

## CHAPTER I: MISSION AND ORGANIZATION

### Organizational Evolution

The Space and Missile Systems Center traces its ancestry back to the Western Development Division (WDD) of the Air Research and Development Command (ARDC). WDD was activated on 1 July 1954 and was redesignated the Air Force Ballistic Missile Division (AFBMD) on 1 June 1957. The organization's original mission was to develop strategic missiles for the Air Force, but ARDC added the responsibility for developing the first military satellite system on 10 October 1955. The responsibility for strategic missiles remained with AFBMD and its successors through the decades that followed, but the Department of Defense (DOD) continued to modify and add to its assignment of the responsibility for the space mission. In February 1958, the Eisenhower administration activated the Advanced Research Projects Agency (ARPA) and placed it in charge of all military space programs during their research and development phases. In September 1959, ARPA lost its dominant role, and Secretary of Defense Neil McElroy divided responsibilities for developing military satellites among the three services. The Army was to develop communication satellites; the Navy, navigation satellites; and the Air Force (in effect, AFBMD), reconnaissance and surveillance satellites. Only the Air Force, however, was to develop and launch military space boosters. This arrangement continued until March 1961, when Secretary of Defense Robert McNamara gave the Air Force a near monopoly on development of all military space systems, ending the role of the Army and the Navy except under exceptional circumstances. Some important exceptions to this developmental monopoly occurred during the next 40 years. For example, the development of reconnaissance satellites and related systems soon came under the authority of the National



*Members of the Weapon System 117L program gather at the Western Development Division in 1956, soon after the first Air Force satellite program was transferred from Wright Air Development Center.*

Reconnaissance Office (NRO), and the Navy developed the first successful space-based navigation system. However, the Air Force continued to exercise a predominant responsibility for military space efforts.<sup>1</sup>

By 1961, therefore, AFBMD had two parallel missions to perform, but it was not necessarily clear that the two missions belonged together. Over the next several decades, in fact, the missile and space functions were separated and rejoined repeatedly, causing numerous reorganizations and redesignations. Because of the increasing importance of space systems, the space and missile functions were separated on 1 April 1961, when AFBMD was inactivated and replaced by the Ballistic Systems Division (BSD) and the Space Systems Division (SSD). On 1 July 1967, the space and missile functions were reconsolidated in the interest of economy, and BSD and SSD were merged to form the Space and Missile Systems Organization (SAMSO). Space and missile functions were separated a second time on 1 October 1979, when SAMSO was divided into the Space Division and the Ballistic Missile Office. These two organizations were redesignated Space Systems Division (SSD) and Ballistic Systems Division (BSD) on 15 March 1989. By the early 1990s, missile programs were being cut back because the cold war had ended, and a final series of redesignations and realignments brought the space and missile functions together for a third time. On 5 May 1990, BSD was redesignated the Ballistic Missile Organization (BMO) and realigned under SSD. On 1 July 1992, SSD was redesignated the Space and Missile Systems Center (SMC), the name it bears today. Finally, in September 1993, BMO was inactivated and absorbed by SMC, recreating the situation that had existed in the 1950s and again in the 1970s, when a single organization was responsible for both space and missile programs.

### **The Aerospace Corporation**

SMC and its predecessors have been supported over the years by private sector organizations that have provided systems engineering for its programs and technical direction to its contractors. The first such organization was the Ramo-Wooldridge Corporation, chosen in 1954 to provide systems engineering and technical direction for WDD's missile programs. In 1958, Ramo-Wooldridge merged with Thompson Products to form Thompson-Ramo-Wooldridge (TRW). However, Congress expressed reservations about the propriety of a profit-making entity serving an agency of the government so closely and exclusively. In 1959, Congress recommended that a nonprofit agency be established as the systems engineering arm of the Air Force for space and missile programs. In June 1960, a nonprofit organization—The Aerospace Corporation—was created at the initiative of the Secretary of the Air Force to perform that function. At that time, plans called for TRW to continue providing systems engineering for existing missile programs and for Aerospace to provide systems engineering for all space programs and for future missile programs. As it turned out, Aerospace did perform some work in the missile field, but it focused primarily on space,

---

<sup>1</sup> That predominance was recognized by DOD's Commission to Assess U.S. National Security Space Management and Organization in its report published on 11 January 2001. It was translated into policy when Secretary of Defense Donald Rumsfeld, acting on the Commission's recommendations, assigned to the Air Force the "responsibility for planning, programming, and acquisition of space systems" in his assessment of the Commission's report provided to Congress on 8 May 2001.

and TRW remained the primary source of systems engineering for missile programs.

