Folder 6

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HOI 25-5

HQ OPERATING INSTRUCTION
NO. 25-5

HEADQUARTERS UNITED STATES AIR FORCE
Washington, 23 September 1963

Management Engineering

(C) BASIC POLICY CONCERNING SATELLITE RECONNAISSANCE

This is a Group 2 document.

EXEMPTED FROM AUTOMATIC DOWNGRADING BY
R. A. Vanderhoff Lt Col USAF
(approving authority)
DOD DIR 5200.10 SAFSS

PURPOSE. This instruction establishes the basic policy and procedures that will be followed in regard to satellite reconnaissance. (C)

1. POLICY. No information concerning the satellite reconnaissance effort will be initiated by Air Force organizations outside the special management structure established for this subject. (S)

2. PROCEDURES:

a. Satellite reconnaissance project information will not be included in the Program Documents (example: PG PD) described in AFM 27-1. (C)

b. Air Force regulations in the 375 series will not apply to the satellite reconnaissance effort. (C)

c. Satellite reconnaissance project information will be furnished as necessary for legislative matters by the Director of the Office of Space Systems. (C)

d. Documents reflecting Air Force requirements for reconnaissance will continue to be prepared and should be forwarded through normal channels to the United States Intelligence Board for consideration. (S)

FOR THE CHIEF OF STAFF

JOHN K. HESTER
Major General, U. S. Air Force
Assistant Vice Chief of Staff

OFFICIAL
R. J. PUGH
Colonel, USAF
Director of Administrative Services

This instruction supersedes HOI 25-5, 29 May 1961.

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OPR: SAFSS

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8 June 62

REVIEW OF OFFICIAL INFORMATION IN THE PUBLIC DOMAIN CONCERNING US SATELLITE RECONNAISSANCE PROGRAM (SAMOS)

PART I

The following information concerning the SAMOS reconnaissance project has been officially released or acknowledged, and is a matter of public record. This information has been summarized from an extensive review of unclassified, official US Government documents, official press releases and public speeches of highly-placed Government officials, both military and civilian; and encompasses the period from 1959 to the present.

A. Organization and Management.

1. Original development of satellite reconnaissance program beyond study stage was identified as Air Force Weapons System 117L. Program was transferred to Advanced Research Projects Agency in 1958, wherein WS-117L was broken into components called Discoverer, SAMOS, and MIDAS. These three projects were transferred back to the Air Force in November, 1959.

2. The unique management structure established for the SAMOS project in September, 1960 i.e., Secretary of the Air Force (Dr. Charyk) direct to field office (General Greer) at El Segundo, California, has been released. Key personnel of present management have been identified.

3. Prime contractor, associates, and major sub-contractors have been identified.

B. Nature, Importance and Priority of Program.

1. SAMOS has been identified as a reconnaissance satellite project of highest priority and importance to the United States being developed to provide the US with a world-wide surveillance capability.

C. Level of Effort.

1. Program funding for Fiscal Years prior to FY 63 are a matter of public record. (Example - FY 60, $160M; [redacted] Year-by-year level of effort, therefore, can be ascertained up to FY 63.

D. Estimate of Operational Date.

1. While no specific estimate of operational date has been released, the following quote from Page 35, DOD Appropriations Bill 61, Senate Report #1550, 10 June 1960, is significant. "...At the funding level recommended in the budget, it is reported that an operational capability will accrue late in calendar year 1963. The additional $83,800,000 recommended herein will make it possible to reduce the risks now inherent in the program by increasing substantially the number of research and

"development launches and by accelerating the program so that an operational capability could be achieved by as much as a full year earlier..."

E. Technical Details.

1. Vehicle.

a. Atlas/Agena configuration.

b. Many details of booster and second stage have been released, such as weights, thrust, guidance, manufacturer, etc.

c. Additional details of basic Agena vehicle have been published since it is also utilized in the Discoverer Program.

d. Discoverer Program has been identified as contributing directly to SAMOS through component testing.

2. Facilities.

a. Tracking and data read-out stations have been identified although not as to individual station capability. (Vandenberg California; New Boston, New Hampshire; Kodiak, Alaska; Kaena Point, Hawaii.)

b. Satellite Test Center (STC), Sunnyvale, California, is known as tracking and control center.

c. Recent construction of additional satellite tracking stations at [redacted] and Annette Island, Alaska, while not publicized, are known.

3. Technical Approach and Objective.

a. That both photographic [and] [electro-magnetic] reconnaissance capability is being developed in SAMOS has been repeatedly stated.

b. Electronic read-out of data from orbiting vehicle has been acknowledged.

c. Objective has been stated "To place vehicle in 94-minute polar orbit which will enable the system to view the entire surface of the earth." Further, that orbit will be as nearly circular as possible.

