

chapters: founding period, Jan. 1949-Dec. 1953; overall development, Jan. 1954-Apr. 1966; Cultural Revolution, May 1966-Oct. 1976; and modernization, Oct. 1976 to the present. While it would be silly to say that one period was more important than the others, I found the 1949-1953 period fascinating, considering all that was going on. The Chinese had to build a modern air force almost from scratch. They founded an aviation industry where none had existed previously. They conducted their first air campaign in Tibet, created an airborne capability, fought the Korean War, and undertook a massive expansion while working with the USSR. All of this was accomplished in a relative short period of time.

After the chronological chapters, Rupprecht devotes nearly a third of the book to three appendices that cover brief histories of the final seven military region air forces and the many air divisions. The last appendix examines the evolution of the PLAAF serial number system. That may not sound important; but, given the paucity of information that comes out of the PRC government, codes may be the only clues to military structure, numbers of assets available, etc.

I can never say enough good things about the quality of Harpia's products. This book—as with all of their other products—is first-rate. They may be a bit pricey, but the reader gets what he pays for: glossy white paper, hi-res photos (both B&W and color), photo captions well removed from regular text, other-information boxes highlighted in different colors, a pleasing layout, and quality editing. But best of all—given the almost encyclopedic nature of the book—is a well-done and useful index. Aircraft types (and sub-variants) are lumped together, as are people, units, places, and the like. If a reader wants to find information on something specific, he can easily do so.

All of Rupprecht's China books are must-haves for anyone who wants to better understand the evolving military powerhouse of Asia.

*Col Scott A. Willey, USAF (Ret), Book Review Editor, and docent, NASM's Udvar-Hazy Center*



**Modern Chinese Warplanes: Chinese Air Force – Aircraft and Units** and **Modern Chinese Warplanes: Chinese Naval Aviation – Aircraft and Units** and **Modern Chinese Warplanes: Chinese Army Aviation**. By Andreas Rupprecht. Houston TX: Harpia Publishing, 2018, 2018, 2019 (respectively). Maps. Tables. Diagrams. Glossary. Photographs. Illustrations. Bibliography. Index. Pp. 237, 94, and 93. \$59.95, \$29.95, and \$29.95, paperback. ISBN: 978-09973092-6-3, 978-09973092-5-6, and 978-0-9973092-8-7

Andreas Rupprecht is a German national who says, in his Twitter account, that he is a “China military aviation

researcher, book author and China news reporter.” From all accounts, he has no inside track for classified information on the Chinese but relies on open sources. However, he does acknowledge Chinese sources that remain unnamed who provide him with materials and translations. That being said, these three books show that he is an excellent researcher who gleans as much as possible from whatever sources are available and analyses and arranges the data into meaningful information.

These three books are being reviewed as one; because, in essence, they are merely three separately bound parts of one large book on the state of military aviation in the People's Republic of China (PRC). The three books are encyclopedic in nature; one shouldn't expect to sit down and read them through cover-to-cover. Rather, they are probably the best possible sources for information regarding all facets of the subject matter.

Each begins with a background and history of the subject service. If these do nothing else, they show how far military aviation has moved in the PRC in a relatively short time, particularly in the naval sector. The history is followed with a chapter on aircraft markings and serial number system. The latter is important in that it provides clues to units of assignment and, therefore, organization of the service. The next chapter covers the aircraft, helicopters, and UAVs used by the particular branch. These are done, generally, in narrative form. In other words, the section isn't just a collection of relatively dry tables of data. Further, pretty much all systems—fighters, bombers, transports, trainers, et al.—are covered. In the next chapter Rupprecht discusses the various weapons and stores employed by the service branch. Each volume then covers the aviation training syllabus employed. In the big chapter on the particular service's order of battle (as of the publication date), the reader finds out how the service is organized and, through this, missions and strategies. The final chapter(s) covers other organizations such as the Marine Corps (under the navy), People's Liberation Army Air Force Airborne Corps (under the air force), and paramilitary groups such as the Coast Guard and several law-enforcement-oriented organizations.

All of the text is backed up with hundreds of photos. Because Harpia publications are all printed on glossy paper, these photos are very high-resolution. Also, throughout the books are many excellent maps that show unit locations, ranges of various weapon systems, and the like. Of particular note are inclusion of potential adversaries' bases (U.S., Japanese, etc.); this helps a reader understand why the forces are deployed as they are. Tables of data and organization charts are plentiful and clearly laid out. The bibliography is, of course, relatively short, given the dearth of information provided by the government and the various services. But the index is very detailed, so finding pictures or information on any weapon system or organization is easy.

