

ROUTE TO		ACTION		CHIEF OF STAFF SUMMARY SHEET		
1	AFDCC	Approval	WILSON	ORIGINATOR (Symbol)	TELEPHONE NO.	DATE
2	AFODC	Coord	Sturtevant	AFDSD-AT	71791	27 Jun 60
3	AFOCS	Signature		ACTION OFFICER		TYPIST'S INITIALS
				Henry C. Howard		

(U) SAMOS

SUMMARY

- REFERENCES:
- a. Letter, Hqs SAC, Gen Power to AFCCS, Gen White, 16 June 1960, TAB A, and additional letter, 24 June 1960, TAB B.
 - b. Letter, Hqs USAF (AFDSD-AT), subj: "(U) Exploitation of Initial SAMOS Data", to ARDC, w/info to CINCSAC, ADC, AMC & AFEND, dated 1 June 1960, TAB C.

1. Reference b. transmitted the recent instructions of SAFUS directing changes in the SAMOS program and the submission of a revised development plan.
2. General Power's letter comments on reference b. and makes recommendations relative to the revision of the SAMOS plans.
3. Reference b. included some questions of an operational nature which had been raised by SAFUS and on which further guidance was to be provided by this headquarters. This guidance is entitled "Supplemental Hqs USAF Guidance to ARDC, SAC and ADC Concerning SAMOS" and is included herewith as an attachment to the proposed reply to General Power's letters. This guidance, TAB D, is concurred in by AFODC, AFXDC, and AFDDC. It is not concurred in by AFCIN. General Walsh's letter of non-concurrence to AFORQ which pertains to this guidance is attached as TAB E.
4. The proposed reply to General Power's letter comments on the difficulties faced in this program and outlines the action necessary to overcome them.

RECOMMENDATIONS:

5. That the Chief of Staff approve TAB D, "Supplemental Headquarters USAF Guidance to ARDC, SAC and ADC Concerning SAMOS".
6. That the Chief of Staff sign the proposed reply to General Power which includes the above guidance, TAB F.

John L. Martin, Jr.

JOHN L. MARTIN, JR.
Colonel, USAF
Deputy Assistant for Advanced
Technology, Development

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- 6 Atchs:
1. Ltr, Gen Power to Gen White, 16 Jun 60, TAB A
 2. Ltr, Gen Power to Gen White, 24 Jun 60, TAB B, w/info etc.
 3. Ltr, Hqs USAF, 1 Jun 60, TAB C
 4. "Supplemental Hqs USAF Guidance to ARDC, SAC, ADC Concerning SAMOS, TAB D
 5. Ltr, Non-Concurrence, AFCIN, 21 Jun 60, TAB E
 6. Proposed Ltr to Gen Power, #12 AFCCS, TAB F

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HEADQUARTERS
STRATEGIC AIR COMMAND
Offutt Air Force Base
Nebraska

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16 JUN 1960

General Thomas D. White
Chief of Staff
United States Air Force
Washington 25, D. C.

Dear Tommy:

General Wilson's recent letter to ARDC with SAC as an information addressee, directed ARDC to develop a revised Development Plan for Samos. Ground rules were laid down to develop a program reduced in scope and along less sophisticated lines. This same letter also went on to stress that questions concerning command and control, operational facilities, and user relationships still continue to be a matter of considerable discussion. (S)

During the past year and as recent as 21 May 1960, I have expressed to you on several occasions, my grave concern about the lack of progress in the Samos program and the urgent necessity for this system in the Strategic Air Command. In view of SAC's requirements for priority intelligence and the potentiality of Samos for improving the operational effectiveness of this command, it is inconceivable to me that we are still questioning the operational requirement for or the assignment of this system. (S)

