

Vanguard of American Atomic Deterrence: The Sandia Pioneers, 1946-1949.
By James L. Abrahamson and Paul H. Carew. (Westport, Connecticut: Praeger, 2002. Pp. xxiii, 181. \$65 cloth.)

There are scores of books about the Manhattan Project and the birth of the atomic bomb. The main outlines and key figures of that extraordinary story are well known. But as soon as the Little Boy and Fat Man bombs are dropped on Japan and the War ends the literature on what happened next with regard to America's nuclear weapons is almost non-existent. That is no longer the case due to an interesting and informative book by James L. Abrahamson and Paul H. Carew. Both are well qualified to tell the tale; Abrahamson is a West Point graduate and former history professor at the Academy and Carew spent his career in the Department of Defense. Their focus is on a group of young Army officers in the years immediately after World War II who were selected to store, maintain, transport, and assemble the atomic bomb, making it ready for combat use if required.

Maj. Gen. Leslie R. Groves, commanding general of the Manhattan Project, saw early on that the military was unavoidably going to have key responsibilities regarding this new weapon and it had better be prepared. The scientists, who had largely performed these tasks during the war, were returning to civilian life and could no longer be relied upon. Beginning in mid-1946, as the nation deliberated over what roles civilians and the military would have concerning atomic energy, Groves set about to ensure that the Army would be competent to handle the new weapon. He chose Colonel Gilbert M. Dorland (West Point, Class of 1936) and 63 junior Army officers and sent them to Sandia Base in Albuquerque, New Mexico to learn their craft. Groves continued to oversee their efforts from his position as Chief, Armed Forces Special Weapons Project, after the Manhattan Engineer District was dissolved at the end of 1946. While Groves is recognized for his accomplishments during the War years as head of the Manhattan Project this book demonstrates that the actions he took and the procedures he established during his short tenure as AFSWP chief left a deep imprint on the decades that followed and are an additional part of his legacy. How institutions are founded is usually important in shaping what come afterwards. The procedures and practices established by Groves, Dorland, and the Pioneers would influence the successor organizations charged with taking care of the bomb, as the AFSWP became the Defense Atomic Support Agency (1958-1971), then the Defense Nuclear Agency (1971-1996), the Defense Special Weapons Agency (1996-1998) and finally the Defense Threat Reduction Agency (1998-to date).

By any standard the young Army officers, who would become known as the Sandia Pioneers, were an impressive group. They were hand picked by Groves largely from the top graduates of West Point and all but a few were from the Corps of Engineers. Several of the Pioneers would go on in the decades that followed to have careers maintaining and managing America's nuclear weaponry. Fifty years later at their 1996 reunion they set about to document their history, much to the benefit of scholars of the early nuclear period. Abrahamson and Carew built upon that foundation, interviewed and corresponded with several dozen Pioneers, did further research and the result is a scholarly book complete with footnotes and a useful bibliography, citing such valuable

primary sources as the official "First History of the AFSWP, 1947-1954," which had not been used before.

A drawback of the book is that it is too expensive to gain the readership it deserves. With the index it is only 180 pages long and at \$65 the cost will surely deter some from buying it. That is unfortunate for there is much of interest throughout. The first five chapters describe the challenges that the Pioneers faced and how they went about overcoming them. We are introduced to many individual Pioneers and follow them as they learn their new skills. Whereas the Army had initial responsibility for the bomb it was not long before the other services demanded atomic missions and weapons of their own. The training procedures and courses at Sandia were eventually extended to the Navy and after September 1947 to the newly independent Air Force. There is an interesting chapter devoted to the Pioneers' involvement in Operation Sandstone, an important series of tests conducted in the spring of 1948 to refine implosion designs by using levitated and composite cores. By the following year the original goal that Groves set had been attained. The authors describe how, through a series of field exercises simulating wartime conditions, the military teams became proficient in bomb assembly and-working with combat units such as the 509th Bombardment Group, successor to the 509th Composite Group that dropped the atomic bombs on Japan-supplied them with weapons ready for use. The Pioneers had helped achieve a realistic military capability that put substance into America's deterrent.

There remain many interesting chapters to be written about the Cold War and not a few of them involve nuclear weapons. Because of the secrecy that has always surrounded nuclear weapons their role in many political, military, and diplomatic events has not been fully appreciated. For example, an account of how, when, and where the U.S. deployed thousands of its nuclear weapons to more than a dozen countries remains to be told. The authors get us off to a good start in filling in some of that history by providing new details about the Spaatz-Tedder agreement, the earliest preparations to deploy American atomic bombs abroad, and a murky episode in the earlier scholarship. In two meetings between Air Chief Marshal Sir Arthur Tedder and General Carl Spaatz in late-June and early-July 1946 agreement was reached to prepare several bases in East Anglia to receive B-29s and to "support atomic operations." The RAF bases chosen were Lakenheath and Sculthorpe. Remarkably this informal agreement was undertaken without the approval or even knowledge of the President or Prime Minister or the Congress or Parliament. Shortly after the meetings Groves sent Colonels Elmer E. Kirkpatrick, Jr., and Wilbur A. Stevens to England to prepare the necessary facilities in what became known as Project Barbara. Groves' choices were logical ones; Kirkpatrick had prepared the atomic bomb facilities on Tinian and Stevens had overseen the construction of the Trinity site. The plan envisioned that Fat Man components would be shipped in crates to the bases on cargo planes. Once the components arrived they would be assembled into a finished bomb and placed in a loading pit. A B-29, modified to carry nuclear weapons, would be wheeled over the pit and a hydraulic lift would lift the bomb into the plane's bay, following the procedure that had been performed on Tinian for the Nagasaki mission. But before the facilities were completed a news story short-circuited the project. On October 10, 1946 Drew Pearson claimed in his column, "Washington Merry-Go-

Round" that the Army had sent some bombs to northern England. The next day President Truman was forced to categorically state that there were no atomic bombs in Great Britain. Tedder, scared of the potential British press reaction, called a halt to the program, 20 percent short of completion. Two years later with the Cold War heating up in earnest several Pioneers returned to Britain to complete the earlier work. Eventually in the 1950s fully assembled bombs would be shipped to Britain, to those bases and to many more, and fifty years later there are still some deployed at Lakenheath.