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56

WDTD

1 August 1955

MEMORANDUM FOR: RAND-WOOLDRIDGE
ATTN: DR. HETTLER

SUBJECT: ~~(S)~~ Program Data for the Advanced Reconnaissance System

1. Attached hereto is a copy of a letter from Wright Air Development Center requesting information and assistance in the WADC Advanced Reconnaissance System Design Study Program.

2. During the week of 22 August a two-day briefing of the WADC people and their contractors will be conducted here at WED. It is requested that R-W prepare a presentation on the information requested in paragraph 2a of the attached letter.

3. Colonel Morton will be Project Officer on this for WED and will make the necessary arrangements for the room, etc., and will advise you as to specific time for this presentation. Please contact him for any further information.

1 Incl
Cy WADC Ltr
dtd 22 Jul 55
(WD-55-12067)

CHARLES H. FERRELL, JR.
Colonel, USAF
Deputy Commander
Technical Operations

cc: Col Glasser, WDTS

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DOD DIR 5200.10

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WD-55-10 /

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WDG

22 August 1955

MEMORANDUM FOR: Colonel Terhune

SUBJECT: Scientific Satellite

1. We can anticipate receiving a directive to undertake the development of a scientific satellite along the lines recommended as Phase II by the Stewart Committee.

2. In accordance with our previous discussions on this matter the scientific satellite should become an integrated part of the Convair program. Ramo-Wooldridge will fill the same role as for the ICBM - namely, have systems engineering responsibility in technical direction. However, it is anticipated that instrumentation and other scientific aspects of the orbital object can be delegated in toto to WADC or Cambridge.

3. The following actions are required:

a. Preparation of a detailed development plan.

b. Organizational readjustment within WDT and R-W to accommodate this program.

I would like to review a first cut at a and b on 2 September.

7 copies made

Orig - Col. Terhune

1 cc - Gen. Schriever file

cc: Colonel Morris

Dr. Ramo

Lt Colonel Hudson

Green - Reading file

Yellow - Official file

WDG

S. Kent

Gen. Schriever

X-219

B. A. SCHRIEVER
Brigadier General, USAF
Commander

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Convair
ALS 58

WDGH

30 August 1955

Convair Presentation, 29 August 1955

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Representatives from Convair, headed by Mr. Jim Dempsey, gave a presentation to WDD and R-W personnel on a proposed orbital research and test vehicle (ORTV). Their interest in this came about when they were solicited by WADC last year to make proposals for a Satellite program. When this proposal was cancelled, Convair continued on its own to study the problem. Two solutions were offered by Convair both envisioning a "A" series XSM-65 as a booster. In one version a non-powered Satellite, spherical in shape, 40" in diameter with a weight of 500 pounds including instrumentation could be boosted up into space where it would rotate as a Satellite for from 90 to 130 days. Convair proposed that within this weight, of which batteries were the largest part, research programs including cosmic radiation, micrometeorite information, biological research, through the use of television cameras could be obtained. There appeared to be no question that Convair favored the unpowered version as the simplest approach.

Convair also indicated study of a power^{ed} version of the ORTV based upon the XSM-65 series "C" as a booster and a weight of 3500 pounds total for the LOX-hydrocarbon. ^{with} Pay load would be about 1500 pounds including attitude control and the shape might be spherical or otherwise. This powered version might also be used as a lunar research vehicle.

Considering the time limitations the Convair study appeared to be very thorough. They believe that such a system would work and the non-power^{ed} version at least could be gotten into operation very quickly

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Convair Presentation (continued)
30 Aug 55, page 2

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after series "6" check-out flights were performed. Convair was very proud of the fact that they spent their own money on this. For full technical details, see the reports which they left. These reports were given to Colonel Norton, WDTD.

Adochifella Jr.

2
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~~CONFIDENTIAL~~

59

9 September 1955

MEMORANDUM FOR THE RECORD

SUBJECT: Telephone Conversation with Colonel Genex

1. This date Lt Colonel Genex of HSDPI, who is monitoring the Air Force responsibility for scientific satellite activities at the present time, called Lt Colonel Oder in regard to the receipt by Hq ARDC of a directive regarding the Phase 2 Satellite which was signed by General Thatcher, Hq USAF, on 31 August. A copy of this directive has been furnished to General Schriever.

2. General Boyd has been briefed by Colonel Genex on the status of the scientific satellite program and its relationship to the advanced reconnaissance system and to the ICBM program. General Boyd furnished certain guidance on the management on this matter as follows:

a. He would like to see Holloman Air Development Center participate as much as possible in regard to the utilization of technical manpower. Colonel Genex felt that General Boyd meant that this was to apply only to the satellite part of the over-all missile configuration.

b. General Boyd stated that WDD should be affected to the minimum possible extent. WDD should make available their part of the over-all configuration, and have operation control over scheduling of tests and firings where any part of the WDD production is involved.

c. General Boyd basically concurred in the fundamental relations between the Phase 2 scientific satellite and the advanced reconnaissance system.

3. ARDC is calling a meeting consisting of representatives from WDD, WADC, AFRC and HADC during the week of 19 September with the following aims:

a. The group should come up with a firm statement of requirements for resources for the Phase 2 scientific satellite for transmission to Hq USAF (the basic directive did not provide for any specific resources, but requested Hq ARDC to provide an estimate of the cost of the program.)

b. To come up with a management plan for defining the responsibilities and inter-relations of WDD, the advanced reconnaissance system, WADC and any others involved.

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Intermittent T/R/R/c

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Memo for Record, 9 Sep 55

4. Colonel Genex expressed the hope that the following schedule would be met:

a. By 30 September a paper (agreed upon by all parties) to be sent to Hq USAF regarding the resources needed for the program.

b. As soon as possible (by the end of October) a development plan to go to Hq USAF.

5. Colonel Genex felt that WDD should be represented by a person or persons who could speak for the management aspects of WDD responsibility as well as the technical aspects of the problem.

6. The basic question at this time is, "Is the date of 19 September good for WDD to furnish representatives, and will WADC at Dayton, Ohio be a convenient place to meet?"

7. I advised General Schriever of this conversation with Colonel Genex. He approved the date of 19 September and the meeting place of WADC, and stated that WDD representatives will be chosen subsequently.

8. I will advise Colonel Genex of General Schriever's reaction to this matter. Colonel Genex will relay the whole matter officially to WDD by TEX.

SIGNED

FREDERIC C. ODER
Lt Colonel, USAF
Office of Assistant to Commander
Headquarters ARDC

Copies made:

Original & 1
Official File Cy (WDD)
Green Reading File Cy (WDD)
Copy for Colonel Oder

2

Colonel Oder

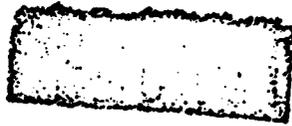
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COMDR WDD INGLEWOOD CALIF

192300Z SEP 55

PRIORITY

X

COMDR ARDC BALTIMORE MD

116

WDG-9-4-E... PERSONAL FOR GENERAL POWER PD ON 16 SEP I RECEIVED A CALL FROM MR. DEMPSEY CMM CONVAIR THAT RCA IS VISITING THEIR PLANT FOR THE PURPOSE OF OBTAINING COMPLETE INFO ON THE ICBM PROGRAM AS IT RELATES TO USE OF SERIES "B" AND "C" VEHICLES FOR THE SCIENTIFIC SATELLITE AND THE ARS PROGRAMS. PD THIS VISIT WAS NOT COORDINATED WITH OR CLEARED BY THIS OFFICE PD DEMPSEY ALSO INFORMED ME THAT RCA HAD RECEIVED INSTRUCTIONS CONCERNING THEIR PARTICIPATION IN THE ARS PROGRAM WHICH INVOLVES THE USE OF ICBM TEST VEHICLES PD ALSO THAT AS A RESULT OF CONVAIR'S BRIEFING TO HQ ARDC THEY WERE REQUESTED TO SUBMIT A PROPOSAL FOR A SIX MONTH'S STUDY INVOLVING INTEGRATION OF ICBM TEST VEHICLES WITH THE ARS PROGRAM PD I AM CONCERNED OVER THE ADVERSE EFFECT WHICH THESE UNCOORDINATED ACTIONS CAN HAVE ON THE ICBM PROGRAM PD SIGNED SCHRIEVER

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1 1

General Schriever

B. A. SCHRIEVER, Brig. Gen. USAF
 Commander

WDG

219

Contractor = Convair

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COMDR WDD INGLEWOOD CALIF

192330 SEP 55

PRIORITY

~~CONFIDENTIAL~~

COMDR ARDC BALTIMORE MD
ATTN: GEN SESSUMS

ASST DEPUTY COMDR, WEAPON SYSTEMS
HQ ARDC WPAFB OHIO
ATTN: RDZ-1 SSG

RDZPI-9-7-E

SECRET

WDTD-9-19-E ATTN GEN SESSUMS PD REURMSG RDZPI-9-7-E CMM BELIEVE GROUP SHOULD CONCENTRATE ITSELF ONLY WITH THE ESTABLISHMENT OF A DEVELOPMENT PLAN PD UNTIL SUCH A STUDY IS COMPLETED NO INTELLIGENT DECISION WITH RESPECT TO THE MANAGEMENT OF A SATELLITE PROGRAM CAN BE MADE PD BASED ON THIS STUDY A PLAN SHOULD BE PRESENTED TO HQ ARDC AND MANAGEMENT DECISION BE MADE AT THAT LEVEL PD OF SPECIFIC INTEREST AND SERIOUS CONCERN OF WDD IS THAT SATELLITE DEVELOPMENT PLAN AND MANAGEMENT APPROACH SHOULD MEET THE CRITERIA OF MINIMUM INTERFERENCE WITH THE ICBM PD SIGNED SCRIEVER

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DOD DIR 5200.10

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1 1

HAROLD W. NERTON, Col, USAF

B. A. SCRIEVER, Brig. Gen. USAF

WDTD

219

Commander

1117A-55-8

Official file copy to WDTD (Col Nerton)

~~SECRET~~

WDID

22 September 1955

MEMORANDUM FOR THE RECORD

~~CONFIDENTIAL~~

SUBJECT: Attendance at ARS Conference, Wright-Patterson Air Force Base

1. In compliance with a request from Hq ARDC, the undersigned attended a conference on the subject of Scientific Satellites and Advanced Reconnaissance Systems at Wright-Patterson AFB on 19, 20 September. Representatives of the following organizations were present: RADC, AFRC, EADC, WADC, Hq ARDC, and office of Assistant Deputy Commander/Weapon Systems. Lt Colonel Genes from General Boyd's office was in charge of the meeting. Colonel William H. Byrnes represented the Weapon Systems office, Wright-Patterson Air Force Base.

2. The first day was spent primarily in a discussion of a technical approach to the problem. Holloman made a rather detailed presentation on how they would go about building a satellite nose cone. In the afternoon of the first day the meeting was divided into two parts: (a) those to consider costs, and (b) those to consider management. I attended the meeting of those to consider management.

3. Colonel Genes proposed three different methods by which a satellite system could be managed. They are as follows:

a. WDD be responsible for everything except the payload and tracking, this to be a responsibility of AFRC, but that AFRC would operate under direction of WDD.

b. That the Weapon Systems office, WPAFB, be responsible for systems management with WDD being responsible for providing ICRM vehicles and having "operational control" over flight test. Holloman, under this system, would be responsible for supervising the design and fabrication of the nose cone and AFRC for the instrumentation and tracking.

c. Same as b, above, except that Holloman would be in charge of systems management with WDD and AFRC supporting.