F. Launches.

1. The initial three launches of SAMOS vehicles were identified as such, and publicly announced. They were:

a. SAMOS I, 11 October 1960. Did not achieve orbit.

b. SAMOS II, 31 January 1961. Launch was successful and confirmation of orbit was made to the press. Orbital parameters were furnished and have been continuously reported in unclassified Satellite Situation Reports since that time. It is currently in the United Nations Registry.

c. SAMOS III, 9 September 1961. Unsuccessful - Exploded on the pad.

2. In each of the above cases, a fact sheet containing considerable information regarding vehicle and proposed launch was furnished to press agencies, examples of which are inclosed. (Inclosure 1)

3. Subsequent launches have not been identified other than by vehicle configuration (Atlas/Agena).

G. Results.

1. No statement has been officially released indicating whether or not there have been any results obtained from any satellite reconnaissance flight.

PART II

Because of the time period covered by the development of the satellite reconnaissance program and the dynamic nature of this process, it is extremely important in assessing public knowledge of this effort that the following factors be kept in mind:

A. Factual official information, as indicated in Part I, has, in practically every case, been utilized by various press media as nuclei for highly speculative articles and stories. Some, among the more informed press, have been uncomfortably accurate at times in speculative assessment of the scope, capability and technical details of the satellite reconnaissance program. However, almost all speculative articles contain substantial errors, and the presence in such articles of some correct but unconfirmed speculation does not justify such aspects being considered in the public domain. With the tightening of security and application of rigid need-to-know procedures approximately one year ago, a decided tendency to repeat old and obsolescent information has become apparent in the more recent press articles, and the relative amount of accurate speculation has decreased.

B. The factor of obsolescence is highly significant. In many cases, program alterations have occurred due to changes in the technical approach or to the evolutionary nature of the developmental process, so that some information which was factual when released is no longer valid.

Inclosure
1. Press Releases for
SAMOS II & III (Uncl)

NEWS RELEASE
PLEASE NOTE DATE

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC AFFAIRS
Washington 25 D C

HOLD FOR RELEASE
UNTIL LAUNCH

JAN 31 1961

NO. 79-61
OXford 75131

SAMOS

The Department of the Air Force today conducted the second of a series of experimental launchings of the SAMOS satellite. This series will continue over the period required for SAMOS research and development. Today's launching, which took place from the Naval Missile Facility, Point Arguello, California, was conducted by the Air Research and Development Command.

The SAMOS satellite is part of a research and development program looking toward improved capabilities for making observations of space, the atmosphere and the nature of the globe.

The SAMOS program is in an early research and development stage and evaluation of the capabilities of SAMOS is not expected to be accomplished for some time.

A Fact Sheet respecting the SAMOS program is attached.

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NEWS RELEASE
PLEASE NOTE DATE

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC AFFAIRS
Washington 25 D C

HOLD FOR RELEASE
UNTIL LAUNCH

JAN 31 1961

NO. 76-61
OXford 75131

FACT SHEET

SAMOS II

GENERAL INFORMATION

Project SAMOS is a research and development program to determine the capabilities for making observations of space, the atmosphere and the nature of the globe from satellites. The program is under the executive management of the Secretary of the Air Force.

TEST OBJECTIVE

SAMOS II was launched from a USAF launch pad at the Naval Missile Facility, Point Arguello, California, into the Pacific Missile Range to place the vehicle in a near circular polar orbit. The purpose of the initial SAMOS flights is component testing bearing on the engineering feasibility of obtaining an observation capability from an orbiting satellite.

CONFIGURATION

SAMOS employs the AGENA as its second stage. It is boosted out of the atmosphere by a modified Air Force ATLAS, and placed into orbit by the AGENA.

First Stage

Booster.....	An Air Force ATLAS modified for the SAMOS vehicle.
Height.....	Approximately 77 feet (with adapter section).
Launch Weight...	Approximately 262,000 lbs.
Propulsion.....	Rocketdyne liquid propellant engine, 356,000 pounds thrust.
Guidance and Control.....	The Convair ATLAS booster is equipped with the GE/Burroughs radio command guidance system. The guidance system can detect position and rate, compare this information with the predetermined trajectory data and command flight correction.

MORE

Satellite Vehicle

The entire Lockheed AGENA second stage becomes the orbiting vehicle.

Height.....About 22 feet

Weight.....Approximately 11,000 lbs. at launch. Orbital weight after fuel exhaustion will be approximately 4,100 lbs.

Propulsion....Following coast period after ATLAS burnout, a Bell liquid fuel rocket engine, developing 15,000 lbs. of thrust, will propel the second stage into orbit.