I recognize that the questions on system reliabilities, readout versus recovery, degree of sophistication, program scope, etc., are all certainly understandable. By the same token, however, these same questions are not going to be resolved to everyone's satisfaction for years to come. There always will be new ideas and suggestions for product improvements. Recognizing this, it appears absolutely essential to me that we should vigorously concentrate our entire efforts on obtaining a basic, operational usable system at the earliest possible date, in order to obtain usable intelligence data for employment of the ICBM and manned aircraft force. Later on, after the initial system

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...turned to operate and has been turned over to SAC, the Samos system can be expanded as required in the form of product improvement. This procedure, of course, is the same one that has been and is currently being utilized in transitioning manned aircraft and ICBM systems from ARDC to SAC. (S)

Specifically I recommend that the basic system to be developed by ARDC for SAC be defined essentially the same as that described in paragraph 3 of General Wilson's letter. In this connection, it will be necessary for ARDC to plan for and install an operational control center in an existing facility on Offutt AFB. At this juncture, since the question of where to locate the data processing facility and the operational control center still seems to be under discussion, in some areas, I would like to review past actions on these facilities. (S)

The Strategic Air Command, on 5 August 1959, was delegated by the Vice Chief of Staff the responsibility for operational planning for employment and control of the Samos system. Further, in a letter from General Wilson to General Schriever, 7 August 1959, it was directed that the control and data processing capability for Samos would be established at Offutt AFB. Accordingly, SAC has conducted its preliminary operational planning in response to the above directives. As a result of numerous planning conferences, ARDC, AMC, ADC and SAC have unanimously agreed and each command has published mutually supporting detailed plans specifying that: (S)

- a. The operational control and data processing elements of Samos should be installed in existing facilities on Offutt AFB. (S)
- b. An interim data processing capability should be installed in existing facilities on Offutt AFB. This facility is required in conjunction with the very first R&D launch. (S)
- c. Data handling must be co-located with the operational control for efficiency of operation and to permit close day to day coordination of efforts between these two integral parts of the systems. (S)

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d. One integrated Samos and Midas control center located in existing facilities on Offutt AFB is essential in view of the highly inter-related use that the Samos and Midas make of common ground support equipment. Co-location of these two facilities will permit considerable monetary savings. (S)

Subsequent to the above actions, Hq USAF, on 25 Feb 1960, submitted to the Secretary of Defense operational plans for Samos and Midas. These USAF plans were in complete consonance with the jointly developed plans of ARDC, AMC, ADC and SAC. Subsequent to 25 Feb 1960 the Secretary of Defense forwarded the USAF plans for Samos and Midas to the JCS for comments and recommendations. (S)

In view of the above actions and recognizing that ARDC (AFBMD) has previously briefed the AFBMC as to why the operational control centers for Samos and Midas should be co-located at Offutt AFB, adjacent to the data processing facility, it is strongly recommended that no action be taken to change existing plans to locate these facilities at Offutt AFB. Any indecision on the part of the USAF, at this time, as to where to locate these facilities will undoubtedly be used to great advantages by external agencies. (S)

I am sure that you recognize the long range benefits that will accrue to the USAF from locating the operational control and data processing features of Samos at Offutt AFB. These operational facilities will without a doubt expand, over the years, into control of other instrumented satellites and manned space systems. Accordingly these facilities should be firmly integrated into the command and control structure of the USAF, by locating them at Offutt AFB. (S)

In conclusion I wish to emphasize that during the past year the Samos and Midas programs have been subjected to numerous reviews, repeated re-direction of efforts, continual re-examination of technical efforts, etc. To date, none of these exercises have resulted in a clear cut course of action. Consequently, it has not been possible to go ahead with long lead time items required for early operational facilities. This situation simply cannot be allowed to continue, in view of the U-2 incident and the dire need

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for strategic intelligence and tactical warning. I am sure that you will agree with me that it is absolutely essential that the Samos and Midas programs be gotten off of dead center. Maximum efforts must be taken to develop, as soon as possible, a basic, operationally useable system. The sophistication and any required increased scope of activities should come later. (S)

This correspondence is classified ~~SECRET~~ because it reveals planning information concerning the SAMOS reconnaissance system. (U)

Sincerely,



THOMAS S. POWER
General, USAF
Commander in Chief

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HEADQUARTERS STRATEGIC AIR COMMAND
UNITED STATES AIR FORCE
OFFUTT AIR FORCE BASE, NEBRASKA



General Thomas D. White
Chief of Staff
United States Air Force
Washington 25, D. C.

