

## Naval War College Review

---

Volume 45  
Number 3 *Summer*

Article 33

---

1992

# Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance

Dale K. Pace

Follow this and additional works at: <https://digital-commons.usnwc.edu/nwc-review>

---

### Recommended Citation

Pace, Dale K. (1992) "Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance," *Naval War College Review*: Vol. 45 : No. 3 , Article 33.

Available at: <https://digital-commons.usnwc.edu/nwc-review/vol45/iss3/33>

This Book Review is brought to you for free and open access by the Journals at U.S. Naval War College Digital Commons. It has been accepted for inclusion in Naval War College Review by an authorized editor of U.S. Naval War College Digital Commons. For more information, please contact [repository.inquiries@usnwc.edu](mailto:repository.inquiries@usnwc.edu).

the arguments that propel those individuals who have the greatest intellectual impact on public (defense) policy. Fotion carefully outlines both the pros and cons concerning future military investment and the maintenance of modernized, capable defenses. He is quite familiar with the specifics of modern weapon systems, although there are a few minor slips. At one point the author compares the Soviet SS-18 strategic missile to the American Titan system; in fact, the Titan is more similar to the SS-9. This does not in the least mar his exposition of the current debates. More importantly perhaps, the professional officer who seeks to examine intellectually what he or she knows "in the gut" to be true will find this work an excellent introduction to the morality of strategic logic. Not a code of ethics, this book is rather an invitation to ethical reasoning on the future of the common defense.

SAM J. TANGREDI  
 Lieutenant Commander, U.S. Navy  
 Hoover Institution

---

MacKenzie, Donald. *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance*. Cambridge, Mass.: MIT Press, 1990. 464pp.  
 (No price given)

Weapon system development is the result of a fascinating, complex, and varied dance of threat-driven requirements, strategic concepts, technological capabilities, cost, politics and institutional interests, personalities, formal research and development, and acquisition processes. Too often, descriptions of how weapon capabilities

develop are overly simplified and do not capture the essential driving factors. Thus, it is easy to misunderstand the development process and to explain why mismatches between America's strategies and the technical capabilities of her forces may arise.

Donald MacKenzie has undertaken the study of the development of the accuracy of nuclear-armed ballistic missiles. His focus is upon the social processes involved in the evolution of the V-2s of World War II into today's MX missiles and Trident IIs. MacKenzie included in his research written documents and 140 interviews with guidance and navigation technologists, navy and air force officers, and defense officials, including secretaries of defense and heads of defense research and development. It is an intricate work, full of captivating detail.

MacKenzie accepts the complexity of his subject and does not abuse it with simplistic "insights" that fail to consider all relevant material. In his conclusion he addresses five subjects: technology, politics, the paradoxical ordinariness of the technical and political worlds of nuclear weaponry, the relationship between technology and politics, and facts. (Technical facts are "hard," in contrast to the "soft" political facts.)

Many opponents of the nuclear arms race and the weapons it produces would describe its development as the wild frenzy of a military-industrial dervish. This work does not support the idea of an uncontrollable technological juggernaut pushing the

political system into endless expenditures. Reality is more complex than that.

MacKenzie has offered a satisfying work. Though its sources were from unclassified sources, no part of the subject was slighted. Those interested in the history of modern weapons will put this book on their "must read" list. It has no set answers, but rather it provides much information that will help the reader to have greater insight into a complex subject.

DALE K. PACE  
The Johns Hopkins University  
Applied Physics Laboratory

---

Lynn-Jones, Sean M., Miller, Steven E., and van Evera, Stephen, eds. *Nuclear Diplomacy and Crisis Management: An International Reader*. Cambridge: The MIT Press, 1990. 347pp. \$14.95

This anthology presents reprints of articles that have appeared in the journal *International Security*. The eleven papers are grouped into two sections. The first section discusses "The Political Impact of Nuclear Weapons," and the second discusses "Nuclear Weapons and Crisis Management."

Sean Lynn-Jones reminds us in his preface that since Hiroshima, statesmen have conducted diplomacy in the shadow of the Bomb. The fundamental questions facing strategic thinkers as they attempt to define and analyze the political implications of the nuclear revolution are: Have nuclear weapons fundamentally changed

international politics? Has a major war been averted because of, or in spite of, the growth of nuclear arsenals? What are the political uses of nuclear weapons? How have the United States' leaders perceived the nuclear balance? Have they acted as if nuclear superiority can be exploited for bargaining leverage? Have nuclear threats been effective in crises?

The papers cover crises that have occurred since the end of World War II. For example, those who served in the Korean War may find Gordon Chang's article, "To the Nuclear Brink: Eisenhower, Dulles, and the Quemoy-Matsu Crisis," of interest. Was Eisenhower bluffing or not?

Professor Marc Trachtenberg provides an introduction to a selection of tapes from the "Excom" meetings of October 1962 at the beginning of the Cuban missile crisis, and discusses the decision processes used by John Kennedy and others in resolving the military crisis abroad and the political crisis at home. Interesting reading to say the least!

If one wishes to know if there is a "bottom line," I suggest the final article, "The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis," written by Barry M. Blechman and Douglas M. Hart. The authors note in what circumstances a state may resort to nuclear threats during tense international situations. This article alone may well provide the motivation for the defense professional to become familiar with this text. The authors state that "it makes sense to analyze past nuclear incidents...to