
74 See Chapter I of this dissertation.
75 Report of the Joint Commission, Vol. VI, Sections 11H & 11N, pp. 120-256. In these sections, the commission compared the construction data with the condition of the people who were in the buildings and their location at the time of the explosion.
76 MED, The Atomic Bombings of Hiroshima and Nagasaki, pp. 11-17.
PDD’s Hiroshima and Nagasaki reports were classified as “secret” because it contained information on the height of burst.\textsuperscript{77} Despite of repeated requests from the Survey executives to lower classification, so that the usefulness of the reports would be more increased,\textsuperscript{78} they remained “secret” until 1953.\textsuperscript{79}

**Urban Areas Division (UAD)**

The 57-page *Effects of Air Attack on the City of Hiroshima* and the 53-page *Effects of Air Attack on the City of Nagasaki* perhaps best describe people’s lives in Hiroshima and Nagasaki during the war and its immediate aftermath. These reports discuss in detail what these individual communities were like during the war, their involvement in the government’s war efforts and how they suffered from the war. Aimed at determining the effects of bombing on cities with a particular emphasis on their economic activities, the division examined the number of commercial and industrial facilities, their activities, and the number of people mobilized to work there. It studied the effects of the atomic bombing


\textsuperscript{78} Memorandum to Commanding General, Manhattan District, from William S. J. Curley, Aug. 7, 1946; Memorandum to Franklin D’Olier from H. L. Bowman, Aug. 14, 1946; Memorandum to D’Olier from G. L. McMurrin, Aug. 21, 1946; Letter to Charles Hurley from H. L. Bowman, Aug. 19, 1947; Letter to H. L. Bowman from C. Hurley, Aug. 21, 1947; Letter to Atomic Energy Commission from Charles Hurley, Nov. 25, 1947, all of Folder: 461-Distribution, Reports, & Publication 1 Jan 46 to present date, Box 44; Memorandum to Herbert C. Gee from H. L. Bowman, Director of PDD, Aug. 22, 1946, both in Folder: 000.72Classification Letters on Japanese Reports, Box 1, all of Entry 1, RG243, NACP. The two reports were the only reports given the level of “secret,” which was the highest of all the USSBS Pacific reports. Of the 107 other reports, 18 were given the levels of “confidential” and 29 “restricted,” respectively.

on these establishments—the number of casualties, damage to the industrial capacities, and if and how fast they were recuperating.

These two reports tell two totally different stories from each other on each city’s war-making strength at the time they were bombed, but both concluded that the atomic bomb was ineffective from a strategic point of view. The reports read:

The Atomic Bomb attack on Hiroshima effectively destroyed the administrative, commercial and residential heart of the city and caused an unprecedented number of casualties, but it failed to damage seriously the war production potential of the urban area.\(^\text{80}\)

From the standpoint of neutralization of enemy industrial war potential, therefore, the atomic bombing of Nagasaki was strategically ineffective. It merely precipitated the same extinction of industrial Nagasaki which the internal economy of Japan would itself have brought about within a very few months.\(^\text{81}\)

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\(^\text{80}\) UAD, *Hiroshima*, p. 33. The slightly different version can be found in Report No. 60h(1), frame 736, Roll 304; Report No. 1c(5) Hiroshima, p. 3, Roll 10, both USSBS ROR. The earlier preliminary report contained another possibly discrediting phrase, which was omitted from later preliminary reports and final version: “All of these [important factories], with one exception where dispersal was in progress, were operating at nearly peak production, and any successful attack would have had a direct effect on output.” Report No. 1c(5) Hiroshima, p. 15, Roll 10, both USSBS ROR.

\(^\text{81}\) UAD, *Nagasaki*, p. 15. The paragraph is followed by a sentence: “As has been shown above, the atomic bomb by no means neutralized the productive capacity of Nagasaki.” There is a similar account in a preliminary report. “One conclusion only emerges from the aggregate. Nagasaki was within three to four months of her extinction as a factor in Japanese war economy. That eventuality was only precipitated by the atomic bombing of 9 August.” Report No. 1c(5) Nagasaki, frame 658, Roll 10, USSBS ROR.
In both Hiroshima and Nagasaki, the most devastated area turned out to be residential districts. In Hiroshima, the entire heart of the city, approximately 4.7 square miles of densely built-up commercial and residential districts were devastated, while large, important plants were “well outside the area of devastation and in most cases sustained only minor damage.”

In Nagasaki, a congested residential district, an oval area of 4.4 square miles, was completely destroyed or severely damaged, while the Mitsubishi Dockyard, the largest military plant in the city employing over half of the city's labor force, was outside the periphery of destruction and sustained only 1.4 percent of structural damage.

The two reports, however, based their conclusions on totally different standpoints. In the Hiroshima report, the author took great pains to place an emphasis on the industry's potential for recuperation. In the Nagasaki report, it was explained that the city's war potential had already been on the verge of collapse due to the decline in production and overall economy as a result of American ship-sinking campaign.

For example, the Hiroshima report repeatedly states that the large factories, many of them only lightly affected by the bomb, began partial operations immediately after the bombing and "could have been restored to practically normal production within 30 days;" had the war

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82 UAD, Hiroshima, p. 19.
83 UAD, Nagasaki, pp. 13, 15.
84 UAD, Hiroshima, pp. 24-27, 32-33.
85 UAD, Nagasaki, pp. 10, 18.
86 UAD, Hiroshima, pp. 24, 25, 27; Report No. 60h(1), frames 746-747, 805; Report No. 60h(2), frame 934, both in Roll 304; Report No. 1c(5) Hiroshima, pp. 5, 52, 53, Roll 10, all in USSBS ROR.
continued. It also argued that the plants had enough labor and food to feed them,\textsuperscript{87} and “there should have been no substantial shortage of fuel for essential industry, because not only had the non-essential consumers been practically eliminated, but also most of the smaller industrial consumers”\textsuperscript{88} by the atomic attack.

UAD’s Nagasaki Team agreed that had the war continued “Mitsubishi would have experienced little difficulty in obtaining labor,” but that was only because “Nagasaki industry had not been operating at more than a small fraction of capacity” for the last several months.\textsuperscript{89} Unlike Hiroshima, which was almost intact until the atomic attack,\textsuperscript{90} Nagasaki had experienced five pre-atomic raids from August 1944,\textsuperscript{91} which inflicted a

\textsuperscript{87} “The larger factories...supplied some food to all of their workers and... to those who lived in company barracks. Such supplies as they had on hand at the time of the bombing remained, intact, and availability of these foodstuffs may well have been a factor in the early return to work of a large proportion of the employees.” UAD, \textit{Hiroshima}, pp. 22, 26.

\textsuperscript{88} UAD, \textit{Hiroshima}, p. 26; Report No. 60h(2), frame 941, Roll 304; Report No. 1c(5) Hiroshima, frame 425, Roll 10, both of USSBS ROR.

\textsuperscript{89} UAD, \textit{Nagasaki}, p. 14. Records of interviews of Nagasaki officials attest to this view. For example, to a question “To what extent could Nagasaki have recovered, had the atomic bomb not ended the war immediately?,” Wakamatsu Nagano, Nagasaki Governor, responded, “No recovery was possible.” Officials of the Mitsubishi Steel Works also told the USSBS interrogator they were always short of certain materials that they were only able to produce no more than 60 percent of quota. Officials of the Mitsubishi Electric Manufacturing in their response to a questionnaire also wrote to the same effect. Interrogation No. D-1, Mr. Nagano, Nov. 11, 1945; Interrogation No. D-17, Mr. Hirai, Mr. Tanaka, and Mr. Ogawara of the Mitsubishi Steel Works, Nov. 26, 1945, both in Report No. 59f, frames 1189, 1203, Roll 303A; Report to the questionnaire for Companies, in Report No. 59j, frame 35, Roll 303B, USSBS ROR.

\textsuperscript{90} Before the atomic bombing, Hiroshima suffered two aerial attacks—one on March 19 by several Navy planes and the other on April 30, 1945, by a B-29. Two people were killed and two buildings were destroyed in the first attack, and 10-15 were killed and 25-30 wounded with 22 buildings destroyed and two damaged in the second attack. PDD, \textit{Hiroshima}, Vol. I, pp. 10, 81-82.

\textsuperscript{91} The raids resulted in 346 killed, 600 wounded and 43 missing in the entire city. UAD, \textit{Nagasaki}, pp. 7-9; Air-raid Casualties, Report No. 59o, frames 103-106, Roll 303B; Interrogation No. D-22, Messrs. Mikawa, Toyoshima, Mizogoshi, Fujimoto, Nov. 29, 1945, in Report No. 59f, frames 1221-1223, Roll 303A, USSBS ROR. UAD’s \textit{Nagasaki} report has “347” killed, but it must be a typo.
severe damage on the Dockyard.\textsuperscript{92} But the report said neither pre-atomic raids nor the atomic bombing reduced Nagasaki’s industrial potential for war.\textsuperscript{93} It asserted that already since February 1945, production had been on the decline in all branches of industry.\textsuperscript{94} 

UAD reports demonstrate interests in both ascribing Japan’s surrender to the conventional forces and demystifying the effects of the atomic bomb. But for the former, the two teams took different approaches: in Hiroshima, they applied what historian Gian P. Gentile calls American conceptual approach to strategic bombing—application of air power to attack the vital elements of the enemy’s war-making capacity.\textsuperscript{95} In Nagasaki, it was the one, often sought by the Navy, to argue that Japan had been beaten by the anti-shipping campaign before the major AAF bombings, or the atomic bombing, which only worked as a final blow.\textsuperscript{96}

\textsuperscript{92} The August 1\textsuperscript{st} raid, the fifth and worst of the pre-atomic attacks by 24 B-29s and 26 B-25s, killed 169, wounded 215 and left 40 missing among its employees. It damaged the foundry, the machine shops and boiler house of an engine factory, causing the complete discontinuation of marine engine production. The raid also directly struck the Mitsubishi Steel Works, the smallest of the conglomerates located 0.75 miles north of GZ with 2800 workers, severely damaging one of the three large extrusion motors and lightly damaging the other two. UAD, \textit{Nagasaki}, pp. 7-9; Air-raid Casualties, Report No. 59o, frames 103-106, Roll 303B; Interrogation No. D-20, Mr. Muto present general manager of the Mitsubishi Dock Yard and Mitsubishi Engineering Co., Nov. 27, 1945, Report No. 59f, frame 1210, Roll 303A, USSBS ROR. UAD report has the figure 199 killed at the Dockyard, but it must be a mistype.

\textsuperscript{93} UAD, \textit{Nagasaki}, pp. 10, 14.

\textsuperscript{94} Interrogation No. D-15, Mr. Ogawa, former head of Mitsubishi Dockyards, Nov. 24, 1945; Interrogation No. D-20, Mr. Muto present general manager of the Mitsubishi Dock Yard and Mitsubishi Engineering Co., Nov. 27, 1945, both in Report No. 59f, frames 1198, 1210, Roll 303A, USSBS ROR.

\textsuperscript{95} Gentile, pp. 5-7. For the definition and example of American conception, see p. 5-9, 55-56.

\textsuperscript{96} Gentile, p. 125.
The reason why the two teams took a different approach is not known, but the fact that authors were an AAF captain for the Hiroshima report and a civilian for the Nagasaki report might have had something to do.97

What the Hiroshima report did was basically to prove that the atomic bombing was a failure. It argued that the bombing failed to damage the war production potential, which should have been the target, not the residential heart. Emphasizing the failure of the atomic bombing would work in the interest of the guardians of the conventional forces because it would make the conventional bombing look more effective. For this purpose, they did not hesitate to modify the data or distort information they collected.

For example, they changed the tone of the results of the interviews of the officials at the largest war plants in the city in a way to underline the industry’s ability to recuperate. The report repeated its mantra that “it would have been possible to resume approximately normal operations”98 on August 15 to describe the condition of the Toyo Industries, the third largest plant in the city with over 7000 workers that produced 19 percent of the ordnance. But the record of the interview of its chief clerk reveals it had decided to close down on that day “due to the general disruption.”99

97 Beveridge, Pacific, pp. 163-165. The authors of UAD Hiroshima and Nagasaki reports were Capt. Ward P. Merner and Mr. Marvin C. Dilkey, respectively.

98 UAD, Hiroshima, p. 30. The report often cites "Industrial questionnaire" as a source of its date. However, the author could not find any such material in USSBS ROR. Most of the materials for UAD’s Hiroshima report in the collection are processed data and not raw data with sources.

99 Interrogations of Yosiro Kaizuka, head of the planning section, and Nakamura, chief clerk, Toyo Industries, Nov. 21, 1945, Report No. 60h(6), frame 1196, Roll 304, USSBS ROR. Their dormitories were cleared and served as temporary hospitals. UAD, Hiroshima, p. 30.
The operation of the Mitsubishi Heavy Industries, Hiroshima Engineering Office, the fifth largest plant in the city with 5,630 workers, came to a standstill for two weeks after the bombing. The officials at the factory told the Survey, “very few workers showed up for work...power, gas, etc. were not functioning and it was several months before same was fully functioning.” The report, however, reads: “The plant was shut down until 17 August... on which date production was resumed with 70 percent of the employees. At the time visited, mid-November 1945, nearly all of the damage had been repaired, and the plant was functioning on a nearly normal basis.”

Even when factories did not suffer much damage, it was not easy for them to resume operations immediately. The warehouse division of the Army Shipping, the seventh largest war plant with 6,300 workers located on Kanawa Island off the coast of Hiroshima Bay, for example, was converted into temporary hospitals for the wounded who were ferried over to the island. Very few showed up to work at the Ujina Shipyard, the 10th largest war plant in the city that produced small boats for the Army and Navy, for 10 days after the bombing and actual production did not resume until August 28. The statement in the

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100 UAD, Hiroshima, p. 30.

101 Interrogations of Tanaka, Chief of the Purchasing Section, J. Miyazawa, Chief of the Sales Dept, Kabinata, Plant liaison office manager, Mitsubishi Heavy Industries, Hiroshima Engineering Office, Nov. 20, 1945, Report No. 60h(6), frame 1200, Roll 304, USSBS ROR.

102 UAD, Hiroshima, p. 31.

103 Interrogations of Lt. Col. Hara, Commander, and others at the Army Shipyard repair division, Nov. 26, 1945, Report No. 60h(6), framess1198, 1204, Roll 304, USSBS ROR.

104 Interrogations of Kuwahara, president, Takeno, managing director of the plant, Onohara, chief of engineer of the Hatsukaichi plant, Okazaki, chief accountant, Asahi Arms, Nov. 29, 1945, Report No. 60h(6), frame 1212, Roll 304, USSBS ROR.
UAD's Hiroshima report about the war production potential also contradicts the wartime Japanese attitude described in a PPD report. *A Report on Physical Damage in Japan* mentions "the Japanese made no real effort to repair their buildings or to get back into production after being bombed."\(^{105}\)

Contrary to its Hiroshima cohort, UAD’s analysts in Nagasaki defied such attempts to place importance on the potential for industrial recovery. “The negligible amount of industrial recovery accomplished in Nagasaki following the surrender could of course not be accepted as an index to the normal recuperability [*sic*] of such an industrial center during wartime,”\(^{106}\) it said.

The atomic bomb was calculated to have destroyed only 22 percent of the productive area of industrial Nagasaki, based on computations of structural damage.\(^{107}\) But this was because the largest industry of the city—Mitsubishi Dockyard—was outside the

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105 *PDD, Japan*, p. 1. The account continues: “At many plants production ceased after bombing without regard to the real effectiveness of the attack. Some plants were out of production before they were bombed, either because the flow of raw materials to the plants had stopped, or because the Japanese, fearing an attack, had started to disperse plant equipment and machinery.” (p. 1) This account confirms UAD Nagasaki Team’s assertion correct. When compared with a later, reliable Japanese study, it is apparent that the USSBS analysts exaggerated some part, while the fact that most of these plants escaped destruction is basically confirmed. See *Hiroshima Genbaku Sensaishi*, Vols. 1, 3 [広島市編『広島原爆戦災誌』 3, 5 巻].

106 UAD, *Nagasaki*, p. 1. Their assertion that the city’s production had been on the decline corresponds with the results of later studies. See, for example, 「戦争経済の崩壊」(destruction of war economy), 三和良一、原朗編『近現代日本経済史要覧』（東京大学出版会、2010 年）、pp. 134-135; 総務省統計局監修、日本統計協会編『日本長期統計総覧』新版第 2 卷（同協会、2006 年）、pp. 362-375, 416-419, 450-459; 矢野恒太記念会『数字でみる日本の 100 年』改訂第 5 版（同会, 2006 年）、pp. 152-161; 国民経済研究協会『戦後復興期経済調査資料＜第 2 卷＞基本国力動態総覧』（日本経済評論社、1998 年）、p. 11.

affected area, located 2.5 miles from the hypocenter.\textsuperscript{108} And the figure tripled—68.3 percent\textsuperscript{109}—when the dockyard was excluded from the computation as the other three Mitsubishi factories—Electrical Engineering, Steel Works and Arms Works\textsuperscript{110}—suffered varying degrees of damages, which were severe enough to suspend their operations.\textsuperscript{111}

Officials of the Mitsubishi plants interviewed by the Survey said that recuperation was eventually possible, though over a much longer period of time than their counterparts in Hiroshima had assumed—Dockyard producing at 80 percent of capacity after three-four months;\textsuperscript{112} Steel Works producing 300 tons monthly for six months and reaching 2,000 tons a month by August 1946\textsuperscript{113}—7.2 percent and 48 percent, respectively, of the average monthly production for a period of August 1944-July 1945;\textsuperscript{114} Electrical Engineering

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\item \textsuperscript{108} UAD, \textit{Nagasaki}, p. 14. In a preliminary draft, first half of the part reads: “The surprisingly low rate of damage for Nagasaki industry is traceable primarily to the fact...” Report No. 1c(5) Nagasaki, frame 650, Roll 10, USSBS ROR.
\item \textsuperscript{109} The Survey considered this figure a fairly reliable index of the weapon’s efficiency against industrial targets. UAD, \textit{Nagasaki}, p. 14.
\item \textsuperscript{110} The four Mitsubishi war plants were estimated to be producing approximately 7 percent of the Japanese arms and munitions production. PDD, \textit{Nagasaki}, Vol. 1, p. 99.
\item \textsuperscript{111} PDD, \textit{Nagasaki}, Vol. 1, pp. 99-100; UAD, \textit{Nagasaki}, pp. 16-17.
\item \textsuperscript{112} Interrogation No. D-15, Mr. Ogawa, former head of Mitsubishi Dockyards, Nov. 24, 1945; Interrogation No. D-20, Mr. Muto present general manager of the Mitsubishi Dock Yard and Mitsubishi Engineering Co., Nov. 27, 1945, both in Report No. 59f, frames 1199, 1210-1211, Roll 303A, USSBS ROR; UAD, \textit{Nagasaki}, p. 16.
\item \textsuperscript{113} Interrogation No. D-24, Mr. Matsuda, Chief of General Affairs, and Mr. Hirai, Production Manager, Mitsubishi Steel Works, Dec. 1, 1945; Interrogation No. D-25, Mr. Kubota, General Manager, Mitsubishi Steel Works, Dec. 5, 1945, both in Report No. 59f, frames 1237-1238, 1242-1243, Roll 303A, USSBS ROR; UAD, \textit{Nagasaki}, p. 16.
\item \textsuperscript{114} Calculation by this author based on the production figures of Mitsubishi Steel Works in Report No. 59i, frames 1263-1264, Roll 303A, USSBS ROR. There is also a graph “Estimated Production Recovery of Mitsubishi Plants in Nagasaki” showing Steel Works to have recovered almost 80 percent of its production around August 1946 in UAD’s Nagasaki report (p. 18).
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resuming normal operations after about six months;\textsuperscript{115} and Arms Works producing at 5 percent of normal capacity after six months and at 50-70 percent of normal capacity after an additional nine months.\textsuperscript{116}

The author of the Nagasaki report, however, called the estimates of the Steel and Arms Works “fairly optimistic.”\textsuperscript{117} The total productive capacity “would have been concentrated solely at the dockyards and the electrical engineering works,” it argued. Even if the official estimates are accepted, and the production would recover 62 percent of normal by March 1946, 77 percent by August, and 80.8 percent by November 1946, the arms works and steel works would have contributed very small portions of them, the report said.\textsuperscript{118}

The Nagasaki report argued that it was wrong to attribute all the deficiencies to the atomic bomb: "these measurable facts of the post-attack situation are deceptive as well as inadequate. The low rates of production are misleading because they would have existed even without the dropping of the atomic bomb; the confidently predicted rapid

\textsuperscript{115} Interrogation No. D-18, Mr. Kitaoka, secretary to the manager, and Mr. Yuta, chief of general affairs, Mitsubishi Electric Works, Nov. 26, 1945; Interrogation No. D-21, Mr. Ishiguro, Manager of Nagasaki Works of Mitsubishi Electrical Engineering Co., Nov. 28, 1945, both in Report No. 59f, frames 1206, 1215, Roll 303A, USSBS ROR; UAD, Nagasaki, p. 17.

\textsuperscript{116} UAD, Nagasaki, pp. 16-17; Interrogation No. D-23, Mr. Kusano, Chief of General Affairs, Mitsubishi Arms Works, Dec. 1, 1945, in Report No. 59f, frames 1228-1229, Roll 303A, USSBS ROR; UAD, Nagasaki, p. 17.

\textsuperscript{117} UAD, Nagasaki, p. 17.

\textsuperscript{118} UAD, Nagasaki, pp. 17-18. The arms works would have contributed only 1 percent and the steel works 2.25 percent of the total production by March 1946, and the arms works 13 percent and the steel works 9 percent by November 1946.
reconstruction of the Mitsubishi plants is equally misleading because such vigor and resilience in recovery if actually exhibited, would have been unprecedented in Japan.”

According to the report, the Mitsubishi factories that suffered pre-atomic bombings were showing the effects of supply shortages before the raids and they “would have been forced to close down their productive operations in February 1946, irrespective of productive capacity.” The atomic bomb “by no means neutralized the productive capacity of Nagasaki.”

In a sharp contrast with the Nagasaki report, UAD’s Hiroshima Team argued that the war plants in Hiroshima enjoyed sufficient resources during the war. It reads: “Most of the industrial firms indicated... that raw material receipts were sufficient to maintain a relatively steady rate of production but were insufficient to enable them to increase production to full plant capacity.” “The trend of production, electric power consumption, and number of industrial workers in the Hiroshima urban area was generally upward

119 UAD, Nagasaki, p. 18.
120 UAD, Nagasaki, p. 9.
121 UAD, Nagasaki, p. 15.
122 UAD, Nagasaki, p. 15. In fact, PDD’s Nagasaki report supports such estimates. PDD points out that because the gas supply was completely disrupted, it “would have impeded production seriously in the industrial plants for approximately 7 months.” (PDD, Nagasaki, Vol. II, p. 268.) The four Mitsubishi companies alone accounted for 66 percent of the gas production by the Western Gas Co. at the time of the Survey. (PDD, Nagasaki, Vol. II, pp. 274-276) As of the electricity, it took three months to have sufficient repairs effected to serve 23,459 residential and 409 industrial consumers, out of 40,842 residential and 949 industrial customers the Kyushu Electric Distribution Co., a local private provider, served prior to the attack. (PDD, Nagasaki, Vol. II, pp. 268, 271-272.) Of the 922 machines and 338 pieces of equipment installed in industrial steel-frame structures within the range of 5,600 feet of GZ, 21 percent and 36 percent, respectively, sustained damage of various degrees. In spite of the relatively small percentage of damage, “losses of other items would have caused a complete shut-down for 4 months (Japanese estimate) before 50 percent of production could have been resumed.” (PDD, Nagasaki, Vol. III, pp. 6-7.)
123 UAD, Hiroshima, p. 11. A slightly different version can be found in p. 8.
during the period studied.\textsuperscript{124} Again, this was likely part of UAD’s effort to emphasize the industry’s potential for recuperation, as some of the factory interviews and evidence attest otherwise.\textsuperscript{125}

For example, consumption of charcoal had decreased from 2,100 meter tons to 330 meter tons for home use from May 1944 to July 1945, 2,100 meter tons to 660 meter tons for industry use from September 1944 to July 1945, and 482 metric tons to 660 meter tons for transportation from October 1943 to July 1945.\textsuperscript{126} Industrial consumption of gas decreased from 96,000 cubic meters in June 1944 to 36,000 cubic meters in July 1945.\textsuperscript{127} Both the consumption and incoming shipping of almost all goods and raw materials had decreased over the last year of the war, and rapidly so in the last few months.\textsuperscript{128} To save electricity, many plants had adopted biweekly electric holidays.\textsuperscript{129}

\textsuperscript{124} UAD, \textit{Hiroshima}, p. 8.

\textsuperscript{125} Five of 13 firms interviewed mentioned lack of raw materials—Toyo Industry, Shipyard Division of Mitsubishi Heavy Industries, Asahi Arms, Mitsubishi Heavy Industry’s Gion Machine Tool Works, Kirihara Barrel Factory—six firms shortage of labor—Nippon Steel, Chugoku Electric, Army Shipping, Mitsubishi Engineering, Kirihara Barrel Factory and Asahi Arms—and five firms shortage of either fuel, electric power or gas—Nippon Steel, Mitsubishi Heavy Industry’s Gion Machine Tool Works, Toyo Industries, Mitsubishi Engineering and Asahi Arms—during the war. Three firms, Japan Steel, Ujina Shipyard and Chugoku Electric, told they had sufficient raw materials. All in Report No. 60h(6), Roll 304, USSBS ROR.

\textsuperscript{126} Frame 631, Report 60e(2) Fuel consumption, Roll 304, USSBS ROR. The report reads, however, “Industrial and domestic consumption of charcoal was approximately equal over the period studied.” “There were no reports of essential war production having been curtailed because of insufficient charcoal.” UAD, \textit{Hiroshima}, p. 12.

\textsuperscript{127} Report No. 60e(2) Fuel consumption, Frames 628, 640, Roll 304, USSBS ROR. The report reasons “Since there was no concomitant decline in the production of the larger plants, it can be assumed that gas was not a critical item in their manufacturing processes.” UAD, \textit{Hiroshima}, p. 13.

\textsuperscript{128} Report No. 60e(2) Fuel Consumption, Roll 304, USSBS ROR. The data corresponds with later studies. See Note 106 above.

\textsuperscript{129} Interrogations of Yosiro Kaizuka, head of the planning section, and Nakamura, chief clerk, Toyo Industries, Nov. 21, 1945, frame 1196; Interrogation of T. Yamazaki, Comptroller of Nippon Steel, Nov. 20, 1945, frame 1189, both in Report No. 60h(6), Roll 304, USSBS ROR. These figures all go along with the nationwide trend that is confirmed by later studies. See Note 106 above.
Both labor force and labor hours started to decrease from August 1944 to early spring of 1945 in all categories, except for chemical and metal.\textsuperscript{130} The shortage of labor was aggravated by the lack of food. The absenteeism rate was high as men, including soldiers, could not hold up under the heavy work due to lack of food, and also because the workers had to go to countryside to scrounge additional food.\textsuperscript{131} “Others were forced to remain at home because of sickness caused by lack of food. The women could not stand the strain as well as male employees, and the food shortage seemed to effect [sic] them more,”\textsuperscript{132} said Managers of Chugoku Electric.

The possible distortion of the facts seems more apparent in the later drafts and published report. Regarding the power disruption at the Engineering Division of Mitsubishi Heavy Industries in the southwest part of the city,\textsuperscript{133} earlier draft reports spoke candidly: “Service to this installation was not restored for several weeks, \textit{but all production had}

\begin{itemize}
\item \textsuperscript{130} Urban Areas Section Hiroshima Team, 60b(2) Industrial labor, Roll 304, USSBS ROR.
\item \textsuperscript{131} Interrogations of Lt. Col. Hara, Commander, Jiro Kataoka, civilian consultant, of the shipyard repair division, Army Shipping Headquarters, Shipyard repair Division, Nov. 26, 1945, frame 1197, Report No. 60h(6), Roll 304, USSBS ROR.
\item \textsuperscript{132} Interrogations of Kishimoto and Samura of Chugoku Electric, Nov. 21, 1945, Report No. 60h(6), frame 1194, Roll 304, USSBS ROR.
\item \textsuperscript{133} Chugoku Electric restored electricity at a limited scale in the unaffected southern part of Hiroshima on Aug. 7, including Army Shipping Command in Ujina and other military posts in the city. Hiroshima Genbaku Sensaishi , Vol. 3 [広島原爆戦災誌 3巻] pp. 484-515. UAD’s Hiroshima report reads, “Electric power from the general network was available in most of the surviving parts of the city on August 7, 1945. Mitsubishi’s engineering division was the only industrial plant from which power was cut off and the service was not restored for several weeks.” UAD, \textit{Hiroshima}, p. 12.
\end{itemize}
ceased in any case due to other factors." But the last half of the sentence was deleted from the published report. (Underline added)

In fact, reported production of the larger plants for August 1945 was less than 10 percent of that of the previous month. The published report, however, defended its argument for the quick recuperation of war plants, when it said, “This [the drop of production for August] does not... provide an accurate indication of the effects of the attack, since many relatively lightly damaged factories closed down to enable their workers to engage in relief activities.”

Possibly acting out of the same motivation, the author or reviewers of the report might have also manipulated some figures. The ratio of the large industries on the perimeter, which could have resumed production within approximately 30 days after the bombing, was increased to 74 percent in later drafts and the published report from 50 percent in preliminary reports. The percentage of the industrial capacity of the urban

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134 Report No. 60h(1), p. 34, frame 793; Report No. 60h(4), frame 1055; Report No. 60a(2), p. 65, frame 279; a draft in Report No. 60, May 1947, p. 77, frame 123, all of Roll 304; Report No. 1c(5), pp. 38-39, frames 427-428, Roll 10, USSBS ROR. The passage was blacked out with a pencil in the March 20, 1946, draft. Report No. 60h(2), frame 942, Roll 304, USSBS ROR.

135 UAD, Hiroshima, p. 28.


137 UAD, Hiroshima, p. 24. Yet perhaps to make a balance with other UAD reports that made the point that the defeat of Japan was assured before the urban aerial attacks were launched, the following paragraph was added at the very end of the Hiroshima report: "While the potential for continued war production existed after the bombing, in view of the increasingly critical supply situation and the impact on city life in general, it is doubtful whether that potential could have been realized." UAD, Hiroshima, p. 33.

138 The ones with the 74 percent figure are: UAD, Hiroshima, p. 27; Report No. 60a(2), pp. 66-67, frames 280-281; Report No. 60h(2), frames 959-960; a draft in Report No. 60, May 1947, p. 80, frame 126, all of Roll 304, USSBS ROR. The ones with the 50 percent figure are: Report No. 60h(1), Insert A (p. 18), frame 770, Roll 304; Report No. 1c(5) Hiroshima, p. 21, frame 410, Roll 10, both of USSBS ROR. No mention of any specific figure in Report No. 60h(4), Roll 304, USSBS ROR, the assumed earliest draft.
area destroyed was decreased to 26 percent in later drafts and the published report from
“less than 35” percent or “less than 30” percent in the earlier preliminary reports. The
percentage of industrial workers in the 10 largest plants who returned to work by August 15 was increased to 42 percent in the published report from 18.6 percent or 24 percent in preliminary reports— all without any explanations.

While displaying more integrity than the Hiroshima report, the Nagasaki report also
downplayed the effects of the atomic bomb when it deleted some words from a sentence in the preliminary reports. While most of the population in the area surrounding the hypocenter “was killed outright and few of the wounded managed to escape to safety” in the preliminary reports, they “escaped to safety” in the published report. (Underline added)
Likewise, in the Hiroshima report, a mention of “beauty parlors” was deleted from the list of nine categories of business in the city licensed by the police.

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139 The ones with the 26 percent figure are: UAD, Hiroshima, p. 32; Report No. 60h(2), frame 841; Report No. 60a(2), p. 6, frame 220; a draft in Report No. 60, May 1947, p. 94, frame 140, all of Roll 304, USSBS ROR. In Report No. 60h(1) (p. 18, frame 769, Roll 304) and Report No. 1c(5) (p. 21, frame 410, Roll 10), it is “less than 35%.” In Report No. 60h(4), it is “less than 30%” (frame 1035, Roll 304).

140 The ones with the 42 percent figure are: UAD, Hiroshima, pp. 24, 32; Report No. 60a(2), pp. 7, 62, frames 221, 274, 276; Report No. 60h(2), frames 863, 935, 938; a draft in Report No. 60, May 1947, pp. 72, 95, frames 118, 141, all of Roll 304, USSBS ROR. The one with the 18.6 percent figure is: Reports No. 60h(4), frames 1036, 1041, Roll 304. The ones with the 24 percent figure are: Report No. 60h(1), frames 772, 805, Roll 304; Report No. 1c(5) Hiroshima, pp. 24, 46, Roll 10, USSBS ROR. Many of these corrections in this paragraph were made by handwriting on Report No. 60h(2) of March 20, 1946, without any apparent grounds and typed in Report No. 60a(2) of the same date.

141 UAD, Nagasaki, p. 11; Report No. 59m, Target Data, pp. 10-11, frames 67-68, Roll 303B; Report No. 1c(5) Nagasaki, p. 18, frame 647, Roll 10; Report No. 55a(13), p. 18, frame 393, Roll 283A, all of USSBS ROR.

142 Table 18 Effect of Attack on Commercial Establishments in East Police District, p. 24, UAD, Hiroshima; Preliminary reports, Reports No. 60h(4), frame 1153; 60h(1), p. 38, frame 799, both in Roll 304; Report No. 1c(5) Hiroshima, p. 42, frame 431, Roll 10, all of USSBS ROR. The original list provided by a Police factory inspector of the East District was as follows. (The left number is of those operating before the bombing and the right after the bombing) Interrogations of Mr. Tatami, No. 13, 1945, Report No. 60h(6), frames 1176-1177, Roll 304, USSBS ROR.
UAD’s tone to downplay the atomic bomb becomes also stronger in later drafts and published report. A later draft and the published report pronounce: “The atomic bomb is clearly the most effective area weapon yet devised. Its social and economic effects, however, are the result almost entirely of the area destruction and the casualties, and do not differ essentially from the effects of a similar sweep of destruction from other means.”143

(Underline added)

UAD’s Hiroshima and Nagasaki reports were classified as “restricted.”144 The division’s assertions, however, including that the atomic bomb failed to destroy enemy’s war-making capacity in Hiroshima and that Nagasaki had lost its war potential even before the atomic attack, are also included in the Chairman’s reports.145

Civil Defense Division

If the Survey aimed to present the limitations of the atomic bomb, it was CDD responsibility to demonstrate it by showing how to defend against it. CDD studied wartime programs of civilian defense in both cities and how they responded to the bombings. In its

<table>
<thead>
<tr>
<th>Restaurants</th>
<th>232</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yadoya (hotels and boarding houses)</td>
<td>216</td>
<td>25</td>
</tr>
<tr>
<td>Recreation rooms (Geisha)</td>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td>Pawn shops</td>
<td>92</td>
<td>3</td>
</tr>
<tr>
<td>Public bath houses</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>Drug stores</td>
<td>147</td>
<td>0</td>
</tr>
<tr>
<td>Second hand stores</td>
<td>582</td>
<td>40</td>
</tr>
<tr>
<td>Barber shops</td>
<td>232</td>
<td>30</td>
</tr>
<tr>
<td>Beauty parlors</td>
<td>94</td>
<td>30</td>
</tr>
</tbody>
</table>

143 UAD, *Nagasaki*, p. 18; a draft in Report No. 59, p. 35, frame 1102, Roll 303A.

144 Distribution lists of published USSBS Reports, Folder: Pacific Survey, Box 140, Entry 3, RG 243, NACP.

145 See Chapters V and VI of this dissertation.
reports, the division discussed the history, the organization and the operations of civil defense agencies, including air raid warning systems, fire services, emergency medical services, and shelters of the two cities, as well as, in the case of Nagasaki, of mortuary and rescue services. But the most important task for the division was to determine what worked best to mitigate the damage from the attacks, and CDD found shelters to be the most effective.

CDD’s report of its study in Japan, *The Final Report Covering Air-Raid Protection and Allied Subjects in Japan*, concluded that for the protection of essential persons required to remain in cities at a time of emergency, “properly constructed and located shelters appear to be the only answer.” Properly constructed shelters meant those “constructed of reinforced concrete of sufficient thickness to withstand the impact of the heaviest bomb anticipated, insulated against intense heat and atomic radiation, and provided with ventilation systems and self-contained oxygen units to provide air in case of conflagration would meet nearly every test.”

This judgment on the feasibilities of shelters as the protection against the atomic bomb was based on its report on Nagasaki. *The Field Report Covering Air-Raid Protection and Allied Subjects, Nagasaki, Japan*, states, “Investigation revealed that tunnel shelters of all types stood up very well from the blast and concussion of the atomic bomb.” In addition, survival of most of the people and machinery in tunnel shelters at a weapons factory

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148 CDD, *Nagasaki*, p. 73.
impressed the analysts. “There is no doubt that the most outstanding part of Mitsubishi’s air-raid protection was their shelters,” the report noted.

Since 1944, the city of Nagasaki and local block associations had constructed 6.75 and 8.625 miles, respectively, of tunnel-type shelters—some big enough to accommodate 1,000 people—around hills, half of which were reinforced with heavy timbers. In the report, CDD made detailed observations of five of these trenched caves—their shapes, structures and distances from GZ—and physical conditions of people who were in those shelters, as well as their specific locations in the shelters at the time of explosion. The division concluded as follows:

It was the opinion of all the subjects interviewed and of civilian defense officials questioned that if the people had been in the types of tunnel shelters... and had taken the proper position therein (not in the entrance) that most of them would have suffered little or no injury and no apparent after-effects. This theory is further strengthened by statements from officials who estimated that about 400 persons were in tunnel shelters at the time of the explosion and that about 300 of them were unharmed or only slightly

149 CDD, Nagasaki, pp. 49-55, 102-112.

150 CDD, Nagasaki, p. 110.

151 CDD, Nagasaki, p. 68.

152 CDD, Nagasaki, pp. 63-75. One of these seven individuals—Subject “F”—was not in the Shelter 4 at the time of the explosion but went there in the afternoon of the day. It is difficult to understand how the Survey made him a witness to the scene and determined the location of individuals in the shelter at the time of the explosion.
injured because they had taken the properly designated positions and had remained in those locations for a reasonable period of time after the explosion.\textsuperscript{153}

The USSBS study laid the groundwork for the civil defense measures against atomic bombing, which included the promotion of nationwide shelter program planned in the 1950s.\textsuperscript{154} And the account in the Chairman's a-bomb report, which provided basis for the program, was derived from the part of the CDD's Nagasaki report cited above.\textsuperscript{155} But it is difficult to trust this account entirely when we compare it with other studies.

For example, while the Nagasaki report includes the first-hand experiences of six survivors who were in shelters at the time of the explosion, it did not provide the whole story about what happened inside the shelters when it told only about those who survived.\textsuperscript{156} Just like PDD that showed only what remained standing in the cities, CDD was telling readers only a fragment of the story. The message is clear: If you are prepared and are in shelters in time, you can beat the consequences of nuclear war.

\textsuperscript{153} CDD, \textit{Nagasaki}, p. 73. Interestingly, this last sentence contradicts the official American view then that there would be no residual radiation in two cities strong enough to harm people's health.


\textsuperscript{155} Chairman's a-bomb report, p. 5.

\textsuperscript{156} CDD, \textit{Nagasaki}, pp. 69-73.
Around the hill almost below the epicenter, at the top of which stood the Nagasaki prison, about a dozen tunnel shelters were built or being built by local block associations since 1944 after the issuance of a directive by the Home Ministry. CDD’s Nagasaki report describes how five people survived the atomic attack in one of these caves—Shelter 1—located 200 yards from the GZ, based on an interview with a 16-year-old girl who survived. There is no mention of any deaths in the shelter, while it illustrated how all the people outside the shelter died in terrifying ways.

According to a study conducted in September 1945 by a group of Japanese scientists from the School of Medicine of the Tokyo Imperial University, there were 52 people from a local block association working in the Shelter 1 at the time the atomic bomb exploded. Of these people, the report states only seven survived in this shelter, along with three others in

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157 All of 134 people, including 48 convicted and 33 prosecuted, who were in the prison facilities at that time were killed.

158 This shelter was located in Oka-machi district.

159 An eyewitness account of this girl can be found in Appendix 3N, Report of the Joint Commission, Vol. I, p. 200.

160 CDD, Nagasaki, pp. 69-70. According to Nagasaki’s official atomic bomb history, these people, mostly women, were unwatering the cave flooded by the rain of a couple days before. According to the Nagasaki official history, there were six more survivors who were in the shelters around the hill.

161 They were members of the atomic bomb research committee assigned by the Japanese Education Ministry. Urabe, M., et al., “Reports of the Inspections of the Cave-Trenches Around the Hill of Prison in the City of Nagasaki,” undated, Folder 4, Box 7407, Economic & Scientific Section, GHQ/SCAP Records, microfiche No. ESS(D) 06274, Ritsumeikan University Shugakukan Research Library. For the Japanese original, see 日本学術議会原子爆弾災害調査報告書刊行委員会編『原子爆弾災害調査報告』第三冊（不二出版、2011年）、pp. 483-486. This author identified CDD’s Shelter 1 as the same one cited as the “cave-trench I” in the Japanese report because of its shape, location at the hill, and the name of the person listed in the two reports. According to the Nagasaki official history, there were six more survivors who were in the shelters around the hill.
two different caves around the same hill.\textsuperscript{162} It is obvious that CDD was not telling the whole story when we compare the figures in the two reports. (See Figures 1 & 2 below)

![Figure 1. The shape of the Cave Trench I and positions of and extent of injuries suffered by people who were there, recorded by Japanese scientists. Black blank circles indicate survivors without injury, Black circles with center dots survivors with injuries, white/black circle those died afterward, and black solid circles those died at once.](image1)

![Figure 2. The shape of the Shelter 1 and positions of people who were there, recorded by the USSBS CDD. CDD, Nagasaki, p. 68.](image2)

CDD’s Nagasaki report also explains how people survived in another shelter—Shelter 2—located about 600 yards west of the GZ.\textsuperscript{163} It describes how eight people inside suffered certain injuries—burns and diarrhea—temporarily but they all had recovered, except for an ongoing fatigue felt by one of them, while "all of the persons on the outside died within a two-day period."\textsuperscript{164} The picture provided here, again, appears to be

\textsuperscript{162} Urabe, M., et al., “Reports of the Inspections of the Cave-Trenches Around the Hill of Prison in the City of Nagasaki,” Folder 4, Box 7407, Economic & Scientific Section, GHQ/SCAP Records, ESS(D) 06274. For the Japanese original, see 単部美代志他「長崎市刑務所丘陵附近横穴防空壕内における災害調査」、日本学術会議原子爆弾災害調査報告書刊行委員会編『原子爆弾災害調査報告』第三冊、pp. 483-486.

\textsuperscript{163} This shelter was located in Shiroyama-cho district.

\textsuperscript{164} CDD, Nagasaki, p. 70.
not complete when we compare it with another study conducted by the Japanese scientists from the Tokyo Imperial University.

According to the Japanese report, of the 17 people working on the repair of the shelter at the time of explosion, two people near the incomplete buffer were killed by the blast instantly, two people near the entrance died from burns the next day and another two, in the middle of the hall between an entrance and lateral passage, died from radiation sickness in periods of 10 days and two months, respectively, after the bombing. Of the 11 survivors, two suffered mild degrees of radiation sickness, while nine others suffered no injuries of ill effects.165 (See Figures 3 & 4 below)

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Figure 3. The shape of the Shelter 2 and positions of people who were there, recorded by the USSBS CDD. CDD, Nagasaki, p. 70.

Figure 4. The shape of the shelter at Shiroyama National School and positions of and extent of injuries suffered by people who were there, recorded by Japanese scientists. Black blank circles indicate survivors without injury, black circles with center dots survivors with injuries, white/black circles those died afterward, and black solid circles those died at once.

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In another tunnel-type shelter, 800 yards from the GZ—which is not in the CDD report—, for example, four or five children at the end of the cave survived, while the remaining dozen people who were in the straight hallway from an entrance were all killed. The three entrances were located to the west, opposite of the GZ, and were covered with baffle walls.

It is true that a bare majority of people who were in the Shelter 2 were unharmed. But it was not because they had taken “properly designated positions” and had “remained in those locations for a reasonable period of time after the explosion,” as CDD argued. The atomic bombing was a surprise attack. There was no way they could have taken positions. Shelters certainly provided a better survival rate for the people inside than those in the open-air. But whether one could survive in a shelter was a matter of unpredictable probability.

Actually, only a handful of people who were in the areas near the center of explosion survived. Of the residents in Matsuyama-cho, located just below the hypocenter, who

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166 長崎市『長崎原爆戦災史第二巻地域編』、pp. 109–111.
167 長崎市『長崎原爆戦災史第二巻地域編』、pp. 99-100.
169 A report of the Joint Commission writes: “The killed rates in these wooden buildings located within 500 meters of the center was 100%.” Report of the Joint Commission, Vol. VI, p. 224.
were in the district at the time of explosion, only one person—a nine-year-old girl who had evacuated to a local shelter—survived.\textsuperscript{170}

According to a 1980 report published by the Nagasaki Atomic Bomb Damage Restoration Committee,\textsuperscript{171} there were 4,281 known residents in the area within 500 meters from the GZ at the time of the atomic attack. The follow-up study confirmed 356 people survived the bomb, including those who suffered various levels of injuries, while 3,882 died instantly, 43 went missing by the attack on August 9, 1945. But of these survivors, 207 had died by the end of September 1945, before the Survey arrived, and 104 had gone missing since then.\textsuperscript{172}

Almost 20 years after the Survey, Lt. Col. Barnet W. Beers, who went to Nagasaki as a member of a CDD team, told a researcher that he interviewed “close to two hundred people who had been within one hundred yards (91 meters) of Ground Zero.”\textsuperscript{173} But if he really had, he should have spoken with almost every individual whom he could find and who

\textsuperscript{170} 長崎市『長崎原爆戦災史第二巻地域編』, pp. 52-53. The number of residents at that time was 1,865.

\textsuperscript{171} 長崎市原爆被災復元調査協議会『原爆被災復元調査事業報告書』（長崎市、1980年）. The committee consisted of members of the municipal government, local block associations, and school districts, as well as journalists and scholars, established in 1970 to extrapolate the actual number of residents lost to the atomic bomb. Many accounts in the Nagasaki’s official atomic bomb history are based on this study. For the process of organizing the committee and survey, see 調来助他『長崎における原爆被災復元調査』『廣島医学』、第27巻、第6号（1974年6月）、pp. 79-85.

\textsuperscript{172} 長崎市原爆被災復元調査協議会『原爆被災復元調査事業報告書』、pp. 11, 14-15. Only 11 people were still alive at the time of the study.

could speak. Still, it is unlikely all of those he spoke with were in shelters at the time of the explosion. The majority of the residents who survived the bomb only did so because they "happened to be working or on errands somewhere away from the area."  

While graphically describing the terrible deaths of people outside the shelters, the CDD's Nagasaki report never mentioned that anyone died in the shelters except for those standing at the "entrances" of the Shelter 4. Most of the others, including those interviewed having only suffered mild injuries and aftereffects, eventually recovered. The CDD's report failed to mention that those who survived consisted of only a segment of people who were in the shelters. The rest of them died just like the people outside the tunnels.

Actually, earlier drafts were likely showing more honest pictures. In these draft reports, it was said that "200 to 400 persons" were in tunnel shelters at the time of the explosion, instead of "400" in the published report. In these drafts, it was also "about

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174 This author has not found any records of these interviews in the USSBS records at NACP or the USSBS microfilms. The only and any records of interviews this author found, which was conducted by CDD in Nagasaki, were of Kunishi Ogata, Kunihiro Moritani, Yasuharu Kakui, and Masaru Yamamoto, mostly of Civil Engineering Department, Shizuma Uchida of Road Section, Tadasuke Nakayama of Commerce and Industry Section, Dr. Fukutomi Nakayama, Chief of Public Health, all of Nagasaki Prefecture. They are not, however, transcripts, but fragmentary notes, mostly handwritten. Reports No. 11n(4), frames 253-263; 11p(2), frames 548-570, both in Role 84, USSBS ROR.


176 This shelter was located in the Yamazato-cho district.

177 CDD, Nagasaki, pp. 70-73. The report reads, "A woman (in Shelter 1)...was burned on the face, arms, and upper part of the chest but she recovered and was not suffering any after-effects" (p. 70); "The persons (two in the Shelter 2)...were burned on the back and swelled up, but all of them have recovered with no apparent ill effects" (p. 70); "A woman (in Shelter 3) was slightly burned and knocked over by the blast, but she has fully recovered with no apparent ill effects" (p. 72).

178 Report No. 5b Manuscript, frame 758, Roll 66; Report No. 13a(8) Nagasaki field report, frame 430, Roll 92, both in USSBS ROR. In Report No. 1c(8), it is "some 400" (frames 86, 317, Roll 12).
100 of them” who were unharmed or only slightly injured,\textsuperscript{180} instead of “300” in the published version.\textsuperscript{181} Even the earlier figures may be too optimistic in comparison with the report of the Nagasaki Mayor Hisakichi Okada, who said “Within a radius of 100 meters from the center of the explosion, all the people and animals in shelters died instantaneously, with the exception of a few persons.”\textsuperscript{182}

The likely amplified survival of people in shelters near the GZ in Nagasaki was also adopted in the CDD’s final report on Japan, which described tunnel shelters as an ideal countermeasure against the atomic bomb. The report reads: “less than 400 persons were reported to have been in shelters at the time of the blast, and that investigations showed that scarcely anyone in tunnel shelters received burns or serious injuries.”\textsuperscript{183}

It is apparent that CDD was not only committed to understate civilian casualties, but also to downplay the effects of the atomic bomb. And CDD tried to conventionalize the atomic bomb as follows:

\textbf{A calm appraisal of the atomic bombing does not change any of the results but comparison of the devastation with that found in Kobe, Osaka, and Tokyo raises the}

\begin{footnotes}
\item[179] CDD, \textit{Nagasaki}, p. 73.
\item[180] Report No. 5b Manuscript, frame No. 758, Roll 66, USSBS ROR; CDD, Atomic Bomb Report, Report No. 1c(8), frames 86, 317, Roll 12; Report No. 13a(8) Nagasaki field report, frame 430, Roll 92, all in USSBS ROR.
\item[181] CDD, \textit{Nagasaki}, p. 73.
\item[182] “Report of the mayor of Nagasaki, Okada,” undated, but believed to have been written prior to 26 August 1945, Appendix, PDD, \textit{Nagasaki}, Vol. III, pp. 192, 223.
\item[183] CDD, \textit{Japan}, p. 6.
\end{footnotes}
question of, why so much emotion? The wasted areas in Hiroshima and Nagasaki do not differ materially, at least in outward appearances, from those in other Japanese cities which were ravaged by incendiary raids. ...the ultimate result was identical—utter devastation. The suspicion, therefore, arises quite naturally that possibly this new method of destruction is not too unlike the old procedures, the results being the same, except that they are achieved with larger element of surprise and with greater concentration of force.184

To support its argument that the atomic bomb is not too different from conventional weapons, CDD added a promising sentence that there would be countermeasures for this weapon, too.

There is no reason for a ‘nothing-can-be-done’ attitude in this field, for just as every revolutionary weapon of the past has caused the development of counter measures in active defense which tended to mitigate its effects, just so is it reasonable to expect that something can be done to lessen the effects of atomic bombs on civilian populations.185
A reviewer of this draft wrote by hand the word “amplify” in the blank margin next to the last sentence. CDD also tried to blame Japanese for huge numbers of casualties among its people. The Japanese military informed civilian defense authorities that the US would stick to precision bombings, and subsequent defense plans were made on this false idea. The result was that “Saturation raids consequently caught the air raid-defense forces off guard and totally unprepared in procedure and equipment with the result that civilian defense organization was overwhelmed in nearly every instance.”

In its final report on Japan, CDD criticized the Japanese government, military and emergency service providers, such as fire fighters, rescue workers and medical personnel, for lack of adequate plans, equipment and training to combat incendiary bombings. For example, it called equipment of Japanese fire departments “inferior,” training “inadequate” and personnel “mediocre,” which made it “impossible for them to meet even the lowest of fire-fighting standards in the United States.” Such conditions inevitably made them unable to cope with the conflagrations within saturation-raid areas. For CDD, the loss of

186 There are two copies of the draft Atomic Bomb Report in Report No. 1c(8), but the handwriting can only be found in frame 300, Roll 12, USSBS ROR.

187 Even after air raid started over Japan, Japanese army intelligence told chiefs of police affairs that American bombers would always fly in formation at high altitudes and drop their bombs in a particular target area. The report assume that Japanese government was unable to revise its original program “perhaps because it did not wish to lose face by admitting the seriousness of the situation but more likely because of the shortage of time, equipment and materials.” CDD, Japan, pp. 2, 69, 196.

188 CDD, Japan, pp. 7-9.

189 CDD, Japan, p. 8.

190 CDD, Japan, p. 8. The same report, however, speaks to the contrary in a different page: “Fire-fighting experts are agreed that the most modern fire department would be unable to cope with conflagrations resulting from saturation incendiary air raids... To meet that situation... it is apparent that all fire-fighting units in a country must be nationalized to provide for a strong centralized control and the ready interchange of equipment, such as pumpers, hose, and couplings. Highly mobile fire-fighting units under
more than half the first-aid stations in Tokyo and its vicinities in Tokyo air raids were
“responsible for the considerable but undetermined number of persons who died for lack of
prompt and effective first aid.”\textsuperscript{191}

The same was true with the case of Nagasaki where “possibly as many as 20,000
died over a period of weeks following the atomic bomb raid.”\textsuperscript{192} CDD’s Nagasaki report
argues, “the physical condition of the streets and the inevitable confusion resulting from
such a catastrophe placed insurmountable obstacles in the way of transporting the injured
to places where they could receive medical attention. The conclusion is, therefore,
inescapable that many persons did die from lack of medical care.”\textsuperscript{193}

CDD also blamed Japanese authorities for not issuing air-raid alarms at the right
time.\textsuperscript{194} Especially in the case of Nagasaki, where they could have profited from the
Hiroshima experience three days before, the Army authorities were responsible, CDD notes,
for the “many unnecessary death,” which could be avoided had the alarm been in effect.\textsuperscript{195}
This tendency to emphasize Japanese failure seems more apparent in later drafts and the
published report.\textsuperscript{196}

national control, with the best of equipment and trained personnel, must be available at strategic points,
ready to rush to a stricken city.” (p. 7)

\textsuperscript{191} CDD, Japan, p. 9.

\textsuperscript{192} CDD, Nagasaki, p. 34.

\textsuperscript{193} CDD, Nagasaki, p. 34

\textsuperscript{194} CDD, Japan, p. 164.

\textsuperscript{195} CDD, Japan, p. 6.

\textsuperscript{196} For example, the published report and later draft include following the sentence: “In spite of the
receipt of intelligence of the atomic bombing of Hiroshima three days before, no consideration was given
by the Nagasaki fire officials to withdrawal of fire equipment to the perimeter of vital areas, upon receipt
This narrative to blame the damages inflicted by American forces on the enemy’s unpreparedness was likely geared toward the American public. It was important to assure them that the atomic bomb can be manageable if they were prepared; while keeping them on alert that it could be terrifying if they were not. Here was the forerunner of what historian Laura McEnaney described as the campaign of the Federal Civil Defense Administration (FCDA) to “simultaneously scare and reassure people about the bomb.”\(^\text{197}\)

However, perhaps these authors could not persuade themselves that they could find countermeasures against the atomic bomb. This carrot-and-stick approach resulted in conflicting accounts, just like the ones we found in the PDD’s reports. In one draft, for example, it was assuring: “From what is currently known of atomic bomb capabilities, it is believed that suitable plans can be made and appropriate measures taken, so that the effects of these bombs can be mitigated to the extent that an atomic-bombed city need not be a dead city.”\(^\text{198}\) In another draft report, on the other hand, it sounds ominous: “Faced by atomic bomb warfare on civilian populations and installations, the existing methods of operation of civilian defense forces become obsolete, and radically different theory must be developed.”\(^\text{199}\)

\(^{197}\) McEnaney, *Civil Defense Begins at Home*, p. 29.

\(^{198}\) CDD, Report 10ww(1) Special atomic bomb report on Japanese civilian-defense forces for inclusion in the over-all report, p. 33, Roll 80, USSBS ROR.

\(^{199}\) CDD, Atomic Bomb Report, p. 20, Report 1c(8), frames 87 & 318, Roll 12, USSBS ROR. As more optimistic views on the atomic bomb were pronounced in the beginning of the report as we will see in page 5, a reviewer of the draft pointed out “emphasis quit [sic] opposite to pp. 1+2.” Comments by a reviewer for the Report No. 1c(8), frame 296, Roll 12, USSBS ROR.
The latter apparently did not make it into the published report; yet we can still find similar accounts in the published report: "It is doubtful, however, even if the [rescue] unit had been trained and equipped, that it could have done very much in actual rescue operations, principally because of the small size of the unit and the tremendous problems created by the bomb."200 “The atomic bomb demonstrated the weaknesses of plans that were based on ordinary air raids."201

CDD’s Nagasaki report is typical of the USSBS reports and of the reaction to the first atomic bomb narrative. The story would be different had there been no shelters in Nagasaki or had the bomb not exploded where it did, since those the Survey studied were among the largest and sturdiest among the hundreds constructed in the city during the war.202

If CDD’s Nagasaki Team was fortunate to find shelters, what did its Hiroshima Team find, if any, to base their stories on? There is a report prepared by CDD’s Hiroshima Team, but it is totally different from the Nagasaki report. It is so not only in that it has nothing on which to build their theories of defense against the atomic bomb, but also in terms of narrative—its authors were awed by the atomic bomb.203 For example, the report reads: "No matter what terms are used to explain the extent of damage caused by this one bomb


201 CDD, *Nagasaki*, p. 27.

202 For the shelters in Nagasaki, see [原爆と防空壕]刊行委員会編, [原爆と防空壕—歴史が語る長崎の被爆遺構]（長崎新聞社, 2012年）、pp. 13-60.

203 We have to recall the paragraph in the very beginning of this chapter, which was cited from CDD’s Hiroshima report.
and no matter how adroitly they are used, any statement regarding the havoc created at HIROSHIMA would be an understatement.”

_Civilian Defense Report No. 1: Hiroshima, Japan, Field Report_ discusses civil defense measures in the city—emergency medical service, fire services and shelters, only to find that none of them provided effective measures. It concludes: “Most persons interviewed agreed that no civilian defense measures, as presently conceived, would be effective against the destructive power of the atomic bomb.” “The effect of the detonation and the shock incident to it were so terrific that little or nothing was, or could be, done to prevent or stay the ensuing conflagration which continued until it burned itself out.” (Underlines added) The contrast is striking when we remember its Nagasaki report arguing, “There is no reason for a ‘nothing-can-be-done’ attitude.”

The Hiroshima report is also different in formats. Actually, the volume is the only report from CDD without the Survey’s official six-line framed front cover and two-column format for the main textual body. It is also the only volume, among all the USSBS’s Pacific reports, with the publication date before the Survey left Japan—November 15, 1945 (See Figures 5 & 6 below). It is also much shorter—60 pages in total—than the one of Nagasaki

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204 CDD, _Hiroshima_, p. 1.

205 _Ibid_, pp. 11-33. As of shelters, it says: “The people were instructed how to build shelters...but, owing to the lack of equipment and material, it was impossible to follow the instructions.”

206 _Ibid_, p. 33.

207 CDD, _Hiroshima_, p. 1.

208 See p. 171 of this dissertation.
(133 pages) with the content of each chapter short and shallow, sounding tentative and not thorough.\textsuperscript{209}

There is little information regarding the report, but it seems likely that CDD did not publish its final report on its Hiroshima study. Actually, other than what was published as the Hiroshima report, there are almost no relevant materials or data collected in connection with the CDD's Hiroshima study found in the voluminous USSBS documents at the National Archives or in microfilm.\textsuperscript{210}

\textsuperscript{209} Of which the main textual body extends only 18 pages. Because the text is typed in a plain single column with a bigger font than the official format, it would be less than 10-page long if it was set in the official format. Photos took up 15 pages, and table of contents and exhibits consisted of other 27 pages.

\textsuperscript{210} Even in the Pacific Survey Reports and Supporting Records 1928-1947 (USSBS ROR), a collection of 487-reel microfilmed documents, which consist of published reports, preliminary reports and background materials, all I found for the CDD's Hiroshima report are the report itself and a couple of other materials, like charts and maps. See Reports No. 9a, 9b, 9c, 9d, 9e and 9f, all in Role 73, USSBS ROR. There are also notes by Capt. Robert W. Ross, a Marine Corps member of the CDD's Team No. 1, who traveled to all the cities CDD studied for its reports on microfilm, but they do not include any part on Hiroshima, where he also visited. Reports No. 11p(2) and 11p(3), Role 84, USSBS ROR. CDD's two draft atomic bomb reports—one is Report No. 1c(8) Atomic Bomb Report, Feb. 27, 1946, frames 68-88 [70-74], 299-319 [301-305], Roll 12, and the other 10ww(1), Feb. 5, 1946, frames 841-879 [864-866, pp. 21-23], Roll 80, both of USSBS ROR, contain some accounts on Hiroshima, some part of which (pages or frame numbers in [brackets] above) can be found in the CDD's Hiroshima report. The division's comprehensive
According to CDD’s original plan, the six-member Team No. 1 was more of a preliminary nature “to make a brief reconnaissance of conditions” in Hiroshima and to report to the Division Director “concerning the availability of plans and materials for a full-scale study.”\(^{211}\) It is likely that their study did not materialize into a full-scale study and they wrote the report based on the preliminary study. But why did it not materialize into a full-scale study? There is no definite answer to this question, but it might have something to do with the issue of the national security.

Actually, there was something also in Hiroshima the USSBS analysts could have taken advantage of. Just as in Nagasaki, there were some dozens of people in Hiroshima who survived the bomb as close as 500 meters in radius from the hypocenter. Many of them were in reinforced concrete buildings.\(^{212}\)

According to a study conducted by the Research Institute for Nuclear Medicine and Biology at the Hiroshima University from 1968-1970, there were 57 survivors as of the end of May 1971, among 3,483 people who were in the areas within approximately 500 meters in radius from the GZ—2,543 known residents and 940 people from outside, working in their offices or who happened to be visiting the area\(^{213}\)—at the time of the explosion.\(^{214}\)

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\(^{211}\) Letter to Nitze from J. B. Warden, Oct. 15, 1945, frames 1233-1235, Roll 1, USSBS ROR.

\(^{212}\) See Notes 214-216 below.

\(^{213}\) According to Kamata, Nanao, et al., the 78 survivors within 500 meters from GZ do not include even one resident in the area, meaning all those in their houses—typically wooden—were likely killed.

The number of survivors increased to 78—48 men and 30 women—by 1972, when a follow-up study started. Many of these survivors were in offices or public buildings, including 21 in the Japan Bank Hiroshima Branch, 18 in Fukoku Life Insurance Company and five in Fukuromachi Elementary School.

That some people survived in concrete structures near GZ, including a bank building only 200 meters from GZ, was known and studied by the Joint Commission and Japanese scientists in the fall of 1945. Among the USSBS divisions, the Medical Division used the information in its report. Why then not CDD? It might be possible that CDD did not know these facts when the analysts were in the city from October 10-21, 1945.