24 JUN 1960

Dear Tommy

Reference is made to your letter of 16 June regarding the need to develop some well-organized interim plans for exploitation of any possible data from Reconnaissance Satellite tests. My immediate concern lies in the responsibility you have placed on SAC to have a processing capability available in time for the SAMOS launches scheduled to begin in September.

As you know, the processing of any take from the R&D launches was to have been carried out by a joint ARDC-SAC effort. This was to be accomplished at a facility to be established here at Offutt and designated as "Early-Fix". Recently, the funds for this project were frozen. Therefore, this facility cannot be made available in time for the first few firings.

As a result of the funds freeze action, we have developed a plan to provide a processing capability sufficient for the R&D launches. This plan consists of three steps or phases that will minimize any slippages in construction programs. Step I will utilize existing personnel, equipment and facilities of the 544th Reconnaissance Technical Group here at this headquarters. This capability is already in being with the exception of a few items of equipment peculiar to the SAMOS system. These items are scheduled for completion prior to the first launch and can be readily installed in the existing facility of the 544th RTG. This arrangement can take care of the immediate situation, and adequately process the data from the first few launches. However, as the number of launches increases, it is essential that the balance of the SAMOS equipment be installed in the "Early-Fix" facility (Step II) in an orderly

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progression. Since the 4999th Data Processing Squadron (ARDC) has been activated at Offutt and has already been partially manned there will be no interruption in changing from Step I to Step II. Step III provides the equipments and facilities necessary for final system evaluation and makes optimum utilization of all expenditures incurred in Step II. This over-all plan provides for the growth of the system in an austere manner. It further provides for growth in an operational intelligence environment that does not exist elsewhere.

Since receipt of your letter of 16 June a message from your headquarters to AFRCE-MR directs immediate termination of the "Early-Fix" construction contract. It is important that this directive be rescinded and the attached proposal be implemented as soon as feasible.

I am attaching a copy of this plan for your information. I have sent the original to General Schriever with the recommendation that it be incorporated in the new SAMOS exploitation plan. It should then provide the means of accomplishing our dual responsibilities in a mutually acceptable manner.

Sincerely



THOMAS S. POWER
General, USAF
Commander in Chief

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D.C.



JUN 1 1960

REPLY TO
ATTN OF:

AFDSD-AT

SUBJECT:

(U) Exploitation of Initial SAMOS Data

TO:

ARDC

INFO TO: CINCSAC ADC AMC AFBMD

1. By letter of 20 April 1960, the Director of Defense, Research and Engineering approved in principle the Research and Development Plans for DISCOVERER, SAMOS and MIDAS, dated 15 January 1960. Separate correspondence as to specific changes and funds pertaining to this approval is being prepared; however, questions of operational command, operational facilities and user relationships for the SAMOS reconnaissance satellite continue to be matters of considerable discussion.
2. The Under Secretary of the Air Force directed on 27 May 1960 that the R&D exploitation and operational plans for SAMOS be re-evaluated. The Under Secretary stated that there is considerable technical uncertainty as to the character and quality of the information that may be obtained by the different payloads of this system and that the operational interest and the character of the initial operational programs will be strongly conditioned by the results of the R&D program. He noted that a very elaborate plan had been originally conceived for the operational control, data handling, data utilization, data volume, and data display elements of the SAMOS and MIDAS operational systems, but that approval of such a plan with authorization for expenditure of funds has not been forthcoming. This delay has occurred because of concern that the assumptions on such items as technical capabilities, schedules, data quality, frequency of coverage, payload reliability and lifetime, computer requirements, optimum camera types, etc., are open to considerable question and can affect in a major way the type of operational system that will ultimately be required. If, as a result of the R&D experimental flight program, recovery rather than readout turns out to be the best primary means for satisfying the bulk of the operational requirements, then the ground complex required for handling such data will be enormously simpler than if complete reliance is placed on readout to meet these requirements.
3. It is directed that a revised SAMOS Development Plan be prepared and submitted as soon as possible within the ground rules specified below. Deviations for valid reasons will be considered and may be presented as alternate plans.