In all of these the primary purpose would be the scientific satellite but ARS requirements would be considered in the scientific satellite. At my suggestion, a fourth proposition was considered; namely, the same as a, above, except that no consideration would be given to the ARS requirements at this time. I had no real purpose in suggesting this except that I thought it was necessary in order to complete the entire study.

4. At Colonel Genes's suggestion, these four propositions were examined on the following considerations:

a. Meet IGY requirements

b. ICRM interference

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H/R, Subj: Attendance at ARS Conference, WPAFB, dtd 22 Sep 55 (Cont'd)

- c. Additional manpower required
- d. Additional facilities required
- e. Simplicity and speed
- f. Satisfy USAF guidance (letter dated 31 Aug 55 signed by General Thatcher)
- g. Cost
- h. Satisfy ARS needs
- i. Satisfy General Boyd (that ARS and IGY satellite be combined as an integrated system).

The group attempted to evaluate each of the proposals on these items. At the completion of the evaluation, Colonel Genz requested comments from the individual representatives as to which system they recommended. Colonel Baynes spoke up quickly saying that since WDD management was obviously the simplest and easiest, he thought the chances of success were far greater under WDD. I made no comments; I restricted my statements solely to those of a technical nature or in discussions of specific items. I should like to emphasize that at no time did I suggest or imply that responsibility should be with WDD. The only other comment came from Holloman; in their opinion they thought that Holloman should do the job. The meeting adjourned with general agreement that as far as this group is concerned, we had done as much as we were capable of doing and that any decisions were the prerogative of General Power and whenever he wished to consult.

5. Since it is very clear that there can be no satellite, either scientific or otherwise, in the foreseeable future, except as a result of the IIRM program, it is strongly recommended that this should become a systems responsibility of WDD.

SIGNED

HAROLD W. HURON
 Colonel, USAF
 Assistant Deputy Commander
 Technical Operations

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SECURITY CLASSIFICATION (If any)

DISPOSITION FORM

~~CONFIDENTIAL~~

FILE NO.	SUBJECT	DATE	COMMENT NO. 1
	Weekly Diary Items	26 Sep 55	
TO	FROM		
Western Development Division ATTN: WDGE	RDGB	Lt Col Oder/id/211	

19 September 1955

Attended, together with Colonel Norton, as WDD representatives, a meeting called by Headquarters ARDC at WADC on the USAF Scientific Satellite Program. Together with Colonel Norton, I furnished information to the conference commensurate with General Schriever's instructions to Colonel Norton on this subject. (Secret)

20 September 1955

By agreement with Mr. Zeller, RDISI, assigned action to RDISI for letter from AFCGM, "Report of Special Security Survey." (Unclassified)

Arranged with Major Jensen, RDQPP, for release of a copy of FSPQ-65-1 to WDD for retention. Also discussed with Lt Colonel Ernst of RDGPL this same item and the furnishing of certain other documents listed in AFM 27-1 to WDD. In view of the limited number of these documents in this headquarters and their limited relevance in WS-107A, it is anticipated that RDGPL will arrange to loan documents to WDD for a limited period. (Unclassified)

21 September 1955

Attended briefings of General Power and members of Headquarters ARDC staff by WDD members on the selection of second source airframe contractor and on the TEM. Assisted in staff work in forwarding results of second source airframe contractor selection board, as approved by General Power and General Schriever to Headquarters USAF for approval. (Unclassified)

22 September 1955

Together with Lt Colonels Pellegrini and Genz of RDZPI briefed General Sessums on the background of subjects covered in TWX's WDG-9-4-E and priority TWX 192330Z. General Sessums reaffirmed the position that no interference with WS-107A by either program concerned under RDZPI cognizance (ARS or the Scientific Satellite) could be discontinued. RDZPI prepared replies to the two TWX's and coordinated these with RDGB. (Secret)

have read

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WD 55 12517

65-53580

DD FORM 96

REPLACES NME FORM 26, 1 OCT 41, WHICH MAY BE USED

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DF, Subject: Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: RDGB DATE: 26 Sep 55 COMMENT NO. 1
(CONT'D)

Prepared essentially a forwarding indorsement to WDD for General Power's signature on letter from DCS/D, Subject: "(Secret) Policy Concerning Air Force Support of British TEM Development" and coordinated same with appropriate staff elements. (Secret)

23 September 1955

Discussed with General Schriever his policy concerning WDD participation or involvement in other programs, such as TEM and scientific satellite. Discussed also the organizational position of the ARDC liaison office. General Schriever decided to leave the office where it is organizationally but we will render full informational support to General Ostrander in his new job as Assistant for Guided Missiles to the Deputy Commander/Weapon Systems.

Frederic C. E. Oder

FREDERIC C. E. ODER

Lt Colonel, USAF

Assistant Chief

Office of the Assistant to the Commander

This correspondence is classified.
SECRET IAW par 23, AFR 205-1.

~~CONFIDENTIAL~~

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WD 55 12517

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20 Sep 55
Lt Col C E Hughes/le/697

OCT 3 1955

WDTSP

MEMORANDUM FOR COLONEL TERPUNE

SUBJECT: Additional Tasks Assigned to the Ramo-Wooldridge Corporation.

1. The purpose of this memorandum is to reiterate those additional tasks which from time to time have been assigned the Ramo-Wooldridge Corporation and which were not specifically contemplated under the current contract as written or as modified by supplemental agreements. The tasks I refer to are:

a. Studies for the Air Force in connection with the problem of insuring that the ICRM will not be susceptible to the countermeasures that might be employed by the potential enemy. This task is in addition to the anti-countermeasures provisions normally incorporated in a weapon system as a result of anticipating the potential enemy's countermeasure capability.

b. Studies conducted for the Air Force in connection with possible satellite responsibilities of the Western Development Division.

c. Efforts in connection with the Intermediate Range Ballistic Missile Program, including internal studies, reviews of contractor proposals, participation on evaluation groups, etc. These efforts which are a direct result of Ramo-Wooldridge activities in support of the ICRM Program, although related to the Intermediate Range Ballistic Missile problem, are not considered to constitute new work under the contract.

2. It is requested that you advise the Chief, Special Aircraft Project Office, AMC, of these additional tasks and the nature thereof in order that he may enter negotiations with the Ramo-Wooldridge Corporation for appropriate contractual coverage.

SIGNED

B. A. SCHRIEVER
Brigadier General, USAF
Commander

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WDTSP

OCT 7 - 1955

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MEMORANDUM FOR COLONEL TERHUNE

SUBJECT: Status of Action Taken to Fund the R-W Contract Over-run.

referred

1. R-W CLAIM

The R-W Corporation has requested that \$1,000,000 (applied to their contract in Sep) not be considered over-run on their original estimates for the contract period ending 31 October. Instead, they claim these costs were incurred as a result of; (1) new work assigned over and above that originally required and, (2) more accomplishment than that originally contemplated. Accordingly, R-W claims a fee is justified. Their claim is based on the following:

- b. Satellite studies (new work) - \$ 96,900
- a. ~~Anticounter measure studies~~ (new work) - \$ 89,700
- c. IRBM - Including "Fall out" (new work) - \$ 286,300
- d. Operational Base studies (new work) - \$ 138,700
- e. 107A Acceleration (more than contemplated) - \$ 367,100
- TOTAL - \$ 978,700

2. SCHRIEVER MEMO TO TERHUNE

General Schriever requests that AMC provide contractual coverage (pay fee) as follows:

- a. Anticounter measure studies (only on work not directly resulting from ICBM effort).
- b. Satellite studies (all new work).
- c. IRBM studies (only on work not directly resulting from ICBM effort).

3. TERHUNE OPINION

Discussions with Joe Frost re R-W claim indicate a Terhune opinion as follows:

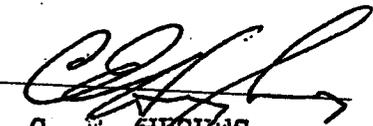
Last of August

WDTSP, SUBJECT: Status of Action Taken to Fund the R-W Contract Over-run.

a. Anticounter measure studies - Twenty-five percent (25%) of the work performed by R-W should be considered new work and above the normal expected under a system-development program. Therefore, Seventy-five percent (75%) X 89,700	\$ 22,425
b. Satellite studies - All new work.	\$ 96,900
c. IRBM studies - New work only where not a direct result of ICBM studies (based on Ramo statement that program dilution by IBM not more than 3 man-months?). R-W estimates sixty percent (60%) of IRBM effort was not "Fall out". Therefore 60% X 286,300. . .	\$ 171,780
d. Operational base studies - not new work	0
e. Acceleration of 107A - not new work	0
<hr/>	
TOTAL	\$ 291,105

4. PROBLEM

Will fee payment on costs amounting to \$291,105 satisfy the intent of General Schriever's memo and thinking as expressed to you?


C. E. HUGHES
Lt. Colonel, USAF
Chief, Programs and Procedures Group

SECRET

66

WDTD

7 October 1955

MEMORANDUM FOR: General Schriever

SUBJECT: Satellites

1. This is a brief resume of activities in WDD on this subject this year. In January Lt Colonel Genes briefed the Advisory Committee on the Advanced Reconnaissance System. As a result of this, R-W was asked to investigate possibilities of using the ICBM as a satellite booster. A low order effort was put on this problem within R-W which resulted in Dr. Fried's report.
2. On 25 May a teletype was received from ARDC, attached as Tab A. This tab should be read in its entirety. To the best of my knowledge, no coordination was made with WDD prior to HADC's presentation at Baltimore on 5 May. As a result of this teletype, we received several requests for ICBM information from HADC. All of this information was supplied. In addition, the undersigned attended an information exchange meeting at HADC in the latter part of May.
3. On 24 June we were notified that we would participate in a presentation to be given to a DOD committee on the subject of satellites (Tab B). On 24 June some members of the Stewart Committee were briefed by Colonel Terhune at WDD on the subject of using the ICBM in connection with the satellite. Dr. Fried's report was the basis for this presentation.
4. On 5 July there was a meeting at ARDC attended by the undersigned and Dr. Fried which put together an Air Force briefing for the Stewart Committee. A dry run of this briefing was given to General Putt on 7 July and presented to the Stewart Committee on 7 July.
5. On 12 August a meeting was held at WDD attended by Mr. Gardner and others in which an Air Force position was established as a result of the Stewart Committee report. As a result of the Stewart report, the IGY Satellite was assigned to the Navy (the Martin Viking to be an integral part).
6. In a letter dated 17 June, General Demlar established a need-to-know for the ARS office at Wright Field in regard to the ICBM data. As a result of this, a briefing was requested on the ICBM program by Wright Field for contractors who are engaged in a study of an ARS (Lockheed, Martin, RCA). A full day's briefing was held at WDD on 23 August on the basic fundamentals of the ICBM program.

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Memo for General Schriever, Subj: Satellites, dtd 7 Oct 55

7. In a letter dated 6 September 1955 (Tab C), the Directorate of Systems Management at Wright Patterson stated their requirements for information on the ICEM program to be used by the ARS contractors. Of particular interest is a letter from Bell Aircraft (subcontractor to RCA) attached to this ARS letter, which indicates a tremendous amount of information which at least one of the ARS contractors feels he should know.

8. Early in September, RCA paid a visit to Convair seeking information on the ICEM for use in an ARS study. Tab D is an explanation of this visit from ARDC. You will note that this explanation indicates that the ARS contractors have been requested to submit a test program by 1 November which uses ICEM vehicle performance as a basis for this program.