## Field Units

Changes in the organizational structure of SMC and its predecessors have been paralleled by changes in field units. Through those field units, its predecessors were involved not only in the development and acquisition of space systems but in space operations as well. Beginning in the 1950s, SMC's predecessors provided or acquired units that controlled military satellites in orbit, conducted satellite launches as well as R&D missile launches, and operated the ranges that supported those launches.<sup>2</sup> The satellite control function was originally performed by the 6594th Test Group, created by AFBMD in 1959, and later by the Air Force Satellite Control Facility, which replaced the Test Group in 1965. During the 1960s, launches were performed by the 6595th Aerospace Test Wing at Vandenberg Air Force Base (AFB) and by the 6555th Aerospace Test Wing at Cape Canaveral Air Force Station (AFS). In 1970, the 6555th became a Group and was realigned under the 6595th, and the 6595th was realigned under a new field unit, the Space and Missile Test Center (SAMTEC). SAMTEC was responsible for overseeing launches at both Vandenberg and the Cape and for operating the Western Test



*Left: Brigadier General Osmond Ritland, then vice commander of WDD, breaks ground at Cooke AFB on 8 May 1957 for the construction of space and missile facilities on the west coast. Cooke was soon renamed Vandenberg AFB. Right: Officers of AFBMD's 6555<sup>th</sup> ATW discuss their final inspection of the Agena spacecraft (in cradle) for the launch of MIDAS 2 on Atlas 45D (in background) on 24 May 1960.*

---

<sup>2</sup> The ranges themselves—that is, the facilities as opposed to the organizations that conducted launches—were controlled during the 1950s and 1960s by organizations that did not report to AFBMD. The ranges reported directly to Air Force Systems Command and were designated the Air Force Missile Test Center at Cape Canaveral and the Air Force Space Test Center at Vandenberg AFB. From 1964 to 1970, both ranges—known then as the Eastern Test Range and the Western Test Range—were overseen by the

Range that supported launches out of Vandenberg. In 1977, it also acquired responsibility for running the Eastern Test Range that supported launches at the Cape. In 1979, SAMTEC was redesignated the Space and Missile Test Organization (SAMTO) and was restructured with two major field units of its own, the Eastern Space and Missile Center (ESMC) and the Western Space and Missile Center (WSMC). ESMC and WSMC conducted launches and operated the ranges on the east and west coasts respectively.

SMC's responsibility for space operations began to change on 1 September 1982, when Air Force Space Command was activated to serve specifically as an operational command for military space systems. In the years that followed, Space Command gradually took over the operational functions previously performed by SMC's field units, and, in the process, it absorbed most of the units themselves. The Air Force Satellite Control Facility was inactivated on 1 October 1987, and most of its personnel and functions were taken over by wing-level units assigned to Space Command. HQ SAMTO was inactivated on 1 October 1989. A year later, the Eastern and Western Space and Missile Centers were reassigned to Space Command, and the transfer of launch operations to Space Command began.<sup>3</sup>

While SMC's predecessors lost field units involved in operations, they temporarily gained units involved in research. In October 1982, the Air Force Space Technology Center (AFSTC) was activated at Kirtland AFB and assigned to Space Division. At the same time, three pre-existing laboratories were assigned to the AFSTC—the Air Force Weapons Laboratory, the Air Force Geophysics Laboratory, and the Air Force Rocket Propulsion Laboratory (later redesignated the Air Force Astronautics Laboratory). Creation of the AFSTC centralized Air Force space technology efforts and reoriented them to better serve the needs of the program offices at Space Division. In December 1990, the AFSTC was redesignated the Phillips Laboratory, and the three laboratories formerly assigned to it were folded into it to form a single super laboratory. In January 1993, Kirtland AFB, where the Phillips Laboratory was located, was transferred to SMC, and the 377th Air Base Wing, the host wing at Kirtland, was assigned to SMC as well. Nevertheless, SMC's subordinate units and their missions were stripped away again during the late 1990s. Phillips Laboratory became part of the newly created, centralized Air Force Research Laboratory on 8 April 1997. The 377<sup>th</sup> ABW was reassigned to the Air Armament Center at Eglin AFB, Florida, on 1 October 1998 to centralize air armament issues within the Air Force. Some space and missile programs managed at Kirtland AFB were closely tied SMC's central mission and were not reassigned. In general, they provided test and evaluation, launch of experimental payloads, and on-orbit operations from the Space Shuttle. These programs were placed under a single SMC detachment—Detachment 12—on 29 June 2001.