Given the nature of military equipment and organiza-

tions, much of the information in these books is perishable. But, for now, anyone wanting to know about this vast nation's military airpower and its capabilities will find no better single source than these three volumes.

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**Winged Brothers: Naval Aviation as Lived by Ernest and Macon Snowden.** By Ernest Snowden. Annapolis MD: Naval Institute Press, 2018. Photos. Notes. Bibliography. Index. Pp. vi, 256. \$29.95. ISBN: 978-1-68247-296-5 (e-book: 978-1-68247-295-8)

In his first professional effort, Ernest Snowden easily weaves the brothers' stories into the fabric of naval aviation's distinguished history. Son of the younger brother, Mac, his own experience as a naval aviator and insight into naval history enables him to turn the two biographies into one readable volume.

The senior Snowden's time in the Navy ranged from the early 1930s (he graduated from the Naval Academy in 1932) to the late 1950s. Before World War II began, he married the daughter of General Henry "Hap" Arnold, who later became commanding general of the U.S. Army Air Forces in World War II. Arnold, an adherent of General William Mitchell's desire to see military and naval aviation consolidated into a third separate branch, accepted his son-in-law without reservation. Ernest Snowden proved to an exemplary leader at the squadron and group level. Heavily involved in the fighting in the Solomon Islands in the southwest Pacific in the war's early years, he eventually received the Navy Cross for his efforts to help defeat the Japanese in the Battle of the Philippine Sea. The air battle became known as the Marianas Turkey Shoot where Naval and Marine Corps aviators decimated the opposing force. The post-war years proved less satisfying. Perhaps the biggest disappointment was his non-selection to command a fleet carrier in the 1950s.

Mac graduated from the Naval Academy in 1946. The Navy's transition from piston power to jet power marked the early years of his career. By the early 1960s, he had spent most of his career in fighter aviation; commanding squadron VF-91 equipped with the Vought F-8 Crusader was a natural progression. Later he would command Carrier Air Wing 5 from aboard *USS Ticonderoga* during her participation in the Vietnam War in 1965. This period marked the beginning of the ill-fated Rolling Thunder bombing campaign, limited air attacks that failed in any way whatsoever to convince the North Vietnamese of the errors of their ways in South Vietnam. Perhaps Mac's greatest contribution was providing the foundation for the Navy's argument that the so-called TFX aircraft program was completely inappropriate for carrier operations. These

efforts resulted in the Air Force (and Australia) acquiring the General Dynamics F-111 when the Pentagon was seeking commonality in aircraft design to save money. Mac instead helped the Navy successfully develop the Grumman F-14 Tomcat. He retired in 1974, but then became the first executive director of the Association of Naval Aviation, a post he held until 1986.

An appendix featuring the brothers' career milestones would have been useful. Air Force readers may find the author's comments concerning various positions contrary to the Navy's a bit over the top. At times the work's tone sounds like a public-relations tune for the Association of Naval Aviation. Nevertheless, the brothers' story is certainly worthy of publication. Snowden has done a fine job of capturing the lives and times of his father and uncle.

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**Sydney Camm: Hurricane and Harrier Designer, Saviour of Britain.** By John Sweetman. Barnsley UK: Pen and Sword Books, 2019. Photographs. Illustrations. Pp. 264. \$49.95. ISBN: 978-1-52675-622-0

Sweetman approached this work with an eye for the details that would bring Sir Sydney Camm to life for the reader. While I initially considered the sobriquet "Saviour of Britain" to be a demonstration of hyperbole, by the time I finished the work and could weigh the sum of Camm's accomplishments, I saw the phrase in a different light and a bit closer to the truth.

Even the most novice of military aviation enthusiasts is aware that the Hawker Hurricane's contribution to the British victory in the Battle of Britain is typically under appreciated. The most effective portion of this book addresses Camm's early life and work which prepared him for his work on the Hurricane. Largely self-taught, Camm approached design with very simple goals: "Achieve the greatest strength with the lightest weight." "The simple solution is usually the best solution." "Consider production during design." Despite his success, I was left with the distinct impression that his lack of formal education and his reliance on simplicity contributed to bouts of a lack of confidence in his own work. Perhaps this lack of confidence contributed to an autocratic and dictatorial management style that produced great airplanes at the cost of personal and professional relationships.

Sweetman goes to great length to describe Camm's "Jekyll and Hyde" personality, going so far as detailing Camm's reaction to a daughter's misadventure baking scones to another anecdote centered on the purchase of a turkey too big to fit in the family oven. But, surprisingly, he fails to include any mention of the Meredith Effect and its integration in the Hurricane's design. Sweetman re-

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