9. At the request of Colonel Genetz, a meeting was held at Wright Field 19 September to discuss management of an ARS-IGY program (Tab E). The meeting was attended by the undersigned and a trip report is attached as Tab F.

10. On 5 October the local Martin representative requested information on the Convair ICEM which he stated would be necessary for use in Martin's ARS studies.

11. Convair has made a pitch to WDD, Wright Field, Baltimore, and the Pentagon on both a powered and unpowered IGY Satellite. To date, nothing specific has come of this except that Convair (Mr. Dempsey) indicates they have been requested to submit a proposal for a six months' study on this subject.

12. In summation, there has been considerable heat generated by Baltimore, Holloman, and Wright Field on the subject of the IGY and ARS Satellite. Since neither of these projects can proceed in the next several years without utilization of the ICEM, all of these offices have been looking to WDD for information, promises of vehicles, etc. The undersigned has attempted to meet these information requirements and it is believed that we have done so with the exception of detailed information to the ARS study contractors. For the most part, the net result of all of the heat has been the placing of WDD in the unenviable position of not being able to satisfy these agencies with answers they want to hear on either design information or vehicle availability; in particular, it has made us appear uncooperative in the eyes of HADC.

SIGNED

HAROLD W. NORTON
Colonel, USAF
Assistant Deputy Commander
Technical Operations

6 Incls

1. TWX (WD-55-11430) Tab A
2. TWX (WD-55-11743) Tab B
3. Ltr (WD-55-12363) Tab C
4. TWX (WD-55-12484) Tab D
5. TWX (WD-55-12390) Tab E
6. M/R (WDTD-55-17) Tab F

WDTD-55-20

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CLASSIFICATION (if any)

DISPOSITION FORM

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FILE NO.	SUBJECT
	RDGB Weekly Diary Items

TO Western Development Division ATTN: WDGE	FROM RDGB	DATE 10 October 1955 L/C Oder/id/211	COMMENT NO. 1
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3 October 1955

1. Discussion with Colonel Miller, RDSI, regarding TWX, WDTF-9-28-S-E to Headquarters USAF, information to Headquarters ARDC. He was unhappy that the TWX went to AFCIE and said that the item for an extension of the rocket sled track at HADC was contrary to General Power's policy. I pointed out that the TWX went to AFCIE because of a previous AFCIE request concerning an additional ten million in FY 56 P-321 money. After I checked with Lt Colonel Swanke, I reassured Colonel Miller that he "was not being cut out of the pattern" and there apparently was some controversy over just what General Power's position on HADC facilities actually was inasmuch as he had indicated approval of the recommendations of the Board of General Officers chaired by General Yates. (Confidential)

2. Coordinated with RDSI on the preparation of a concurring 1st indorsement to a basic letter from Headquarters AOC requesting approximately 1.7 million for Conair and Edwards facilities. (Confidential)

3. In a discussion with General Sessums was advised that Mr. Gardner was scheduling a meeting for 11 October 1955 concerning ATLAS, subject and time unknown. He asked me to check and advise General Power. (Unclassified)

4. Checked with Lt Colonel Ahola regarding 3 above and was told that meeting would be at 1000 hours, 11 October 1955, in the Secretary of Defense Conference Room and would have present by invitation present and potential ATLAS contractors and major subcontractors. The meeting to be chaired by Secretary Wilson would be to impress the attendees with the fact that ATLAS has highest priority per Presidential directive. Mr. Gardner has advised General Schriever. (Secret)

5. Wrote a memorandum to General Power advising him of 4 above. (Unclassified)

4 October 1955

1. Wrote a DF to WDSI regarding what appears to be a security breach in connection with a 1 October 1955 Associated Press dispatch. (Confidential)

2. Received TWX from Headquarters USAF regarding approval of Glenn L. Martin Company as second airframe contractor for WS-107A and prepared TWX to WDD directing immediate implementation and quoting Headquarters USAF TWX. Coordinated TWX with Generals Ostrander and Demler and got same signed off by General Sessums in General Power's absence. Advised Colonel Norton that the TWX (RDGB-10-1-E) was dispatched. (Secret)

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DF, SUBJECT: RDGB Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: RDGB DATE: 10 Oct 55 COMMENT NO. 1 (CONT'D)

3. Reviewed the Top Secret documents in RDGB. There are a number which could possibly be downgraded. Plan to discuss these with General Schriever the next time he is in Baltimore.

5 October 1955

1. Attended a presentation to General Power by General Davis, HADC, regarding implementation of the Board of General Officers (headed by General Yates) recommendations regarding establishment of a "space center" by ARDC. Also present were Generals Ostrander and Landon and Colonel Miller (RDSI). General Power expressed concern whether the Board had taken a long enough view into the future needs of such an installation, the proximity of Alamogordo to HADC and the limits that the town would place on a future establishment. General Power directed General Ostrander to prepare instructions to reconvene the Board and give the problem of the geographical needs of the proposed installation further consideration. ~~(Secret)~~

2. General Power said that he had discussed with General Boyd that morning the issue of management of the Air Force Scientific Satellite program and asked me to get together with General Boyd in asking General Schriever to come in next Monday (10 October) to get the matter settled. ~~(Secret)~~

3. General Power said that he had been discussing with Dr. Kelly the ARDC (WDD) request to Bell Telephone Laboratories for their participation, that Kelly said there was some confusion in that General Power's letter of 28 July and the views of WDD representatives did not seem to agree, that he had suggested to Kelly that he write a letter for the record as to what BTL understood it was being asked to do. I passed this information on to Colonel Terhune who stated that Colonel Blasingame was in New York today on this subject and he said he would call Kelly's position to his attention with a view to obviating the need for a letter such as Kelly was to write. (Unclassified)

4. Discussed with Lt Colonel Jacobson, WDTT, and Major Harkins, RDSTTG, certain aspects of WDD requirements at AFMTC. (Unclassified)

5. Received a telephone call from Mr. George Grimminger, AFDRD, who wanted information on gravity studies being performed by WDD. I could not answer his question and suggested that any queries he have be handled through Lt Colonel Ahola. (Unclassified)

6. Sent TWX to General Schriever regarding information received from Lt Colonel Genetz, RDZPI, on Headquarters USAF views on relationships of Scientific Satellite and ARS programs. ~~(Secret)~~

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WD 55 12888

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DF, SUBJECT: RDGB Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: RDGB DATE: 10 Oct 55 COMMENT NO. 1 (CONT'D)

6 October 1955

1. Received TWX, WDG-10-1-E, 4 October 1955, regarding WDD views on development of nuclear rockets. Brought TWX to the attention of RDGN who hadn't received a copy and determined from Captain Monday, RDGN, that the ANP Program Budget, line 14, presently contains a total of 5.3 million dollars for nuclear rockets and nuclear ramjets. Discussed TWX with General Ostrander, RDZG; Colonel Stefan, RDTD; and Colonel Nay, RDTDP, and decided to discuss the TWX with General Schriever on 10 October to determine specific action desired. General Power briefed on above per his request. ~~(Secret)~~

2. General Power concerned about reasons for and/or propriety of TWX, WDS-9-1-E. After discussion with Colonel Terhune and Lt Colonel Hudson, WDD advised him that TWX was sent because WDD had informal information that Headquarters USAF was about to disapprove WDD request for C-131D and that neither WDD nor RDGB were aware of the fact that General Power personally interceding for WDD with Headquarters USAF. General Power accepted the explanation. It turns out that General Power had been asked to intercede by Colonel Ljunggren, RDZ, who had not so advised RDGB. (Unclassified)

3. Wrote DF to RDACT through RDG recommending downgrading of certain portions of Military Operations Order 1-54 (reference WDSIS-10-15-E). (Unclassified)

4. General Power advised me that:

a. At the request of Colonel Terhune, WDD, he had authorized sole source for contract with Bell Telephone Laboratories. He asked that WDD furnish to him justification for this requested sole source. (Unclassified)

b. Mr. Macauley, Acting ASD(R&D), has asked Army representatives to visit WDD "to learn how the project is managed". General Power does not know why the Army needs this information but has acquiesced to the visit. General Putt to send TWX on this. (Unclassified)

7 October 1955

1. Was visited by Captain W. L. Sandidge, AFDFR, SCEL, who wanted information on WS-107A tests at AFMTC this fall and winter for the Applied Physics Group at

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WD 55 120000

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DF, SUBJECT: RDGB Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: RDGB DATE: 10 Oct 55 COMMENT NO. 1 (CONT'D)

130
SCEL (Dr. McAfee) who want to test their new 75 MC radar (called "MOON") against flights from Patrick. The flights must go over 90 miles. I furnished general information to Captain Sandidge on the schedule and expected path of the RTV (X-17). (Secret)

2. Attended General Power's and General Landon's staff meetings. (Unclassified)

3. General Power advised that at the request of Mr. Quarles (because of publicity regarding Martin Company work on satellite and question of workload capability at GLM) relayed through General Putt that he had by telephone advised General Schriever to not sign a letter contract with GLM until approval was received from Headquarters USAF and that he had determined from WDD and so advised General Putt that this should be cleared up by 11 October 1955 at the latest. General Schriever to visit Headquarters USAF regarding this problem on morning of 10 October 1955. At General Power's direction, a TWX was sent to WDD making his verbal instructions a matter of record. (Secret)

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4. Discussed procedure for WADC visits to WDD with Mr. Zeller, RDISI, after receiving a query regarding this subject from Mr. Yost, WADC. Mr. Zeller discussed with Lt Colonel Cofield, WDD, who will send TWX on desired procedure. (Unclassified)

Frederic C. E. Oder
FREDERIC C. E. ODER

Lt Colonel, USAF

Assistant Chief

Office of the Assistant to the Commander

cc: Colonel Ahola, AFDDC-A
Hq USAF, Wash., D. C.

This DF is classified SECRET
IAW par 23, AFR 205-1.

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WD 55 12626

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

SR No. 5
17 October 1955

ARDC SYSTEM REQUIREMENT

*All ltr 7 Nov 55
re Gen Powers
Division of
10 Oct 55*

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1. DIRECTED ACTION

Submission, upon request, to Headquarters ARDC (Western Development Division) of information necessary for the preparation of a System Development Plan by the following participating centers is directed:

- ✓ a. Wright Air Development Center.
- ✓ b. Air Force Cambridge Research Center.
- c. Holloman Air Development Center.
- ✓ d. ~~Wright Air Development Center.~~
- e. Arnold Engineering Development Center.
- f. Air Force Missile Test Center.
- g. Air Force Personnel and Training Research Center.

(UNCLASSIFIED)

2. GENERAL INFORMATION

- a. Title: (UNCLASSIFIED) Advanced Reconnaissance System.
- b. System No: 117L
- c. Responsible Agency: Headquarters ARDC (Western Development Division) is responsible for preparation of a System Development Plan based on the requirements contained herein in accordance with ARDCM 80-4, dated 1 July 1955.
- d. Target Dates:
 - (1) Submission of System Development Plan to Headquarters USAF: 1 April 1956.

This SR supersedes SR No. 5, dated 29 November 1954, title, "Advanced Reconnaissance System."