Unlike in Nagasaki, where the very tunnel shelter where people survived, were also used as post-raid evacuation shelters, in Hiroshima, many of those who survived ran to the

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216 鎌田七男他「爆心地域被爆生存者に関する総合医学的研究」『広島医学』35 巻、8 号（1982 年 8 月）、pp.1084-1098.

217 Table 12 (10H), Mortality and Casualty Rates in Certain Concrete Buildings, Hiroshima; Section 11H, Building and Protection Studies, both in Report of the Joint Commission, Vol. VI. For Japanese study, see 北本治、石川浩一「爆心より 200 米弱の一建築物における原子爆弾による人的被害について」（1945 年 12 月23 日）。For the English translation, see Atomic Bomb Casualty Reports No. 9 Atomic Bombing Injuries in a Building which was about 200 meters distant from Center of the Bombardment in Hiroshima, March 2, 1946, Folder 9, Box 7407 (Microfiche: ESS (D) 06275), RG311. The English reports contain much more detailed information than the Japanese report.

218 Japanese scientists and the Joint Commission conducted the study on these people. The result was also discussed in the reports of NavTechJap, the British Mission and the USSBS Medical Division (The Effects of Atomic Bombs on Health and Medical Services in Hiroshima and Nagasaki, p. 53).

219 We have to remember that CDD team stayed in Hiroshima much earlier than Medical Division team who stayed there from Nov. 4-8. This may also explain why their report sounds so awed.
countryside from fire and for medical care and shelter. They either did not go back to the city or went back to work only after normalcy was restored.

In such a circumstance, it would have taken time for the CDD Hiroshima Team to collect information on these people even if they knew the fact. Or it might be that the division could not publish the final Hiroshima report due to security constraint. Shielding effects against the atomic bomb had become a subject of the national security. Otherwise, civilian defense experts in the US would have unmistakably taken advantage of the opportunity to bring their business forward.

According to Historian Lyon G. Tyler, CDD was added to the Survey at the request of Franklin D'Olier, USSBS Chairman, who was a Regional Director of the Office of Civilian Defense (OCD), a wartime government agency established in May 1941 by executive order of President Franklin D. Roosevelt. After OCD was terminated in June 1945, the Office of

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220 According to later testimonies by these survivors, they could not stay in the areas because all the buildings were engulfed in flames within some minutes after the explosion.

221 According to a recent series of newspaper articles, which featured 11 of these survivors—nine still alive and two dead—and their published testimonies, for example, most of them did not go back to their offices or schools where they were at the time of the explosion because they stayed their houses away from the area or had to be relocated from the city. 「伝えるヒロシマ＜5＞」 『中国新聞』、2014 年 6 月 2 日-8 月 4 日; 居森清子『被爆体験集』（広島被爆 10 巻、国立追悼平和記念館）、「長い旅：友田典弘さん」北島宏泰編『ひとりひとりの戦争・広島』（岩波新書、1984 年）ほか。

222 See Chapters V and VI of this dissertation.

223 They were eager to be "recognized as a primary component of over-all defense and must be removed from its former inferior and haphazard role." Provost Marshal General, "Defense Against Enemy Action Directed at Civilians" (Study 3B-1), April 30, 1946 (hereafter, "Study 3B-1"), p. 3, Box 1953, Entry 468, RG 389, NACP.

224 Tyler, pp. 12-13. Regional offices coordinated the work of state and local defense organizations. D'Olier was director of Region II, in charge of the states of Delaware, New Jersey and New York. It is apparent that D'Olier was interested in shelters as the protection against the atomic bomb. In an interview by a newspaper upon his return from Japan, D'Olier said: "Hiroshima and Nagasaki, targets of the A-bombs, have received special study. It is safe to say that the report on Japan will disclose whether underground installations are impervious to atomic attack." John LA Cerda, "D'Olier's Report on Bomb
the Provost Marshal General, the internal-security branch of the War Department, was
directed to study the problems of postwar civilian defense.\footnote{225}{Tyler, p. 13.} After the end of the war,
Colonel Alton C. Miller, Director of the Provost Division, to which the study has been
assigned, created a Civilian Defense Branch (CDB), to study the issue especially in
connection with the emergence of the atomic bomb.\footnote{226}{Tyler, pp. 16-17.}

CDD’s findings were incorporated into the Provost Marshal General’s report when Lt.
Col. Beers\footnote{227}{See pp. 168-169 and Note 173 of this chapter. Tyler describes Colonel Beers as “a trim, serious,
hard-working, former Illinois National Guard officer” who had overseen the activities of the Army officers
assigned to the civilian-defense regional office as G-3 at Governor’s Island, New York, before joining the
Survey. Beers later became a member of the Civil Defense Board, established by War Department on Nov.
25, 1946, to specify the department’s role in civil defense and its position in the entire civil defense
organization. He also worked as the Executive Assistant for the Director of the Office of Civilian Defense
Planning (OCDP), established by Defense Secretary James V. Forrestal in March 1948. Beers became
Assistant of Defense Secretary Louis Johnson for Civil Defense Liaison after OCDP was abolished on Aug. 1,
1949. Tyler, pp. 25-26, 47-48, 162, 187.} was designated as the head of CDB soon after he returned to the US from the
Pacific.\footnote{228}{Col. Frank A. McNamee and Col. John B. Warden, CDD’s director and chief, respectively, later became
members of the OCDP. Tyler, pp. 52, 94.} In the “Defense Against Enemy Action Directed at Civilians” (Study 3B-1), a
report published by CDB in April 1946, conventionalization of the atomic bomb was
promoted further. Referring to tunnel shelters in Nagasaki, the report says, “it cannot be
truthfully stated that no defense is possible.”\footnote{229}{Study 3B-1, p. 4.} And it concludes: “The advent of atomic
warfare does not eliminate the possibility of effective civil defense but, rather, increases its

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Damage to Japan will be Released Soon,” \textit{Philadelphia Bulletin}, Dec. 10, 1945, Folder: 000.75 Press
Clippings, USSBS Pacific, Box 2, Entry 1, RG 243, NACP; U.S. Office of Civilian Defense, \textit{Civilian Defense
Volunteer Office}, Washington, D.C., 1942, p. 34.
\end{flushright}
importance. The same passive civil defense measures that were employed as a defense against conventional air raids can be adapted to atomic attack, no matter how extensive."230 The report became the foundation of postwar US civilian-defense planning.231

CDD's Hiroshima and Nagasaki reports were classified as "restricted."232 The division's finding, however, that most of the people in the tunnel shelters escaped injury, are also included in the Chairman's reports.233

The Federal Civil Defense Administration (FCDA), created by an Executive Order of President Truman in December 1950,234 promoted a nationwide program to construct fallout shelters in the wake of the Soviet atomic detonation and the outbreak of the Korean War.235 However, it eventually failed largely due to lack of government financing and to the emergence of the hydrogen bomb, of which inescapable effects would finally nullify the myth of nuclear shelters.236 It is ironic that CDD criticized exactly such a policy of the

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230 Study 3B-1, p. 7.
231 Tyler, p. 27.
232 Distribution lists of published USSBS Reports, Folder: Pacific Survey, Box 140, Entry 3, RG 243, NACP.
233 See Chapters V and VI of this dissertation.
234 It became an official government agency with the enactment of Federal Civil Defense Act in January 1951.
236 Tyler, pp. 337-338; Garrison, pp. 40-41, 51-54.
Japanese government in its report. It was now Americans who were trapped in the same dilemma.

While later events have cast doubt about the usefulness of conventional protective measures against nuclear weapons, Tyler writes, “This judgment [in the Study 3B-1]... seemed entirely valid in 1946.” What Tyler and many people then did not comprehend was that the report was most likely a product of manipulated information, intended to sell postwar civilian defense to the public. Tyler states that the report written under Beers’ supervision was “based on what had been wrought at Hiroshima and Nagasaki, not on what could be wrought.” Actually, as we have seen, it was not even based on what had been wrought at Hiroshima and Nagasaki.

Conclusion

In his 1946 book Hiroshima, American journalist John Hersey called the six survivors who became his main characters “among the luckiest in Hiroshima.” It is unknown how

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237 It reads: “The Japanese government desired that some sort of shelter be provided for everyone, and then left the execution of the program largely to the individual. It suggested plans for types of shelters but made no effort to furnish materials nor did it provide funds...” CDD, Japan, p. 7.

238 Tyler, p. 34.

239 Tyler, p. 39. Tyler had actually fallen victim of the CDD narrative in his dissertation. For example, he states, “at Hiroshima and Nagasaki radiation had done comparatively minor damage. The atomic bomb, on careful examination, except that it was far bigger, seemed much like any other bomb.” (p. 18)

240 Speaking of civil defense planners’ downplaying of the atomic bomb, Garrison writes, “the generally poor quality of civil defense planning, most often based on data that ignored the real effects of nuclear blast and fallout, further underlined the peripheral importance of civil defense to most political leaders.” Garrison, p. 35.

many people would ever realize the fact those buildings PDD discussed in their reports were the ones that survived the bomb and were also the “luckiest.”

The three divisions that studied in Hiroshima and Nagasaki had different purposes and different agendas in writing their reports. Military personnel, for example, had vested interests in defending the conventional forces of their origin, while some others were eager to take advantage of the results to maintain people's interest in a postwar civilian defense program. But they invariably adopted a narrative that more or less limited the effects of the atomic bomb. Some of these analysts did not hesitate to modify figures and other data to this end.

These narratives would also fit perfectly with the counterfactual conclusion, and would support it as evidence. The tendencies to downplay the effects had even become more obvious in later manuscripts and the published reports—in a reinforced effort to support the early-surrender hypothesis. The Survey's effort to marshal these and other divisional reports to support the conclusion is discussed in Chapter V.

On the other hand, these reports also included accounts that demonstrated awe of the new weapon. These accounts attest to the fact that the analysts understood the implications of the emergence of the new weapon by studying the two cities in person. Together with the other narrative that appeared in the same reports or in different reports of the same divisions, which denied the notion that the bomb was absolute and revolutionary in nature, they created awkward inconsistencies that all the more differentiated the bomb from other bombs.
The terrific force of the explosion irradiates every piece of matter in the area. Investigators will...die in the same way victims of leukemia die. ...rain falling on the area will pick up the lethal rays and will carry them down to the rivers and the sea. And animal life in these waters will die. I cite these facts to illustrate the awesome force contained in the atomic bomb. It defies the imagination. Flash Gordon looks like a piker compared to it.1

As we have seen in the previous chapter, the reports of the three divisions that conducted studies on the effects of the atomic bomb demonstrated their inclination to downplay the atomic bomb. As much as they wanted to deny the notion that the atomic bomb was an absolute weapon, some of them even wanted to prove that the new weapon was not necessary to bring about Japan's surrender. While these divisions tried to conventionalize the atomic bomb, there was one single peculiar aspect of the bomb's effects that had hurt this effort: radiation. The news of delayed deaths and lingering radiation had frightened people across the globe,2 and alarmed the US government, forcing it into denying such stories.

My research reveals that such an attitude was also shared by USSBS. For example, those Survey divisions that studied the effects of the atomic bomb, with the exception of the Medical Division, hardly discussed radiation or its effects. While earlier drafts of these


2 Delayed effects of radiation and the effects of lingering/residual radiation are totally different types of phenomena. But in the early postwar period, due also to lack of knowledge, I sometimes find them being treated alike as they were both mysterious.
divisions contained references to delayed effects of radiation or the issue of lingering or residual radiation, these accounts were often removed as a whole in the published reports.

The Medical Division, on the other hand, discussed in detail what radiation had done to the people in Hiroshima and Nagasaki in a chapter, which devoted a substantial part to the atomic bomb casualties. They did this to an extent that had not been done before, setting a precedent for discourses on radiation sickness and injuries yet to be told. By doing so, the division also contributed to make the Chairman’s a-bomb report persuasive and trustworthy. The first report from the USSBS Chairman’s Office relied substantial part on the Medical Division’s report. This had likely paved the way for the two other Chairman’s reports to be also accepted as such.

In this chapter, I examine how this narrative of the effects of radiation on human beings came to be included in the Medical Division’s report to such an extent. In the course of this process, I also explore how much freedom the division had in writing the report at the time when discussion about the atomic bomb was restricted.

Committed to provide the public with a factual basis, the Medical Division may not have been totally free in discussing certain aspects or certain results of the effects of the atomic bomb, e.g., residual radiation. While the division discussed effects of the initial

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3 “Chapter III: Nature of Atomic Bomb Casualties” is the largest chapter with 46 pages of the six chapters of its report on Hiroshima and Nagasaki, excluding the Introduction (Chapter I) and the Summary and Conclusions (Chapter VIII). The Medical Division, The Effects of Atomic Bomb on Health and Medical Services in Hiroshima and Nagasaki, March 1947 (Hereafter, “Medical Division, Hiroshima and Nagasaki”).

4 See Chapter V of and Appendix III to this dissertation. And the a-bomb report, when released in June 1946, attracted the most media attention of all the three reports from the Chairman’s Office. For example, NYT alone carried four articles on the Chairman’s a-bomb report on June 30, including, “Gamma Ray Cause of 20% of Deaths” (p. 4).
radiation to an extent that had not been done before, it categorically denied the presence of residual radiation even when studies were still underway. This, as a result, had also set a precedent for the aspects of the effects of the atomic bomb to be discounted, which, as historian Sean L. Malloy asserts, might otherwise have benefited the human race to a great extent.\(^5\)

It may also have something to do with the Survey's own agenda. As the story of unknown symptoms that appeared on affected individuals attracted the public's attention, the Survey's effort was increasingly directed to demystifying the atomic bomb: that is, to deny the bomb as a mysterious and limitless force.\(^6\) While denial of residual radiation was in line with the US government's policy,\(^7\) the attitude was also in accord with the Survey's interest to conventionalize the atomic bomb.

**Medical Division Confronts CDD**

Of the five divisions that studied the effects of the atomic bomb, the Medical Division seems least confined by the inclination to ascribe Japan's surrender to conventional forces.

The discussion in the division's report—*The Effects of Atomic Bombs on Health and Medical*


*Services in Hiroshima and Nagasaki*—is limited to the scientific findings and there seems to be little political implications. Perhaps that is because the majority of its members were medical experts who had little vested interest in defending conventional forces.8

Such an attitude toward facts, therefore, was apparent when it confronted with the Civilian Defense Division (CDD)’s blatant effort to downplay the effects of the atomic bomb. Contrary to the CDD’s argument that “a considerable number of students, nurses, and patients survived” at Nagasaki Medical School because the school buildings were of concrete construction and did not collapse,9 the Medical Division revealed a different picture: “Of the 850 medical students present 600 were killed and 12 of the 16 professors were also lost... Almost all of the... occupants of the buildings were killed outright.”10 Everyone else was injured, some of which had radiation sickness and died later. The destruction of the school buildings was so great that they could not be used even for the emergency medical care.11

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8 For the list of the survey staff for Hiroshima and Nagasaki, see Medical Division, *Hiroshima and Nagasaki*, p. 1. For the whole division staff, see Beveridge, *Pacific*, pp. 203-208.

9 Actually, figures in the CDD’s Nagasaki report—“807 persons were killed, of whom about 500 were medical students”—show an accurate picture. It is quite misleading to call those survived “a considerable number” without giving the number of the entire population at the university. CDD, *Nagasaki*, p. 37; Report No. 5b, frame 652, Roll 66, USSBS ROR.

10 Medical Division, *Hiroshima and Nagasaki*, p. 10. This account is supported by evidence, information provided by Prof. Kanesiko Kitamura and Prof. Raisuke Shirabe of Nagasaki Medical School. Statistics on Nagasaki Medical School, Report No. 13d(2)c, frame 746, Roll 92, USSBS ROR. The later study by Prof. Shirabe results in 892 deaths—535 students, 42 faculty members, 206 administration officials and 109 nurses and student nurses. 長崎市役所編『長崎原爆戦災誌第1巻』、pp. 324-331.

Whereas CDD blamed the lack of medical care for the death of as many as 20,000 who died over a period of weeks following the atomic bombing of Nagasaki,¹² the Medical Division obliquely denied this narrative:

With large quantities of whole blood and adequate supportive treatment possibly 10 to 20 percent of those dying of radiation might have survived. However, it is doubtful that 10 percent of all the deaths resulting from the atomic bombs could have been saved with the best medical care; 5 to 8 percent is probably a more likely figure.¹³

Perhaps the difference in their stance with that of CDD appears most conspicuous in their handling of the number of casualties of the atomic bomb. The Medical Division questioned the casualty figures of the Nagasaki bombing collected by CDD—25,761 dead, 30,460 injured and 1,928 missing as of November 6, 1945.¹⁴ The division called it “admittedly inadequate” because they include only the number of verified deaths and those hospitalized in Nagasaki.¹⁵ The division then presented its estimates: about 80,000 deaths and 80,000-100,000 injuries in Hiroshima and about 45,000 death and 50,000-60,000 injurie

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¹² CDD, *Nagasaki*, p. 34. See Chapter III of this dissertation. Some Japanese medical experts had also spoken to this effect. For example, Chief of the Health Department of Hiroshima Prefecture, stated, “in the absence of adequate supplies and equipment and hospital facilities, many patients were thought to have died as a result of inadequate medical care.” But he also mentions cases of radiation sickness that occurred about two weeks after the explosion, and that the former cases apparently do not imply radiation sickness, contrary to CDD’s argument. Notes re interview with Dr. Takemaru Kitajima, Nov. 6, 1945, Report No. 13c(2)(b), frames 664-665, Roll 92, USSBS ROR.

¹³ Medical Division, *Hiroshima and Nagasaki*, p. 55.


¹⁵ Medical Division, *Hiroshima and Nagasaki*, p. 56.
injuries in Nagasaki,\textsuperscript{16} which were "the result of careful study by investigators who visited
the cities."\textsuperscript{17}

The cases of Hiroshima and Nagasaki were not exceptions. The division in fact
considered CDD's air-raid casualty figures of Japanese civilians for the entire country
provided by the Japanese Home Ministry—269,187 deaths, 109,871 serious injuries and
195,517 slight injuries, or 574,565 casualties in total—too small.\textsuperscript{18} Comparing the figures
with those provided directly by prefectural health divisions, the report called the Home
Ministry figures "conservative,"\textsuperscript{19} and made its discussion using the prefectural
figures—330,000 deaths and 473,000 injuries or 806,000 total casualties.\textsuperscript{20}

In its inherent mission to study the effects of the bombings on the system of public
health and medical care in Japan, the Medical Division inevitably had to deal with the
problem of the morality of indiscriminate bombings. About 10 percent of hospitals across

\textsuperscript{16} Ibid, p. 57. The report did not mention CDD's Hiroshima figures, but it was also much lower than
Medical Division's estimates—46,185 dead, 64,670 injured and 17,429 missing. CDD, \textit{Hiroshima}, p. 10.
These figures remained the same from the earliest drafts. Report No. 1c(8), frames 71, 74, 302, 305, Roll
12; Report No. 10ww(1), frames 865, 867, Roll 80, both in USSBS ROR.

\textsuperscript{17} Medical Division, \textit{The Effects of Bombing on Health and Medical Services in Japan} (Hereafter, "Medical
Division, Japan"), p. 143. The division also noted the discrepancy in the number of casualties among
students at the Nagasaki Medical School between local authorities (600 killed) and the Ministry of
Education (399 killed). (p. 20)

\textsuperscript{18} Ibid, p. 142. These figures were calculated by adding the number of casualties of Kagoshima and two
other cities, of which data was missing, to the figures shown in Appendix C-1 (pp. 242-244). For the CDD’s
account, see CDD, \textit{Japan}, p. 2.

\textsuperscript{19} Medical Division, \textit{Japan}, p. 142.

\textsuperscript{20} Ibid, pp. 142-143. There is no definite figure as to how many civilians lost their lives due to air raids
even more than 70 years after the war. The presumed deaths range from 238,475 to 557,848. The most
commonly used figure is 241,309 compiled by the Japanese Health and Welfare Ministry. 吉田裕ほか編
『アジア・太平洋戦争辞典』（吉川弘文館、2015年）、pp.108-109; 広田純「太平洋戦争における
the country were totally destroyed, with more than 20 percent of their bed capacity lost.²¹

In Tokyo, in particular, 233 of some 500 hospitals were destroyed and one-third of their 48,000 beds were lost.²² While the division never openly criticized the American bombing campaign, it deplored what they found: “The destruction of the civilian population of any country, even if it occurs as an incident in the destruction of military objectives, is not pleasant to contemplate, especially when the majority of such casualties are women and children.”²³

Having compared the damage with that of Germany, the division seems to have been awed by the extent of the overall destruction inflicted on Japan: “It is quite evident... that whatever yardstick is used, whether fatalities per ton of bomb dropped, or fatalities per month, the number of fatalities caused by bombing in Japan was proportionately much greater than in Germany.”²⁴

The division appears to have been also awed by the atomic bomb. Unlike three other divisions in the previous chapter, the Medical Division made it clear that the bomb is like no other weapons. The very beginning of its report on Hiroshima and Nagasaki reads: “It is important for one to realize the magnitude of the destructive forces since they so

²¹ Medical Division, Japan, pp. 10-11, 13.

²² Ibid., pp. 11, 14, 21.

²³ Ibid., p. 5. The photos of charred bodies of mothers and their babies on page 152 of this report eloquently speak for themselves.

²⁴ Ibid., p. 5.
completely surpass all previous concepts of destruction that one might have when thinking in terms of ordinary incendiary or high-explosive bombing."\textsuperscript{25}

It is not surprising, therefore, if the division did not trust CDD, which was committed to downplaying the atomic bomb. Perhaps this is why it did not even discuss tunnel shelters in its earlier drafts, which noted that concrete buildings were the “only shielding factors of importance” against radiation.\textsuperscript{26} The published report, however, was changed to include the following:

Earth was effective in protecting provided it was present in sufficient thickness.

Persons in Nagasaki were protected from gamma rays even close to ground zero who were behind hills or in air raid shelters dug into the side of hills or embankments.\textsuperscript{27}

Earth was also effective in protecting a small number of persons in air-raid shelters and behind hills in Nagasaki. Earth has less shielding value than concrete and several times the thickness was required to afford comparable protection.\textsuperscript{28}

\textsuperscript{25} Medical Division, \textit{Hiroshima and Nagasaki}, p. 2.

\textsuperscript{26} Report No. 13a(1), frames 71, 191; Roll 92; Report No. 1c(1), frame 870, Roll 7, all in USSBS ROR. This assertion was probably based on the interview of Lt. Col. Averill A. Liebow, a member of the Joint Commission. Record of the interview can be found in Report No. 13c(2)a, frame 659, Roll 92, USSBS ROR.

\textsuperscript{27} Medical Division, \textit{Hiroshima and Nagasaki}, p. 49; Report No. 13a(1), frames 59-60, 178, Roll 92; Report No. 1c(1), frame 825, Roll 7, both in USSBS ROR.

\textsuperscript{28} Medical Division, \textit{Hiroshima and Nagasaki}, p. 56; Report No. 13a(1), frames 72, 190, Roll 92; Report No. 1c(1), frame 832, Roll 7, both in USSBS ROR.
These accounts were included probably because of a suggestion of a reviewer who requested the division to provide “circumstances of the attack in a form consistent with the stories of other divisions.”

There is another change made to the division’s report that would make it a stark contrast from other divisions’ reports, i.e. on the effects of radiation. Among all the effects of the new weapon, the Medical Division seems to have been most alarmed by the danger of radiation, which was the most distinctive feature of the atomic bomb. Contrary to the other divisions, which demystified the bomb more in later drafts and published reports, it had come to include more detailed information about radiation’s effects in the later draft and the published report.

Medical Division Discusses Radiation

The initial radiation emitted during the atomic bomb explosion consists of gamma rays and neutrons, which would inflict invisible, lethal injuries to people who were directly

29 A memorandum from Philip J. Farley to Dr. Thompson, Feb. 26, 1946, Report No. 13a(9), frame 435, Roll 92, USSBS ROR. Farley was the principal author of the Chairman’s atomic bomb report.

30 There are at least three draft reports—one that was completed in mid-February, early July and on July 15, 1946. First of these, Report of Medical Division on Effects of Atomic Bombing on the Public Health of Hiroshima and Nagasaki, can be found in Report No. 13a(1), undated (likely mid-February 1946), frames 141-247, Roll 92; and in Report No. 1c(1), frames 840-921 (with corresponding notes for correction in frames 811-839), Roll 7, both of USSBS ROR (Hereafter, “first report”). Another draft, also undated (likely early-mid July 1946), of the Effects of Atomic Bombs on Health and Medical Services in Hiroshima and Nagasaki can be found in Report No. 13, frames 730-931, Roll 91A, USSBS ROR (Hereafter, “second report”). The latest draft, the Effect of Atomic Bombs on Health and Medical Services in Hiroshima and Nagasaki, dated July 15, 1946, is found in Report No. 13a(1), in two copies (frames 1-140, 248-404), Roll 92; and in Report No. 1c(1), July 15, 1946, frames 425-564, Roll 7, USSBS ROR (Hereafter, “third report”). There should be another or more in-between what are here called the first and the second drafts, but this author has yet to find them.
exposed to them within a radius of about 1,000 meters. Those who were near the center of the explosion became ill within two or three days and died following the onset of hemorrhagic diarrhea. Others, who were at greater distances from the center, also suffered from various symptoms one to four weeks after the explosion, even if they did not die. These include nausea, vomiting, and lassitude, as well as malaise and anorexia. Fever, leucopenia, epilation, inflammation and necrosis of the gums, stomatitis, pharyngitis, petechiae and ulceration of the lower gastrointestinal tract were also commonly seen.

The three USSBS divisions that appeared in the previous chapter—Physical Damage Division (PDD), Urban Area Division (UAD), and CDD—almost never discussed radiation effects in their published reports, except one case in the CDD’s Nagasaki report. For example, PDD mentioned the word several times as an element of the bomb’s power. It also talked about the “new effects” of the bomb and suggested that it strove to assemble the evidence on the phenomena, which obviously included the effects of radiation; yet, it did not discuss them in any other part of its lengthy reports.


32 Medical Division, Hiroshima and Nagasaki, pp. 4, 46.

33 PDD, Hiroshima, Vol. I, pp. 8-9; Vol. II, pp. 126, 129-130. The first one was in connection with the comparison of the effectiveness of the bomb with conventional high-explosive weapons. Comparison upon a tonnage or upon a plane-load-for-plane-load basis would ignore “fragmentation and earth shock damage from high-explosive weapons and radiation and incendiary damage from the atomic bomb.” (p. 126) The others were in connection with the possible construction of buildings and need of bomb shelters designed to protect against radiation. (pp. 129-130) There are also a couple of cases of using the word “radiation” to mean “initial ray of heat from the atomic bomb.” PDD, Hiroshima, Vol. II, pp. 44, 47.

34 PDD, Hiroshima, Vol. I, p. 6; Nagasaki, Vol. I, pp. 1, 9. It specifically mentions “the gamma rays.” From the earliest draft, the division kept using “gamma rays” as synonym for “radiation.” PDD, “Preliminary Findings,” Report No. 3c(28), frames 1340, undated (likely early February), Roll 52; Physical Damage from the Atomic Bomb, Preliminary not checked, p. 1, in Report No. 92a, Roll 326A, both of USSBS ROR.
PDD’s earliest preliminary report included a paragraph that explained the effects of radiation and the possible protection against it. But the whole paragraph was deleted from the later drafts and the published report. The paragraph reads:

Rays of short wavelength were released which, absorbed in sufficient quantity by the human body, resulted in death. The rays were generally referred to as gamma rays; their effects were called radiation effects. Persons exposed at distances of 2500-3000 ft. of not killed by other effects subsequently died (not immediately, but in a period of 1-4 weeks). Those exposed at 4000 ft. had perhaps a 50% chance of surviving; non-fatal effects extended to about 7000 ft. Protection against the rays was afforded by various materials, for example, 20-24 in. of concrete at 2000 ft. from the point of detonation.35

In fact, the division studied, or, at least, was involved in the study of the protection from radiation—extensively.36 The result of the study, however, was not included in its report, but in the Joint Commission’s report, instead. And the report was classified, as any information indicative of the effective protection against this radiation was restricted on national security grounds.37

35 Physical Damage from the Atomic Bomb, Preliminary not checked, p. 1, in Report No. 92a, Roll 326A, USSBS ROR.

36 See Sections 11H & 11N, the Medical Report of the Joint Commission for the Investigation of the Effects of the Atomic Bomb in Japan, Vol. VI. See, also, Note 74, Chapter V of this dissertation.

37 Memorandum by JCS, C.C.S. 919/6, June 19, 1946, Box 4, Entry 491; also in Folder: 3-A, ABC471.6 (17 Aug 45), Box 570, Entry 421, both of RG165, NACP. See, also, Chapter VI of this dissertation.
UAD did not use the word “radiation” in any part of its reports. Its preliminary reports, however, contained the following passages, which were deleted as a whole from both later drafts and the published report.

The officials questioned reaffirmed, in substance, the statements made earlier by the Japanese concerning the after-effects of the bomb on persons exposed to the site. Many persons who, immediately following the bombing, appeared to have survived without injury, subsequently died. Their temperatures rose to forty degrees centigrade (104 degrees Fahrenheit), eyebrow and head hair fell off, stool was green. These were all persons who had been exposed to the initial flash. However, similar symptoms also appeared in some individuals who were not even in the city at the time of the bombing.

A nurse from Kumamoto who entered the atomic area two weeks after the bombing and stayed in the University Hospital for four hours reportedly developed the same symptoms a week later and subsequently died.38 (Underline added)

The unknown and progressing nature of some of the after-effects delayed and complicated medical treatments.39

38 UAD, “Nagasaki Preliminary Writeup,” undated, p. 12, in Report No. 59m, frame 69, Roll 303B; An undated preliminary report on Nagasaki City, pp. 19-20, in Report No. 1c(5), frames 648-649, Roll 10; A undated preliminary report on Nagasaki City, p. 19, in Report No. 55a(13), frame 396, Roll 283A, all of USSBS ROR. The paragraph was instructed to be deleted in handwriting over the text in the Report No. 55a(13). This statement was obtained from a roundtable interrogation of Mikawa, Prefectural Chief of Police for Nagasaki, Fujimoto, Chief of the Fire Department, Mizogoshi, police official formerly in charge of Air Defense, Toyoshima police official in charge of Air Defense. The record of the interrogation can be found in “Interrogation No. D-22,” Roll 303A, USSBS ROR, p. 8.

CDD's Nagasaki report never used the word “radiation” to discuss conditions of the individual subjects who survived in cave shelters, who were apparently suffering from radiation sickness. However, it included the word in a paragraph that discussed “some interesting accounts of the delayed effects of the atomic bomb,” which described physical symptoms commonly suffered by survivors. There, CDD discussed something quite contrary to the UAD’s deleted paragraph:

The most frequent symptom noted in those exposed to atomic bomb radiation but who did not die was the loss of hair. That was regarded as the mildest of the demonstrable radiation effects. Other radiation effects in the period shortly after the bomb explosion were cited. Members of rescue squads who worked in the ruins but who had not been exposed to the bomb developed diarrhea and falling of the hair, but none of them died. (Underlines added)

40 CDD, Nagasaki, pp. 70-73. The text reads; “Subject “B” received no burns or any other injuries, but he has had a tired feeling from which he does not seem to be able to recover, and also has suffered from “gas on the stomach.” The only effect suffered by subject “C” was considerable bleeding of the teeth. Subject “D” suffered from diarrhea for about a month after the blast and seemed to catch cold very quickly.” (p. 70) “Subject “G” ...was unharmed but has been affected with diarrhea at various times since the explosion.” (p. 73) “Subject “H” further revealed that he suffered from diarrhea for 3 or 4 days following the blast and has been constantly bothered by a tired feeling.” (p. 73) See, also, pp. 162-163, and Note 152 of the Chapter III of this dissertation.

41 The first part of the paragraph reads: “Some interesting accounts of the delayed effects of the atomic bomb were obtained...first...there were many who developed symptoms of diarrhea with greenish stools and fever which could not be controlled, with death following in 8 to 10 days: second, those who developed a generalized petechial eruption (purpura hemorrhagica) and fever, and died within 14 days.” CDD, Nagasaki, p. 34.

42 CDD, Nagasaki, p. 34. The same account can also be found in its two drafts. Report No. 5b Manuscript, frame 645; Report No. 5, frame 90, both in Roll 66, USSBS ROR.
The CDD’s account was allegedly based on information of an informant, whom it referred to as “an experienced physician and an intelligent observer, and who had occupied the position of director of the prefectural health section for the previous five years.” The purpose of this account is clear: to establish the fact as presented by some reliable Japanese that residual radiation did not kill anyone. We will see more of this narrative later.

Except the case of the CDD’s account above, these divisions hardly discussed radiation. This attitude was in line with the US government’s policy at that time when discussion of radiation had been categorically banned. A month after the end of the war, President Harry S. Truman issued a directive, asking relevant individuals to withhold information concerning various aspects of the atomic bomb. A military order from the United States Pacific Command to all units under the command, dated Sept. 25, 1945, reads:

“In view of Jap propaganda efforts radio active [sic] effects should not be discussed except by people with complete knowledge.”

43 Ibid.

44 The request to the country’s press reads: “In the interest of the highest national security, editor and broadcasters are requested to withhold information (beyond the official release) without first consulting with the War Department, concerning scientific processes, formulas, and mechanics of operation and techniques employed in the operational use of the atomic bomb: location, procurement and consumption of uranium stocks; quality and quantity of production of these bombs; their physics and characteristics; and information as to the relative importance of the various methods or plants, or of their relative functions or efficiencies.” To the administration, another memorandum was issued, which reads: “Appropriate department of the Government and the Joint Chiefs of Staff are hereby directed to take such steps as are necessary to prevent the release of any information in regard to the development, design or production of the atomic bomb; or in regard to its employment in military or naval warfare, except with the specific approval of the President in such instance.” War Department Bureau of Public Relations, “Note to Editors,” Sept. 14, 1945; Memorandum for the secretaries of State, War, the Navy, the Joint Chiefs of Staff and the Director of OSRD, Sept. 15, 1945, both in Folder: 380.01 (Security), Box 66, Entry 5, MEDR.

45 Incoming message from CINCPAC to ALPAC, Sept. 25, 1945, Box 156, Entry 4, RG 243, NACP.
The Medical Division, on the other hand, seems to have tried to pursue facts about radiation, just as it did with the death tolls of the Japanese civilians. This attitude is more apparent in the later drafts and published report than the earliest draft. For example, its second and third drafts, as well as the published report contains an added paragraph, which argued:

The importance of radiation as a cause of death is definitely underrated by the foregoing presentation... There is a reason to believe that if the effects of blast and fire had been entirely absent from the bombing, the number of deaths among people within a half mile radius would have been almost as great and the deaths among those within a 1-mile radius would have been only slightly less. The principal difference would have been in the time of the deaths. Instead of being killed outright as were most of those people, they would have survived for a few days to 3 to 4 weeks, only to die of radiation disease.46

This observation is accurate from the current standard. According to a study made in 1998, people in Hiroshima were first exposed to a shower of neutrons, which were released in one-millionth second after the fission when the fireball had not even been

46 Medical Division, *Hiroshima and Nagasaki*, p. 54; second draft, p. 56; third draft, p. 56. The added texts total five paragraphs in the pages 54-55 in the published report. The paragraphs also talk about the lack of treatment in the two cities and the percentage of potential lives saved with proper and timely treatment. See, also, request for corrections by a reviewer attached to the first draft in Report No. 1c(1), frames 828-829, Roll 7, USSBS ROR.
formed. Residents of a Japanese-style house located 130 meters from GZ, for example, received a total of 57.7 Gy of neutrons and gamma rays, enough to destroy their whole body’s cells. At one kilometer from GZ, it is estimated that people received a total of 4 Gy of radiation, which was enough to kill half of them.48

The same study describes radiant heat, which reached the maximum temperature 0.2 seconds after the explosion, burned to death all the people outside buildings within 2 kilometers from GZ in three seconds.49 The following blast, with a pressure of 7 tons/m² at one kilometer from GZ, licked the whole city center that extended 4 km in diameter in 10 seconds, shattering all the window glasses, which, together with other debris, became missiles in whorls that blew people up and crushed them down.51 The already dead city was then assailed by firestorms that occurred approximately 20 minutes after the explosion and kept burning for hours, turning everything into ashes.52 The Medical Division was right when they said: “No doubt many of them theoretically died many times over in that a single

47 NHK Hiroshima Bureau, Genbaku Toka Jubyo-no-Shogeki (The impact of the atomic bomb dropped on Hiroshima in the first 10 seconds from the moment of fission), Tokyo: NHK Publishing, 1999, pp. 46-156. The original documentary version of the program was aired nationwide on Aug. 6, 1998.
48 Ibid., pp. 73-76.
49 Ibid., pp. 118, 127-128.
50 NHK staff tried to recreate the pressure of 20 tons/m² at 2 km from GZ, which the Industrial Promotion Hall, located 160 meters from GZ, received, using a shock wave generator. But it could not, since that strong pressure could destroy the generator. Ibid, pp. 124-125.
51 Ibid, pp. 124-156.
52 Ibid, pp. 161-162.
person may have been subjected to several injuries any one of which alone would have been fatal.“53

The division also provided an estimate of the incidence of radiation effects, which it said was no less than 15 to 20 percent cause of the deaths, a figure more significant than any other estimation that had been made by then.54 It was suggested to provide the estimate “at least within certain ranges” by a member of the USSBS Secretariat.55 In the report, the division even called “far too low”56 the estimate—that radiation was responsible for 5 to 7 percent of the total deaths in the two cities—made earlier by Colonel Stafford L. Warren, Chief of the Medical Section of the Manhattan Engineer District (MED) who led one of the district’s two survey teams.57

53 Medical Division, *Hiroshima and Nagasaki*, p. 53; first draft, p. 38; second draft, p. 54; third draft, p. 54.

54 Medical Division, *Hiroshima and Nagasaki*, p. 54; second draft, p. 56; third draft, p. 57. See, also, request for corrections by a reviewer attached to the first draft in Report No. 1c(1), frames 828-829, Roll 7, USSBS ROR. NavTechJap states 15 percent of 4,030 survivors in Hiroshima randomly sampled were suffering from the effects of radiation. NavTechJap, *Atomic Bombs, Hiroshima and Nagasaki, Article 1, Medical Effects*, December 1945, pp. 26-27. MED Group’s report used “7 per cent or less.” (p. 28) The 1951 report of the Joint Commission concluded that radiation injury was seen among 37.4 percent of injured persons in sample group studied in Hiroshima and 33.7 percent in Nagasaki. *Report of the Joint Commission, Vol. 1*, p. 14.

55 Memorandum from Philip J. Farley to Thompson, Feb. 26, 1946, Report No. 13a(9), frame 436, Roll 92, USSBS ROR.

56 Medical Division, *Hiroshima and Nagasaki*, p. 54; second draft, p. 56; third draft, p. 57. See, also, request for corrections by a reviewer attached to the first draft in Report No. 1c(1), frames 828-829, Roll 7, USSBS ROR.

57 Statement of Col. Stafford L. Warren, Feb. 15, 1946, Hearings before the Senate Special Committee on Atomic Energy, p. 510. Warren also said “the gamma radiation and allied radiation effects did not add a great deal to what would have happened if the same amount of energy had been released by TNT.” Almost 10 years later, Warren divulged some of the cover-ups of the atomic bomb effects by the US government. During a speech on June 23, 1954, he declared that the loss of life from atomic bombs dropped over Hiroshima and Nagasaki was at least three times greater than the published toll. See, for example, “Scientist Says Truth of A-Bomb Toll Not Told,” *Santa Cruz Sentinel*, June 24, 1954, p. 2.
While attributing more death to radiation, however, certain other aspects of radiation effects were selectively denied—effects of radiation on reproduction—in later drafts and published report. For example, an account regarding pregnant women in the earliest draft was changed in the published report as follows:

[first draft]
In the group between 6,500 and 10,000 feet about 1/3 have given birth to apparently normal children. Two months after the explosion of the bomb the incidence of miscarriages, abortions and premature birth was 27 per cent as compared to a normal of 6 per cent. It must be admitted that many factors other than radiation may contribute to this increased rate.58

[published report]
In the group of pregnant women between 6,500 and 10,000 feet who could be traced, about one third have given birth to apparently normal children. The remainder had not reached the term of the pregnancy or their pregnancy had terminated prematurely. No definite effects attributable to the bomb have been seen in these women. Records of the Hiroshima Prefectural Health Department revealed that 2 months after the explosion of the bomb the incidence of miscarriages, abortions and premature births for the entire city, without consideration of whether the women were even in the city at the time of the bombing, was 27 percent as compared with a rate of about 6 percent prior to the

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58 The first draft, p. 27.
bombing. Other factors such as malnutrition, emotional disturbances and poor living conditions may play a large part in this increase. As a matter of fact, there is no concrete evidence upon which one can say that radiation alone played any definite part.59

(Underlines added)

As we can see, the account was added by sentences and a clause, which denied in more unequivocal terms the relevance of radiation to the increase in the incidence of miscarriages, abortions and premature births. Likewise, a sentence to the same effect was added at the end of the summary for the same chapter of the later drafts and the published report, which reads: “The information relative babies born of mothers exposed to the effects of the bombs is inadequate for any definite statement relative to radiation effects on these babies.”60

It is not certain what motivated the division to change the account. Perhaps these changes were made in response to suggestions by MED. Brigadier General Leslie R. Groves, MED Commander, considered that USSBS placed “undue emphasis on the effects of gamma radiation from the bombs, particularly with respect to impairment of the sex functions.”61 After all, these changes likely made little difference in the significance of the report. The omen of the incident was already obvious. The following accounts about pregnant women

59 Medical Division, Hiroshima and Nagasaki, p. 53; second draft, p. 52; third draft, pp. 52-53.

60 Medical Division, Hiroshima and Nagasaki, p. 57; second draft, p. 63; third draft, p. 63.

61 Memorandum to the Secretary of War from L. R. Groves, June 19, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, Entry 106, RG 107, NACP. The memo continued: “Too much emphasis on the sex phase will supply the more lurid news publications with openings for sensational stories.” See, for more detail, Chapter VI of this dissertation.
exposed to the explosion near the center, which were left intact from the first draft, spoke for itself with an un-erasable impact:

All or nearly all pregnant women in various stages of pregnancy who survived and who had been within 3,000 feet of the center of the explosion have had miscarriages. Even up to 6,500 feet they have had miscarriages or premature infants who died shortly after birth.\(^\text{62}\)

Abortions and miscarriages were the rule in pregnant women within 3,000 feet and such effects may have extended to greater distance.\(^\text{63}\)

These accounts stayed in the report likely because they were supported by evidence. The report of the Medical Section of the Joint Commission for the Investigation of the Effects of the Atomic Bomb in Japan (Hereafter, “the Joint Commission”) contains results of investigations by the Japanese researchers that turned out the grim picture on the effect of the atomic bomb on pregnancies (See Table 1 below).\(^\text{64}\) It is apparent that the USSBS Medical Division relied its account on this study.

\(^{62}\) Medical Division, *Hiroshima and Nagasaki*, p. 53; first draft, p. 27; second draft, p. 52; third draft, p. 52.

\(^{63}\) Medical Division, *Hiroshima and Nagasaki*, p. 57; first draft, p. 32; second draft, p. 63; third draft, p. 63. In the first draft, it was “extended to 8-10,000 feet” instead of “extended to greater distance.”

The Joint Commission’s report also includes an account that reads: “The effects of
the atomic bomb on pregnancy was studied with the help of approximately one-third of the
local obstetricians and midwives. These specialists had attended 182 women in the period 9
August to 8 November 1945. Of these pregnancies, 50, or 27.5% terminated abnormally.
According to their clinical records, during the period 9 August 1944 to 8 August 1945, 99, or
6.1% of pregnant women they attended had miscarriages or delivered prematurely.” The
Medical Division’s earlier account most likely came from this one or the one by the Japanese,
on which the Joint Commission based their studies.

The report of the British Mission to Japan, which also relied on the Joint Commission
for information on medical effects of the atomic bomb, also contains the identical data.66

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65 Appendix 1 (4N) Resume of Studies by Japanese Doctors in Nagasaki, Report of the Joint Commission,
p. 1. The Medical Division mentions Hiroshima Prefectural Health Department as the source of the data
likely because it was first accumulated by the department from the local obstetricians and midwives.

66 The British Mission to Japan, The Effects of The Atomic Bombs at Hiroshima and Nagasaki, p. 17. It
reads: “At distances up to 1,000 yards from the centre of damage, pregnant women who survived have
had miscarriages. At distances up to 1 1/4 miles from the centre of damage, pregnant women who
survived have had either miscarriages or premature infants who died very soon. Even beyond this range,
up to nearly 2 miles, only about one-third of pregnant women have given birth to what appear to be
normal children. Two months after the explosion miscarriages, abortions, and premature births
These facts demonstrate those accounts evidenced by firm data remained intact, while deductions based on these data—attributing the results to radiation—became the subjects of denial and deletion. This policy of discussing only evinced facts seems to have also applied to the issue of residual radiation, but not properly.

Residual Radiation Denied

As soon as the first atomic bomb was used in action, the US officials were alarmed by the danger of the publicity about radiation, when an article distributed by INS on August 7, 1945, described the bomb’s long-term effects. The article written by Dr. Harold Jacobson claimed, “Hiroshima will be a devastated area not unlike our conception of the moon for nearly three-quarters of a century.”

It was the very first account that revealed the possible long-term effects of the bomb that is known as the residual or lingering radiation. Residual radiation refers to radiation that is emitted after one minute from the instance of an atomic explosion. It mainly comes from fission products (later known as “fallout”) and to a lesser extent from uranium and throughout Hiroshima were nearly five times as frequent as in normal times, and formed more than one quarter of all deliveries.”

A physicist and a graduate of the University of Chicago, Jacobson worked on the atomic bomb project in the Oak Ridge, Tenn., plant and at Columbia University. He was associated with Philip E. Wilcox, Inc., New York research engineers, at the time he wrote the statement.

Jacobson, “Death Will Saturate Bomb Targets For 70 Years,” p. 1. While there are more than 100 newspapers that carried the article about the War Department’s denial of the Jacobson’s statement, there are only a handful of papers that carried the original INS article of Jacobson’s statement. Analysis by the author of the results of a database research using Newspapers.com.
plutonium, which escaped fission during the detonation, as well as radioactivity induced by the interaction of neutrons with various elements present in the earth, sea, and air.\(^69\)

The story was quickly denied by a statement of Dr. J. Robert Oppenheimer, director of Los Alamos Laboratory, issued by the War Department.\(^70\) He said, “in the opinion of the most competent experts who have been studying all phases of the effects of the bomb for a number of years there is no basis for Dr. Jacobson’s speculation with respect to radioactivity...there is every reason to believe there was no appreciable radioactivity on the ground at Hiroshima and what little there was decayed very rapidly.”\(^71\) Jacobson, after being questioned by the Federal Bureau of Investigation, renounced his earlier statements as having been merely his opinions, only had connection with the Manhattan Project in a minor official capacity.\(^72\)

The control of publicity did not help War Department much. With or without Jacobson’s statement or its suppression, the media would speculate on the possible lethal


\(^71\) *Ibid.* This statement actually contradicts what Oppenheimer had revealed before the bomb was used. See p. 215 of this chapter.

\(^72\) “70-Year Effect of Bombs Denied,” *NYT*, Aug. 9, 1945, p. 8; “Atom Bomb's Radioactivity Fades Rapidly,” *WP*, Aug. 8, 1945, pp. 1, 2. Jacobson’s story was reviewed and passed by the Office of Censorship before publication because the radioactive property of uranium was generally known scientific fact. The office also took it for granted that Jacobson had been properly briefed as to what he might say by the Manhattan Project. Press Memo by Day Thorpe, Aug. 7, 1945; Press Memorandum by Theodore F. Koop, Aug. 8, 1945, both in Folder: Aug 1945, Box 481, RG216, NACP; Washburn, Patrick, S., “The Office of Censorship's Attempt to Control Press Coverage of the Atomic Bomb During World War II,” July 1988, ERIC Document ED295201, p. 32.
power of this new element, and it was eager to confirm the fact as soon as possible.\textsuperscript{73} For example, citing experiments conducted at the University of California radiation laboratory, Howard W. Blakeslee, Associated Press Science Editor, assumed “if the temporary neutrons from the ground lasted as much as a day, which would be a long time for such induced secondary activity, Japanese going into the center of the area on rescue missions might receive serious neutron damage to their bodies from the earth.”\textsuperscript{74}

How prevalent was the talk of residual radiation and its possible effects is also apparent in the USSBS documents. For example, referring to medical experts of the MED Group, who were soon going into Japan, Rear Admiral Ralph A. Ofstie, a USSBS senior naval member who headed the Naval Analysis Division, told D’Olier that this group was “particularly interested in the study of delayed radiation from the bombs.”\textsuperscript{75} PDD’s Hiroshima report also suggests how all the study parties to Japan had waited for possible residual radiation to dissipate before entering the two cities. It reads: “As soon as it was considered reasonably safe to enter the city of Hiroshima, numerous investigations... were undertaken by different agencies.”\textsuperscript{76}

\textsuperscript{73} Bigart, Homer, Hiroshima Ruin Is Scrutinized in Photographs, \textit{New York Herald Tribune}, Aug. 9, 1945, p. 12; Lee, Clark, \textit{One Last Look Around}, NY: Duell, Sloan and Pearce, 1947, p. 78. Bigart, one of the journalists who entered Hiroshima on Sept. 3, 1945, referring to people and a train moving in the outskirts of the Hiroshima, said, “This was a matter of interest since scientists had warned that the lethal effect of the atomic blast might linger for many hours.” Lee, another member of the press tour to Hiroshima, wrote, “Before going to Hiroshima...we feared we might expose ourselves to lethal doses of radiation.”


\textsuperscript{75} “Atomic Bomb Survey in Japan,” a memorandum from Ralph A. Ofstie to D’Olier, Aug. 30, 1945, Folder: Outgoing Letter File, 1945, Box 2, Ralph A. Ofstie Papers, NHHC.

In the meantime, stories from the Japanese news sources appeared, about mysterious delayed deaths, of which toll was mounting. These accounts described the uncanny effects of the bomb that made even those who had suffered no visual injuries from the explosions weakened after a few days. Hiroshima was said to have been peopled by a “ghost parade” where the injured pleaded to kill themselves because of the pain. These stories of delayed death were terrifying enough but it was the ones that appeared two days later that disturbed the US government. They claimed that the people who entered the city after the explosion also suffered the same symptoms as those who were in the city at the moment of detonation. The US government denied such a claim, saying they were Japanese propaganda to win international sympathy. But this denial would soon face a challenge this time by the Allied sources.

When the occupation forces arrived in Japan, Hiroshima was designated as off-limits to these incoming foreign individuals. However, about a dozen correspondents from major Western media reached the city on Sept. 3, 1945, and their stories started to

77 “Tokyo Puts Toll of Atomic bombs At 190,000 Killed and Wounded,” NYT, Aug. 23, 1945, pp. 1, 5; “480,000 Japs Left Dead, Wounded, Homeless By Hiroshima, Nagasaki Atom Bomb Attacks,” WP, Aug. 23, 1945, pp. 1-2. These stories were dispatched by Domei and recorded by the UP.

78 Ibid.

79 “Japanese Stress Hiroshima ‘Horror’,” NYT, Aug. 25, 1945, p. 3; The Associated Press, “30,000 Died Of Burns In 2 Weeks After Attack,” WP, Aug. 25, 1945, pp. 1, 7. These stories were based on Tokyo broadcasts.


82 These correspondents include Wilfred Burchett, an Australian correspondent for London’s Daily Express, and a group of American correspondents in a press tour organized by AAF. The press tour was
appear in newspapers and radio broadcasts in the UK and across the US before long. And
the stories they wrote based on what they saw and heard in the city turned out to be little
different from the Japanese dispatches.83

“...In Hiroshima, 30 days after the first atomic bomb destroyed the city and shook the
world, people are still dying, mysteriously and horribly—people who were uninjured by the
cataclysm—from an unknown something which I can only describe as atomic plague.”84 The
famous front-page article by Wilfred Burchett, Australian correspondent, in the London Daily
Express declared. “In these hospitals I found people who, when the bomb fell, suffered
absolutely no injuries, but now are dying from the uncanny after-effects,” he wrote. “For no
apparent reason their health began to fail. They lost appetite. Their hair fell out. Bluish spots
appeared on their bodies. And the bleeding began from the ears, nose and mouth.”85

organized as part of AAF’s publicity campaign dubbed “STINKO Project,” which was aimed at featuring
the roles AAF had played in bringing about Japan’s capitulation. The members include Vern Haugland of
the Associated Press (AP), Clark Lee of International News Service (INS), James McGlincy of the United Press
(UP), Guthrie Jannsen of NBC, Bill Downs of CBS, Bernard Hoffman of Life magazine, John Bockhorst of MGM
“News of the Day,” Stanley Troutman of Acme Newpictures, William H. Lawrence of the NYT, Homer Bigart of
the New York Herald Tribune, Frederick Opper of ABC and Bob Brumby of MBS. Burchett is often believed to
be the first journalist to arrive in Hiroshima, but these American correspondents visited the city on the
same day as Burchett and they encountered each other. And stories by these Americans made it into
newspapers or radio broadcasts earlier than Burchett’s. See Shigesawa, Atsuko, Genbaku-to-Ken’etsu,

83 See, for example, Lawrence, W. H., “Visit to Hiroshima Proves It World’s Most-Damaged City,” NYT, Sept.
5, 1945, pp. 1, 4; Bigart, Homer, “A Month After the Atom Bomb: Hiroshima Still Can’t Believe It,” New
York Herald Tribune, Sept. 5, 1945, pp. 1, 4; Haugland, Vern, “U.S. Correspondents Told “People Hate You
and Think You Are Fiendish and Cruel,” “ Boston Evening Globe, Sept. 4, 1945, pp. 1, 6; McGlincy, James F.,
“First U.S. Eyewitness Tells Hiroshima Devastation,” Los Angeles Times, Sept. 4, 1945, pp. 1, 2; Lee, Clark,
“53,000 Japs Dead from A-Bomb Attack on Hiroshima; City Unsafe for Five Years, Doctor Says,” The Port
Arthur News, Sept. 4, 1945, p. 10. Also, the four correspondents for NBC, ABC and MBS broadcasted their
stories on Sept. 3. See “What the Atom Bomb Did to Hiroshima: Most Terrible Destruction in World,” PM,
Sept. 4, 1945, p. 5; sound recording, “Description of Hiroshima,” Sept. 3, 1945, Special Media Archives
Services Division (NWCS), NACP.


85 Ibid., p. 1.
Burchett’s story not only reminded readers of the Jacobson’s statement (city made
inhabitable) and the Japanese propaganda (mysterious delayed death), but also connected
what was possibly residual radiation with poisonous gas. Burchett wrote: “My nose
detected a peculiar odour unlike anything I have ever smelled before… They believe it is
given off by the poisonous gas still issuing from the earth soaked with radioactivity released
by the split uranium atom.”86

Often eclipsed by the heroic story of Burchett’s solo adventure to Hiroshima, and his
fight against US imperialism throughout his life,87 stories written by American
correspondents, some of which appeared earlier than Burchett’s,88 likely disturbed the US
government even further.

Some said... all who had been in Hiroshima that day would die as a result of the bomb’s
lingering effects. ...persons who had been only slightly injured on the day of the blast
lost 86 per cent of their white blood corpuscles, developed temperatures of 104
degrees Fahrenheit, their hair began to drop out, they lost their appetites, vomited
blood and finally died.89

86 Ibid., p. 1.

87 For Burchett’s life and career, see Burchett, Wilfred, Shadows of Hiroshima, London: Verso Editions,
1983; Burchett, Wilfred, George Burchett and Shimmin Nick, eds., Rebel Journalist: The Autobiography of

88 Radio broadcasts were aired within Sept. 3, 1945, and some UP, AP and INS stories appeared in
newspapers on Sept. 4, 1945.

Many of the published articles by these correspondents have the word “delayed” in their dateline. Some of
the stories also contain comments and inserts by editors, which were based on the government view and
that in effect cast doubt on the accounts.
All of the wounded as well as many who received no wounds will also die. Thousands are in hospitals around Kure with only minor burns the size of a quarter on the hand or face. But these victims suffer from extreme nausea with temperatures as high as 104. They cough up blood. Their white corpuscles count decreased rapidly. All of these will probably die. Instruments show that there is still much radium scattered in small particles over the ground. This, the officials believe, will not trouble anyone who is in the area only a short time, but it may affect those who live there.90

I wish I had never seen Hiroshima. It was a terrifying sight. Hiroshima... may never rise again. It cannot rebuild at least for six years. ...it may be safe to rebuild the city after six years, but not before that time. ...People are still dying from the effects that the Japanese surgeon described as radio malaise. There are at least 5,000 people waiting to die. And they are dying at a rate of about 100 a day.91

The US government grew increasingly anxious over these stories. They have not only confirmed phenomena of delayed death from initial radiation but also suggested the existence of lingering radiation and its possible effects. And these stories were written by Americans and read by the American public. “News stories by newspaper men who visited Hiroshima recently are causing considerable trouble here,” wrote Major J. A. Derry,

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91 CBS news correspondent Bob Brumby, description of Hiroshima, Sept. 3, 1945, Control No. 200-G-461, David Goldin Collection, 1932-ca. 1952, Special Media Archives Services Division (NWCS), NACP.
assistant to General Groves in Pentagon. Referring to the MED’s study groups, Derry asked, “When will our parties reach Hiroshima and Nagasaki? ...We must be able to meet the points raised in these stories.”

That was exactly what Brig. Gen. T. G. Farrell, another assistant to Groves and chief of the MED atomic bomb mission to Hiroshima and Nagasaki, did when he spoke at a press conference held in Tokyo on Sept. 12, 1945. Farrell “made it clear that the weapon's chief effect was blast, and that only in a limited area...was there any radioactivity and this exclusively at the moment of the explosion.” (Underline added) Farrell denied that the bomb released poison gases. He did not deny the presence of residual radiation but told the press it was "not sufficient to be dangerous." Some persons who suffered burns that were non-fatal in themselves now were dying from a decrease in the number of white corpuscles.

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92 Top secret telegram message from Derry to Commanding General, 313th Wing 21st Bomber Command, Tinian, Sept. 5, 1945, Folder: 1946 TS, Box 2, Entry NM-15 197, RG341, NACP. Since Burchett’s story was hardly reprinted or cited in the US, it is apparent that Derry specifically referred to stories written by American correspondents.

93 Ibid.

94 It was arranged to be released on or after Sept. 12 likely to coincide with the stories from the Trinity site discussed below. Statement by Brig. Gen. T. F. Farrell, Chief, Atomic Bomb Mission, Tokyo, Japan, Sept. 12, 1945, Folder: 10 Atomic Bomb Mission #1, Box 785-11; Top Secret telegram for Farrell from Commanding General, 313th Wing, Sept. 11, 1945, Folder: 3 Atomic Bomb Mission, Box AG-8, both of RG331, NACP.


96 Statement by Farrell, Tokyo, Sept. 12, 1945; Kaempfert, Waldemar, “Science in Review: Radiologists Determine the After-Effects of Explosions of Atomic Bombs,” NYT, Sept. 16, 1945, p. E9. We have to note that the evidence, the data, was collected a month after the explosion.
he said. But it was not due to residual radioactivity but to the powerful gamma rays shot out from the bomb at the moment of explosion.  

It was also asserted that the atomic bomb exploded at a high altitude in both Hiroshima and Nagasaki greatly reducing the absorption of the gamma rays by the ground. This American official view stands up to this day. According to one of the most definitive studies in the US on the effects of the atomic bomb, the primary hazard of the residual radiation results from the creation of fallout particles. “In the case of an air burst, particularly when the fireball is well above the earth's surface,” the study says, “all of the weapon residues, in the form of very small particles, will have risen to such a height that the nuclear radiations no longer reach the ground in significant amounts.”

In the meantime, Groves made sure that the journalists in the US would not be bought by the stories written earlier by their colleague correspondents in Japan. On Sept. 9, 1945, he and Oppenheimer accompanied a group of journalists, including AP's science editor Blakeslee, to the Trinity site where the atomic bomb test was conducted on July 16 to prove there was no residual radiation.

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100 Ibid., p. 388.

There might be a reason why they needed to deny residual radiation. Using weapons that would produce a poisonous effect would be akin to chemical warfare, which had been prohibited by international law. Groves and some Manhattan Project scientists knew before Hiroshima of the possibility of lingering radiation to be produced in the bombing.\textsuperscript{102} Oppenheimer, for example, suggested in May 1945 “monitoring will be necessary if this area is to be entered within some weeks of the primary detonation.”\textsuperscript{103} MED’s investigations in Hiroshima and Nagasaki were organized probably because of this suggestion.\textsuperscript{104} And Groves and Oppenheimer were also aware of the illegality of chemical warfare, and of the poison gas analogy of radiological warfare.\textsuperscript{105}

This knowledge of the chemical warfare analogy of poisonous weapons was not limited to these Manhattan Project officials and scientists. In June 1945, only two months before dropping the bomb on Hiroshima, for example, the US military had confirmed the possible illegality of such weapons when they considered using LN8—an agent that

\begin{footnotesize}
\textsuperscript{102} Malloy, pp. 523-527, 534-535, 541-543. The Joint Commission explains that the term “residual radioactivity” refers to “certain radiologic phenomena” that was discovered in Hiroshima and Nagasaki after the bombing, but it was warned as early as March 1940 in England it would be emitted by the atomic explosion. \textit{Report of the Joint Commission}, Vol. 1, p. 38; Malloy, p. 522.

\textsuperscript{103} Oppenheimer, Memorandum for Thomas Farrell, May 11, 1945, File 5G, CTS. It is apparent that Oppenheimer was trying to downplay the possible effects of residual radiation when he added, “The probable results of monitoring will be that it is quite safe to enter.”

\textsuperscript{104} There was even a report prepared in May 1945 by a MED scientist that allegedly made predictions of possible radiation dosages to be received in a target city. The report, V. F. Weisskopf, “Neutron and gamma ray effects after the nuclear explosion, II,” Manhattan District Report LA-250, is mentioned in Tybout, Richard A., “Radiation in Hiroshima and Nagasaki,” April 6, 1946, Box 92; and included in the references of Pace, Nello, and Robert E. Smith, “Measurement of Residual Radiation Intensity at the Hiroshima and Nagasaki Atomic Bomb Sites,” NMRI-160A, April 16, 1946, Box 90, both of Entry 6, MEDR. The actual report has remained classified and not available for the public access. Response to the author’s email inquiry from Los Alamos National Laboratory Research Library on Feb. 28, 2019.

\textsuperscript{105} Malloy, pp. 527-532.
\end{footnotesize}
destroys food crops—against Japan. Until then the US had warned the enemy country of retaliation in kind only when it would attack the Allied nations or the US with chemical weapons. In its report dated June 11, 1945, the Joint Staff Planners and the Joint Logistics Committee recommended the Joint Chiefs of Staff (JCS) not to attempt to use the chemical in 1945, but would restudy the subject in January 1946. Because, if used in 1945, the committee asserted, its effects could be only felt late in 1946 when occupational forces would be there.