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- a. In order to have parallel R&D tests of readout and recovery systems, re-examine all applicable camera equipment, both on the shelf and in development, and make recommendations for the introduction of an additional recoverable payload development program with associated schedules and cost.
- b. Endeavor to achieve the earliest flight dates for the different payloads with priorities in this order: photographic recovery, photographic readout, ferret. Consideration is to be given to possible delaying elements and added insurance against such delays.
- c. Make provision for the minimum essential capability to handle in a reasonable fashion any operational take from the R&D flights:
 - (1) Include facility details, schedules, costs, manpower, and subsystem descriptions.
 - (2) Initial readout is limited to two sites.
 - (3) No wide-band data links authorized except Vandenberg-Sunnyvale.
 - (4) No provision is to be made for alternate satellite control centers: control to be exercised originally from Sunnyvale center.
 - (5) Capability will be limited to that required to handle one operating readout satellite at a time.
 - (6) System should be planned to permit growth capacity if R&D program results are promising and decision is made later to use readout primarily.
 - (7) Processing capability should be adequate for recovered as well as readout data.
 - (8) Personnel staffing and training should be geared to the modified program. The present activities in this regard appear to be completely out of scale and out of phase time-wise.
 - (9) Provision will be made only for essential elements of subsystem I. Complexity and computer requirements introduced into this subsystem as a result of ferret payloads should be carefully reassessed. The very limited value of possible data from F-1 and F-2 militates against sophisticated data handling system. Subsystem I appears to have been greatly over-engineered, at least for the ferret aspects of the program.
 - (10) Computer programming problems, schedules and computer requirements for photographic readout payloads will be re-evaluated to determine whether it is reasonable to anticipate extensive pre-determined selective area coverage on request by intelligence in the R&D flights now scheduled. The interim facility requirements should be planned accordingly.

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d. Determine the effects of the above on MIDAS and prepare necessary revisions to the MIDAS plans.

4. The proposed SAMOS interim operational capability should be located in the area where it is desired to establish the final operational facility and control center, if appropriate, or can consist of an augmentation to the R&D capability with Air Force personnel rather than contractor personnel responsible for the operation. The plan for this capability must include recommendations for its location with justification for the choice. The current plan is to use a very small portion of the old Martin bomber plant in Omaha with overlapping control systems for MIDAS and SAMOS. The Under Secretary questions the desirability of this plan and reports that CINCPACRAD believes this is unacceptable and that MIDAS control, readout, display, etc., must be integrated in a common location with other defense subsystem elements such as those related to BMEWS. Therefore, questions of the following types must be considered in making a new plan for the interim operational capability:

a. Should the Air Force plan ultimately to establish the complete operational data handling, display and control elements of SAMOS and MIDAS at the old Martin Bomber Plant?

b. If not, or if there is serious question as to such desirability, is it sound to reactivate a minute area of this large plant for the interim operational equipment?

c. Should the entire complex be considered as basically a "peacetime" operation with survivability of all or part of the equipment of little importance?

d. Is it necessary or desirable to co-locate data handling and processing facilities with future control centers and should the SAMOS and MIDAS control centers be integrated?

5. Request this headquarters be notified of the earliest possible date that the requested plans can be formally submitted for appropriate briefings and presented to the Air Force Ballistic Missile Committee. ARDC is to act as team captain for the preparation of these plans with other commands participating as necessary. Further guidance will be provided by this headquarters on the questions in paragraph 4.