Instrument Package....Test photographic and related equipment

TRACKING, TELEMETRY AND COMMAND

a. Primary tracking, telemetry and command during orbit will be performed by:

Vandenberg Tracking Station, Vandenberg AFB, California
Hawaiian Tracking Station, Kaena, Oahu, Hawaii
Kodiak Tracking Station, Kodiak, Alaska

b. Ascent guidance (booster)

GE Mod II, Vandenberg AFB, California

c. Ascent tracking and telemetry

Vandenberg Tracking Station, Vandenberg, California

d. Downrange Telemetry and Tracking Ship

Richfield

e. Ascent Radar and/or Optical Tracking (PMR)

Point Arguello, California
Point Mugu, California
St. Nicholas Island, California

f. USAF Satellite Test Center, Sunnyvale, California

Control Center receiving all orbital data and exercising command control of SAMOS.

E N D

NEWS RELEASE
PLEASE NOTE DATE

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC AFFAIRS
Washington 25, D. C.

FOR THE PRESS | February 1, 1961 | NO 86-61
OXford 75131

January 31, 1961

The following announcements were issued yesterday at Vandenberg AFB, California regarding SAMOS II:

SAMOS II was successfully launched by the Air Force at 3:23 PM EST today from Vandenberg AFB, California.

The vehicle consists of the ATLAS intercontinental ballistic missile as the booster of first stage and AGENA, a liquid fuel upper stage incorporating the Bell rocket engine.

Today's launch is the second of a series that will continue the research and development phase of the system.

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January 31, 1961

Preliminary telemetry reports indicate that the second stage of the Air Force SAMOS II satellite vehicle was fired.

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January 31, 1961

The SAMOS II satellite launched at 3:23 PM EST, weighing approximately two tons has gone into orbit according to reports received from tracking stations.

The period of orbit is approximately 95 minutes.

The maximum altitude of orbit is approximately 350 miles and the minimum altitude is 300 miles.

END

NEWS RELEASE
PLEASE NOTE DATE

DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC AFFAIRS
Washington 25 D C

HOLD FOR RELEASE
UNTIL LAUNCH

NO 929-61
OXford 75131

SEP - 9 1961

FACT SHEET
SAMOS III

GENERAL INFORMATION

Project SAMOS is a research and development program to determine the capabilities for making observations of space, the atmosphere and the globe from satellites. The program is under the executive management of the Secretary of the Air Force.

TEST OBJECTIVE

SAMOS III was launched from a USAF launch pad at the Naval Missile Facility, Point Arguello, California, over the Pacific Missile Range to place the vehicle in a near circular, polar orbit. A major objective of the test will be to further determine the reliability of the ATLAS/AGENA B combination.

Another purpose of the flight is continued component testing to establish the feasibility of obtaining an observation capability from an orbiting satellite.

CONFIGURATION

SAMOS III employs the AGENA B as its second stage. It is boosted out of the atmosphere by a modified Air Force ATLAS and placed into orbit by the AGENA.

First Stage

Height . . . . . Approximately 80 feet (with adapter section).
Launch Weight. . . . . Approximately 262,000 pounds.
Thrust . . . . . Approximately 368,000 pounds (includes two booster engines which produce 154,500 pounds thrust each and are jettisoned after about two minutes of flight; the sustainer engine, rated at approximately 57,000 pounds; and two small vernier engines at 1,000 pounds of thrust each).

MORE

Orbital Stage

Height . . . . . Approximately 25 feet (about 3 feet of the aft section fit inside the ATLAS adapter ring, making the total mated vehicle height 102 feet).

Weight . . . . . Approximately 18,000 pounds at launch. Orbital weight after fuel exhaustion will be approximately 4200 pounds.

Thrust . . . . . Approximately 15,000 pounds.

Instrument Package. Test photographic and related equipment.

TRACKING, TELEMETRY AND COMMAND

a. Primary tracking, telemetry and command during orbit will be performed by:

Vandenberg Tracking Station, Vandenberg AFB, California
Hawaiian Tracking Station, Kaena, Oahu, Hawaii
Kodiak Tracking Station, Kodiak, Alaska
New Boston Tracking Station, New Boston, New Hampshire

b. Ascent guidance (booster)

GE Mod II, Vandenberg AFB, California

c. Ascent tracking and telemetry

Vandenberg Tracking Station, Vandenberg AFB, California

d. Downrange Telemetry and Tracking Ship

To be announced

e. Ascent Radar and/or Optical Tracking (PMR)

Point Arguello, California
Point Mugu, California
Saint Nicholas Island, California

f. USAF Satellite Test Center, Sunnyvale, California

Control Center receiving all orbital data and exercising command control of SAMOS.

CONTRACTOR PARTICIPATION

ATLAS

Assembly and Test . . . . General Dynamics/Astronautics

Systems Engineering and Technical Direction. . . Space Technology Laboratories

Guidance . . . General Electric Company, Burroughs Corporation (ground based computer)

Propulsion . . . Rocketdyne Division of NAA

AGENA

Prime Contractor . . . Lockheed
Propulsion . . . . . Bell
Ground-Based Communications . . . Philco

END