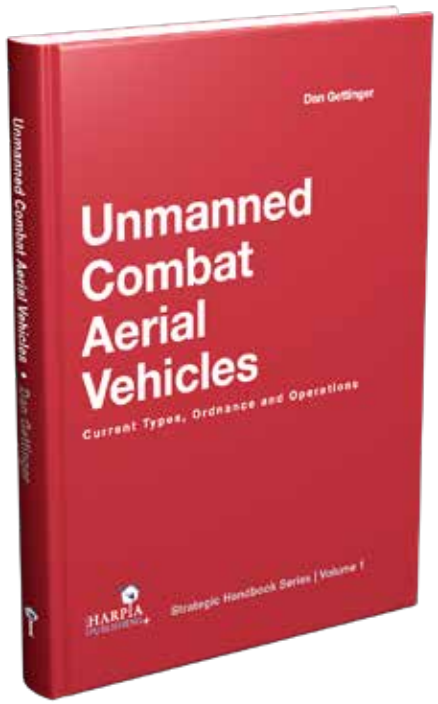
Unmanned Combat Aerial Vehicles–Current Types, Ordnance and Operations

Author: Dan Gettinger, Harpia Publishing, September 1, 2021, 144 pages

A book review by COL Jayson A. Altieri (Ret.)

Unmanned Combat Aerial Vehicles–Current Types, Ordnance and Operations, by Dan Gettinger, is the first volume of Harpia Publishing's Strategic Handbook Series that is a perfect reference to help provide background on the complexity of modern warfare. For example, the recent Russo-Ukrainian conflict, a war that began with Russian tanks rolling across Ukraine's borders, First World War-style trenches carved into the earth, and Soviet-made artillery pounding the landscape now has taken on a more modern dimension. With hundreds of reconnaissance and attack unmanned combat air vehicles (UCAVs) flying over Ukraine each day, a conflict that set off by a land grab befitting an 18th-century emperor has transformed into a digital-age competition for technological superiority in the skies using UCAV platforms—one military annals may mark as a turning point and that requires military and civilian analysists to have a full understanding of the diversity of UCAV and loitering munition systems.

The earliest application of UCAVs in modern combat occurred in 1848 during the Italian War of Independence, when Austrian forces used remotely triggered bombs from unmanned balloons on the Italian-held city of Venice. Nearly 70 years later, during the First World War, several pursued the development of what were known as "aerial torpedoes," early cruise missiles based on radio-controlled biplanes. During the Second World War, both the Allied and Axis powers experimented and utilized UCAVs with some success, the most famous being the German V-1 "Buzzbomb" used against cities in the United Kingdom. By the middle of the Cold War, unmanned aerial systems (UAS) proliferated with aircraft like the U.S. Navy's QH-50 Drone Anti-Submarine Helicopter (DASH) and the U.S. Air Force's BQM-34 Firebee jet-powered reconnaissance platform. Following the Vietnam War, Western interest in UCAV platforms waned for nearly 30 years until the Global War on Terrorism, when militaries began showing a renewed interest in unmanned systems like the RQ-1 Predator for use against insurgents in locations from Africa, Asia, and the Middle East. Since that time, UCAVs have become a dominant operational weapon system due to their low cost and elimination of risk to aircrews. The recent Russo-Ukrainian conflict has seen these advantages manifested in the first large scale by both sides on a contemporary battlefield.



Today, nearly 96 UCAV vehicles are produced by 59 entities in 27 countries, and *Unmanned Combat Aerial Vehicles–Current Types, Ordnance and Operations*, documents the combat UCAV systems that are in development or deployed, as well the Global operations in which they have been used. In doing so, this book provides readers with a professional, academic style guidebook to navigate today's world of combat UCAV platforms. The author provides three chapters that include definitions and analysis of UCAVs and loitering munitions, system profiles by producer countries, and a detailed description of the theaters of operation in which UCAVs are currently operating. Useful to readers is the author assessment of trends in the variety of UCAVs, loitering munitions, UCAV operations, and

the future of UCAV technological and doctrinal developments like the development of the so-called "loyal wingman" UCAV systems.

Printed by Harpia Publishing, *Unmanned Combat Aerial Vehicles–Current Types, Ordnance and Operations*, is an excellent book and worth the read. Since the surge of UCAV development in the past 20 years, unmanned air technologies have changed the character of warfare. Unmanned combat aerial vehicles and loitering munitions will test the vulnerability of other military technologies such as tanks, as well as the preparedness of air defense systems and strategies. Far from making warfare unmanned, the surge of UCAV systems on the modern battlefield points to a future in which military and civilian personnel are at greater risk without having a clear understanding of the capabilities, doctrine, technologies, and trends of these systems.

Dan Gettinger is founder and the co-director of the Center for the Study of the Drone, an interdisciplinary research and education institution at Bard College, Annadale-on-Hudson, New York. His research concerns a variety of issues related to unmanned systems, including the commercial drone industry and regulations, defense research and procurement, and international trade and security. Dan is currently engaged in a study of drone proliferation and global unmanned systems capabilities and employments. Dan is an expert at the Forum on the Arms Trade and the co-founder of the Drone Research Network. He holds a bachelor of arts degree in Political Studies from Bard College.

Army Soldiers prepare to launch the RQ-11 Raven. The Raven is a hand-launched, remote-controlled unmanned aerial vehicle that can be used for surveillance and reconnaissance, enabling units to gather information with reduced risk to Soldiers. U.S. Army photo by SGT Liane Hatch.

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