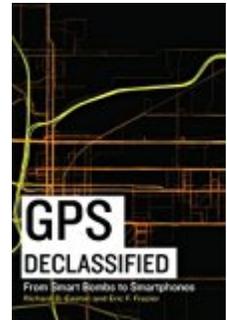




Richard D. Easton, Eric F. Frazier. *GPS Declassified: From Smart Bombs to Smartphones.* Dulles, VA: Potomac Books, 2013. xx + 301 pp. \$34.95, cloth, ISBN 978-1-61234-408-9.



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In *GPS Declassified: From Smart Bombs to Smartphones*, coauthors Richard D. Easton and Eric F. Frazier set out to trace the development of the Global Positioning System (GPS) from its classified roots, anchored in the beginning of the space race with the former Soviet Union, through its evolution into a ubiquitous, free public utility. Along the way, they endeavor to shed light on the true technological origin of the positioning, navigation, and timing (PNT) concept that led to the current array of satellites surrounding the globe. They also attempt to place GPS into the longer history of navigation and capture it as a common, free utility that, as both creator and victim of public policy decisions, has changed the way that humans interface with the world around them. While acknowledging in the introduction that their purpose is to “strike a balance between following the shortest, most direct route and making sure readers visit the most important point of interest” (p. 6), the authors do pass through all of the necessary waypoints but are only moderately successful in achieving their goal.

Easton and Frazier construct the book to tell a chronological story, but it is broken into two distinct parts. The first part addresses the development of the concept of PNT in the 1950s, situating it in the larger story of the United States’ race with the Soviets to be the first nation to place a functioning satellite in orbit around the earth. Once the Soviets launched Sputnik, however, the United States’ challenge expanded to include developing the necessary technological capability to not only launch a satellite but track others’ satellites as well. Although the authors plow some very familiar ground in their telling, access to primary source documents, some provided by Roger Easton (Richard Easton’s father), a satellite engineer at the Naval Research Laboratory working on the earliest satellite navigation systems, provides some new insight into the early phase of the US space program. This is particularly useful in revealing the competing technological approaches taken by the Naval Research Laboratory through its Timation effort and the United States Air Force’s Project 621B. It is also one of the more

frustrating aspects of the book. Rather than revisiting aspects of the early space program that are well established, it would have been fascinating to explore more fully the technological and bureaucratic elements of the competition between the two competing projects. In addition, it would have been instructive to explore more fully some of the critical programmatic decisions made in the 1990s. The authors, however, have laid the groundwork for future work in this area, which should be of great interest to any historian of space technology.

Another opportunity is lost in the first part of the book when the authors only superficially place the PNT satellite program into the larger history of the art and science of navigation. The authors present an incomplete picture of the history of navigation and how humans interact with specialized technologies to form a greater understanding of their position in the world. The development of navigation is a wonderfully complex tale that historians have expanded far beyond simple descriptions of spherical geometry and the phases of Jupiter's moons (see Edwin Hutchins's *Cognition in the Wild* [1995], for example). Their discussion underplays the significance of PNT in that tale, and there is a rich story to be told from both the technological and social perspectives tracing the development and use of centuries of navigational tools and how they shaped humanity's evolution.

In the second part of the book, the authors transition from describing the development of the GPS to assessing how it evolved into a public utility that has become an integral part of the fabric of daily life. In their discussion of how GPS came to the fore in 1991 in the first Gulf War as a result of the US military's need to strike targets more precisely, they tell an interesting story of how humans adapted an existing technology to provide benefits unseen by their original creators, a theme common in the history of technology. The link between precision targeting and the billions

of financial transactions that take place each day is fascinating. Just as interesting is their revelation of how the power of a technology that is integral to the consumer industry can drive the need to develop public policy at the highest levels. In fact, the second half of the book could easily expand into a book of its own, one that more fully explores the social impact of a technology initially designed to accurately track moving objects in earth orbit but that evolved into one of the most essential, if invisible, elements of daily human life.

Ultimately, *GPS Declassified* achieves the authors' goal of introducing the reader to important elements of the story of the development of GPS. While lacking the depth and complexity that would appeal to historians of either space or technology, it identifies important technological and social elements that deserve further exploration.

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