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DOWNGRADED AT 12 YEAR
INTERVALS; NOT AUTOMATICALLY
DECLASSIFIED. DOD DIR 5200.10

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SR No. 5

- (2) Operational time period of this system: Prior to 1965 through 1970 (See par 5a).

e. Participation, Coordination, or Interest:

- (1) Air Materiel Command - (F).
(2) Air Proving Ground Command - (P).
(3) Air Training Command - (P).
(4) Strategic Air Command - (C).
(5) Air Defense Command - (C).
(6) CNO, USN - (I).
(7) C/S, USA - (I). (8) CIA (I)

f. Funding Information: Funds for this program are carried for FY 1956 under BPSN 2-1115.

g. References

- (1) GOR No: 80 (SA-2c), dated 16 March 1955.
(2) DD Form 613, title, "Advanced Reconnaissance System", Project No. 1115, dated 19 April 1955, RCS: DD-R&D/A/119.

(SECRET)

3. REQUIREMENT

a. General Philosophy

In order to permit selection of the most effective approach to an Advanced Reconnaissance System concept which utilizes an earth satellite as a system platform, it is essential that the existing and projected state-of-the-art in this field be adequately surveyed, and a determination made through system design studies by selected contractors, of the technical and economical magnitude of full system development effort. From these studies there will be prepared a Development Plan which will be used as a basis for choice of the Advanced Reconnaissance System to be developed for the Air Force inventory. It has been generally accepted that, with the advent of the very high yield super weapon, strategic target intelligence requirements for efficient use of such a weapon have become far less detailed than heretofore; but at the same time, the requirement for routine surveillance of an enemy's territory becomes all the more necessary to

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anticipate and circumvent his effective use of the same caliber weapon. In concept at least, the technical approach to this type of Advanced Reconnaissance System leads one to the artificial earth satellite which, with its inherent capability for routine, long duration flight and its apparent capabilities for the collection of reasonably detailed information from the surface of the earth, seems to make a satellite system attractive for strategic and national reconnaissance. (SECRET)

b. Objectives of the Advanced Reconnaissance System

As a matter of general guidance, the following may be considered the intelligence objectives for the Advanced Reconnaissance System:

- (1) Continuous reconnaissance (visual, electronic, or other) coverage of the USSR and satellite nations, for surveillance purposes. Timeliness of receipt of the intelligence information is essential, with daily reconnaissance coverage at high resolution the ideal. In consideration of the requirement for earliest availability of the Advanced Reconnaissance System, the engineering progression and Air Force acceptance should be from the lesser to the greater resolution.
- (2) The resolvable surface dimension detail should be of the order of 100 feet or smaller. A capability of resolving detail to the degree that objects approximately 20 ft on the side can be positively identified is the optimum in order to positively identify enemy weapon launching sites and associated activity. If this objective can be met, the many other intelligence requirements of larger surface dimension would automatically be satisfied.
- (3) The volume of intelligence delivered by this Advanced Reconnaissance System will be staggering. Therefore, the system, in order to be considered complete, must include a suitable associated data handling, recording, reduction, and filing system. The earliest acceptable system must have provisions for automatic data indexing, filing and storage. Final objective will be for completely automatic data processing, interpretation, presentation, and dissemination. All data handling systems conceived for the Advanced Reconnaissance System will be compatible with data handling equipment in contemporary use within the intelligence community.

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- (4) The accuracy with which points on the earth's surface can be located by the Advanced Reconnaissance System should be studied. While grosser accuracies can be accepted as interim solutions, the finer accuracies should be considered as the optimum and the goal for ultimate complete development.
- (5) Thorough investigation of all possible means of improving the intelligence collection capability of the Advanced Reconnaissance System; such as the application of stereo techniques to the analysis and interpretation of television images.

~~(SECRET)~~

c. Mission

- (1) The primary operational mission of the Advanced Reconnaissance System will be to provide pioneer and surveillance reconnaissance coverage of the territories controlled by the USSR and its allies. The system must be capable of obtaining:
 - (a) Routine target, mapping, pioneer terrain, weather, and photo intelligence data.
 - (b) Bomb damage assessment of high yield weapon strikes.
- (2) An alternate and co-equal mission for the Advanced Reconnaissance System will be to provide and maintain continuous and comprehensive surveillance of the electronic activities of the USSR as a means of securing basic Soviet intentions, intelligence, and capabilities intelligence. The electronic reconnaissance (ferret) system should be capable of:
 - (a) Sensing, coding, recording and retransmitting all significant electronic emissions on both a qualitative and quantitative basis.
 - (b) The location of areas of high electronic densities compatible with the resolution capabilities obtainable.
- (3) Each mission carries a firm requirement for a suitable data handling and processing capability

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both in the vehicle and on the ground.

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d. Physical Characteristics

The Advanced Reconnaissance System can be described as follows:

- (1) A launching base which will consist of all facilities and equipment necessary for the proper launching of the satellite vehicle.
- (2) A satellite vehicle which will consist of the following sub-systems:
 - (a) Propulsion stage or stages necessary to boost the reconnaissance payload to its orbital altitude and once at this altitude to impart the velocity required to establish the satellite on its orbit.
 - (b) Guidance and control equipment to (a) guide the vehicle from the launching base to its orbit and (b) establish and maintain the reconnaissance payload in the correct attitude after it has been placed on orbit.
 - (c) Reconnaissance equipment that provides useable pictorial reconnaissance information for transmission to a ground receiving station. The alternate mission will require sensing equipment that is capable of detecting electromagnetic radiations instead of physiographic features.
 - (d) Information storage equipment with a capability of routinely storing the information gathered by the satellite vehicle until it can be transmitted to a ground receiving station.
 - (e) Transmitter equipment for transmission of the collected reconnaissance information, transmission and reception of any other information that is required to properly operate the satellite and its equipment.
 - (f) Miscellaneous equipment required for the proper functioning of the satellite; e.g., a transponder beacon to aid in the tracking of the

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SR No. 5

satellite by a ground receiving station might conceivably be used.

- (g) An auxiliary power supply to provide sufficient power for all of the satellite's needs.
 - (h) Provision for self-destruction of the satellite vehicle upon termination of its operational usefulness.
- (3) The ground receiving station will consist of the following sub-systems:
- (a) Receiving equipment to (a) receive the transmitted reconnaissance information, (b) enable vehicle tracking, and (c) any other information transmitted from the satellite.
 - (b) Transmitter equipment to transmit any required information to the satellite.
 - (c) Information storage equipment that will retain the reconnaissance information transmitted from the satellite until it is fully used.
 - (d) Display equipment that will display the reconnaissance information as it is received and which can also be used for viewing stored information.
 - (e) Other equipment that is required for the handling, interpretation and dissemination of the reconnaissance data that is received.

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4. GUIDANCE

a. Three parallel system design studies on the "Advanced Reconnaissance System" are currently being conducted under Task No. 21010, Project No. 1115. The purpose of these studies is to determine whether a useful military intelligence system, utilizing an artificial earth satellite as a carrier, can be foreseen with sufficient definitude to indicate full development at this time. Maximum utilization of these design studies in preparing the System Development Plan is directed.

b. In the artificial satellite we see a platform which at the present time appears to be limited in its military usefulness to that of making observations or relaying communications. This is a vehicle system singularly applicable to use as a reconnaissance system.

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The approach to the design of the overall system must be that of assuring a maximum military utility and reliability (since early models of the Advanced Reconnaissance System will undoubtedly be unmanned) of the reconnaissance sub-system; these factors will determine in turn the design objectives of the vehicle with its propulsion and guidance sub-systems.

c. One of the basic advantages of a satellite is its more-or-less unlimited duration of flight. If we were to try to take full advantage of this flight duration capability, it would be necessary to achieve flight equipment reliability far in excess of that which is possible today. There is a point at which a balance can be struck between efforts aimed at improving the reliability of flight components of the satellite, and the economy to be realized from the extended flight duration characteristics of a satellite. The system design studies directed herein should result in a suggested optimum system flight time, for which in-flight components should be designed.

d. In design of the Advanced Reconnaissance System, full advantage must be taken of those components, in existence or under development for other systems, which have application to a satellite-type vehicle system. Activity resulting from this directive must be fully coordinated, within ARDC, with related system developments to insure that no unwarranted duplication of study or design effort exists. Headquarters USAF will undertake necessary inter-service coordination.

e. The proposed test program for the Advanced Reconnaissance System should be oriented so as to maximize the usefulness of the test vehicles to the scientific community in general, as well as to satisfy environmental and engineering requirements of the Advanced Reconnaissance System. The System Development Plan should contain provisions for the fabrication and launching of "research laboratory models" of the satellite test vehicle, capable of obtaining and transmitting to earth valuable scientific data on the space environment and astronomical bodies. Such vehicles should be planned for launching early in the system test program, with the first "research laboratory model" launching prior to 1 January 1959, if possible.

f. In addition to the three system design studies referred to in 4a above, Project No. 1115 encompasses state-of-the-art study and experimental hardware development in the critical component areas of the Advanced Reconnaissance System. The current technical program involves thirteen separate tasks, carried out principally by contract. This program was established to provide state of art inputs to the system design studies; fullest exploitation of the Project 1115 technical program should be insured in this respect.

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SR No. 5

5. OTHER INFORMATION

a. SECURITY

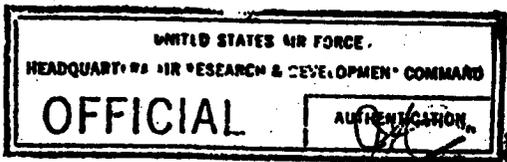
(Maintenance of proper security of this program is of paramount importance. A basic guide to security will be the following: all information which contains or implies a date of operational availability for the Advanced Reconnaissance System; as well as information pertaining to its progress as a Weapons System will be classified TOP SECRET.) Other aspects of the Advanced Reconnaissance System program, including its exploitation of the satellite, will be SECRET. (SECRET)

b. USE OF SCIENTIFIC CONSULTANTS

The broad group of the engineering, physical, and geo-physical sciences, which is encompassed by a development such as that contemplated in the Advanced Reconnaissance System, requires that ARDC make maximum use of the scientific and technical competence within the nation. This competence should be recognized and utilized when required in a consultant and advisory capacity by the Weapons Systems Project Office responsible for the Advanced Reconnaissance System. Wherever possible, civilian scientists who can contribute to the success of this project should be engaged in the capacity of consultant to ARDC, and the results of their efforts made available to all contractors on an equal basis. (CONFIDENTIAL)

c. PRIORITY

Preparation of the System Development Plan directed herein will be carried out under Priority 1A, Precedence II-3. (UNCLASSIFIED)



JOHN A. CONNOR
Chief, Program Control Div
Directorate of Systems Plans

Don R. Ostrander

DON R. OSTRANDER
Brigadier General, USAF
Assistant for Guided Missiles Systems
Deputy Commander/Weapon Systems

This SR is classified ~~SECRET~~
IAW AFR 205-1, par 23c.