/signed/ Roscoe C. Wilson

ROSCOE C. WILSON
Lt General, USAF
Deputy Chief of Staff, Development

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~~MEMORANDUM FOR THE DIRECTOR, AFSS, AND THE SAC, SECURITY MATTER~~

1. Reference is made to paragraphs 4 and 5 of secret letter, Exploitation of Existing Secret Data, AFSS-27, 1 June 1960.
2. In general, some of the questions raised by the Under Secretary are covered in paragraph 4 of referenced letter concerning the feasibility of a system which would permit the use of existing secret data for the benefit of AFSS's technical advice in order to derive an effective conclusion in case of the arms race by the Under Secretary. Following paragraphs deal with the same questions in paragraph 4 of referenced letter in reverse order:
 - a. Reference paragraph 4.d. In this case this headquarters does not consider it necessary to mention that the data handling and photo-reproduction facilities be co-located with future control centers in all cases. A recovery system is submitted to be the most effective arrangement. However, co-location will be occasionally necessary if the need is revealed to a resident site and/or a combination of both. It should be pointed out that Air Force has a certain existing requirement which requires the continuing improvement of data handling and processing facilities for the Strategic Air Command if that command is to continue to maintain its operational effectiveness. In the interim, during the SAC phase, exploitation of the SAC data can logically be conducted at places other than the Langley research facility. SAC test results should enable us to answer in a more definitive manner to the question of co-location of the processing and handling and system operational control facilities. The question of integration of these and other related matters, see paragraph 5 below.
 - b. Reference paragraph 4.c. This headquarters recognizes that all plans for operational Secret systems have been based on the assumption that these will be essentially a processing system. Further this headquarters is aware of the Strategic Air Command's previous proposal that the system be portable. This proposal was based on the fact that in view of the Under Secretary's question, this point required serious consideration. For the time being, the SAC effort and related operations of SAC data will be considered processing operations and will be provided in soft facilities. The final studies in development of the final "hard" or "soft" configuration must be consistent with technical and other considerations involved in maintaining the system essential facilities for post strike operations.

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Request RAND undertake such a study to determine:

(1) Is it possible to harden (or disperse) sufficient facilities to give the system a reasonable chance of survival?

(2) If so, what are the minimum essential facilities which must be hardened to allow operational exploitation of R&D during and immediately after the first hours of general war? This question should be answered in two parts. Part one to be based on the assumption that primary operational dependences will be placed on readout systems and part two on the assumption that recoverable systems eventually become the major operational configuration.

(3) The added funds required by fiscal year to harden facilities required by each assumption above. Assume for this purpose that a go-ahead will be given in late FY 61.

Since it is recognized that many of the same personnel currently engaged in revising the development plan will be required to conduct this study, it will not be required until 1 September.

c. Reference questions a and b. The answer to question "a" is directly dependent upon the final position on question c. Since a reality of the "penetration" vs "hardening" ability of the system puts eventual use of the Martin Bomber Plant in question, the position of this headquarters is that a small area of this facility should not be reactivated at this time for the interim operational exploitation equipment. The action directed by paragraph 3 c of the referenced letter should consider all feasible methods of converting the R&D take into standard formats (9 inch photographic film and 2 1/2 inch tapes) and providing duplicating services, bearing in mind that this is a photographic/technical function demanding extremely high competence. The reactivation of a portion of the Martin Bomber Plant for this purpose will be authorized only if it can be shown that this is the most efficient and economical method of accomplishing these tasks. It is recognized that Strategic Air Command exploitation of the R&D take, once it is reduced to standard formats, is a different function and involves other factors. HQ Strategic Air Command will conduct a study of the exploitation problem (as differentiated from the processing and duplication problem) using RAND estimates of reasonable R&D "take." This study will consider all reasonable exploitation facilities available to the command and total workload. The object of the study will be to determine the following:

(1) How long existing facilities will be adequate for exploitation of the R&D take.

(2) Time-phased requirements and justification for additional facilities, if any are required.

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