1st GENERATION AIR FORCE BALLISTIC MISSILES

The Air Force ballistic missile program had its origins in studies and projects initiated by the Army Air Corps immediately after World War II. These efforts aimed at mating the German V-2 ballistic missile and the atomic bomb, a union that carried the potential for a revolution in strategic warfare. Technical problems held the program back at first, but the situation was changed drastically by the so-called "thermonuclear breakthrough" of the early 1950's. This breakthrough made it possible to manufacture high-yield nuclear weapons that were small enough and light enough to be carried as warheads aboard ballistic missiles.

Atlas, Thor, and Titan I

Faced with growing evidence of the Soviet Union's development of thermonuclear weapons and ballistic missile technology in 1953, the Air Force Secretariat's architect for research and development, Trevor Gardner, chartered the Strategic Missiles Evaluation ("Teapot") Committee, chaired by Professor John von Neumann, to diagnose the slow pace of America's strategic missile programs. The Committee recommended in 1954 that Project Atlas, the only American ICBM then under development, be reoriented and accelerated. The Air Force established the Western Development Division to carry out that task, sending Brigadier General Bernard A. Schriever to Los Angeles to set up and command the new organization in August 1954.

At first, the Division was responsible for developing only the Atlas, which was being designed and built by the Consolidated Vultee Aircraft Corporation (Convair). It was an intercontinental ballistic missile with liquid-fuel engines and a stage-and-a-half configuration. Within a year, the Division also became responsible for developing an alternate missile called the Titan. A more advanced, two-stage missile to be built by the Martin Company, the Titan was a hedge against failure or delay in the Atlas program. By the end of 1955, the Division was also developing an intermediate range ballistic missile, the Thor, under contract to Douglas Aircraft Company. Finally, it was charged with achieving initial operational capability for the three missile systems. That meant deploying them, a massive undertaking in itself. In barely 18 months, the mission of the Division had undergone an enormous expansion.

To develop operational missile systems as soon as possible, the Division replaced the conventional pattern of sequential development with concurrent development. Within the framework of a single overall plan, tasks related to development, production, testing, and initial operational capability proceeded simultaneously. Although the concept of concurrency was not new, the Division applied it on a scale never before used in military development programs.

The development of ballistic missile systems slowed in 1956-1957, when the Eisenhower administration made large cuts in defense spending to balance the budget. However, on 4 October 1957, the Soviet Union used an ICBM to launch the first manmade satellite. Sputnik's impact was dramatic. The United States' missile program was given renewed impetus, restrictions were lifted, previous program priorities were reinstated, and funding was vastly increased.

On 20 September 1957, even before Sputnik, the Air Force Ballistic Missile Division successfully launched a Thor missile from Cape Canaveral, Florida. On 17 December, the Division carried out the first successful Atlas launch, also from Cape

Canaveral. Following these successes, the Air Force missile program progressed rapidly. Deployment of the Thor was completed in 1960 at four 15-missile Royal Air Force squadrons in England. By the end of 1962, 132 Atlas launchers had been turned over to squadrons of the Strategic Air Command (SAC) by Ballistic Systems Division's Site Activation Task Forces (SATAFs). The Titan I made its first successful operational flight in 1960, and the SATAFs turned over all 54 Titan I launchers to SAC during 1962. By the end of 1962, therefore, all three first-generation missiles were in place and ready for operation.