As to the use of chemical weapons, it was the opinion of the Judge Advocate General at that time that the U.S. is “not bound by any treaty which specifically exclude or restricts the use of chemicals whether toxic or non-toxic in time of war.” However, it was also his opinion that: “evidence warrants a conclusion that a rule of international law has developed by which poisonous gases and those causing unnecessary suffering are prohibited. This prohibition does not constitute a complete ban on all gases and chemical substances. A distinction exists between the employment of poisonous gases against the enemy and the use of chemical agents to destroy property such as natural vegetation or crop


107 “Enclosure ‘A,’” Policy on the Use of Chemical Agents for the Distribution of Japanese Food Crops, JCS 1371/1, June 1, 1945, Folder: ABC 475.92 (25 Feb 44) Sec 1-C, Box 578, Entry 421, RG 165, NACP. This opinion of the Judge Advocate General is included as citation and it is not clear when he made this statement. For the discussion on radiological warfare within Manhattan Project, see Malloy, pp. 527-528.

108 “Appendix to Enclosure ‘A,” Facts bearing on the Problem, JCS 1371/1, June 1, 1945, p. 5, Folder: ABC 475.92 (25 Feb 44) Sec 1-C, Box 578, Entry 421, RG 165, NACP. In 1925, the United States took the initiative of convening a diplomatic conference in Geneva, and a multinational protocol (Geneva Protocol) was signed by most states prohibiting the use of poison gas and biological weapons in war. The US, however, did not ratify the protocol until 1975.
cultrations.” The Judge Advocate General added, “the use of this particular class of chemicals to destroy enemy crops would not violate any rule of international law, upon condition, however, that such chemicals do not produce a poisonous effect upon enemy personnel either from direct contact, or indirectly from ingestion of plants and vegetables which have been exposed thereto.” (Underline added)

The analogy of this judgment is clear: the use of the atomic bomb, if it affects the enemy population with its poisonous effect, would be illegal. Even if they did not know that the atomic bomb was being developed or that the bomb had such an element as radiation before Hiroshima, military leaders should have come to understand what it implied when they read stories of the mysterious death from the bomb. It is not difficult to imagine Jacobson had reminded them of the poison gas analogy. Identifying the atomic bomb as a chemical weapon would not only criminalize those responsible for using the bomb, but also jeopardize the country’s future path in atomic research and development.

109 Ibid., pp. 5-6.

110 Ibid., p. 6. Austrian journalist Robert Jungk evinced that the Judge Advocate General of the Navy also held such a view when he was asked to give his opinion concerning crop-destroying biological weapons shortly before the decision to drop the atomic bomb was made. Jungk, Robert, James Cleugh, trans., Brighter Than a Thousand Suns: a Personal History of the Atomic Scientists. Harmondsworth, UK: Penguin Books, 1964, p. 168; Alperovitz, Gar, The Decision to Use the Atomic Bomb, NY: Vintage Books, 1995, Note 74, p. 756.

111 There is no pre-Hiroshima evidence that point to the fact that US government officials made efforts to minimize deadly fallout to avoid any contention that poison gases were being used. But, there was post-Hiroshima uneasiness among US government officials about the potential association between the atomic bomb and poison gas. Bernstein, “Doing Nuclear History,” pp. 27-36; Tannenwald, Nina, The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945, NY: Cambridge University Press, 2007, p. 97.

112 Malloy, p. 518.
According to historian Sean Malloy, there is no evidence that points to the fact that high-level decision makers in the administration, including President Truman, were informed of the radiological effects of the atomic bomb before Hiroshima, nor that suggest a coordinated conspiracy to conceal the information from them.\textsuperscript{113} For the Groves’ part, Malloy asserts, “As a tireless booster of the bomb, he undoubtedly had no desire to focus on or draw attention to aspects of the project that might raise troubling questions about its use.”\textsuperscript{114}

There is no doubt Groves was aware of the possible radiological effects before the bomb was used. When asked about the presence of radioactivity during the hearing at the Senate Special Committee on Atomic Energy in November 1945, Groves repeatedly denied the presence of residual radiation and made it clear that he and his men had both the knowledge and concern about residual radiation, when he said, “we hoped to avoid that, and we did avoid that.”\textsuperscript{115} And he added, “if it was a choice between radioactivity on a few Japanese or even a number of thousands of Japanese or a case of saving 10 times as many American lives, I would go the American way on that question without any hesitation.”\textsuperscript{116}

\textsuperscript{113} Malloy, pp. 535, 537-538.

\textsuperscript{114} Malloy, p. 540. For Groves’ willingness to use the bomb, see Norris, Robert S., Racing for the Bomb: General Leslie R. Groves, the Manhattan Project’s Indispensable Man, South Royalton, VT: Steerforth Press, 2001, pp. 376-378.

\textsuperscript{115} Statement of Maj. Gen. Groves, Hearings, Senate Special Committee on Atomic Energy, Nov. 28, 1945, p. 33. How suspicious the War Department had looked is apparent in the following comment by Brian McMahon, chairman of the special committee. “It seemed to me that the War Department had made a great deal of the fact and sought to emphasize it time after time, that there was no harm from radioactivity. Of course, if you are simply telling the fact, that is one thing, but its very reiteration seemed to me to indicate that there was some feeling on the part of the War Department that there was something morally wrong if it had.” (p. 36)

\textsuperscript{116} Ibid, pp. 33, 36.
The heights of the atomic bomb’s airbursts over Hiroshima and Nagasaki were calculated to achieve the maximum demolition effects.\textsuperscript{117} Groves argued that the height was also set to limit radiation exposure or residual radiation.\textsuperscript{118} So far historians have confirmed no evidence that proves this,\textsuperscript{119} however, this claim alone confirms the fact they had the knowledge of the residual radiation and its effect before Hiroshima.

It was right after the end of the war and the notion that the former enemies were using the horrific stories of the atomic bomb for propaganda purpose seems to have prevailed among postwar survey groups that studied the effects of the atomic bomb.\textsuperscript{120} NavTechJap, for example, argued that the press and Japanese should not be trusted: “Since much of what has been written in the press about their effects has been wholly or partly erroneous, we have felt obliged to include some physical data in this report as a basis for understanding the medical aspects... In considering the Japanese data, due allowance must


\textsuperscript{119} Bernstein, “Doing Nuclear History,” pp. 32-33; Malloy, p. 538. In an interview for a Japanese documentary, Ted Rockwell, a nuclear engineer who worked in the Manhattan Project, said he had calculated the height of detonation of the atomic bomb that would limit the residual radiation to a minimum level. NHK Special, \textit{Misugosareta Hibaku: Zanryu-Hoshasen 63 nengou-no-shinjitsu} (overlooked cases of radiation exposure: the truth about residual radiation after 63 years), aired on Aug. 6, 2008. It is difficult, however, to trust his recollection of more than 60 years later, unless there is any evidence.

\textsuperscript{120} For the postwar survey groups, see Chapter II of this dissertation.
be made for the backward character of Japanese medicine and the natural desire of the
Japanese to color the truth for propaganda purposes.”

After arriving in Japan, however, they were no longer sure about that: Studies by top
Japanese scientists presented some areas with the presence of an intensive radioactivity in
the two cities. In a conference of the National Research Council of Japan, held at the Tokyo
Imperial University on November 30, for example, Yoshio Nishina, a physicist at the
Institute of Physical and Chemical Research (Riken), noted the ongoing measurements of
the radioactivity at Takasu, three-kilometers west of GZ in Hiroshima, and Nishiyama,
two-kilometers east of GZ in Nagasaki, where the radioactivity was still strong.122

This had likely led to studies by two American groups, one by Naval Medical
Research Institute, which were arranged by USSBS and NavTechJap and the other by the
MED Group.123 They were both based on the reports and additional measurements made
by two groups of Japanese scientists.124 The studies culminated into two reports, both

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121 NavTechJap, Atomic Bombs, Hiroshima and Nagasaki, Article 1, Medical Aspect, December 1945, p. 5.

122 Japanese Atomic Bomb Conference; report of Special Conference on Research and Investigation of Damage Done by Atomic Bombings, Nov. 30, 1945, both of Report No. 3c(7), Roll 52, USSBS ROR. The USSBS analysts were invited to the conference of the National Research Council of Japan, held at the Tokyo Imperial University on November 30.


124 The two Japanese groups are: one of Kyushu Imperial University led by Kenichi Shinohara and the other of the Institute of Physical and Chemical Research (Riken) in Tokyo led by Nishina. Reports by Shinohara’s group can be found as Report No. 3c(21), frames 1015-1020; Report No. 3c(23), frames 1028-1039; Report No. 3c(40) (Series of Japanese reports on the Atomic Bomb No. 11), frames 1535-1541, all of Roll 52; Report No. 3c(41) (Series of Japanese reports on the Atomic Bomb No. 12), frames 1-5; Report No. 3c(42) (Series of Japanese reports on the Atomic Bomb No. 13), frames 6-18, both of Roll 53, all of USSBS ROR. Reports by Riken group can be found as Report No. 3c(22), frames 1021-1027, Roll 52; Reports Nos. 3c(43)-3c(46) (Series of Japanese reports on the Atomic Bomb Nos. 14-17), frames 19-44, Roll 53; USSBS ROR. Report Nos. 3c(22) and 3c(43) are the same. Report Nos.
completed in April 1946. The two reports identified two distinct areas with residual
radiation: one around Ground Zero (GZ) and the other distant downwind areas—Takasu
and Nishiyama.125

The radioactivity in Nishiyama area, where fission products of the bomb were
deposited in substantial amounts, was especially strong even more than two months after
the explosion.126 One of the studies found that, in Nishiyama, residents could have received
a gamma ray dosage of 27-110 r if they stayed in the area for a period of six weeks after the
bombing, whereas the highest dose in Hiroshima would have been 6-24 r at around GZ.127

Blood studies of 25 residents in Nishiyama, who were not exposed to the initial radiation
and who stayed in Nishiyama since the explosion, also demonstrated a high degree of
leukocytosis and eosinophilia.128 The report noted: “the maximal tolerance dose of

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3c(23) and 3c(40) are identical, too, though with different graphics. The Japanese original of the Report
No. 3c(45) can be found as 宮崎友喜雄ほか「原子爆弾により惹起された広島市内およびその附近の放
射能について（その 2）」『原子爆弾災害調査報告』第 2 冊 (不二出版, 2011 年), pp. 35-38. Reports
by Shinohara’s group was likely combined and published in Japanese as 瀬原健一ほか「長崎市およびそ
の近郊における土地の放射能」（第 1-2 部）、『原子爆弾災害調査報告』第 2 冊、pp. 45-53. Another
report by Riken group has yet to be located, but its probable Japanese version can be found as 山崎文男
ほか「広島における人骨中にできた放射性炭 P32 について」『原子爆弾災害調査報告』第 2 冊、pp. 16-18.

125 Pace and Smith, “Measurement of Residual Radiation Intensity at the Hiroshima and Nagasaki Atomic
Bomb Sites”; Tybout, “Radiation in Hiroshima and Nagasaki.”

126 Pace and Smith, “Measurement of Residual Radiation Intensity,” pp. 1-2, 7-8; Tybout, “Radiation in
Hiroshima and Nagasaki,” pp. 1, 45. We have to note these studies discuss residues measured two or
three months after the detonations, when those elements might have already been washed out by rains
or any other causes.


radiation was exceeded for a sufficient length of time in Nishiyama to produce significant physiological effects.”

These studies, however, seem to have made little difference for other postwar missions who maintained the War Department’s line of stories after all. Their reports denied any tangible effects of residual radiation to the human body, while acknowledging the effects of initial radiation. The British Mission, for example, acknowledged, “there were areas which remained radio-active” both in Hiroshima and in Nagasaki. However, it did not take the studies by its American cohorts into account when it said “but the amount of radio-activity was trivial then, and had been so soon after the bomb exploded... Thus residual radio-activity is not a danger from these bombs exploded at such heights.”

There is no mention of Nishiyama nor Takasu.

MED, NavTechJap, and the Joint Commission, mentioned Nishiyama or Takasu, or both, and referred to the radiological studies by two American groups or Japanese scientists. While they noted the possible dosage of a gamma ray people could have received, and the increase of leukocytosis and eosinophilia, they all denied the level of residual radiation sufficient to cause any harm to people or presence of individuals who

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129 Ibid., p. 8. This account was followed by a passage: “but that it fell below the maximal tolerance dose fairly quickly.”

130 British Mission, p. 15.

131 Ibid., p. 15.

132 The increasingly distanced relationship on the atomic energy between the US and the UK may also explain the lack of information on the British side. See Chapter VI of this dissertation.

were affected in any way.\textsuperscript{134} The Joint Commission cited a report by a group of Japanese scientists on residents of the Nishiyama district, who “consider themselves perfectly well; and that they appear to be well.”\textsuperscript{135} And it suggested “the changes in the blood picture might be explained on the basis of hookworm infestation.”\textsuperscript{136}

The report of the USSBS Medical Division denied any substantive effects of residual radiation from its earliest draft. It reads: “There is no evidence that there is sufficient residual radioactivity in the target areas to be dangerous to man.”\textsuperscript{137} Taking its confrontation with CDD and MED’s Col. Warren into consideration, it is difficult to believe that the Medical Division accepted the War Department’s stance on residual radiation without any doubt. It is especially so when USSBS had arranged the continuation of studies of residual radiation in two areas through the Special Intelligence Group of NavTechJap.\textsuperscript{138}

The issue of residual radiation likely ceased to attract the public attention at the end of June 1946 when the USSBS, MED and the British Mission released their reports, all of which dismissed it. In November 1946, the United States established the Atomic Bomb Casualty Commission (ABCC) to continue the study of people who were exposed to


\textsuperscript{135} \textit{Report of the Joint Commission}, Vol. 1, p. 43.

\textsuperscript{136} \textit{Ibid.}, p. 43.

\textsuperscript{137} Medical Division, \textit{Hiroshima and Nagasaki}, p. 84; first draft, p. 74; second draft, p. 152; third draft, p. 130.

\textsuperscript{138} See Note 123 above. NavTechJap, Atomic Bombs, Hiroshima and Nagasaki, Article 2, Medical Effects, Supplementary Studies, May 1946, p. 5; Slocum, “The Naval Technical Mission to Japan,” p. 3.
radiation of atomic fission.\textsuperscript{139} But it had never embarked on a research of residual radiation.

According to Japanese historian Hiroko Takahashi, ABCC in Hiroshima almost started one in 1952 on the people who were not in the cities at the time of the explosion. Questionnaires were prepared, and of the 491 respondents, 314 reported symptoms of radiation sickness.\textsuperscript{140} There were even a couple of cases of death by the end of 1945.\textsuperscript{141} However, full-fledged research was never initiated due allegedly to the pressure of other work and a shortage of investigators.\textsuperscript{142}

\textbf{Japanese Reports Residual Radiation}

While much of their effort to demystify the effects of the atomic bomb originated in its notion to counteract the Japanese propaganda, Americans now, once the occupation had started, might have found their job easier. The Japanese, in a conversion of their earlier arguments, were now denying the effect of residual radiation sufficient to be dangerous. Nothing could be more helpful in identifying the damage the new weapon had caused than the opinions of the former enemy who suffered from it. Many of the missions that studied in

\textsuperscript{139} Letter to the President from James Forrestal, Nov. 18, 1946, Folder: 1 Atomic Bomb Casualty Commission, Box 9354, RG331, NACP. The letter reads: “Preliminary survey involve about 14,000 Japanese who were exposed to radiation of atomic fission. It is considered that the group and others yet to be identified offer a unique opportunity for the study of the medical and biological effects of radiation which is of utmost importance to the United States. Such a study should continue for a span of time as yet undeterminable.” For the history of ABCC, see Lindee, M. Susan, \textit{Suffering Made Real: American Science and the Survivors at Hiroshima}, IL: University of Chicago Press, 1994.


\textsuperscript{141} Interview of Dr. Hideya Tamagaki, former ABCC researcher, in NHK Special, \textit{Misugosareta Hibaku}, Aug. 6, 2008. This program was produced based on Takahashi’s research.

\textsuperscript{142} Takahashi, “One Minute after the Detonation of the Atomic Bomb,” p.154.
the two cities also cited Japanese investigations as the ultimate evidence for their conclusions.

Reports prepared by the Japanese military collected by the Survey acknowledged mild radiation sickness, but denied any death or emphasized the patients’ recovery. For example, The Japanese Navy in Sasebo, near Nagasaki, found people who came in to the affected area within a short time after the explosion “experienced the over-all special effects of the atomic bomb to a light degree, returning [sic] to normal health in a short while.” 143

Doctors of the Army Medical College in Hiroshima wrote:

It is impossible to deny that damage was inflicted by radioactive soil and objects upon persons who entered Hiroshima after the explosion. However, manifestation and severity of symptoms seemed to be greatly influenced by individual disposition, physical stamina, nutrition and environment, since there were cases of some people with no symptoms to some that developed quite a number of symptoms. We were, however, unable to confirm any deaths in our investigations. 144

143 Sasebo Naval District, Report on Damage in the City of Nagasaki Resulting from the Atomic Bomb Raid, Oct. 3, 1945, in Report No. 3c(16), frame 878, Roll 52, USSBS ROR.

144 Army Medical School, Tokyo Provisional First Army Hospital, “Medical Report on Atomic Bomb Damages in Hiroshima,” Nov. 30, 1945, p. 156, Another version of translation can be found as Report No. 3c(25), Roll 52, USSBS ROR. For original Japanese report, see 陸軍軍医学校・臨時東京第一陸軍病院「原子弹爆による広島戦災医学的調査報告」「原子弹爆災害調査報告」第 3 冊（不二出版、2011 年）、p. 391. Such an attitude to blame individual health conditions was also seen in the reports of the USSBS Medical Division. The division cited Japanese doctors as follows: “Japanese physicians who had treated bomb casualties, in Nagasaki and Hiroshima as elsewhere [sic] were of the opinion that many of the delayed deaths would not have occurred had the victims been better nourished prior to their injury or had it been possible to feed them properly after the injury.” (Medical Division, Japan, p. 81) Also, “Doctor Akizuki had occasion to treat many victims of the bombing. According to him, many cases of delayed death were due to causes such as tuberculosis, heart disease and hypertension. Three persons with tuberculosis under his care became considerably worse following the bombing. He believes this to have
The Kure Naval District reported cases of people who went into Hiroshima after the explosion, whose counts of leucocytes, erythrocytes, and hemoglobin percent were “affected considerably.”\textsuperscript{145} The effect was greater in cases of patients living near the center and the speed of the recovery was faster in cases of those living farther away from the center. They also recovered faster than those exposed directly to the bomb.\textsuperscript{146}

According to a report by the Medical Section, the Chugoku District Army, of 136 people who entered into Hiroshima after the explosion, 89 cases (65 percent) showed a decrease in leucocyte count (2300-5000). The decrease was especially severe among those who went within 500 meters of the explosion center. Those who stayed in the damaged area for several days showed marked effects. Four cases out of 136 had leukocytosis (11,000-20,000). However, only a very few had shown any serious symptoms in the 50 days since the bombing, and none had died.\textsuperscript{147} (Underline added)

Masao Tsuzuki, head of the Medical section of the Special Committee for the Investigation of the Effects of the Atomic Bomb, established by the National Research Council of Japan,\textsuperscript{148} in a conference held on November 30, 1945, called it a rumor that

\textsuperscript{145} Kure Naval District, Medical Report #8, “Investigation of the Effects of the Atomic Bomb in Hiroshima, Medical Aspects,” Sept. 20, 1945, Roll 52, USSBS ROR.

\textsuperscript{146} Ibid.

\textsuperscript{147} Medical Section, Chugoku District Army, Medical Report #9, “Research Into Symptoms Resulting from the Atomic Bomb in Hiroshima,” Oct. 23, 1945, Roll 52, USSBS ROR.

\textsuperscript{148} The council was the most authoritative academic body under the supervision of the Japanese Ministry of Education.
“people who handled the bones of a victim proceeded to cough up blood and die, or else that those whose hair fell out died.”  

“All these rumors were carefully investigated,” he said, “but at this point it is impossible with certainty to get hold of any first-hand examples.”

The same Tsuzuki, however, had spoken differently two months earlier. In a Japanese newspaper article, Tsuzuki said there were cases among the general public who worked within a radius of 500 meters for a few days after the explosion, who were affected considerably and some even died.

Because at issue was whether residual radiation was sufficient to be dangerous, the focus of attention was on whether if it killed anyone. Both American and Japanese studies seem to have been preoccupied with this point. But the fact is that even if they did not die,

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149 Statement by Dr. Masao Tsuzuki, report of Special Conference on Research and Investigation of Damage Done by Atomic Bombings, Nov. 30, 1945, Report No. 3c(7), frame 68, Roll 52; Report No. 13d(2)d, frame 721, Roll 92, both in USSBS ROR. This statement is followed by: “It would naturally be a good thing if at this moment we could believe that more than one week after the explosion of the atomic bomb there remained no special poisonous matter injurious to the human body.” (Underline added) Tsuzuki, a Tokyo University professor, led the group of Japanese scientists in the Joint Commission.

150 Ibid.

151 Masao Tsuzuki, report, The Chugoku Shimbun, Sept. 5, 1945, p. 2. It is difficult to believe that Tsuzuki dismissed the phenomena as “rumors” as he had suspected of the lingering effects of radiation, which he called “radioactive poison.” He actually published a report on the phenomenon in November 1945, which was suppressed entirely by GHQ. He was expelled from Tokyo University after he refused to publish English translation of the report without reference to “radioactive poison.” He was soon reinstated but remained adamant about the radioactive poison and that he was purged from his position again in early 1947, which stayed in effect until Peace Treaty was concluded in 1952. 广岛市編『広島原爆戦災誌第1巻』（1951年），pp. 89-90. Tsuzuki also personally visited Yoshitoki Monden, a 19-year-old medical student at Yamaguchi Medical College who was engaged in the rescue operation from Aug. 10-15, at his parents’ house in Okayama, to interview him. Monden left the operation after he started suffering from radiation sickness. The diaries he prepared at Tsuzuki’s suggestion, which ran from Aug. 10 to Oct. 1, 1945, can be found in Folder: (39) Atomic Bomb Casualty Reports No. 51—My Experience of the “Atomic Bomb Disease,” Box 7407, RG 331, NACP; Report of the Joint Commission, Vol. 1, pp. 81-86. The comment by a member of the Joint Commission on the diaries reads: “The nature of the illness described by this narrator is not known. However, since he entered the bombed area two days after the bombing it is now certain that his illness was not caused by the effects of residual radio-activity in the city of Hiroshima. The report is important since it represents one type of evidence which led the Japanese to believe that the City of Hiroshima had captured so much radio-activity that it could not be inhabited again with safety for 50 to 75 years.” (p. 87)
people were certainly affected by residual radiation. And the point missed then was that the
effect would turn out to be slow and long-term. It was only after a half century that studies
proved that there was a connection between exposures to residual radiation and some
illnesses—e.g. leukemia and cancers—and high mortality rates from these illnesses.152

It is possible that results of the postwar studies had become more accurate than
earlier, first-hand information. Yet, there is a reason to believe that the Japanese reports
might not have presented all the facts they had collected. The Japanese government, after
the initial campaign to criticize the US as inhumane for using the new weapons, obviously
chose to cooperate with Americans as the occupation forces started to rule their country.
The collaborative relationships between American and Japanese scientists were not based
on an equal footing, but that of rulers and those ruled.

“[Japanese officials] frequently told us what they thought we wanted to hear,”
Stafford L. Warren, head of the MED’s medical division, revealed at the hearing before the
Senate Special Committee on Atomic Energy. “We had great trouble in getting the true
facts.”153 It is not surprising because the Japanese government ordered its civil servants to

152 For example, a three-fold increase in the incidence of leukemia among those who entered Hiroshima on
August 6, 1945, after the explosion was reported in an article in a medical journal in 2006. 鎌田七男、大北威、
藤本淳他, 「8 月 6 日入市被爆者白血病の発生増加について」 『長崎医学会雑誌』第 81 巻 (2006 年
9 月)、pp. 245-249; 「8 月 6 日入市被爆者白血病発症率が 3 倍」 『朝日新聞』、2006 年 6 月 14 日
朝刊、p. 29. Also, considerable high mortality risk was identified in 2013 among those males who entered the
city on August 6, 1945, after the explosion, than those who entered three days after or later. 「投下当日の入市
被爆男性 がん死亡高リスク」 『朝日新聞』、2013 年 10 月 23 日朝刊、p. 34.

153 Statement of Col. Stafford L. Warren, Feb. 15, 1946, Hearings before the Senate Special Committee on
Atomic Energy, p. 511. The author of the MED History also referred to this “peculiar psychology of the
Japanese who wanted to please the interrogator” in its report. MED History, “Investigation of the After
Effects of the Bombing in Japan,” Chapter 6, Volume 4, Book 1, Reel 1, Manhattan Project: Official History
cooperate with the occupation forces while the country was waiting for the arrival of her new rulers.154 Japanese historian Yukuo Sasamoto argues that the Japanese government used atomic bomb survivors to facilitate American’s need to collect vital information for the US national security. In that sense, “they, too, had become victimizers.”155

This collaboration between the rulers and the ruled had likely lasted for some time, even after the end of the occupation in the wake of the Cold War, and the issue of residual radiation had hardly been taken heed of by either governments.156 The local governments and medical practitioners in Hiroshima and Nagasaki, however, had acknowledged the similar symptoms among those who entered the cities after the explosion as those who were directly exposed to the bomb.157 The definition in the 1957 A-bomb Survivors Medical Treatment Law of atomic bomb survivors included: 1) those who entered within 2 km of the hypocenters within two weeks after the bombing; and 2) those who were exposed to radiation from fallout, along with 3) those who were directly exposed to the bomb’s explosion; and 4) those who were exposed in the womb of female survivors of any

154 鳥飼政子『通訳者と戦後日米外交』（みすず書房、2007 年）、pp. 182-183.

155 笹本征男『米軍占領下の原爆調査—原爆加害国になった日本』（新幹社、1995 年）、pp. 286-293.


157 The official atomic bomb history of Hiroshima City contains the result of a survey conducted by its editors in 1969. According to the result, of the 233 responses among 400 questionnaires sent to former members of the Army branch who were engaged in the rescue operations in Hiroshima soon after the detonation, almost all of them suffered leucopenia and many experienced fatigue and epilation. Some ten of them had died by the time of the survey, including one who died in March 1946. 広島市編『広島原爆戦災誌第 1 巻』、pp. 136-150.
of these categories. Those who were exposed to residual radiation (the first two
categories) account for one-third of all survivors.

On the other hand, the certification criteria to recognize sufferers of illnesses caused by
the atomic bomb, who are entitled to a monthly health allowance of approximately 140,000 yen,
had been based on a formula that took into account the estimated dose at a distance from the
hypocenter almost solely from the initial radiation, but not residual radiation or internal
exposure. With the successive losses on the government’s part in class action lawsuits filed
by applicants for certified hibakusha who were turned down by the Ministry of Health and
Welfare, the Japanese government finally revised the certification criteria in 2008.

The survivors of the Hiroshima and Nagasaki bombings testified to the fact through
the sacrifice of their lives. Their own bodies served as the most reliable and strongest
evidence. But it took their whole lifetime to prove it. As Malloy pointed out, had there not
been the postwar denial of residual radiation, and had MED made its wartime study data on

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158 The law was incorporated into the 1994 Atomic Bomb Survivors Relief Law, which kept the same
definition. According to Junichi Urata, a former engineer at the Japanese Ministry of Health and Welfare,
he included categories 2 and 3 as a result of his study visit to Hiroshima to draft the bill. He said, although
there was no scientific evidence to support the connection between the malaise and radiation, he and his
colleagues at the ministry agreed that they should save all who are suspected of atomic diseases if there
was the slightest possibility that they were affected by radiation. Interview of Junichi Urata in NHK
Special, Misugosareta Hibaku, Aug. 6, 2008.

159 Hibakusha numbers 164,621 as of March 31, 2016, of which those in the two categories account for
55,120. Ministry of Health, Labor and Welfare, accessed at

160 Takahashi, p. 155; Yabui, Kazuo, “Less than 1% of A-bomb survivors recognized as suffering from
http://www.hiroshimapeacemedia.jp/?p=13586.

161 野上隆生「原爆と向き合う科学 残留放射線影響説く」『朝日新聞』、2008 年 8 月 4 日、p. 3;
尼子真央「原爆被爆者援護の現状と課題」『立法と調査』、283 号（2008 年 7 月）、pp. 69-77.
radiation effects available to the public, these people might have been saved earlier, or their burdens might have been lighter.\textsuperscript{162}

**Defending the National Interest**

As the Survey was designed to provide the public with factual bases, the accounts of the Medical Division were limited to established facts. Based on the evidence we have seen, however, this policy may not have been properly applied to the case of residual radiation. The division unequivocally denied the effects of residual radiation from its earliest draft, saying, the bomb’s effects “have been confined to those who were in the area at the time of the bomb burst.”\textsuperscript{163} But the evidence points to the fact that people suffered from various malaise from residual radiation even if they did not die. Their denial came out even when the results of the investigation of the effect of residual radiation had not been finalized yet.\textsuperscript{164}

There was also an area that the division did not talk about: matters that involved security restrictions. Text on the heights of the bomb burst,\textsuperscript{165} the size of the fireball,\textsuperscript{166}

\textsuperscript{162} Malloy, p. 545. Grove might have intended to provide the Japanese with some information through the MED study teams. A cabled message reads: “General Groves has ordered General Farrell and party of scientists into Japan at the earliest possible moment to survey bomb damage in Hiroshima and Nagasaki areas and to curtail further loss of life by spotting contaminated areas and offering medical advice for the treatment of casualties.” But this is only hearsay and this author has found no other documents that support this statement. Outgoing message (personal, urgent & top secret) from Spaatz to MacArthur, Aug. 13, 1945, Box 11, Curtis LeMay Papers, LOC.

\textsuperscript{163} Medical Division, *Hiroshima and Nagasaki*, p. 56; The first draft, p. 31; second draft, p. 62; third draft, p. 62.

\textsuperscript{164} See pp. 220-223 of this chapter.

\textsuperscript{165} A phrase “1,750 to 2,000 feet from the center of the explosion” (first report, p. 16) was changed to “some distance from the center of the explosion” in the later draft and the published report (second draft, p. 30; third draft, p. 30; Medical Division, *Hiroshima and Nagasaki*, p. 24.)
and the thickness of possible shielding from the bomb’s effects\textsuperscript{167} were deleted from the published report at the suggestions of a reviewer from the Manhattan Project.\textsuperscript{168}

The USSBS historian Beveridge mentioned the possible classification of the Medical Division’s report because of its highly classified nature.\textsuperscript{169} Classification of the division’s report on Hiroshima and Nagasaki was “Secret” as of July 10, 1946.\textsuperscript{170} Changes were made, especially to the references to the size of the fireball and thickness of concrete to protect against the bomb,\textsuperscript{171} and the final draft dated July 15, 1946, was cleared of security by MED of scientific and technical details by July 29,\textsuperscript{172} and approved by the Chairman’s Office for printing on August 15, 1946.\textsuperscript{173} However, it had to wait until March 1947 to be published without classification.\textsuperscript{174}

\textsuperscript{166} A phrase in a parenthesis, “estimated by the British to be of the order of 256 feet” (second draft, p. 36; third draft, p. 36) was deleted (In the first report, it was “250 feet” instead of 256 feet.).

\textsuperscript{167} A sentence, “The roof is covered with \(\frac{3}{4}\) inch of tile and each floor contains as equivalent of 6 inches of concrete” (first draft, p. 26; second draft, p. 51; third draft, p. 51) was changed to “with a tile roof,” which was added to the preceding sentence in the published report (p. 53). Also, a phrase, “At close range 18 to 24 inches of concrete was necessary for complete protection” (first draft, p. 32; second draft, p. 63; third draft, p. 63) was deleted from the paragraph in the published report (p. 56).

\textsuperscript{168} Medical Division, draft of July 15, 1946, pp. 36, 51, 63, Box 91, Entry 6, MEDR.

\textsuperscript{169} Beveridge, \textit{Pacific}, p. 208.

\textsuperscript{170} Memorandum: Transmittal of USSBS Medical Division Report on “The Effects of Atomic bombing on the Public Health of Hiroshima and Nagasaki,” Report No. 13a(10), frame 443, Roll 92, USSBS ROR.

\textsuperscript{171} Although the mention on the height of bomb burst was deleted from the earliest draft, the size of fireball and thickness of concrete necessary as protection were still included at this stage. See, also, Chapters V and VI of this dissertation.

\textsuperscript{172} Memorandum from David B. Parker, Military Operations Division, Manhattan Project, to the USSBS Chairman, July 29, 1946, Folder: 000.72 Classification Letters on Japanese Reports, Box 1, Entry 1, RG 243, NACP. Photos in the report were granted clearance separately. Memorandum from Leigh C. Fairbank, Military Operations Division, Manhattan Project, to Capt. W. Curley, June 20, 1946, Folder: 000.72 Classification Letters on Japanese Reports, Box 1, Entry 1, RG 243, NACP.

\textsuperscript{173} Memorandum from L. R. Thompson to Editing and Reproduction Section, n.d., Report No. 13a(10), frame 445, Roll 92, USSBS ROR.
It was ironic that what the American media had reported on Hiroshima evoked such
denials of residual radiation, and the need to counteract such reports. This sense of urgency
to counteract the initial news stories was shared throughout the War Department, which
developed the atomic bomb. In a cabled message to the Supreme Commander of Allied
Forces in the Pacific Douglas MacArthur, Marshall requested that MED’s study mission be
given every assistance in completing their investigations in Hiroshima and Nagasaki.

“Complete and accurate data to be gathered by this mission is needed here promptly,”
Marshall continued, “in order that we have all possible knowledge for the future and to
combat adverse Japanese propaganda and the incorrect impressions from such propaganda
carried in our own press.”

It is not difficult to imagine that USSBS, which was placed under the supervision of
the Secretary of War, had come to assume this job of combating the adverse news reports as
part of its mission in Japan. It should not have bothered Paul H. Nitze, a Vice Chairman, or
other USSBS members who were committed to defending the conventional forces, since
denying the mysterious effects of radiation would work to demystify the atomic bomb as a
whole.

Speaking of “US officials needing to justify use of the atomic bomb after the fact,”
political scientist Nina Tannenwald argues, “it thus became important that its radiation

174 Distribution Lists of Published USSBS Reports, 1945-47, Box 140, Entry 3, RG243, NACP. I have yet to
find the reason why it took that long to be published.

175 Secret incoming message from Marshall to MacArthur, Sept. 21, 1945, Folder: 10 Atomic bomb
Mission # 1, Box 785-11, RG 331, NACP.
aspect be downplayed, so that the bomb seemed as much like a conventional weapon as possible.”

It is unknown how the members of the Medical Division actually saw the issue of the residual radiation. Nitze seems to have had no qualms about it. In 1979, more than three decades later, he sent a letter to a senator on a doubt raised about his remark during a luncheon that there was no appreciable fallout at Hiroshima and Nagasaki. Nitze checked his recollection with the Chairman’s a-bomb report and confirmed there was no residual radiation sufficient to be dangerous. He wrote to the senator “both of those weapons were exploded at the optimum altitude to maximize blast effects. That altitude was sufficiently high so that ... the probability of prompt fallout is very much reduced.”

But at least in speaking of the effects of the initial radiation, the USSBS Medical Division provided the public with information to an extent that had not been done before. A substantial part of its accounts on radiation’s effects on the human body was incorporated into the Chairman’s a-bomb report, and helped the public grasp what the atomic bomb could do to people. The distribution of its copies was limited. However, through the

176 Tannenwald, The Nuclear Taboo, p. 97.

177 Letter from Paul H. Nitze to Charles McC. Mathias, Jr., May 9, 1979, Folder: US Strategic Bombing Survey Japan Miscellaneous materials May 1950, Mathias, Box 166, PHN. The doubt was raised by Charles Tyroler, II., a senior partner of a Washington-based business and political consulting firm, who was a founder of the Committee on the Present Danger.

178 Chairman’s a-bomb report, p. 18.

179 Letter from Paul H. Nitze to Charles McC. Mathias, Jr., May 9, 1979, Folder: US Strategic Bombing Survey Japan Miscellaneous materials May 1950, Mathias, Box 166, PHN.

180 See Appendix III to this dissertation.

181 The entire Chairman’s a-bomb report was reprinted in the July 5, 1946, issue of U.S. News. Newspapers in the US also published articles on the report, often focusing on radiation effects of the
Chairman’s a-bomb report, which was the most distributed of all the Pacific Survey’s more than 100 reports, its accounts were cited and disseminated widely by the media and atomic bomb literature—most famously in John Hersey’s *Hiroshima*.

**Conclusion**

When the story of Harold Jacobson made headlines in American newspapers just two days after the breaking news of the first-ever atomic bomb attack against Hiroshima, the mood of elation in the public that came from the shared sense of accomplishment was little overshadowed by the ominous revelation. The swift move by the War Department had successfully discredited Jacobson and controlled subsequent news reports, including those by American correspondents who visited Hiroshima and Nagasaki, whose initial stories were little different from those by Japanese. And “the issue of radiation receded from the center of public awareness.”

atomic bomb. See, for example, “Gamma Ray Cause of 20% of Deaths,” *NYT*, June 30, 1946, p. 4; Folliard, Edward T., “Rays Alone Kill at One Mile, White House Told,” *WP*, June 30, 1946, p. B1; “Hiroshima Revisited,” *WP*, July 4, 1946, p. 6. See Folder: 000.75 Press Clippings, USSBS ETO 1945, Box 2, Entry 1, RG 243, NACP. A lot of literature on the atomic bomb also has relied on this report.

182 600 copies. Distribution lists of published USSBS Reports, Folder: Pacific Survey, Box 140, Entry 3, RG 243, NACP.

183 20,000 copies. It was followed by *The Summary Report* (19,860 copies) and *Japan’s Struggle to End the War* (10,125 copies). Distribution copies of divisional reports number 178 to 2,500 copies. (Except eight reports—Nos. 6, 16, 17, 54, 60, 72, 94, 96—of which data not available) *Ibid*.


While the major American media dismissed the story as Japanese propaganda, the USSBS analysts simply disregarded it, by excluding the issue from their reports. Even the Medical Division, which pursued facts about the initial radiation, was no exception. It categorically denied the effects of residual radiation in its report. How it could have spoken to the effects of initial radiation to an extent that had not been done before is discussed in Chapter VI.

It is unknown if analysts of the division had truly supported the official line and viewed the story as the product of Japanese propaganda. But it is probable that the Survey executives and those of other divisions did not have any qualms about the issue, as denying the mysterious effects of residual radiation would also work to demystify the atomic bomb as a whole. The division’s report, thus, would contribute to the cause of the Survey and its counterfactual conclusion.
Chapter V

The Chairman's A-Bomb Report:
A Contested Terrain for the Two Narratives

Someone said that the atomic bomb was the Kamikaze to save Japan.¹

The decision to end the war and to accept defeat on Allied terms had already been taken by the Emperor, the Lord Privy Seal, the Prime Minister, the Foreign Minister and the Navy Minister as early as April of 1945—well before the Potsdam declaration, Russia’s entry into the Pacific war or the atom bombs were dropped.²

Of the three reports from the USSBS Chairman’s Office, Chairman’s a-bomb report went public first, on June 30, 1946, two weeks before the release of Japan’s Struggle to End the War, and three weeks before that of the Summary Report. Although it did not include the exact phrasing of the early-surrender hypothesis, it still contained a conclusion of similar substance. Part of the report, for example, reads: “It cannot be said...that the atomic bomb convinced the leaders who effected the peace of the necessity of surrender.”³

Yet, it seems strange that the report over the effects of the atomic bomb does not include the conclusion that seems crucial for the Survey. Actually, a conclusion of the section “the Japanese Decision to Surrender” of the chapter “the Effects of the Atomic Bombing” in the report speaks to the contrary, saying that the bomb provided the Japanese with the opportunity


³ The Chairman’s a-bomb report, p. 22.
to accept the Potsdam terms. But how could it have reached a conclusion that goes against possibly the most important conclusion found in two other reports?

My research reveals that the Survey had also intended to include the early-surrender conclusion in the Chairman's a-bomb report. But it did not materialize, likely due to scrutiny by the Manhattan Engineer District (MED) which reviewed the draft. Still, it means that the Survey planned to include the conclusion in all of the Chairman's reports. It was the nucleus of its study in the Pacific.

As we have seen in the previous chapters, those reports of the Survey divisions on Hiroshima and Nagasaki were written or changed in a way to conform to the early-surrender hypothesis. My research shows that the Chairman's a-bomb report had also undergone a similar process, as it was compiled simultaneously with the divisional reports.

Its argument, however, was weakened in the process of various revisions. This process reveals that the report had become a contested terrain for the two different narratives—one argued that the atomic bomb ended the war (Hereafter, “the decisive weapon narrative”) and the other claimed that it was not necessary to bring about Japan's surrender—while the Survey tried to retain elements that supported the latter: the early-surrender conclusion. This silent, invisible battle of words added to the inconsistencies in the report, part of which had come from the contradictory attitudes among the Survey analysts of demystifying the atomic bomb and being awed by the power of the new weapon.

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4 Chairman's a-bomb report, p. 23.
In this Chapter, I first examine how the Chairman's a-bomb report was compiled and resulted in its final form, without the counterfactual. I then discuss why I think such a battle took place. In doing so, I focus on the Morale Division's report because it provided the evidence for the narratives. Its transition also corresponded with that of the Chairman's report, or vice versa, though it would take the opposite course. While the tone of the early-surrender arguments in the Chairman's report would be weakened in the later drafts and published report, the Morale Division's earliest drafts, which found the atomic bomb responsible for Japan's surrender, would be transformed into one that limited its role. With the transformation, the division's report would serve as machinery for the Chairman's report in support of its early-surrender arguments.

Because it does not include the counterfactual, preceding studies hardly looked into the Chairman's a-bomb report. Examining only those reports that include the early-surrender hypothesis, however, misses the significance of the role the Chairman's a-bomb report played. Though weakened, the early-surrender arguments were retained in the Chairman's a-bomb report, which laid the groundwork for the two other Chairman's reports that followed.

Compiling the Chairman's A-Bomb Report

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The principal author of the Chairman’s a-bomb report was Philip J. Farley, an Army Second Lieutenant who was assigned to the Capital Equipment and Construction Division of the Pacific Survey. The fact that Nitze entrusted the report to Farley itself attests to the importance of the assignment. The 28-year-old graduate of UC Berkeley was selected by Nitze as his assistant for the European Survey among 25 candidates in the Army roster who met two conditions: holding a Ph.D. degree and a close knowledge of Germany, including the language. Farley was assigned to the Economic Division’s Industry Survey Branch in the European Survey, and wrote the Schweinfurt Ball Bearings Report. Nitze held high regard for Farley’s work and this time wanted him to write the atomic bomb report.

During his stay in Japan, Farley visited Hiroshima from November 10-13, 1945. He left Tokyo on November 7 by train for Osaka, from where he left for Hiroshima a couple days later. According to Beveridge, Farley took over the position of the Division Chief

6 Farley would later become the deputy director of the State Department’s arms control agency and the alternate chairman of the U.S. delegation to the strategic arms limitation talks (SALT) with the Soviet Union before joining the Brookings Institution as a senior fellow in the mid-1970s.

7 Personnel Order No. 3, U. S. Strategic Bombing Survey, Oct. 24, 1945, Folder: 300.4-F Personnel Order, Box 12; List of Personnel, Folder: 341 Recruiting of Personnel for USSBS, Box 38, both in RG 243, NACP. The division was organized to study the effects of the Allied aerial attack on the Japanese machine tools, electrical equipment and construction.

8 Nitze, From Hiroshima to Glasnost, pp. 27-28; Oral History Interview with Paul H. Nitze, July 17, 1975, p. 72, HSTL. Farley received a PhD. in English from UC Berkeley in 1942.

9 He was assigned to the branch on Sept. 16, 1944, from the AAF’s 703rd Bomb Squadron. Roster of Personnel, attached to a memorandum from Daniel E. O’Keefe to the Adjutant General, Washington, D. C., Dec. 5, 1944, Folder: 320.4 Manning Tables, Box 34, RG 243, NACP; Beveridge, Pacific, p. 158.

10 Operations Order No. 72, U. S. Strategic Bombing Survey (Pacific), Nov. 6, 1945, Folder: 300.4-E Operations (USSBS) Tokyo, Box 12, RG 243, NACP; Beveridge, Pacific, p. 159. According to the order and Beveridge, Farley was supposed to accompany Roger Pineau, a Navy Lieutenant who was fluent in Japanese, to Hiroshima. According to Pineau’s letters to his wife, however, Pineau got cold and was hospitalized on Nov. 9 when he was still in Osaka until Nov. 13. It is likely Farley proceeded with his
from Major George J. Hales after he returned to the US in December 1945. He was soon discharged from the military; and stayed in USSBS in a civilian capacity to complete the Chairman's a-bomb report.11

Historian Gian P. Gentile notes it took longer for the Pacific Survey to complete the final reports than the European Survey. He attributes it to the bitter inter-service rivalry between the AAF and the Navy.12 It is true that the two USSBS directors—Orvil A. Anderson of the Military Analysis Division and Ralph A. Ofstie of the Naval Analysis Division—had bitter disagreements over the way respective contributions of AAF and the Navy to ending the war against Japan were described in each other’s reports.13 When it comes to the Chairman’s a-bomb report, however, the study of the atomic bomb involved not only such new elements as the effects of radiation, but also the issue of security clearance by MED. The report underwent MED’s reviews at least three times.

Schedule as Pineau helped Farley get an interpreter. Farley told to a reporter years later that he did not visit either Hiroshima or Nagasaki to write the report. Powers, Thomas, “Nuclear Winter and Nuclear Strategy,” Reprint Mailing, No. 68 (January 1985), Laucks Foundation, Santa Barbara, CA. But I am writing here on an assumption that Farley did go to Hiroshima trusting Beveridge who stated that he did. Because I feel there is a possibility that Farley may not have told the truth to avoid people's attention on the matter. I am grateful to Julienne Hubbard and other members of Pineau’s bereaved family for sharing their father/grandfather’s papers with me.

11 Beveridge, Pacific, p. 159.


There are at least six drafts for the Chairman's a-bomb report before it was released on June 30, 1946. The oldest one I found is dated March 5, 1946 (Hereafter, “the first draft”), which was incomplete with some blank sections. On March 26, a likely second draft was completed and distributed to all divisions for a review (Hereafter, “the second draft”). Subsequently, those dated April 27 (Hereafter, “the third draft”), June 7 (Hereafter, “the fourth draft”), and June 19, 1946 (Hereafter, “the fifth draft”), followed. There is also another draft, undated, but is a more complete version of the first draft, with numerous hand-written corrections and additions made over it or in a form of inserts on

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14 The released report can be found in frames 534-567, Role No. 51, USSBS ROR; Folder: Atomic Bomb and Energy, August 1945--November 1949, Box 4, Confidential File, HSTL.

15 Preliminary Composite Report on the Atomic Bomb: Its Power, Effects and Limitations, March 5, 1946, in Report No. 3, frames 236-305, Roll 51, USSBS ROR (Hereafter, “the first draft”). Because this draft is not paged, I will use the frame number of the microfilm to cite the draft.

16 Preliminary Composite Report on the Atomic Bomb: Its Power, Effects and Limitations, March 26, 1946, in Report No. 3, frames 306-395; Memo to all division chiefs, March 26, 1946, frames 762-763; Memorandum to all division chiefs from John L. Rogers, March 28, 1946, frame 306, all in Roll 51, USSBS ROR (Hereafter, “the second draft”). This is likely the “official first draft.”

17 Preliminary Composite Report on the Atomic Bomb, April 27, 1946, Folder: 319.19 Preliminary Composite Report on the Atomic Bomb, Box 33, Entry 1, RG 243; Folder: Preliminary Composite Report on A-Bomb by USSBS, Box 92, Entry 6, MEDR, both of NACP; Folder 4: Strategic Bombing Survey, Box 20, Files of Edwin A. Locke, Jr., both of HSTL; Folder: Atomic bomb-Hiroshima and Nagasaki, Subject File-NSC-Atomic, Reel 40, Part 3, Truman Office File; Report No. 92f(1)(k), frames 266-315, Roll 327, USSBS ROR (Hereafter, “the third draft”). Of all these drafts, the second draft appears to be the first official draft. However, I also examine these earlier versions as they demonstrate the process of its formation.

18 The Effects of the Atomic Bombings of Hiroshima and Nagasaki, June 7, 1946, Folder: U.S. Strategic Bombing Survey “The Effects of the Atomic Bombings of Hiroshima and Nagasaki,” Box 92, Entry 6, MEDR (Hereafter, “the fourth draft”).

19 The Effects of the Atomic Bombings of Hiroshima and Nagasaki, July 19, 1946, Folder: Atomic Bomb: Hiroshima and Nagasaki, Box 174, President’s Secretary’s Files; Folder 1: Strategic Bombing Survey, Box 20, Files of Edwin A. Locke, Jr., both of HSTL; Folder: Atomic bomb-Hiroshima and Nagasaki, Subject File-NSC-Atomic, Reel 40, Part 3, Truman Office File; Report No. 92f(1)(k), frames 266-315, Roll 327, USSBS ROR (Hereafter, “the fifth draft”). Of all these drafts, the second draft appears to be the first official draft. However, I also examine these earlier versions as they demonstrate the process of its formation.
separate papers, which would be reflected in the second draft (Hereafter, “the first complete draft”).

Much of the portion of these drafts and the released report were likely based on the drafts and the final reports of the five divisions that studied in Hiroshima and Nagasaki (See Appendix III to this dissertation). And the Chairman's a-bomb report mostly followed the footsteps of the divisional reports that we saw in Chapters III and IV.

The first two drafts are similar to each other except that the first draft was incomplete and some of its sections, including “The atomic bomb and the Japanese surrender,” were left blank. The second draft, built on the first draft, is more substantial, with more information and figures that filled the blanks left in the first draft. The two drafts explain the mechanism of the atomic bomb, and describe its effects—heat, blast and radiation. They talk about what the target cities were like before the attacks—their geographical features, houses and populations, as well as their economies and morale—a concise version of all the divisional studies in the two cities combined. They also discuss what happened to the cities, their people and buildings by the atomic explosions, and

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20 A draft, undated, in Report No. 3, frames 394-490, Roll 51, USSBS ROR. Likely complete, but pages 1-10 missing from the microfilm. Because this draft contains numerous inserts in separate papers, I will use frame numbers of the microfilm when I cite the draft.

21 The Chairman's a-bomb report consists of four parts: I. Introduction (1 page), II. The Effects of the Atomic Bombings (21 pages), III. How the Atomic Bomb Works (12 pages), and IV. Signposts (6 pages). This chapter focuses on Parts II and III.

22 The first draft, frame 292, Roll 51, USSBS ROR. In the blank space there a note, “In Preparation.” In the content list, the title of the section is “The Japanese Decision to Surrender.” Other incomplete parts were the section “Limitations of Effect” and an account on “Casualties among School Children” in the section “Scope of Effect.” (both in frame 255)
especially on human bodies; e.g. flash burns, radiation diseases, and effects of radiation on reproduction, on which the author relied heavily on the Medical Division’s report.

The major difference between the first and the second drafts is that many of the accounts of radiation effects added to the Medical Division’s later drafts came to be incorporated into the Chairman’s second draft. For example, the estimate of the incidence of radiation effects—from 15 to 20 percent cause of the deaths—was included.\textsuperscript{23} It was actually Farley who suggested the Medical Division provide the estimate “at least within certain ranges.”\textsuperscript{24}

In the complete first draft and later drafts, as well as the published report, was added an account in the Medical Division’s report that argued the estimate that radiation was responsible for 5 to 7 percent of the total deaths in the two cities, made earlier by Colonel Stafford L. Warren, was “far too low”.\textsuperscript{25} This estimate was given by the Chief of the MED’s Medical Section during a hearing before the Senate Special Committee on Atomic Energy on February 15, 1946.\textsuperscript{26} An account on the significance of radiation that appeared in the complete first draft, later drafts and published report reads:

\textsuperscript{23} The second draft, p. 36; third draft, p. 24; fourth draft, p. 24; fifth draft, pp. 16-17; Chairman’s a-bomb report, p. 15. Many of these additions were made in a form of inserts to the complete first draft. See, for example, frames 402-404, Roll 51, USSBS ROR.

\textsuperscript{24} Memorandum from Farley to Thompson, Feb. 26, 1946, Report No. 13a(9), frame 436, Roll 92, USSBS ROR.

\textsuperscript{25} The second draft, p. 36; third draft, p. 24; fourth draft, p. 24; fifth draft, p. 16; Chairman’s a-bomb report, p. 15. It was added in a form of inserts to the complete first draft, frame 402, Roll 51, USSBS ROR.

\textsuperscript{26} See Chapter IV of this dissertation.
There is reason to believe that if the effects of blast and fire had been entirely absent from the bombing, the number of deaths among people within a half mile radius would have been almost as great and the deaths among those within a one mile radius would have been only slightly less. The principal difference would have been in the time of death. Instead of being killed outright as were most of these people, they would have survived for a few days or even three or four weeks, only to die eventually of radiation disease.\(^{27}\)

On the other hand, the Chairman’s first draft included sentences that are nowhere to be found in the earliest draft of the Medical Division’s:

Though evidence of lingering radioactivity is slight, it is strong enough to leave open the ominous possibility of a different situation had the bomb been exploded at ground level or beneath.\(^{28}\)

No clear-cut instances of harmful effects on people who came into the area after the explosion have been verified, though there are marginal cases still under investigation of newcomers showing a decrease in white blood corpuscles or general debility after living in the area.\(^{29}\) (Underline added)

\(^{27}\) The first complete draft, frame 415, Roll 51, USSBS ROR; second draft, pp. 45-46; third draft, pp. 31-32; fourth draft, pp. 31-32; fifth draft, pp. 22-22; Chairman’s a-bomb report, pp. 19-20. The original division report on which this account is based likely: Medical Division, *Hiroshima and Nagasaki*, p. 54.

\(^{28}\) The first draft, frame 248, Roll 51, USSBS ROR; first complete draft, frame 467, Roll 51, USSBS ROR; second draft, p. 15; third draft, p. 46; fourth draft, p. 46; fifth draft, p. 33; Chairman’s a-bomb report, p. 28.

\(^{29}\) The first draft, frame 248, Roll 51, USSBS ROR.
While the first sentence stayed through to the final report, the second sentence was changed to one that categorically denied the residual radiation in the later draft and published report, which reads, “Reports of harmful effects on people who came into the area after the explosion have evaporated under investigation.”

A similar change is found in the accounts on radioactivity in the Nishiyama district in Nagasaki and the Takasu district in Hiroshima. While both the first and second drafts denied any degree of radioactivity that was sufficient to produce casualties, the first draft mentioned “dubious cases of induced radio-activity from the interaction of neutrons with matter have been reported.” This sentence was changed in the second draft to: “All reports of induced radioactivity from the interaction of neutrons with matter have been unsubstantiated.” There are hand-written corrections over the complete first draft made likely by a reviewer, who also suggested adding explanatory paragraphs, which in part read: “Our understanding of radiation casualties is not complete... In the words of Dr. Robert Stone, in charge of studying this question for the Manhattan Project, ‘the fundamental mechanism of the action of radiation on living tissues has not been understood.’”

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30 The correction was made in handwriting over the first complete draft (frame 467, Roll 51, USSBS ROR). For the corrected sentence, see the second draft, p. 15; third draft, p. 46; fourth draft, p. 46; fifth draft, p. 33; Chairman’s a-bomb report, p. 28. From the fourth draft it reads: “Stories of harmful effects on people who came into the area after the explosion have been disproved by investigation.”

31 The first draft, frame 267, Roll 51, USSBS ROR.

32 The second draft, p. 40. In the third drafts and on, it was: “Similarly, induced radioactivity from the interaction of neutrons with matter caused no authenticated fatalities.” The third draft, p. 28; fourth draft, p. 28; fifth draft, p. 19; Chairman’s a-bomb report, p. 18.

33 “Insert, page 31” in the first complete draft, frame 409, Roll 51, USSBS ROR. The addition stayed through to the final report. The second draft, p. 41; third draft, p. 28; fourth draft, p. 28; fifth draft, p. 19; Chairman’s a-bomb report, p. 18. The same reviewer also argued, in a different page, “I think we should at
The third draft underwent a major change from the second drafts upon receiving comments and suggestions from each division.34 These suggestions mostly dealt with accuracies and details of the subjects that the earlier draft discussed in general terms.35 A lot of information was also added, as suggested by reviewers, and the construction of the entire report was changed.36

One of the PDD’s suggestions pointed out that the introductory paragraph of the second draft “seems to imply that the atomic bomb attacks were almost solely responsible for Japan’s surrender.37 This is at variance with Section H of Part 3,”38 a section of the “Japanese Decision to Surrender,”39 which argued that the atomic “bomb did not defeat least mention the morality question and justify the Hiroshima and Nagasaki bombings by the probable saving of an equal number of American lives that would, probably, otherwise have been sacrificed in an invasion.” An undated memo attached to the first complete draft, frame 394, Roll 51, USSBS ROR. The first half of this memo notes: “Oratorical, ending as a sermon, but I believe it is better that way as a formal report to the President.”

34 There was also a meeting on March 18 before the second draft was distributed to discuss atomic bomb report prepared by Farley. Memorandum for all division directors, “Meetings of the Secretariat,” March 15, 1946, Folder: 300.6 Administrative Memorandums, Box 13, Entry 1, RG 243, NACP.

35 This author found responses from two divisions—the Medical Division and PDD. “Suggested Corrections in the Chairman’s Report,” memorandum for the Chairman from L. R. Thompson, April 18, 1946, Folder: 319.4 Preparation of Reports (USSBS), 1 May to Present Date, Box 28, Entry 1, RG 243, NACP; “Review of Composite Report,” to Director, PDD, from Joseph F. Bangham Jr., Chief, PDD Team 1, April 16, 1946, Report No. 92f(1)(g), frames 155-178, Roll 327, USSBS ROR.

36 For example, sections “property damage,” “factories and machine tools,” “utilities and transportation,” and “community organization” in the first (pp. 34-48) and second drafts (pp. 47-63) was modified and placed as a section, “The attacks and damage,” at the very beginning of the third (pp. 3-22) and the later draft (fourth draft, pp. 3-22; fifth draft, pp. 3-15; Chairman’s a-bomb report, pp. 3-15).

37 The paragraph includes such expressions as: “The results were spectacular... six days later Japan surrendered unconditionally. The dramatic sweep of devastation and the political sequence of events within Japan matched almost exactly the effects planned by the men who selected the targets and the time of attack.” The second draft, p. 3.

38 Composite Report on the Atomic Bomb: It’s Power, Effects, and Limitations, Reviewed by PDD Team 1, Report No. 92f(1)(g), frame 165, Roll 327, USSBS ROR.

39 The second draft, pp. 70-72. The entire section comes from Feb. 14, 1946, memorandum “The Role of the Atomic Bomb in the Japanese Surrender Decision” that I will discuss later in this chapter.
The introductory paragraph was replaced by some accounts that emphasize the impartiality and fact-based nature of the Survey. Section H was also changed but it still asserted that Japan would have surrendered even without the atomic bomb.

More changes were made, but the structure basically remained the same from then on to the released report. These changes in different stages demonstrate the tendency in the later draft or the published report to limit the effects of the atomic bomb. For example, whereas the first report compared the atomic bombing of Hiroshima with from 200 to 750 B-29s, loaded with incendiaries to achieve the same devastation, the later drafts and published report compared it with just 210 B-29s.

The ratios of buildings destroyed became smaller in later drafts and the published report. For example, the figure in the third draft, “40,653 out of a total of 50,160 buildings in the urban area, or 81.1 percent” destroyed in Hiroshima, was changed to “62,000 out of a

40 Ibid., p. 70.
41 The third draft, p. 1; fourth draft, p. 1; fifth draft, p. 1; Chairman’s a-bomb report, p. 1.
42 The third draft, p. 40. The Section H is now Section B-3 of Part II, “The Japanese Decision to Surrender.” Similar attitude can be seen in the treatment of other divisional reports. For example, of the draft report “Air Effort Against Japan,” which acknowledged that the atomic bomb played a role in surrender and credits the B-29 bombing with great effect, Ofstie, director of the Naval Analysis Division, warned all holders of the report to restrict it to service personnel and not to make it available for publication under no condition. Ofstie also requested that “the memorandum be stapled to the inside cover of the copy in your possession.” Memorandum to all holders of “The Air Effort against Japan” a report by the Naval Analysis Division from R. A. Ofstie, March 28, 1946, frame 1028, Roll 21, USSBS ROR.
43 The first draft, frame 244, Roll 51, USSBS ROR. As we saw in Chapter I, 200 is the figure Alexander de Seversky had used. It is unknown where the figure 750 came from, but it is close to 730, a figure used by Gen. Farrell, Groves’ deputy, at a Congress hearing in February 1946. Supplementary Report on Atomic Bombings of Hiroshima and Nagasaki, February 1946, p. 11, Folder: de Seversky, A. P., Box 22, RPP; Statements of Alexander de Seversky and Gen. Thomas F. Farrell, Feb. 15, 1946, Hearings before the Special Committee on Atomic Energy, US Senate, 79th Cong., Part 5, pp. 468, 503.
44 The third draft, p. 52; the fourth draft, p. 52; the fifth draft, p. 38; the Chairman’s a-bomb report, p. 33.
45 The first draft, pp. 34-35; second draft, pp. 47-48; third draft, p. 12. The original division report is likely: UAD, Hiroshima, p. 19.
total of 90,000 buildings in the urban area, or 69 percent" in the fourth and later drafts, as well as in the published report. These changes were likely made at the suggestion of PDD's review of the second draft.47

References to the magnitude of damage to houses were often deleted or made ambiguous. For example, the following account in the earlier drafts was changed to the one below.

<The first complete draft>

Of the 25,145 residential buildings standing in Nagasaki on 1 August, 14,146 houses or 56.3% were burned or completely destroyed (of which 11,494 were completely burned); 5,441 houses, or 21.6%, were half-burned or destroyed; and virtually every house remaining suffered superficial damage.48 (Underlines added)

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46 The fourth draft, p. 12; fifth draft, p. 9; Chairman's a-bomb report, p. 9. The original division reports on which this account is based are likely as follows: PDD, Hiroshima, Vol. I, p. 9. Report by the Hiroshima Governor has figures of building damage that are: completely burned, 55,000; partially burned, 2,290; totally destroyed, 6,820; partially destroyed, 3,750; total, 67,860. Army Col. Kakuzo Oya, in his report, presented 61,825 as the figure for total destroyed (55,005 completely burned and 6,820 completely collapsed). Report by the Governor of Hiroshima, Report No. 92f(1)(c), p. 5; Report by Col. Oya, Report No. 92f(1)(j), p. 8, both of Roll 327, USSBS ROR. It is unknown where the PDD's figures of 62,000 and 90,000 came from.

47 The reviewer noted, "The total number of buildings [of Hiroshima] are believed incorrect especially when compared with the number ascribed to Nagasaki." Composite Report on the Atomic Bomb: It's Power, Effects, and Limitations, Reviewed by PDD Team 1, Report No. 92f(1)(g), pp. 19, frame 175, Roll 327, USSBS ROR.