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SECURITY CLASSIFICATION (If any)

DISPOSITION FORM

~~CONFIDENTIAL~~

WJ

*2 Oct. Item 2
13 Oct. Item 1*

FILE NO.	SUBJECT	DATE	COMMENT NO. 1
	RDGB Weekly Diary Items	19 OCT 1955	
TO Western Development Division ATTN: WDGE	FROM RDGB	Lt Col Oder/id/211	

10 October 1955

1. Rediscussed with Mr. Morgan, RDSTAB, the possible need of General Electric for a B-57 on bailment. Gave results of this discussion to Colonel Hebner by telephone. (Unclassified)
2. Prepared a TWX to DCS/D regarding clarification of responsibilities to support of British TBM as well as NAA-Rolls Royce Agreement. Showed TWX to General Schriever, coordinated paper with General Boyd and General Wood, and sent to RDG for signature. (Secret)
3. Received a call from Colonel McKewen, RDSM, regarding EP-690 sufficiencies for AFMTC in support of WS-107A. Called Colonel Ahola and requested that he determine status of this action about to be in AFDED and expedite reply, if possible. (Unclassified)
4. General Power advised me (together with General Boyd, General Sessums, General Demler, and General Ostrander) of Secretary Wilson's decision regarding assignment of MRBM responsibility to the Air Force; job to be done by WDD, "use made of Redstone," Navy requirements to be considered, and priority "co-equal with WS-107A." General Power stated aspects of this responsibility remained to be resolved, including priority, which appears to be in conflict with a recent Presidential directive. (Secret)
5. Advised Major Shea, RDSMSA, that WDD approved AFMTC request for RQVI equipment. (Unclassified)

11 October 1955

1. At the direction of General Power sent TWX to WDD lifting restrictions on signing second source airframe contract with Glenn L. Martin Company. (Secret)
2. Attended meeting in Pentagon chaired by Secretary Gardner and attended by industry representatives from all major WS-107A contracts. (Unclassified)
3. Discussed briefly with General Schriever his desires regarding the recent WDD TWX on nuclear rockets. (Unclassified)

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~~CONFIDENTIAL~~

DF, SUBJECT: RDGB Weekly Diary Items

TO: WDGE

FROM: RDGB

DATE: 19 OCT 1955

COMMENT NO. 1
(CONT'D)

4. Discussed with General Sessums, and subsequently by phone with Colonel Sheppard and Major Ferguson, the submission by WDD of a preliminary draft Operational Concept. (Unclassified)

12 October 1955

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1. Discussed with Lt Colonel Beckett, RDTF, certain aspects of a letter from Headquarters USAF regarding monitoring of R&D exchange positions in London, one of which was the position to be transferred to WDD in regard to support of British TBM. Sent letter to RDSO for further action. (Secret)

2. Notified by Colonel Genes, RDZPI, that Headquarters USAF was in the process of signing a TWX suspending action on the Phase II Scientific Satellite until certain resolutions of this matter were obtained between General Putt and Mr. Macaulay. Advised Colonel Norton, WDD, of this by phone. (Confidential)

3. Advised by Mr. Zeller, RDISI, that Headquarters USAF had taken exception to those provisions of joint AMC-ARDC security agreement on WS-107A concerning visitor control. Furnished certain inputs to Mr. Zeller including pending action of Gillette Committee in order that we might prepare a reply to Headquarters USAF. (Unclassified)

4. In answer to question by Lt Colonel Beard, RDZPS, concerning the use of WS-107A inclusion in the ARDC Command Presentation to the Air Force Security Service, recommended that only the information currently in the Command Presentation (which is meager) concerning this matter be presented to AFSS. (Unclassified)

5. Advised by Lt Colonel Higginbotham, RDZBT, that he has been charged with preparing a systems requirement on MRBM. Advised him of the current state of responsibility in this regard. (Unclassified)

6. Major Simons from the Human Factors Laboratory at HADC asked regarding possibility of WS-107A test vehicles carrying some of their experiments (monkeys and mice). Suggested he contact WDD directly on this matter. (Unclassified)

13 October 1955

1. Advised by Lt Colonel Genes that he had been charged with preparing systems requirement on ARS, transferring systems responsibility to WDD. Advised Colonel Norton of this by phone. (Unclassified)

2. Presented a briefing to Division Chiefs of the Directorate of Development, this headquarters, at their request and with the concurrence of General Schriever. (Unclassified)

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WD 55 12689

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~~CONFIDENTIAL~~

DF, SUBJECT: RDGB Weekly Diary Items

TO: WDGE

FROM: RDGB

DATE: 19 OCT 1955

COMMENT NO. 1
(CONT'D)

3. Together with Major Ferguson, WDD, briefed General Sessums on the draft Operational Concept for the SM-65. General Sessums signed the forwarding indorsement and the papers were handcarried to the Pentagon by Major Ferguson, with the proviso that he brief General Power in Washington on the 14th previous to presenting the papers to AFOOP. (Unclassified)

14 October 1955

1. Discussed with Colonel Miller, RDSI, the procedure agreed upon in recent meeting in Washington for handling all facility matters in connection with WS-107A. (Unclassified)

2. Attended staff meetings of the Deputy Commander for Resources and the Commander and advised them that WDD has prepared a preliminary draft Operational Concept for the SM-65 which will be given appropriate circulation in Headquarters ARDC. (Unclassified)

3. Prepared DF to WDT regarding coordination of AFFTC Test Plan 30151.

Frederic C. E. Ode
FREDERIC C. E. ODER

Lt Colonel, USAF

Assistant Chief

Office of the Assistant to the Commander

cc: Colonel Abola, AFDDC-A
Hq USAF, Wash., D. C.

This DF is classified SECRET
IAW par 23c, AFR 205-1.

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WD 55 12689

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Satellites File
70

20 October 1955

WDTD

MEMORANDUM FOR: Colonel Terhune

SUBJECT: Miscellaneous Events

1. The purpose of this memorandum is to try to bring to your attention certain critical problems or critical areas within WDT. They are as follows:

a. Fund expenditures - Col Hughes is working on a fund expenditure schedule which will be completed by about the 15th of November. So far during this month we have managed to place about 80.0 on PR's. This area is still one that is very critical and needs constant attention on Hughes' part.

b. The Martin contract, as yet, is not signed. I am informed by the local Martin representative that the company is proceeding all-out on the technical matters as if they had a contract; however, this matter is still unsettled.

c. A tentative schedule for production and flight test was outlined in the meetings last week. A copy of this rough schedule is attached to this memorandum. A more detailed schedule will be issued by Dr. Nichols as soon as he returns to duty.

d. I am quite worried about BTL. Up until a few days before BTL agreed to join us, I was operating under the erroneous thought that the BTL system was actually going to provide a backup to the GE radio inertial system. I find however that this is certainly not the case; that what we have done is hired BTL to work on a system for the Martin airframe. Blasingame tells me that it would be a major re-engineering job of something of the order of 9 to 12 months to convert the BTL system to the Convair configuration.

During the two-day meeting here on the 13th and 14th, BTL several times, while not objecting specifically to technical direction by EW, left no doubt that they didn't like the idea too much. They specifically asked to have the TD meetings on the same day and in conjunction with Martin. They also stated that they could see no reason why BTL would be required to come out here on a monthly basis but rather, should come out, say every three or four months.

Lastly, BTL seemed quite shocked when the statement was made that their system would be convertible to the Convair configuration even on a much detailed time schedule. They seemed to feel that the facts had been misrepresented to them in our dealings in an effort to get them into the program. On the afternoon of the 14th, in Dr. Dunn's presence, along with Col Glasser and some people from Martin, I made it as clear as I possibly could to Mr. Hough of BTL that we would have technical direction meetings at least once a month; that the TD meetings would not be on the same day

Hughes

Heck

OK
6/12/55

will be worked out

will work
OK
w.m. time

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Memo for Col Terhune, Subj: Misc. Events, dtd 20 Oct 55

as Martin but would be on the day following the Martin meeting; and lastly, that I could not see how we could agree to BTL developing a guidance system for the Martin configuration only and still be in keeping with our primary mission here which is to invent an ICM the soonest. BTL seemed to accept my statements; at least there was no violent objection. Strangely enough, I found that the most violent opposition to my statements comes from Blasingame himself. I reached a conclusion that Blasingame is certainly opposed to the technical direction system or at least to the technical direction under the system that RW is giving the present guidance contractors. He has not given me any specifics in this matter but contains himself to statements that RW is too much in detail and not doing enough systems engineering. I think this allegation may be partially true. I don't disagree on the amount of detail but I do believe that RW is lacking in the systems engineering.

In any event, I feel now that our weakest link on the XSM-65 is in guidance. We have a reasonable backup for everything else but we are apparently totally dependant upon GE's effort in the radio inertial guidance field. Blasingame assures me that there is enough depth in the GE system to provide backup on its own accord; however, I am of the opinion that we should get at least another radar into the works. Take, for example, the Gilfillan radar and adapt it to one of our computers into the GE airborne components. I have talked to Dr. Dunn briefly about this matter and I find that he shares my feeling. Dunn has stated that sometime within the next ten days he intends to investigate the problem and see if indeed we can get a backup radar into our radio inertial guidance system. I personally feel that this is very necessary.

e. Satellites. I have received no further instructions on what we are going to do about this subject; however, Dr. Ramo has designated Dr. Thiel of RW to commence their satellite effort. I talked to Thiel on the 19th and gave to him our complete file on this subject so that he would have all of the background information on the Holloman studies, Dr. Fried's studies, etc.

f. Facilities. Prior to the SAC meeting, I talked to Swanke and to Nichols and Dunn and I tried to persuade Nichols and Dunn to take an active interest in facilities on the part of RW. Dunn made the statement that RW had been instructed some time ago by Glasser to "stay out of the facilities area because this is an Air Force problem." This is true to some extent, however, we are rapidly being overcome by events. Swanke couldn't possibly handle the job without a considerable increase in his office. I think that it's necessary that RW get a strong facilities team together to carry out their fair share of the burden. Prior to his departure for Washington to the SAC meeting, I told Swanke that upon his return his primary job was to educate RW into the problem in order that RW could set up a staff to give us some help. I think this is very necessary and unless this is done, we're just going to get further and further behind in the facilities area

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DMO

notes

See Swanke

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Memo for Col Terhune, Subj: Misc. Events, dtd 20 Oct 55

g. Team concept of contractors for the XSM-65 and the XSM-68. You were briefed very briefly by Dr. Dunn on the concept of associating certain contractors with Convair and other contractors with Martin to be the primary teams to develop the 65 and the 68 respectively. I have written to Dunn asking that at least some formal announcement of their policy be made in the near future so that we can get all of our people headed in the same direction. I have also suggested to him that he prepare letters for Schriever's signature to the contractors explaining to the individual contractors our concept. Most of these contractors have been briefed on the subject in TD or special meetings, however, something should go out in writing. On this same subject, we have a tremendous amount of work to do in order to be sure that we actually know where we're going. In other words, do we want to place orders with Aerojet for engines to fit Convair? Do we want to make any provision to force BTL to be able to install their guidance in the Convair missile, etc? Essentially, what this amounts to is we have to rewrite our entire Development Plan.

h. A year ago our mission was quite clear and simple; namely, to get an ICBM. During this past year, more and more effort of the military personnel in WDD is being devoted either to expanding our effort into other missile or satellite fields or warding off raids. I would strongly suggest that you make an appeal to General Schriever to allow the WDT personnel to spend at least the rest of this year in full concentration on the ICBM. If we are to have a MREM or satellite or anything else, let's not take the job on until we get the people in here to handle it.

1 Incl
Schedule (rough)
(WD-55-12647)

H. Norton
HAROLD W. NORTON
Colonel, USAF
Assistant Deputy Commander
Technical Operations

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WDTD-55-24

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SUBJECT: The Rano-Wooldrige Corp., Contract
AF18(600)-1190 Proposal for Additional
Work Performed Prior to 31 Oct 55

TO: MCPT

FROM: WDT

DATE: OCT 27 1955 **EXHIBIT NO. 2**
Major Caley/ha/326

1. Your attention is invited to the attached memorandum from General Schriever to Colonel Terhune, subject: "Additional Tasks Assigned to the Rano-Wooldrige Corporation" dated 3 October 1955 which sets forth the areas of additional work.
2. The following percentage allocations are considered to be justified as additional work:
 - a. Tactical Ballistic Missile - approximately 60%
 - b. Satellite - 100%
 - c. Anti-ICMS Countermeasures - 25-50%
3. Attached is a statement of work covering the additional items to be incorporated into the supplemental agreement.
4. A purchase request is not included herewith. Conversation with Mr. Hinas, MCPT, has indicated that presently available funds on PR-64 are sufficient to cover additional cost.

