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SECTION II
FUNDING PROGRAM
AMENDMENT 1
APPENDIX A
22 SEPTEMBER 1961

SPACE SYSTEM DEVELOPMENT PLAN
SAMOS R&D PROGRAM
11 AUGUST 1960

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APPENDIX A
SAMOS PROGRAM

GENERAL

This appendix provides a detailed estimate of additive FY 1962 fund requirements for support of new program elements authorized subsequent to submission of AMENDMENT 1 dated 21 July 1961.

PROGRAM DESCRIPTION: The funding shown will provide one prototype satellite, four flight model satellites, four Blue Scout vehicles, launch operations technical support, the equipment necessary for conducting operations, and other support necessary for operating the system during CY 1962. The satellites will contain sensing equipment, data recording equipment, data readout equipment, and satellite control and tracking equipment. The Blue Scout vehicles will be guided four-stage solid propellant vehicles that will contain flight termination equipment, instrumentation, and other airborne ancillary equipment. Equipment at the ground control and tracking stations, operation of the ground control and tracking stations, the collection and transmission of data, and the analysis and evaluation of this data will be provided. Also, the funds provide for studies and investigations necessary to accomplish the required technical direction; test documentation support; test operation analysis; and technical support for launch and training operations on the Blue Scout vehicles. Launch site facilities and Aerospace Ground Equipment will be provided to support satellite and Blue Scout vehicles receipt, inspection, assembly, mating, checkout, and launch activities.

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APPENDIX A
SAMOS PROGRAM

Justification:

A. Satellite and Associated AGE and Control Equipment
Radio Corp. of America

1. Satellites: One prototype model satellite, four flight model satellites, one set of spares and special test equipment will be provided by the funds. The satellites will contain equipment for sensing, data recording, readout transmission, and vehicle control, power and tracking functions.

2. Satellite AGE: Aerospace Ground equipment for the satellite will be provided by the funds and employed in the pre-launch checkout functions at Pt Arguello, California.

3. Satellite Control Equipment: The funds provide for equipment to be installed at the Satellite Test Annex and the Vandenberg AFB and New Boston Tracking stations. The equipment will perform such functions as satellite vehicle and payload performance data reception, processing, correlation, and retransmission, plus satellite

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APPENDIX A
SAMOS PROGRAM

B. Satellite Control Support

The funds provide for support from the 6594th Test Wing (Satellite) and associated contractors (LMSC and Philco Corp.) and the satellite control network which they operate. The network consists of a central Satellite Test Annex, numerous remote Tracking Command and Data Acquisition Stations and the interconnecting voice and data communications. Program requirements for the use of the network are levied by the Program Director on the AFSSD Satellite Control Office which in turn translates them into directions to the Test Wing, and, contractual authorizations for the contractors to assist the Wing in network operation and the incorporation of new equipment or modifications. The funds therefore provide for all planning, integration, engineering, computation, coordination, communication, testing analysis, documentation and other functions involved in supporting the Program through operation of the Satellite Control Network. The Program will require maximum available network tracking support during initial orbit operations, plus any National Range or Space Track capabilities which can be employed. Subsequent to initial orbit operations, satellite control functions will be essentially restricted to the Satellite Test Annex, the Vandenberg

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SAMOS PROGRAM

AFB and New Boston Tracking, Command and Data Acquisition Stations; special Program equipment and personnel will be located at these three facilities.

C. Satellite Launch and Orbit Control Operations, Technical Assistance and Spares Provisioning: (LASC - Philco Corp. - RCA)

The funds provide for the performance of the following functions:

1. Launch and Orbital Operations planning, engineering and documentation.
2. Pre-launch satellite checkout.

Checkout, maintenance and Operation of Satellite Control and Data Handling Equipment in the Satellite Test Annex, the Vandenberg AFB and New Boston Tracking Stations.