48 The first complete draft, frame 419, Roll 51, USSBS ROR; second draft, p. 49. The second draft uses the figure 52,000, instead of 25,145, and 27.2%, instead of 56.3%, and 10.5% instead of 21.6%. The second draft, frame 274, Roll 51, USSBS ROR. The original document cited is: "A Synopsis Report of the Air-Raid Disaster at Nagasaki, August 9"," September 1, 1945[長崎県 『八月九日長崎市空襲災害概要報告書』 (昭和二十年九月一日)] Report No. 3c(16), frame 516, Roll 52, USSBS ROR. This report does not have the total number of residential buildings as of Aug. 1, 1945. The figure, 25,145, likely came from: UAD, Nagasaki, p. 12.
Of the 52,000 residential units in the city on 1 August, 14,146 or 27.2 percent were burned or completely destroyed (by Japanese count) (11,494 of these were burned); 5,441, or 10.5 percent were half-burned or destroyed; many of the remaining units suffered superficial or minor damage.49

The attitude of blaming the Japanese or some other factors than the bomb's effects for the magnitude of the destruction, which we saw in the divisional reports in Chapter III, is also apparent in the Chairman's report:

The slow and inadequate treatment of victims by the Japanese probably contributed to the high casualty rates. Many persons could undoubtedly have been saved had facilities, supplies, and personnel been available immediately after the bombings.50

The type of construction, coupled with antiquated fire-fighting equipment and inadequately trained personnel, afforded even in peacetime a high possibility of conflagration. Many wood-framed industrial buildings were of poor construction by American standards.51

49 The third draft, p. 20; fourth draft, p. 20; fifth draft, p. 13; Chairman's a-bomb report, p. 13. These corrections were made in handwriting over the first complete draft (frame 419, Roll 51, USSBS ROR).

50 The third draft, p. 10; fourth draft, p. 10; fifth draft, p. 8; Chairman's a-bomb report, p. 8. The original divisional report is likely: Medical Division, Hiroshima and Nagasaki, pp. 19, 55.

51 The first draft, frame 257; first complete draft, frame 396, both of Roll 51, USSBS ROR; second draft, p. 30; third draft, p. 6; fourth draft, p. 6; fifth draft, p. 5; Chairman's a-bomb report, p. 5. The original division report is likely: PDD, Preliminary Physical Damage Report on the Atomic Bomb, Report No. 92a, Roll No. 326A, pp. 2, 7-8.
On the other hand, the report acknowledges the uselessness of preparedness, saying:

“In Hiroshima, only 16 pieces of fire-fighting equipment were available for fighting the conflagration, three of them borrowed. However, it is unlikely that any public fire department in the world, even without damage to equipment or casualties to personnel, could have prevented development of a conflagration in Hiroshima, or combated it with success at more than a few locations along its perimeter. The total fire damage would not have been much different.”

This inconsistency created by the attitudes of both demystifying the effects of the atomic bomb and being awed by the bomb is in line with what we found in Chapter III.

The report also revealed that the atomic bomb failed to destroy the enemy’s war-making capacity. For example, in Hiroshima, large plants and military facilities that spread over the outskirts of the city suffered only slight industrial damage.

The report reads:

Industry in the center of the city was effectively wiped out. Though small workshops numbered several thousand, they represented only one-fourth of the total industrial production of Hiroshima, since many of them had only one or two workers. The bulk of the city’s output came from large plants located on the outskirts of the city; one-half of the industrial production came from only five firms. Of these larger companies, only

52 The third draft, p. 10; fourth draft, p. 10; fifth draft, pp. 7-8; Chairman’s a-bomb report, p. 8. The original division report is likely: PDD, Hiroshima, Vol. II, p. 19; Composite Report on the Atomic Bomb: It’s Power, Effects, and Limitations, Reviewed by PDD Team 1, Report No. 92f(1)(g), p. 8, frame 164, Roll 327, USSBS ROR.

53 The third draft, p. 7; fourth draft, p. 7; fifth draft, p. 6; Chairman’s a-bomb report, p. 6. The original division report is likely: UAD, Hiroshima, pp. 4-5, 17, 19.
one suffered more than superficial damage. Of their working force, 94 percent were uninjured. Since electric power was available, and materials and working force were not destroyed, plants ordinarily responsible for nearly three-fourths of Hiroshima’s industrial production could have resumed normal operation within 30 days of the attack had the war continued.54

Army buildings on the periphery of the city provided shelter and emergency hospital space, and dispersed Army supplies supplemented the slight amounts of food and clothing that had escaped destruction.55

Its assertion that Nagasaki had already lost its war potential even before the atomic attack also corresponds with a UAD report.56 The Chairman’s report reads: “Shortage of raw materials had reduced operations at these four Mitsubishi plants to a fraction of their capacity.”57 It also did not fail to mention CDD’s mantra: “People in the tunnel shelters escaped injury, unless exposed in the entrance shaft.”58 The Survey was confident in its

54 The third draft, p. 11; fourth draft, p. 11; fifth draft, pp. 8-9; Chairman’s a-bomb report, p. 8. The original division reports are likely: UAD, Report No. 1c(5), dated Jan. 23, 1946, pp. 45, 48-49, 52-53, Roll 10, USSBS ROR; UAD, Report No. 60a(2), pp. 61-62, Roll 304, USSBS ROR; UAD, Hiroshima, pp. 19, 24-25, 27-31. The original division reports on which this account is based are likely: UAD, Hiroshima, p. 21; Report by Lt. Col. Oya, “The Atomic bombings of Hiroshima and Nagasaki,” Roll 327, USSBS ROR.

55 The third draft, p. 8; fourth draft, p. 8; fifth draft, pp. 6; Chairman’s a-bomb report, p. 6.

56 See Chapter III of this dissertation.

57 The third draft, p. 22; fourth draft, p. 22; fifth draft, p. 15; Chairman’s a-bomb report, p. 15. The original division report is likely: UAD, Nagasaki, pp. 14-18.

58 The fourth draft, p. 5; fifth draft, p. 4; Chairman’s a-bomb report, p. 5. The original division report on which this account is based is likely on the Medical Division, Hiroshima and Nagasaki, pp. 49, 56; Report No. 13a(1), frames 59-60, 72, 190, 178, Roll 92; Report No. 1c(1), frames 825, 832, Roll 7, both of USSBS ROR; CDD, Nagasaki, p. 73. The author seems to have relied the most on the Medical Division’s report.
recommendation that “adequate shelters can be built which will reduce substantially the casualties from radiation.”

That the Survey was committed to demystifying the atomic bomb is also apparent in the original title of the Chairman’s a-bomb report: “The Atomic Bomb, Its Power, Effects, and Limitations.” (Underline added) These drafts acknowledged the “irresponsible or fantastic or hysterical statements that are current about atomic bombs,” and aimed at making it clear that the “bomb does not work by miraculous or supernatural means.” It further explained that the “forces used were all natural...not miraculous” and the “bomb, despite its tremendous power and effectiveness, is understandable, and the effect it has is directly derived from the power it is known to possess.”

A section called “Limitation on Effect,” which was to discuss or discussed the possibilities of shielding from heat, blast and gamma rays was deleted from the third and later drafts/published report. From the fourth draft, any references to the thickness of

And that might explain why the third and earlier drafts did not include this account, as it corresponds with the fact that the Medical Division did not discuss shelters in its earliest draft. See Chapter IV.

59 The fifth draft, p. 42; Chairman’s a-bomb report, p. 38. In the fourth draft, the following sentence was crossed out, to be replaced by this sentence handwritten in side space: “By taking advantage of contours and of underground construction, shelters become practicable that will reduce casualties even from a more powerful bomb burst near its target.”

60 The first and second drafts had this title. The first complete draft does not have the title page.

61 The first draft, frame 242, Roll 51, USSBS ROR; second draft, p. 6.

62 The first draft, frame 243, Roll 51, USSBS ROR; second draft, p. 6.

63 The first draft, frame 255; first complete draft, frames 476-482, both of Roll 51, USSBS ROR; second draft, pp. 21-23a.
shielding from radiation disappeared. The height from the ground of the center of the explosion ("between 1500 and 2000 feet"), the size of the fireballs ("just under 500 feet in diameter"), and the temperature at the core or the edge of the fireballs ("the order of 70 million degree" at the core and "several thousand degrees" at its edge) were made ambiguous in the later draft and published report ("several hundred feet above ground," and "several hundred feet in diameter," "millions of degrees Centigrade"). This move is in line with what we saw with the Medical Division’s report. References to the temperatures of the heat from the explosion that reached the ground and the degree of burns in accordance with distances from the Ground Zero were also deleted.

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64 The first to the third drafts had such references as: “one or two feet of concrete or earth” (first draft, frame 250, Roll 51, USSBS ROR; first complete draft, frame 467, Roll 51, USSBS ROR, with corrections to “two or three” in handwriting over the text); “two or three feet of concrete or earth” (second draft, p. 15; third draft, p. 46).

65 The first draft, frame 247; first complete draft, frame 461, both of Roll 51, USSBS ROR; second draft, p. 11.

66 The first draft, frame 247; first complete draft, frame 461, both of Roll 51, USSBS ROR; second draft, p. 11.

67 The first draft, frame 247; first complete draft, frame 461, both of Roll 51, USSBS ROR; second draft, p. 11; third draft, p. 43.

68 The third draft, p. 43; fourth draft, p. 43; fifth draft, p. 31; Chairman’s a-bomb report, p. 25.

69 The third draft, p. 43; fourth draft, p. 43; fifth draft, p. 31; Chairman’s a-bomb report, p. 25.

70 The fourth draft, p. 43; fifth draft, p. 31; Chairman’s a-bomb report, p. 25.

71 The third draft, p. 25; second draft, pp. 12-14; first complete draft, frame 404-405; first draft, frame 248-249, both of Roll 51, USSBS ROR. Texts differ by drafts. Part of the deleted account in the third draft reads: “reasoning from the extent of such phenomena as flaking of granite, bubbling of roof tile, combustion of clothing, and charring of telephone poles, Japanese scientists have placed temperatures at 2000° Centigrade 1,500 feet from ground zero at Hiroshima and 2,000 feet from ground zero at Nagasaki.” “The temperature nearer ground zero was of course much higher because closer to air zero... As the distances from ground increased, the burns fell off in intensity: third degree burns were confirmed up to 4,500 feet and reported up to 7,200 feet. Burns of unprotected skin occurred up to 12,000 or 13,000 feet from the center of the explosion, and people reported having felt a heat blast at distances as far as 24,000 feet from ground zero.”
An account on the study by the Joint Commission of the death rate at various
distances from GZ of 16,718 school children in Hiroshima disappeared from the third and
later drafts/published report.\textsuperscript{72} It is not certain why the Survey did not include this data in
the Chairman's a-bomb report when its Medical Division and the British Mission have the
information in their reports.\textsuperscript{73} Neither PDD nor the Medical Division, who reviewed the
second draft, made any suggestions referring to the part. That particular data was
unclassified, in the first place, though some other part of the same volume of the original
report was classified as secret for a security reason until 1954.\textsuperscript{74}

\textsuperscript{72} This account can be found in the first draft, frames 254-255; first complete draft, frames 473-474, both
of Roll 51, USSBS ROR; second draft, pp. 19-20.

\textsuperscript{73} Medical Division, \textit{Hiroshima and Nagasaki}, pp. 55-56; British Mission, p. 18. MED reviewed both of
these reports before their releases. Medical Division, draft of July 15, 1946, Box 91; British Mission, draft
december 1945, Box 90, both of Entry 6, MEDR.

\textsuperscript{74} The volume VI of the Medical Report of the Joint Commission for the Investigation of the Effects of the
Atomic Bomb in Japan was classified as secret because of the information on buildings in relation to its
shielding effects contained in Sections 11H and 11N. The Section 10H (“Population and casualties,
Hiroshima”) in the volume, which included mortality in “shielded” and “unshielded” school children, was
unclassified. Memorandum, Review of classifications of Hiroshima, Nagasaki Report by the Army Institute
of Pathology, from Philip G. Krueger, Oct. 14, 1946; Memorandum, Review and Classification of Report of
the Joint Commission for the Investigation of the Effects of the Atomic Bomb in Japan, to Director, Army
Institute of Pathology, from David B. Parker, Manhattan Project, Nov. 6, 1946, both in Folder:
Miscellaneous Correspondence Pertaining to Various Reports, Box 90, Entry 6, MEDR. During a
declassification process in 1950, however, an Army information officer requested a statement of policy
from the Office of the Surgeon General (OSG), regarding the part of the school children, saying, “This
information may have political implications; i.e., children, etc.” The respondent, an OSG’s security officer,
recommended that the part be deleted and the entire volume be declassified. After all, the entire volume,
less two parts in the Section 10H—“Casualties among School Children at Hiroshima” and “Casualty Study
of Yasuda Girls’ High School,” which extended a total of 33 pages—remained restricted by the order of the
Secretary of the Army “as a safeguard against exploitation as propaganda prejudicial to the security of the
nation.” The entire volume, including the two above-mentioned parts, was declassified in 1954.
Memorandum to Chief, Technical Information Office, OSG, from Robert J. Coakley, Armed Forces Special
Weapons Project, Aug. 10, 1950; Memorandum to Security Classification Branch, AGO, from M. E.
Beckham, Security Officer, SGO, Sept. 18, 1950; Memorandums to the Surgeon General from L. L. Clayton,
Office of the Adjutant General, Department of the Army, Oct. 19, 1950, all attached to the original copy of
Medical Report of the Joint Commission, Vol. 6. I am most grateful for my advisor Dr. Robert A. Jacobs for
sharing the information about these reports and the data.
There is no definite answer to this question. However, what distinguishes it from those in the Medical Division's and the British Mission's reports is its tone: “The most telling picture of the spread and intensity of the bomb’s effectiveness is given by the study of casualties among schoolchildren at Hiroshima. These children had been mobilized for clearing firebreaks, and were at work at the time of the explosion under organized control that made it possible to place each group in relation to ground zero... The sharply graded decline is striking, and particularly so in the percentage killed.”

**Formation of the Morale Division Report**

As we saw earlier in this Chapter, the Chairman’s a-bomb report was inclined to conclude that the atomic bomb did not compel Japan’s surrender by itself. But it did not include the early-surrender conclusion. This makes us wonder, especially when the report has a section, entitled, “The Japanese decision to surrender.” What, then, does this section say as to the reason why Japan surrendered? To discuss this question, it is essential that we explore the Morale Division’s report, from which this almost entire section came from.

The Morale Division published only one report from its study in the Pacific—*The Effects of Strategic Bombing on Japanese Morale.* It includes a 13-page chapter: “Effects of

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75 The first draft, frames 254-255; first complete draft, frames 473-474, both of Roll 51, USSBS ROR; second draft, pp. 19-20.

76 The third draft, pp. 38-40; fourth draft, pp. 38-40; fifth draft, pp. 27-29; Chairman’s a-bomb report, pp. 22-23.

77 The section in the Chairman’s a-bomb report almost entirely comes from “Effect of the Bomb on the Japanese Government” in the Morale Division report (pp. 99-100).

78 Morale Division, pp. 1-284.
the Atomic bombs on Morale”\textsuperscript{79} and another, 10-page “The Role of Morale in Japan’s Surrender,”\textsuperscript{80} which, together, are similar in scope and purpose with the Chairman’s \textit{Japan’s Struggle to End the War}\textsuperscript{81}

Of all the five divisions that studied the effects of the atomic bomb, this division conducted studies that were most relevant to the early-surrender hypothesis, because its mission was deeply associated with Japan’s decision to surrender. And the Survey would take advantage of the division’s work, in order to support the counterfactual. In the following, I examine how the Chairman’s a-bomb report and the Morale Division’s report resonated each other, revolving around the counterfactual.

According to the Morale Division, the bomb was the most important single factor that lowered the morale of the two areas of Hiroshima and Nagasaki, and their vicinities, while it was outranked by the conventional air raids and military losses in its effect on the certainty that Japan could not win the war in the rest of the country.\textsuperscript{82} With the extensive damage across the country by the air attacks and losses at Saipan, the Philippines and

\textsuperscript{79} Chapter 8, Morale Division, pp. 91-103.

\textsuperscript{80} Chapter 11, Morale Division, pp. 137-146.

\textsuperscript{81} It is in a way even more comprehensive than \textit{Japan’s Struggle to End the War} as it includes the reference to the failed military \textit{coup d’état} before the broadcasting of the Imperial Rescript, which the Chairman’s report does not have. On the other hand, it does not discuss in detail the effects of the Allies military operations, like \textit{Japan’s Struggle to End the War} does. Morale Division, pp. 144-145. There are also a couple of paragraphs in the Morale Division report that are also used in the Chairman’s Summary Report.

\textsuperscript{82} Morale Division, pp. 95-96. Also corrected June 15 draft, p. 15 (See Note 96 below); June 15 draft (See Note 94 below), p. 15; March 15 draft, pp. 11-12; Feb. 6 draft, pp. 8-13.
Okinawa, the Morale Division concluded that the effects of the atomic bomb on the morale of the public was confined mainly to that of the target areas.\textsuperscript{83} The report reads:

Physically devastating as the atomic bombs were in the cities of Hiroshima and Nagasaki, their effects on Japanese morale were limited by a number of factors. Among these factors: only two of these bombs were dropped, and not until late in the war when other influence had already driven the Japanese into approaching desperation; and the news of the bombs was effectively confined for a time to the immediate vicinity of the two cities.\textsuperscript{84}

The report describes how people in the two cities—Hiroshima almost intact and Nagasaki not so extensively bombed before the atomic bombings—had maintained higher confidence about winning the war than other conventionally bombed cities, up until the day of the attacks.\textsuperscript{85} It found the most common reaction to the bombing was fear (47 percent), followed by admiration for the power and scientific skill that helped in the discovery and production of the bomb (26 percent), and that of anger (17 percent).\textsuperscript{86}

\textsuperscript{83} Morale Division, pp. 97-98. Also corrected June 15 draft, pp. 21-23; June 15 draft, pp. 21-23; March 15 draft, p. 12; Feb. 6 draft, pp. 12-13.

\textsuperscript{84} Morale Division, p. 3. A slightly different version can be found in Chapter 1, pp. 8-9, corrected June 15 draft.

\textsuperscript{85} Morale Division, pp. 91-92. This result can also be found in all the draft. The corrected June 15 draft, p. 3; June 15 draft, p. 3; March 15 draft (See Note 93 below), p. 1; Feb. 6 draft (See Note 92 below), pp. 1-3.

\textsuperscript{86} “The total percentage equals more than 100 because many respondents gave more than one answer.” Morale Division, p. 92. This result can also be found in all the draft. The corrected June 15 draft, pp. 5-10; June 15 draft, pp. 5-10; March 15 draft (See Note 93 below), pp. 4-9; Feb. 6 draft (See Note 92 below), pp. 4-8.
Only 10 percent of the people in areas other than Hiroshima and Nagasaki said they became certain that Japan could not win, and the other 10 percent became unwilling to go on with the war, because of the bomb. Those who said that accounted for 28 percent and 24 percent, respectively, even within Hiroshima and Nagasaki areas, and the morale of these areas after the bomb was still higher than the rest of Japan.87

On the contrary, bombing experiences, military losses and consumer deprivations, such as food shortage, had been shared by the entire population, uniformly undermining morale, whether they had personally experienced raids or not, the report said.88 The division gathered that the atomic bomb influenced the Japanese decision to surrender only in a limited capacity, and came up with a conclusion that is analogous to the early-surrender hypothesis:

From the standpoint of the politics of surrender—and by August 1945 politics were the key—the atom bombing of Hiroshima and Nagasaki was not essential. From its studies of Japanese resources, military position, and ruling class politics, the Survey estimates that the government would have surrendered prior to 1 November and certainly before the end of the year, whether or not the atomic bombs had been dropped and Russia had entered the war.89 (Hereafter, “pseudo-counterfactual conclusion”)


88 Morale Division, p. 2; corrected June 15 draft, p. 4.

89 Morale Division, p. 4. It was written over a text of the decisive weapon argument in the corrected June 15 draft (Chapter 1, p. 9) by handwriting.
But how did they reach a conclusion that is almost identical to the counterfactual? Was it a ready-made opinion handed down by the Survey executives or was it the result of the division's own, based on their research?

Actually, earlier drafts of the Moral Division present opposite arguments. This does not necessarily mean the later drafts and published report are faulty. It is possible that the published report came up with different results from earlier drafts after all the reviews and confirmations of facts. To find the answer, it will require a thorough examination of the records of the interviews of thousands of Japanese individuals the division conducted, which can be found in the USSBS microfilm.90

I will not embark on this ambitious job at this time. In the following, however, I would like to show how the narrative of the report changed during the course of the writing. Unlike other divisions’ reports, which only became stronger in their support of conventional forces in their later drafts, the Morale Division’s report took a different path from an opposite point. The endeavor of all these divisions, however, was headed toward the same direction—that the atomic bomb was not decisive in Japan’s surrender.

There are at least three drafts on the effects of the atomic bomb for the Morale Division report before it was published in June 1947.91 The earliest one I found is dated

90 The microfilmed documents of the Morale Division alone count 115 rolls (Rolls 92-206, of which 151-206 consist of records of interviews of Japanese individuals) of all the 377 rolls in USSBS ROR.

91 There is also Feb. 11, 1946, draft. But it is not complete (12 pages) and does not include any sections or chapters on the atomic bomb. Morale Division, The Effect of Bombing on Japanese Morale (Interim Report), Feb. 11, 1946, Report No. 53a(62)b, frames 521-532, Roll 273, USSBS ROR.
February 6, 1946 (Hereafter, “the Feb. 6 draft”),\textsuperscript{92} which was likely followed by the second and the third drafts completed on March 15\textsuperscript{93} and June 15,\textsuperscript{94} respectively (Hereafter, “the March 15 draft” and “the June 15 draft”). These drafts would become a chapter, “Effects of the Atomic Bombs on Morale,” in the published report.\textsuperscript{95}

Only the June 15 drafts come in an entire report. Because there is another June 15 draft in the USSBS microfilm that comes with extensive handwriting corrections over the typed text and inserts that have replaced original pages, which would be reflected in the final report, demonstrating part of the report’s transition, I treat this one (Hereafter, “the corrected June 15 draft”) separately from the other June 15 draft.\textsuperscript{96} In addition, there are two interim reports, dated Feb. 11 and March 21, respectively, which consist of a short summary of the division report in progress.\textsuperscript{97} The comparison of these drafts demonstrates

\textsuperscript{92} Preliminary Draft, The Effect of the Atomic Bombings on Japanese Morale, Feb. 6, 1946, in Report No. 1c(2), frames 852-866, Roll 8; Report No. 53a(62)(c), frames 533-547, Roll 273; six preliminary drafts in Report No. 14h(1), frames 816-831, 832-847, 848-863, 864-879, 899-913 and 914-929, Roll 133, all of USSBS ROR (Hereafter, “the Feb. 6 draft”). Some of these come in different typing, layouts and page numberings, but the contents are the same. Hereafter, I will use the page numbering of Report No. 1c(2) for the Feb. 6 draft.

\textsuperscript{93} The Effect of the Atomic Bombings on Japanese Morale (Revised), March 15, 1946, three copies (frames 716-732, 818-834, 835-851) in Report No. 1c(2), Roll 8, USSBS ROR.

\textsuperscript{94} The Effects of Strategic Bombing on Japanese Morale, June 15, 1946, in Report No. 1c(2), frames 257-715 (Chapter 8 [numbered “9” in this draft], the Effects of the Atomic Bombs on Japanese Morale is found in frames 480-510), Roll 8, USSBS ROR. Because this draft comes in entire report, I refer to the chapter number and pages in it before “June 15 draft” when I cite from chapters other than Chapter 8.

\textsuperscript{95} Chapter 8, Morale Division, pp. 91-103. The Feb. 6 and March 15 drafts have a slightly different title, “The Effect of the Atomic Bombings on Japanese Morale.”

\textsuperscript{96} The Effects of Strategic Bombing on Japanese Morale, June 15, 1946, in Report No. 1c(2), frames 978-1378, Roll 7 (Chapter 8, the Effects of the Atomic Bombs on Japanese Morale is found in frames 1223-1253), frames 1-253, Roll 8, USSBS ROR. Because this draft comes in entire report, I refer to the chapter number and pages in it before “corrected June 15 draft” when I cite from chapters other than Chapter 8.

\textsuperscript{97} The Morale Division, The Effect of Bombing on Japanese Morale (Interim Report), Feb. 11, 1946, Report No. 53a(62)(b), frames 521-532, Roll 273; also in Report No. 14h(23)a, frames 485-496 and
how they were transformed into one that would support the early-surrender hypothesis.

The Feb. 6 draft, for example, included the following paragraphs:

(A) Breaking the confidence of the civilian population, however, was incidental to the more decisive [sic] consequences of the bomb’s use—elimination of the last vestiges [sic] of the government’s determination to continue the war.98 (Underline added)

(B) It was facetiously remarked by some that the atomic bomb was the real Kamikaze, since it saved Japan from further useless slaughter and destruction. Although there were difficulties in negotiation before the Potsdam Declaration was accepted, it was the atomic bomb which first offered certain government leaders the opportunity to sway the military.99 (Underline added)

These accounts argue that the atomic bomb played a decisive role in bringing Japan’s surrender. In the March 15 draft, however, the underlined part of the Paragraph (A) was changed to read: “speeding up the political maneuverings to achieve peace.”100 In the draft, the Paragraph (B) above was also replaced by the following Paragraph (C).

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98 The Feb. 6 draft, p.15.

99 The Feb. 6 draft, p. 13.

100 The March 15 draft, p. 16.
(C) A quip was current in high government circles at this time that the atomic bomb was the real Kamikaze, since it saved Japan from further useless slaughter and destruction. It is apparent, however, that the Government was looking for an opportunity to surrender, and the testimony of various Japanese leaders indicates that another would have been found at an early date, even if the atomic bomb had not been dropped.101 (Underline added)

As we can see, the underlined sentences in Paragraphs (B) and (C) contain opposite views. Also, in the March 15 draft, following sentences in support of counterfactual were added.

This was only secondarily a morale effect, however. It cannot even be said that it was the atomic bomb which convinced the leaders who effected the peace that surrender was necessary.102 (Hereafter, “Sentences (D)"

The bomb did not convince the military that defense of the home islands was impossible, if their behavior in government councils is adequate.103

101 The March 15 draft, p. 15. In the June 15 draft, it is “some other excuses” instead of “another” (p. 29).

102 The March 15 draft, pp. 12-13; June 15 draft, pp. 25-26; corrected June 15 draft, pp. 25-26; Morale Division, p. 99. This was followed by a sentence: “The decision to seek ways and means to terminate the war, influenced in part by knowledge of the low state of popular morale, had been taken in May 1945 by the Supreme War Guidance Council.” Wordings of earlier drafts are a little different. The Feb. 6 draft used the date “20 June” instead of “26 June,” in the March 15 and June 15 drafts, and “May 1945” in the corrected June 15 draft and the final report. This paragraph also appears in USSBS Chairman's Office, Summary Report, p. 22.

The main difference between the earliest draft and the March 15 draft comes from the difference in ways of perceiving the extent of the influence the bomb had on decision makers. The Feb. 6 draft deemed the bomb to have been decisive, while March 15 draft made light of its effect. But where does that difference come from?

The Morale Division discussed the issue of morale using two separate and different sets of sources—a collection of interrogations with Japanese leaders and the other, 3,100 interviews of Japanese civilians.\textsuperscript{104} That the effect of the atomic bomb on the nation as a whole was limited, which had come from the latter set, had been expressed from the earliest draft.\textsuperscript{105} The Feb. 6 draft, for example, mentions people’s doubts about Japanese victory having reached quite a high level before the atomic bombing due to general air raids and consumer deprivations, and lack of understanding of the meaning of the new weapon because of the lack of channels of mass communication.\textsuperscript{106}

These arguments were maintained through to the final report and were summarized as follows: “The atomic bombings took place so very close to the surrender that a sufficient amount of time was not available in which to connect the catastrophe of the bomb with the conduct of the war. Some of the respondents may have answered questions about morale during the war solely on the basis of the period before the atomic bombings.”\textsuperscript{107}

\begin{flushright}
104 \textit{“Introduction,” Second Interim Report, frames 734, 768, and 868, Roll 8, USSBS ROR.}

105 Feb. 6 draft, 10-13; Interim Report, pp. 4-10; Second Interim Report, 6-10.

106 Feb. 6 draft, 11-13.

107 The June 15 draft, p. 25; corrected June 15 draft, p. 25; Morale Division, p. 98.
\end{flushright}
On the other hand, the division argued “the atomic bomb had more effects on the thinking of government leaders than on the morale of the rank and file of civilians outside of the target cities.”\footnote{The Morale Division, p. 99; corrected June 15 draft, p. 25. In earlier drafts it was: “The atomic bomb had less effects on the morale of the rank and file of civilians (outside of the target cities) than on government leaders.” The Feb. 6 draft, p. 13 (without the words in the parenthesis); March 15 draft, p. 12; June 15 draft, p. 25.} The Feb. 6 draft found the atomic bomb more responsible for Japan’s surrender probably because of the powerful testimony of one Japanese government official.

Tsunehisa Sakomizu, Chief Cabinet Secretary, was one of 28 Japanese government officials, intellectuals and industrial executives whom the division interrogated while they were in Japan.\footnote{For the list of individuals that the Division interviewed, see a web page of the National Diet Library (Tokyo) at https://rnavi.ndl.go.jp/kensei/entry/USB-12-43.php. Interview of Sakomizu was arranged through Maxwell Kleiman, a NY businessman and an old friend of Sakomizu, who worked for the Office of Strategic Services during the war. For Kleiman’s background, see Iguchi, Haruo, “An Unfinished Dream: Yoshisuke Ayukawa’s Economic Diplomacy Toward the U.S., 1937-1940,” \textit{Journal of American and Canadian studies}, No. 16 (1998), pp. 24-25.} He told the division that the chance to end the war had come with the atomic bombings, as no country could carry on a war against a nation that possesses such a weapon.\footnote{Statement of Hisatsune Sakomizu, No. 609, Dec. 11, 1945, p. 5, frame 578, Reel 6, \textit{Interrogations of Japanese leaders.}} “It was not necessary to blame the military side, the manufacturing people, or anyone else—just the atomic bomb. It was a good excuse,” he said. “Someone said that the atomic bomb was the Kamikaze to save Japan.”\footnote{\textit{Ibid}, p. 5.}

In the Feb. 6 draft, he is cited as “a informant close to the Prime Minister” who told the Survey that the atomic bomb provided the peace party with the opportunity to win the military leaders to their view since “to surrender would not cause either the military or the
industrialists to lose face, nor would it be a reflection on the valor of the Japanese soldiers.”

In the interrogation, Sakomizu also testified that the Japanese government had decided to surrender well before the atomic attack. According to Sakomizu, the Emperor, at a meeting on June 20, 1945, after having read a report that he prepared for the previous meeting held on June 9, told: “I think it is necessary for us to have a plan to close the war at once as well as one to defend the home island.” And as a result of this Emperor’s remark, Prime Minister Kantaro Suzuki “decided to stop the war.”

The narrative of the Morale Division’s earliest drafts corresponds perfectly with what Sakomizu told the division. Recognition of defeat and actual surrender are two different things. While “national leaders, intellectuals and informed circles generally felt that Japan could not win” and “basic influence toward surrender were already at work before August, 1945,” the atomic bomb and Russian entry into war “were deemed the occasions for overcoming the opposition of the military, and permitted the ‘face-saving’.” Actually, the section of “The Government” in the Feb. 6 draft consists entirely of Sakomizu’s

112 The Feb. 6 draft, p. 13. It is not exactly how he said as the original text not in quotations.
114 Ibid, p. 3.
115 Interim Report, p. 9.
testimony,116 as 27 others who were interrogated by the division hardly discussed the atomic bomb in their statements.117

Those changes made to the section of the March 15 draft resulted in a shift from the narrative. Those newly added accounts limited the role of the atomic bomb in Japan's decision. On the other hand, because it retained some elements of the Sakomizu testimony,


117 Only a handful of 28 individuals the Morale Division questioned referred to the atomic bomb. Nobushige Nishizawa of Police Affairs Bureau, Home Affairs Ministry, said: “The principal causes of the end of the war were the atomic bomb and Russian entry,” but no further discussion. (No. 458, Nov. 22, 1945, frame 688, Reel 9); Sukehide Kabayama of Publicity Bureau of the Foreign Office, mentioned the atomic bomb once but in the context of keeping wartime secret. (No. 443, Nov. 21, 1945, frames 595, Reel 9); Toshiaki Fujiiwara, a military police captain, said, “After the atomic bomb the people knew that they couldn’t fight the US.” (Dec. 20-21, 1945, frame 875, Reel 3); Atsuyasu Funada, official in the Secretariat of the Board of Information, said, “the hopes of the die-hards were dashed to pieces by participation in the war of Russia and the atomic bomb. Both of these gave good material to the peace group.” (Dec. 12, 1945, frames 1076-1077, Reel 3); Toshiro Tsukahara, a company president, told the Survey “People in general were angry about the bombing, but especially so at the time of the atomic bomb.” (Dec. 17, 1945, frame 422, Reel 5) He also said: “Some people said that if America used the atomic bomb then we ought to use bacteria bombs.” (frame 423, Reel 5) On the other hand, records of the interrogations of the 28 individuals show that the division was interested in the effects of the American propaganda, likely because many of its members served in the Office of Strategic Services (OSS) during the war. While the interrogators of the Morale Division hardly asked questions about the atomic bomb, they often asked questions regarding the effects of the aerial bombing and American propaganda. And many of these Japanese individuals questioned spoke how aerial bombing demoralized the public. For example, Yutaka Akabane, Vice-Chief of the Cabinet Information Board, Home Ministry, explained that the Tokyo Air Raid of March 10, 1945, turned people’s high confidence into a fear and feeling of doubt about victory (Oct. 22, 1945; frame 233, Reel 8). Sasaki Katsumi of the public relations section of the Board of Information, said, “in the spring of this year the terrible air raids began. There was also the defeats at Iwo, Saipan and in Burma. These were not much a great shock to the Japanese people, but the bombing was.” (Dec. 22, 1945, frame 623, Reel 6). Goro Koizumi, Chief of the Police Bureau, Home Ministry, also attributed the decline of the public’s morale to the fire bombings of Japanese cities in general (Oct. 22, 25, 1945; frame 446, Reel 5; frame 416, Reel 8). Kazuo Kawai, Chief Editorial Writer of the Nippon Times, said, “the real terror came with those leaflets naming the places to be bombed. When you did that and they bombed the places named, then there was real terror.” (Nov. 19, 1945, frames 247, 249, Reel 5) Sukehide Kabayama of the Publicity Bureau of the Foreign Office in charge of Radio Monitoring also spoke to the same end (Nov. 21, 1945, frames 601, Reel 9). “in the spring of this year the terrible air raids began. There was also the defeats [sic] at Iwo, Saipan and in Burma. These were not much a great shock to the Japanese people, but the bombing was.” Several individuals referred to the fall of Saipan as the turning point in terms of people’s morale. Statement of Prof. Kimio Hayashi of Waseda University (Oct. 26, 1945, frame 465, Reel 8; frames 138-139, Reel 4); Statement of Kazuo Kawai (Nov. 19, 1945, frame 249, Reel 5); Statement of Sukehide Kabayama (Nov. 21, 1945, frames 596-597, Reel 9); Statement of Toshiro Tsukahara of the Board of Information (Dec. 12, 1945, frame 809, Reel 7). All of the reels cited above from Interrogations of Japanese leaders.
the section is still open to both interpretations—the decisive weapon narrative and the
other that argues it did not end the war. For example, a part of the text reads:

It [the atomic bomb] did permit the Government to say... that no army without the
weapon could possibly resist an enemy who had it, thus saving 'face' for the Army
leaders and not reflecting on the competence of Japanese industrialists or the valor of
the Japanese soldier... There seems little doubt... that the bombing of Hiroshima and
Nagasaki weakened their inclination to oppose the peace group.\footnote{The March 15 draft, p. 14. This account stayed through to the final report; June 15 draft, p. 29; corrected June 15 draft, p. 29; Morale Division, p. 100}

The logic in this section revolves around mainly two conflicting assumptions: that
the surrender decision had already been made before the atomic bomb was used and that
the Supreme War Guidance Council remained deadlocked even after the atomic bomb was
dropped, allowing only the Emperor to intervene.\footnote{These accounts were most likely derived from \textit{Japan's Struggle to End the War} (pp. 2-9).}

But because of the concluding
sentence—the underlined part in the Paragraph (C)—the main argument of the March 15
draft sounds more like the bomb was not the cause of Japan's surrender. But how did they
come to an opposite conclusion in such a short time?

There is no definite answer to this question. But it might have something to do with
a memorandum issued on February 14, 1946, by the Office of Chairman.\footnote{USSBS Office of the Chairman, Note on the Role of Atom-Bombs in the Japanese Surrender Decision, Feb. 14, 1946. See Note 2 of this chapter.}

\footnote{The four-page memorandum, \textquotedblleft Notes on the Role of Atom-Bombs in the Japanese Surrender Decision,\textquotedblright}
argues: “The Hiroshima and Nagasaki bombs did not defeat Japan, nor by the testimony of the enemy leaders who ended the war did they persuade Japan to accept unconditional surrender.” (See Appendix I to this dissertation) It explains the assertion as follows:

1) The decision to end the war and to accept defeat on Allied terms had already been taken by the emperor as early as April 1945.

2) The Supreme War Guidance Council remained split even after the atomic bomb was dropped.

3) The Hiroshima attack worked as lubrication and contributed to a situation wherein the government could bring the Emperor directly into the decision for immediate acceptance of the Potsdam declaration.

4) The Hiroshima bomb and the rumor obtained from an American prisoner of war that an atom-bomb attack on Tokyo was scheduled for August 12, 1945, helped the Japanese make up their minds to surrender.121

The memorandum agrees that “the bombs did foreshorten the war and expedite the peace.” But it did not find it decisive as “the war would have been over prior to the invasion of the homeland planned for November 1, 1945.”122 Most of the paragraphs that follow this


conclusion are devoted to the chronological documentations of the course of Japanese
decision to surrender that had developed since April 1945.\textsuperscript{123}

It is not clear how widely it was circulated and how binding it was.\textsuperscript{124} But if it was
binding in any way, it would explain the transition from Feb. 6 draft to March 15 draft.
Actually, elements of the memorandum remained extensively in the March 15 draft. For the
Morale Division to come to include the pseudo-counterfactual conclusion in its report,
however, it would take another twist. Interestingly, this twist involves changes both in
support of and against the counterfactual. To understand these changes, we now have to go
back to the Chairman’s a-bomb report to see the final part of its transition.

\textbf{A Contested Terrain for the Two Narratives}

Although it did not include the counterfactual conclusion, the Chairman’s a-bomb
report was certainly intended to vindicate its early-surrender arguments, as it has a section,
“The Japanese decision to surrender.”\textsuperscript{125} There is a good reason to believe this section was
designed to prove its argument because in the earliest drafts, it was “The Role of the Atomic


\textsuperscript{124} As we saw in the Note 2 of this chapter, the memorandum is found in two microfilm reels: one that
contains materials relevant to the Chairman’s a-bomb report and the other those relevant to the Morale
Division report. If it was circulated among all the divisions that studied the effects of the atomic bomb,
however, its influence on the part of four other divisions is doubtful as Japan’s surrender decision hardly
concerns these divisions’ missions.

\textsuperscript{125} The third draft, pp. 38-40; fourth draft, pp. 38-40; fifth draft, pp. 27-29; Chairman’s a-bomb report, pp.
22-23.
Bomb in the Japanese Surrender Decision”¹²⁶ that was identical to the “Note on the Role of Atom-Bombs in the Japanese Surrender Decision” issued by the Chairman’s Office on February 14, which I discussed above.

“The Role of the Atomic Bomb in the Japanese Surrender Decision” was replaced, from the third draft, by “The Japanese decision to surrender,” which used almost the entire section of “The Government” in the chapter, “The Effects of the Atomic Bombs on Morale,” in the Morale Division’s March 15 draft.¹²⁷ Basically, therefore, the section in the third draft of the Chairman’s a-bomb report retained the main ideas of the February 14 memorandum, and it is now supported by the “findings” of the Morale Division.

On the other hand, some shift occurred between the third and fourth drafts. The underline sentence in the Paragraph (E) below, which is identical to the Paragraph (C) in the Morale Division’s March 15 draft, was changed to Sentence (F) in the fourth draft.

(E) A quip was current in high government circles at this time that the atomic bomb was the real Kamikaze, since it saved Japan from further useless slaughter and destruction. It is apparent, however, that the Government was looking for an opportunity to surrender, and the testimony of various Japanese leaders indicates

¹²⁶ The first complete draft, frames 442-443, Roll 51, USSBS ROR; second draft, pp. 70-72. In the first draft, it was “The atomic bomb and the Japanese surrender,” but the content of the section was left blank with a note, “in preparation.” (p. 54)

¹²⁷ Morale Division, pp. 99-100.
that another would have been found at an early date, even if the atomic bomb had not been dropped.  

(F) It is apparent that in the atomic bomb the Japanese found the opportunity which they had been seeking to break the existing deadlock within the Government over acceptance of the Potsdam terms.

This change alters the tone of the narrative of the report completely because Sentence (F) argues that the atomic bomb was decisive in the Japanese surrender. The section retained some counterfactual elements, including a sentence that was a variant of Sentences (D) in the Morale Division's March 15 draft I discussed earlier. But because the section also contained elements of Sakomizu testimony, just like the Morale Division's March 15 draft, it was also open to both interpretations — the decisive weapon narrative and the early-surrender hypothesis. And the concluding sentence seems to have a defining effect. This paragraph stayed this way through to the final report.

The change made in the Chairman's a-bomb report was also applied to the Morale Division's final report. Once shifted toward the early-surrender hypothesis, the divisional

\[128\] It is identical to the Paragraph (C) in the Morale Division's report discussed in p. 250 of this chapter. The March 15 draft, p. 15. In the June 15 draft, it is "some other excuses" instead of "another" (p. 29).

\[129\] The fourth draft, p. 40.

\[130\] "It cannot be said... that the atomic bomb convinced the leaders who effected the peace of the necessity of surrender." (The third draft, p. 38; fourth draft, p. 38; fifth draft, p. 27; Chairman's a-bomb report, p. 22; the Morale Division, p. 99).

\[131\] See p. 263 of this chapter.

\[132\] The fifth draft, p. 29; Chairman’s a-bomb report, p. 23.
report was now taking another turn. The underlined sentence in the Paragraph (C) I
discussed earlier was again changed, this time, to the Sentence (F), the same conclusion for
the section of the Japanese decision to surrender in the Chairman’s report.\textsuperscript{133}

Several paragraphs were also changed in the section of the “Effect of the Bomb on
the Japanese Government” (formerly, “The Government”), with some added paragraphs
almost all cited from Sakomizu’s statement in the interrogation. These accounts spoke
eloquenty of how effectively the atomic bomb provided the Japanese government with the
opportunity to surrender.\textsuperscript{134} Also, the phrase that replaced the underline part of Paragraph
(A),\textsuperscript{135} which reduced the decisiveness of the atomic bomb, was again changed now to
read: “Breaking the confidence of the civilian population, however, was only incidental to
the more decisive consequences of the bomb’s use in the political maneuverings to achieve
peace which took place within the Japanese government.”\textsuperscript{136} (Underline added)

As the Survey was inclined to the counterfactual conclusion, how did it end up in
including the decisive weapon narrative in its reports?

It is apparent that the Survey did not make the changes willingly. If they were happy
with Sentence (F) or any other decisive weapon narrative accounts, they would have not
pursued to include the early-surrender conclusion in the two other Chairman’s reports that

\textsuperscript{133} Morale Division, p. 100. The correction was made over the typed text of the corrected June 15 draft by
handwriting (p. 29).

\textsuperscript{134} The corrected June 15 draft, pp. 26-29; Morale Division, pp. 99-100.

\textsuperscript{135} See p. 263 of this chapter.

\textsuperscript{136} Morale Division, p. 100. This was done by an insert for the corrected June 15 draft, p. 31.
followed the a-bomb report. In fact, the Survey had also moved to incorporate
counterfactual elements in other parts of the Chairman’s a-bomb report. For example, a
paragraph that was added in the fourth draft just before the section of “The Japanese
decision to surrender,” reads:

Even in the target cities, it must be emphasized, the atomic bombs did not uniformly
destroy the Japanese fighting spirit. Hiroshima and Nagasaki, when compared with
other Japanese cities, were not more defeatist than the average. The bombs were
tremendous personal catastrophes to the survivors, but neither time nor
understanding of the revolutionary threat of the atomic bomb permitted them to see in
these personal catastrophes a final blow to Japan’s prospects for victory or negotiated
peace.137 (Underline added)

Also added in this draft just prior to this paragraph is the data on how the certainty
of defeat declined in the wake of the atomic attacks as distance from the target cities
increased138—probably as evidence to support the above newly added paragraph.

Actually, there is even a trace of the Survey’s attempt to include the counterfactual
conclusion in the Chairman’s a-bomb report. The third draft in the MED Papers has an
insert on a separate paper to the last page of the section, “The Japanese decision to
surrender,” suggesting that two paragraphs, including one consisting entirely of the

137 The fourth draft, p. 38; fifth draft, p. 27; Chairman’s a-bomb report, p. 22.

138 The fourth draft, p. 38; fifth draft, p. 26; Chairman’s a-bomb report, p. 22. The data shows percentages
of people who became certain of defeat because of the atomic bomb, in accordance with the distance from
the target cities. The original data can be found in the Moral Division, p. 98.
early-surrender conclusion (Hereafter, Insert (G)),\textsuperscript{139} replace the first part of Paragraph (E).

The insert was never incorporated in the later draft or the final report. Yet, it attests to the strong commitment on the part of the Survey to retain the counterfactual narrative. It was also this time that the Morale Division added some accounts that limits the role of the atomic bomb in Japan’s decision to surrender, including the pseudo-counterfactual, to its report.\textsuperscript{140} Among the newly added accounts were the following sentences—ones that present the atomic bomb as just another bomb:

Hiroshima and Nagasaki are found to resemble the lightly bombed and unbombed cities in morale rather than the heavily bombed cities.\textsuperscript{141}

\textsuperscript{139} This third draft with the insert of the early-surrender conclusion for p. 40 can only be found in Box 92, Entry 6, MEDR. In addition to the first paragraph of the counterfactual, the second paragraph reads: “In this period, the air attack with conventional weapons would have continued with increasing weight. The casualty rate had averaged over 3,500 killed and wounded for each urban raid, and the destruction averaged 1.8 square miles of the target city for each attack. The rise in the number and weight of attacks would have balanced the disappearance of major intact targets, and the loss of lives and property would have continued. The atomic bombs simply concentrated their devastation at two cities and at two moments; the total destruction was no greater than was to be expected from continuation of the war even without an invasion. Civilian deaths and deprivations are the results of modern warfare, not simply of the atomic bomb.” There is no attached document but the pencil mark points clearly where the insert should be incorporated in the draft. But this can only be interpreted as the Survey’s attempt to incorporate the conclusion into the Chairman’s a-bomb report, as no other individuals or organizations had an interest in doing so.

\textsuperscript{140} The account of the pseudo-counterfactual replaced a decisive weapon narrative: “From the possibly specious vantage point of hind sight, it appears that the bomb served to weaken the position of the military, who were holding out for continuation of the war, in the ruling coalition. It also provided them with an opportunity to ‘save face’ in withdrawing their opposition to surrender.” (Chapter 1, the corrected June 15 draft, pp. 9-10)

\textsuperscript{141} The June 15 draft, p. 13; corrected June 15 draft; Morale Division, p. 95.
The atomic bomb did not produce any different kind of morale effects than those produced by incendiary and high explosive bombs...nor...was it the major factor leading to the destruction of the will to resist in all Japan.\(^{142}\)

How can we explain these actions that were headed toward opposite directions in one draft or in one report, of the Chairman's a-bomb report and the Morale Division's report, respectively?

There is no definite answer to this question. But probably it had something to do with MED.

As a report that predominantly discusses the effects of the atomic bomb, the Chairman's a-bomb report was destined to be reviewed by the Army element before its release. It was so arranged when Henry Alexander, an USSBS Vice Chairman in the Pacific, spoke with Leslie R. Groves, Commander of the District, in August 1945 before the Survey analysts embarked on the trip to Japan.\(^{143}\)

There are two drafts of the Chairman's a-bomb report in the MED Papers at the National Archives—the third draft of April 27 and the fourth draft of June 7.\(^{144}\) Based on the markings on various pages of these drafts, they were obviously reviewed by the MED officials for security clearance. These drafts do not indicate any signs of suggestions or

\(^{142}\) The corrected June 15 draft, p. 12; Morale Division, p. 94. Only the first sentence used in the June 15 draft (p. 12).

\(^{143}\) See Chapter II of this dissertation.

\(^{144}\) In addition, MED reviewed the fifth draft of June 19. See, for details, Chapter VI of this dissertation.
corrections by the district officials on these places that were changed to the decisive weapon narrative;\textsuperscript{145} however, the change came only after MED reviewed the third draft.\textsuperscript{146}

Naturally sensitive about how the bomb was being discussed, Groves and other MED officials could easily detect the hint of criticism against the bomb in the counterfactual elements.\textsuperscript{147} In an implicit attempt to change the underlined sentence of Paragraph (E), probably the reviewer pointed out the inconsistencies between the two sentences in the paragraph. Perhaps it was then that the Survey tried to replace the first part of Paragraph (E) with Insert (G) that include the early-surrender conclusion to make the paragraph consistent. But the censor, knowing the first part was supported by the Sakomizu’s testimony, probably demanded evidence that would support the latter part of Paragraph (E) and Insert (G). Unable to convince the MED officials, the Survey perhaps changed the sentence in Paragraph (E) to Sentence (F).

There is no evidence to prove this assumption. However, the transition of the texts in the drafts evinces that such a battle probably took place. Otherwise, it is hard to explain all the changes in the drafts and the probable attempt and failure to include the counterfactual. MED had also increasingly become frustrated with the Survey’s report by this time.\textsuperscript{148}

\begin{flushleft}
\textsuperscript{145} The third draft in Box 92, Entry 6, MEDR.
\textsuperscript{146} The fourth draft, p. 40; fifth draft, p. 29; Chairman’s a-bomb report, p. 23.
\textsuperscript{147} See Chapter VI of this dissertation.
\textsuperscript{148} See Chapter VI of this dissertation. Groves would also review the fifth draft.
\end{flushleft}
While the two organizations shared an interest in demystifying the unknown and mysterious effects of residual radiation or the delayed effects of radiation, they had totally different ideas about how they wanted to present the bomb. For MED to justify the use of the atomic bomb, it should be a revolutionary weapon that played a decisive role in ending the war. For USSBS to demystify the bomb, it could not be decisive, but just another bomb. It was inevitable that the report become a contested terrain for the two different narratives.

Unable to include the early-surrender counterfactual in the Chairman’s report, however, the Survey was now perhaps more concerned about accumulating evidence for the early-surrender conclusion in the two other reports that would follow, over which MED did not have any jurisdiction. The Survey had also gone through the trouble of changing the underlined sentence in Paragraph (C) of the Moral Division’s draft when the divisional report was apparently not the subject of the MED’s review. Perhaps that was to maintain consistencies with the Chairman’s report. Otherwise, all the other accounts that were based on the division’s findings would be deemed unreliable.

Those changes in the Morale Division’s report, however, demonstrate the fact that the divisional reports were used as tools to support their arguments. That the reviewer or

149 See Chapter IV of this dissertation.


151 See Chapters III and IV of this dissertation.

152 Memorandum to Edwin A. Locke, Jr., from Walter Wilds, July 10, 1946, Folder 651, Box 1677, Official File, White House Central Files, 1945-53, HSTL. According to this memorandum, MED did not review the two reports. There are also no manuscripts or final reports in MED papers.
the authors put a citation at the end of the pseudo-counterfactual—“See USSBS Chairman’s Report—Summary Report (Pacific Survey)—pages 25-26”\textsuperscript{153}—attests to this fact. The citation was not included in the published report, but it is the very proof that the Survey had made the Morale Division report state what they wanted to say.

Actually, it was the strength of the Survey to have these divisional reports, as no one could argue against its conclusion as long as it was supported by the results of their studies. It was this careful and meticulous job of accumulating evidence on the part of the Survey that prepared the way for the early-surrender hypothesis to fit into the two other Chairman’s reports without too many inconsistencies.

**Two Other Chairman’s Reports**

Yet, how do the results of these studies in Hiroshima and Nagasaki relate to the counterfactual conclusion? Did they contribute in any way to the formation of the early-surrender hypothesis?

The two reports—*Japan’s Struggle to End the War* and the *Summary Report*—indeed share findings with the Chairman’s a-bomb report and divisional reports.\textsuperscript{154} *Japan’s Struggle to End the War*, for example, includes the February 14 memorandum that I discussed earlier almost in its entirety in a five-page chapter, “The Political Target Under

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\textsuperscript{153} Chapter 1, the corrected June 15 draft, p. 9.
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\begin{flushleft}
\textsuperscript{154} For how much of the entire Summary Report is based on divisional reports, see 富永謙吾訳「太平洋戦争総合報告書」(Japanese translation of the Summary Report)『現代史資料 39』（みすず書房、1977年）.
\end{flushleft}
Assault,” which discusses the principal contributions to Japan’s surrender. And that means it also shares certain accounts with the Morale Division’s other drafts and the final report. The counterfactual conclusion is found at the end of the chapter.

It appears, however, that the Morale Division’s report did not contribute to the formation of either Japan’s Struggle to End the War or its counterfactual conclusion. As we saw earlier, it was rather the division’s report that was based on the Chairman’s report, as it was transformed into one with counterfactual elements after the February 14 memorandum prepared by the Office of Chairman came out.

On the other hand, the Summary Report includes a four-page section, “Effects of the Atomic Bombs,” the entire part of which is based on the Chairman’s a-bomb report (and thus divisional reports). The accounts in the section correspond with those in the a-bomb report also in that they tend to make light of the effects of the atomic bomb.

For example, the report discusses how large plants, located on the periphery both of Hiroshima and Nagasaki, escaped damage and destruction, and how fast they were recuperating, in the case of Hiroshima, and were ready to resume production within 30

155 Section B of “The Political Target Under Assault,” USSBS Chairman’s Office, Japan’s Struggle to End the War, pp. 10-13.

156 March 15 draft, pp. 12-15; corrected June 15 draft, pp. 25-29; June 15 draft, pp. 25-29; Morale Division, pp. 99-100.

157 USSBS Chairman’s Office, Summary Report, pp. 22-25. While most of the accounts in this section were devoted to the descriptions of the tremendous power of the new weapon, there are others that made light of the effects of the bomb, which were included in the divisional reports and the Chairman’s a-bomb report. For example, the section discusses how large plants, located periphery both of Hiroshima and Nagasaki, escaped damage and destruction, were ready to resume production in 30 days in Hiroshima and within several months in Nagasaki (pp. 23-24).

158 Ibid., p. 16.
days of the bombing. It did not fail to mention that those in Nagasaki would have taken
months to resume but it was because of a shortage of raw materials.

The Summary Report also exaggerated the survivability of the people in tunnel
shelters in Nagasaki. It explains how all of some 400 occupants of the tunnel shelters in
Nagasaki survived the blast of the bomb even when they were directly under the
explosion.

It is followed by the two-page section “Japan’s Struggle to End the War,” a brief
summary of the other report under the same title. The early-surrender counterfactual is
found at the end of this section. While many of the studies on the effects of the bomb in
the Summary Report are based on the Chairman’s a-bomb report and, thus, divisional
reports, these reports provided few factual bases for the counterfactual hypothesis. The
Summary Report contained the early-surrender hypothesis from its earliest draft prepared
in March 1946.

159 Ibid., pp. 23-24.
161 Ibid., p. 24. For the transition of the number of people survived in tunnel shelters in Nagasaki, see
Chapter III of this dissertation.
164 There are at least five drafts before the Summary Report, dated July 1, was released; the earliest one I
found is dated March 27, 1946, which is followed by those dated April 10, April 24, June 1, and July 1. In
addition, there is a separate draft dated March 12, which is the concluding chapter of the report. In
addition, there is a draft outline for the report dated Nov. 17, 1945. The early-surrender conclusion is
included in every draft, and even appears twice—at the end of the section “Japan’s struggle to end the
war” and in the concluding chapter—in the April 10, 24, and June 1 drafts. The March 12 draft also
included the conclusion and the March 27 draft has it in its concluding chapter. “Air Power in the Pacific
War” (Draft outline and summary, Final report), Nov. 17, 1945, Folder: 314.7 Military Histories, Box 25,
Entry 1, RG 243, NACP; Very preliminary draft, March 12, in Reports No. 1a(1)-1a(2), four copies (frames
1041-1055, 1126-1143, 1364-1373, 1440-1449), Roll 1; Preliminary draft, March 27, in Report No. 1a(1),
Then where did the early-surrender hypothesis come from? It will take another chapter or more to discuss how the counterfactual conclusion in *the Summary Report* and *Japan’s Struggle to End the War* came to what they are. I will not embark on this job at this time; however, I briefly present my observation on the question in the following.

The Survey explained in the two reports that the early-surrender conclusion was based on “a detailed investigation of all the facts, and supported by the testimony of the surviving Japanese leaders involved.”  

When we read the two reports, we can see that *the Summary Report* was based on the reports of different divisions in the Pacific Survey and many of the accounts in *Japan’s Struggle to End the War* were based on the testimony of the Japanese leaders.  

When it comes to the counterfactual conclusion, however, it is hardly supported by the statements of the Japanese leaders, as preceding studies argued.  

There are some elements in these statements that conform to the early-surrender conclusion. For example, many of those interrogated recognized their defeat in the spring of

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165 USSBS Chairman’s Office, *Summary Report*, p. 26; idem, *Japan’s Struggle to End the War*, pp. 1, 13.

166 In addition to the first part of the paragraph that include the early-surrender hypothesis in Note 163, *Japan’s Struggle to End the War* specifically notes that “the evidence is chiefly in the testimony obtained by Survey interrogation of the Army, Navy, Government, and Imperial household leaders who participated or were influential in the struggle within Japan over whether to continue the war or to accept surrender.” (p. 1)

167 Of all the 24 leaders listed in *Japan’s Struggle to End the War*, 13 were actually interrogated by the USSBS. These 13 individuals were: Naruhiko Higashikuni, Kiichiro Hiranuma, Koki Hirota, Koichi Kido, Fumimaro Konoye, Koshiro Oikawa, Jizaburo Ozawa, Hisatsune Sakomizu, Kantaro Suzuki, Sokichi Takagi, Soemu Toyoda, Yoshijiro Umezu, Yonai Mitsumasa. For the list of the 24 Japanese leaders, see Appendix B, *Japan’s Struggle to End the War*, pp. 23-35.

168 See Newman and Bernstein, “Compelling Japan’s Surrender.”
1945 or earlier. And most of the Army and some of the Navy leaders interrogated expressed their determination to fight to the end even after the a-bomb and Russian entry into the war.

That the Japanese recognized defeat months before the actual surrender and that neither the atomic bomb nor the Soviet invasion caused surrender is discussed in both the Summary Report and Japan’s Struggle to End the War. But USSBS failed to show a blue print drawn by the Japanese that would have transformed the situation into a surrender when neither the dropping of the atomic bomb nor the Russian invasion took place, not to mention the origin of the dates November 1 and December 31, 1945. As previous studies pointed out, only Kido cited the date November 1, and that only came in response to a leading question by a Survey interrogator. No one mentioned December 31, as the definitive time the surrender would have come.

There were also some Japanese leaders who mentioned Russia’s entry in the war and the a-bomb as accelerators of surrender, and three of them even admitted that the a-bomb

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170 Statements of Koshiro Oikawa, No. 494, Dec. 1. Not included in the list of 24 leaders, the following military personnel expressed similar views: Shunroku Hata, No. 522, Dec. 8; Tastuhiko Takashima, No. 478, Nov. 24; Torashiro Kawabe, Nov. 2; Saburo Endo, No. 279, Nov. 3, Interrogations of Japanese Leaders. Yet, this determination to fight on cannot be taken at face value, as they were only talking hypothetically now that the war was over.

171 USSBS Chairman’s Office, Summary Report, p. 26; idem, Japan’s Struggle to End the War, pp. 12-13.


173 Statements of 13 individuals in the Note 166 above, Interrogations of Japanese Leaders.

174 Statements of Sakomizu; Konoye; Suzuki; Hiranuma, Toyoda, Interrogations of Japanese Leaders.
was the primary element that enabled the surrender. In fact, the Survey itself referred to the fear of further atomic bombing attacks as having introduced urgency into the minds of the Japanese government to accept the Potsdam terms.

It appears no one was able to say when Japan would have surrendered if things did not go as they did, because it was a decision that was never made. That Japan would have surrendered by November 1 was a speculation only those who planned the attacks on the country could have made with the knowledge of the scale and the extent of the attacks. Having expected reinforced bombings and the invasion of its mainland, the Japanese would not have known the actual scale of the attacks that had awaited them.

As we saw earlier, the date November 1 in the early-surrender hypothesis refers to the day when the invasion of Japanese home island was scheduled. For the Survey, however, it meant more the end of the AAF’s bombing campaign that would have obviated the landing. In this bombing, AAF planned to drop “a total of 350,000 tons of the bombs and mines on industrial and transportation targets in the Japanese homeland and would have wrought thereby devastation on a scale the world has never seen.” This amounts to more than double the total bombs used in the entire war period against Japan.

175 Statements of Sakomizu; Suzuki; Hiranuma, Interrogations of Japanese Leaders.

176 USSBS Chairman’s Office, Summary Report, p. 26; idem, Japan’s Struggle to End the War, p. 13.

177 There is one mention of “November 1945” in the report as an occasion of confrontation with the Japanese at the Kyushu beachheads. USSBS Chairman’s Office, The Summary Report, p. 16.

178 Memorandum from F. F. Everest, acting Assistant Chief of Air Staff, to Paul H. Nitze, u.d. (likely in late June 1946), p. 5, frame 1491, Roll 1, USSBS ROR.

179 USSBS Chairman’s Office, The Summary Report, pp. 16-17.
There are some accounts in the *Summary Report* other than the section "Japan’s Struggle to End the War" that support the early-surrender hypothesis. But they consist of the Survey’s speculations on the following points:180

1) A successful attack on Japan’s railroad and transportation system would have applied maximum pressure in support of either bringing Japan’s surrender or reducing her capability of resisting invasion.181

2) The upcoming strategic bombing campaign in advance of the Operation Downfall, Allied plan for invasion scheduled on November 1 could have exerted sufficient pressure to bring about unconditional surrender and obviate the need for invasion.182

These points were included in the plan for upcoming operations against Japan the Survey proposed to the Joint Target Group of the Joint Chiefs of Staff (JCS) when they met in Washington DC in early July, 1945.183 In his memoir, Nitze suggested the Survey’s opposing the use of the atomic bomb on that occasion, by telling JSC “even without the atomic bomb,

180 These speculative accounts can be found in pp. 16-17, 19-20.


183 USSBS Chairman’s Office, *Summary Report*, p. 16; Nitze, *From Hiroshima to Glasnost*, pp. 34-37; Gentile, *How Effective is Strategic Bombing*, pp. 94-102. For the record on the meeting, see “Report on USSBS and JTG Conferences;” “Personal from Gen Eaker to Gen Arnold;” Folder: 319.1 Reports—USSBS & JTG Conferences, Box 27, Entry 1, RG 243, NACP. The plan, “Japanese Targets,” can be found in Folder: 383.8 Industrial Sites—Targets--Japanese, Box 41, Entry 1, RG 243, NACP.
Japan was likely to surrender in a matter of months.” “My own view was,” he recalled, “Japan would capitulate by November 1945.”