SIGNED

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

- 3 Incls
1. n/c
 2. Memo fr Gen Schriever to Col Terhune dtd 3 Oct 55 (Copy) *all under date*
 3. Statement of Additional Work (Copy)

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DOD DIR 5200.10

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WDT FILE

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~~CONFIDENTIAL~~
MINUTES OF STAFF MEETING
Office of Commander
Western Development Division
26 October 1955

Present: General Schriever
Dr. Dunn
Colonel Terhune
Colonel Morris
Colonel Sheppard
Lt Colonel Hudson
Lt Colonel Boatman
Captain Babcock

See Page 2

General Schriever

Furniture: General Schriever requested of Colonel Hudson the status of furniture with respect to cost of chairs for VDD and R-W. Colonel Hudson replied that he had spoken with Colonel Fulton on the subject of our prices against GSA, and other controversial matters. Colonel Hudson quoted the prices paid for chairs by R-W vs prices quoted by GSA. General Schriever requested Colonel Hudson to be prepared to bring this up at the next staff meeting.

A general discussion ensued relative to the cost of furniture purchased by R-W vs cost if purchased by GSA. General Schriever requested that VDD figures be checked against RAND and what they pay for furniture. Colonel Morris advised that GSA buys in such tremendous quantities that this may make a difference.

Overtime and Multishifts: Colonel Morris stated that he had sent a draft into the General's office containing material for the General's approval. He said that Generals McKee and Baker feel we should give AFPRs authority to approve overtime and multishifts if they feel it is justified.

NSC Paper, Presidential Directive and Gillette Committee: General Schriever stated that the Gillette Committee's final report recommends setting up a Committee at Air Force Secretary level to review our development plan and have final authority to give approval to plan permitting us to implement plan. Approval and apportionment of necessary funding in accordance with the financial plan could be made at the same time. This in essence means one review and approval agency at the Air Force Washington level. General Schriever advised that a similar body is also being set up at

Dr. Rock
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Dr. Rock
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DECLASSIFIED AFTER 12 YEARS
DOC DIR 5200.10

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the DOD level. This DOD group will hear an information presentation on our program once or twice a year and give general approval. Implementing papers were prepared at the Air Force Secretary's level and submitted to Mr. Quarles. Mr. Quarles sent these papers to DOD requesting approval. The implementing papers would waive certain DOD directives now applying on facilities particularly, and delegate authority to approve to Air Force level. Essentially, the streamlined procedures needed to carry out the accelerated program are in the final stages of preparation and should be approved within two weeks. When the implementing documents are received at WDD, we will then sit down and review our internal procedures and see where they change. Approximately the week of 8 November we might have these directives and can start implementing action necessary on our part.

General Schriever advised that we are scheduled to make another briefing to the National Security Council in December of this year. We will receive correspondence directing this.

The General reported that the Von Neumann Committee meeting seemed to go off all right. He stated that the Committee, in addition to being advisory to the Secretary of the Air Force, is also responsible as advisory to the Secretary of Defense. This has been adopted as policy.

Medium Range Ballistic Missile: General Schriever stated that the Medium Range Ballistic Missile field is still vague. It is now the subject of a roles and mission consideration at the Joint Chief of Staff level. The settling of this mission will be given a very high priority by the Secretary of Defense.

General Schriever stated that WDD will be assigned the responsibility for the Reconnaissance Satellite and the MRBM if the Air Force gets the job management-wise. ✓

Reconnaissance Satellite: Colonel Terhune stated that Colonel Genes and his people want to come out and talk with us. Suggested that we need to have some definition of what we are going to do in the program. Colonel Terhune asked if WDD will delegate this work to someone else - would WDD rely on another JPO type organization to do the work for us?

General Schriever stated that we will have to develop a plan for the Satellite. He stated that we will have the MRBM and should plan personnel accordingly. The General advised that DT and DS should be concerned with obtaining technical and support personnel for the MRBM and the Satellite. He stated that MCPT may require additional contracting personnel.

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Staff Minutes - 26 Oct 55

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Visit to Industry: General Schriever advised that he will start Monday, 31 October, on his tour of the major companies in the program. Mr. Gardner, General Putt, General Power, Colonel Morris and Lt Colonel Ford will accompany him on this tour, visiting 14 companies in 7 days. The General requested that anyone with any points that need to be brought up or discussed during this visit should bring them to his attention. He also requested that the Group Chiefs be advised to inform him of any particular items that need looking into.

Organizational and Functional Chart: The General inquired as to status of this chart. Colonel Hudson reported that the chart is up-to-date and has been coordinated. He stated that it is to be presented to the General next week.

The General advised that he would like to get this chart out, that if he disagrees with parts of it an amendment can be made. He stated that if the staff agrees on the chart, it should be published immediately.

General Schriever directed that a briefing be prepared by WDS on organization and functions and presented at a meeting of the entire staff in his office at an early date. Colonel Hudson stated that he will comply.

Technical Direction: General Schriever inquired as to status of DOI. It was reported that this DOI is still in draft form. The General advised that this should have been out in tentative form back in May, 1955, but now that it is October we have gained a lot in experience and the DOI should be brought up-to-date reflecting the experience we have gained during these months. The General suggested that we need a report on this from the people who are working on it, which means WDD and R-W who are primarily interested. He requested that this be published by next staff meeting, Thursday, 10 November. This was an item the I.G.s found reason to criticize and the General stated that he would like to have a procedural document which is up-to-date.

Medical Support: Colonel Hudson reported that he and his people have had several discussions with Edwards on medical support, also with ARDC, who suggested that we adopt an emergency policy. With this policy WDD military personnel may receive treatment from any civilian doctor desired, in an emergency, process a voucher and the doctor, or the individual, will be paid by the Government. Sawtelle was highly recommended for dental work, etc., rather than Edwards. For dependents, Group Insurance Companies in California were recommended. A meeting is in progress now with the insurance companies to arrive at the type group insurance that can be given. Colonel Hudson stated that he should be able to make up a DOI by Friday, 29 October, on this matter.

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Staff Minutes - 26 Oct 55

Colonel Boatman stated that we should encourage our people to go to a general hospital if they need hospitalization. General Schriever advised that if our people need to be hospitalized this should be so. He requested Colonel Hudson to draft up instructions on military personnel receiving medical treatment in the local area.

General Schriever directed that Colonel Hudson issue a notice to all military personnel that each individual's physical must be completed within the 60 day period preceding his birthday. Anyone who does not complete his physical within this 60 day period will be automatically grounded.

Colonel Hudson

B-25a: Colonel Hudson advised that we have an opportunity to secure two additional B-25s. He stated that we could obtain one VC-47 and one B-25 if this would help our transportation problem. One VC-47 and one B-25 were decided upon. A VT-129 was discussed to replace the request for the C-131D. After discussion the staff felt that the C-131D would better fulfill this organization's requirements. General Schriever suggested that we should request replacement of our C-45 due to the great amount of maintenance.

Colonel Terhune

British Guided Missile: Colonel Terhune stated that we have requested the AFPR that the BJSM representative be stationed with the AFPR at North American. This will provide the most convenience in the transfer of documents from NAA to Rolls Royce and will, at the same time, give him ready access to JDD in the event we must advise him or the AFPR on certain matters.

Present Control Room Meeting: Colonel Terhune announced that 28 October is the day for review of charts in the control room and that individuals concerned will receive notices by Thursday morning, 27 October.

General Schriever

Re: Missions: The General stated that he is very much concerned about the missions. He would like to have a separate meeting with Colonel Terhune, Colonel Sparks and Mr. Marshall (MCPT). He stated that he would like to discuss the development plan and budget annex. He further stated that the

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Staff Minutes - 26 Oct 55

entire Gillette Committee thinking with respect to review and approval on the part of elements in Washington resolves around the development plan. He said that the basic document will be approved at the Secretarial level. Approval of the development plan by the Secretarial Policy Committee carries with it authority and funds for WDD to proceed according to the approved plan.

General Schriever advised that WDD will be called upon to make a presentation of its development plan as it relates to the '57 budget. He said that he needs an up-to-date briefing on the '57 budget, and the '56 - '57 financial plan. He advised that WDD will probably be directed to give such a briefing in Washington and if not the General will suggest that we do so sometime during the month of November or early December, when the budget which has now gone from Air Force to DOD to Bureau of the Budget is coming back down. He pointed out that the Air Force will shortly be going through the budget exercise in a final go-around for submission to DOD. The General said that what he has in mind is that WDD will give a presentation of our program with the '57 budget as the primary points to focus on with the WDD development plan as the basic document in support of it. He added that this is timely from a budget standpoint and from the standpoint of the Gillette Committee, that it will increase the degree of confidence in us, in that we have the ability to present the complete program.

Colonel Terhune

FRs: Colonel Terhune stated that 15 November is the deadline for assembling dates for FRs to Colonel Morris. He feels that the figures we will have at that time will be the best possible figures to form the basis for our presentation. He stated that Colonel Glasser is responsible for this.

General Schriever

General Schriever directed that we obtain sufficient copies of the Gillette Committee Reports so that all our WDD/MCPT and R-W people might see the changes made. Colonel Boatman stated that Colonel Parry is now in Washington and will bring the copies back with him.

The General advised that we want one document for the total program. This document should be the development plan. The development plan should include an annex showing WDO type requirements and planning.

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Staff Minutes - 26 Oct 55

General Schriever advised that as soon as the Secretarial Policy Committee is established and ready for review we should send a wire to AMC and ARDC with a copy to Washington (General Brentnall). The wire should state: (1) The development plan has been brought up-to-date, including refinement of the '57 budget; (2) Set forth dates (between 15 and 30 November) when ADD briefing will be ready for presentation to the Secretarial Policy Committee.

SIGNED

B. L. BOATMAN
Lt Colonel, USAF
Executive Officer

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COMDR WED ARDC
INGLEWOOD CALIFORNIA

COMDR HOLLOWAY AFB
NEW MEXICO

ROUTINE

HDFT-10-64-E

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WED-11-2-S-E

REFERENCE FORECON BETWEEN GEN DAVIS AND COL TERREUSE, REPLY TO HDFT-10-64-E
WILL BE WITHHELD PENDING RESOLUTION OF MANAGEMENT OF SATELLITE PROGRAM.

10/19/55

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DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

"A—PARAPHRASE NOT REQUIRED EXCEPT PRIOR
TO CATEGORY B ENCRYPTION—PHYSICALLY RE-
MOVE ALL INTERNAL REFERENCES BY DATE-TIME
GROUP PRIOR TO DECLASSIFICATION."