---

National Range Division, which reported directly to Air Force Systems Command. In 1970, the Space and Missile Test Center (SAMTEC) was set up under SAMSO to oversee both the launching organizations and the ranges as explained above.

<sup>3</sup> Launch operations were transferred incrementally. The Delta II and Atlas E launch operations were transferred first, followed by the Atlas II, Titan II, and Titan IV launch operations.

## The Space Commission of 2000

During the years 2000-2001, changes in SMC's relationship to its higher headquarters underwent profound changes. Supporters of more highly centralized military space functions had been gaining strength within Congress, and they inserted language in the National Defense Authorization Act for FY 2000 calling for a commission to assess the management and organization of space activities that supported national security. When constituted, the Commission to Assess United States National Security Space Management and Organization included prestigious space experts drawn from DOD and Congress, and its report, published on 11 January 2001, carried great weight.<sup>4</sup> The Commission emphasized the importance of the Air Force's management of space programs by recommending that the Secretary of Defense formally designate the Air Force as the executive agent for space within the Department of Defense. Among other managerial changes, the Commission proposed consolidating the Air Force's management of space efforts by realigning SMC from Air Force Materiel Command (AFMC) to Air Force Space Command (AFSPC), thus bringing the developers and operators of military space systems together under one major command. During a ceremony at Fort MacArthur on 1 October 2001, SMC's flag passed from the hands of AFMC's commander to the hands of AFSPC's commander, thus beginning in fact as well as in symbol a significant change in the management of military space programs.

As we have noted, developers and operators had worked together under SMC's organizational predecessors a generation earlier. Now, however, the managers at the top of the organizational pyramid for space would be members of the operational rather than the developmental community. With developers and operators in the same organization, the management and organization of Air Force space efforts had come full circle. However, space efforts were now better integrated with other defense efforts.

Another significant change in the management of Air Force space programs also resulted from the recommendations of the Space Commission. Until 1986, space and other acquisition efforts managed by the Air Force had reported on the status of their programs through the organizational chain of command. In 1986, however, the President's Blue Ribbon Commission on Defense Management, known as the Packard Commission, recommended that managers of individual programs report to Program Executive Officers (PEOs), who would report to Service Acquisition Executives in the service secretariats. The Air Force began to implement this recommendation in 1987, designating acquisition programs with large budgets as Executive Programs and leaving the other programs to the oversight of product division commanders. The new system created few changes in practice because product division commanders were usually designated as PEOs for the Executive Programs managed by their organizations. However, in 1989 the President asked for another review of the defense procurement process. The review was known as the Defense Management Review, and it endorsed the recommendations of the Packard Commission but proposed that product division commanders not be allowed to serve as PEOs. The Air Force implemented this proposal

---

<sup>4</sup> Not the least cause of the Commission's influence was the fact that the incoming Bush administration's Secretary of Defense, Donald Rumsfeld, had chaired the Commission during most of its term.



*General Lester L. Lyles, commander of Air Force Materiel Command, hands SMC's flag to Lieutenant General Roger G. DeKok, vice commander of Air Force Space Command, during ceremonies observing SMC's transfer to a new major command. Lieutenant General Brian A. Arnold, commander of SMC, stands at right. (Both General Lyles and Lieutenant General DeKok were former commanders of SMC.)*

in January 1990, appointing new PEOs for major areas of acquisition, including space. Eventually, all of the PEOs were reassigned to the area of Washington, D.C., to improve communications with acquisition executives in the Pentagon. The PEO for Space was reassigned to Washington effective 1 September 1990.

When the Space Commission issued its report on 11 January 2001, it recommended that the PEO for Space be transferred from the Pentagon back to SMC in order to consolidate SMC's space research, development, and acquisition responsibilities under Air Force Space Command. The Air Force PEO for Space was physically reassigned to SMC in June 2001 during the transition to the Commission's recommendations. On 19 February 2002, Secretary of the Air Force James G. Roche officially assigned the responsibilities of the PEO for Space to SMC's commander, directing that all acquisition programs at SMC were to be considered PEO programs. In matters of execution and support for space acquisition programs, the commander of SMC would report directly to the Under Secretary of the Air Force or, in his absence, to the Secretary of the Air Force.