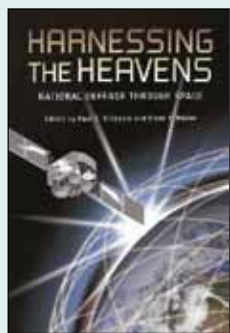


spends little time in the country, and because his experience and reporting are so mundane. He collects outdated spot reporting largely unconnected from the broader campaign, PRT practice, and the evolution of the multinational effort in Afghanistan. He relies to an almost stupefying degree on official mission statements to learn about the activities of the various PRTs—an approach that does not tell the reader much more than a Web search would. If he had committed to more research, followed up interviews, and talked to more people, a more cohesive and coherent volume could make a vital contribution to the limited literature on Afghanistan. The war, now approaching its first decade, demands much from those committed to fighting it. A similar commitment is required to understand it as well. **JFQ**

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**Harnessing the Heavens:
National Defense Through Space**
*Edited by Paul G. Gillespie and
Grant T. Weller*
Chicago: Imprint
Publications, 2008
235 pp. \$29.95
ISBN: 978-1-879176-45-4

Reviewed by
JEFFREY L. CATON

This book comes at an interesting time in the history of U.S. space activity. Its publication is within 1 year of the 40th anniversary of the Apollo 11 moon mission. Ironically, it is also within 2 years of the National Aeronautics and Space Administration's (NASA's) planned date for the termination of space shuttle flights, with no replacement until at least 2015, when the Orion system should be available. This conscious abdication of human spaceflight capability forces the United States to depend on Russian (or Chinese?) rockets to ferry astronauts to and from the International Space Station, a structure built with over \$25 billion of U.S. investment.

What are the national defense implications of such actions? To evaluate such situations properly requires both historical knowledge and forward thinking. This book provides both. Organized as 14 essays divided into 4 sections, *Harnessing the Heavens* offers contributions from Everett Dolman, Roger Launius, Howard McCurdy, and others in the pantheon of space authors with hundreds of years of collective experience analyzing space issues. They share their wealth of experience not only through superb prose, but also with extensive endnotes.

The book's first section, "Space and the Cold War: Prime Motivations for Space," consists of five outstanding essays that provide historical context regarding the early development of U.S. spacepower. The essays analyze issues at the strategic level and consider the influences of all elements of national power. Common themes among the authors include the emergence of the trinity of civil, military, and intelligence communities for space application; the evolution of diverse priorities given to space programs by the Dwight

D. Eisenhower, John F. Kennedy, and Lyndon Johnson Presidential administrations; and the influence of competition with the Soviet Union in space efforts.

The lead article sets the stage with a summary of space development from the German V-2 rocket to the present day, stopping just short of including the 2006 space policy. It explains the important distinction between *weaponizing* space and *militarizing* space, and it presents the six major perspectives on the debate regarding the presence of weapons in space. The next four compositions delve into some of the specific national competitions that characterize the space portion of the Cold War. These articles provide fascinating details on such topics as the separate studies for possible moon bases made by the Army and Air Force, the emphasis placed on unmanned reconnaissance satellites over manned spaceflight by Eisenhower, and Kennedy's initial reluctance as a space supporter that changed only with the political realities following Soviet Yuri Gagarin's triumph as the first man in space.

The next section, "Doctrinal Faith: Strategic Dimensions of the War Fighter and Space," builds upon the trifurcated structure of space introduced in the first section with particular focus on U.S. Air Force contributions. The first composition is a concise survey of the manned space program pursued by the Service from 1959 to 1963, highlighting the interactions with NASA's Mercury and Gemini programs as well as the Dyna-Soar spaceplane. The next article steps through several recurring themes in Air Force space history, such as the pursuit of peaceful purposes, need for assured access, challenge of building space-savvy leadership, role of commercial sectors, and debate on establishing a separate Space Corps. This

section's final article addresses the compelling topic of space weapons as a driver to transform warfare. However, due to some unfounded and extraneous material presented for dialogue, it is not as credible as the book's other works.

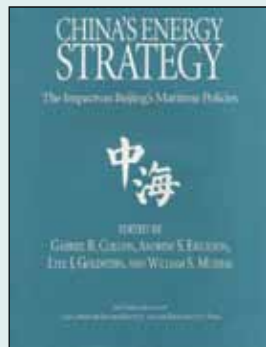
The third section, "U.S. Space from the 'Other Side of the Fence,'" provides an outstanding overview of strategic issues related to other nations' space programs. The lead article addresses the evolution of Soviet space power during the Cold War, delivering succinct summaries of the key players and institutions as well as their roles within the context of evolving global security. It concludes with a recap of five broad patterns of Soviet space activity. The next article is a perfect companion to the first, covering China's space program with its emphasis on a "two bombs [nuclear fission and fusion], one satellite" goal that was achieved between 1964 and 1970. The author, Dean Cheng, argues that China sees space as a "major component of future conflict," although its motives remain unclear at times, such as those surrounding the January 2007 antisatellite weapon test. The third article talks to the celebrity nature of women astronauts. Although a well-written commentary, it is not consistent with the theme of the section, and it fails to mention Valentina Tereshkova, the first woman to orbit the Earth. A better essay to complete this section might have been one assessing the implications of commercial space enterprises, especially those of the European Space Agency.