4. Pre-launch and orbital operations evaluation.
5. Satellite vehicle and payload performance evaluation.
6. Special pre-launch and Orbital System Operations studies as required.
7. Satellite, AGZ, Control and Data Handling Equipment Spares.

D. Data Transmission

The funds will provide for leased coaxial cable communication links between

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APPENDIX A
SAMOS PROGRAM

New Boston, New Hampshire, Vandenberg AFB, California, Tracking Stations, Data Reduction Center.

E. Boosters Chance-Vought

The funds provide for four guided, four-stage solid propellant Blue Scout vehicles. The contract for the vehicles will be administered by the AFSSD Blue Scout Office (SSVS) based on requirements of the Program. The Blue Scout vehicle including rocket motors, guidance system equipment, control system equipment umbilicals and other units will be sent from the manufacturers' plant directly to the launch site. At the launch site the vehicles will be assembled, checked-out, mated with the satellites, and launched by "Blue Suit" personnel. The funds will provide for electronic and mechanical spares, and in service modification for the Blue Scout vehicles. The AGE will be used for Blue Scout processing at the launch site and will include transtainers for handling the Aerojet Senior rocket motors, transport-erectors for processing the booster, airframe assembly tools, airframe handling slings, rocket motor handling slings, rocket alignment fixtures and tools, assembly-maintenance stands, ignition installation tools, ignition simulator equipment, destruct charge installation tools and simulators,

SECRET

SECRET

APPENDIX A
SAMOS PROGRAM

hydrogen peroxide servicing cart, control motor alignment equipment, guidance system installation and checkout equipment, electrical power supply equipment, ground air conditioning servicing equipment, umbilical mast equipment, a gas cylinder trailer, booster checkout equipment, handling dollies, consoles, and telemetry system checkout equipment.

F. Blue Scout/Payload Accommodation Kits, Technical Assistance and Services
Chance-Vought

The funds provide for two categories of performance on the part of the Blue Scout contractor, namely:

1. In-plant engineering and fabrication of payload accommodation kits for the Scout vehicle which will be built in accordance with NASA Specification L-1588. A separate payload accommodation kit is required for each Blue Scout vehicle. Individual kits are to modify an L-1588 Scout so as to accommodate the mounting, joint-checkout, launch, ascent and separation requirements of each individual payload.
2. Technical assistance and services local to the Program Directorate office to include:

SECRET

SECRET

APPENDIX A
SAMOS PROGRAM

- a. Launch Operations and Support Documentation
- b. Ascent trajectory analysis
- c. Blue Scout performance analysis
- d. System Test Planning
- e. Launch Operations Analysis
- f. Special engineering analysis and reports as required.

The functions described above will be performed specifically for and under the direction of the Program Directorate.

G. Blue Scout Launch Operations Engineering, Training and Spares Provisioning
Chance-Vought

The funds provide for Launch Operations and training support to the 6565th Test Wing (Development), Vandenberg AFB on the Blue Scout for this Program, Transit and other programs to be launched from the Ft Arguillo complex. The funds also provide for spares provisioning on an integrated basis for all of the programs involved in Blue Scout launches by the Wing. The functions will be performed by personnel of the Blue Scout contractor which are located in the Vandenberg AFB/Ft Arguillo area. All functions will be managed by the Commander, 6565th Test Wing or his designate. The overall contract for this effort will be

SECRET

SECRET

APPENDIX A
SAMOS PROGRAM

administered by the AFSSD Blue Scout Office; this Program will contribute its share of the cost on a pro rata basis.

H. Booster (Blue Scout) Motors

The funds provide for a set of stage motors (four stages per vehicle) for each of the four flight vehicles. The contracts for the motors are administered by the AFSSD Blue Scout Office based on Program requirements and fall into the following categories:

1. First Stage: Direct fixed price contract with Aerojet
2. Second Stages: Firm price MIPR through Argma with Thielkol
3. Third and Fourth Stages: MIPR through NASA on CPTF with ANU

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