

theater for Germany, especially when the German assault of mid-1941 failed to knock Russia out of the war. In this context Rommel's later activities, from El Alamein on, represents eccentric strategy.

Macksey presents a thorough analysis of Rommel's strengths and weaknesses, and his book is a worthwhile addition to the library of any serious student of warfare. It is a worthy companion to *Guderian*, *Panzer Battles*, and *The Rommel Papers*.

THE DYNAMICS OF DOCTRINE: The Changes in German Tactical Doctrine During the First World War, Leavenworth Papers, No. 4. By Capt Timothy T. Lupfer, USA. U.S. Army Command and General Staff College, Fort Leavenworth, Kans. 66027, 1981. 73 pp. paperback. No price; request copies from publisher.

reviewed by Prof Williamson Murray

The German Army, quite naturally considering its enormous impact on the first half of the 20th Century, has received considerable attention from professional as well as amateur historians. That interest by and large has centered on two aspects of the army's history: the disastrous political and strategic role that it played in the fate of the German nation and straight operational histories of its campaigns. Unfortunately, what has not received proper attention are the basic questions of how and why the German Army was able to reach and to maintain such a consistent level of competency on the battlefields of two world wars. The answer to those questions should be of interest to soldiers as well as historians.

Capt Timothy Lupfer, now teaching in the Department of History at West Point, has provided an insightful and interesting first step in addressing the question of German military competency. By looking at the dynamics of doctrinal change on the Western Front in the period from 1916 to 1918, Lupfer examines the inherent difficulty of integrating battlefield experience into current doctrine and the conduct of future operations.

The German Army had not done all that much better than its opponents in the first half of the Great War. In fact, the twin battles of Verdun and the Somme in 1916 not only suggested considerable tactical and operational deficiencies but strategic

failures that bordered on bankruptcy. Lupfer begins the substantive portion of his work by examining the development of German defensive doctrine on the Western Front in response to the crisis of 1916. The real movement to a radical reorganization of the army's defensive tactics began with Ludendorff's accession to the position of First Quartermaster General of the German Army in August 1916.

What Lupfer emphasizes is worth stressing again in this review: Ludendorff, no matter what his faults were in the political and strategic realms, brought considerable flexibility of mind to solving the tactical and operational problems that his army faced. As Ludendorff recorded in his memoirs:

On the Eastern Front we had for the most part adhered to the old tactical methods and old training which we had learned in the days of peace. Here [in the West] we met with new conditions and it was my duty to adapt myself to them.

To adapt to those conditions Ludendorff carried out a number of visits from his headquarters to the battlefields of the Western Front where he demanded that briefing officers not give him "favorable reports made to order." The result of Ludendorff's efforts was an opening-up of the lines of communication from the front to the high command.

The second stage in recasting German defensive doctrine involved the combination of frontline experience with tactical experimentation and a thorough training program. Ludendorff and his advisors ensured that the new doctrine was flexible, was adaptable to changing circumstances, and was thoroughly understood not only by the staffs and commanders serving on the Western Front but by the troops as well. As a result, the new doctrine, as it evolved over the course of 1916 and 1917, enabled the Germans to smash the spring 1917 French offensives to such an extent that mutinies broke out in the French Army; they were also able to blunt Haig's great late-summer offensive in Flanders.

Having addressed the evolution of defensive doctrine, Lupfer then turns to how the German Army solved the critical problem of World War I: how to get across the killing zone into and through the enemy's main line of resistance. Ironically, it was the flexibility and emphasis on maneuver and counterattack, which was built into the defensive doctrine, that gave the

Germans the key. The offensive system that the Germans used with such devastating effectiveness at Caporetto, Cambrai, and in the spring of 1918 evolved out of the counterattack tactics developed for defensive doctrine. In fact, modern tactics of maneuver and exploitation began with the efforts of the German Army in the last half of World War I. For that reason these actions deserve the closest attention from the soldier as well as the military historian.

Lupfer's most significant contribution in this work may well lie beyond his excellent description of the tactical recipes the Germans formulated. He lays out with great clarity "the how." The doctrinal solution that the Germans formed involved a corporate effort to address the difficulties of fighting on the Western Front. Not one officer, but several officers and staffs cooperating together, drew up the new doctrinal manuals and principles. There was no *one* expert, and Ludendorff showed himself surprisingly receptive to the arguments of relatively junior officers (down to the rank of captain). Thus, the Germans tackled their difficulties from many perspectives and ensured that battlefield experience was assimilated as rapidly as possible into doctrine. Above all the Germans made every effort to cast their troop training to reflect current doctrine. One should note that the training programs to instruct the troops preparing for the spring 1918 offensives had as their first pupils the staffs and commanders of the units that would lead that offensive.

Lupfer ends his study with a short discussion of what made German doctrine so effective. Unlike American doctrinal statements which attempt to say everything and all too often end up saying nothing, the Germans fashioned their doctrine in as broad a framework as possible in order to give troop commanders general guidance with which to work. The doctrinal principles of the general staff never attempted to replace the judgment of commanders by providing solutions to every possible problem. As Lupfer notes:

The German doctrine achieved the balance between the demands of precision for unity of effort and the demands of flexibility for decentralized application.

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For the Germans all tactical solutions were tentative; the Germans developed tactical doctrine inductive-

ly and applied and refined it in the same spirit.

