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File

GENERAL BACKGROUND - WS-117L 17.2

The concept for using a satellite as a platform for reconnaissance equipment was a natural outgrowth of the requirement for obtaining intelligence information of a potential enemy whose area and security precludes the effective collection of this information by ordinary aerial reconnaissance or other usual means. The need for timely and continuous intelligence information, to assess a potential enemy's capabilities and probable intent, has become more critical as the advancement of technology has produced offensive weapons with intercontinental range and greater destructive powers. The impetus which motivated the military establishment to foster work on new methods for collection of intelligence information came from the realization that current, reliable, prehostilities intelligence information is required to insure proper direction of national planning in the development of effective counterforce weapons and counterforce strategy.

The results of the numerous studies conducted since 1946, at the direction of the Department of Defense, established that a Satellite Intelligence System was feasible and would satisfy to a great extent the requirements for intelligence information to aid the national planners in making decisions.

The concept of the Advanced Reconnaissance System is a result of studies conducted at the Rand Corporation. A study completed in 1947, together with similar investigations by other contractors, concluded that a satellite vehicle was feasible as a reconnaissance vehicle but not as a weapons carrier. In 1950, the Research and Development Board vested satellite custody in the Air Force, and Rand was directed to explore its possible military utility.

Recommendations for an expanded study of reconnaissance applications were made to the Air Staff in late 1950, and a formal report (Rand-217) followed in April 1951. Feasibility studies for critical subsystems initiated at the time were television (RCA), attitude control (North American Aviation), and nuclear auxiliary power units (Bendix Aviation, Frederick Flader, Allis-Chalmers and Virto Corporation).

Recommendations for the ARS development were made by Rand in November 1953, and these were followed by a final report (Rand-262) in February 1954. Subsequently, the Air Force issued System Requirement No.5, dated 27 November 1954, later revised on 17 October 1955, and General Operational Requirement No. 80 (SA-2C), dated 16 March 1955. In the spring of 1955, design study proposals were solicited by the Air Force from selected contractors.

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File 10.4
Programs

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The number of sources solicited was limited by the Government's desire to maintain a secure program throughout the design and development phase. The WS 117L is a reconnaissance system involving the launching of a vehicle into orbit for the ultimate purpose of collection and dissemination of intelligence information. Therefore, the problem of providing an airframe and engines did not need to be the sole guide to the type of contractors solicited. Those solicited were the Lockheed Aircraft Corp., the Radio Corporation of America, Glenn L. Martin Company, and Bell Telephone Laboratories. Bell Telephone Laboratories declined to submit a proposal.

The three contractors conducted their design studies between June 1955 and March 1956. These design studies culminated in three separate and distinct development plans. The Lockheed proposal was considered to meet the requirements most satisfactorily.

An ARDC System Development Directive No. 117L was issued on 17 August 1956. The development and test of WS 117L was awarded the Lockheed Aircraft Corp. on Contract AF 04(647)-97 in October 1956. The Massachusetts Institute of Technology was awarded the contract for research and development of the WS 117L Guidance and Orbital Attitude Control Equipment on Contract AF 04(647)-103 in November 1956. Executive management of the project is the responsibility of AFBMD.

By decision of the Secretary of Defense, 1 November 1957, the directive was issued to proceed with the WS 117L at the maximum rate consistent with good management.

The primary objective, established by the USAF's General Operational Requirement for WS 117L, was to "provide continuous (visual, electronic or other) coverage of the U.S.S.R. and satellite nations for surveillance purposes." In its capacity as Prime Weapon System Contractor, operating under the direction of AFBMD, Lockheed initiated a broad program of research and development to meet this objective: the program included both visual and electronic reconnaissance systems.

On 30 June 1958, the Advanced Research Projects Agency (ARPA) Order No. 9-58 was issued confirming previous Department of Defense directives for the assumption of responsibility by ARPA for the Advanced Reconnaissance Satellite Development Program. This directive established the Director, ARPA, as the source of policy and technical guidance for future WS 117L development.