HAROLD W. NORTON, Col, USAF
Asst Deputy Comdr, Tech Operations

SIGNED

HAROLD W. NORTON
Colonel, USAF
Assistant Deputy Commander
Technical Operations

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WDIASC

MEMORANDUM FOR: WDT

SUBJECT: Advanced Reconnaissance Satellite (ARS) Program

1. On 1 and 2 November, Major G. R. Vanden Heuvel attended a series of contractor briefings on the ARS system design studies at the WADC. A brief discussion of these briefings, and comments on the program in general as observed during the visit, follow.
2. To supply continuity to this report, it is necessary to say that specific tasks of the overall satellite reconnaissance program have been in being for a number of years. They appeared to vary from recently established programs to as much as three years of effort. At what was considered the proper time, based upon the demonstrated state of the art in this field, three contractors were selected to conduct one year ARS system design studies with two paramount things upon which to base their studies. One, the basic vehicle booster would be provided by the WD-107A program, and two, the inputs from all the tasks would be reflected in the satellite design.
3. With this then in mind, the briefing given by Lockheed Aircraft Co., Glenn L. Martin Co. and Radio Corporation of America consisted of a verbal report of the first three months activity on these respective design studies. The technical details will not be covered here. The printed reports should be received shortly and additional details can be covered in the 9-10 November briefing to WND by the ARDC ARS project office. The first impression one got was that both the Martin and Lockheed first cuts of the ARS configuration were tailored to boosters that were recently proposed in their alternate airframe effort. This, however, appeared to be a negligible portion of the effort. The major portion seemed to concentrate on the satellite functions that will be required once the platform is "in place". A great deal of effort was expended by all three in the areas of space environment, auxiliary power plants, data gathering techniques, data processing aloft, transmission of data to the ground, and the acquisition, storage and dissemination of this processed data.

0 To Co. Section

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WDD (WDYSC) Memo, Subject: Advanced Reconnaissance Satellite (ARS) Program

4. On the subject of the transfer of the program reins to the WDD, a discussion was held among the following:

Lt Col William King	ARDC Project Officer (WPAFB)
Lt Col Frederick Oder	Hqs ARDC
Lt Col Victor Genes	Hqs ARDC
Maj G.R. Vanden Heuvel	WDD
Mr. R.S. Blocker	ARDC (WPAFB)
Dr. Adolph Thiel	R-W.

This discussion was limited to reaching a conclusion as to whether the 9-10 Nov date was satisfactory for briefing the WDD on the ARS program, and to clarify what the briefing would consist of. Both of these points were resolved and concurred in by phone with Col Terhune on 1 Nov 1955. The briefing was established for the 9th and 10th of Nov and would consist of technical briefing of the program as presently established and ARDC (WADC) recommendations on the future management of the program.

5. It is the considered and previously unexpressed opinion of the undersigned that:

a. The ARDC effort on the ARS program to date has been a well coordinated, concerted effort in a relatively new field of endeavor.

b. Use of the 107A weapon system, less warhead, as a booster necessitates WDD cognizance of the program.

c. Too rapid a reorientation of the program management could be quite detrimental to the program. (Loss of time, personnel, and/or momentum).

d. This should not be managed by the WDD/R-W group as presently manages the WS 107A program. The introduction of the R-W Corporation into the fields of operation reconnaissance and intelligence appears to be completely contradictory to the present philosophy under which we operate and further, would dilute their present effort on the WS 107A while delaying both the ARS and WS 107A until such time as they could make an order of magnitude increase in their operating personnel. The task of providing suitable boosters on a specific schedule is a reasonable delineation of the R-W portion of the effort. The reconnaissance and intelligence effort should remain under a ARDC WSPO as presently constituted.

6. The above frank and unsolicited opinions are submitted in the best interest of the USAF.

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GEORGE R. VANDEN HEUVEL
Major, USAF

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is classified
in accordance with
APR 205-1

WDYSC 55-51

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WESTERN DEVELOPMENT DIVISION
AIR RESEARCH AND DEVELOPMENT COMMAND
MONTGOMERY, MARYLAND

NOV. 7 - 1955

Brig. Gen. Bernard A. Mohrloer
Commander
Western Development Division (AWDC)
P. O. Box 262
Bellevue, California

SR5 dtd 17 Oct 55

Dear Gen:

In accordance with Gen. Fower's decision on Monday, 10 October 1955, I have had System Requirement No. 5 issued, which establishes management responsibility for the Advanced Reconnaissance System at Western Development Division. System Requirement No. 5, assigning you management of the MREM has also been prepared; however, I am holding up distribution pending formal clarification of Air Force's responsibility for this system.

I believe that we could assure closest coordination on the Advanced Reconnaissance System program if you would submit your Development Plan to USAF through our planning people here (HDEP). Due to the somewhat complex structure of this program at present involving simultaneous conduct of both state-of-the-art and system studies, I suggested that the mechanics of establishing the Advanced Reconnaissance System program at Western Development Division be very carefully planned, so as to avoid unnecessary disruption to any of the current activities. Both the RIGS and HDEP people concerned stand ready to assist you in any way possible.

I would appreciate your views on this matter.

Sincerely,

ALBERT BOYD
Major General, USAF
Deputy Commander/Weapon Systems

DISPOSITION FORM

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adly

FILE NO.

SUBJECT

RDGB Weekly Diary Items

TO Western Development
Division
ATTN: WDGE

FROM RDGB

DATE 14 Nov 55
Lt Col Oder/lf/211

COMMENT NO. 1

7 November 1955

1. General Ostrander raised certain questions that he wanted me to ask while on TDY at WDD. These were:

a. To suggest a check on control of distribution of contractors films on WS-107A. An incident occurred where a CONVAIR representative at W-P AFB on his own volition offered to show their latest quarterly film to Colonel McCoy. Discussed this briefly with General Schriever, Colonel Boatman, and Colonel Perry.

b. General Estes wants to insure that all offices concerned with the Anti-ICBM are brought in on current Anti-ICBM efforts. Question was what is WDD's interest in Anti-ICBM. Discussed this with General Schriever who felt that at present WDD had little to contribute but was quite willing to cooperate in this matter and had set up a working relationship with Lincoln Labs to this end (as an example).

c. Discussed possible times that Generals Schriever, Ostrander, and Estes might meet to discuss transfer of ARS management (as things stand now the next Commanders' Conference looks like the earliest possible date).

I will advise General Ostrander of these answers.

8, 9, and 10 November 1955

1. Colonel Oder was on TDY at WDD. While there:

a. Attended presentation by Lt Colonel William King, RDZSGG, to General Putt and General Schriever on ARS.

b. Attended a critique by Secretary Gardner, Generals Putt and Schriever, Colonels Morus, Ballweg, Lt Colonels Ford, Boatman, Drs. Ramo and Lauritson, and Captain Babcock on their recent trip to major WS-107A contractors.

c. Discussed a similar trip for General Power with General Schriever and Lt Colonel Ford.

d. Discussed a number of test and support matters with various WDT and WDS personnel.

Frederic C. E. Oder
Lt Colonel, USAF
Assistant Chief

Office of the Assistant to the Commander

cc: Colonel Ahola, AFDDC-A

DD FORM 96
1 FEB 50

REPLACES NME FORM 96, 1 OCT 48, WHICH MAY BE USED.

16-51001-3 U. S. GOVERNMENT PRINTING OFFICE

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~~CONFIDENTIAL~~

WDTST

14 November 1955

MEMORANDUM TO: Col. Norton

1. On 9-10 November, a delegation from WADC, consisting of Col. William G. King, Jr., Lt. Washburn and Mr. Copeland, visited WDD and conferred at length with the following:

Cdr. R. C. Truax
Lt. Col. J. D. Heck
Major G. R. Vanden Heuvel
Dr. A. K. Thiel

on the subject of the Advanced Reconnaissance Satellite.

2. It was agreed that the following action is necessary to effect an orderly transfer of cognizance of the Satellite program from the WADC to the WDD.

By WDD:

a. Designate a responsible agent within WDD who will familiarize himself with the A. R.S. program and represent the WDD on the working level in matters relating to the A.R.S. This would include membership on the ARS advisory committee.

b. Create a management organization capable of assuming the administration of the program. This action requires a decision as to the management structure, particularly with respect to E-W participation and the future role of WADC and the other government laboratories. It will also be necessary to arrange to staff such organization as may be created. This requires a decision whether any or all of the WSPO people at WADC will be transferred to WDD. A policy reading between General Estes and General Schriever in this regard would be most helpful.

c. Budget for the ARS program for FY 1957 and subsequent years. A budget estimate of \$15 million for FY 1957 has been prepared by the WSPO and is currently under review at WADC. WDD should either arrange to have the sum finally approved transferred to WDD jurisdiction, or should initiate a new request through WDD channels.

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WDTST 55-9

Information

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MEMO. TO: Col. Norton 14 November 1955

d. Jointly with WADC, WDD should arrange for transfer of contractual documents to WDD buyers.

By WSPO:

a. Formulate a reorientation of the ARS system studies now being carried out by Martin, Lockheed, and RCA to result in a preliminary development plan by 15 February 1956. This plan must meet with the approval of the WDD wherever it touches upon the ICBM or MRBM programs.

b. Continue day to day management of the program until details of transfer have been completed.

c. Cooperate in arranging transfer of contractual documents.

d. Arrange for WDD to receive copies of ARS reports on a continuing basis.

3. Early formulation of a policy with respect to the system design studies is required so that the development plan formulated will not be inconsistent with WDD policy with respect to utilization of contractors.

4. WDTST will be happy to accept any responsibilities with respect to this program that he may be assigned, since it is of great personal interest to him.

SIGNED

R. C. TRUAX
Commander, USN

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Cy 1 of 9
Pg 2 of 3

ARS Program

November 22, 1955

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- 2 -

hardware experimentations on orbiting attitude control, nuclear power supply, radio spectrum sensing, optical pick-ups, communication, etc. The other work presently being sponsored consists of three systems planning projects.

It would be our strong recommendation that the first action that is needed, and this should be taken as soon as possible, is to announce continuation of the first set of tasks on component state of the art development, and simultaneously to drastically alter the tasks of the second group conducting systems studies. This group has been asked to prepare a complete R&D plan for a sophisticated and major satellite system, a task which is considered to be premature, and which requires for its carrying out that the three contractor teams seek a great deal of information from ICBM contractors--a substantial interference to the ICBM project.

The redirection of these studies should, we believe, be as follows. They should be given by WDD/R-W a brief and succinct description of the ICBM vehicle below the nose cone and told to eliminate completely from their studies any other investigations of this vehicle understructure, boost, and trajectory. They then should be asked to prepare preliminary designs of a powered nose cone to be available for launching in the latter half of 1958 on present ICBM understructures and boost-trajectory. The purpose of this first series of flights would be merely to obtain orbiting experience. These first nose cones would contain an absolute minimum of instrumentation, except that associated with the control and tracking of the satellite to assure proper orbiting. The general weight of nose cone would be in the region of, say, three to ten thousand pounds and their studies would, of course, cover the complete package, including the additional rocket power and path control into the orbit, attitude control of the nose cone after reaching orbit, and the satellite-borne portion of the tracking instrumentation.

An additional task these three contractors should be asked to consider is what should be done as the next phase to alter the nature and complexity of the instrumentation carried in the satellite to where it has some minimum usefulness for reconnaissance or intelligence purposes.

Attacked in this way, the satellite program assures the development of techniques that will ultimately make possible the design of more sophisticated and versatile satellite systems. It will give the earliest possible flying experience (even conceivably making possible a backup for the IGY satellite if required), and probably even making possible the earliest possible attainment of some minimum militarily useful satellite.

To implement this program with the greatest of clarity and direction, while assuring the least assignment to WDD of what could be carried by others, it is recommended that WDD take control only of the systems study programs

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Cy 1 of 9
Pg 3 of 3

... Program

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- 3 -

November 22, 1955

... immediately effect this redirection, leaving the component development program under its present management for the time being. This latter program should, however, come under increasing scrutiny by WDD/R-W because it may require substantial later modifications or extensions, and background to effect these should be sought as early as possible.