That the Survey did not deduct the conclusion from the interrogations of Japanese leaders has been discussed above and well proven by the studies of the two historians. The conclusion was more likely a product of their belief in their plan they made in July 1945, which they held on to even after the war.

There is no definite answer as to why they held on to it. However, the Survey probably claimed to have based their reports and conclusions on their studies in the two cities and interrogations of Japanese leaders to repel any criticisms and refutations. Just like the divisional reports, statements of the Japanese leaders may be used as machinery to support the conclusion. As I discussed earlier, it was the Survey’s strength to have studied in these two cities and conducted interrogations of hundreds of Japanese leaders, as no one could argue against its results as long as they were supported by these firsthand studies.

Conclusion

184 Nitze, From Hiroshima to Glasnost, pp. 36-37.

185 See Newman and Bernstein, “Compelling Japan’s Surrender.”

186 Among the civilian executives in the Pacific Survey, D’Olier, Henry Alexander, another Vice Chairman, and John K. Galbraith, Director of all the economic studies in the Pacific, appear to have shared the belief. D’Olier, for example, also pursued the early-surrender line in questioning Fumimaro Konoye. Alexander and Galbraith helped Nitze write the Summary Report. Interrogations of Fumimaro Konoye, p. 20, Folder: US Strategic Bombing Survey Japan, Konoye, Prince Fumimaro, 1945-46, 1954-58, 1968, Box 166, PHN; Gentile, p. 116; Letters to Galbraith and Alexander from Nitze, both dated March 7, 1946, Folder 4, Box 165, Nitze Papers; Letter to George W. Ball from Henry Alexander, July 15, 1946, Folder 2 Alexander, Henry, 1945-1959, Box 3, George W. Ball Papers, Mudd Library, Princeton University. In his memoir, Galbraith also emphasized that the atomic bomb was indecisive, citing the early-surrender hypothesis. Galbraith, A Life in Our Times, Boston: MA, 1981, pp. 232-233.
As other reports of the USSBS divisions that studied in Hiroshima and Nagasaki, the Chairman’s report had also gone through changes in its narrative, as it was compiled simultaneously with the divisional reports. The report of the Morale Division had also undergone a similar process before it was finally released. But unlike other divisions’ reports, its earliest draft that found the atomic bomb responsible for Japan’s surrender was transformed into one that limited the role of the atomic bomb.

This move came in response to the changes in the Chairman’s a-bomb report. The counterfactual elements in the Chairman’s report appear to be weakened after its drafts were reviewed by MED. With the possible intervention of MED, the Chairman’s a-bomb report had thus become a contested terrain for the two conflicting narratives—the decisive weapon narrative and the other that argues that the bomb did not end the war. In such a circumstance, the Morale Division’s report was used as evidence in support of the counterfactual elements in the Chairman’s a-bomb report.

While it may not have directly contributed to the formation of the early-surrender counterfactual, however, by coming out first with similar arguments, and together with the narrative to downplay the effects of the atomic bomb, the Chairman’s a-bomb report paved the way for the early-surrender counterfactual to fit in the two other Chairman’s reports that followed. And the reports of the five divisions served as machinery that provided evidence for the Chairman’s reports.
Chapter VI

USSBS Report as White Paper

The Survey has a great responsibility, as it is one of the very few groups arising from a Presidential directive, and our report is to be made directly to the Secretary of War, for transmission to the President, and it, therefore, must necessarily be an impartial civilian report—absolutely uninfluenced by the military, because, to a certain extent, it is a report to the nation.¹

Even if he had nothing to do with its transitions, there is no doubt that Groves did not like the USSBS Chairman’s a-bomb report. In a memorandum to the Secretary of War Robert P. Patterson on June 19, 1946, he argued that the USSBS report “presents highly conjectural ideas concerning the Japanese intent to surrender, and reaches a conclusion that the atomic bombings did not materially speed the cessation of hostilities.”² (See Appendix II to this dissertation) The report would provide, Groves continued, “ammunition for the critics of the War Department and the administration who have maintained that the atomic bombs should not have been used at all, since they were not necessary to the winning of the war.”³ It is apparent that Groves had found the Survey's counterfactual arguments a serious problem.

¹ Text of address by Franklin D'Olier to members of the Survey, Dec. 22, 1944, p. 7, Folder: 350.001 Speeches, Box 39, Entry 1, RG 243, NACP.

² Memorandum to the Secretary of War from L. R. Groves, June 19, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, Entry 106, RG 107, NACP.

³ Ibid. According to Groves, these critics also argued that no landing operations were necessary and that preparations for such operations were the result of an inaccurate estimate, were wasteful and unnecessary; and that the Okinawa campaign was unnecessary since the Japanese would have surrendered anyway.
Groves was talking about the Chairman’s a-bomb report dated June 19, which I have referred to as “the fifth draft” in the previous chapter. An advance copy was sent to the Manhattan Engineer District (MED) on June 13 from Philip J. Farley, its principal author.

The report, revising the fourth draft as required by Groves, was scheduled to be distributed to the press on June 19 for publication in the Sunday morning papers four days later. It is unknown what requirements Groves requested the Survey to comply with. It is certain, however, Groves wanted to make sure that they be adopted thoroughly, as he even had follow-up interviews with the Survey members to discuss the issue.

Obviously, the report did not turn out to be as he had hoped. Perhaps Groves was disappointed to find the counterfactual elements added to the fourth drafts still remained in the fifth draft. He called Patterson on June 17 long distance from Chicago, where he was staying to participate in a conference, asking the Secretary that the MED’s report be

4 Memorandum from Philip J. Farley to the Manhattan Engineer District, June 13, 1946, Folder: 000.72 Classification Letters on Japanese Reports, Box 1, Entry 1, RG 243, NACP; also in Folder: Miscellaneous Correspondence Pertaining to Various Reports, Box 90, Entry 6, MEDR.

5 Ibid. In the memo, Farley mentions Groves’ security requirements communicated in detail on June 8 by Lt. Col. David B. Parker, Chief of the MED’s Military Operations Division.

6 Ibid. The interviews Farley referred to in his memorandum probably took place on June 12, 1946, with Paul H. Nitze, a Vice Chairman, and Walter Wilds, Survey’s secretariat and the principal author of Japan’s Struggle to End the War. There is no record of Groves’ meeting with Farley in his diaries. Entry of June 12, 1946, Diaries of Gen. Leslie R. Groves, Box 3, Entry 7, LRG.

7 See Chapter V of this dissertation.

8 Groves was invited to the 55th annual meeting of the General Federation of Women’s Clubs, which discussed issues of atomic bomb. Other participants included Senator McMahon and Dr. Harold C. Urey. “M’Mahon Protests Action: Senator, in Chicago Speech, Says He will Resist Amendments,” NYT, June 19, 1946; Entry of June 18, 1946, Diaries of Gen. Leslie R. Groves, Box 3, Entry 7, LRG.
released coincident with the USSBS report.\textsuperscript{9} “Otherwise,” Groves said, “the War Department and the Army will come in for severe criticism for having used the atomic bombs at all.”\textsuperscript{10} Groves even came to see the Secretary in person at his office, first thing in the morning on June 19, as soon as he returned to Washington.\textsuperscript{11}

There are no minutes of the meeting with Patterson. However, the memorandum Groves prepared likely to accompany to the Secretary’s office further noted that he feared that the USSBS report would add to the criticisms that no landing operations nor the Okinawa campaign were necessary since “the Japanese would have surrendered anyway.”\textsuperscript{12}

Groves’ effort was rewarded and the release of the USSBS report was delayed for a week to be coincident with the MED report on June 30.\textsuperscript{13} But most of the counterfactual elements in the Chairman’s a-bomb report remained intact. Why did Groves demand Patterson to have the USSBS report released on the same day with his report? And more

\textsuperscript{9} The MED report was scheduled to be released on June 30, 1946, a week later than the USSBS’ report. Draft memorandum to the Secretary of War, June 19, 1946, Folder: Miscellaneous Correspondence Pertaining to Various Reports, Box 90, Entry 6, MEDR.

\textsuperscript{10} Memorandum for Howard C. Petersen from Robert P. Patterson, June 17, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, Entry 106, RG 107, NACP. This citation is from the memorandum and that it might not be exact citation of how he said.

\textsuperscript{11} He visited the Secretary at 9am. Entry of June 19, 1946, Folder: Appointments, 4/25/46-9/25/46, Box 98, RPP; Entry of June 19, 1946, Diaries of Gen. Leslie R. Groves, Box 3, Entry 7, LRG.

\textsuperscript{12} Memorandum to the Secretary of War from L. R. Groves, June 19, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, Entry 106, RG 107, NACP.

\textsuperscript{13} It was delayed on the ground that the report of General Eisenhower, wartime Supreme Commander of the Allied Expeditionary Force, would be scheduled for publication on June 23. Memorandum for the Secretary of War from W. S. G., Jr., June 19, 1946; Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, RG 107, NACP.
importantly, why did the counterfactual elements in the USSBS report stay, despite of Groves’ effort to direct the Secretary’s attention to them?

Actually, there was another report that was released on the same day in London—*The Effects of the Atomic Bombs at Hiroshima and Nagasaki* by the British Mission to Japan. It was agreed in March 1946 that the British and American Chiefs of Staff would simultaneously release the USSBS and the British Mission’s reports. Groves’ action was motivated by this agreement to give the reports authenticity as government white papers.

In this chapter, I first examine the process whereby the Chairman’s a-bomb report had been pushed into the diplomatic arena. This development inevitably invested into the report the capacity of an official government report. And this had ignited competition on the part of MED with USSBS over the narrative to be disseminated to the public. The contested terrain had now become one over publicity. I explore how this competition developed and came to an end.

Buried under the veil of history, this decision of the simultaneous release of the Anglo-American studies is noteworthy. It is significant in respect that the release was approved by the US military, and the approval was given in an attempt to inform the public of the effects of the atomic bomb. It was likely because of this decision that the Chairman’s a-bomb report was allowed to speak eloquently about the effects of the bomb—primarily through those accounts that came from the Medical Division’s report—to an extent that had not been done before.
The event also marked a watershed in terms of the Anglo-American relationship. While the British apparently wanted to produce the release of its and USSBS reports as the symbol of past and future cooperation, instead it marked the last act of the partnership. The tripartite meeting in Washington, D.C. in November 1945 where the leaders of the US, the UK and Canada agreed to full cooperation on atomic energy brought the British a brief period of euphoria. But the hope for future cooperation was devastated when President Harry S. Truman signed the Atomic Energy Act of 1946, which allowed “no exchange of information with other nations.” The process of releasing the two reports demonstrates America’s increased inclination toward secrecy at the dawn of the Cold War. The USSBS Chairman’s a-bomb report, thus, would become emblematic of the growing distance between the two countries.

The report’s release also marked the beginning of the renewed inter-service rivalry between the Army versus the Navy, when the Army wanted to use its release as leverage against the Navy. While its rival was promoting the image of postwar naval power that could sustain an atomic attack by staging Operation Crossroads, the Army grew increasingly keen to claim the atomic bomb as their weapon. Ironically, the release of the report would per se put an end to the brief era of the conventional forces versus the atomic bomb.

The British and the a-bomb Survey

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14 Section 10, Atomic Energy Act of 1946, Public Law 585.
The participation of the British, the only non-American group engaged in the postwar studies in Japan among the seven known surveys, in the USSBS Pacific Survey came through an arrangement between American and British Chiefs of Staff (Hereafter, “BCS”).

It was so arranged a few weeks after the war when BCS requested the US Chiefs of Staff (Hereafter, “JCS”) to accept a small group of British investigators in the US study of the bombing on Japan. The Mission worked in Hiroshima and Nagasaki with USSBS and produced two reports: *Report of the British Mission to Japan on an Investing of the Effects of the Atomic Bombs Dropped at Hiroshima and Nagasaki*, a 110-page report completed in mid-January, 1946, and its 38-page abridged version, *The Effects of the Atomic Bombs at Hiroshima and Nagasaki*.

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16 Memorandum by the Representatives of BCS, “Investigation of the effects of the bombing on Japan,” C.C.S. 919, Aug. 28, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165.

17 The report can be found in folders: PREM 8/194, CAB 80/99, CAB 126/253, AIR 48/224, ADM 205/66, AIR 23/4758, CAB 21/1609, all in BNA; Box 90, Entry 6, MEDR. Drafts of this report, likely ones provided to USSBS by the Mission before it left Japan are found in Report No. 3g(1), three copies (frames 216-276, 277-354, and 394-489), Roll 54, USSBS ROR. The report reads: “The present Report, which is a summary and interim document, is condensed from interim reports drawn up by the individual field workers who composed the mission. More detailed reports will be drawn up by these specialists in the near future.” However, this author has yet to find the more detailed reports. COS (46) 22 (O), “Report on the Effects of Atomic Bombs in Japan,” note by Air Ministry and Home Office, Jan. 21, 1946, CAB 80/99, BNA. The report was known as “Thomas-Bronowski Report,” named after its principal authors.

18 Report of the British Mission to Japan, London, His Majesty’s Stationery Office, 1946 (Hereafter, "BM a-bomb report"). This report can be found online in Report No. 3g(1), frames 355-393, Roll 54, USSBS ROR. The earlier draft of the report, dated May 11, 1946, can be found in HO 187/975, BNA. The later draft submitted to the US Chiefs of Staff for review can be found in Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.
The British came up with this idea of investigating Hiroshima and Nagasaki as soon as the bomb was used when the Air Ministry and the Home Office proposed such a study. The purpose of such a survey was to prepare British cities for future defense. The records from the field research at Hiroshima and Nagasaki would be used as a basis for estimating damage and casualties in the UK from future bombs, which would be more powerful than the ones used against the two Japanese cities.

A plan prepared by the Home Office proposed physical damage studies be made by a group of not more than 12 men, which would be led by Professor W. N. Thomas, a civil engineer from Cardiff University, Wales, and Dr. Jacob Bronowski, a mathematician who worked for the Ministry of Home Security during the war. The plans also recommended including a medical study, "to learn what is the best provision of shelter and services, including rescue services, to meet the radiation dangers."

Now that the war was over, the British were eager to develop their own bomb—though it would not formally make the decision until January 1947—and was desperately seeking an Anglo-American project, just like the one of the wartime years.

Having collaborated in the atomic bomb development during WWII, the British appeared to

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19 "Examination of the effects of the bombing of Japan," a draft proposal, attached to a memorandum dated Aug. 23, AIR 20/4818, BNA.

20 The appendix, Plans to Survey Atomic Bomb Damage, CAB 126/250, BNA.

21 Ibid.

22 Ibid.

take it for granted that they take part in the post-war investigation in Japan and share the results of the studies with Americans. It was just not practical for the British to set up an organization of their own due to lack of resources.24

A telegram proposing the plan for the British Mission in Japan was sent on Aug. 27 to the Joint Staff Mission (JSM), wartime military liaison set up in Washington, D.C. for close military co-operation with the US.25 The proposals included two points: that a small group of British investigators be accepted in the bombing effects study in Japan conducted by USSBS; and that the full results of American investigations in Japan, particularly with regard to the effects of the atomic bomb, would be made available to the British.26 It was sent to JCS on Aug. 28, who forwarded it to the Joint Staff Planners (Hereafter, "JSP") to study.27

In a memorandum dated September 15, JSP recommended JCS to accept the proposal.28 In the formal response to the British on September 27, 1945, the US agreed to accept British investigators and to provide the British with “the complete facts which result from the United States investigation.”29 It was also mentioned that any information

24 “Examination of the effects of the bombing of Japan,” AIR 20/4818, BNA.

25 COS (W) 78, from AMSSO to JSM, Washington, Aug. 27, 1945, CAB 105/65, BNA; CANAM 403, from Makins from Rickett, Aug. 31, 1945, CAB 126/250, both of BNA.

26 COS (W) 78, from AMSSO to JSM, Washington, Aug. 27, 1945, CAB 105/65; “Examination of the effects of the bombing of Japan,” AIR 20/4818, both of BNA.

27 Combined Chiefs of Staff, “Investigation of the Effects of the Bombing on Japan,” CCS 919, Aug. 28, 1945; Directive, Joint Staff Planners, Investigation of the Effects of the Bombing on Japan, JPS 748/D, Aug. 29, 1945, both in Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.

28 Enclosure “A,” Report by the Joint Staff Planners, JCS 1501/1, Sept. 15, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.

29 JSM 66, from JSM to Cabinet Office, Sept. 27, 1945, CAB 105/51, BNA; Memorandum by the US Chiefs of Staff to the Combined Chiefs of Staff, “Investigation of the effects of the bombing on Japan,” C.C.S. 919/1, Sept. 27, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.
pertaining to the atomic bomb would be subject to the agreements on the disclosure of information on the use of the atomic bomb, which was agreed by the two governments in a Combined Policy Committee meeting on July 4, 1945. They included a provision prohibiting the disclosure of information on the technical and mechanical difficulties in the production of the bomb and the methods applied to solve the difficulties.

It is apparent the US had already become cautious about exchange of information on the atomic bomb even with the wartime ally who helped them build the bomb. In accepting the British group, for example, JCS issued a directive, which said: “You should not make any inquiries into research, constructional or operational aspects of atomic bombing that are outside the scope of the U.S.S.B.S. terms of reference.” The compartmentalization of knowledge adopted by the Manhattan Project was still active.

The 16-member British Mission to Japan consisted of two teams, one under Professor Thompson (RAF Field Team 1, Group 1) and the other under Omond McKillop Solandt (RAF Field Team 1, Group 2). The group left the UK on October 11 and arrived in considering the proposal, a question was raised whether the British should be provided with the “full results.” The Army representative argued “the full results” would include deductions as well as facts, which result from the investigation, and he suggested it should be limited to facts only. This opinion prevailed. Memorandum from G. A. Lincoln for the Assistant Secretary, Sept. 14, 1945, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.


31 Ibid., p. 13.

32 Ridler, Jason S., Maestro of Science: Omond McKillop Solandt and Government Science in War and Hostile Peace, 1939-1956, University of Toronto Press, 2015, p. 105. The directive cited in the book was issued to Omond McKillop Solandt, a Canadian scientist who would later become the first chairman of the Canada’s Defense Research Board. It is not known if the directive was also issued to other members of the mission.

33 Operation Order No. 34, Folder: 300.4 Orders-Operations (USSBS) Tokyo, Box 12, Entry 1; Cablegram from Washington (HURLEY) to CINCAFPAC ADV, COMGENUSASTAF ADV (FOR NITZE), Oct. 20, 1945, Box
Washington, D.C. on October 13.34 After a week stay in the US, they left for Japan, arriving in Tokyo on October 27.35 There they were briefed by Japanese physicists and doctors on the effects of the atomic bomb, and they also viewed Hiroshima and Nagasaki from the air on board an airplane.36 The two teams worked in both Hiroshima and Nagasaki for about 15 days each, respectively.37

The Mission returned to their country before the end of the year and completed their first report by January 21, 1946.38 The copies were made available to the members of the Advisory Committee on Atomic Energy on March 6. At this stage, the report was top secret and circulated only among those “whose work necessitates a knowledge of its contents.”39 The photographs and specimens the mission brought from the two cities were exhibited at the Home Office to be viewed by civilian defense experts and the committee members.40

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35 *Ibid.*, p. 106. According Ridley, Solandt once spoke that the British were given a week of briefing on what to expect in Japan by officials from MED. But this statement is contested, Ridley says, since Solandt also remembered differently at a different time—that the meetings with MED never materialized.


37 Operation Order No. 34, Folder: 300.4 Orders-Operations (USSBS) Tokyo, Box 12, Entry 1; Cablegram from Washington (HURLEY) to CINCAFAC ADV, COMGENUSASTAF ADV (FOR NITZE), Oct. 20, 1945, Box 151, Entry 4, both of RG 243, NACP. The RAF Field Team 1, Group 1, for example, stayed in Nagasaki from Nov. 2-13 and Hiroshima Nov. 14-24. Ridley, *Maestro of Science*, p. 107. I have yet to find the details of their daily activities in the two cities.

38 “Report of the British Mission to Japan on an investigating of the effects of the atomic bombs dropped at Hiroshima and Nagasaki,” Jan. 21, 1946, CAB 80/99, also in CAB 126/253; PREM 8/194; and AIR 48/224, all of BNA; Folder: British Mission to Japan “An Investigation of the Effects of the Atomic Bomb Dropped at Hiroshima and Nagasaki,” Box 90, Entry 6, MEDR.

39 Letter to Rickett from Air Vice-Marshal T. M. Williams, March 6, 1946, CAB 126/250, BNA.

40 Letter to Rickett from Stradling, March 1946 (undated), CAB 126/250, BNA.
report was also reviewed by the American counterparts, including MED and the USSBS Physical Damage Division.41

In the meantime, the British took their next move. In a memorandum sent on January 29, the British suggested to the US to synchronize the releases of their reports. BCS hoped that their American counterpart would intend to publish its report in “such a form as would correspond to a government white paper, thus establishing the authenticity of the information.”42 The British most likely wanted to produce the release as a joint venture, especially in the wake of the Washington Declaration on international control signed by the three leaders of the US, the UK and Canada on November 15, 1945.43 Both official and informal agreements confirmed “full and effective cooperation in the field of atomic energy” between the three countries.44


42 Memorandum by the Representatives of the British Chiefs of Staff, “Investigation of the effects of the bombing on Japan,” C.C.S. 919/2, Jan. 29, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165; COS (W) 223, from Cabinet Office to JSM, Jan. 25, 1946, CAB 126/250, CAB 105/66, BNA. In the memorandum to the BCS Committee, the Air Ministry and Home office also suggested the report be available to the members of the UN Organization so a full understanding of the consequences of the form of raiding may assist it “in its task of securing the control of atomic energy for the common good and abolishing the use of weapons of mass destruction.” COS (46) 22 (o), Jan. 21, 1946, CAB 126/253, BNA.


The case was referred to JSP for comment and recommendation. In its report to JCS dated February 22, JSP concluded that “it is desirable to make known to the public certain reports or certain parts of reports on the effects of the bombing of Japan as prepared by the U.S. Strategic Bombing Survey” and “such release of information to the U.S. public should be synchronized with the British releases.” The JSP did not forget to mention that a release should come “after such reports have been reviewed by appropriate military agencies.” Considering what had recently happened, it was a sweeping decision on the part of the US military.

On February 15, 1946, 22 men working in the joint Canadian-British atomic research project were arrested in connection with the alleged leak of the secret information on the atomic bomb to Russia. This news of a Soviet spy ring was convincing enough for American officials to reconsider the issue of the exchange of nuclear information. The proposal to establish an all-civilian Atomic Energy Commission, for example, Senator Brien

45 Directive, “Investigation of the Effects of Bombing on Japan,” JPS748/1/D, Jan. 29, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.

46 Report by the Joint Staff Planners, J.C.S. 1501/2, Feb. 22, 1946, p. 10, Box 4, Entry 491; Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG 165, NACP.

47 Ibid.

48 Ibid.


50 In fact, it was Groves who leaked the story to Frank McNaughton, a journalist who wrote a second revelation about Soviet agents that appeared the same day as the Canadian arrests. Herken, The Winning Weapon, pp. 129-133.
McMahon’s atomic energy bill was about to take a turn. Those in favor of military representation in the new agency had been invigorated.51

On Feb. 27, Groves was invited to testify before the Senate Special Committee on Atomic Energy to give his view on atomic energy.52 There he once again made a powerful statement that military representation was necessary in some form.53 This testimony prompted an amendment by Senator Arthur H. Vandenberg that would allow establishment of a military board to consult with the civilian commission.54

Perhaps the British were not expecting the nightmare that would soon follow at this stage. But the remark by US Secretary of State James F. Byrnes on the spy case had brought the British not only concerns over the future of the partnership with the US, but also a sense of embarrassment over its inferior standing. “So far as he knew,” Byrnes was cited to have said in a press conference on Feb. 19, “the secret ‘know-how’ of atomic bomb production still was held exclusively”55 by the US. Asked whether he meant that Britain and Canada did not have the know-how, Byrnes replied that was the fact.56

“Some surprise still persisted in view of the emphasis in the President’s statements about the partnership between Canada, the U.S. and the U.K.,” Roger Makins, minister at the


52 Prior to this, Groves appeared at Congressional hearings on Oct. 9, 1945, before the House Committee on Military Affairs, and on Nov. 28, 1945, before the Special Committee on Atomic Energy.


54 Hewlett, et al., The New World, pp. 504-512.


56 ANCAM 544, from JSM to Cabinet Offices, Feb. 21, 1946, CAB 126/190, BNA.
British Embassy in Washington DC, wrote to D. H. F. Rickett, Secretary of Advisory Committee on Atomic Energy, on February 21.  

“\[I need not emphasise the effect which all this is likely to have on the question of the exchange of information with ourselves,\]” Makins continued. “U.S. reluctance to give us what we want is bound to be greatly increased.”

The March 16 memorandum from the Americans concurring with their idea of simultaneous release, therefore, must have come as a relief for the British. There is no record of how they reacted to the American response. An important question is: why did the Americans decide to release the report under such circumstances?

**The Decision to Release the USSBS Report**

When President Truman requested USSBS to study the effects of “all types of air attack,” the US apparently did not have any specific plans to release the atomic bomb report to the public. The USSBS reports were inherently to be classified, as the Survey analysts were allowed to “access to all pertinent military records, subject to proper security control.” The decision to release the report to the public probably came when JCS agreed with the British.

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59 JSM 206, from JSM to Cabinet Offices, March 16, 1946, CAB 126/250, CAB 105/52, BNA.

60 It was agreed within the War Department in December 1944 that the USSBS reports be classified as secret based on a Army Regulation while the existence of the Survey shall be treated as unclassified fact. It was then decided that all information and reports should be classified “restricted,” and all information and reports concerning the atomic bomb should be classified “secret” except the information already released. Memorandum “Classification of the Survey,” for the Vice Chairman, United States Strategic Bombing Survey, from George A Brownell, Jan. 2, 1945, Folder: 300.6 (A) Administrative Directives USSBS (G-2 Files); Memorandum “Establishment of the U.S. Strategic Bombing Survey” from Chief of Staff
In their report to JCS, JSP also noted, “that portion of the report dealing with the effects of the atomic bomb should be as factual and complete as current security restrictions permit.”\(^{61}\) It explained the importance of disclosing such information, saying: “Such authentic publicity will aid in establishing in the public mind the proper relation between atomic and conventional type weapons as well as emphasizing the importance of creating effective controls for atomic weapons.”\(^{62}\) (Underline added)

The JSP report to JCS was forwarded to relevant sections of the military, including USSBS, MED and AAF. There was no objection raised.\(^{63}\) The report and draft memorandum for the Combined Chiefs of Staff (CCS) from JCS were also forwarded to the Secretaries of War and Navy for approval.\(^{64}\) I have yet to find any responses from the two secretaries; however, the memo was likely approved, as it was formally sent to CCS on March 15.\(^{65}\)

There is no detail of discussion within JSP on the issue in the preserved documents so there is no way of knowing how they came to include the above-mentioned suggestions.

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61 Investigation of the Effects of Bombing on Japan, J.C.S. 1501/2, Feb. 22, 1946, p. 9, Box 4, Entry 491, RG165, NACP.

62 Ibid.

63 Memorandum for S&P, OPD, WDGS from James R. Lamey, March 5, 1946; Memorandum for the Secretaries of War and the Navy, March 3; Memo for Record by D. F. T., March 6, 1946, all in Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.

64 Draft Enclosure to the Memorandum by the U.S. Chief of Staff, Box 4, Entry 491; Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG 165, NACP.

65 Memorandum by the United States Chiefs of Staff, “Investigation of the Effects of Bombing on Japan,” C.C.S. 919/3, March 15, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.
in their report. However, it was most likely suggested by Groves. The inclusion of such words as “authentic,” “factual” and “complete” in the above paragraph looks familiar with his writings. Moreover, policies regarding the control of information of the atomic bomb had become something of which Groves was in charge. President Truman, for example, asked Bernard Baruch, newly appointed representative of the United States to the UN Atomic Energy Commission, to rely on Groves for information. Groves also believed in the necessity of educating the public on the meaning of the atomic bomb.

In a speech to a crowd of teachers in Kansas City in 1948, for example, Groves said, “it is not hard to talk of a city being destroyed by a single bomb but it is extremely difficult for the average American to understand what this really means.” He continued, “how long it will take the peoples of the world to understand, I do not know.” He stressed the importance of education, saying, “the responsibility still rests upon us to make certain that the people of the United Sates are sufficiently cognizant of the essential ramifications of the question. For if they are they will make certain that our atomic energy affairs are wisely conducted.”

In fact, the importance of informing the public about atomic energy had been suggested since the war. James B. Conant, President of Harvard University and Chairman of

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67 “Development and implications of Atomic Energy,” to be delivered before Missouri State Teachers Association at Kansas City, MO, Nov. 5, 1948, p. 12, Folder: 1948-1949 Speeches, Box 1, Entry 9, LRG.

68 Ibid., p. 12.

69 Ibid., p. 22.
the National Defense Research Committee (NDRC), and Vannevar Bush, Director of the Office of Scientific Research and Development (OSRD), for example, believed the informed public would be the key to the world peace. In a memorandum to the Secretary of War, the two scientists argued, “If accurate information were available as to the development of these atomic bombs in each country, public opinion would have true information about the status of the armament situation.” “Under these conditions there is reason to hope,” they continued, “that the weapons would never be employed and indeed that the existence of these weapons might decrease the chance of another major war.”

The part on domestic control in the JSP’s February 22 report also corresponds with Groves’ earlier assertion on the subject. During the hearing of the Senate Special Committee on Atomic Energy on November 28, 1945, Groves emphasized the importance of domestic control of atomic energy. “We must recognize the clear distinction between domestic control and international control. Domestic control is necessary no matter what international policy may be eventually worked out for the United States and the world,” Groves argued. “It is necessary,” he continued, “to protect America’s tremendous investment in atomic research and development and to insure that this development will go steadily forward.”

70 Memorandum to the Secretary of War from V. Bush and J. B. Conant, Sept. 30, 1944, File 10: International Control of Atomic Energy, Target 4, Roll 2, TSC.

71 Ibid.

72 Investigation of the Effects of Bombing on Japan, J.C.S. 1501/2, Feb. 22, 1946, p. 9, Box 4, Entry 491, RG165, NACP.

For Groves, educating the public on the meaning of the atomic bomb also meant to teach them that it was a revolutionary weapon that ended the war.\textsuperscript{74} The ongoing inter-service rivalry and their narrative to downplay the effects of the bomb had made him increasingly impatient to defend the bomb.\textsuperscript{75} But “the policy certainly was,” Groves confessed years later, “that the effect of the MED on the war should be soft-pedaled as much as possible.”\textsuperscript{76}

When the British requested to simultaneously release their reports, Groves, therefore, was probably thrilled at the opportunity to “make things right”—informing the public of the meaning of the atomic bomb. But to do so, a proper text would be needed. For Groves, the USSBS report with the counterfactual elements was not acceptable for this purpose.

In a script prepared for his upcoming telephone conversation with Assistant Secretary of War Howard C. Petersen on May 31, Groves argued, “no official reports on the bombings be released prior to release of the authentic report by the Manhattan Engineer District.”\textsuperscript{77} (Underline added) “Since the M.E.D. designed and produced the bombs and

\textsuperscript{74} Asked by a professor at the West Point to cater copies of a book on the atomic bomb for his students, Groves requested him to provide the students with the copies with an admonition that the atomic bomb ended the war. Letter from L. R. Groves to Colonel T. D. Stamps, January 7, 1947, Folder: Letters to friends, Box 4, Entry 3, LRG.

\textsuperscript{75} Groves’ communication with his friends and colleagues eloquently speaks of his frustration of the narrative that downplays the atomic bomb. See, for example, letters between Groves and Sam Sturgis, Jr., Brigadier General, US Army, Nov. 7 & Dec. 15, 1945, Folder: G-O-A, Box 1, Entry 3, LRG.


\textsuperscript{77} A draft memorandum, “Telephone conversation with Assistant Secretary of War Peterson [sic] concerning publication of reports on the bombings of Hiroshima and Nagasaki,” undated, but attached to a memo by David B. Parker, is dated May 30, 1946, Folder: Miscellaneous Correspondence Pertaining to
have the only complete source of information on both the bombs and their effects, and since the M.E.D. is the censoring agency for all releases, it is highly desirable that the M.E.D. report, which will be the most complete one and therefore the representative War Department report, be released at least as soon as any other.”

(Underlines added) Groves then suggested that the MED report would be ready by June 16, in time for the scheduled release day of the USSBS Chairman’s a-bomb report on June 23.

“Work has been accelerated on the M.E.D. report since we first learned of your desire to publish the USSBS and British reports in June,” Groves continued. Then he compared the MED report with the USSBS and the British reports, and once again emphasized its strength, saying it would “cover all the ground that is covered by the others, except for some of the USSBS data on popular opinion in Japan following the bombings.” He appealed that it would be suitable for the public as it would "be somewhat analogous [sic] to

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Various Reports, Box 90, Entry 6, MEDR. According to Parker, Groves wanted to use this script when he was to speak with Petersen on May 31.

78 Ibid.
79 Ibid.
80 Ibid.
the Smyth report, but will be of course be much shorter, will be completely non-technical, and will be more completely illustrated.”

Consulting with Petersen did not help Groves much, as he had to ask Patterson later. Perhaps Petersen did not want to jeopardize the existing plan in order to release the report in time. But it is apparent when he called Patterson and wrote him the memorandum explaining what was wrong with the USSBS report, Groves wanted to overshadow the USSBS report with his MED report as a more authoritative report. In his memorandum to Patterson, Groves once again stressed: “The Manhattan Engineer District report is a factual report. It is not conjectural, and it contains information which was not available to any other reporting agency.” (Underline added)

Sensing Grove’s intention, on the other hand, USSBS Secretary Walter Wilds tried to stop the simultaneous release of the MED report. He suggested Edwin Locke, Jr., Special


82 A draft memorandum, “Telephone conversation with Assistant Secretary of War Peterson [sic] concerning publication of reports on the bombings of Hiroshima and Nagasaki.”

83 See the next section of this chapter.

84 Memorandum to the Secretary of War from L. R. Groves, June 19, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, Entry 106, RG 107, NACP.

85 Ibid. A draft of this memorandum also argued: “The MED report should be the definitive War Department report on the bombings. “Draft Memorandum to the Secretary of War,” not dated, but probably June 19, 1946, Folder: Miscellaneous Correspondence Pertaining to Various Reports, Box 90, Entry 6, MEDR.
Assistant to President Truman who was in charge of the USSBS reports at the White House that the MED report “not made public at this time.”86 “We have... found it largely duplicative,” Wilds continued, “and despite efforts to reduce conflicts by providing him with our data, believe release of the two reports would promote public confusion.”87

Groves eventually prevailed and the release of the USSBS report was delayed for a week to be coincident with the MED report on June 30.88

By the middle of April, the British had an abridged report prepared for publication by the Air Ministry and the Home Office, ready to be circulated within the Joint Intelligence Committee for review.89 On May 6, BCS notified the Americans that the report prepared by the British Mission was ready and asked their US counterpart to review the draft.90 They

86 Letter to Eddie from Walter Wilds, dated June 20, 1946, Folder: Atomic bomb-Hiroshima and Nagasaki, NSC-Atomic, Reel 40, Part 3: Subject File, President Harry S. Truman’s Office Files, 1945-1953, University Publications of America, 1989; Folder: 651 U.S. Strategic Bombing Survey, Box 1677, Official File, White House Central Files, 1945-53, HSTL; Folder: 300.6-P Intelligence (Combat, Counter, etc) May 1945 to Present date, Box 20, Entry 1, RG 243, NACP.

87 Ibid. It is not clear what the original plan was for the MED report with regard to its disclosure. But based on the remaining archival documents, it was likely that Groves started to prepare a MED report for public release because of this Anglo-American agreement. According to Wilds, the USSBS learned that Groves was preparing a similar report for simultaneous public release for the first time on June 7. Nitze and Wilds then discussed with officials at the office of Assistant Secretary Petersen on June 17 and agreed that Secretary Patterson would be advised that only the Survey’s report should be made public. On June 19, however, the Survey was informed that Patterson had consented to the simultaneous release of the MED report with the Survey’s report after discussing the subject with Groves.

88 It was delayed on the ground that the report of General Eisenhower, wartime Supreme Commander of the Allied Expeditionary Force, would be scheduled for publication on June 23. Memorandum for the Secretary of War from W. S. G., Jr., June 19, 1946; Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, RG 107, NACP.

89 JIC/490/46, Memorandum, by T. Haddon, April 14, 1946, and its Appendix “A,” Minute by the Secretary, Chiefs of Staff Committee to Vice Chiefs of Staff, April 14, 1046, both of CAB 126/250, BNA.

90 Memorandum by the Representatives of the British Chiefs of Staff, “Investigation of the Effects of Bombing on Japan,” C.C.S. 919/4, May 6, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG165, NACP.
also asked the US side to give them the same facilities with respect to the American report, “with a view to reaching agreement on the documents”\(^{91}\) to be released on the same date.

**The Army and Operation Crossroads**

When JCS received the British report by May 15,\(^{92}\) the British demand to review the USSBS report apparently troubled some of their American counterparts. The problem was that the Army did not want the British to review the USSBS report.\(^{93}\) JSP, to which the question was referred, established a subcommittee that would comment and submit recommendations on the matter.\(^{94}\) In the meantime, the British report was distributed to both the USSBS and MED, as well as to members of the ad hoc committee, for their comments, in order to furnish the British with sufficient time to make changes before the synchronized release.\(^{95}\)

This author has yet to find any comments or recommendations by the subcommittee; yet it likely concurred with the Army’s opinion not to exchange suggested

\(^{91}\) *Ibid.*

\(^{92}\) Memorandum by JSM, May 15, 1946; BM a-bomb report, both enclosures to Note by the Secretaries, J.C.S. 1501/3, May 20, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG165, NACP; COS (W) 290, from Cabinet Offices to JSM, May 1, 1946, CAB 126/250, CAB 105/66, BNA. It appears that it took some time to send the actual copies of the report to the US.

\(^{93}\) Memorandum to the Army Planner from Edwin B. Broadhurst, May 10, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG165, NACP.

\(^{94}\) JSP Directive, note by the Secretaries, JPS 748/3/D, May 21, 1946; Memorandum for members of the subcommittee from JSP, May 23, 1946, both in Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG165, NACP. There is no mention of why JSP needed to establish the subcommittee.

\(^{95}\) Memorandum for Colonel Broadhurst from George A. Lincoln, May 24, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG165, NACP.
amendments or comments on their reports. A memorandum to that effect was approved by JCS and forwarded to CCS on June 8, 1946, more than one month after the British request was received. The case was also sent to the Secretaries of War and Navy with draft memorandum for the Combined Chiefs of Staff (CCS) from JCS for approval.

In the formal response to the British, JCS concurred to forward the American report to be completed about June 15, 1946, to BCS for their use; however, they told the British that they were “unable to agree to the previous proposal that suggested amendments or comments to these documents be exchanged by the respective Chiefs of Staff prior to publication.” As for the reason why, it added that the “release of information on atomic bombs has become of primary political concern in the United States and hence is not under the sole cognizance of the United States Chiefs of Staff.”

Why did the Army refuse to have the USSBS report reviewed by the British? What political concern did they have with the release of information on the atomic bomb?

According to one Army official, it was a time factor. In a memorandum to Brig. Gen. Lincoln, Army planner, Col. Edwin B. Broadhurst, the assistant executive officer in the Office

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96 Report by the Joint Staff Planners, “Investigation of the Effects of Bombing on Japan,” J.C.S. 1501/4, May 23, 1946; and Memorandum by the United States Chiefs of Staff, “Investigation of the Effects of Bombing on Japan,” C.C.S. 919/5, June 8, 1946, both in Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP.

97 Memorandum for Secretaries of War and the Navy with draft Enclosure to the Memorandum by C. W. Nimitz, May 31, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG 165, NACP.

98 Memorandum by the United States Chiefs of Staff, “Investigation of the Effects of Bombing on Japan,” C.C.S. 919/5, June 8, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, RG 165, NACP; JSM 261 from JSM Washington to Cabinet Office, June 10, 1946, CAB 126/250, BNA.

99 Ibid.
of the Assistance Secretary of War, insisted that the latest British request be refused in an
effort to avoid any changes that might result in the delay of its publication. Writing on
behalf of the Assistant Secretary, Broadhurst said, “it is most important that the Army
report be released prior to ‘CROSSROADS’ since this will serve to point up the Army’s
connection with the Atom Bomb during the war, a point that is fast fading with the public as
a result of Navy ‘CROSSROADS’ publicity.”

By “CROSSROADS,” Broadhurst meant the upcoming nuclear tests at Bikini Atoll in
July 1946. The idea to test the new weapon with warships was first discussed in August
1945. Although it was conducted by a joint task force, it had increasingly become a Navy
project by the time it was announced on January 24, 1946, with the Navy commander and
its primary mission was to determine the effects of the atomic bomb upon Naval vessels.

Officials from the three services considered that the results of the operation would help to
determine the allocation of resources among the services.

The Army feared that the possible success of the test would pose a threat to its
vested interest. In his memorandum to the Army’s Director of Information on February 26,

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100 Memorandum to the Army Planner from Edwin B. Broadhurst, May 10, 1946, Folder: ABC 471.6 Atom
(17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG165, NACP.

101 Ibid. By “the Army report,” Broadhurst meant USSBS Chairman’s a-bomb report.

102 The plans were then disclosed by Admiral Ernest J. King, Chief of Naval Operations during World War
Weisgall, Operation Crossroads, pp. 13-17.

103 Graybar, pp. 893-895. Admiral William H. P. Blandy was appointed as Commander of Joint Task Force
1 in charge of the operation.

104 Graybar, p. 894. That the operation was instigated by inter-service rivalry is well documented by the
above-mentioned previous studies.
1946, Assistant Secretary Petersen said: “the test looms as one in which the future of the
Navy is at stake... If the Navy withstands it... the Navy will have ‘won’.” “The consequences,”
Petersen continued, “will be to strengthen the Navy’s position as to the size of its
establishment and the participation by it in the total funds appropriated for the military
forces.”

For the Navy, survival of the 92 ships at the test site literally meant its
survival—remaining in existence in the postwar period—that was threatened by the advent
of the atomic bomb. It was indispensable that they demonstrate ships would not be
vulnerable to atomic attacks. The inter-service rivalry may have been also ignited by
another effort on the Navy’s part to adjust to the atomic age by seeking to prove that their
carrier aircraft could be useful for the delivery of atomic weapons.

For example, Rear Admiral Forrest P. Sherman, who was to become Deputy Chief of
Naval Operations in December, referred to the possibility of arming themselves with the
atomic bomb in November 1945. During the hearings on the unification of the military
forces, Sherman criticized the airmen’s claim for guided missiles with atomic warheads,
saying, “no one service should be given a monopoly on the use of the airplane, of guided
missiles, or of any other weapon or technical device which may be required for the effective

105 Memorandum to Lt. General J. Lawton Collins from Howard C. Petersen, Feb. 12, 1946, Folder: Atomic
Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1947-July 24, 1947, Box
1, RG 107, NACP.

106 Davis, Vincent, Postwar Defense Policy and the U.S. Navy, 1943-1946, Chapel Hill, NC: University of
nuclear energy and other new weapons in mid-October 1945 with Blandy as the head.

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performance of the functions of another service.”  

“The carrier may prove to be less obsolescent than the very large strategic air forces which were so effective in the war just concluded,” Sherman argued, adding, “A large armored vessel firing guided missiles with atomic warheads may be the fighting ship of the future.”

Vice Adm. Dewitt C. Ramsey, Deputy Commander in Chief, Pacific Fleet, also suggested the potential of the nuclear Navy. “There is no practical reason to prevent the use of our ships as launching bases for such weapons fitted with atomic heads,” Ramsey said during the unification hearings in December 1945. “They may prove to be the most effective agents for intercepting attacks before they can reach the objective, for our carriers can be equipped with both, homing missiles and jet-propelled fighters.”

In June 1946, the Navy had contracted with a plane manufacturer to put the plane that could carry a Nagasaki-type atomic bomb into limited production. In addition, the Navy was also planning to initiate a program to apply practicable uses of atomic energy in propulsion of naval vessels.


108 Ibid., p. 505.


110 Davis, Postwar Defense Policy and the U.S. Navy, 1943-1946, p. 249. This did not work after all; such a plane was too big to make a safe landing on carrier deck.

111 Memorandum for War Secretary from Forrestal, March 14, 1946; Memorandum for CG, MED, from C.H. Bonesteel, Ill., March 19, 1946, both in folder: Sec 7, ABC471.6 (17 Aug 45), Box 570, Entry 421, RG165, NACP. This effort culminated into the completion the USS Nautilus, the world’s first operational nuclear submarine, which first ran under nuclear power on January 17, 1955. For the Navy’s effort in building the nuclear-powered naval fleet, see, for example, Hewlett, Richard G. and Francis Duncan, Nuclear Navy 1946-1962, Chicago, IL: University of Chicago Press, 1974.
Assistant Secretary Petersen argued that if the battleships withstood the atomic bomb, while the public expected that the atomic bomb would devastate them, it would give the public inaccurate perceptions of the bomb. What was needed would be the education of the public that would present the tests objectively and in proper perspective before the results of the tests would be known. The Army wanted to take advantage of the release of the USSBS Chairman’s a-bomb report for this purpose, but it would have to be released prior to the test.

The Army officials were even suspicious of the Navy’s possible obstruction of their effort. In his response to Col. Broadhurst, Gen. Lincoln mentioned his fear that “the Navy Department may try to delay publication of either or both reports until after the explosion of the atomic bomb at Bikini about 1 July.” In view of our commitment to release both the British and American reports simultaneously,” Lincoln continued, “delay of one report will serve to hold up the other.” This sense of urgency was shared by Groves. That is why he was trying to complete the MED report before the first test on July 1.

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112 Memorandum to Lt. General J. Lawton Collins from Howard C. Petersen, Feb. 12, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 194-July 24, 1947, Box 1, RG 107, NACP.

113 Memorandum for Colonel Broadhurst from George A. Lincoln, May 24, 1946, Folder: ABC 471.6 Atom (17 Aug 45) Sec 3-A, Box 567, Entry 421, both of RG165, NACP.

114 Ibid.

115 A draft memorandum, “Telephone conversation with Assistant Secretary of War Peterson [sic] concerning publication of reports on the bombings of Hiroshima and Nagasaki, undated, but attached to a memo by David B. Parker, is dated May 30, 1946, Folder: Miscellaneous Correspondence Pertaining to Various Reports, Box 90, Entry 6, MEDR. USSBS had also been requested to complete the Chairman’s a-bomb report by mid-June.
On June 13, JCS sent a memorandum to the British containing a list of amendments to their Mission’s report. The list included suggested changes or deletions in 17 of all the 96 paragraphs in the report. These changes involved mostly a few words and figures in the paragraphs, except one that required the deletion of a whole paragraph, which included a reference to the height of the bomb burst, “2,000 feet above Hiroshima and 1,750 feet above Nagasaki.”

The memorandum also included a set of three criteria of security restrictions to be applied to accounts of the effects of the atomic bomb, on which these amendments were based: 1) Direct reference to the height of the bomb burst or publication of information from which this height could be estimated or computed, 2) The effects of gamma ray radiation on the human body and information which indicated effective protection against this radiation, 3) Direct reference to any information from which could be computed the diameter of the ball of fire resulting from the atomic explosion.

116 Memorandum by the U.S. Chiefs of Staff, C.C.S. 919/5, June 13, 1946, Folder: 3-A, ABC471.6 (17 Aug 45), Box 570, Entry 421, RG165, NACP; JSM 268, from JSM Washington to Cabinet Offices, June 13, 1946, CAB 126/250, CAB 105/52, BNA. To save time, draft memorandum that had been approved by neither JCS nor JSP, which turned out to be the same as C.C.S. 919/5, June 19, 1946, was sent to the British.

117 Memorandum by JCS, C.C.S. 919/6, June 19, 1946, Box 4, Entry 491; also in Folder: 3-A, ABC471.6 (17 Aug 45), Box 570, Entry 421, both of RG165, NACP.

118 Ibid.

119 By this they meant information on shelters and shielding by concrete building, e.g. thickness of walls and floors.

120 Memorandum by JCS, C.C.S. 919/6, June 19, 1946, Box 4, Entry 491; also in Folder: 3-A, ABC471.6 (17 Aug 45), Box 570, Entry 421, both of RG165, NACP. These criteria and amendments were provided by MED. Memorandum, Summary of Pertinent Joint Chiefs of Staff Action for the week ending 22 June 1946, from Elmer J. Rogers for Deputy Commander, AAF, Chief of Air Staff, Deputy Chiefs of Air Staff, June 24, 1946, Folder: JCS Papers, Box 3, Entry NM-15 197, RG 341, NACP. The account reads: “Approved certain deletions, recommended by Manhattan District and US Strategic Bombing Survey, from British Report on subject above for security reasons.” We must note there was no amendments that concerned the effects of gamma radiation on impairment of the sex functions that Groves argued the British and USSBS placed
The British fully agreed to the suggestions.\footnote{Memorandum by JCS, C.C.S. 919/6, June 19, 1946; Top Secret Memorandum by the Representatives of the British Chiefs of Staff, C.C.S. 919/7, June 22, 1946, both in Box 4, Entry 491; also in Folder: 3-A, ABC471.6 (17 Aug 45), Box 570, Entry 421, all of RG165, NACP; JSM 268 from JSM to Cabinet Offices, June 13, 1946, CAB 126/250, CAB 105/52, BNA. By then the British Mission had also received comments from USSBS divisions who reviewed the draft report, which was likely reflected in the latest draft sent to the JCS. For these comments, see Report No. 3g(5), frames 558-573, Roll 54; Report No. 13b(1), frames 521-560, Roll 92, both in USSBS ROR.} The British report was revised and ready for June 23 release by June 19 when they were notified of the change of schedule for the release later that day.\footnote{JSM 268, from JSM to Cabinet Offices, June 13, 1946, CAB 126/250, CAB 105/52; COS (W) 315, from Cabinet Offices to JSM, June 14, 1946, CAB 126/250; JSM 274, from JSM to Cabinet Offices, June 19, CAB 126/250, CAB 105/52; LETOD 682, from JSM to Cabinet Offices, June 19, 1946, CAB 126/250, all of BNA. No explanation was given to BCS by USCS as to the reason why they changed the release day in the US.} It was released on June 30, simultaneously with those of USSBS and MED.\footnote{COS (W) 328, from Cabinet Offices to JSM, June 28, 1946, CAB 126/250, CAB 105/66, BNA.}

**USSBS Chairman’s Reports Go Public**

In its memorandum on June 19, JCS told the British that the American report, which the British had not seen yet, “parallels generally the British report, since it is predicated on the same basic data and concerns itself with coverage of essentially the same descriptive and analytical material.”\footnote{Memorandum by the USCS, C.C.S. 919/6, June 19, 1946, p. 1, Box 4, Entry 491, RG165, NACP.} It is true that they discuss similar subjects and conditions. The descriptions of the medical effects, for example, are almost identical, except the incidence of undue emphasis on in his memorandum to Patterson. There were several amendments to the paragraphs that discussed the effects of gamma rays on the human body; yet they were all about deletions of figures, which were either distances from the explosion or the thickness of concrete and earth, such as “1/2 mile from the explosion” where pregnant women were located at the time of explosion in Paragraph 77 (p. 17).
the three types of injuries USSBS report attempted to estimate. This is because the two reports used the same data for medical effects that was provided by the Joint Commission.

There is a distinct difference, however, between the two reports: the British report did not try to judge the bomb’s effectiveness or determine its effect on Japan’s surrender decision. As it was originally so conceived, the British Mission’s report was intended for application in cities in the UK in case of future atomic warfare.

On the other hand, the comparison of the USSBS and the MED reports brings our attention to various degrees of differences in descriptions of the effects, including the one regarding the incidence of radiation effects on human beings. The MED report maintained Colonel Stafford L. Warren’s estimate—that radiation was responsible for “7 percent or less of the deaths” in the two cities. Buried under the accounts of the terrific power of the bomb and some 100 photographs of lands turned barren was perhaps the most striking difference: their view of the role the atomic bomb played in Japan’s surrender. MED was

125 The British report states, “No conclusion can be reached regarding the relative importance of the different lethal agents.” The Effects of the Atomic bombs at Hiroshima and Nagasaki, p. 18.

126 Top Secret Memorandum by the USCS, C.C.S. 919/6, June 19, 1946, Box 4, Bureau of Public Relations, Entry 491, RG165, NACP; Memorandum, May 2, 1946, PREM 8/194, BNA.

127 Report of the British Mission to Japan on an Investing of the Effects of the Atomic Bombs Dropped at Hiroshima and Nagasaki, pp. 44-47; BM a-bomb report, pp. 19-20. Speaking of the radiation, the fuller report has a sentence; “In neither case, however, has this activity been of importance, for example as a source of delayed casualties.” (p. 34) The summary report also denied, saying, “residual radio-activity is not a danger from these bombs exploded at such heights.” (p. 15)

proud: “The atomic bomb did not alone win the war against Japan, but it most certainly ended it, saving the thousands of Allied lives that would have been lost in any combat invasion of Japan.”

On July 20, three weeks after the reports’ release, “a death-blow to what remained of the wartime arrangements for interchange” was inflicted on the British when a maximum penalty of death for security violations was introduced and adopted in the House session in US Congress. The bill for the Atomic Energy Act passed the Senate on July 26 and was signed by the President on August 1. The release of the report came as the last act of the wartime partnership before it was brought to the end with the new act.

The entire operation of USSBS ceased in June 1947. Just a handful of individuals were left to process the remaining work until October 8, 1947 when it was completely disbanded.

The releases of its reports to the public were certainly the most glorious moments for the Survey in its three-year history. Groves hoped the MED report would overpower and correct any impact of the USSBS report by releasing it on the same day or giving them to the press on the same day. However, my research finds the result to the contrary: there was

129 Ibid., p. 34.
130 Hewlett, et al., The New World, p. 529.
131 Ibid., p. 527.
132 Memorandum to Military Intelligence Service, Pentagon, from Charles Hurley, u.d., Folder: 461 Distribution, Reports & Publications 1 Jan 46 to present date, Box 44, Entry 1, RG 243, NACP.
133 In the draft memorandum to the Secretary of War, Groves recommended that all the reports “be given to the press on the same date but that the release date for publication for the MED report be 3 or 4 days later,” if Patterson felt that the USSBS and the British reports should be published prior to that of the MED
only a little press coverage of the MED report, whereas the USSBS report enjoyed publicity with multiple newspaper articles, many on the front pages.\(^{134}\) Generally, those newspaper articles spoke highly of the USSBS study and its results, including *Japan’s Struggle to End the War and the Summary Report*.\(^{135}\)

It is ironic that the place Groves so wanted to occupy with his MED report, to educate the public, was now occupied by the USSBS report. Because of the decision to inform the public of the effects of the atomic bomb, the Chairman’s report was given a voice to speak about the effects to an extent that had not been done previously.\(^{136}\)

Groves would remember the event with bitter feelings for the rest of his life. In 1965, five years before his death, he wrote: “For some reason which I have never understood, the U. S. Strategic bombing Survey seemed to take the viewpoint from the very start that they should minimize the effect of the atomic bomb—not the physical effect so much as the effect on ending the war. I could sense this from conversations I had with their leaders before they

\(^{134}\) One possible reason for the media attention on the USSBS report is that it was released at the White House, whereas the MED report was released by the War Department. Folliard, Edward T., “Rays Alone Kill at One Mile, White House Told,” *WP*, June 30, 1946, p. B1. According to USSBS historian Beveridge, the original directive by President said that reports should be made to the Secretaries of War and the Navy. But it was changed “by the Chief Executive taking into his own hands the release to the public of the Survey’s principal reports, information copies going to the two Secretaries.” Beveridge, *Pacific*, p. 222.

\(^{135}\) My research of four newspapers (*NYT, WP, Washington Evening Star* and *Baltimore Sun*) using online database found at least one article for each of the three reports from the USSBS Chairman’s Office by each paper when the reports were released. In case of *NYT*, it carried five articles on the Chairman’s a-bomb report—four on June 30 and one analytical article by the paper’s military editor Hanson W. Baldwin on July 7. *NYT* did not carry even an article that discussed the MED report. On the other hand, three other papers carried articles that discussed the MED report together with the USSBS report. All of which, however, had prioritized the USSBS report. See, also, scrap newspaper articles on the reports in folder: 000.75 Clippings, Boxes 1-2, Entry 1, RG 243, NACP. See, also, Beveridge, *Pacific*, pp. 222-223.

\(^{136}\) See Chapter IV of this dissertation.
even left for Japan." “All this was,” he added, “of course, outside of their field and particularly their competence. Their personnel did not have the capabilities.”

Contrary to the general reception in the media, many other military leaders, both the AAF and the Navy, also found the reports—especially the *Summary Report*—dissatisfying.

While Nitze, the principal author, went through pains not to credit any one of the armed forces and weapons with the victory, these military branches saw the Survey report biased in favor of the other arm. Lauris Norstad, former chief of staff of the 20th Air Force who was appointed Director of War Department's Plans and Operations Division in February 1946, for example, accused the report of including “a Navy slant.” The Navy, having found the Survey friendlier to AAF, on the other hand, was “surprised that credit was given the submarine and the Navy Air Corps.”

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137 “Comments on “Hiroshima Saved Japan” by Medford Evans,” Sept. 15, 1965, pp. 4-5, Folder: Evans, Medford, Box 1 (Alvarez-Evans), Comments, Entry 10, LRG.


139 Letter to H. H. Arnold from Norstad, July 21, 1946, Folder 4: Ni-Om, Correspondence 1946-1950, Box 29, HHA. The letter reads: “There has been considerable discussion in the Air Staff as to what should be done to meet some of the criticism included in the report and to counter what appeared to me to be a Navy slant. Bob Lovett was down here on this subject for a day last week and it appears that he was successful in stopping an Air Force release which had been prepared and which would have had the effect of discrediting the report at least to some extent.” It is not known what Norstad meant by criticism against the Army in the report, but it might include the chemical weapon analogy of the atomic weapon used in the report. In the section of the Signpost, the Survey discusses the future defense of the United States as follows: “As defensive weapons, atomic bombs are useful primarily as warnings, as threats of retaliation which will restrain a potential aggressor from their use as from the use of poison gas or biological warfare. The mission of active defense, as of passive defense, is thus to prevent the surprise use of the atomic bomb from being decisive.” The third draft, p. 54; fourth draft, p. 59; fifth draft, p. 44; Chairman's a-bomb report, p. 43.

140 The Naval Analysis Division deemed the Survey taking the air force's “party line.” That its report, “The Air Effort Against Japan,” could not be published under the auspice of the Survey had likely made them feel that way. See, for more details, Gentile, *How Effective Is Strategic Bombing?*, pp. 112, 126-129.

141 Letter to Ralph A. Ofstie from John E. Asfeld, July 29, 1946, Folder: Letter File, 1946 Incoming, Box 2, Papers of Vice Admiral Ralph A. Ofstie, NHHC.
pressure AAF had given the Survey executives, with which the Navy alleged USSBS to have complied by changing a conclusion in the *Summary Report* to the AAF’s advantage.142

“Although USSBS was supposed to be apolitical, this hope was naïve,” said Military historian Philip S. Meilinger in his book.143 He asserts “the entire subject of strategic bombing was freighted with politics: inter-Allied (US vs. UK), interservice (AAF vs. Navy), and intraservice (bombers vs. fighters).”144 “No matter what the survey teams wrote,” he added, “they would offend someone.”145

Yet, we have to remember even at this stage the criticisms were not directed at the counterfactual conclusion. There is no definite answer to the question of why the counterfactual elements in the reports remained intact. The USSBS’ a-bomb report was cleared by six relevant parties in the government—the President, MED, JCS, and the State Department, as well as the Army and the Navy.146 The releases of the two other reports from the Chairman’s Office, which include the conclusion—*The Summary Report* and *Japan’s Struggle to End the War*—were approved by the Departments of State, Army and Navy, as

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144 Ibid

145 Ibid.

146 Memorandum for Edwin A. Locke, Jr., from Walter Wilds, June 20, 1946, Folder: Atomic bomb-Hiroshima and Nagasaki, NSC-Atomic, Reel 40, Part 3: Subject File, President Harry S. Truman’s Office Files, 1945-1953; Folder: 651 U.S. Strategic Bombing Survey, Box 1677, Official File, White House Central Files, 1945-53, HSTL; Folder: 300.6-P Intelligence (Combat, Counter, etc) May 1945 to Present date, Box 20, Entry 1, RG 243, NACP; Memorandum, “Clearance of Atomic Bomb Report,” June 20, 1946, Folder: Miscellaneous Correspondence Pertaining to Various Reports, Box 90, Entry 6, MEDR.
well as the White House. In addition, the advance copies of the Summary Report were sent to some AAF officials for review, but no one argued about the conclusion.

It will take another chapter to explore the issue. In the case of the Chairman's a-bomb report, as we have seen, a time factor had definitely played a part: the Army was desperate to release the report before Operation Crossroad and wanted to avoid any move that might lead to a delay. But it does not explain everything. Patterson actually requested the USSBS executives to make a few changes in the report when Groves attempted to direct the Secretary's attention to the counterfactual elements in the report. However, they were mostly about accuracies of the descriptions of some facts that had little to do with the counterfactual elements. With the revisions made to the published report by the Survey,

147 Undersecretary of State Dean Acheson had “certain reservations” in making public the section in both the Summary Report and Japan's Struggle to End the War “dealing with Russia's role in the Pacific War.” But his concern was cleared when Secretary of State James Byrnes returned from the Paris Conference of Foreign Ministers, sparing him a possible awkward situation created by the account. A more tangible concern for the counterfactual conclusion was expressed by Edwin A. Locke, Jr., special assistant to the President, who was in charge of the USSBS reports at the White House, when he discussed the language in Japan's Struggle to End the War, which describes the role of the atom bombs in terminating the war. According to Wilds, he and Nitze “reviewed this language” on July 9 and suggested certain changes that Locke “agreed both clarified and strengthened that section.” Memorandum for the President from Edwin A. Locke, Jr. July 3, 1946, Folder: Strategic Bombing Survey I, Box 20 Files of Edwin A. Locke, Jr.; Letter from Franklin D'Olier to the President, July 10, 1946; Memorandum for Charles G. Ross from Edwin A. Locke, Jr., July 10, 1946, both in Folder 651, Box 1677, Official File, White House Central Files, 1945-53, HSTL. Copies of Japan's Struggle to End the War were given to the press for release in upcoming Sunday papers (July 14). The press was given copies of the Summary Report on July 16, 1946, four days before the embargo was to be lifted at 6 pm, EST, July 20. Hold for Release, July 16, 1946, Folder: 651 U.S. Strategic Bombing Survey, Box 1677, Official File, White House Central Files, 1945-53, Presidential Papers, Harry S. Truman Library, MO.

148 These officials include: Brigadier General Charles P. Cabell, General George C. Kenney, and Brigadier General Frank F. Everest. Notes by Everest to Nitze, undated, frames 1487-1492; Letter to Nitze from Cabell, June 24, 1946, frame 1478; Notes by General George C. Kenney, June 24, 1946, frames 1479-1486, all of Roll 1, USSBS ROR.