The final section, "Technological Change and the Transformation of American Space Power," offers excellent historic context with strategic analysis of the role of technology in space power. Its first essay focuses on the realm of hypersonic travel as

the key to routine space access pursued by the Air Force early in the space age. The author, Roy F. Houchin II, contrasts how various Presidential administrations viewed this potential capability and entertains the possibility of the next generation bomber being a hypersonic platform. The next selection is a masterful treatise on satellite communications from 1966 to 2007, balancing technical details with historic evolution of all major U.S. programs. Its holistic analysis includes consideration of strategic requirements, user needs, costs, and benefits. The section closes with an editorial reflecting on the need for “warriors in space.” Although the essay offers thoughtful conjecture and opinion, it does not serve as a comprehensive summary of the book’s themes.

Overall, *Harnessing the Heavens* is a “must read” for anyone contemplating research on national (or international) defense issues related to space—past, present, or future. Most of the contributors accomplish the difficult task of condensing extensive material into concise, focused, and compelling prose that is readable by nonprofessionals as well as experts. Reflecting on the various articles, it is clear that even 50 years after Sputnik, the pursuit of national defense through space remains largely an ad hoc effort. **JFQ**

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**China's Energy Strategy:
The Impact on Beijing's
Maritime Policies**

*Edited by Gabriel B. Collins,
Andrew S. Erickson, Lyle J.
Goldstein, and William S. Murray*
Annapolis:

Naval Institute Press, 2008
485 pp. \$47.95
ISBN: 978-1-59114-330-7

Reviewed by
RICHARD DESJARDINS

These are exciting times for China watchers. The People's Liberation Army is in the midst of the most wide-ranging reforms undergone since at least the mid-1980s. China's opening to the outside world has expanded to its military. This explains in part the increasing accuracy of our understanding of China's military machine as well as its intentions. While much remains in the dark, discussions are much better informed, and the questions are getting more precise.

The China Maritime Studies Institute at the Naval War College has been holding annual conferences on the People's Liberation Army Navy (PLAN) since 2006. Founded in October of that year, the institute is fast becoming a center of excellence for research on all aspects of the Chinese navy. Papers presented at each conference are subsequently published in book format, with *China's Energy Strategy* being the second work in this series.

The purpose of *China's Energy Strategy* is to determine what role China's growing energy needs play in shaping the development and role of its navy. Until recently, the PLAN's main focus was believed to be on developing scenarios for invading Taiwan should Taipei unilaterally declare its independence. However, recent developments involving the navy suggest that Beijing is looking beyond Taiwan.

The literature on power politics indicates that naval development often offers a hint of the aspirations of an emerging power. Traditionally, China's navy has been a coastal one. But the country's emergence as an economic powerhouse is leading Western observers to query China's intentions in the military field. As the media have reported, the economy has been growing at an average rate of 10 percent per year for more than a decade. Until the recent problems involving international finance, prospects looked good for continued healthy growth.

Such growth involving a country the size of China puts enormous strains on its existing energy supply. Even if the country benefits from being home to a large reserve of coal, it was bound to begin looking abroad for additional energy supplies. A turning point came in 1993, when China became a net importer of oil. Domestic exploration had failed to discover sizable oil fields that could have postponed China's search beyond its border. Since then, Beijing has launched a broad and intensive campaign to secure access to oil and gas to feed its growing domestic needs. This campaign included negotiating long-term contracts in Southeast Asia, Central Asia, Russia, Africa, Latin America, and the Middle East, notably Saudi Arabia and Iran. China's shopping for oil inevitably raises other major challenges, including

the impact on U.S. relations with countries such as Saudi Arabia.

The contributors to this book, however, focus on how China's offensive to secure access to oil and gas in faraway places will impact the development of its navy. They identify a number of issues that will likely shape this development: Chinese perceptions of U.S. intentions toward it, China's approach to secure the sea lines of communication (SLOC), and internal developments that may impact China's ability to fund the growth of its navy.

While all the contributions are excellent, several were of particular value to this reviewer, including chapters that covered the debate among Chinese analysts on U.S. intentions in the event of a conflict with China and how best to secure SLOC (Gabriel B. Collins, Andrew S. Erickson, and Lyle J. Goldstein); the importance of energy in China's military development and its ability to secure SLOC (James C. Mulvenon); a comparison of U.S. and Chinese vulnerabilities to disruption in energy supply (Charles W. Freeman, Jr.); the development of a strategic petroleum reserve (David Pietz); the geopolitics of natural liquefied gas markets (Mikkal Herberg); and the challenge of securing SLOC and China's attempts to date in developing facilities in Burma and Pakistan (James R. Holmes and Toshi Yoshihara). Throughout the book, contributors consider various purchases of weaponry over the years and the state (as of December 2006) of the Chinese navy and the extent to which it is prepared to meet any challenges involving SLOC.

The beauty of this book comes in different forms. As the editors indicate in their introduction, the contributors do not always agree. Thus, readers will note that Bernard Cole, for instance, does not see energy as having as important a role