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## Hiroshima and Nagasaki: The Physical, Medical, and Social Effects of the Atomic Bombings

Richard Ned Lebow

The Committee for the Compilation of Material, on Damage Caused by the Atomic Bombs in Hiroshima and Nagasaki

Eisei Ishikawa

David L. Swain

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conflict with his civilian superiors that he was not reappointed to a second tour. Because he disagreed with the acquisition of the F-111B from General Dynamics, he earned the enmity of SecDef McNamara's team. He crossed the Secretary personally over management of the Cuban blockade. By going somewhat quietly, to be Ambassador to Portugal, he forfeited the opportunity to take the Navy's grievances to Congress and its public.

Admiral Anderson's successor was another naval aviator. Admiral David L. McDonald. During his four years he pressed forward with the Navy's plans to add three more nuclear carriers to the fleet and did his best to maintain the strength of the operating forces while the war in Vietnam was prosecuted. Like Anderson before him, he was unable to stave off SecDef's moves to take control of naval operations, nor was he able to maintain CNO's traditional authority to assign flag officers. Still, he succeeded in bringing Admiral Thomas H. Moorer in as his successor, and thus the stress on the development of the carrier battle groups went forward.

As Professor McDonald notes, Admiral Moorer had two principal tasks to achieve, once he took office. He had to see that the Navy executed its assigned missions in Vietnamese waters, and he had to maintain enough naval capability to meet its other obligations throughout the rest of the world. Given the insistence of the Johnson administration on having both "guns and butter," Moorer fared no better than McDonald in increasing the Navy's strength. Admirals Burke, Anderson, McDonald, and Moorer strove constantly to awaken the nation to the increasing danger from Soviet naval growth, but none was particularly successful in this endeavor.

authority limited by the centralization of power in the office of SecDef.

The volume ends with Norman Friedman's essay on Admiral Zumwalt. Given the controversial nature of his four years as CNO, and the recency of the period, Dr. Friedman did a good job of highlighting the goals and controversies of the admiral's tours. Like his predecessors, Zumwalt strove constantly to alert the administration, Congress, and the public to the Soviet naval threat. He fostered strategic planning and attempted to develop construction programs in support of the plans.

Conscious that morale had reached bottom, due to the lack of public support for the war in Vietnam, he initiated programs aimed at restoring pride in the service and thereby increasing reenlistment rates. Like his "high-low" approach to construction planning, the attempts to boost morale and enlistments proved highly controversial. It is fairly clear that both he and the Navy heaved sighs of relief when he went on the retired list. Dr. Friedman's essay is fair to the admiral, and the Navy, but many more years will have to pass before the impact of Elmo Zumwalt can be properly assessed.

On balance, this reviewer does not hesitate to recommend Professor Love's book to the armed services professional. There are occasional slips of the professional pen, such as describing Admiral Anderson as the first Catholic CNO (Admiral Benson was the first!), but these are few. More importantly, there is much of value to be learned from these essays and they deserve reading.

GERALD E. WHEELER San José State University

Soviet naval growth, but none was particularly successful in this endeavor.

After Burke, all of the CNOs found their Published by U.S. Naval war College Digital Commons, 1982

The Committee for the Compilation of Materials on Damage Caused by the Atomic Bombs in Hiroshima and

Nagasaki, Hiroshima and Nagasaki: The Physical, Medical, and Social Effects of the Atomic Bombings. trans. Eisei Ishikawa and David L. Swain. New York: Basic Books, 1981. 706pp. \$37.50

This study represents the most complete account to date of the consequences of the atomic bombings of Hiroshima and Nagasaki. It is an indispensable source and reference book for those interested in studying the physical, medical and social effects of nuclear weapons. The findings themselves are of great contemporary importance for they indicate the staggering destructiveness of nuclear warfare.

Three kinds of findings merit brief elaboration in this regard. First of all, the Committee found that every index of directly measurable human cost, i.e., fatalities, chronic and delayed diseases, chromosomal damage and mental illness, was considerably higher than earlier studies had supposed or predicted. Moreover, much of this suffering and death occurred more than a week after the bombs were dropped.

Although fatalities dropped sharply after two weeks, it remains impossible to calculate the total number of the victims in part because people are still dying, thirty-seven years later, from bombrelated illnesses. The Department of Defense most often uses the first week after a nuclear attack to calculate fatalities in its nuclear war scenarios, and then only from blast, fire, and radiation. The study indicates that this is a very misleading measure that dramatically underestimates fatalities to say nothing of casualties.