This is an outstanding study—one that will reward the serious student of World War I as well as the soldier in search of lessons from military history. Besides the specific details of German offensive and defensive doctrine, Lupfer has caught the spirit that enabled the Germans to bring doctrine up to date, while under the most intense pressure of the terrible battles on the Western Front. Unfortunately for their neighbors, they were to prove just as adept in the next world war.

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JANE'S 1981-1982 AVIATION ANNUAL. Edited by Michael J.H. Taylor. Jane's Publishing Company, Ltd., London, 1981, 159pp., \$15.95 (Member \$14.35)

JANE'S 1981-1982 MILITARY ANNUAL. Edited by Col John Weeks. Jane's Publishing Company, Ltd., London, 1981, 144pp., \$14.95 (Member \$13.45)

JANE'S 1981-1982 NAVAL ANNUAL. Edited by Capt John Moore. Jane's Publishing Company, Ltd., London, 1981, 158pp., \$15.95 (Member \$14.35)

reviewed by Maj Roger A. Jacobs

Jane's Publishing Company requires no elaborate introduction to the military reader. Their voluminous and detailed yearbooks on the world's fighting ships and aircraft have served military men and defense analysts since 1897. Now, to supplement their principal publications, they are producing a trilogy of annual reviews. These new aviation, military, and naval annuals are interesting, informative, and for the most part, readable. Though titled the 1981-1982 annuals, these first efforts actually cover the period from mid-1980 to mid-1981, a time of significant military activity in the Middle East and Southwest Asia. The volumes, each a collection of articles by an authoritative group of authors, are by no means consistent in either content or tone. Though all are useful to the military professional, each one is written to appeal to a specific audience as evidenced by their titles. What they share is their emphasis on equipment and technology, their de-

cidedly European view of the world, and their candid analysis of the tools and the practice of warfare and of the politics overshadowing both.

The *Aviation Annual* is the most technical of the publications, and its articles on aviation fuels, engines, and new aircraft may leave the non-aviator's interest grounded. On the other hand, after providing us a meaningless chronology of significant events (new aircraft rollouts and so forth) the *Aviation Annual* offers excellent recaps on the space shuttle, stealth technology, and of particular interest to Marines, the use of attack helicopters and the future of vertical short takeoff and landing (VSTOL) aircraft in the Navy.

The *Military Annual* is the least technical of the reviews and covers the widest spectrum of subjects, ranging from historical analysis to laser-guided munitions. The articles on Desert One (the Iranian Hostage rescue attempt) and the Iran-Iraq War are well-researched and presented in the best war-correspondent style. Other articles of general interest include analyses of the Soviet's Hind helicopter, Warsaw Pact infantry units, and NATO communications problems. For those more interested in equipment there are technical papers presented on the engines for main battle tanks, the development of tanks, and the trends in artillery development. In short, the *Military Annual* offers something for everyone, and I found it the most readable of the three books.

Naval matters are, of course, Jane's forte and, because of that I confess to a certain amount of disappointment in the *Naval Annual*. An undue amount of space is devoted to a thumbnail review of all the world's navies at the expense of a more thorough range of discussion on naval issues. Additionally, the *Naval Annual* has the most pronounced British view of the various reviews. Articles decrying British naval policy, anticipating British naval exercises, and urging British naval reform dominate the publication. The Soviets are scrutinized briefly and NATO's northern flank is analyzed but, all in all, the *Naval Annual* does not live up to expectations.

Overall, Jane's can be credited with publishing a useful product with their first venture into annual reviews. There is, indeed, something for everyone and, if the quality varies among and within the reviews, that is not unusual for encyclopedic publica-

tions. Consistency in format and a less parochial (read: British) outlook would improve the trilogy in the years to come, but these initial efforts are certainly worth a professional's time.

B-52 STRATOFORTRESS. By Jeff Ethell and Joe Christy. Charles Scribner's Sons, New York, 1981, 128 pp., \$17.50. (Member \$15.75)

F-105 THUNDERCHIEF. By Jerry C. Scutts. Charles Scribner's Sons, New York, 1981, 112 pp., \$17.95. (Member \$16.15)

F-104 STARFIGHTER. By Arthur Reed. Charles Scribner's Sons, New York, 1981, 112 pp., \$17.95. (Member \$16.15)

reviewed by Col Fred J. Vanous,
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The "Buff," the "Thud," and the "Widow Maker" are names that many have given to 3 aircraft that have been the backbone of the U.S. Air Force for the past 30 years—the B-52 Stratofortress, the F-105 Thunderchief, and the F-104 Starfighter. Few aircraft have lived so long, been so unique in mission capability, and written such classic chapters in the annals of aviation history. Through the writing efforts of four capable authors and the publishing efforts of Charles Scribner's Sons, we are now able to enjoy the inside stories on the equipment, role, and performance of these frontline aircraft.

B-52 Stratofortress is filled with detailed information on the B-52 uncovered in the authors' detective-like efforts to tell the full story of the stratofortress. Their research is noteworthy, and it, together with personal interviews, makes the history and accomplishments of Buff come alive. Being able to have a glimpse into the participants side of this massively impressive weapons system sets this book aside as a truly special portrait of the main manned nuclear weapons delivery system.

In *F-105 Thunderchief* we learn the uniqueness of "the world's most powerful one-man airplane." Single engined, complex, very heavy, and often defying its critics, we see an aircraft that had to be fully capable of delivering the "ultimate weapon" and yet was only really accepted after displaying its potential as a conventional strike aircraft in Southeast Asia where it "wrote a classic chapter in the annals of aviation history in the