149 Memorandum for the Chief of Staff from Robert P. Patterson, June 24, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, Entry 106, RG 107, NACP.
Patterson was completely satisfied.\textsuperscript{150} It is not surprising that Patterson had no qualms about the counterfactual conclusion, as he believed, “We would have won without the bomb.”\textsuperscript{151}

As we have seen in Chapter I, many of the contemporary American leaders also had few qualms about the “just another weapon” narrative and downplaying the effects of the atomic bomb. Even Truman seems to have accepted the conclusion when he was briefed on the Survey’s findings, including the conclusion, when he met with the Survey executives on March 29, 1946.\textsuperscript{152}

This would soon change, however. The official narrative would soon take over. Growing increasingly alarmed by emerging criticisms of the decision to use the atomic bomb in the wake of the release of the USSBS reports, Harvard’s president Conant, one of the architects of the American nuclear policy, asked Henry L. Stimson, the wartime secretary of war, to write an article that would explain that the bombings were necessary to

\textsuperscript{150} Patterson especially demanded that the date of a meeting when the decision to seek ways and means to terminate the war was made by the Japanese would be changed from “as early as 26 June” to “May 1945.” Memorandum for the Chief of Staff from Robert P. Patterson, June 25, 1946, Folder: Atomic Energy Safe File #2, Secretary of War (Patterson) Subject File (Safe File), Sept. 27, 1945-July 24, 1947, Box 1, Entry 106, RG 107, NACP; Shigesawa, Atsuko, “Robert P. Patterson and USSBS Atomic Bomb Report: Mystery of 'June 26' and His Attempt to Counteract Isolationism,” a presentation at the Annual Meeting, American Studies Association in Chicago, US, on Nov. 9, 2017.

\textsuperscript{151} The quotation is followed by “but thousands of American soldiers who are alive today would have died before final victory was achieved.” Statement of Robert P. Patterson, Secretary of War, Hearings before the House Military Affairs Committee Atomic Energy, Oct. 9, 1945, 79th Congress, 1st Session on H.R. 4280, p. 4.

\textsuperscript{152} Oral Report to President, March 29, 1945, Folder: 314.7 Military Histories, Box 25, Entry 1, RG 243, NACP. On that occasion, USSBS Chairman Franklin D’Olier also requested classified Japanese ULTRA information in order to complete Japan’s Struggle to End the War, which Truman granted. Letter to D’Olier from Edwin A. Locke, Jr., March 27, 1946; Letter from Franklin D’Olier to the President, May 10, 1946; Memorandum for the President from Edwin A. Locke, Jr., May 11, 1946; Letter from Truman to D’Olier, May 15, 1946, all in Folder 651, Box 1677, Official File, White House Central Files, 1945-53, HSTL.
end the war. The efforts would culminate into Stimson’s article in February 1947 issue of *Harper’s Magazine*, which would become a canon of America’s history on the decision to use the bomb.

The military branches in the US were also going through a transition. Those who defended the conventional forces before were now eager to defend the atomic bomb. To embrace the new weapon, they needed to justify its use. In a contrast with his earlier view, George Marshall argued in 1957: “We had to end the war, we had to save American lives. We had to halt this terrific expenditure of money which was reaching a stupendous total. And there was no easy to economize on it until we stopped the war.” “The bomb stopped the war,” Marshall added, “Therefore, it was justifiable.”

If anything, it was probably this view that turned the USSBS reports into a legacy of the past. The counterfactual conclusion gradually lost its place in the context of the official

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154 Stimson, Henry L., “The Decision to Use the Atomic Bombs,” *Harper’s Magazine*, Vol. 194 (February 1947), pp. 97-107. According to Bernstein, “Conant wanted to shape popular understanding and demolish the wrong kind of thinking, hoping thereby to bar a return to prewar isolationism and to promote international control of atomic energy.” Bernstein, “Seizing the Contested Terrain,” p. 36. Stimson’s article remains unchallenged, often considered to represent the official view of the decision to use the atomic bomb.

155 See Chapter I of this dissertation.


157 *Ibid.*, p. 28. This attitude was shared by other military leaders. In response to a question by California-based journalist, for example, Henry H. Arnold, AAF Commander, said “In fact, we justified its use on the basis that it could be decisive [sic]. Letter to H. H. Arnold from Zenas L. Potter, April 29, 1948, Folder: Potter, ZL, Microfilm 28272, Arnold, Henry H., AFHRA.
narrative of the atomic bomb. This change appears to have come only slowly and quietly, as many of those, once accepted or even supported the conclusion, would not dare to challenge it on its face. The change may most symbolically be found in the attitude of Patterson. Almost a year after the first uses of the atomic bomb, Patterson appeared to have a different idea about the weapon:

Do not be fooled by any talk that the atomic bomb is not as powerful as we first believed after the breath-taking announcement of Hiroshima. Don’t let yourself be lulled into any false sense of security by such words as, “Oh well, it’s just another bomb; they’ll find a defense against atom bombs;” Defense are being studied, yes, but regardless of how potent, they can offer only partial protection, not security...Unless we can build such a structure to control the atom, the atom will control us... It is you or the atom.158

Conclusion

The British participation in the Survey and its request to synchronize the release of their atomic bomb reports had come to place on the Chairman’s a-bomb report an importance as a government white paper. This had prompted in the mind of Groves’ a sense of urgency to demand that the MED report be released coincident with the two other

reports so his report could overpower the other reports. The contested terrain had now become one over publicity.

The simultaneous releases of the reports also marked the last act of the wartime partnership between the UK and the US. But because of the decision to inform the public of the power of the bomb, the USSBS Chairman's a-bomb report could speak about the effects of the atomic bomb to an extent that was not done before. In the meantime, the ongoing preparation for Operation Crossroads increasingly aggravat ed the inter-service rivalry, and configured the report as a center of this competition when the Army tried to use its release as an occasion to remind the public of the role the Army's bomb played in the war. The release of the USSBS a-bomb report had now become a matter of the Army versus the Navy over the atomic bomb.

Though the release was delayed, those counterfactual arguments stayed intact, paving the way for the early-surrender hypothesis in two other Chairman's reports to be accepted without too many inconsistencies. Ironically, the release of the reports also coincided with the shift in America's attitude toward the atomic bomb, which would eventually put an end to "just another weapon" narrative, and, thus, diminish the counterfactual conclusion.
Conclusion

As the developer and exploiter of this ominous weapon, our nation has a responsibility, which no American should shirk, to lead in establishing and implementing the international guarantees and controls which will prevent its future use.¹

—United States Strategic Bombing Survey

We cannot afford to pass up any opportunity to strengthen ourselves and must continually seek out and develop new ideas for hydrogen bombs or any other weapon which may prove effective, no matter how repugnant it may be to us.²

—Leslie R. Groves

In September 1946, two months after the Summary Report was released, a plan was initiated by some of America’s elite to shape popular understanding of the decision to use the atomic bomb.³ The plan, which culminated into an article by Henry L. Stimson, wartime Secretary of War,⁴ was conceived by James B. Conant, president of Harvard University who had played a part as Chairman of the National Defense Research Committee in the 1942 establishment of the Manhattan Project.⁵ It involved such individuals as Karl T. Compton, president of Massachusetts Institute of Technology, Felix Frankfurter, a Supreme Court Justice, and Harvey H. Bundy, a lawyer who served Stimson as a Special Assistant

¹ Chairman’s a-bomb report, p. 43; fifth draft, p. 45; fourth draft, p. 60; third draft, p. 55. In the third draft, the last phrase is “the recurrence of such tragedies,” instead of “its future use.”

² “Some Implications of the Hydrogen Bomb,” Address to be delivered at the Colgate University Conference on American Foreign Policy, July 8, 1950, p. 4, Folder: 1950 Speeches, Box 1: Speeches 1941-64, LRG.


during the war. Upset by a magazine article that contended that the atomic bombing was unnecessary, Conant, through Bundy, urged the retired secretary to write an article to defend the use of the bomb—to propagate the “correct” history.

Leslie R. Groves was part of the effort. Groves contributed to the article by writing his own version of the history of the bomb’s development and the process that led to the devastation of the two Japanese cities, for use in the article. Commenting on Stimson’s article upon its publication, Groves wrote, “There is no question but that as stated... The Controlling factor in the Japanese decision to accept our terms of surrender was the atom bomb.”

These policymakers feared that doubts about the decision to drop the atomic bomb would invite a return to prewar isolationism. In a letter on September 23, 1946, Conant wrote to Bundy: “We are in danger of repeating the fallacy which occurred after World War I [when] it became accepted doctrine among a group of so-called intellectuals who taught in


7 According to Bernstein, this article was Cousins, Norman, “The Literacy of Survival,” Saturday Review of Literature, Vol. 29 (September 14, 1946), p. 14. Bernstein did not specify, but Conant’s biographer lists USSBS counterfactual conclusion as one element that drove Conant to act. Hershberg, James B. Conant, p. 292.

8 Ibid., pp. 42-43.

9 Letter to Harvey H. Bundy from Groves, Nov. 6, 1946, Folder: 20. Miscellaneous, Box 8, Entry 1, MEDR. The letter was attached to two drafts prepared by Groves’ office.

10 “Comments on article by Secretary of War, Henry L. Stimson, Harper’s Magazine, February 1947, explains why we used the atomic bomb,” Folder: Correspondence (Misc.), Box 1, Entry 4, LRG. The wording of Stimson in the article was: “all the evidence I have seen indicates that the controlling factor in the final Japanese decision to accept our terms of surrender was the atomic bomb;” (p. 105) Interestingly, Stimson cited Japan’s Struggle to End the War, as a source of this conclusion together with two other materials, including Compton, K. T., “If the Atomic Bomb Had Not Been Used,” Atlantic Monthly, Vol. 178 (December 1946), pp. 54-56.
our schools and colleges that the United States made a great error in entering World War I.\textsuperscript{11} It is interesting to note how similar Conant’s contention was to that of promoters of the other narrative that presented the new weapon as “just another bomb.”\textsuperscript{12}

It is not certain if he was actually the originator of this maneuver, but Groves certainly “won” this time. Stimson’s article has become the \textit{de facto} official history of the United States on the decision and has enjoyed a solid standing over the last seven decades. USSBS survived the competition with the Manhattan Engineer District (MED) over the a-bomb report, but it did not succeed in getting its counterfactual conclusion to become the official narrative. The conclusion has mostly remained at the periphery of history since then, having occasionally come under a spotlight with the rise and fall of revisionist thinking in the United States.\textsuperscript{13}

Two preceding studies on the USSBS early-surrender hypothesis that came out in 1995 asserted that it was not a conclusion drawn forth from investigations of Japanese leaders, but was likely an idea preconceived by the Survey’s Vice Chairman, Paul H. Nitze.\textsuperscript{14}

But, questioning Japanese officials is not all they had done. Roughly one third of the Survey’s

\begin{enumerate}
\item Bernstein, “Seizing the Contested Terrain of Early Nuclear History,” pp. 36, 39-40.
\item See Chapter I of this dissertation.
\item For the role the counterfactual conclusion played in the debate over the decision to drop the atomic bomb, see 織沢浩子「米戦略爆撃調査団報告書の＜原爆不要論＞：原爆投下論争の研究史から見るその役割と意義」『広島国際研究』、広島市立大学国際学部、第 19 巻（2013 年 11 月）、pp. 1-19 [Shigesawa, Atsuko, “The U.S. Strategic Bombing Survey’s Early-Surrender Conclusion and the Debate over the Atomic Bombings of Hiroshima and Nagasaki,” \textit{Hiroshima Journal of International Studies}, Vol. 19 (November 2013), pp. 1-19. See, also, Chapter VI, Gentile, \textit{How Effective Is Strategic Bombing}?
\item Newman, pp. 167-194; Bernstein, “Compelling Japan’s Surrender Without the A-Bomb, Soviet Entry, or Invasion, pp. 101-148.
\end{enumerate}
some 200 operations in the Pacific took place either in Hiroshima, Nagasaki, or both.\textsuperscript{15} The Survey analysts had seen the effects of the atomic bomb with their own eyes and collected substantial evidence in the affected areas.\textsuperscript{16} How do these studies relate to the counterfactual conclusion?

By examining the preliminary and final reports of the five USSBS divisions that studied in Hiroshima and Nagasaki, this dissertation has sought to determine if these studies directly contributed to the formation of such a hypothesis. As they provided bases for the Chairman’s reports, the divisional studies were intertwined with the counterfactual conclusion in multiple ways. However, my research on the question suggested to me that perhaps they did not, as the conclusion was likely a preconceived conclusion although they were used to support the conclusion.

Many of the reports prepared by the five divisions that studied Hiroshima and Nagasaki demonstrate tendencies to downplay the effects of the atomic bomb. For example, the Physical Damage Division (PDD) avoided determining damages on dwellings that were hardest hit of all the structures in the two cities. The reports of the Urban Areas Division (UAD) argued the atomic bombings were not effective in destroying the cities’ war-making capacity. Civilian Defense Division (CDD) wanted to show the bomb could be defended against, if proper measures had been taken. Some of the divisional reports were even modified to this end. It was in this way that they laid the groundwork for the counterfactual conclusion.

\textsuperscript{15} “Operation Orders & Areas,” Folder: 300.4 Orders-Operations (USSBS) Tokyo; “Operations orders,” Folder: 300.4-E Operations (USSBS) Tokyo, both in Box 12, Entry 1, RG 243, NACP.

\textsuperscript{16} See Chapter II of this dissertation.
conclusion to better fit into the Chairman’s reports. Early and unprecedented studies though they were, these divisional studies functioned as evidence for the Chairman’s reports.

Often buried in oblivion in the discussions of the counterfactual, because it does not include the exact conclusion, however, the role of the Chairman’s a-bomb report, the first report published from the Chairman’s Office, was significant. It was pushed into the diplomatic arena when the British and American Chiefs of Staff agreed to simultaneously release the British Mission’s and the USSBS reports. This allowed the report to speak eloquently about the effects of the bomb—primarily through those accounts by the Medical Division, which discussed effects of the initial radiation to an extent that had not been done before.

I say the early-surrender hypothesis was likely preconceived based on my research into the Morale Division’s report and its drafts. While the division conducted studies that were most relevant to the early-surrender hypothesis, and it does include counterfactual elements in the report, my study reveals transitions of its writings from the earliest draft to the later drafts, and to the final report demonstrate these elements probably originated in the Chairman’s Office. Thus the Morale Division report was made into evidence for the conclusion in a postmortem fashion.

That the conclusion itself was not deducted from the interrogations of Japanese leaders is well proven by the two historians. As I previously discussed, it appears that the Survey argued to have based their reports on their studies and interrogations to repel any
criticism and refutation. But that does not necessarily mean the conclusion is unreliable and should not be trusted, as the two historians argue. Dismissing the conclusion simply because it was not properly based on evidence misses its significance.

Bernstein discussed the above-mentioned effort on the authority's part to hold a contested terrain over the narrative of the atomic bomb in his 1993 paper. But, as I discussed in my chapters, already in the period leading up to that time, there was another, silent competition unfolding between USSBS and MED over which narrative should prevail. In light of the struggle of the two different narratives, the meaning of the counterfactual conclusion is not small.

The fact that it was not based on evidence is just a sideline of a bigger picture. When we see the issue from a different angle, even the fact that the USSBS executives might have manipulated evidence to justify their speculation, which they said was derived from questioning the Japanese, becomes evidence. If we take a look at this from the broader point of view of this contested terrain, the story of one of the two narratives becomes too important to dismiss.

Often eclipsed by the later acceptance of the bomb as a godsend that ended the war, saving the lives of hundreds of thousands of American soldiers, contemporary people actually reacted to the emergence of the new weapon differently. Not a few of them resisted change, by defending the conventional forces, old notions and interests. Downplaying the atomic bomb was one of the first reactions to the new age. For some, such an action was

necessary to alleviate the awe of the atomic bomb felt by the public in order to maintain their morale and interest in preparedness for another war. Some sought to counteract Japanese propaganda. Others wanted to protect conventional forces and manpower from being overshadowed by the new weapon, especially in view of the unification of military forces and universal military training. Their attitude would eventually change, but people could not adjust to the emergence of the atomic bomb overnight.

The USSBS hypothesis came out just at the time when such a transition was taking place. The United States, for example, had just conducted its first postwar nuclear tests, enacted the Atomic Energy Act to promote the development of atomic energy, and was trying to implement international control of atomic energy. In such circumstances, American armed forces, which first detested the atomic bomb, had started to embrace the bomb as part of its arsenal. But if the USSBS reports eventually became obsolete, that is not because of the atomic bomb, but rather because of its narrative. It was the tone that discredited the atomic bomb as “just another bomb” that was associated with the Survey, which left them buried in the past.

Implications of the counterfactual conclusion, however, are complex and manifold. Historians have often argued about how many people the bomb saved by ending the war and making the invasion needless. The US government and military officials have justified the atomic bombings for their decisive role. However, if the atomic bomb was really a

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19 Historian Alex Wellerstein calls the year 1946 “a liminal year,” which is “a transition period between two orders.” He explains 1946 was a brief period when American approach towards the bomb was still unclear. Wellerstein, “Liminal 1946: A Year in Flux,” Restricted Data blog, November 8, 2013, at http://blog.nucarsecrecy.com/2013/11/08/liminal-1946/
revolutionary and absolute weapon, then, the question we should be asking is not if the bomb ended the war, but if the bomb was necessary. This question is exactly what the USSBS early-surrender hypothesis posed.

If it was not based on Japanese testimonials, the USSBS counterfactual testifies to the notions, interests and sentiments that existed in the United States following the first atomic bombing. It was more likely based on an opinion shared by more than a few government leaders, especially those of the military branches. In a way, it represented their views.

The USSBS counterfactual conclusion is an important key to understanding their thoughts and responses toward this unknown power in a critical, transitional period in history.
Bibliography

Primary Sources

<Manuscript Collections>

USA

National Archives at College Park

Textual records of the United States Strategic Bombing Survey, RG243

Papers of General Leslie R. Groves, Collection GRO

Records of the Army Air Forces, RG18

Records of the Office of the Chief of Engineers, RG77

Secretary of War (Patterson) Subject File, RG107

Records of the War Department General and Special Staffs, RG165

Headquarters US Air Force, RG341

USAF/USAF Unit History, RG342

Records of the Office of the Chief of Naval Operations, RG38

Records of the Army Provost Marshal General, RG389

Records of the Office of Censorship, RG216

Record of Allied Operational and Occupation Headquarters, WWII, 1907-1977, RG331

David Goldin Collection, 1932-ca. 1952, Special Media Archives Services Division (NWCS)

Library of Congress Manuscript Reading Room

Paul H. Nitze Papers

Robert P. Patterson Papers
Alexander de Seversky Papers

Henry H. Arnold Papers

Hoyt S. Vandenberg Papers

Carl A. Spaatz Papers

Ira C. Eaker Papers

Curtis E. LeMay Papers

Herbert Feis Papers

Felix Frankfurter Papers

Veterans History Project, Library of Congress American Folklife Center

Alan B. Smith Collection

Arthur Canter Collection

Harry S. Truman Library, Independence, MO

Official File, White House Central Files, Harry S. Truman Papers

President's Secretary's Files, Harry S. Truman Papers

Dean G. Acheson Papers

Clark M. Clifford Files

Edwin A. Locke, Jr. Files

Robert L. Dennison Files

Mathew J. Connelly Files

Eben A. Ayers Papers
Dwight D. Eisenhower Library, Abilene, KS

Pre-Presidential Papers, 1916-53, Principal File

Lauris Norstad Papers

Air Force Historical Research Agency, Maxwell Air Force Base, AL

Miscellaneous Records of the United States Strategic Bombing Survey

Henry H. Arnold Collection

Orvil A. Anderson Papers

Muir S. Fairchild Papers

George C. Kenny Papers

Naval History and Heritage Command, Washington, D.C.

Ralph A. Ofstie Papers

Rear Admiral Forrest P. Sherman Papers

Fleet Admiral William D. Leahy Papers

Chester W. Nimitz Papers

The United States Army Heritage and Education Center, Carlisle, PA

Sheffield Edwards Papers

Edmund J. Winslett Papers

Eric T. Bradley papers

Smithsonian Institute Archives

Program and Exhibition Files, 1982-1996


Princeton University Seeley G. Mudd Manuscript Library

James V. Forrestal Papers

George W. Ball Papers

Bernard M. Baruch Papers

John Foster Dulles Papers

Ferdinand Eberstadt papers

David E. Lilienthal papers

Arthur Krock Papers

Adlai E. Stevenson Papers

Columbia University Oral History Center

Robert P. Patterson Project

Henry H. Arnold Project

University of Montana, Missoula, Maureen and Mike Mansfield Library

Vern Haugland Papers

Cradle of Aviation Museum, Long Island, NY

Alexander de Seversky Papers
Saving the Legacy Oral History Project, American West Center, University of Utah

Wataru Misaka Collection
Edward L. Hart Collection

Houghton Library, Harvard University

Robert E. Sherwood Papers

Swarthmore College Peace Collection, Pennsylvania

Emergency Peace Campaign Records, 1936-1937

Drexel University Archives

College of Engineering Records, 1930-2013

George C. Marshall Research Library

George C. Marshall Interviews and Reminiscences for Forrest C. Pogue

accessed online at
https://www.marshallfoundation.org/library/collection/george-c-marshall-interviews-reminiscences/#!/collection=341

New York Public Library

New Yorker Records

K. Kaida, et al., Medical School, Kyushu Imperial University, “Report of miscarriages and premature parturitions”

UK

National Archives, Kew, Richmond, UK

Records of the Cabinet Office (CAB)

Records of the Prime Minister’s Office (PREM)

Records of the UK Atomic Energy Authority and its predecessors (AB)

Records created or inherited by the Home Office, Ministry of Home Security, and related bodies (HO)

Records created or inherited by the Air Ministry, the Royal Air Force, and related bodies (AIR)

Domestic Records of the Public Record Office, Gifts, Deposits, Notes and Transcripts (PRO)

Records of the Admiralty, Naval Forces, Royal Marines, Coastguard, and related bodies (ADM)

Records of the Atomic Weapons Establishment, predecessors and successors (ES)

Records created or inherited by the Foreign Office (FO)

University of East Anglia, Norwich, Norfolk

Solly Zuckerman Archive

US Government Publications

<Microfilm Collections>

USSBS, Pacific Survey Reports and Other Records 1928-1947, National Archives and Record Administration, microfilm publication M1655A, M1655B, Wilmington, Delaware:

**Chairman’s Office:**

Very Preliminary Draft, March 12, 1946, four copies (frames 1044-1058, 1131-1146, 1364-1378, 1440-1449), Roll 1, USSBS ROR. This is likely the first draft of the conclusion of the Chairman’s Summary Report.

Summary Report Draft, March 27, 1946, three copies (frames 998-1058 (of which 1044-1058 is the March 12 draft), 1103-1146 (of which 1031-1046 is the March 12 draft), 1147-1207), Roll 1, USSBS ROR. This is likely the first draft of the Chairman’s Summary Report.

Preliminary Draft of Chairman’s Report, April 10, 1946, three copies (frames 860-938, 1304-1378 (of which frames 1364-1378 is the March 12 draft), 1379-1449 (of which pp. 60-74, or frames 1440-1449, is the March 12 draft)), Roll 1, USSBS ROR. This is likely the second draft of the Chairman’s Summary Report.

Preliminary Draft of Chairman’s Report, April 24, 1946, in Report No. 3, frames 491-533, Roll 51; frames 939-951 (this is partial), Roll 1, both of USSBS ROR. This is likely the third draft of the Chairman’s Summary Report.

Revised Draft, Summary Report, June 1, 1946, two copies (frames 1059-1102, 1708-1748), Roll 1, USSBS ROR. This is likely the fourth draft of the Chairman’s Summary Report.

Preliminary Draft (Not revised), Japan’s Struggle to End the War, July 1, 1946, Report No. 2a, frames 153-219, Roll 51, USSBS ROR. This is the only draft of Japan’s Struggle to End the War this author has so far found.

Preliminary Composite Report on the Atomic Bomb: Its Power, Effects and Limitations, March 5, 1946, Report No. 3, frames 236-305, Roll 51, USSBS ROR. This is likely the first draft of the Chairman’s a-bomb report.

Preliminary Composite Report on the Atomic Bomb: Its Power, Effects and Limitations, March 26, 1946, Report No. 3, frames 306-395, Roll 51, USSBS ROR. This is likely the second draft of the Chairman’s a-bomb report.

Preliminary Composite Report on the Atomic Bomb, April 27, 1946, Folder: 319.19 Preliminary Composite Report on the Atomic Bomb, Box 33, Entry 1, RG 243; Folder: Preliminary Composite Report on A-Bomb by USSBS, Box 92, Entry 6, RG 77, both of
NACP; Folder 4: Strategic Bombing Survey, Box 20, Files of Edwin A. Locke, Jr., HSTL. This is likely the third draft of the Chairman's a-bomb report.

The Effects of the Atomic Bombings of Hiroshima and Nagasaki, June 7, 1946, Folder: U.S. Strategic Bombing Survey “The Effects of the Atomic Bombings of Hiroshima and Nagasaki,” Box 92, Entry 6, RG 77, NACP. This is likely the fourth draft of the Chairman’s a-bomb report.

The Effects of the Atomic Bombings of Hiroshima and Nagasaki, July 19, 1946, Folder: Atomic Bomb: Hiroshima and Nagasaki, Box 174, President's Secretary's Files; Folder 1: Strategic Bombing Survey, Box 20, Files of Edwin A. Locke, Jr., both of HSTL; Folder: Atomic bomb-Hiroshima and Nagasaki, Subject File-NSC-Atomic, Reel 40, Part 3, Truman Office File; Report No. 92f(1)(k), frames 266-315, Roll 327, USSBS ROR. This is likely the fifth draft of the Chairman's a-bomb report.

**Physical Damage Division:**

Preliminary Findings, Report No. 3c(28), frames 1339-1346, Roll 52, USSBS ROR. This is likely the oldest draft based on the traces of changes made. Undated, but probably prepared in early February 1946.

Preliminary atomic bomb report, Feb. 20, 1946, Report No. 92a, frames 228-315, Roll 326A, USSBS ROR.


Section I: Object of study, Report No. 92f(1)(a), frames 1-4, Roll 327, USSBS ROR.

The Atomic Bomb at Hiroshima, Japan, Section XV: Probable Effects on Other Targets, undated, Report No. 92f(1)(b), frames 5-47, Roll 327, USSBS ROR. This is part of the Hiroshima report, which had likely become Part M of Section II, pp. 26-28 of Vol. I.

Section VI: Description of the Atomic Bomb Attack, undated, Report No. 92f(1)(d), frames 98-111, Roll 327, USSBS ROR.

Section VII: Determination of Zero Points, undated, Report No. 92f(1)(e), frames 112-122, Roll 327, USSBS ROR. This is part of the Hiroshima report, which had likely become Part E of Section II, p. 11 of Vol. I.

Section VIII: Dwellings, undated, Report No. 92h(1), frames 455-466, Roll 327, USSBS ROR.
Section IX: Fire—Cause and Extent, Report No. 92i(1), frames 467-558, Roll 327, USSBS ROR.

Section X: Damage to Buildings, in Report No. 92j(1), frames 660-713, Roll 327, USSBS ROR.

Section XI: Machine Tools, Report No. 92k(1), frames 55-71, Roll 327A, USSBS ROR.

Section XII: Damage to Bridges, undated, Report No. 92l(1), frames 1-48, Roll 327A, USSBS ROR. This is part of the Hiroshima report, which had likely become Part J of Section II, pp. 18-21 of Vol. I.

Section XIII: Damage to Services and Utilities, Report No. 92m(1)(a), frames 797-818; Report No. 92m(3)(a), frames 847-863, both of Roll 327A; Report No. 92m(5)(a), frames 40-61; Report No. 92m(6)(a), frames 162-178; Report No. 92m(7)(a), frames 193-211; Report No. 92m(6)(a), frames 162-178; Report No. 92m(5)(a), frames 40-57; frames 60-89; Report No. 92m(4)(a), frames 1-35, all of Roll 328, USSBS ROR.

Effects of the atomic bomb on Nagasaki (interim report), Report No. 3v(70), two copies (frames 1291-1318, 1319-1344), Roll 60, USSBS ROR.

Preliminary draft report of the Effects of the Atomic Bomb on Hiroshima, Japan, Report No. 92u (three volumes), frames 184-410, Roll 328A, frames 1-940, Roll 329, frames 1-664, Roll 329A, USSBS ROR. This preliminary report and the one of Nagasaki below are almost identical to the published reports with little additions and changes.

Preliminary draft report of the Effects of the Atomic Bomb on Nagasaki, Japan, Report No. 93i (three volumes), frames 408-1083, Roll 332, frames 1-1032, Roll 333, USSBS ROR.

Urban Areas Division:

A preliminary Report on Hiroshima City, Report No. 60h(4), frames 1014-1154, Roll 304, USSBS ROR. This one, undated, was apparently written before Jan. 23, 1946, and the earliest draft of UAD's Hiroshima reports as far as examined by this author.

Preliminary reports, Report No. 1c(5), dated Jan. 23, 1946, Roll 10, USSBS ROR. A preliminary report for Hiroshima can be found in frames 386-452, which is the typed version of Report No. 60h(1), frames 732-832, Roll 304.

A preliminary Report on Hiroshima City, Report No. 60h(1), frames 732-832, Roll 304, USSBS ROR. This one is the same content with the same date with the Hiroshima preliminary report in Report No. 1c(5), but apparently an earlier version with handwritten additions and inserts that were typed in the one in Report No. 1c(5).
cited above. It is believed Reports No. 60h(1), No. 1c(5) and No. 60h(4) cited below are earlier versions than Reports No. 60h(2) and No. 60a(2), cited, respectively, below.

A preliminary Report (draft) on Hiroshima City, Report No. 60h(2), frames 833-977, Roll 304, USSBS ROR. This one, dated March 20, 1946, is almost identical with Report No. 60a(2) cited below with handwritings that are typed in Report No. 60a(2).

Urban Area Study of the Atomic Bomb Attack on Hiroshima, March 20, 1946, Report No. 60a(2), frames 206-289, Roll 304, USSBS ROR.

Effects of Air Attack on the City of Hiroshima (draft), May 1947, in Report No. 60, frames 36-188, Roll 304, USSBS ROR. This one, undated, is basically the same as Reports No. 60a(2) and No. 60h(2) with a little modification and almost identical to the final report.

An undated preliminary report on Nagasaki City, in Report No. 1c(5), frames 625-659, Roll 10, USSBS ROR. This is considered to be the oldest draft for the UAD’s Nagasaki report, likely completed around the same time as other reports in Report No. 1c(5) (late January 1946).

An undated preliminary report on Nagasaki City, in Report No. 55a(13), frames 371-401, Roll 283A, USSBS ROR. This is the same as the one in Report No. 1c(5), but only runs to the middle without remaining pages. Also, modifications are made in the form of overwriting and inserts.

An undated draft report on Nagasaki City, in Report No. 59j, frames 1-9, Roll 303B, USSBS ROR. A partial draft, which is identical to Report No. 59m below.

An undated draft report on Nagasaki City, Report No. 59m, frames 50-79, Roll 303B, USSBS ROR. This is a revised draft of the oldest draft in Report No. 1c(5).

An undated draft of the Effects of Air Attack on the City of Nagasaki, in Report No. 59, frames 1068-1143, Roll 303A, USSBS ROR. This is almost identical to the final report with a few modifications.

Civil Defense Division:

Manuscript of Nagasaki report, Report No. 5, undated, frames 1-303, Roll 66, USSBS ROR.

Target Report of Civilian Defense Division Field Team No. 2, Covering Air Raid Protection Facilities and Allied Subjects in the City of Nagasaki, Japan, in Report No. 5a, undated (likely March 7, 1946), frames 376-575, Roll 66; in Report No. 1c(8), frames 91-294,
Roll 12, USSBS ROR. This is identical to the Report No. 5 above except that it does not include texts and tables for the exhibits.

Manuscript of Nagasaki report, Report No. 5b, undated, frames 576-814, Roll 66, USSBS ROR. Obviously, this is the earliest version with handwritten modifications that were reflected in Reports No. 5 and No. 5a and No. 10ww(1).

Nagasaki field report, Civilian Defense Division, Report No. 13a(8), frames 430-438, Roll 92, USSBS ROR. This brief draft report consists of the part of the “Shelters” in the Field Report Covering Air-Raid Protection and Allied Subjects in Nagasaki, Japan (pp. 63-73) but without the part of the reasons why so few people were in shelters at the time of the explosion (pp. 73-75). Based on the content, it is assumed that it was written between Report No. 5b and Report No. 5.

Atomic Bomb Report, Report No. 1c(8), Feb. 27, 1946, two copies (frames 68-88, and 299-319), in Roll 12, USSBS ROR. I have not found a manuscript or draft or preliminary report for CDD’s Hiroshima report in USSBS documents, but two draft atomic bomb reports, which discuss Hiroshima and were written by CDD. One is this and the other is in Report No. 10ww(1) below. The former is undated, but it was likely written before 10ww(1).

Special Atomic Bomb Report on Japanese Civilian Defense Forces for inclusion in the over-all report Report No. 10ww(1), Feb. 5, 1946, frames 841-879, Roll 80, USSBS ROR. This is also included in Report No. 1c(8), frames 322-355, Roll 12, USSBS ROR.

**Medical Division:**

Report of Medical Division on Effects of Atomic Bombing on the Public Health of Hiroshima and Nagasaki, Report No. 13a(1), undated draft (likely mid-February 1946), frames 141-247, Roll 92; Report No. 1c(1), frames 840-921 (with corresponding notes for correction in frames 811-839), Roll 7, USSBS ROR. This is apparently the earliest Medical Division draft of all I found in USSBS ROR. All the directions inserted for corrections by a reviewer in No. 13a(1) are reflected in the draft report No. 13 listed below.

A draft, the Effects of Atomic Bombs on Health and Medical Services in Hiroshima and Nagasaki, Report No. 13, undated, frames 730-931, Roll 91A, USSBS ROR. Many of the hand-written corrections over the pages are reflected in the draft report Nos. 13a(1) and 1c(1) below.

A draft, the Effect of Atomic Bombs on Health and Medical Services in Hiroshima and Nagasaki, Report No. 13a(1), July 15, 1946, two copies (frames 1-140 & 248-404), in Roll 92; Report No. 1c(1), July 15, 1946, frames 425-564, Roll 7, all in USSBS ROR.
These three copies are the same except that each of the former two copies has different hand written corrections over the pages.

**Morale Division:**

Preliminary Draft, The Effect of the Atomic Bombings on Japanese Morale, Feb. 6, 1946, Report No. 1c(2), frames 852-866, Roll 8; Report No. 53a(62)(c), frames 533-547, Roll 273; six preliminary drafts in Report No. 14h(1), frames 816-831, 832-847, 848-863, 864-879, 899-913 and 914-929, Roll 133, all of USSBS ROR. Some of these come in different typing and layouts, but the contents are the same.

The Effect of Bombing on Japanese Morale (Interim Report), Feb. 11, 1946, three copies, (Report No. 1c(2), frames 901-920, Roll 8; Report No. 14h(1), frames 942-954, Roll 133; Report No. 53a(62)(b), frames 521-532, Roll 273), USSBS ROR.

The Effect of the Atomic Bombings on Japanese Morale (Revised), March 15, 1946, Report No. 1c(2), three copies (frames 716-732, 801-817, 818-834, 835-851) in Roll 8, USSBS ROR.

The Effect of Bombing on Japanese Morale (Second Interim Report), March 21, 1946, frames 733-766, 767-800, 867-900, Roll 8, USSBS ROR.

The Effects of Strategic Bombing on Japanese Morale, Report No. 1c(2), June 15, 1946, frames 978-1378, Roll 7, and frames 1-253, Roll 8, USSBS ROR. (Chapter 8: The Effects of the Atomic Bombing on Japanese Morale is found in frames 1253-1283, Roll 7.) There is also undated draft that is similar to this one in Report No. 1c(2), frames 257-715 (The Effects of the Atomic Bombing on Japanese Morale is found in frames 480-510), Roll 8, USSBS ROR.


Henry L. Stimson Papers, Yale University Library.

Diaries of James V. Forrestal, Princeton University Library.

Manhattan Project: Official History and Documents, University Publications of America, 1977


Correspondence ("Top Secret") of the Manhattan Engineer District, 1942-1946, microfilm publication M1109, Washington, D.C.: National Archives and Records Administration, 1980. (Microfilm accessed online via the Center for Research Libraries)


<Books>


Medical Branch, USSBS Morale Division (European Survey), *The Effects of Bombing on Health and Medical Care in Germany*, October 1945.


US Congress. Senate Committee on Military Affairs. Department of Armed Forces, Department of Military Security: Hearings before the committee on S. 84: A bill to Provide for a Department of Armed Forces, Secretary of the Armed Forces, Under Secretaries of Army, Navy, and Air, and for Other Purposes; and S. 1482: A Bill to Establish a Department of Military Security, to Consolidate Therein the Military Security Activities of the United States, and for Other Purposes, 79th Congress, 1st Session, Washington DC: GPO, 1945.


USSBS Medical Division, 12, *The Effects of Bombing on Health and Medical Services in Japan*, June 1947

USSBS Medical Division, 13, *The Effects of Atomic Bomb on Health and Medical Services in Hiroshima and Nagasaki*, March 1947


USSBS Over-All Economic Effects Division, 53, *The Effects of Strategic Bombing on Japan’s War Economy*, December 1946.


USSBS Military Analysis Division, 71a, *Air Campaign of the Pacific War*, July 1947.


USSBS Naval Analysis Division, 73, *The Campaigns of the Pacific War*, 1946.

USSBS Physical Damage Division, 92, *The Effects of the Atomic Bomb on Hiroshima, Japan* (3 volumes), May 1947.
USSBS Physical Damage Division, 93, *The Effects of the Atomic Bomb on Nagasaki, Japan* (3 volumes), June 1947.


<Periodicals>

*Air Force Magazine*

*American Heritage*

*Atlantic Monthly*

*Baltimore Sun*

*Collier's Magazine*

*Colorado Springs Gazette*

*Harper's Magazine*

*Life*

*London Daily Express*

*Los Angeles Times*

*New York Herald Tribune*

*New York Sun*

*New York Times*

*PM*

*Proceedings Magazine*

*Reader's Digest*
Saturday Evening Post

Saturday Review of Literature

Time

Washington Evening Star

Washington Post

空襲通信

朝日新聞

読売新聞

毎日新聞

中国新聞

Published Books and Articles


Anniversary Committee, Foreign Correspondent’s Club of Japan, ed., *20 Years of History 1945-1965*, Tokyo, Santoku Printing, 1965


Butow, Robert J. C., Japan’s Decision to Surrender. CA: Stanford University Press, 1954. [ロバート・J・C・ピュートー、大井篤訳、1958『終戦外史—無条件降伏までの経緯』時事通信社]


Grayling, A. C., Among the Dead Cities: Was the Allied Bombing of Civilians in WWII A necessity or a Crime?, London: Bloomsbury, 2006. 〔グレイリング、A. C., 鈴木主税・浅岡政子訳、『大空襲と原爆は本当に必要だったのか』（河出書房新社、2007 年）〕


Jacobs, Robert A., *The Dragon’s Tail: Americans Face the Atomic Age*, Amherst, University of Massachusetts Press, 2010.（新田準訳、高橋博子監訳『ドラゴン・テール: 核の安全神話とアメリカの大衆文化』（凱風社、2013年）


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[渡辺明訳『真珠湾—日米開戦の真相とルーズベルトの責任』（錦正社、1999年）]


Nitze, Paul H., From Hiroshima to Glasnost: At the Center of Decision, New York: Grove Weidenfeld, 1989.


Roitto Matti, Dissenting Visions: The Executive, Parliament and the Problematic Anglo-American Atomic Collaboration in the Changes of British Atomic Foreign Policy 1945-6, PhD. dissertation submitted to the University of Jyväskylä, Finland.


Shigesawa, Atsuko, “From the STINKO to the USSBS Motion Picture Project: Daniel A. McGovern and the Army Air Forces’ First Atomic Bomb Films,” The Kobe Gaidai Ronso (Kobe City University Journal), Vol. 67, No. 3 (Nov. 2017), pp. 107-130.

Shimamoto, Mayako, Henry A. Wallace: Critic of America’s Atomic Monopoly, 1945-1948, PhD. Dissertation submitted to the Graduate School of Language and Culture, Osaka University, 2012.


Yergler, Dennis Keith, Herbert Feis: Wilsonian Internationalism and America's Technological Democracy, PhD. Dissertation accepted by University of Iowa, 1990.


<日本語文献>

青木富貴子『昭和天皇とワシントンを結んだ男ーパルナム日記が語る日本占領』（新潮社、2011年）

秋吉美也子『横から見た原爆投下作戦』（元就出版社、2006年）

麻田貞雄『『暗闇』（「読売・吉野作造賞」受賞作）に異議あり 「原爆投下」より「ソ連参戦」を日本降伏の主因と見なすとは』『諸君』38 巻 9 号 (2006年9月) pp. 138-149.

同「冷戦の起源と修正主義研究ーアメリカの場合ー」「国際問題」170 号（1974年5月）、pp. 2-21.


尼子真央「原爆被曝者援助の現状と課題」『立法と調査』、283 号（2008年7月）、pp. 69-77.

アメリカ戦略爆撃調査団聴取書を読む会編『福岡空襲とアメリカ軍調査—アメリカ戦略爆撃調査団聴取書を読む』（海鳥者、1998年）

伊香俊哉「戦略爆撃から原爆へ—拡大する「軍事目標主義」の虚妄」『アジア・太平洋戦争 5 戦場の諸相』（岩波書店、2006年）、pp.271-298.


市川義夫『藤原さんと私』（私家版）

今中哲二「原爆直後の残留放射能調査に関する資料収集と分析」『広島平和記念資料館資料調査研究会研究報告』第10号（2014年）、pp.31-52.

今堀誠二『原水爆時代—現代史の証言』上下（三一書房、1959、1960年）

岩佐武彦「太平洋戦争下 連合国軍の米子地方空襲について—米国戦略爆撃調査団報告（USSBS）他より」『伯耆文化研究』（伯耆文化研究会）第12巻（2010年）pp.63-85.

岩松寛俊『戦争責任と核廃絶』（三一書房、1998年）

鶴飼美子『通訳者と戦後日米外交』（みすず書房、2007年）

道編集部『米国戦略爆撃調査団から三〇年目の訪問—匿名の庶民は戦後をどう生きたか』『潮』195号（1975年9月）pp.105-162.

歌田明弘『科学大国アメリカは原爆投下によって生まれた—巨大プロジェクトで国を変ええた男』（平凡社、2005年）

宇吹昭『ヒロシマ戦後史—被爆体験はどう受けとめられてきたか』（岩波書店、2015年）


NHK広島局原爆プロジェクト・チーム『ヒロシマ・残留放射能の42年』（日本放送出版協会、1988年）

NHK取材班編『対日仮想戦略「オレンジ作戦」』（角川文庫、1995年）

NHKスペシャル取材班『日本海軍400時間の証言—軍令部・参謀たちが語った敗戦』（新潮社、2011年）

NHK 広島「核・平和」プロジェクト『原爆投下・10秒の衝撃』（NHK出版、1999年）
NHK スペシャル取材班ほか『原爆投下 黙殺された極秘情報』（新潮文庫、2012 年）
大井篤・富永謙吾訳『証言記録 太平洋戦争史 I』（日本出版協同、1954 年）
大井篤ほか編『証言記録 太平洋戦争』作戦編、開戦編、終戦への決断編の三冊（サンケイ新聞出版局、1975 年）
大岡昇平『ながい旅』（新潮社、1982 年）
大角良人、鎌田定夫「長崎における原爆の効果に関するアメリカ合衆国戦略爆撃調査団報告」『長崎造船大学研究報告』16 巻 1 号（1975 年 6 月）pp. 129-149.
同「アメリカ合衆国戦略爆撃調査団報告『広島・長崎における原爆の効果』」『長崎造船大学研究報告』18 巻 1 号（1977 年 5 月）pp. 139-173.
太田昌克『アトミック・ゴースト』（講談社、2008 年）
大野芳『近衛秀麿—日本のオーケストラをつくった男』（講談社、2006 年）
大野直樹『冷戦下 CIA のインテリジェンス』（ミネルヴァ書房、2012 年）
大橋雄二、橋川容治「法令における構造関係規定の変遷（その 1）～（その 6）」『日本建築学会大会学術講演演題概集』、1986 年 8 月～1988 年 9 月号.
大平一枝『届かなかった手紙 原爆開発「マンハッタン計画」科学者たちの叫び』（角川書店、2017 年）
奥住喜重、早乙女勝元『東京を爆撃せよ—東京大空襲の本当の標的は何だったか？』（三省堂選書、1990 年）
奥田博子『原爆の記憶—ヒロシマ／ナガサキの思想』（慶應義塾大学出版会、2010 年）
小熊英二『市民と武装—アメリカ合衆国における戦争と銃規制』（慶應義塾大学出版会、2004 年）
小畑哲雄『占領下の「原爆展」—平和を追い求めた青春』（かもがわブックレット、1995 年）
外務省編『終戦史録』（新聞月鑑社、1952 年）
核戦争防止・核廃絶を訴える京都医師の会編『医師たちのヒロシマ—原爆災害調査の記録』（機関紙共同出版、1991 年）
徳原康久「下関空襲と「銃後」の市民：米国戦略爆撃調査団・下関面接調査の分」『地域文化研究』（梅光学院大学地域文化研究所）第 26 巻（2011 年）pp. 4-17.

カーツ、マイケル・J. 「平成 19 年度公文書講演会講演記録 1 米国における政府公文書へのアクセスの保証—米国国立公文書館・記録管理庁（NARA）の役割—」『沖縄県公文書館研究紀要』第 10 号（2008 年 3 月発行）p. 81-87.

金田茉莉『東京大空襲と戦争孤児—隠蔽された真実を追って』（影書房、2002 年）

鎌田七男、大北威、蔵本淳他、「8 月 6 日入市被爆者白血病の発生増加について」『長崎医学会雑誌』第 81 巻（2006 年 9 月）、pp. 245-249.

鎌田七男他「近距離被爆生存者に関する総合医学的研究」『広島医学』45 巻、3 号（1992 年 3 月）、pp. 538-539.

鎌田七男他「爆心地域被爆生存者に関する総合医学的研究」『広島医学』35 巻、8 号（1982 年 8 月）、pp. 1084-1098.

上村英輔『生き残り放談』（石油春秋社、1971 年）

川口悠子「広島の「越境」—占領期の日米における谷本清のヒロシマ・ビース・センター設立活動—」東京大学総合文化研究科博士論文、2013 年。


川島高峰「日本の敗戦と民衆意識―天皇制ファシズムから天皇制民本主義へ」『年報日本現代史』創刊号（1995 年 5 月）、pp. 174-204.

川村滉『銀幕のキノコ雲：映画はいかに「原子力/核」を描いてきたか』（インパクト出版会、2017 年）


北畠宏泰『ひとりひとりの戦争・広島』（岩波書店、1984 年）

木戸幸一『木戸幸一日記』上下（東京大学出版会、1966 年）

紀平英作『歴史としての核時代』（山川出版社、1998 年）
木村朗、ピーター・カズニック『広島・長崎への原爆投下再考—日米の視点』（法律文化社、2010年）

木村玲次『戦争に隠された「震度7」1944 東南海地震 1945 三河地震』（吉川弘文館、2014年）

工藤美代子『われ巢鴨に出頭せず—近衛文麿と天皇』（中公文庫、2009年）

同『聖林からヒロシマへ—映画カメラマン・ハリー三村の人生』（晶文社、1985年）

工藤洋三『日本の都市を焼き尽くせ！—都市焼夷空襲はどう計画され、どう実行されたか』（自家版、2015年）

同『原爆投下部隊—第509混成群団と原爆・バンブキン』（自家版、2013年）

黒木雄司『原爆投下は予告されていた！—第五航空情報連隊情報室勤務者の記録』（光人社、1992年）

ケーリ、オーテス「京都に原爆を落とすな」『文芸春秋』53 巻 9 号（1975年）、pp. 146-158。

「原爆と防空壕」刊行委員会編著『原爆と防空壕—歴史が語る長崎の被爆遺構』（長崎新聞社、2012年）

織津厚『「聖断」虚構と昭和天皇』（新日本出版社、2006年）

国民経済研究協会『戦後復興期経済調査資料＜第2巻＞基本国力動態総覧』（日本経済評論社、1998年）

小林啓治、鈴木哲也著、高橋伸一監修『かくされた空襲と原爆』（機関紙共同出版、1998年）

斎藤道雄『原爆神話の五〇年』（中公新書、1995年）

坂口大作『米国社会と陸軍兵力—伝統的な軍隊観と UMT 構想』『国際安全保障』29 巻、3号（国際安全保障学会、2001年）80-97。

坂田卓雄『スイス発緊急暗号電 竪信太郎と男たちの終戦工作』（西日本新聞社、1998年）

佐々木卓也『ゲイサー報告書とアイゼンハワー政権の封じ込め政策（上）』、『立教法学』47号（1997年7月）、pp. 25-71。

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同「ジョージ・Ф・ケナン、ポール・H・ニッツィとNSC68への道」『一橋論叢』103巻1号（1990年1月）、pp.58-79.

佐々木英基『核の難民—ピキニ水爆実験「除染」後の現実』（NHK出版、2013年）

笹本征男『米軍占領下の原爆調査—原爆加害国になった日本』（新幹社、1995年）


椎名麻紗枝『原爆犯罪—被爆者はなぜ放置されたか』（大月書店、1985年）

宍戸伴久『戦後処理の残された課題—日本と欧米における一般市民に戦争被害の補償—』『レファレンス』（国立国会図書館調査及び立法考査局）、58巻12号（2008年12月）、pp.111-140.

繁沢敦子「革命的な兵器」か、「強力な爆弾の一つ」か？—原爆の威力をめぐる言説と米戦略爆撃調査団報告書』『歴史学研究』第951号（2016年11月）、pp.52-63.

同「米戦略爆撃調査団報告書の＜原爆不要論＞：原爆投下論争の研究史から見るその役割と意義」『広島国際研究』、広島市立大学国際学部、第19巻（2013年11月）、pp.1-19.

同「錯綜するアメリカの公式見解—米軍における『もう一つの戦争』とスティムソン論文の誕生」、『同志社大学アメリカ研究』別冊、同志社大学アメリカ研究所、第20巻、2013年、pp.103-126.

同「ジョン・ハーシーの『ヒロshima』再考～66年目の視点で読み解く」『広島国際研究』、広島市立大学国際学部、第18巻（2012年11月）、pp.19-37.

同『原爆と検閲』（中公新書、2010年）

四條知恵『浦上の原爆の語り——永井隆からローマ教皇へ』（未来社、2015年）

篠田英朗「核兵器使用と国際人道法—1996年核兵器使用と使用の威嚇に関する国際司法裁判所勧告的意見を中心にして—」、広島大学平和科学研究センター編、IPSHU研究所シリーズ研究報告 No.27（2001年）、pp.119-199.

柴田優『“ヒロシマ・ナガサキ”被爆神話を解体する——隠蔽されてきた日米共犯関係の原点』（作品社、2015年）

調来助編『長崎 爆心地復元の記録』（日本放送出版協会、1972年）

調来助他『長崎における原爆被災復元調査』『広島医学』、第27巻、第6号（1974年6月）、pp.79-85。

ジン、ハワード『爆撃』（岩波ブックレット、2010年）

鈴木多聞『「終戦」の政治史 1943-1945』（東京大学出版会、2011年）

スティネット、ロバート『真珠湾の真実—ルーズベルト欺瞞の日々』（文芸春秋、2001年）

洲脇一郎『神戸空襲～米国戦略爆撃調査団による分析』『神戸親和女子大学研究論叢』第49号（2016年3月）、pp.13-28。

戦史研究会『原爆が落ちた日』（文芸春秋、1972年）

総務省統計局監修、日本統計協会編『日本長期統計総覧』新版第2巻（同協会、2006年）

高瀬毅『ナガサキ消えたもう一つの「原爆ドーム」』（文春文庫、2013年）

高田馨里『オープンスカイ・ディプロマシー』（有志舎、2011年）

高橋伸一監修、小林啓治・鈴木哲也著『かくされた空襲と原爆』（つむぎ出版、1993年）

高橋健夫『油断の幻影』（時事通信社、1985年）

高橋博子『新訂増補版 封印されたヒロシマ・ナガサキ』（凱風社、2012年）

高村聡史『USSBS(戦略爆撃調査団)と山梨県中巨摩郡旧豊村—「空襲」なき一養蚕村の戦時—』『昭和のくらし研究』2011年3月号、pp.35-55。

立花誠『原爆投下問題の研究について——アメリカにおける研究状況と今後の課題——』『歴史学研究』第459号（1978年8月）、pp.23-35。

田中利幸『空の戦争史』（講談社現代新書、2008年）
田中利幸、ピーター・カズニック著『原発とヒロシマーー「原子力平和利用」の真相』（岩波ブックレット、2011年）

土屋由香『親米日本の構築』（明石書店、2009年）

土屋礼子『対日宣伝ビラが語る太平洋戦争』（吉川弘文館、2011年）

『東京大空襲・戦災誌』編集委員会『東京大空襲・戦災誌』第3巻（東京空襲を記録する会、1973年）

富永謙吾訳「太平洋戦争総合報告書」「日本の終戦努力」ほか『現代史資料39』（みすず書房、1977年）

鳩居民「近衛文麿「黙」して死す―すりかえられた戦争責任」（草思社、2007年）

直野章子『原爆体験と戦後日本：記憶の形成と継承』（岩波書店、2015年）

同「被爆者という主体性と米国に謝罪を求めるということの間」『現代思想』第44巻、第15号（2016年8月）、pp.74-85。

永井秀明『10フィート映画世界を回る』（朝日新聞社、1983年）

長崎市『長崎原爆戦災史』

長崎市長崎文化会館編『原爆被災復元調査事業報告書』（1970年）

長崎市原爆被災復元調査協議会『原爆被災復元調査事業報告書』（長崎市、1980年）

長崎「原爆問題」研究普及協議会編『長崎原爆に関する資料集・第1集 米国戦略爆撃調査団報告一資料解題と概要』（同協議会、1980年）

中村隆英、宮崎正康編『史料・太平洋戦争被害調査報告』（東京大学出版会、1995年）

西岡達裕著『アメリカ外交と核軍備競争の起源：1942-1946』（彩流社、1999年）

広川禎秀「降伏時の国民意識—米国戦略爆撃調査団報告および面接記録を中心に—」『人文研究』39巻1号（1987年）pp.813-837。

中川保雄『放射線被曝の歴史』（技術と人間、1991年）
同「広島・長崎の原爆放射線影響研究一急性死・急性障害の過少評価」『科学誌研究』通号 157（1986 年 5 月）、pp. 20-33.

同「過小評価されていた放射線障害—広島・長崎 41 年目の真実」『科学朝日』第 46 巻、第 8 号（1986 年 8 月）、pp. 117-122.

中野耕太郎『戦争のるつぼ—第一次世界大戦とアメリカニズム』（人文書院、2013 年）

中野博文「20 世紀初頭の陸軍改革と合衆国の政党政治—1917 年選挙微兵法制定をめぐって——」『歴史学研究』第 657 号（1994 年 4 月）、pp. 18-33, 57.


中沢志保『ヘンリー・スティムソンと「アメリカの世紀」』（国書刊行会、2014 年）

同「アメリカの初期原子力政策とシビリアン・コントロール—マクマホン法の再検討」 『文化女子大学紀要 人文・社会科学研究』第 7 号（1999 年）、pp. 129-140.

日本学術会議原子爆弾災害調査報告書刊行委員会編、『原子爆弾災害調査報告集 第一、二分冊』（日本学術振興会、1953 年）

秦郁彦『昭和史の謎を追う』上下（文春文庫、1999 年）

同『八月十五日の空—日本空軍の最後』（文春文庫、1995 年）

パレット、ピーター編、防衛大学校『戦争・戦略の変遷』研究会訳『現代戦略思想の系譜—マキャベリから核時代まで』（ダイヤモンド社、1989 年）

被爆建造物調査研究会 『ヒロシマの被爆建造物は語る』（広島平和記念資料館、1996 年）

日高義樹『なぜアメリカは日本に二発の原爆と落としたのか』（PHP 研究所、2012 年）

平塚恵編著『米軍が記録した日本空襲』（草思社、1995 年）

広島県『戦後五十年広島県政のあゆみ』（ぎょうせい、1996 年）

広島市原爆体験記刊行会編 『原爆体験記』（朝日新聞社、1965 年）

広島市『広島原爆戦災誌 1-5 巻』（広島市、1971 年）
広島市『広島新史 資料編Ⅰ 都築資料』（広島市、1981 年）

広島原爆医療史編纂委員会『広島原爆医療史』（広島原爆障害対策協議会、1961 年）


福間良明『焦土の記憶—沖縄・広島・長崎に映る戦後』（新曜社、2011 年）


同『原爆投下の国際法的再検討 2 完』『関西大学法学論集』第 25 巻第 3 号（1975 年 9 月）pp. 386-455.

藤田伶史『スティムソン論文再考—原爆投下決定をめぐる公式見解と歴史論争—』『文学研究論集』第 31 号（2009 年）、pp. 133-152.

同『アメリカ歴史教科書における原爆投下のコンテクスト—第二次世界大戦、冷戦、核時代—』『アメリカ研究』第 46 号（2012 年）、pp. 127-146.

同『エノラ・ゲイ展における展示台本第五部「ヒロシマ・ナガサキの遺産」—アメリカ合衆国における原爆投下観に関する—考察—』『駿台史学』第 148 号（2013 年）、pp. 49-75.

藤原章生『湯川博士、原爆投下を知っていたのですか：“最後の弟子”森一久の被爆と原子力人生』（新潮社、2015 年）

布施将夫『エリヒト・ルートの軍制改革—陸軍省参謀部の創設をめぐって』肥後本芳男、山澄享、小野沢透編『現代アメリカの政治文化と世界—20 世紀初頭から現代まで（アメリカ史のフロンティア II）』（昭和堂、2010 年）4-28.

古川愛智『原爆投下は予告されていた：国民を見殺しにした帝国陸海軍の「犯罪」』（講談社、2011 年）

フリードリヒ、イェルク著、香月恵里訳『ドイツを焼いた戦略爆撃 1940-1945』（みすず書房、2011 年）

ブルマ、イアン著、石井信平訳『戦争の記憶—日本人とドイツ人』（TBS ブリタニカ、1994 年）

堀栄三『大本営参謀の情報戦記—情報なき国家の悲劇』（文芸春秋、1996 年）

堀川恵子『原爆供養塔——忘れられた遺骨の 70 年』（文藝春秋、2015 年）
堀場清子『原爆 表現と検閲—日本人はどう対応したか』（朝日選書、1995年）
同『禁じられた原爆体験』（岩波書店、1995年）
前田哲男『戦略爆撃の思想—グルニカ・重慶・広島』（凱風社、2006年）
マキジャニ、A.、J. ケリー共著、関元訳、『Why Japan? 原爆投下のシナリオ』（教育社、1985年）
松浦総三 「戦時下報道の虚実—＜アメリカ戦略爆撃調査団報告書＞に日本の報道分析を見る 」『総合ジャーナリズム研究』11 巻1号（1974年1月）pp.94-104.
松本剛『略奪した文化—戦争と図書』（岩波書店、1993年）
松木秀文、夜久恭裕『原爆投下—黙殺された極秘情報』（NHK出版、2012年）
西日本重工業株式会社長崎造船所庶務課編『三菱長崎造船所史（続編）』（1951年）
三和良一、原朗編『近現代日本経済史要覧』（東京大学出版会、2010年）
三牧聖子『戦争違法化運動の時代—「危機の20年」のアメリカ国際関係思想』（名古屋大学出版会、2014年）
村田晃嗣『米国初代国防長官フォレスタール—冷戦の闘士はなぜ自殺したのか』（中公新書、1999年）
村松高夫「広島・長崎の原子爆弾に関する初期調査」『三田学会雑誌』89 巻1号（慶應義塾経済学学会、1996年4月）、pp.108-126。
室山義正「トルーマン政権の経済財政政策と核兵器—原爆投下による大戦後、朝鮮戦争に至るまで」『拓殖大学政治行政研究』第1巻（拓殖大学地方政治行政研究所、2009年）135-175。
矢野恒太記念会『数字でみる日本の100年』改訂第5版（同会、2006年）
山田康博『原爆投下をめぐるアメリカ政策—開発から使用までの内政・外交分析』（法律文化社、2017年）
同「「ナンバーズ・ゲーム」10年後の再論—原爆投下をめぐって」『アジア太平洋論叢』、第18号（2009年）、pp.123-145。

山本昭宏『核エネルギー言説の戦後史 1945-1960』（人文書院、2012 年）

同『核と日本人—ヒロシマ・ゴジラ・フクシマ』（中公新書、2015 年）

山本武利編『占領期文化をひらく：雑誌の諸相』（早稲田大学出版部、2006）

油井大三郎『日米戦争観の相剋—摩擦の深層心理』（岩波書店、1995 年）


エンク、ロベルト著、菊森英夫訳『千の太陽より明るく—原爆を造った科学者たち』（平凡社ライブラリー、2000 年）

吉田守男『京都に原爆を投下せよ』（角川書店、1995 年）

同『日本の古都はなぜ空襲を免れたか』（朝日文庫、2002 年）

吉田裕ほか編『アジア・太平洋戦争辞典』（吉川弘文館、2015 年）
NOTES ON THE ROLE OF ATOM-BOMBS IN THE JAPANESE SURRENDER DECISION

The Hiroshima and Nagasaki bombs did not defeat Japan, nor by the testimony of the enemy leaders who ended the war did they persuade Japan to accept unconditional surrender. The decisions to end the war and to accept defeat on Allied terms had already been taken by the Emperor, the Lord Privy Seal, the Prime Minister, the Foreign Minister and the Navy Minister as early as April of 1945—well before the Potsdam declaration, Russia's entry into the Pacific war or the atom-bombs were dropped. The War Minister and his two Chiefs of Staff opposed unconditional surrender. The impact of the Hiroshima attack however was to bring urgency and lubrication to the machinery of achieving peace, primarily by contributing to a situation wherein the government could bring the Emperor overtly and directly into the decision for immediate acceptance of the Potsdam declaration. Hence the bombs did foreshorten the war and expedite the peace. It needs to be stated however that the atom bombs changed no votes of the Supreme War Guidance Council concerning the Potsdam terms; and further that in the view of responsible Japanese leaders available to the Survey the war would have been over in any case prior to the invasion of the homeland planned for 1 November 1945.

Events and testimony which support these conclusions are blue-printed in the following notes:
1. The mission of the Suzuki government, appointed 7 April, was to make peace. The appearance of negotiation and mediation for less than unconditional surrender was maintained. To contain the military and bureaucratic elements still determined on a final Bushido defense, and perhaps even more importantly to obtain freedom to create peace with minimum personal danger and internal obstruction. It is clear however that in extremis the peacemakers would have peace, and peace on any terms. This was the gist of advice given to Hirohito by the Jushin in February, the declared conclusion of Kido in April, the underlying reason for Koiso's fall in April, the specific injunction of the Emperor to Suzuki on becoming premier which was known to all members of his cabinet.

