

Book Reviews

Crowded Orbits: Conflict and Cooperation in Space

By James Clay Moltz

Reviewed by Wing Commander Gerry Doyle

Biography: Wing Commander Gerry Doyle is currently serving at HQ Air Command as the 'Develop' desk officer for Future Combat Air Systems. A former Nimrod and E-3D pilot and Bulldog QFI, he is also a CAS' Fellow at the University of Reading, working on a thesis about Bernard Schriever and early US Military Spaceflight.

Introduction

For many military practitioners, their first exposure to military spaceflight applications comes via a lecture or lesson on 'orbitology', leading to an understanding of the commonly used orbital belts around the Earth, and some general background about Kepler's Laws. This is then backed up by a suitable text giving more details of orbits, something about rocketry and the space environment and a description of satellite design features. While this may be a good start, it does little to explain to the would-be practitioner the context in which they hope to operate and the motivations and goals of other space users. This short volume addresses that gap in a most accessible way. For those interested in policy constraints, multi-national perspectives or the growth of space law, rather than the associated hardware and science, it might even provide a better starting point.

In its 226 pages, *Crowded Orbits* includes enough introductory material to get a complete beginner started in the field, as well as providing deeper analysis for those already familiar with some of the background. Since all spaceflight to date has been enabled by rocket technology, it bases its introduction to the space age around the development of practical rockets in the

20th Century. It similarly introduces space policy and politics against the prism of Cold War rivalries and the 'Space Race'.

To understand its subsequent analysis of national positions, the reader is introduced to the distinctions between 'civil space' (meaning 'scientific space', primarily with a research focus), 'commercial space' (meaning 'space for business or profit'), and 'military space', possibly the area of greatest interest to APR readers. For each category, an overview is given of the various national positions held around the world. The treatment of 'military space' majors on the debate surrounding space weaponization - a sound editorial decision given the degree of contention associated with it. Readers particularly interested in this debate might wish to reflect on the national positions described against the framework of space 'schools' outlined in the 1980s by David Lupton, and ponder which nations are aligning themselves with which schools of thought.¹

The text concludes with an analysis of how and why progress on an international governance structure for space operations has stalled, and what the future might look like. Given the setbacks suffered by the proposed International Code of Conduct at the meeting held in New York during July 2015, the concerns raised are both real and serious. Moltz is entirely correct to highlight the importance of developing consensus in this area, though whether the current hiatus is due to the large number of interested parties in the debate, or their tendency to align themselves with what they perceive as the 'US' view or the 'BRIC' view is debatable. His analysis of three possible outcomes: military hegemony, piecemeal international engagement or enhanced international institutions is convincing, as is his preference for the last of these alternatives. Whether and how progress towards this desirable state could or should be made is inevitably, however, left unresolved.

Why should all this be of interest to a military reader? Principally, because of the growing recognition of the inextricably linked interests of all operators in space. The distinctions between civil/scientific space, commercial space and military space are real and useful - they enshrine the varying motivations and constraints on the players and thus serve to make activity more predictable. But once those constraints are understood, the actions play out in a shared theatre - there is only one low-Earth orbital band where most of the action takes place. Awareness of this can be demonstrated by the recent initiative undertaken by the UK, USA, Australia and Canada to enter a partnership relating to combined space operations. The author plainly hopes that such agreements will become commonplace so that all can enjoy access to space for civil, commercial and military/security purposes for a long time to come.

This is an excellent introduction to an important area of national policy - both security focussed and otherwise. It is not the complete compendium to address every issue - that so much can be fitted into 226 pages is a testament to the author's skill, but there are inevitable limits to what can be discussed. Arguably, for the military reader, their most likely exposure

to space-derived capability will be via 'space force enhancement' - the enhancement of terrestrial forces by means such as satellite communications, navigation or reconnaissance or surveillance. In this respect, the focus on weaponization in the analysis of military space activity skews the content somewhat. But that is small criticism of an interesting and elegant introduction, which also serves as a prompt for further study. The work is annotated, but there is (regrettably) no Bibliography. However a careful search of the authors and works cited will provide at least initial lines of enquiry for the interested reader. Other works have covered similar ground in the past; Professor Michael Sheehan's 2007 volume 'The International Politics of Space' springs to mind for its regional and national analysis of motivations displayed by space actors.² But the world keeps turning, new nations develop space capabilities and the ebb and flow of alliances is eternal. This would make an excellent initial text for anyone seeking a broad view of the topic, and will hopefully spur its readers to pursue their own research in this important area.

Notes

¹ David E. Lupton, *On Space Warfare: A Space Power Doctrine* (Maxwell AFB, AL: Air University Press, 1988), Lupton's 'schools' were further analysed in Bruce DeBlois (ed) *Beyond the Paths of Heaven: The Emergence of Space Power Thought* (Maxwell AFB, AL: Air University Press, 1999).

² Michael Sheehan, *The International Politics of Space* (Abingdon: Routledge, 2007).

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