The second important finding pertains to the synergistic effects of bomb damage, that is the ways in which one kind of destruction magnifies the effects of another. Because medical care was inadequate, fatalities at both Hiroshima

and Nagasaki were higher than they might have been; the care was inadequate because ninety percent of the doctors and nurses in Hiroshima were themselves killed by the bomb. Public health, relief work and every other kind of post-attack activity suffered from the same problem; the individuals and sometimes the institutions upon which such activity depended had simply ceased to exist.

The study notes: "When the key members of a community are wiped out or wounded, the community itself disintegrates, and traditional society collapses." Hiroshima and Nagasaki ultimately "recovered" only because of help from the outside. A nuclear war between today's superpowers, even one short of an all-out exchange, might not leave sufficient outside resources untouched and able to come to the aid of stricken populations. Recovery under such circumstances would be questionable.

Finally, the study takes note of the psychological impact of nuclear attack. The survivors were severely traumatized by their experience. In the short-term, the hours and days following the attack, the majority were so numbed by their experience as to be incapable of anything resembling normal functioning.

Perhaps even more important are the long term effects. As Robert Lifton has reported, survivors feel themselves to be the "living dead," the victims of "a grotesque, absurd, collective, unacceptable and unabsorbable death" that forever separates them from non-victims and makes it difficult, and in some cases impossible, for them to find renewed purpose in their lives.

Such a phenomenon on a society-wide scale might pose an even greater threat to the survival of a political order or even society itself than all the destruction caused by blast, fire, and radiation. Evidence from past disasters like the Black Death tend to support this contention.

The warning is clear: mankind stands at the brink of self-destruction. Those strategists and officials for whom nuclear war has become a conceivable option would do well to pause and consider the folly of their position.

RICHARD NED LEBOW Johns Hopkins University School of Advanced International Studies, The Bologna Center

Friedman, Norman. Naval Radar. Annapolis, Md.: Naval Institute Press, 1981. 240pp. \$31.95

Naval Radar, published first in Great Britain by Conway Maritime Press, Ltd., is now offered in this country by the Naval Institute. The volume is extensively illustrated. Regretfully, portions of the text appear to have been composed in haste. Despite an advanced degree in electrical engineering, introduction into radar development in 1940, assignment as fire control officer in a new capital ship and also radar officer from the time the CXAM-1 came on board, experience with radar in combat, and postwar responsibilities in research and development, this reviewer found Part 1, entitled "Theory, Function, Performance," to be very laborious reading. One reason is the author's apparent predilection for details, often covered in fragmentary and seemingly disjointed fashion. Clarity of the work suffers from the extent to which abbreviations are used and the frequency with which technical or quasitechnical phraseology is inserted, sometimes unnecessarily or not in proper context. This first part of the book would have benefited from more synthesis and correlation of bits and pieces. Yet another problem lies with the number of statements or interpretations

that could be subject to misunderstanding, might lead to confusion, or are in error. Anyone seeking to use the volume as a reference work should do so selectively and with caution.

There is some historical background in Part 1, followed by peripheral material on radio and on electronic warfare.

Part 2 is a comprehensive "Catalog of Naval Radar." This includes capsule summaries on almost four hundred "radar" types or series of the United States, Great Britain, Germany, Japan, Italy, The Netherlands, and France. There is also a four-page discussion of Soviet radars. Insofar as the United States is concerned, the coverage appears to be complete. There is much good material, although some of the commentary suffers from faults similar to those one encounters earlier in the volume.

Here is a sample of the sort of statement in Naval Radar which this reviewer found to be troublesome. The author refers on page 13 to "the Mk 8 surface gunnery set, which could observe both splashes and target." This implies rhat the Mk 8's predecessors could not observe both. Yet, on page 172 he refers to ranges on splashes by the Mk 3. Unfortunately the figures he gives are wrong. It is stated that "reliable ranges" of a Mk 3 "at an antenna height of 80ft" were 20,000 yards for a 16in splash. Yet the range of the optical horizon at that height is over 30,000 yards and the tall splashes of 16 inch projectiles were in fact observed reliably by these main battery radars at well beyond the horizon. And then the author goes on to assert that "reliable ranges" for this surface fire control radar (mounted on the main battery directors) also were "bomber (10,000ft) at 45,000 yds!" Furthermore, the forward directors

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