2. Negotiation for Russia to intervene began the forepart of May in both Tokyo and Moscow. Konoye, if persona grata to the Russians, would have been the amissary. Konoye stated to the Survey that while ostensibly he was to negotiate through the Russians, he received direct and secret instructions from the Emperor to secure peace at any price, notwithstanding their severity. Efforts toward peace through the Russians were forestalled by Molotov's imminent departure for Potsdam, and subsequent events.

3. Slight evidence exists that in the closing days of Koiso's government tentative, somewhat clumsy approaches were made to Chungking for mediation of the war with the U. S.

4. Shortly after Germany fell on 8 May, War Minister Anami asked the cabinet for an Imperial conference to consider whether the war should be continued. This led to a series of such conferences of
the Supreme War Guidance Council before Hirohito, which began on
8 June and carried through 14 August. At the 8 June meeting the situa-
tion was reviewed. On 26 June the Emperor, supported by the premier,
foreign minister and navy minister, declared for peace; the army
minister and the two chiefs of staff did not concur. On 10 July the
Emperor again urged haste in the moves through Russia, but Potsdam
intervened. While the government still awaited a Russian answer, the
Hiroshima bomb was dropped on 6 August and Russia entered the war on
8 August.

5. Consideration of the Potsdam terms within the Supreme War
Guidance Council revealed the same three-to-three cleavage which first
appeared at the Imperial conference on 26 June. The war minister and
two chiefs of staff held the terms “too dishonorable” unless modified
to exclude occupation of the home islands, repatriation of overseas
forces and trial of war criminals by Japan herself. On the morning of
9 August Premier Suzuki and Hirohito decided at once to accept the Pots-
dam terms; meetings and moves thereafter were designed to legalize the
decision and prepare for the rescript without more ado.

6. Cabinet Secretary Sakomizu alleged that while awaiting the
Russian answer on mediation it was decided that were it negative direct
overtures would be made to the U.S.

7. At the conclusive Imperial conference, on the night of 9-10
August, after the Hiroshima attack and Russia’s entry, the Supreme
War Guidance Council still split three to three on ending the war. It
was necessary for the Emperor finally to repeat his desire for peace.

8. Indubitably the Hiroshima bomb and the rumor derived from
interrogation of an American prisoner (B-29 pilot) of an atom-bomb at-
tack on Tokyo intended for 12 August introduced urgency in the minds of
the government and magnified the pressure behind its moves to end the
war.
WAR DEPARTMENT
P. O. Box 2610
WASHINGTON, D. C.

19 June 1946.

MEMORANDUM TO THE SECRETARY OF WAR

SUBJECT: Publication of Reports on the Atomic Bombings of Japan.

1. There are three reports on the atomic bombings of Hiroshima and Nagasaki which are now ready for publication, viz.,
   a. Manhattan Engineer District Report,
   b. U. S. Strategic Bombing Survey Report,
   c. Report by the British Mission to Japan.

It is desirable that these reports be published prior to the Crossroads tests, while public interest in the atomic bombs is at a peak. Tentative arrangements were made for simultaneous release of all three reports: the Manhattan Engineer District and U. S. Strategic Bombing Survey reports were to be distributed to the press in Washington on 19 June 1946 for publication in the Sunday morning papers of 23 June, and the British report was to be released for publication in London on 23 June. The Joint Chiefs of Staff have agreed that the British report may be published at the same time as the first United States report.

2. The U. S. Strategic Bombing Survey report presents highly conjectural ideas concerning the Japanese intent to surrender, and reaches a conclusion that the atomic bombings did not materially speed the cessation of hostilities. This will provide ammunition for the critics of the War Department and the administration who have maintained
   a. that the atomic bombs should not have been used at all, since they were not necessary to the winning of the war,
   b. that no landing operations were necessary and that preparations for such operations were wasteful and unnecessary and were the result of an inaccurate estimate of the military situation,
or c. that the Okinawa campaign was unnecessary since the Japanese would have surrendered anyway.

3. The U. S. Strategic Bombing Survey and British reports place undue emphasis on the effects of gamma radiation from the bombs, particularly with respect to impairment of the sex functions. No authoritative statement on radiation and its effects can be made by anyone until the completion of the analysis of the available data by the Joint Medical Commission. Too much emphasis on the sex phase will supply the more lurid news publications with openings for sensational stories.

4. The Manhattan Engineer District report is a factual report. It is not conjectural, and it contains information which was not available to any other reporting agency.

L. R. GROVES,
Major General, USA
THE UNITED STATES STRATEGIC BOMBING SURVEY

THE EFFECTS OF
ATOMIC BOMBS
ON
HIROSHIMA AND NAGASAKI

CHAIRMAN'S OFFICE
30 June 1946
THE UNITED STATES
STRATEGIC BOMBING SURVEY

THE EFFECTS
OF
ATOMIC BOMBS
ON
HIROSHIMA AND NAGASAKI

CHAIRMAN'S OFFICE
30 JUNE 1946

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1946
"... the power of the atomic bomb is beyond belief ..."

Nagasaki Prefecture Report

A. A. P. Photo
FOREWORD

The United States Strategic Bombing Survey was established by the Secretary of War on 3 November 1944, pursuant to a directive from the late President Roosevelt. Its mission was to conduct an impartial and expert study of the effects of our aerial attack on Germany, to be used in connection with air attacks on Japan and to establish a basis for evaluating the importance and potentialities of air power as an instrument of military strategy, for planning the future development of the United States armed forces, and for determining future economic policies with respect to the national defense. A summary report and some 200 supporting reports containing the findings of the Survey in Germany have been published.

On 15 August 1945, President Truman requested that the Survey conduct a similar study of the effects of all types of air attack in the war against Japan, submitting reports in duplicate to the Secretary of War and to the Secretary of the Navy. The officers of the Survey during its Japanese phase were:

Franklin D'Olier, Chairman.
Paul H. Nitze, Henry C. Alexander, Vice Chairman.
Walter Wills, Secretary.
Harry L. Bowman.
J. K. Galbraith.
Reensis Likert.
Frank A. McNamara.
Fred Sorens, Jr.
Monroe Spaight.
Dr. Louis R. Thompson.
Theodore P. Wright, Directors.

The Survey's complement provided for 300 civilians, 330 officers, and 500 enlisted men. The military segment of the organization was drawn from the Army to the extent of 60 percent, and from the Navy to the extent of 40 percent. Both the Army and Navy gave the Survey all possible assistance in furnishing men, supplies, transport, and information. The Survey operated from headquarters in Tokyo early in September 1945, with subheadquarters in Nagoya, Osaka, Hiroshima, and Nagasaki, and with mobile teams operating in other parts of Japan, the islands of the Pacific and the Asiatic mainland.

It was possible to reconstruct much of wartime Japanese military planning and execution, engagement by engagement and campaign by campaign, and to secure reasonably accurate statistics on Japan's economy and war production, plant by plant and industry by industry. In addition, studies were conducted on Japan's overall strategic plans and the background of her entry into the war, the internal discussions and negotiations leading to her acceptance of unconditional surrender, the course of health and morale among the civilian population, the effectiveness of the Japanese civilian defense organization and the effects of the atomic bombs. Separate reports will be issued covering each phase of the study.

The Survey interrogated more than 700 Japanese military, government, and industrial officials. It also recovered and translated many documents which have not only been useful to the Survey, but will also furnish data valuable for other studies. Arrangements are being made to turn over the Survey's files to a permanent Government agency where they will be available for further examination and distribution.
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I. INTRODUCTION

The available facts about the power of the atomic bomb as a military weapon lie in the story of what it did at Hiroshima and Nagasaki. Many of these facts have been published, in official and unofficial form, but mingled with distortions or errors. The United States Strategic Bombing Survey, therefore, in partial fulfillment of the mission for which it was established, has put together in these pages a fairly full account of just what the atomic bombs did at Hiroshima and Nagasaki. Together with an explanation of how the bomb achieved these effects, this report states the extent and nature of the damage, the casualties, and the political repercussions from the two attacks. The basis is the observation, measurement, and analysis of the Survey's investigators. The conjecture that is necessary for understanding of complex phenomena and for applying the findings to the problems of defense of the United States is clearly labelled.

When the atomic bombs fell, the United States Strategic Bombing Survey was completing a study of the effects of strategic bombing on Germany's ability and will to resist. A similar study of the effects of strategic bombing on Japan was being planned. The news of the dropping of the atomic bomb gave a new urgency to this project, for a study of the air war against Japan clearly involved new weapons and new possibilities of concentration of attack that might qualify or even change the conclusions and recommendations of the Survey as to the effectiveness of air power. The directors of the Survey, therefore, decided to examine exhaustively the effects of the atomic bombs, in order that the full impact on Japan and the implications of their results could be confidently analyzed. Teams of experts were selected to study the scenes of the bombings from the special points of emphasis of physical damage, civilian defense, morale, casualties, community life, utilities and transportation, various industries, and the general economic and political repercussions. In all, more than 110 men—engineers, architects, fire experts, economists, doctors, photographers, draftsmen—participated in the field study at each city, over a period of 10 weeks from October to December, 1945. Their detailed studies are now being published.

In addition, close liaison was maintained with other investigating units. Cooperation was received from, and extended to, the following groups:

The Joint Commission for the Investigation of the Atomic Bomb in Japan.
The British Mission to Japan.
The Naval Technical Mission to Japan.

Special acknowledgment is due to the medical groups of the Joint Commission, whose data and findings have been generously made available to the Survey. On medical aspects of the bombings, the Joint Commission was the chief fact-finding group; it will present its definitive report in the near future. In other fields, however—particularly the study of physical damage and the impact on community life—the Survey collected its own data and is the primary source.
II. THE EFFECTS OF THE ATOMIC BOMBINGS

A. THE ATTACKS AND DAMAGE

1. The attacks.—A single atomic bomb, the first weapon of its type ever used against a target, exploded over the city of Hiroshima at 0815 on the morning of 6 August 1945. Most of the industrial workers had already reported to work, but many workers were enroute and nearly all the school children and some industrial employees were at work in the open on the program of building removal to provide firebreaks and disperse valuables to the country. The attack came 45 minutes after the "all clear" had been sounded from a previous alert. Because of the lack of warning and the populace's indifference to small groups of planes, the explosion came as an almost complete surprise, and the people had not taken shelter. Many were caught in the open, and most of the rest in flimsily constructed homes or commercial establishments.

The bomb exploded slightly northwest of the center of the city. Because of this accuracy and the flat terrain and circular shape of the city, Hiroshima was uniformly and extensively devastated. Practically the entire densely or moderately built-up portion of the city was leveled by blast and swept by fire. A "fire-storm," a phenomenon which has occurred infrequently in other conflagrations, developed in Hiroshima: fires springing up almost simultaneously over the wide flat area around the center of the city drew in air from all directions. The inrush of air easily overcame the natural ground wind, which had a velocity of only about 3 miles per hour. The "fire-wind" attained a maximum velocity of 30 to 40 miles per hour 2 to 3 hours after the explosion. The "fire-wind" and the symmetry of the built-up center of the city gave a roughly circular shape to the 4.4 square miles which were almost completely burned out.

The surprise, the collapse of many buildings, and the conflagration contributed to an unprecedented casualty rate. Seventy to eighty thousand people were killed, or missing and presumed dead, and an equal number were injured. The magnitude of casualties is set in relief by a comparison with the Tokyo fire raid of 9-10 March 1945, in which, though nearly 16 square miles were destroyed, the number killed was no larger, and fewer people were injured.

At Nagasaki, 3 days later, the city was scarcely more prepared, though vague references to the Hiroshima disaster had appeared in the newspaper of 8 August. From the Nagasaki Prefectural Report on the bombing, something of the shock of the explosion can be inferred:

The day was clear with not very much wind—an ordinary midsummer's day. The strain of continuous air attack on the city's population and the severity of the summer had vitiated enthusiastic air raid precautions. Previously, a general alert had been sounded at 0648, with a raid alert at 0730; this was canceled at 0850, and the airiness of the people was dilated by a great feeling of relief.

The city remained on the warning alert, but when two B-29's were again sighted coming in the raid signal was not given immediately; the bomb was dropped at 1112 and the raid signal was given a few minutes later, at 1119. Thus only about 100 people were in the city's tunnel shelters, which were adequate for about 30 percent of the population.

When the atomic bomb exploded, an intense flash was observed first, as though a large amount of magnesium had been ignited, and the scene grew hazy with white smoke. At the same time at the center of the explosion, and a short while later in other areas, a tremendous roaring sound was heard and a crushing blast wave and intense heat were felt. The people of Nagasaki, even those who lived on the outer edge of the blast, all felt as though they had sustained a direct hit, and the whole city suffered damage such as would have resulted from direct hits everywhere by ordinary bombs.

The area, where the damage was most severe, was almost completely wiped out and for a short while after the explosion no reports came out of that area. People who were in comparatively damaged areas reported their condition under the impression that they had received a direct hit. If such a great amount of damage could be wreaked by a near miss, then the power of the atomic bomb is unbelievably great.
In Nagasaki, no fire storm arose, and the uneven terrain of the city confined the maximum intensity of damage to the valley over which the bomb exploded. The area of nearly complete devastation was thus much smaller; only about 18 square miles. Casualties were lower also; between 35,000 and 40,000 were killed, and about the same number injured. People in the tunnel shelters escaped injury, unless exposed in the entrance shaft.  

The difference in the totals of destruction to lives and property at the two cities suggests the importance of the special circumstances of layout and construction of the cities, which affect the results of the bombings and must be considered in evaluating the effectiveness of the atomic bombs. An account of the nature and history of each city will give meaning to the details of the damage and disorganization at each.

2. Hiroshima.—The city of Hiroshima is located on the broad fan-shaped delta of the Ota River, whose 7 mouths divide the city into 6 islands which project fingerlike into Hiroshima Bay of the Inland Sea. These mouths of the river furnished excellent firebreaks in a city that is otherwise flat and only slightly above sea level. A highly developed bridge system, with 81 important bridges, joined the islands. A single kidney-shaped hill in the eastern part of the city, about one-half mile long and rising to an elevation of 221 feet, offered some blast protection to structures on the eastern side opposite the point of fall of the bomb. Otherwise, the city was uniformly exposed to the spreading energy from the bomb.  

The city boundary extends to some low hills to the west and northeast and embraces 26.36 square miles, only 13 of which were built up. Seven square miles were densely or moderately built up, the remainder being occupied by sparsely built-up residential, storage, and transportation areas, vegetable farms, water courses, and wooded hilly sections. In the central area, no systematic separation of commercial, industrial, and residential zones existed, though there were rough functional sections. The main commercial district was located in the center of the city, and with the adjoining Chugoku Regional Army Headquarters occupied the greater portion of the central island. Residential areas and military barracks overlapped and surrounded this central area. The bulk of the industries was located on the perimeter of the city, either on the southern ends of the islands (where the Hiroshima airport was also situated) or to the east of the city. The 4 square miles of densely built-up area in the heart of the city—residential, commercial, and military—contained three-fifths of the total population. If there were, as seems probable, about 245,000 people in the city at the time of the attack, the density in the congested area must have been about 33,000 per square mile. Five completed evacuation programs and a sixth then in progress had reduced the population from its wartime peak of 380,000.  

In Hiroshima (and in Nagasaki also) the dwellings were of wood construction; about one-half were one story and the remainder either one and one-half or two stories. The roof coverings were mostly hard-burnt black tile. There were no masonry division walls, and large groups of dwellings clustered together. The type of construction, coupled with antiquated fire-fighting equipment and inadequately trained personnel, afforded even in peacetime a high possibility of conflagration. Many wood-framed industrial buildings were of poor construction by American standards. The principal points of weakness were the extremely small tenons, the inadequate tension joints, and the inadequate or poorly designed lateral bracings. Reinforced concrete framed buildings showed a striking lack of uniformity in design and quality of materials. Some of the construction details (reinforcing rod splices, for example) were often poor, and much of the concrete was definitely weak; thus some reinforced concrete buildings collapsed and suffered structural damage when within 2,000 feet of ground zero, and some internal wall paneling was demolished even up to 3,000 feet. (For convenience, the term “ground zero” will be used to designate the point on the ground directly beneath the point of detonation, or “air zero.”) Other buildings, however, were constructed far more strongly than is required by normal building codes in America, to resist earthquakes. Furthermore, construction regulations in Japan have specified since the 1923 earthquake that the roof must safely carry a minimum load of 50 pounds per square foot whereas American requirements do not normally exceed 40 pounds per square foot for similar types. Though the regulation was not always followed, this extra strong construction was encountered in some of the buildings near ground zero at Hiroshima, and undoubtedly accounts for their ability to withstand atomic bomb
pressures without structural failures. Nearly 7 percent of the residential units had been torn down to make firebreaks.\(^1\)

Hiroshima before the war was the seventh largest city in Japan, with a population of over 340,000, and was the principal administrative and commercial center of the southwestern part of the country. As the headquarters of the Second Army and of the Chugoku Regional Army, it was one of the most important military command stations in Japan, the site of one of the largest military supply depots, and the foremost military shipping point for both troops and supplies. Its shipping activities had virtually ceased by the time of the attack, however, because of sinkings and the mining of the Inland Sea. It had been relatively unimportant industrially before the war, ranking only twelfth, but during the war new plants were built that increased its significance. These factories were not concentrated, but spread over the outskirts of the city; this location, we shall see, accounts for the slight industrial damage.\(^2\)

The impact of the atomic bomb shattered the normal fabric of community life and disrupted the organizations for handling the disaster. In the 80 percent of the population killed and the additional 30 percent seriously injured were included corresponding proportions of the civic authorities and rescue groups. A mass flight from the city took place, as persons sought safety from the conflagration and a place for shelter and food. Within 24 hours, however, people were streaming back by the thousands in search of relatives and friends and to determine the extent of their property loss. Road blocks had to be set up along all routes leading into the city, to keep curious and unauthorized people out. The bulk of the demobilized population found refuge in the surrounding countryside; within the city the food supply was short and shelter virtually nonexistent.\(^3\)

On 7 August, the commander of the Second Army assumed general command of the Countermeasures, and all military units and facilities in the area were mobilized for relief purposes. Army buildings on the periphery of the city provided shelter and emergency hospital space, and dispersed Army supplies supplemented the slight amounts of food and clothing that had escaped destruction. The need far exceeded what could be made available. Surviving civilians assisted; although casualties in both groups had been heavy, 190 policemen and over 2,000 members of the Civilian Defense Corps reported for duty on 7 August.\(^4\)

The status of medical facilities and personnel dramatically illustrates the difficulties facing authorities. Of more than 200 doctors in Hiroshima before the attack over 90 percent were casualties and only about 30 physicians were able to perform their normal duties a month after the raid. Out of 1,780 nurses, 1,654 were killed or injured. Though some stocks of supplies had been dispersed, many were destroyed. Only three out of 45 civilian hospitals could be used, and two large Army hospitals were rendered unusable. Those within 3,000 feet of ground zero were totally destroyed, and the mortality rate of the occupants was practically 100 percent. Two large hospitals of reinforced concrete construction were located 4,000 feet from ground zero. The basic structures remained erect but there was such severe interior damage that neither was able to resume operation as a hospital for some time and the casualty rate was approximately 80 percent, due primarily to falling plaster, flying glass, and fire. Hospitals and clinics beyond 7,000 feet, though often remaining standing, were badly damaged and contained many casualties from flying glass or other missiles.\(^5\)

With such elimination of facilities and personnel, the lack of care and rescue activities at the time of the disaster is understandable; still, the eyewitness account of Father Siemens\(^6\) shows how this lack of first-aid contributed to the seriousness of casualties. At the improvised first-aid stations, he reports:

\[
\cdot \cdot \cdot \text{Iodine is applied to the wounds but they are left uncleaned. Neither ointment nor other therapeutic agents are available. Those that have been brought in are laid on the floor and no one can give them any further care. What could one do when all means are lacking? Among the passersby, there are many who are injured. In a purposeless, incoherent manner, distraught by the magnitude of the disaster, most of them rush by and none conceives the thought of organizing help on his own initiative. They are concerned only with the welfare of their own families—in the official aid stations and hospitals, a good third or half of those that had been brought in died. They lay about there almost without care, and a very high percentage succumbed. Everything was lacking, doctors, assistants, dressings, drugs, etc.} \cdot \cdot \cdot \]

Effective medical help had to be sent in from the outside, and arrived only after a considerable delay.\(^7\)

Fire-fighting and rescue units were equally stripped of men and equipment. Father Siemens

\(^{1}\) German-born Jesuit professor at Sophia University, Tokyo; in the Hiroshima area when the bomb fell.
reports that 30 hours elapsed before any organized rescue parties were observed. In Hiroshima, only 16 pieces of fire-fighting equipment were available for fighting the conflagration, three of them borrowed. However, it is unlikely that any public fire department in the world, even without damage to equipment or casualties to personnel, could have prevented development of a conflagration in Hiroshima, or combatted it with success at more than a few locations along its perimeter. The total fire damage would not have been much different.  

All utilities and transportation services were disrupted over varying lengths of time. In most cases, however, the demand fell off even more precipitously than the available supply, and where the service was needed it could be restored at a minimal level. Thus, through railroad service was possible on 8 August, only 2 days after the attack, when fire trucks still had to be used to pump water into the locomotives because of insufficient water pressure. Electric power from the general network was available in most of the surviving parts of the city on 7 August, and only one plant, the Engineering Division of Mitsubishi Heavy Industries, was hampered in its recovery by the inability to obtain sufficient power for several weeks.  

The water reservoir, which was of reinforced concrete and earth-covered, was undamaged; it was nearly 2 miles from the blast center. However, 70,000 breaks of pipe connections in buildings and dwellings were caused by blast and fire effects. No subsurface pipes were crushed and no leaks resulted from blast as a direct cause, though several leaks in underground mains resulted from falling debris. Pressure in the city center dropped to zero because of the connection breaks and the damage to a 16- and a 14-inch water main where they crossed damaged bridges. Six sewer pumping stations were rendered inoperable by fire and blast within a radius of 1 mile. The remaining eight stations were only slightly damaged, but no effort was made to repair or operate them. Water tables rose at flood periods and lands behind revetments were inundated.  

Trolley cars, trucks, and railroad rolling stock suffered extensive damage. Transportation buildings (offices, stations, living quarters, and a few warehouses) were damaged by fire in the passenger station area, but damage was slight to the roundhouses, transit sheds, warehouses, and repair units in the classification and repair area. About 200 railroad employees were killed, but by 20 August, 14 days after the attack, 80 percent of the employees were at work.  

The electric power transmission and distribution system was wrecked; only power equipment of rugged construction, such as transformers, resisted the blast and heat within the devastated areas. Instruments were damaged beyond repair, and switches, switchyard insulators, cables, and copper bus work were rendered unusable. The telephone system was approximately 80 percent damaged, and no service was restored until 16 August 1945.  

Industry in the center of the city was effectively wiped out. Though small workshops numbered several thousand, they represented only one-fourth of the total industrial production of Hiroshima, since many of them had only one or two workers. The bulk of the city’s output came from large plants located on the outskirts of the city; one-half of the industrial production came from only five firms. Of these larger companies, only one suffered more than superficial damage. Of their working force, 94 percent were uninjured. Since electric power was available, and materials and working force were not destroyed, plants ordinarily responsible for nearly three-fourths of Hiroshima’s industrial production could have resumed normal operation within 30 days of the attack had the war continued.  

Immediately after the attack, the presence of these nearly intact industries spurred countermeasures in an effort to retain for the nation’s war effort the potential output of the city. The prefectural governor issued a proclamation on 7 August, calling for “a rehabilitation of the stricken city and an aroused fighting spirit to exterminate the devilish Americans.” To prevent the spread of rumors and brace morale, 210,000 out-of-town newspapers were brought in daily to replace the destroyed local paper. With the surrender, however, reconstruction took on a slower tempo. On 16 August, regular rationing was resumed. Care of the injured and disposal of corpses remained urgent, but other steps were few.  

By 1 November, the population of Hiroshima was back to 137,000. The city required complete rebuilding. The entire heart, the main administrative and commercial as well as residential section, was gone. In this area only about 50 buildings, all of reinforced concrete, remained standing. All of these suffered blast damage and all save about a dozen were almost completely gutted by fire; only 5 could be used without major re-
pairs. These burnt-out structural frames rose impressively from the ashes of the burned-over section where occasional piles of rubble or twisted steel skeletons marked the location of brick or steel frame structures. At greater distances light steel frame and brick structures remained undamaged. Blast damage to wood-frame buildings and to residences extended well beyond the burned-over area, gradually becoming more erratic and splotchy as distances were reached where only the weakest buildings were damaged, until in the outer portions of the city only minor disturbances of the tile roofs or breakage of glass were visible. The official Japanese figures summed up the building destruction at 62,000 out of a total of 90,000 buildings in the urban area, or 69 percent. An additional 0,000 or 6.6 percent were severely damaged, and most of the others showed glass breakage or disturbance of roof tile. These figures show the magnitude of the problem facing the survivors.25

Despite the absence of sanitation measures, no epidemics are reported to have broken out. In view of the lack of medical facilities, supplies, and personnel, and the disruption of the sanitary system, the escape from epidemics may seem surprising. The experience of other bombed cities in Germany and Japan shows that this is not an isolated case. A possible explanation may lie in the disinfecting action of the extensive fires. In later weeks, disease rates rose, but not sharply.26

3. Nagasaki.—Nagasaki is located on the best natural harbor of western Kyushu, a spacious inlet in the mountainous coast. The city is a highly congested urban pattern extending for several miles along the narrow shores and up the valleys opening out from the harbor. Two rivers, divided by a mountain spur, form the two main valleys in whose basins the city lies: the Urakami River, in whose basin the atomic bomb fell, running into the harbor from a NNW direction, and the Nakashima River, running from the NE. This mountain spur and the irregular layout of the city effectively reduced the area of destruction.27

The main residential and commercial districts are intermingled in these two river basins. The large industrial plants stretch up the west shore of the bay and up the Urakami Valley. Though the metropolitan area of the city is officially about 35 square miles and stretches far into the countryside, the heavily built-up area is confined by the terrain to less than 4 square miles. The greatest population density thus approximated 65,000 per square mile even after the evacuations.28

Despite its excellent harbor, Nagasaki's commercial importance, though great in previous centuries, had declined in recent years because of the city's isolated peninsular position and the difficulties of transportation through the mountains by inadequate roads and railroad facilities. As a naval base it had been supplanted by Sasebo. Industry gradually increased in importance, primarily under Mitsubishi influence. The four largest companies in the city were the Mitsubishi Shipyards, Electrical Equipment Works, Arms Plant, and Steel Works, employing nearly 90 percent of the city's labor force. Administratively, Nagasaki was by 1941 of merely local importance despite being the seat of the prefectural government.29

Before the atomic bombing on 9 August, Nagasaki had experienced five small-scale air attacks in the previous 12 months, by an aggregate of 138 planes which dropped a total of 270 tons of high explosive, 53 tons of incendiary, and 20 tons of fragmentation bombs.30

Of these, a raid of 1 August 1945 was most effective, with several bombs falling in the Mitsubishi Shipyards and Steel Works. The scale of effect can be roughly measured, however, by comparing the toll of building damage with that from the atomic bomb; in all these raids 276 residential buildings and 21 industrial buildings were destroyed or badly damaged. When the atomic bomb fell, Nagasaki was comparatively intact.31

Because the most intense destruction was confined to the Urakami Valley, the impact of the bomb on the city as a whole was less shattering than at Hiroshima. In addition, no fire storm occurred; indeed, a shift in wind direction helped control the fires. Medical personnel and facilities were hard-hit, however. Over 80 percent of the city's hospital beds and the Medical College were located within 3,000 feet of the center of the explosion, and were completely destroyed. Reinforced concrete buildings within this range, though standing, were completely gutted by fire; buildings of wooden construction were destroyed by fire and blast. The mortality rate in this group of buildings was between 76 and 80 percent. Exact casualty figures for medical personnel are unknown, but the city seems to have fared better than Hiroshima: 120 doctors were at work on 1 November, about one-half of the preraid roster.
GROUND ZERO AT NAGASAKI—Before and after bombing.

A. A. F. Photos.
Casualties were undoubtedly high: 600 out of 850 medical students at the Nagasaki Medical College were killed and most of the others injured; and of the 20 faculty members, 12 were killed and 4 others injured.32

Utilities and services were again disrupted. Both gas plants were destroyed, and the replacement time was estimated at several months. Though the basic water supply was not affected, thousands of residential feeder-line breaks were supplemented by eight breaks on a 14-inch main line and four breaks where another main line crossed a bridge. Electric power distribution and transmission systems were effectively destroyed in the area of heaviest destruction, but power could be supplied to the other parts of the city almost immediately.33

Shipping was virtually unaffected. Trolley service was halted both by the interruption in power supply and by damage to street cars. Nagasaki is at the end of a railroad spur line. The major damage was sustained by track and railroad bridges. The rails buckled intermittently for a distance of 5,000 to 7,500 feet from ground zero, at points where burning debris set fire to wooden crossties. Three bridges were displaced; rails were distorted and the tracks had to be completely rebuilt. The railroad stations were completely destroyed by blast and fire and the electric signal system was severely damaged. Rolling stock was slightly damaged, primarily by fire. Although the damage to equipment was not extensive, it was severe enough to curtail traffic for 48 hours, during which time sufficient emergency repair work was performed to permit resumption of limited traffic.34

Control of relief measures was in the hands of the prefecture. The sequence of clearance and repair activities illustrates the activities that were carried on.

The city's repair facilities were completely disorganized by the atomic bomb, so that with the single exception of shutting off water to the affected areas no repairs were made to roads, bridges, water mains, or transportation installations by city forces. The prefecture took full responsibility for such restoration as was accomplished, delegating to the scattered city help the task of assisting in relief of victims. There were only 3 survivors of 115 employees of the street car company, and late as the middle of November 1945 no cars were running. A week after the explosion, the water works officials made an effort to supply water to persons attempting to live in the bombarded areas, but the leakage was so great that the effort was abandoned. It fell to the prefecture, therefore, to institute recovery measures even in those streets normally the responsibility of the city. Of the entire public works construction group covering the Nagasaki city area, only three members appeared for work and a week was required to locate and notify other survivors. On the morning of 10 August, police rescue units and workers from the Kawaninami shipbuilding works began the imperative task of clearing the Omura-Nagasaki pike, which was impassable for 8,000 feet. A path 615 feet wide was cleared despite the intense heat from smouldering fires, and by 15 August had been widened to permit two-way traffic. No tracks, only raikes and shovels, were available for clearing the streets, which were filled with tile, bricks, stone, corrugated iron, machinery, plaster, and stereo. Street areas affected by blast and fire were littered with wood. Throughout the devastated area, all wounded had to be carried by stretcher, since no motor vehicles were able to proceed through the cluttered streets for several days. The plan for debris removal required clearance of a few streets leading to the main highway; but there were frequent delays caused by the heat of smouldering fires and by calls for relief work. The debris was simply raked and shoveled off the streets. By 20 August the job was considered complete. The streets were not materially damaged by the bomb nor were the surface or the abutments of the concrete bridges, but many of the wooden bridges were totally or partially destroyed by fire.35

Under the circumstances—fire, flight of entire families, destruction of official records, mass cremation, identification of dead and the accurate count of casualties was impossible. As at Hiroshima, the season of the year made rapid disposal of bodies imperative, and mass cremation and mass burial were resorted to in the days immediately after the attack. Despite the absence of sanitary measures, no epidemics broke out here. The dysentery rate rose from 25 per 100,000 to 125 per 100,000. A census taken on 1 November 1945 found a population of 142,700 in the city.36

At Nagasaki, the scale of destruction was greater than at Hiroshima, though the actual area destroyed was smaller because of the terrain and the point of full of the bomb. The Nagasaki Prefectural Report describes vividly the impress of the bomb on the city and its inhabitants:
RESIDENTIAL AREAS, NAGASAKI. Shielded by hills, one congested area survived (note firebreak in the foreground).

A number, 1,000 feet northeast of ground zero was reduced to rubble.
Within a radius of 1 kilometer from ground zero, men and animals died almost instantaneously from the tremendous blast pressure and heat; houses and other structures were smashed, crushed and scattered; and fires broke out. The steel complex members of the structures of the Mitsubishi Steel Works were bent and twisted like jelly and the roofs of the reinforced concrete National Schools were crumpled and collapsed, indicating a force beyond imagination. Trees of all sizes lost their branches or were uprooted or broken off at the trunk.37

Outside a radius of 1 kilometer and within a radius of 2 kilometers from ground zero, some men and animals died instantly from the great blast and heat, but the great majority were seriously or superficially injured. Houses and other structures were completely destroyed while fires broke out everywhere. Trees were uprooted and withered by the heat.38

Outside a radius of 2 kilometers and within a radius of 4 kilometers from ground zero, men and animals suffered various degrees of injury from window glass and other fragments scattered about by the blast and many were burned by the intense heat. Dwelling and other structures were half destroyed by blast.39

Outside a radius of 4 kilometers and within a radius of 8 kilometers from ground zero, living creatures were injured by materials blown about by the blast; the majority were only superficially wounded. Houses were half or only partially damaged.40

While the conflagration with its uniformly burnt-out area caught the attention at Hiroshima, the blast effects, with their resemblance to the aftermath of a hurricane, were most striking at Nagasaki. Concrete buildings had their sides facing the blast stove in like boxes. Long lines of steel-framed factory sheds, over a mile from ground zero, leaned their skeletons away from the explosion. Blast resistant objects such as telephone poles leaned away from the center of the explosion; on the surrounding hills trees were blown down within considerable areas. Although there was no general conflagration, fires contributed to the total damage in nearly all concrete structures. Evidence of primary fire was more frequent than at Hiroshima.41

Because parts of the city were protected by hills, more than one-half of the residential units escaped serious damage. Of the 52,000 residential units in the city on 1 August, 18,146 or 27.9 percent were completely destroyed (by Japanese count) (11,494 of these were burned); 5,441 or 10.5 percent were half-burned or destroyed; many of the remaining units suffered superficial or minor damage. In 638 nonresidential buildings in the built-up area of Nagasaki which the Survey studied, almost 80 percent of the usable floor area was destroyed or structurally damaged. Only 12 percent was undamaged, the rest suffering superficial or minor damage.42

The survival of a higher percentage of the buildings, then, distinguishes Nagasaki from Hiroshima, so also, on the other hand, does the damage to factories. In Nagasaki, only the Mitsubishi Dockyards among the major industries was remote enough from the explosion to escape serious damage. The other three Mitsubishi firms, which were responsible together with the dockyards for over 50 percent of the industrial output of the city, were seriously damaged. The Arms Plant and the Steel Works were in the main area of damage. Plant officials estimated that 58 percent of the value of the former and 78 percent of the value of the latter were destroyed; survey investigators considered the two plants to be 50 percent destroyed. The Mitsubishi Electric Works were on the edge of the main area of destruction, but suffered 10 percent structural damage.43

One or two paragraphs from the report of the commanding officer of Sasebo Naval District will illustrate the sort of damage done to industrial installations. Of two plants of the Mitsubishi Arms Works, he reports:

With the exception of the tunnel workshops and the half-underground workshops, the Ohashi and Mori Machi Plants were completely destroyed by collapse. Reinforced concrete structures in these plants were severely damaged, some completely; ceilings collapsed, fittings of all sorts were destroyed, and equipment was damaged. Casting and forging shops in the Ohashi Plant were destroyed by fire, which broke out in these structures. The Mori Machi Plant was nearly completely destroyed by fire. Taking both plants together, 30 percent of the machinery installations was damaged. In the Ohashi Plant, from 30 to 50 percent of the machinery can be used again; in the Mori Machi Plant only 10 to 20 percent of the machinery can be used in the future.44

Or of the Mitsubishi Steel Works:

Plant structures here (some wrought steel framed structures) suffered extensive damage to roofs and walls; steel plates were blown off. The frames themselves were bent, twisted, or toppled over, and several buildings caught fire. Hardly any of the machinery in the plant can be used again in its present condition. However, nearly 70 percent of the machinery can be repaired.45

In general, (as has proved true with high explosive or incendiary bombs also) the damage to machinery and other contents of a factory was less than damage to the buildings. In addition, the air burst of the atomic bomb meant that it acted indirectly on machine tools and other building
THE TREMENDOUS PRESSURE OF THE BLAST bent the steel frame of the Mitsubishi Steel Works (about 2,400 feet south of ground zero at Nagasaki) away from the explosion. Nagasaki Medical University Hospital in background.

(Photo taken 26 August 1945 by Japanese.)
contents. Though a few tools were blown over by blast, almost all the serious damage was caused by debris from damaged buildings, overturning through mass movement of buildings, or burning of buildings.\textsuperscript{46}

Thus the extent and sort of damage to machinery depended on the construction of the buildings housing them. In wood-frame buildings, 95 percent of the machines were seriously damaged, but in reinforced concrete or steel framed buildings only one-third or one-fourth of the machines were affected seriously. As would be expected, fire caused much damage to machinery in timber framed shops (practically all of which were destroyed up to 7,000 feet from ground zero) and some damage in other types of structure. Debris was a major cause of damage only in certain reinforced concrete buildings, where walls and roofs collapsed.\textsuperscript{47}

Shortage of raw materials had reduced operations at these four Mitsubishi plants to a fraction of their capacity. Had the raw material situation been normal and had the war continued, it is estimated that restoration of production would have been possible though slow. The dockyard, which was affected mainly by the 1 August attack rather than by the atomic bomb, would have been able to produce at 80 percent of full capacity within 3 or 4 months. The steel works would have required a year to get into substantial production, the electric works could have resumed production at a reduced rate within 2 months and been back at capacity within 6 months, and the arms plants would have required 15 months to reach two-thirds of their former capacity.\textsuperscript{48}

B. GENERAL EFFECTS

1. Casualties.—The most striking result of the atomic bombs was the great number of casualties. The exact number of dead and injured will never be known because of the confusion after the explosions. Persons unaccounted for might have been burned beyond recognition in the falling buildings, disposed of in one of the mass cremations of the first week of recovery, or driven out of the city to die or recover without any record remaining. No sure count of even the preread populations existed. Because of the decline in activity in the two port cities, the constant threat of incendiary raids, and the formal evacuation programs of the Government, an unknown number of the inhabitants had either drifted away from the cities or been removed according to plan. In this uncertain situation, estimates of casualties have generally ranged between 100,000 and 190,000 for Hiroshima, and between 50,000 and 100,000 for Nagasaki. The Survey believes the dead at Hiroshima to have been between 70,000 and 90,000, with an equal number injured; at Nagasaki over 35,000 dead and somewhat more than that injured seems the most plausible estimate.\textsuperscript{49}

Most of the immediate casualties did not differ from those caused by incendiary or high-explosive raids. The outstanding difference was the presence of radiation effects, which became unmistakable about a week after the bombing. At the time of impact, however, the causes of death and injury were flash burns, secondary effects of blast and falling debris, and burns from blazing buildings. No records are available that give the relative importance of the various types of injury, especially for those who died immediately after the explosion. Indeed, many of these people undoubtedly died several times over, theoretically, since each was subjected to several injuries, any one of which would have been fatal. The Hiroshima prefectural health department placed the proportion of deaths from burns (flash or flame) at 60 percent, from falling debris at 30 percent, and from other injuries at 10 percent; it is generally agreed that burns caused at least 50 percent of the initial casualties. Of those who died later, an increasing proportion succumbed to radiation effects.\textsuperscript{50}

The seriousness of these radiation effects may be measured by the fact that 95 percent of the traced survivors of the immediate explosion who were within 3,000 feet suffered from radiation disease. Colonel Stafford Warren, in his testimony before the Senate Committee on Atomic Energy, estimated that, radiation was responsible for 7 to 8 percent of the total deaths in the two cities. Most medical investigators who spent some time in the areas feel that this estimate is far too low; it is generally felt that no less than 15 to 20 percent of the deaths were from radiation. In addition, there were an equal number who were casualties but survived, as well as uncounted thousands who probably were affected by the gamma rays but not enough to produce definite illness.\textsuperscript{51}

A plausible estimate of the importance of the various causes of death would range as follows:

- Flash burns, 20 to 30 percent.
- Other injuries, 50 to 60 percent.
- Radiation sickness, 15 to 20 percent.\textsuperscript{52}
PROTECTION AGAINST RADIANT HEAT. This patient (photographed by Japanese 2 October 1945) was about 6,500 feet from ground zero when the rays struck him from the left. His cap was sufficient to protect the top of his head against flash burns.
If we examine the nature of the casualties under each group of causes we find familiar and unfamiliar effects.

Flash burns.—The flash of the explosion, which was extremely brief, emitted radiant heat traveling at the speed of light. Flash burns thus followed the explosion instantaneously. The fact that relatively few victims suffered burns of the eyeballs should not be interpreted as an indication that the radiant heat followed the flash, or that time was required to build up to maximum heat intensity. The explanation is simply that the structure of the eye is more resistant to heat than is average human skin, and near ground zero the recessed position of the eyeball offered protection from the overhead explosion. Peak temperatures lasted only momentarily.

Survivors in the two cities stated that people who were in the open directly under the explosion of the bomb were so severely burned that the skin was charred dark brown or black and that they died within a few minutes or hours.

Among the survivors, the burned areas of the skin showed evidence of burns almost immediately after the explosion. At first there was marked redness, and other evidence of thermal burns appeared within the next few minutes or hours, depending on the degree of the burn. Uninfected burns healed promptly without any unusual clinical features, according to the Japanese physicians who attended the cases. American medical observers noted only a tendency to formation of excess scar tissue, which could be satisfactorily explained as the result of malnutrition and the large degree of secondary infection that complicated healing of the burns. There were also a few instances of burns healing with contractures and limitation of the mobility of certain joints, such as the elbows or knees. In many instances, these primary burns of minor nature were completely healed before patients developed evidence of radiation effects.

Because of the brief duration of the flash wave and the shielding effects of almost any objects—leaves and clothing as well as buildings—there were many interesting cases of protection. The radiant heat came in a direct line like light, so that the area burned corresponded to this directed exposure. Persons whose sides were toward the explosion often showed definite burns of both sides of the back while the hollow of the back escaped. People in buildings or houses were apparently burned only if directly exposed through the windows. The most striking instance was that of a man writing before a window. His hands were seriously burned but his exposed face and neck suffered only slight burns due to the angle of entry of the radiant heat through the window.

Flash burns were largely confined to exposed areas of the body, but an occasion would occur through varying thicknesses of clothing. Generally speaking, the thicker the clothing the more likely it was to give complete protection against flash burns. One woman was burned over the shoulder except for a T-shaped area about one-fourth inch in breadth; the T-shaped area corresponded to an increased thickness of the clothing from the seams of the garment. Other people were burned through a single thickness of kimono but were unscathed or only slightly affected underneath the lapel. In other instances, skin was burned beneath tightly fitting clothing but was unburned beneath loosely fitting portions. Finally, white or light-colored reflected heat and afforded some protection; people wearing black or dark-colored clothing were more likely to be burned.

Other injuries.—Because of the combination of factors at the area near the center of the explosion, the casualty effects of blast are hard to single out. It if is remembered that even directly under the explosion, people were several hundred feet away from the air-burst, it will be easier to understand why true blast effects were relatively rare. Only toward the periphery of the affected zone was the blast effect lateral and likely to throw people violently against buildings, and at the periphery the intensity of the blast had fallen off sharply. Comparatively few instances were reported of arms or legs being torn from the body by flying debris. Another indication of the rarity of over-pressure is the scarcity of ruptured eardrums. Among 100 victims examined by the Japanese in Hiroshima on 11 and 12 August, only three showed ruptured eardrums; a study done in October at the Onura hospital near Nagasaki revealed that only two of 92 cases had ruptured eardrums. Only at Nagasaki were there reports of over-pressure in the shock wave. Some of the dead were said by survivors to have had their abdomens ruptured and intestines protruding; others were reported to have protruding eyes and tongues, and to have looked as if they had drowned. Thorough check by Allied investigators discounted these stories as evidence of di-
rect blast effects; the normal effects of blast are internal hemorrhage and crushing. These external signs point to injuries from debris rather than blast. 58

Injuries produced by falling and flying debris were much more numerous, and naturally increased in number and seriousness nearer the center of the affected area. The collapse of the buildings was sudden, so that thousands of people were pinned beneath the debris. Many were able to extricate themselves or received aid in escaping, but large numbers succumbed either to their injuries or to fire before they could be extricated. The flimsiness of Japanese residential construction should not be allowed to obscure the dangers of collapse; though the walls and partitions were light, the houses had heavy roof timbers and heavy roof tiles. Flying glass from panels also caused a large number of casualties, even up to 15,000 feet from ground zero. 59

The number of burns from secondary fires was slight among survivors, but it was probable that a large number of the deaths in both cities came from the burning of people caught in buildings. Eyewitness accounts agree that many fatalities occurred in this way, either immediately or as a result of the lack of care for those who did extricate themselves with serious burns. There are no references, however, to people in the streets succumbing either to heat or to carbon monoxide as they did in Tokyo or in Hamburg, Germany. A few burns resulted from clothing set afire by the flash wave, but in most cases people were able to beat out such fires without serious injury to the skin. 60

Radiation disease.—The radiation effects upon survivors resulted from the gamma rays liberated by the fission process rather than from induced radio-activity or the lingering radio-activity of deposits of primary fission products. Both at Nagasaki and at Hiroshima, pockets of radio-activity have been detected where fission products were directly deposited, but the degree of activity in these areas was insufficient to produce casualties. Similarly, induced radio-activity from the interaction of neutrons with matter caused no authenticated fatalities. But the effects of gamma rays—here used in a general sense to include all penetrating high-frequency radiations and neutrons that caused injury—are well established, even though the Allies had no observers in the affected areas for several weeks after the explosions. 61

Our understanding of radiation casualties is not complete. In part the deficiency is in our basic knowledge of how radiation affects animal tissue. In the words of Dr. Robert Spence of the Manhattan Project, “The fundamental mechanism of the action of radiation on living tissues has not been understood. All methods of treatment have therefore been symptomatic rather than specific. For this reason, studies into the fundamental nature of the action of radiation have been carried on to some extent, the limitation being that it was unlikely that significant results could be obtained during the period of war.”

According to the Japanese, those individuals very near the center of the explosion but not affected by flash burns or secondary injuries became ill within 2 or 3 days. Bloody diarrhea followed, and the victims expired, some within 2 to 3 days after the onset and the majority within a week. Autopsies showed remarkable changes in the blood picture—almost complete absence of white blood cells, and deterioration of bone marrow. Mucous membranes of the throat, lungs, stomach, and the intestines showed acute inflammation. 62

The majority of the radiation cases, who were at greater distances, did not show severe symptoms until 1 to 4 weeks after the explosion, though many felt weak and listless on the following day. After a day or two of mild nausea and vomiting, the appetite improved and the person felt quite well until symptoms reappeared at a later date. In the opinion of some Japanese physicians, those who rested or subjected themselves to less physical exertion showed a longer delay before the onset of subsequent symptoms. The first signs of recurrence were loss of appetite, listlessness, and general discomfort. Inflammation of the gums, mouth, and pharynx appeared next. Within 12 to 48 hours, fever became evident. In many instances it reached only 100° Fahrenheit and remained for only a few days. In other cases, the temperature went as high as 104° or 106° Fahrenheit. The degree of fever apparently had a direct relation to the degree of exposure to radiation. Once developed, the fever was usually well sustained, and in those cases terminating fatally it continued high until the end. If the fever subsided, the patient usually showed a rapid disappearance of other symptoms and soon regained his feeling of good health. The other symptoms commonly seen were shortage of white corpuscles, loss of hair, inflammation and gangrene of the gums, inflammation of the mouth and pharynx, ulcer-
tion of the lower gastro-intestinal tract, small livid spots (petechiae) resulting from escape of blood into the tissues of the skin or mucous membrane, and larger hemorrhages of gums, nose and skin.63

Loss of hair usually began about 2 weeks after the bomb explosion, though in a few instances it is reported to have begun as early as 4 to 5 days afterward. The areas were involved in the following order of frequency with variations depending on the degree of exposure: scalp, axillae, breast, pubic region, and eyebrows. Complete baldness was rare. Microscopic study of the body areas involved has shown atrophy of the hair follicles. In those patients who survived after 2 months, however, the hair has commenced to regrow. An interesting but unconfirmed report has it that loss of the hair was less marked in persons with grey hair than in those with dark hair.64

A decrease in the number of white blood corpuscles in the circulating blood appears to have been a constant accompaniment of radiation disease, even existing in some milder cases without other radiation effects. The degree of leukopenia was probably the most accurate index of the amount of radiation a person received. The normal white blood count averages 5,000 to 7,000; leukopenia is indicated by a count of 4,000 or less. The white blood count in the more severe cases ranged from 1,500 to 0, with almost entire disappearance of the bone marrow. The moderately severe cases showed evidence of degeneration of bone marrow and total white blood counts of 1,500 to 3,000. The milder cases showed white blood counts of 3,000 to 4,000 with more minor degeneration changes in the bone marrow. The changes in the system for forming red blood corpuscles developed later, but were equally severe.65

Radiation clearly affected reproduction, though the extent has not been determined. Sterility has been a common finding throughout Japan, especially under the conditions of the last 2 years, but there are signs of an increase in the Hiroshima and Nagasaki areas to be attributed to the radiation. Sperm counts done in Hiroshima under American supervision revealed low sperm counts or complete aspermia for as long as 3 months afterward in males who were within 5,000 feet of the center of the explosion. Cases dying of radiation disease showed clear effects on spermatogenesis. Study of sections of ovaries from autopsied radiation victims has not yet been com-

pleted. The effects of the bomb on pregnant wo-

men are marked, however. Of women in various stages of pregnancy who were within 3,000 feet of ground zero, all known cases have had miscarriages. Even up to 6,500 feet they have had miscarriages or premature infants who died shortly after birth. In the group between 6,500 and 10,000 feet, about one-third have given birth to apparently normal children. Two months after the explosion, the city's total incidence of miscarriages, abortions, and premature births was 27 percent as compared with a normal rate of 6 percent. Since other factors than radiation contributed to this increased rate, a period of years will be required to learn the ultimate effects of mass radiation upon reproduction.66

Treatment of victims by the Japanese was lim-

ited by the lack of medical supplies and facilities. Their therapy consisted of small amounts of vitamins, liver extract, and an occasional blood transfusion. Allied doctors used penicillin and plasma with beneficial effects. Liver extract seemed to benefit the few patients on whom it was used: it was given in small frequent doses when available. A large percentage of the cases died of secondary disease, such as septic bronchopneumonia or tuberculosis, as a result of lowered resistance. Deaths from radiation began about a week after exposure and reached a peak in 3 to 4 weeks. They had practically ceased to occur after 7 to 8 weeks.67

Unfortunately, no exact definition of the killing power of radiation can yet be given, nor a satisfactory account of the sort and thickness of concrete or earth that will shield people. From the definitive report of the Joint Commission will come more nearly accurate statements on these matters. In the meanwhile the awesome lethal effects of the atomic bomb and the insidious additional peril of the gamma rays speak for themselves.68

There is reason to believe that if the effects of blast and fire had been entirely absent from the bombing, the number of deaths among people within a radius of one-half mile from ground zero would have been almost as great as the actual figures and the deaths among those within 1 mile would have been only slightly less. The principal difference would have been in the time of the deaths. Instead of being killed outright as were most of these victims, they would have survived for a few days or even 3 or 4 weeks, only to die eventually of radiation disease.69

These suppositions have vital importance, for
actually in Nagasaki and Hiroshima many people who were protected by structures against blast and fire were not protected against the effect of gamma rays. The complexity of the problem of shelter protection has been increased by this necessity of shielding against radiant heat and gamma rays. Fortunately, earth and concrete will shield against gamma rays, the required thickness varying with the intensity of the rays.  

The slow and inadequate treatment of victims by the Japanese probably contributed to the high casualty rates. Many persons could undoubtedly have been saved had facilities, supplies, and personnel been available immediately after the bombings. Probably the number of deaths from the true blast effects, flame burns, or serious injuries from collapsing structures would not have been altered appreciably; generally speaking, these cases either were killed outright or else survived. Many of the flash burn cases could have been saved with tremendous quantities of plasma and parenteral fluids if treatment could have begun within a few hours after the bombing. Probably the most significant results could have been achieved with the radiation cases. With large quantities of whole blood and adequate supportive treatment, possibly 10 to 20 percent of those dying of radiation might have survived. However, it is doubtful that 10 percent of all the deaths resulting from the atomic bombs could have been avoided with the best medical care. A more likely figure is 5 to 8 percent.  

2. Morale.—As might be expected, the primary reaction to the bomb was fear—uncontrollable terror, strengthened by the sheer horror of the destruction and suffering witnessed and experienced by the survivors. Between one-half and two-thirds of those interviewed in the Hiroshima and Nagasaki areas confessed having such reactions, not just for the moment but for some time. As two survivors put it:  

Whenever a plane was seen after that, people would rush into their shelters; they went in and out so much that they did not have time to eat. They were so nervous they could not work.  

After the atomic bomb fell, I just couldn’t stay home. I would cook, but while cooking I would always be watching and worrying whether an atomic bomb would fall near me.  

The behavior of the living immediately after the bombings, as described earlier, clearly shows the state of shock that hindered rescue efforts. A Nagasaki survivor illustrates succinctly the mood of survivors:  

All I saw was a flash and I felt my body get warm and then I saw everything flying around. My grandmother was hit on the head by a flying piece of roof and she was bleeding —— I became hysterical seeing my grandmother bleeding and we just ran around without knowing what to do.  

I was working at the office. I was talking to a friend at the window. I saw the whole city in a red flame, then I ducked. The pieces of the glass hit my back and face. My dress was torn off by the glass. Then I got up and ran to the mountain where the good shelter was.  

The two typical impulses were those: Aimless, even hysterical activity or flight from the city to shelter and food.  

The accentuated effect of these bombs came not only from the surprise and their crushing power, but also from the feeling of security among the inhabitants of the two cities before the attacks. Though Nagasaki had undergone raids in the previous year, they had not been heavy, and Hiroshima had gone almost untouched until the morning of 6 August 1945. In both cities many people felt that they would be spared, and the various rumors in circulation supporting such feeling covered a wide range of wishful thoughts. There were so many Christians there, many Japanese-Americans came from Hiroshima, the city was a famous beauty spot—thece and other even more fantastic reasons encouraged hopes. Other people felt vaguely that their city was being saved for “something big,” however.  

Such a shattering event could not fail to have its impact on people’s ways of thinking. Study of the patterns of belief about the war, before and after the bombing, show this change clearly. Prior to the dropping of the atomic bombs, the people of the two target cities appear to have had fewer misgivings about the war than people in other cities. Response to set questions indicate that among Japanese civilians prior to 1 July 1945:  

- 50 percent in the Hiroshima-Nagasaki areas but  
- 74 percent in the other urban areas entertained doubts about a Japanese Victory;  
- 31 percent in Hiroshima-Nagasaki but  
- 47 percent in other urban areas felt certain that victory for Japan was impossible;  
- 12 percent in Hiroshima-Nagasaki but.
34 percent in other urban areas had reached a point where they felt unable to continue the war.\(^6\)

Further,

28 percent of the people of Japan as a whole said they had never reached a point where they felt they could not go on with the war, whereas

39 percent of the people in the Hiroshima-Nagasaki areas said they had never reached such a point.\(^6\)

These figures clearly suggest that the will to resist had indeed been higher in the "atomic bomb cities" than in Japan as a whole.\(^8\)

There is no doubt that the bomb was the most important influence among the people of these areas in making them think that defeat was inevitable. An additional 28 percent stated that after the atomic bomb was dropped they became convinced that victory for Japan was impossible. Almost one-fourth admitted that because of the bombing they felt personally unable to carry on. Forty percent testified to various degrees of defeatism induced by the atomic bomb. Significantly, certainty of defeat was much more prevalent at Hiroshima, where the area of devastation and the casualties were greater, than at Nagasaki.\(^8\)

Typical comments of survivors were:

If the enemy has this type of bomb, everyone is gone to die, and we wish the war would hurry and finish.\(^8\)

I did not expect that it was that powerful. I thought we have no defense against such a bomb.\(^5\)

One of my children was killed by it, and I didn’t care what happened after that.\(^8\)

Other reactions were found. In view of their experiences, it is not remarkable that some of the survivors (nearly one-fifth) hated the Americans for using the bomb or expressed their anger in such terms as "cruel," "inhuman," and "barbarous."\(^8\)

... they really despise the Americans for it, the people all say that if there are such things as ghosts, why don’t they haunt the Americans?\(^8\)

When I saw the injured and killed, I felt bitter against the enemy.\(^9\)

After the atomic bomb exploded, I felt that now I must go to work in a munitions plant. \(^*\)\(^*\)\(^*\). My sons told me that they wouldn’t forget the atomic bomb even when they grow up.\(^8\)

The reaction of hate and anger is not surprising, and it is likely that in fact it was a more extensive sentiment than the figures indicate, since unquestionably many respondents, out of fear or polite

ness, did not reveal their sentiments with complete candor. Despite this factor, the frequency of hostile sentiments seems low. Two percent of the respondents even volunteered the observation that they did not blame the United States for using the bomb. There is evidence that some hostility was turned against their own Government, either before or after the surrender, although only a few said they wondered why their nation could not have made the bomb. In many instances the reaction was simply one of resignation. A common comment was, "Since it was war, it was just shikata-ga-na (Too bad).\(^9\)

Admiration for the bomb was more frequently expressed than anger. Over one-fourth of the people in the target cities and surrounding area said they were impressed by its power and by the scientific skill which underlay its discovery and production.\(^9\)

Of greater significance are the reactions of the Japanese people as a whole. The two raids were all-Japan events and were intended so: The Allied Powers were trying to break the fighting spirit of the Japanese people and their leaders, not just of the residents of Hiroshima and Nagasaki. Virtually all the Japanese people had a chance to react to the bomb through the news had not reached to full spread at the time of the surrender. By the time the interviewing was done, only about 9 percent of the population in rural areas and 1 percent in the cities had not heard of the bomb.\(^3\)

The reactions found in the bombarded cities appeared in the country as a whole—fear and terror, anger and hatred against the veterans, admiration for the scientific achievement—though in each case with less intensity. The effect of the bomb on attitudes toward the war in Japan as a whole was, however, much less marked than in the target cities. While 40 percent of the latter respondents reported defeatist feelings induced by the bomb, 28 percent of those in the islands as a whole attributed such reactions to the news of the bomb. There are at least three possible explanations of this difference. First, the level of confidence was quite low in Japan well before the time of the atomic bombing.\(^1\) Prior to 1 July 1945 doubts about a Japanese victory were felt by 74 percent of the population. By the same date 47 percent had become certain that a Japanese victory was impossible, and 34 percent felt that they could not go on with the war.\(^2\) Under these circumstances, the announcement of a new and devastating
weapon was merely an addition to the already eloquent evidence of national weakness. Second, the reaction of those at some distance from the target cities seems to have been blunted by their direct experience with other sorts of misfortunes and hardships, the common phenomenon of psychological distance increasing with geographical distance. In Japan as a whole, for example, military losses and failures, such as those at Saipan, the Philippines, and Okinawa, were twice as important as this atomic bomb in inducing certainty of defeat. Other raids over Japan as a whole were more than three times as important in this respect. Consumer deprivations, such as food shortages and the attendant malnutrition, were also more important in bringing people to the point where they felt they could not go on with the war.96

Third, the lack of understanding of the meaning of the new weapon in areas away from the target undoubtedly limited its demoralizing effect. As distance from the target cities increased, the effect of the bombs in causing certainty of defeat declined progressively.97

<table>
<thead>
<tr>
<th>Group of cities</th>
<th>Percent of population certain of defeat because of atomic bomb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiroshima - Nagasaki</td>
<td>25</td>
</tr>
<tr>
<td>Cities nearest to target cities</td>
<td>23</td>
</tr>
<tr>
<td>Cities next to target cities</td>
<td>13</td>
</tr>
<tr>
<td>Cities far from target cities</td>
<td>8</td>
</tr>
<tr>
<td>Cities farthest from target cities</td>
<td>8.98</td>
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Only in the nearest group of cities, within 40 miles of Hiroshima or Nagasaki, was there a substantial effect on morale. Were the channels of mass communication as readily available to all the population as they are in the United States and had the use of the bomb received anything like the intensive coverage it had here, the effect on continued support of the war would probably have been greater. Something approaching such knowledge, of course, probably would have spread rather widely had the war continued many more weeks, whether sanctioned by the censors or spread by the ever-active rumor channels so common in the country.99

It is apparent that the effect of the atomic bombings on the confidence of the Japanese civilian population was remarkably localized. Outside of the target cities, it was subordinate to other demoralizing experiences. The effect which it did have was probably due largely to the number of casualties and the nature of the injuries received. These consequences were in part the result of surprise and the vulnerability of the raid defense system. Properly enforced warnings, precautions and an emergency care organization of the scale of the bomb's effects might have reduced casualties and, therefore, the effects on morale.100

Even in the target cities, it must be emphasized, the atomic bombs did not uniformly destroy the Japanese fighting spirit. Hiroshima and Nagasaki, when compared with other Japanese cities, were not more defeatist than the average. The bombs were tremendous personal catastrophes to the survivors, but neither time nor understanding of the revolutionary threat of the atomic bomb permitted them to see in those personal catastrophes a final blow to Japan's prospects for victory or negotiated peace.101

3. The Japanese decision to surrender.—The further question of the effects of the bombs on the morale of the Japanese leaders and their decision to abandon the war is tied up with other factors. The atomic bomb had more effect on the thinking of Government leaders than on the morale of the rank and file of civilians outside of the target areas. It cannot be said, however, that the atomic bomb convinced the leaders who effected the peace of the necessity of surrender. The decision to seek ways and means to terminate the war, influenced in part by knowledge of the low state of popular morale, had been taken in May 1945 by the Supreme War Guidance Council.102

As early as the spring of 1944, a group of former prime ministers and others close to the Emperor had been making efforts toward bringing the war to an end. This group, including such men as Admiral Okada, Admiral Yonai, Prince Konoye, and Marquis Kido, had been influential in effecting Tojo's resignation and in making Admiral Suzuki Prime Minister after Koiso's fall. Even in the Suzuki cabinet, however, agreement was far from unanimous. The Navy Minister, Admiral Yonai, was sympathetic, but the War Minister, General Anami, usually represented the right-to-the-end policy of the Army. In the Supreme War Guidance Council, a sort of inner cabinet, his adherence to that line was further assured by the participation of the Army and Navy chiefs of staff, so that on the peace issue this organization was evenly divided, with these three opposing the Prime Minister, Foreign Minister, and Navy Minister. At any time military (especially Army) dissatisfaction with the Cabinet might have eventuated at least in its fall and possibly in the "liquidation" of the antiwar members.103
Thus the problem facing the peace leaders in the Government was to bring about a surrender despite the hesitation of the War Minister and the opposition of the Army and Navy chiefs of staff. This had to be done, moreover, without precipitating counter measures by the Army which would eliminate the entire peace group. This was done ultimately by bringing the Emperor actively into the decision to accept the Potsdam terms. So long as the Emperor openly supported such a policy and could be presented to the country as doing so, the military, which had fostered and lived on the idea of complete obedience to the Emperor, could not effectively rebel.104

A preliminary step in this direction had been taken at the Imperial Conference on 26 June. At this meeting, the Emperor, taking an active part despite his custom to the contrary, stated that he desired the development of a plan to end the war as well as one to defend the home islands. This was followed by a renewal of earlier efforts to get the Soviet Union to intercede with the United States, which were effectively answered by the Potsdam Declaration on 26 July and the Russian declaration of war on 9 August.105

The atomic bombings considerably speeded up these political maneuvers within the government. This in itself was partly a morale effect, since there is ample evidence that members of the Cabinet were worried by the prospect of further atomic bombings, especially on the remains of Tokyo. The bombs did not convince the military that defense of the home islands was impossible, if their behavior in Government councils is adequate testimony. It did permit the Government to say, however, that no army without the weapon could possibly resist an enemy who had it, thus saving "face" for the Army leaders and not reflecting on the competence of Japanese industrialists or the valor of the Japanese soldier. In the Supreme War Guidance Council voting remained divided, with the war minister and the two chiefs of staff unwilling to accept unconditional surrender. There seems little doubt, however, that the bombing of Hiroshima and Nagasaki weakened their inclination to oppose the peace group.106

The peace effort culminated in an Imperial conference held on the night of 9 August and continued into the early hours of 10 August, for which the stage was set by the atomic bomb and the Russian war declaration. At this meeting the Emperor, again breaking his customary silence, stated specifically that he wanted acceptance of the Potsdam terms.107

A quip was current in high Government circles at this time that the atomic bomb was the real Kamikaze, since it saved Japan from further useless slaughter and destruction. It is apparent that in the atomic bomb the Japanese found the opportunity which they had been seeking, to break the existing deadlock within the Government over acceptance of the Potsdam terms.108
III. HOW THE ATOMIC BOMB WORKS

Out of the stories of Hiroshima and Nagasaki can be built up, detail by detail, the picture of how the atomic bomb works—the different forms of energy given off, the velocity and intensity of each, the sort of effects each has on animate and inanimate objects. In these factors is the real story of what happened at Hiroshima and Nagasaki, for in them chance circumstances are ruled out.

