

## AIR POWER AND WARFARE: A CENTURY OF THEORY AND HISTORY

Tami Davis Biddle

In this monograph, Tami Davis Biddle analyzes the historical record of air power over the past 100 years. Her survey, designed for the student of strategy, is intended to provide both a concise introduction to the topic and a framework for thinking intelligently about air power, particularly aerial bombing. Her primary aim is to discern the distinction between what has been expected of air power by theorists and military institutions, and what it has produced in the crucible of war. Throughout this monograph, Biddle encourages students to focus primarily on the assumptions underpinning theories about what aerial bombing, in particular, might achieve, and why. Such assumptions are powerfully influenced by attitudes, ideas, capabilities, and fears prevailing at the moment when a given theory is articulated.

After their arrival on the scene in the early years of the 20th century, airplanes posed institutional challenges to all military organizations seeking to employ them. Immediate questions arose: How should they be used? Who should control them? How will they interact with other military instruments? None of the questions had simple or straightforward answers, and every military institution had to work out solutions tailored to its own needs. Early in World War I, it became obvious that airplanes were powerful military instruments offering important advantages to those who employed them well, and acute disadvantages to those who failed to do so. They immediately proved their worth in a wide range of activities, including reconnaissance, surveillance, communication, artillery spotting, ground attack, and short- and long-range bombardment. The value of airspace was immediately evident, prompting the creation of fighter airplanes designed to protect one's airspace and deny it to one's enemies.

Aerial bombing was the most dramatic new innovation made possible by heavier-than-air flight, and the one bearing the highest burden of

expectation. Both short- and long-range bombing received preliminary and inconclusive trials during World War I, and this fueled ongoing speculation and debate throughout the interwar years. World War II provided an extensive test of air power, and aerial bombing especially, but it did not resolve ongoing debates about the ability of bombers to win wars independently, as some claimed they might do.

Aerial bombing, Biddle argues, cannot control the ground. It is fundamentally a coercive activity in which an attacker seeks to structure the enemy's incentives—using threats and actions to shape and constrain the enemy's options, both perceived and real. It is an important and much-utilized military instrument for both deterrence and compellence. However, its ability to produce results varies, and students of strategy must understand the circumstances under which it is more or less likely to achieve particular results or political ends.

Biddle points to the assumptions embedded in theories of aerial bombing articulated before and during World War II, and assesses whether these assumptions eventually aligned with actual wartime experience. Relying principally on the extensive experience of the postwar U.S. Air Force, she undertakes similar analyses with respect to the many bombing campaigns that organization waged from the 1950s through to the present day. She explains and assesses the work of some of the more prominent air power theorists of the recent past, including John Boyd and John Warden. In trying to discern where expectations and outcomes were misaligned, and why, she hopes to help sharpen the critical thinking skills of strategists.

She explains that successful coercion relies on highly detailed and nuanced knowledge of the actor or actors one seeks to coerce. Because of this, those seeking to use aerial bombing for coercion will often find themselves facing bigger or thornier

challenges than they expected. They will find, as well, that: civilian populations are often more robust and resilient than air power theorists—and air forces generally—expect them to be; that local coercive mechanisms can overwhelm more remote ones; that war economies are usually less fragile and more adaptable than anticipated; and that, for a variety of reasons, air forces are rarely at liberty to carry out a bombing campaign in the way that they would prefer.

Looking forward to the next 25-30 years, Biddle argues that air power—the way we think about it and what we expect of it—will go through a period of flux as the technology of the information age begins to take full effect. In some scenarios, our current knowledge and our legacy systems will retain their full utility; in others, they will retain only partial utility. Moreover, as we move forward to environments increasingly characterized by anti-access/area denial (A2/AD), we will be forced to rethink many of our most fundamental assumptions, and to develop new methods and platforms designed to deter potential adversaries, to protect our interests, and to prevail in the event of war.

\*\*\*\*\*

More information about the programs of the Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press may be found on the Institute's homepage at <http://ssi.armywarcollege.edu/>.

\*\*\*\*\*

Organizations interested in reprinting this or other SSI and USAWC Press executive summaries should contact the Editor for Production via e-mail at [usarmy.carlisle.awc.mbx.ssi-editor-for-production@mail.mil](mailto:usarmy.carlisle.awc.mbx.ssi-editor-for-production@mail.mil). All organizations granted this right must include the following statement: "Reprinted with permission of the Strategic Studies Institute and U.S. Army War College Press, U.S. Army War College."



**This Publication**



**SSI Website**



**USAWC Website**