Spectators' accounts, whether of the New Mexico, the Hiroshima, or the Nagasaki explosion, describe similar pictures. At Nagasaki, for example, the bomb exploded at 1102 with a tremendous flash of blue-white light, like a giant magnesium flare. The flash was accompanied by a rush of heat and was followed by a huge pressure wave and the rumbling sound of the explosion. Curiously enough, this sound was not distinctly noted by those who survived near the center of the explosion, although it was heard as far as 15 miles away. People on the hillsides in the country at a considerable distance from Nagasaki told of seeing the blue-white and then multicolored flash over the city, followed some seconds later by a tremendous clap, like thunder very close overhead. A huge snow-white cloud shot rapidly into the sky and the scene on the ground was observed first by a bluish haze and then by a purple-brown cloud of dust and smoke.

The survivors were not aware at the time that a radically new bomb had been used. They were conscious of an explosion of tremendous power, but even the Government had no conception, until President Truman's announcement was broadcast, of the new principle of operation. If we strip our minds of any lingering prejudice that the atomic bomb is supernatural or incomprehensible in its operation, we shall see why its uniqueness was not at first recognized.

A. THE NATURE OF THE EXPLOSION

The atomic bomb works by explosion. An explosion is, in the words of the Smyth report, simply a "sudden and violent release of a large amount of energy in a small region." As do ordinary high explosives, atomic bombs release energy, though on an unprecedented scale. The energy takes three forms (one of which is new), and all the effects of the bomb can be referred directly to these three kinds of energy. They are:

1. Heat (which is present in other explosions, as the familiar injuries known as "flash burns", on warships illustrate, but ordinarily not at high enough diffused temperatures to burn a man or set fire to combustible objects at any considerable distance from the explosion).

2. Radiation (similar to X-rays or to that from radium).

3. Blast or pressure (as from a demolition bomb).

The whole discussion of the effects of the atomic bomb will be phrased in terms of these three kinds of energy. No other more mysterious or immeasurable forces acted; these were all.

These were enough. The energy released in atomic explosion is of such magnitude and from so concentrated a source that it sets entirely new problems in its use or in protection against it. Ordinary burning or explosion is a chemical reaction in which energy is released during the rearrangement of the atoms of the explosive material. In an atomic reaction, however, the identity of the atoms, not simply their arrangement, is changed. The change is more fundamental: in it, matter is transformed into energy. The energy released when a pound of nitroglycerine explodes would, when converted into heat, raise the temperature of 150 pounds of water by 18° F. The explosion of a pound of uranium would produce an equal temperature rise in 2 billion pounds of water! Clearly, only a small part of the mass in the bomb's active core need be transformed to give an explosion of tremendous power.

At the time of the explosion, then, energy was given off in the forms of light, heat, gamma radiation, and pressure. The whole range of radiations, indeed, seems to have been present. There were heat radiations in the low frequency band
below infrared, visible waves of all colors (as the eyewitness accounts show), and penetrating radiations of very high frequency generally grouped as "gamma rays." Light and radiant heat ("flash heat") spread out in all directions at a rate of 186,000 miles per second, and the gamma rays at the same rate (though their effect was not immediately obvious). The shock waves travelled much more slowly. It may be inferred from tests with high explosives that the rate at a relative short distance from the point of explosion was about 2 miles per second, and dropped rapidly to the speed of sound, or about one-fifth of a mile per second. Thus the light, heat, and gamma radiation reached the target first, followed by shock and sound and the high winds of the blast.

B. HEAT

The center of the explosions—several hundred feet above ground—was a ball of fire. Because the radiant heat given off at the explosion easily charred combustible objects while causing so quickly that surfaces not in the direct line of radiation were unaffected, there are clearly marked "shadows" visible where objects were shielded against the heat. By projecting back the sharply defined outlines of these shadows, Japanese and Allied scientists have determined the height and diameter of the fireball. The two fireballs were apparently several hundred feet in diameter. The temperature at their core was virtually inconceivable—millions of degrees centigrade. Even at its edge, the temperature was several thousand degrees; reasoning from the heat effects observed on human beings, bubbled roof tile, and combustible materials, Japanese and Allied scientists have placed the figure variously between 3,000° and 9,000° C. Energy given off in heat alone was estimated by Japanese physicists at the astronomical figure of 10¹⁰ calories.

The flash heat was intense enough to cause fires, despite the distance of the fireball from the ground. Clothing ignited, though it could be quickly beaten out, telephone poles charred, thatched roofs of houses caught fire. In Hiroshima, the explosion started hundreds of fires almost simultaneously, the most distant of which was found 13,000 feet from ground zero; this, however, probably started when a building with a thatched roof collapsed onto a hot charcoal fire. Fires were started directly by flash heat in such easily ignitable substances as dry cloth, paper, or dry-rotted wood, within about 3,500 feet of ground zero; white-painted, concrete-faced or cement-streeced structures reflected the heat and did not ignite. A cedar bark roof and the top of a dry-rotted wooden platform 5,200 feet west of ground zero, were reported to have been ignited by the bomb flash. The majority of initial fires in buildings, however, were started by secondary sources (kitchen charcoal fires, electric short-circuits, industrial process fires, etc.). In Nagasaki, both Japanese and American fire experts agreed that more fires were caused directly than indirectly, in a ratio of 60 to 40. The range of primary fire there is reported to have exceeded 10,000 feet.

Charred telephone poles were discernible for 10,000 feet south and 13,000 feet north of ground zero at Hiroshina, and for 13,000 feet or more at Nagasaki. Bubbling of roof tile occurred at Hiroshina from ground zero out to 4,000 feet, though with only scattered frequency after 2,000 feet. The same phenomenon was reported at Nagasaki, accompanied again by scarring and peeling of granitic rocks, almost a mile from ground zero. A similar bubbled surface was obtained at the National Bureau of Standards by heating a sample of the tile to 1,800° C, for a period of 4 seconds. The effect so produced extended deeper into the tile than did the bubbling caused by the atomic bomb, which indicates that the explosion of the bomb subjected the tile to a temperature of more than 1,800° for less than 4 seconds.

Persons reported feeling heat on their skin as far away as 24,000 feet. Burns of unprotected skin certainly occurred up to 12,000 to 13,000 feet, and reportedly up to 15,000 feet—nearly 3 miles. Serious or third-degree burns were suffered by those directly exposed within 4,500 feet, and occasionally as remote as 7,200 feet. In the immediate area of ground zero, the heat charred corpses beyond recognition.

Clothing as well as buildings afforded considerable protection against the flash. Even a clump of grass or tree leaf was, on occasion, adequate. The implication clearly is that the duration of the flash was less than the time required for the grass or leaf to shrivel. While an accurate estimate is not possible, the duration could hardly have exceeded a fraction of a second.

C. RADIATION

From the chain reaction which produced the mass release of energy in the explosion, a wide
NAGASAKI—Blistered tile found at ground zero.

"Shadow" of hand valve wheel on paint of a gas holder at Hiroshima. Radiant heat instantly burned paint where the heat rays were not obstructed. 6,500 feet from ground zero (Japanese phase).
NEW SHOOTS are appearing on this limb of a chestnut tree, about 2,100 feet south of ground zero at Nagasaki, 2 months after the attack, even though the leaves were burned and withered at the time of the explosion (Japanese photo).

TREES SPLINTERED BY BLAST on a Nagasaki hillsacie, 2,700 feet southwest of ground zero (Japanese photo).
range of radiations were released. The light and heat are familiar elements of explosions, but the free neutrons and high-frequency radiations such as gamma rays are a new phenomenon. These radiations are highly penetrating and lethal.\textsuperscript{115}

The damaging penetration of radiation would be possible from three sources:

(a) From the high-frequency radiations, whether neutrons, gamma rays, or other unspecified rays, released in the chain reaction of the bomb.

(b) From lingering radioactivity from deposits of primary fission products scattered in the explosion.

(c) From induced radioactivity in the bomb area, caused by interaction of neutrons with matter penetrated.\textsuperscript{116}

Only the first cause seems to have had important effects, though there are detectable pockets of radioactivity in both cities. At Takasu, 10,000 feet from ground zero at Hiroshima, and at Nishi-yama, 6,300 feet from ground zero in Nagasaki, scientific measurements weeks after the explosion showed radioactivity. Presumably this was from deposits of primary fission products rather than induced radioactivity. In tests of the ground and homes of victims of radiation disease, certain substances—phosphorus, barium, strontium, rare earths—have shown radioactivity. Though evidence of lingering radioactivity is slight, it is strong enough to leave open the ominous possibility of a different situation had the bomb exploded at ground level.\textsuperscript{117}

The radiation apparently had no lasting effects on the soil or vegetation: Seeds later planted within a few hundred feet of ground zero grew normally. Examination of subsoil near the immediate area showed presence of earthworms and other life only a few inches below the surface. The effect on human procreation is as yet undetermined, but pregnant women within a mile of ground zero showed an increased number of miscarriages, and there was in most cases a low sperm count among men in the same area. Stories of harmful effects on people who came into the area after the explosion have been disproved by investigation.\textsuperscript{118}

The rays proved lethal for an average radius of 3,000 feet from ground zero. They caused loss of hair up to 7,500 feet and occasionally beyond, and other mild effects up to almost 2 miles.\textsuperscript{119}

D. BLAST

The pressure or shock wave travelled out in all directions from the explosion. The blast effects produced were uniform, and essentially those of conventional large high-explosive weapons though on a much larger scale. Thus, instead of localized effects such as the collapse of a roof truss or wall panel, entire buildings were crushed or distorted as units.

The blast pressure, as with high explosives, rose almost instantaneously to a peak, declined more slowly, and then fell below atmospheric pressure for a period about three times the period during which it was above atmospheric pressure. The positive period—that during which the pressure was greater than atmospheric—was of much greater peak pressure than the succeeding, or negative phase. Short though the positive phase was—probably only slightly longer than a second—it lasted longer than the positive phase of ordinary bombs. Thus the effect of the atomic bomb on buildings was usually that of a powerful push which shoved buildings over or left them leaning, whereas high explosive bombs strike sharply and much more briefly and tend to punch holes in walls. The duration was also long enough so that almost all building failures came during the positive phase. Comparatively few evidences were found of failures of members during the longer but less intense negative phase; window shutters blown outwards toward the explosion were very rare.

Experiments with high explosives have shown that the face-on peak pressures are approximately two to five times as intense as side-on peak pressures; thus greater damage was inflicted on walls or roofs facing the blast than on similar surfaces parallel to the blast. Near ground zero, the blast struck almost vertically downward. Buildings were crushed if weak, or the roofs were crushed in with little or no damage to the walls. Trunks of trees remained standing, but stripped of their branches; telephone poles, pushed farther out, also remained erect near the center. Many small buildings were virtually engulfed in the pressure wave and simultaneously crushed from different directions. At somewhat greater distances, both horizontal and vertical components of the blast were appreciable, and buildings suffered damage both to roofs and to walls facing the explosion. At considerable distances, where the blast was travelling
BLAST STRUCK DOWNWARD against the roof of the Chinzai School, 1,500 feet from ground zero at Nagasaki, which had been taken over in part for munitions work. The fourth story collapsed completely, but the heavy earthquake-resistant structure protected some machine tools on the first floor from serious damage. Electric transformers and a switchboard did not escape; a combination of blast, fire, and debris destroyed them.
in an almost horizontal direction, damage was predominantly inflicted on walls during the blast. In such cases, the buildings were often completely racked by the inability of roof truss members to transmit the pressure to the far walls.

Shielding was more important at Nagasaki than at Hiroshima, because of the hills that divided the city. Building restrictions in Japan after the 1923 earthquake limited building heights to 100 feet; thus there was little shielding by buildings from these airburst bombs.

Reflection and diffraction effects were observed. Had the blast travelled in completely straight lines, more buildings would have survived in Nagasaki than actually did. Reflection effects were most clearly observed in the destruction of parapet walls of roofs on the side away from the bomb, where reflection of the blast wave from the roof reinforced the blast impinging on the wall directly. They were also visible in the displacing and cracking of concrete decks of bridges within 1,000 feet of ground zero, where reflection of the blast wave from the water struck the bridges where their resistance was least.

The resistance of buildings depended very largely on their construction, as two examples show.

(a) In the area between 2,000 and 3,000 feet from ground zero at Nagasaki, only 3.5 percent of the floor area of reinforced concrete buildings was destroyed or structurally damaged. Yet in the ring between 1,000 and 2,000 feet from ground zero, 30 percent of such buildings was destroyed or structurally damaged. Careful examination showed that the difference lay solely in design, construction detail, and materials: The bomb detonated over a section containing the most carelessly and poorly built buildings in the city, the majority multistory earthquake resistant structures. This strength more than compensated for the greater intensity of blast. A rapidly diminishing blast was capable of serious damage to weaker buildings further away, mostly high, single-story industrial buildings, with thin, shell-type, arch roofs.

(b) At both cities, steel-framed buildings with corrugated asbestos walls and roofs suffered less structural damage than those with corrugated iron or sheet-metal walls and roofs. The corrugated asbestos crumbled easily, permitting the blast pressure to equalize itself rapidly around the main framing members, but the steel siding transferred the pressure to the structural members, causing distortion or general collapse.

The limits of blast effects extended 8 miles out, where some glass reportedly shattered in Hiroshima; at the same city, some roof stripping and disturbance of tiles was inflicted at the Japan Steel Co., 4.1 miles from ground zero.

In analyzing the extent of the destruction wrought by the bombs, it is necessary to discriminate between the two cities and between different types of buildings. Equivalent effects are found at Nagasaki over greater areas. Structural damage to reinforced concrete buildings, both earthquake resistant and non-earthquake resistant, occurred within an area of 0.95 square mile at Hiroshima, but at Nagasaki similar severe damage was inflicted in an area of 0.43 square mile.

Severe damage to one-story light steel frame buildings was equally extensive at the two cities: the area was 3.3 square miles at Nagasaki and 3.4 square miles at Hiroshima. Heavy steel frame buildings could be studied only at Nagasaki, where they suffered structural damage over an area of 1.8 square miles.

One-story brick buildings with load bearing walls were severely damaged within an area of 8.1 square miles at Nagasaki, and within an area of 6 square miles at Hiroshima. Multistory brick buildings, which were studied only at Hiroshima, were severely damaged within an area of 3.8 square miles.

Wood domestic buildings were severely damaged within an area of 7.5 square miles at Nagasaki, and within an area of 6 square miles at Hiroshima. Wood frame industrial and commercial buildings, which were of inferior construction, were severely damaged within 9.3 square miles at Nagasaki, and 8.5 square miles at Hiroshima.

Maximum blast pressures fall off very rapidly as the distance from the detonation increases. In the two bomb cities, thus, reinforced concrete buildings of good construction were structurally damaged only when within a few hundred feet of ground zero. Indeed, ground zero itself was too distant from air zero for the earthquake-resistant buildings to be collapsed. It is the opinion of the Survey's engineers that at Hiroshima more thorough destruction near ground zero, without significant loss in the scope of destruction, could have been achieved had the bomb been detonated at a lower altitude.
FIRE FRINGE. 8,200 feet from ground zero at Nagasaki, the old police station was completely gutted by fire. Hills protected houses on the right from blast, and fire did not spread to them (Japanese photo).

BLAST BUCKLED THE COLUMNS of this wood frame building, beyond the fire fringe at Hiroshima (7,000 feet from ground zero).
WRECKAGE IN NAGASAKI STREETCAR TERMINAL 1,500 feet north of ground zero. Streetcar in center was blown about 6 feet by the blast (Japanese photo).

THE HIROSHIMA FIRE DEPARTMENT lost its only aerial ladder truck when the west side main fire station was destroyed by blast and fire, 4,000 feet from ground zero (Japanese photo).
E. THE ATOMIC BOMB COMPARED WITH OTHER WEAPONS

In comparing the atomic bomb with other weapons, it is well to remember the importance of the height at which it exploded. Because of this distance from the target, the atomic bomb did not exert at any point in Hiroshima or Nagasaki the high instantaneous peak pressures of even small high explosive bombs. For example, a single 100-pound bomb exploding at ground level exerts a higher blast pressure over an area of 1,000 square feet (for about 18 feet around its point of detonation) than did the atomic bomb at any point in either city.

That fact will place comparisons of the radii of effectiveness in the proper perspective. Even at the heights from which the atomic bomb was exploded in Japan, its blast effects were on a new scale because the duration of the blast was long compared to that of high explosive bombs. To take only one example: At Nagasaki, brick buildings suffered structural damage within a radius averaging 6,000 feet from ground zero. Comparable damage would be done by a 500-pound high explosive bomb burst at ground level for a radius of 55 feet; by a 1,000-pound bomb for 80 feet; by a 1-ton bomb for 110 feet; and by a 2-ton bomb for 200 feet. A hypothetical 10-ton blockbuster (only 10-ton penetrating bombs have actually been used) could be expected to achieve equivalent damage over a radius of 400 feet. The area of effectiveness of the air-burst atomic bomb against brick buildings thus ranged from 10,000 times as great as that for a 500-pound bomb to 225 times as great as that for the imaginary 10-ton blockbuster.

A simple table shows most strikingly the comparison between the striking forces needed for atomic and for conventional raids. Against the two atomic attacks can be set the data for the most effective single urban attack, that on Tokyo on 9 March 1945, and the average effort and results from the Twentieth Air Force’s campaign against Japanese cities:

What stands out from this compilation, even more than the extent of the destruction from a single concentrated source, is the unprecedented casualty rate from the combination of heat, blast, and gamma rays from the chain reaction.

On the basis of the known destructiveness of various bombs computed from the war in Europe and the Pacific and from tests, the Survey has estimated the striking force that would have been necessary to achieve the same destruction at Hiroshima and Nagasaki. To cause physical damage equivalent to that caused by the atomic bombs, approximately 1,200 tons of bombs (one-fourth high explosives and three-fourths incendiaries) at Hiroshima and 600 tons (three-fourths high explosives and one-fourth incendiary) would have been required at Nagasaki—in the target area. To place that many bombs in the target area, assuming daylight attacks under essentially the same conditions of weather and enemy opposition that prevailed when the atomic bombs were dropped, it is estimated that 1,000 tons of bombs would have had to be dropped at Hiroshima and 500 tons at Nagasaki. To these bomb loads would have had to be added a number of tons of antipersonnel fragmentation bombs to inflict comparable casualties. These would add about 500 tons at Hiroshima and 300 tons at Nagasaki. The total bomb loads would thus be 2,100 tons at Hiroshima (400 HB, 1,200 IB) and 1,200 tons (675 HB, 245 IB) at Nagasaki. With each plane carrying 10 tons, the attacking force required would have been 210 B-29s at Hiroshima and 120 B-29s at Nagasaki.

It should be kept in mind, however, that the area of damage at Nagasaki does not represent the full potential effectiveness of the atomic bomb used there. The damage was limited by the small size of the rather isolated section of the city over which the bomb exploded. Had the target been sufficiently large, with no sections protected by intervening hills, the area of damage would have been about five times as large. An equivalent bomb load which would correspond to the destructive power of the Nagasaki bomb rather than the imperfect results achieved would approximate 2,200 tons of high explosives and incendiaries for physical damage plus 500 tons of fragmentation bombs for casualties, a total of 270 B-29 loads of 10 tons each.

### Table: Effective Results

<table>
<thead>
<tr>
<th></th>
<th>Hiroshima</th>
<th>Nagasaki</th>
<th>Average at 10 B-29s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plane</td>
<td>1</td>
<td>1</td>
<td>279</td>
</tr>
<tr>
<td>Bomb load</td>
<td>11</td>
<td>11</td>
<td>1,400</td>
</tr>
<tr>
<td>Population density per square mile</td>
<td>35,000</td>
<td>35,000</td>
<td>130,000</td>
</tr>
<tr>
<td>Square miles destroyed</td>
<td>4.7</td>
<td>1.8</td>
<td>15.5</td>
</tr>
<tr>
<td>Killed and wounded</td>
<td>7,000,000</td>
<td>3,000,000</td>
<td>52,000</td>
</tr>
<tr>
<td>Injured</td>
<td>70,000</td>
<td>70,000</td>
<td>297,000</td>
</tr>
<tr>
<td>Mortality rate per square mile destroyed</td>
<td>15,000</td>
<td>35,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Casualty rate per square mile</td>
<td>25,000</td>
<td>41,000</td>
<td>10,400</td>
</tr>
</tbody>
</table>
DESTRUCTION OF BUILDINGS WITH BRICK LOAD BEARING WALLS. Note how brick debris lies inside wall facing blast, at remains of a barracks at the Japanese Army Divisional Grounds, 4,300 feet from ground zero at Hiroshima. The Koa Fire Insurance Co., 1,300 feet from ground zero, is completely destroyed except for the heavy walls of the vault.
REINFORCED CONCRETE BUILDINGS STILL STAND—but note how the interiors, as in the operating room of the Nagasaki University Hospital (2,200 feet from ground zero), are burnt out. Fire has consumed the floor, the balcony, and all seats, and disturbed the metal railings and pipe.
IV. SIGNPOSTS

A. THE DANGER

The Survey's investigators, as they proceeded about their study, found an insistent question framing itself in their minds: "What if the target for the bomb had been an American City?" True, the primary mission of the Survey was to ascertain the facts just summarized. But conclusions as to the meaning of these facts, for citizens of the United States, forced themselves almost inescapably on the men who examined thoughtfully the remains of Hiroshima and Nagasaki. These conclusions have a different sort of validity from the measurable and ponderable facts of preceding sections, and therefore they are presented separately. They are not the least important part of this report, however, and they are stated with no less conviction.

No two cities, whether in Japan or the United States, are exactly alike. But the differences in terrain, layout and zoning, density, and type of construction can be allowed for one by one; when that is done, comparisons become possible. The most striking difference between American and Japanese cities is in residential districts: what happened to typical Japanese homes is not directly applicable to American residential districts. But in Japanese cities were many brick and wood frame buildings of Western or similar design and of good workmanship. It was the opinion of the Survey's engineers, with their professional familiarity with American buildings, that these Japanese buildings reacted to the bomb much as typical American buildings would have. And these buildings were exceedingly vulnerable: multi-story brick buildings with load-bearing walls were destroyed or seriously damaged over an area of 3.6 square miles at Hiroshima, while similar one-story brick buildings were destroyed or seriously damaged within an area of 6 square miles. Wood frame buildings built as industrial or commercial shops suffered similar damage in an area of over 8 miles, while Japanese residences were destroyed or seriously damaged within an area of 6 square miles. This was at Hiroshima, where the less powerful bomb was used!

These figures indicate what would happen to typical wood, brick, and stucco structures in American cities. Modern reinforced concrete and steel frame buildings would fare better here—as they did in Japan. But the following table shows how American cities are built, and how few buildings are of blast-resistant construction.

<table>
<thead>
<tr>
<th>City</th>
<th>Total structures reported</th>
<th>Wood</th>
<th>Brick</th>
<th>Stucco</th>
<th>Other materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>15,913,519</td>
<td>972</td>
<td>4,670</td>
<td>4,670</td>
<td>123,297</td>
</tr>
<tr>
<td>Washington</td>
<td>10,710,035</td>
<td>675</td>
<td>5,670</td>
<td>5,670</td>
<td>12,946</td>
</tr>
<tr>
<td>Chicago</td>
<td>10,710,035</td>
<td>675</td>
<td>5,670</td>
<td>5,670</td>
<td>12,946</td>
</tr>
<tr>
<td>Detroit</td>
<td>10,710,035</td>
<td>675</td>
<td>5,670</td>
<td>5,670</td>
<td>12,946</td>
</tr>
<tr>
<td>San Francisco</td>
<td>10,710,035</td>
<td>675</td>
<td>5,670</td>
<td>5,670</td>
<td>12,946</td>
</tr>
</tbody>
</table>

Source: Sixteenth Census of the United States (1940), vol. II.

The overwhelming bulk of the buildings in American cities could not stand up against an atomic bomb bursting a mile or a mile and a half from them.

And the people? We must not too readily discount the casualty rate because of the teeming populations of congested Japanese cities. American cities, too, have their crowded slums, and in addition tend to build vertically so that the density of the population is high in a given area even though each apartment dweller may have more living space than his Japanese equivalent.

Most of the population densities in this table are merely averages for people within a city limits. Most meaningful, therefore, are the figures for the central areas of Hiroshima and Nagasaki, and for the boroughs of New York. The casualty rates at Hiroshima and Nagasaki, applied to the massed inhabitants of Manhattan, Brooklyn, and the Bronx, yield a grim conclusion. These casualty rates, it must never be forgotten, result from the first atomic bombs to be used and from bombs burst
DAMAGE TO MACHINE TOOLS was usually indirect. At the Mitsubishi Steel and Arms Works, 4,200 feet from ground zero at Nagasaki, many closely packed machines escaped serious damage from collapsing roof trusses, but were exposed to the weather. Other machines were torn from their foundations by collapsing steel members.
at considerable distances above the ground. Improved bombs, perhaps detonated more effectively, may well prove still more deadly.

<table>
<thead>
<tr>
<th>City</th>
<th>Population</th>
<th>Area sq. mi.</th>
<th>Population density per sq. mi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>7,500,000</td>
<td>232.9</td>
<td>32,520</td>
</tr>
<tr>
<td>Manhattan (incl.)</td>
<td>2,200,000</td>
<td>22.2</td>
<td>100,000</td>
</tr>
<tr>
<td>Boston</td>
<td>1,120,000</td>
<td>41.4</td>
<td>27,000</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>1,700,000</td>
<td>50.9</td>
<td>34,200</td>
</tr>
<tr>
<td>Queens</td>
<td>1,300,000</td>
<td>121.1</td>
<td>11,100</td>
</tr>
<tr>
<td>Staten Island</td>
<td>120,000</td>
<td>57.2</td>
<td>2,100</td>
</tr>
<tr>
<td>Washington</td>
<td>625,001</td>
<td>46.1</td>
<td>11,000</td>
</tr>
<tr>
<td>Chicago</td>
<td>2,625,000</td>
<td>205.7</td>
<td>12,800</td>
</tr>
<tr>
<td>Detroit</td>
<td>1,625,000</td>
<td>132.8</td>
<td>12,100</td>
</tr>
<tr>
<td>San Francisco</td>
<td>600,000</td>
<td>44.6</td>
<td>14,300</td>
</tr>
<tr>
<td>Hiroshima</td>
<td>1,340,000</td>
<td>26.3</td>
<td>51,750</td>
</tr>
<tr>
<td>Center of city</td>
<td>1,000,000</td>
<td>4.6</td>
<td>25,000</td>
</tr>
<tr>
<td>Nagasaki</td>
<td>1,200,000</td>
<td>25</td>
<td>7,000</td>
</tr>
<tr>
<td>Bullion area</td>
<td>1,200,000</td>
<td>2.4</td>
<td>55,000</td>
</tr>
</tbody>
</table>

1 Forman.
2 As of Apr. 45.

B. WHAT WE CAN DO ABOUT IT

The danger is real—of that, the Survey’s findings leave no doubt. Scattered through those findings, at the same time, are the clues to the measures that can be taken to cut down potential losses of lives and property. These measures must be taken or initiated now, if their cost is not to be prohibitive. But if a policy is laid down, well in advance of any crisis, it will enable timely decentralization of industrial and medical facilities, construction or blueprinting of shelters, and preparation for life-saving evacuation programs. The almost unprotected, completely surprised cities of Japan suffered maximum losses from atomic bomb attack. If we recognize in advance the possible danger and act to forestall it, we shall at worst suffer minimum casualties and disruption.

Since modern science can be marshaled for the defense as well as the attack, there is reason to hope that protective weapons and techniques will be improved. Even protective devices and vigilance, however, cannot be perfect guards against surprise or initial attack, or against the unlimited choices of targets offered an enemy through the range and speed of modern weapons. In our planning for the future, if we are realistic, we will prepare to minimize the destructiveness of such attacks, and so organize the economic and administrative life of the Nation that no single or small group of successful attacks can paralyze the national organism. The foregoing description of the effectiveness of the atomic bomb has shown clearly that, despite its awesome power, it has limits of which wise planning will take prompt advantage.

1. Shelters.—The most instructive fact at Nagasaki was the survival, even when near ground zero, of the few hundred people who were properly placed in the tunnel shelters. Carefully built shelters, though unoccupied, stood up well in both cities. Without question, shelters can protect those who get to them against anything but a direct hit. Adequate warning will assure that a maximum number get to shelters.

Analysis of the protection of survivors within a few hundred feet of ground zero shows that shielding is possible even against gamma rays. At Hiroshima, for example, persons in a concrete building 3,000 feet from ground zero showed no clinical effects from gamma radiation, but those protected only by wooden buildings at a similar distance suffered from radiation disease. The necessary thickness varies with the substance and with the distance from the point of detonation. Adequate shelters can be built which will reduce substantially the casualties from radiation.

Men arriving at Hiroshima and Nagasaki have been constantly impressed by the shells of reinforced concrete buildings still rising above the rubble of brick and stone or the ashes of wooden buildings. In most cases gutted by fire or stripped of partitions and interior trim, these buildings have a double lesson for us. They show, first, that it is possible without excessive expense to erect buildings which will satisfactorily protect their contents at distances of about 2,000 feet or more from a bomb of the type so far employed. Construction of such buildings would be similar to earthquake resistant construction, which California experience indicates would cost about 10 percent to 15 percent more than conventional construction. Even against more powerful bombs or against near misses, such construction would diminish damage. Second, the internal damage illustrates the danger from interior details and construction which result in fire or flying debris in otherwise sound buildings. The elimination of combustible interiors and the provision of full-masonry partition
HEAVY ELECTRICAL EQUIPMENT such as this turbogenerator at Minami Sannamachi substation 7,200 feet from ground zero at Hiroshima, often survived the explosion.

NAGASAKI. Steel-frame building about 4,000 feet south of ground zero in Mitsubishi Steel and Arms Works distorted to grotesque shape by blast of bomb.
NAGASAKI SHELTERS. Tunnel shelters in the hillside, such as the ones pictured (very close to ground zero), protected the few occupants from blast, heat, and radiation.

HIROSHIMA EARTH-AND-POLE AIR-RAID SHELTER. This simple shelter is undamaged by fire and blast 5,000 feet northeast of ground zero, though surrounding buildings have been destroyed (Japanese photo, 10 August 1945).
walls, fire-resistive stair and elevator enclosures, and fire division walls would localize fires. Avoidance of glass, tile, or lath and plaster on wood stud would cut down damage from flying debris. The studies of the Physical Damage Division of the Survey support such recommendations and include many others.

The survival of sheltered sections of Nagasaki suggests forcefully the use that can be made of irregular terrain. Uneven ground reduces the spread and uniformity of blast effect. Terrain features such as rivers and parks afford natural firebreaks and avenues of escape.

2. Decentralization.—Hiroshima and Nagasaki were chosen as targets because of their concentration of activities and population. The population density of 45,000 or more per square mile of built-up area explains in part the high casualty rate. Significant therefore is the fact that deaths at Nagasaki, despite the greater population density, were only one-half those at Hiroshima: the difference can be assigned in the main to the separation of the dispersed built-up pockets at Nagasaki, in contrast to the uniform concentration of the inhabitants in the heart of Hiroshima. The Nagasaki bomb thus dissipated much of its energy against hills, water, or unoccupied areas, while the Hiroshima bomb achieved almost optimum effect.

The fate of industries in both cities again illustrates the value of decentralization. All major factories in Hiroshima were on the periphery of the city—and escaped serious damage; at Nagasaki, plants and dockyards at the southern end of the city were left intact, but those in the valley where the bomb exploded were seriously damaged. So spread out were the industries in both cities that no single bomb could have been significantly more effective than the two actually dropped.

Medical facilities, crowded into the heart of the city rather than evenly spread through it, were crippled or wiped out by the explosion. Only the previous removal of most of medical supplies from Hiroshima to outlying communities, and the bringing in of aid, enabled the limited medical attention of the first few days.

These results underline those in conventional area raids in Germany, where frequently the heart of a city was devastated while peripheral industries continued to produce and where (particularly in Hamburg) destruction of medical facilities just at the time of greatest need hampered care of wounded.

The similar peril of American cities and the extent to which wise zoning has diminished it differ from city to city. Though a reshaping and partial dispersal of the national centers of activity are drastic and difficult measures, they represent a social and military ideal toward which very practical steps can be taken once the policy has been laid down. In the location of plants, administrative headquarters, and hospitals particularly, the value of decentralization is obvious, and can be obtained cheaply if the need is foreseen. For example, by wise selection of dispersed sites, the present hospital building program of the Veterans’ Administration could be made to lessen our congestion without additional cost.

Reserve stocks of critical materials and of such products as medical supplies should be kept on hand. This principle of maintaining reserves applies also to the capital equipment of the country. Key producing areas must not be served by a single source of power or channel of transportation. Indispensable materials must not come from processing plants of barely adequate capacity. Production of essential manufactured goods—civilian and military—must not be confined to a few or to geographically centralized plants. And the various regions of the country should be encouraged to approach balanced economic development as closely as is naturally possible. An enemy viewing our national economy must not find bottlenecks which use of the atomic bomb could choke off to throttle our productive capacity.

3. Civilian defense.—Because the scale of disaster would be certain to overwhelm the locality in which it occurs, mutual assistance organized on a national level is essential. Such national organization is by no means inconsistent with decentralization; indeed, it will be aided by the existence of the maximum number of nearly self-sustaining regions whose joint support it can coordinate. In addition, highly trained mobile units skilled in and equipped for fire fighting, rescue work, and clearance and repair should be trained for an emergency which disrupts local organization and exceeds its capability for control.

Most important, a national civilian defense organization can prepare now the plans for necessary steps in case of crisis. Two complementary programs which should be worked out in advance are those for evacuation of unnecessary inhabitants.
THIS STEEL FRAME BUILDING, 2,000 feet from ground zero at Hiroshima, had its first-story columns buckle away from the blast, dropping the second story to the ground. Combustibles were destroyed by fire.

COLLAPSE OF REINFORCED CONCRETE BUILDING. Chugoku Coal Distribution Control Co., 700 feet from ground zero at Hiroshima.
from threatened urban areas, and for rapid erection of adequate shelters for people who must remain.

4. Active defence.—Protective measures can substantially reduce the degree of devastation from an atomic bomb and the rate of casualties. Yet if the possibility of atomic attack on us is accepted, we must accept also the fact that no defensive measures alone can long protect us. At best they can minimize our losses and preserve the functioning of the national community through initial or continuing partial attack. Against full and sustained attacks they would be ineffectual palliatives.

As defensive weapons, atomic bombs are useful primarily as warnings, as threats of retaliation which will restrain a potential aggressor from their use us from the use of poison gas or biological warfare. The mission of active defense, as of passive defense, is thus to prevent the surprise use of the atomic bomb from being decisive. A wise military establishment will make sure—by dispersal, concealment, protection, and constant readiness of its forces—that no single blow or series of blows from an enemy can cripple its ability to strike back in the same way or to repel accompanying attacks from other air, ground, or sea forces. The measures to enable this unrelenting state of readiness are not new; only their urgency is increased. Particularly is this true of the intelligence activities on which informed decisions and timely actions depend.

The need for research is not limited to atomic energy itself, but is equally important in propellants, detection devices, and other techniques of countering and of delivering atomic weapons. Also imperative is the testing of the weapon's potentialities under varying conditions. The coming Operation Crossroads, for example, will give valuable data for deciding more precisely what is already known about the atomic bomb's effectiveness when air-burst; more valuable, however, will be tests under new conditions, to provide sure information about detonations at water level or under water, as well as underground. While prediction of effects under differing conditions of detonation may have a high degree of probability, verified knowledge is a much better basis for military planning.

5. Conclusion.—One further measure of safety must accompany the others. To avoid destruction, the surest way is to avoid war. This was the Survey's recommendation after viewing the rubble of German cities, and it holds equally true whether one remembers the ashes of Hiroshima or considers the vulnerability of American cities.

Our national policy has consistently had as one of its basic principles the maintenance of peace. Based on our ideals of justice and of peaceful development of our resources, this disinterested policy has been reinforced by our clear lack of anything to gain from war—even in victory. No more forceful arguments for peace and for the international machinery of peace than the sight of the devastation of Hiroshima and Nagasaki have ever been devised. As the developer and exploiter of this ominous weapon, our nation has a responsibility, which no American should shirk, to lead in establishing and implementing the international guarantees and controls which will prevent its future use.
UNITED STATES STRATEGIC BOMBING SURVEY

European War

LIST OF REPORTS

The following list of studies is a bibliography of completed reports resulting from the German survey. Reports numbers 1, 2, and 3 can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. Permission to examine the remaining reports may be had by writing to the headquarters of the Survey at Gravelly Point, Washington 25, D. C.

1. The United States Strategic Bombing Survey: Summary Report (European War)
2. The United States Strategic Bombing Survey: Overall Report (European War)
3. The Effects of Strategic Bombing on the German War Economy

AIRCRAFT DIVISION
(By Division and Branch)

4. Aircraft Division Industry Report
5. Inspection Visits to Various Targets (Special Report)

Airframes Branch

6. Junkers Aircraft and Aero Engine Works, Dessau, Germany
7. Erich Maschinenwerke G m b H, Hettfeldt, Germany
8. A T G Maschinenbau, G m b H, Leipzig (Mockau), Germany
9. Guthner Waggonfabrik, A G, Gotha, Germany
10. Focke Wulf Aircraft Plant, Bremen, Germany (over-all Report)
12. Dornier Works, Friedrichshafen & Munich, Germany
13. Gebruder Fieseler Werke G m b H, Kassel, Germany
14. Wiener Neustadter Flugzeugwerke, Wiener Neustadt, Austria

Aero Engines Branch

15. Hunsing NAG Flugmotorenwerke G m b H, Bruns- wick, Germany
16. Mittel-Deutsche Motorenwerke G m b H, Taucha, Germany
17. Bavarian Motorworks Inc., Elsenach & Durenhof, Germany
18. Bayerische Motorenwerke A G (BMW) Munich, Germany
19. Henschel Flugmotorenwerke, Kassel, Germany

Light Metal Branch

20. Light Metals Industry—Part I, Aluminum of Germany
21. Vereinigte Deutsche Metallwerke, Hildesheim, Germany
22. Metallgussgesellschaft G m b H, Leipzig, Germany
23. Aluminiumwerk G m b H, Plant No. 2, Bitterfeld, Germany
24. Gehrude Glashütte G m b H, Ludwigsf. Germany
25. Luftschiffbau Zeppelin G m b H, Friedrichshafen on Bodensee, Germany
26. Wieland Werke A G, Ulm, Germany
27. Rudolph Reutenbach Leichtmetallwerkstätten, Solingen, Germany
28. Lipnowerke Vereinigte Aluminiumwerke A G, Lauen, Germany
29. Vereinigte Deutsche Metallwerke, Heilbronn, Germany

AREA STUDIES DIVISION

31. Area Studies Division Report
32. A Detailed Study of the Effects of Area Bombing on Hamburg
33. A Detailed Study of the Effects of Area Bombing on Wuppertal
34. A Detailed Study of the Effects of Area Bombing on Dusseldorf
35. A Detailed Study of the Effects of Area Bombing on Solingen
36. A Detailed Study of the Effects of Area Bombing on Reimscheld
37. A Detailed Study of the Effects of Area Bombing on Darmstadt
38. A Detailed Study of the Effects of Area Bombing on Lubeck
39. A Brief Study of the Effects of Area Bombing on Berlin, Augsburg, Bockum, Leipzig, Hagen, Dortmund, Oberhausen, Schweinfurt, and Bremen

CIVILIAN DEFENSE DIVISION

40. Civilian Defense Division—Final Report
41. Cologne Field Report
42. Bonn Field Report
43. Hanover Field Report
44. Hamburg Field Report—Vol I, Text; Vol II, Exhibits
45. Bad Oldesloe Field Report
46. Augsburg Field Report
47. Reception Areas in Bavaria, Germany

EQUIPMENT DIVISION

Electrical Branch
48. German Electrical Equipment Industry Report
49. Brown Boveri et Cie, Mannheim Kafertal, Germany

Optical and Precision Instrument Branch
50. Optical and Precision Instrument Industry Report

Abrasive Branch
51. The German Abrasive Industry
52. Mayer and Schmidt, Offenbach on Main, Germany

Anti-Friction Branch
53. The German Anti-Friction Bearings Industry

Machine Tools Branch
54. Machine Tools & Machinery as Capital Equipment
55. Machine Tool Industry in Germany
56. Herman Kolb Co., Cologne, Germany
57. Collet and Engelhard, Offenbach, Germany
58. Naxos Union, Frankfurt on Main, Germany

MILITARY ANALYSIS DIVISION

59. The Defeat of the German Air Force
60. V-Weapons (Crossbow) campaign
61. Air Force Rate of Operation
63. Bombing Accuracy, USAF Heavy and Medium Bombers in the ETO
64. Description of RAF Bombing

MORAL DIVISION

Medical Branch
65. The Effect of Bombing on Health and Medical Care in Germany

MUNITIONS DIVISION

Heavy Industry Branch
66. The Coking Industry Report of Germany
68. Gutehoffnungshütte, Oberhausen, Germany
69. Friedrich-Alfred Hutte, Rheinhausen, Germany
70. Nunkirchen Eisenwerke A G, Nunkirchen, Germany
71. Reichswerke Hermann Goering A G, Hallendorf, Germany
72. August Thyssen Hütte A G, Hamborn, Germany
73. Friedrich Krupp A G, Borbeck Plant, Essen, Germany
74. Dortmund Hoerder Huetttenverein, A G, Dortmund, Germany
75. Hoese A G, Dortmund, Germany
76. Bochumer Verein fuer Gusstahlfabrikation A G, Bochum, Germany

Motor Vehicles and Tanks Branch
77. German Motor Vehicles Industry Report
78. Tank Industry Report
79. Daimler Benz A G, Untertürkheim, Germany
80. Renault Motor Vehicles Plant, Billancourt, Paris
81. Adam Opel, Ruesselsheim, Germany
82. Daimler Benz-Gaggenau Works, Gaggenau, Germany
83. Maschinenfabrik Augsburg-Nürnberg, Nuremberg, Germany
84. Auto Union A G, Chemnitz and Zwickau, Germany
85. Henschel and Sohn, Kassel, Germany
86. Maybach Motor Works, Friedrichshafen, Germany
87. Volgltander Maschinenfabrik A G, Plauen, Germany
88. Volkswagenwerke, Fallersleben, Germany
89. Russkiy MAF, Brunswick, Germany
90. Muchmore Industrie A G (Ming) Brunswick, Germany
91. Friedrich Krupp Gusswerkze, Magdeburg, Germany

Submarine Branch
92. German Submarine Industry Report
93. Maschinenfabrik Augsburg-Nürnberg A G, Augsburg, Germany
94. Holm and Voss Shipyards, Hamburg, Germany
95. Deutsches-Krewer A G, Kiel, Germany
96. Deutsche Schiff und Maschinenbau, Bremen, Germany
97. Friedrich KruppGermanwalwerk, Kiel, Germany
98. Howaldtswerke A G, Hamburg, Germany
99. Submarine Assembly Shelter, Farge, Germany
100. Bremer Vulkan, Vegesack, Germany

Ordnance Branch
101. Ordnance Industry Report
102. Friedrich Krupp Gusswerkze A G, Magdeburg, Germany
103. Bochumer Verein fuer Gusstahlfabrikation A G, Bochum, Germany
104. Henschel and Sohn, Kassel, Germany
105. Rheinmetall-Borsig, Duisdorf, Germany
106. German Georing Werke, Braunschweig, Hallendorf, Germany
107. Hammoversche Maschinenbau, Hamer, Germany
108. Gusstahlfabrik Friedrich Krupp, Essen, Germany

OIL DIVISION

109. Oil Division Final Report
110. Oil Division Final Report, Appendix
111. Powder, Explosives, Special Rockets and Jet Propellants, War Gases and Smoke Acid (Ministerial Report #1)
112. Underground and Dispersal Plants in Great Britain, Germany
113. The German Oil Industry, Ministerial Report Team 78
114. Ministerial Report on Chemicals

Oil Branch
115. Ammoniakwerke Mersburg G m b H, Leuna, Germany—2 appendices
116. Braunkohle Benzol A G, Zeitz and Bohlen, German Wintershall A G, Lustakendorf, Germany
117. Ludwigshafen-Oppau Works of IG Farbenindustrie A G, Ludwigshafen, Germany
118. Ruhrwer Hydrogenation Plant, Bottrop-Boy, Germany, Vol I and Vol II
Rubber Branch

129 Deutsche Dunlop Gummi Co., Hanau on Main, Germany

132 Continental Gummiwerke, Hannover, Germany

138 Hoesch Synthetic Rubber Plant

159 Ministerial Report on German Rubber Industry

Propellant Branch

130 Elektro-Chemisk Werke, Munich, Germany

131 Schoene beck Explosive Plant, Düsseldorf Sprengstoff Werke G.m.b.H., Bad Salzuflen, Germany

132 Plants of Dynamit A.G. Vorna, Alfred Nobel & Co., Troisdorf, Cautenthal, Drunhal and Danube, Germany

133 Deutsche Sprengstoffe GmbH, Kralburg, Germany

OVERALL ECONOMIC EFFECTS DIVISION

134 Overall Economic Effects Division Report

135 Gross National Product---------- Special papers

136 Kriegs Erleichte---------- which together

137 Herman Goering Works---------- comprise the

138 Food and Agriculture---------- above report

PHYSICAL DAMAGE DIVISION

135 Villeneuve Airfield, Paris, France

136 Railroad Repair Yards, Malines, Belgium

137 Railroad Repair Yards, Louain, Belgium

138 Railroad Repair Yards, Hasselt, Belgium

139 Railroad Repair Yards, Nurnau, Belgium

140 Submarine Pens, Brest, France

141 Powder Plant, Angoulême, France

142 Powder Plant, Bordeaux, France

143 Coking Plants, Montigny & Liego-Belgium

144 Fort St. Blaise Verdun Group, Metz, France

145 Gnome et Rhone, Limoges, France

146 Michelin Tire Factory, Clermont-Ferrand, France

147 Gnome et Rhone Aero Engine Factory, Le Mals, France

148 Kugelblitser Bearing Ball Plant, Ebelknecht, Germany

149 Louis Breguet Aircraft Plant, Toulouse, France

150 S. C. A. E. Aircraft Plant, Toulouse, France

151 A. L. A. Aircraft Plant, Toulouse, France

152 V Weapons in London

153 City Area of Kobe

154 Public Air Raid Shelters in Germany

155 Gudenberg Thermal Electric Power Station, Knapsack, Germany

156 Braunweller Transformer & Switching Station, Brauweller, Germany

157 Storage Depot, Nuthelenbach, Germany

158 Railway and Road Bridge, Bud Munster, Germany

159 Railway Bridge, Elbe, Germany

160 Gustloff Werke, Wismar, Germany

161 Haaschel and Sohn G.m.b.H., Kassel, Germany

162 Air Survey at Flimmsmern, Germany

163 Hamburgh, Hanover, Germany

164 Mannesmann, Hanover, Germany

165 A. T. G. Maschinenbau GmbH, Moorkan, Germany

166 Kuhn Maschinenwerke GmbH, Moorkan, Germany

167 Bayerische Motorenwerke Darrerhoff, Germany

168 Mittel-Deutsche Motorenwerke GmbH, Tuchow, Germany

169 Submarine Pens, Deutsche Werft, Hamburg, Germany

170 U-Boot Werke, Hamburg, Germany

171 U-Boot Werke, Hamburg, Germany

174 Kassel Marshalling Yards, Kassel, Germany

175 Munenbeckwerke, Munenbecken, Germany

176 Brown Boveri et Cie, Mannheim, Kurfürstent, Germany

177 Adam Opel A.G., Russelheim, Germany

178 Daimler-Benz A.G., Unfurth, Germany

179 Valentin Unterufer Assembly, Forge, Germany

180 Volkswagenwerke, Fallersleben, Germany

181 Railway Vinduct at Bidefeld, Germany

182 Ship Yards Dowaldswinke, Hamburg, Germany

183 U-Boot Werke, Hamburg, Germany

184 Daimler-Benz A.G., Mannheim, Germany

185 Synthetic Oil Plant, Meerbeck, Hamburg, Germany

186 Gewerkschaft Victor, Castrop-Rauxel, Germany

187 Klockner Humboldt Deutz, Ulm, Germany

188 Ruhredd Hydrogenation Plant, Böttrop-Bay, Germany

189 Neukirchen Eiselewerke A.G., Neukirchen, Germany

190 Railway Vinduct at Altenbeuren, Germany

191 Railway Vinduct at Alsenburg, Germany

192 Deuring-Norma Rodenburg, Misburg, Germany

193 Fire Raids on German Cities

194 1 G FarbenIndustrie, Ludwigshafen, Germany, Vol 1 & Vol II

195 Roundhouse in Marshalling Yards, Ulm, Germany

196 1 G FarbenIndustrie, Leverkusen, Germany

197 Chemische Werke, Ruels, Germany

198 Grenberg Marshalling Yard, Grenberg, Germany

199 Locomotive Shops and Bridges at Hanau, Germany

TRANSPORTATION DIVISION

200 Transportation Division Report

201 Rail Operations Over the Brenner Pass

202 Effects of Bombing on Railroad Installations in Regensburg, Nurnberg and Munich Divisions.

203 German Locomotive Industry During the War

204 Wehrmacht Train Over the German Railroads

UTILITIES DIVISION

206 German Electric Utilities Industry Report

207 1 to 10 in Vol I "Utilities Division Plant Reports"

208 11 to 20 in Vol II "Utilities Division Plant Reports"

209 21 Rheinische-Westfälische Elektrizitätswerk A G
Notes for the Chairman’s a-bomb report (Appendix III)


3. UAD, Hiroshima, p. 19; Medical Division, p. 57; Table 16, UAD, Hiroshima, p. 21. The table uses the figure 78,657 as killed and missing and 42,371 as injured in the March 9 Tokyo air raid. For other figures, see, UAD, Tokyo-Kawasaki-Yokohama, p. 1; PDD, Japan, pp. 107, 111. The PDD Japan report lists the dead and injured in the March 9 Tokyo air raid as 83,793 and 40,918, respectively.

4. UAD, Nagasaki, p. 10; Morale Division, p. 91.

5. Nagasaki Prefecture, “A Synopsis Report of the Air-Raid Disaster at Nagasaki, August 9th,” September 1, 1945, translated from document obtained by Team 2 from Pacificification Section, Nagasaki Prefecture Government, EXHIBIT A, PDD, Nagasaki, Vol. III, p. 197. The original translation of the report can be found as Report No. 3v(68), Roll No. 60, USSBS ROR. A slightly different translation and the original Japanese report [長崎県『八月九日長崎市空襲災害概要報告書』（昭和二十年九月一日）] can be found as Report No. 3c(16), Roll 52, USSBS ROR.

6. CDD, Nagasaki, pp. 63, 73; CDD, Japan, p. 6; PDD, Nagasaki, p. 10.


10. UAD, Hiroshima, pp. 1-3, 15; UAD, Population and casualty figures for Hiroshima and Nagasaki, March 14, 1946, Report No. 3f(27), Roll 54; Report No. 60a(2), p. 49, Roll 304, bot of USSBS ROR.

11. PDD, The Preliminary Physical Damage Report on the Atomic Bomb, Report No. 92a, Roll 326A, pp. 2, 7-8, USSBS ROR; PDD, Nagasaki, Vol. I, p. 10; Vol. II, p. 5; Hiroshima, Vol. I, p. 11; PDD, Japan, pp. 166-167; UAD, Hiroshima, p. 15. The PDD Hiroshima report, on the other hand, specifies that 15,000 combustible buildings, slightly less than one-sixth of all buildings in the city, were reported to have been removed up to 6 August 1945 (Vol. II, p. 12).


13. UAD, Hiroshima, pp. 19-21; Medical Division, Hiroshima and Nagasaki, p. 57; UAD, Report No. 60a(2), pp. 53-54, Roll 304, USSBS ROR.


16. Eyewitness Account of the Bombing of Hiroshima by Father Siemes of Hiroshima and biographical material about the author (part Japanese), Report No. 3c(10), pp. 2, 6, Roll 52, USSBS ROR. The account was obtained by the joint investigations of a U.S. Army and NavTechJap.


25. Report on number of households and population of 5 cities of Hiroshima Prefecture (1 November 1945) (4) (part Japanese), Source: Hiroshima Prefectural Office [広島県下五市ニ於ケル世帯並ニ人口数調査表 (昭和二十年十一月一日調)] , Report No. 3b(12), Roll No. 51; UAD, Report No. 1c(5), dated Jan. 23, 1946, p. 19; Roll 10; Report No. 92f(1)(j), Report by Col. Oya, p. 8; Report No. 92f(1)(c), Report by the Governor of Hiroshima, p. 5, both in Roll 327; Report No. 93a(4)(b) Report from Governor of Nagasaki, pp. 35-36, Roll 330; Report No. 93h(1), translations of official and industrial documents obtained in Nagasaki, pp. 6, 61-62, 75, 148, Roll 332, all of USSBS ROR; UAD, *Hiroshima*, p. 19; PDD, *Hiroshima*, Vol. I, pp. 9, 17. In these reports, the number of buildings still standing is said to be 30 and all of these except two, not five, were gutted by fire.


31. UAD, *Nagasaki*, pp. 8-9. The number of residential buildings destroyed or badly damaged (276) is wrong. The correct number is 476.
35. CCD, *Nagasaki*, pp. 41-47.
36. CCD, *Nagasaki*, pp. 36-37; Medical Division, *Hiroshima and Nagasaki*, p. 77; Nagasaki Shi and Ken population figures (1 November 45) (1), Source: Ken foreign affairs section, Report No. 3b(1) and Report No. 3b(14); 長崎県五市人口調査（昭和二十年十一月一日現在）, both in Roll 51, USSBS ROR. The precise figure in these reports is 142,748. Nagasaki Shi & Ken Population Figures as of 1 Nov, Report No. 3b(1), Roll 51; Nagasaki Prefecture, "A Synopsis Report of the Air-Raid Disaster at Nagasaki, August 9th," p. 197, September 1, 1945[長崎県『八月九日長崎市空襲災害概要報告書』（昭和二十年九月一日）], Report No. 3c(16), Roll 52, all of USSBS ROR; PDD, *Hiroshima*, Vol. I, pp. 13-15; Vol. II, pp. 21, 24, 28, 34.
37. A Synopsis Report of the Air-Raid Disaster at Nagasaki, August 9th," September 1, 1945[長崎県『八月九日長崎市空襲災害概要報告書』（昭和二十年九月一日）], Report No. 3c(16), frame 516, Roll 52, USSBS ROR.
44. Interrogation No. D-23, History of production at the company's Nagasaki's Plants, Dec. 1, 1945, Report No. 59f, Roll 303A, USSBS ROR. No exact wording, but calculation leads to the figures written.
50. Medical Division, *Hiroshima and Nagasaki*, pp. 43-55.
54. Medical Division, *Hiroshima and Nagasaki*, pp. 27.
57. Medical Division, *Hiroshima and Nagasaki*, pp. 27-36.
60. Medical Division, *Hiroshima and Nagasaki*, pp. 24-25.
63. Medical Division, *Hiroshima and Nagasaki*, p. 46.
64. Medical Division, *Hiroshima and Nagasaki*, p. 49.
69. Medical Division, *Hiroshima and Nagasaki*, p. 54.
70. Medical Division, *Hiroshima and Nagasaki*, p. 49, 53, 54.
71. Medical Division, *Hiroshima and Nagasaki*, pp. 19, 55.
72. The Feb. 6 draft, pp. 4-7; March 15 draft, pp. 4-7; June 15 draft, pp. 5-9; Morale Division, pp. 92-93.
73. The Feb. 6 draft, p. 4; March 15 draft, p. 4; June 15 draft, p. 9; Morale Division, p. 93.
74. The Feb. 6 draft, p. 4; March 15 draft, p. 4.
75. The Feb. 6 draft, p. 5; March 15 draft, p. 5.
76. The Feb. 6 draft, p. 5; March 15 draft, p. 5.
77. The Feb. 6 draft, pp. 4-6; March 15 draft, pp. 4-6.
78. Morale Division, p. 91; Feb. 6 draft, pp. 1-2; March 15 draft, pp. 1-2; June 15 draft, pp. 1-2; Special Report, Report No. 14f(9)(a), frame 559, Roll 125, USSBS ROR. In the last report, the interviewee, a reporter of the local Chugoku Shimbun, tells of the rumors people talked about regarding the reason why Hiroshima had not been bombed.
79. The Feb. 6 draft, pp. 2-3; March 15 draft, pp. 2-3; June 15 draft, pp. 2-3; Morale Division, p. 92.
80. The Feb. 6 draft, pp. 2-3; March 15 draft, pp. 2-3; June 15 draft, p. 4; Table 81, Morale Division, p. 92. The figures were 46%, 56%, 33%, 44%, 13%, and 21%, in the Feb. 6, but were modified to 45%, 61%, 51%, 44%, 7%, and 17%, in the March 15 draft, and were changed to 59%, 74%, 31%, 47%, 12%, and 34%, in the June 15 draft, respectively.
81. The Feb. 6 draft, p. 3; March 15 draft, p. 3. The figures were 29% and 38% in the Feb. 6 draft, but were modified to 28% and 39% in the March 15 draft.
82. The Feb. 6 draft, p. 3; March 15 draft, p. 3.

83. The Feb. 6 draft, p. 7; March 15, p. 9; June 15 draft, pp. 14-15; Morale Division, p. 95. "An additional 28 percent" was originally "Twenty-nine percent" in the Feb. 6 draft and was modified to "Twenty-eight percent" in the March 15 draft.

84. The Feb. 6 draft, p.8; March 15 draft, p. 9; June 15 draft, p. 16; Morale Division, p. 96.

85. The Feb. 6 draft, p.9; March 15 draft, p. 10.

86. The Feb. 6 draft, p.9; March 15 draft, p. 9.

87. The Feb. 6 draft, p.6; March 15 draft, p. 7; June 15 draft, p. 10; Morale Division, pp. 93-94.

88. The Feb. 6 draft, p.6; March 15 draft, p. 7; June 15 draft, p. 10; Morale Division, p. 94.

89. The Feb. 6 draft, p.6; March 15 draft, p. 8.

90. The Feb. 6 draft, p.6; March 15 draft, p. 8; June 15 draft, p. 10; Morale Division, p. 94.

91. The Feb. 6 draft, p.7; March 15 draft, pp. 8-9.

92. The Feb. 6 draft, p.7; March 15 draft, p. 9; June 15 draft, p. 9; Morale Division, p. 92.

93. The Feb. 6 draft, p.9; March 15 draft, p. 10; June 15 draft, p. 20; Morale Division, p. 97.

94. The Feb. 6 draft, p.11; March 15 draft, p. 11; June 15 draft, pp. 20-21; Morale Division, p. 97.

95. The Feb. 6 draft, p.11; March 15 draft, p. 11-12; June 15 draft, pp. 3-4; Morale Division, pp. 91-92. Also, see, Table 81 in Morale Division, p. 92.

96. The Feb. 6 draft, p.11; March 15 draft, p. 12; June 15 draft, p. 22; Morale Division, p. 97.

97. The Feb. 6 draft, p.11; March 15 draft, p. 12; June 15 draft, pp. 22-23; Morale Division, pp. 97-98.

98. The June 15 draft, p. 22; Morale Division, p. 97; Table 89, Morale Division, p. 98.

99. The Feb. 6 draft, p.12; March 15 draft, p. 12; June 15 draft, p. 23; Morale Division, p. 98. See, also, Table 89, Morale Division, p. 98. The distance in this report is 60 miles, not 40 miles.

100. The Feb. 6 report, p.13; March 15 draft, p. 15.

101. The Feb. 6 draft, p. 3; March 15 draft, p. 3; June 15 draft, pp. 12-13; Morale Division, p. 99.

102. The Feb. 6 draft, p. 12; March 15 draft, pp. 12-13; June 15 draft, pp. 25-26; Morale Division, p. 99. The latter phrase was "The atomic bomb had less effect on the morale of the rank and file of civilians than on government leaders" in the Feb. 6 draft but was changed to "The atomic bomb had less effect on the morale of the rank and file of civilians outside of the target cities than on government leaders" in the March 15 draft and modified to "The atomic bomb had more effect on the thinking of government leaders than on the morale of the rank and file of civilians outside of the target cities" on the June 15 draft. The wordings of earlier drafts are also a little different. And the first draft used the date "20 June" instead of "26 June." The date 26 June appears as modification on the March 15 draft. Also, the Feb. 6 draft emphasize the role of the atomic bomb, saying, "Although there were difficulties in negotiation before the Potsdam Declaration was accepted, it was the atomic bomb which first offered certain government leaders the opportunity to sway the military." (pp. 12-13)

103. The June 15 draft, p. 26; Morale Division, p. 99.

104. The June 15 draft, p. 27; Morale Division, p. 99.

105. The June 15 draft, p. 27; Morale Division, p. 99.
106. The June 15 draft, pp. 27-29; Morale Division, pp. 99-100.
107. The June 15 draft, p. 29; Morale Division, p. 100.
108. The June 15 draft, p. 29; Morale Division, p. 100. The text was changed from “It is apparent, however, that the Government was looking for an opportunity to surrender, and the testimony of various Japanese leaders indicate that some other excuses would have been found at an early date even if the atomic bomb had not been dropped” in the third draft.
111. Medical Division, *Hiroshima and Nagasaki*, pp. 25, 27.
113. Medical Division, *Hiroshima and Nagasaki*, pp. 27, 36.
115. Medical Division, *Hiroshima and Nagasaki*, p. 46.
117. Medical Division, *Hiroshima and Nagasaki*, pp. 43, 84.
118. Medical Division, *Hiroshima and Nagasaki*, p. 49.