Simon Ramo

(dictated but not read)

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... REVED AT 3 YEAR INTERVALS;
... REVED AFTER 12 YEARS.
... EGD DIR 5200.10

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23 November 1955

Colonel Oder -

General Schriever requests that you give the attached copy of Memo of Understanding to General Ostrander. A copy has also been forwarded to General Estes at WADC.

ARS Management

Please tell General Ostrander that General Schriever had intended to write a covering memo but was called out of town. If he has any questions concerning same to call General Schriever. General Schriever will be in Washington through the first part of the week of 28 November.

Colonel Glasser of WDD is making arrangements for the conference referred to under Para. 1.d.

B. L. BOATMAN
Lt Colonel, USAF
Executive Officer

Sibuel has file us

GA PLS

Nov 28 23

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INCL 7466 V LA 1069
DE RJEDWP 71J
R 281539Z

FM COMDR DR OF SYS MAN HQ ARDC WPAFB OHIO
TO COMDR WESTERN DEV DIV INGLEWOOD CLIF
AF GRNC

BT

RDZSGG-11-951-E A SERIES OF BRIEFINGS WILL BE HELD AT HQ SAC 12 THRU
14 DEC 55. PURPOSE OF BRIEFINGS IS TO INFORM DIRECTOR OF INTELLIGENCE
SAC OF ARDC EFFORT IN DEVELOPMENT OF INTEGRATED USAF INTELLIGENCE
DATA HANDLING SYSTEM /PROJECT 438L/ AND THE ADVANCED RECONNAISSANCE
SYSTEM /PROJECT 1115/ AND SECONDLY TO GAIN FOR ARDC CONTRACTORS ON
THE PROJECTS AN INSIGHT INTO SAC OPERATIONAL PROBLEMS. AGENDA WILL BE
A ONE DAY TWO BRIEFINGS BY ARDC PERSONNEL COVERING PROJECTS 438L
AND 1115. B ONE DAY BRIEFINGS ON AIR INTELLIGENCE BY HQ SAC
DIRECTORATE OF INTELLIGENCE. C ONE DAY TOUR OF 544TH RTS ORGANIZATION.
ALL ATTENDEES WILL BE REQUIRED TO HAVE A TOP SECRET CLEARANCE. IF YOU

PAGE TWO RJEDWP 71J

DESIRE TO ATTEND THE BRIEFINGS IT IS SUGGESTED THAT TWO REPRESENTATIVES
FROM W D D WOULD BE APPROPRIATE. A LIST OF PERSONNEL THEIR SECURITY
CLEARANCES AND REQUESTS FOR ACCOMMODATIONS SHOULD BE SENT TO CINC
SAC OFFUTT AFB NEBRASKA. ALSO REQUEST NAMES OF THOSE ATTENDING BE
FORWARDED TO DIRECTORATE OF SYSTEMS MANAGEMENT HQ ARDC DETACHMENT 1
ATTN RDZSGG WPAFB. BOMBARDMENT MISSILES DIVISION

BT
28/1719Z NOV RJEDWP

#9

SECRET

SECURITY CLASSIFICATION (If any)

DISPOSITION FORM

ARS 7 Dec - 24
9 Dec - 2

81

FILE NO.

SUBJECT

Diary for Week Ending 10 December 1955

TO Western Development
Division
ATTN: WDGE

FROM RDGE

DATE 12 Dec 55

COMMENT NO. 1

Lt Col Oder/if/58

5 December 1955

1. Attended with Lt Colonel Boatman a briefing of General Power by Lt Colonel Ford on the 1 December 1955 presentations to the NSC on ballistic missiles programs. ~~(Confidential)~~
2. Sent memorandum to General Schriever regarding Vanguard.
3. Major Eumm called regarding the possible assignment of S/Sgt Fleming Turner from HADC to WDD for duty with WDGE. Passed the request to Major Maret then on TTY with RUSP.
4. Brought TTX, WDSP-11-1-E, (regarding assignment of AFS people), to the attention of Generals Boyd and Ostrander. The request is in RLSP for action.
5. Received call from Mr. Roddy, AFORD, re matter of RAF officer at WDD. General White is sending a memorandum to Mr. Quarles recommending that the British withdraw their request. Subsequently asked AFDC-A to verify; they did so and WDD was informed.

6 December 1955

1. Prepared 3rd indorsement to AFCEM on "(Secret) Policy Concerning Air Force Support of British TEM Development." ~~(Secret)~~
2. Commander Truax visited (no previous notice of the visit) and I put him in touch with Lt Colonel Genez, RDZPI.
3. Called General Schriever and discussed:
 - a. Error made by AFMTC in submitting Station 12 program.
 - b. Invitations to WDD presentation scheduled for 22 December 1955.
 - c. Colonel Tenney's (AMC) problem re the GLM-Denver deal.
4. Directed by General Power to find out about a meeting held between Mr. Gardner, General Schriever, Mr. Smith, Admiral Clark, Mr. Martin, and General Gavin, and to advise General Schriever that General Power desired that a mechanism be established to require proper Army and Navy funding, planning, and coordination regarding IEM No. 2 and AFMTC (plus other AFDC test centers). ~~(Confidential)~~

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~~CONFIDENTIAL~~

DF, SUBJECT: Diary for Week Ending 10 December 1955

TO: WDGE

FROM: RDGB

DATE: 12 Dec 55 COMMENT NO. 1
(CONT'D)

5. Discussed 4 above in unclassified terms with General Schriever and subsequently advised General Power regarding the meeting. Per General Power's direction arranged with Colonel Ahola to get a copy of the memorandum of the meeting (sent to General Schriever by Colonel Ahola at the ARDC Commanders' Conference at Offutt on 9 December).

6. Received a call from Colonel Hebner, WDD, concerning a proposed joint ARDC-AMC supply document. Arranged for RDSM to expeditiously staff out the paper.

7. Sent copy of Department of Army TWX re Army-Navy Meeting at AFMTC to WDD (this TWX reached us the day of the meeting). AFMTC had not seen Department of Army TWX. Suggested that Colonel Soper get it.

7 December 1955

1. General Power asked me to brief him on IRBM. Prepared to do so but as of the end of the week have not been able to get on his calendar.

2. General Ostrander advised Colonel Boone, RDSTGG, and me that General Power desires:

a. Close look at the impact of Project Vanguard on AFMTC. Action to Colonel Boone. ~~(Confidential)~~

b. That every effort be made to have an ARS capability during the IGY. Sent TWX (coordinated with RDZG and RDZPI) to WDD on this. ~~(Secret)~~

3. Per request of Colonel Boatman, sent two copies of the "Gillette Report" to General Yates.

4. Relayed to Mr. Faber, RDSOB, request from WDD for \$30,000 of F-481 needed for December, 1955.

5. Advised by RDSI that the WS-107A Facilities Package had run into considerable nitpicking by EOD. Requested they confer with Colonel Swanke on the problem.

8 December 1955

1. Advised Colonel Friedlander, RDTOR, Colonel Burch, RDZFA, and Mr. Amer, RDZ, (who are concerned with Anti-ICEM planning) of certain aspects of our test plans at AFMTC.

2. Advised RDZPI (Colonel Pelligrini) that ARS meeting at WDD scheduled at 0900, 13 December 1955, and that General Ostrander had asked that Colonel Genez, RDZPI, attend.

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DF, SUBJECT: Diary for Week Ending 10 December 1955

TO: WDGE

FROM: RDGB

DATE: 12 Dec 55

COMMENT NO. 1
(CONT'D)

3. Prepared IRBM Briefing for General Power.

4. Discussed General Power's suggestion re Hq USAF representatives at 22 December presentation with Colonel Sheppard, WDD.

9 December 1955

1. Attended with Colonel Hudson, WDD, meeting run by Colonel Crumly, RDGP, on new Military Operations Order for ICBM and IRBM.

2. Called by Colonel Glasser and Colonel Boatman on item 8 of 6 December. Got further information from AFDD and AFPGM to effect that no action taken by Hq USAF. Meeting at AFMTC was held on 6 December but General Yates hadn't been advised that it was to be held. Also advised of TX sent by General Medaris, Army, to General Schriever.

3. Wrote letters to ARDC centers sending a copy of "Gillette Report".

10 December 1955

Advised Colonel Boatman regarding General Medaris' TX (item 2 of 9 December).

W. E. ODER

ROBERT C. E. ODER

Lt Colonel, USAF

Assistant Chief

Office of the Assistant to the Commander

cc: Colonel Ahola, AFDDC-A
Hq USAF, Wash., D.C.

This correspondence is classified
SECRET IAW par 23, AFR 205-1.

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WD 55 13000

WDD 55 980

CS-66-919



~~CONFIDENTIAL~~ 82

WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

W. J. ...

IN REPLY ADDRESS COMMUNICATION TO COMDR,
WDD, ATTENTION FOLLOWING OFFICE SYMBOL

WDTST

16 December 1955

MEMORANDUM FOR: General Schriever

SUBJECT: Program for Execution of WDD Responsibilities
With Respect to Pied Piper Project

Return to Schriever

W. J. ...

1. A meeting was held at WDD at 0900 on 13 December to discuss problems connected with the transferring of cognizance of the Pied Piper Project to the WDD and with acceleration of the program in accordance with SR No. 5 of 17 October 1955.

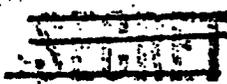
2. The object of the meeting was to determine the participation of the various centers and the systems study contractors in preparation of the Systems Development plan. This plan is due on 1 April 1956. A second objective was to present the plans of WDD for transferring day-to-day control of the program from WADC to WDD, the management organization after transfer, and to invite comments on the plan.

3. Representatives from the following organizations participated:

- Ramo-Wooldridge Corporation
- Asst. Dep Comdr, WPN Sys
Hq ARDC WPAFB, Ohio
- Comdr. AFCRC, Hanscom Field, Mass.
- Comdr. RADC, Griffis AFB, N. Y.
- Comdr. HADC, Holloman AFB, New Mexico
- Comdr. WADC, WAPFB, Ohio
- Comdr. ARDC, Baltimore, Maryland

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WDTST 55-12 ✓

~~CONFIDENTIAL~~

Memo. to Gen. Schriever
Subject: Program for Execution of WDD Responsibilities with Respect to Pied Piper Project

4. The management philosophy proposed was essentially the creation of the equivalent of a Weapons System Project Office at WDD which will exercise overall supervision of the program. The Ramo-Wooldridge Corporation will assist as an extension of the WDD Technical Staff, as requested by the WSPO. This assistance is required to, in a measure, replace the technical support currently being provided by the laboratories at Wright Field. The Ramo-Wooldridge Corporation will continue to participate in the technical component development program, as at present.
5. It is anticipated that the laboratories at Wright Field, and at the other participating centers will continue to do state-of-the-art work substantially in accordance with their present assignments. Draft letters to each center have been prepared confirming this. Hollomon represents a special case since they have not taken part in the program up to now. Representatives from WDD will visit Hollomon during the week of 19 December for further discussions on this point.
6. The systems study contractors will continue to investigate the overall feasibility of the system, the size weight, and interaction of components, etc., with the objective of obtaining the best possible current estimate of a reconnaissance configuration.
7. In view of the requirement of SR-5 for a Development Plan by 1 April, it is the intention to ask each of the three systems study contractors for an initial draft of such a plan by 1 March 1956. It is expected that these drafts, plus the contributions of the various participating centers, will be used by WDD to prepare the Systems Development Plan for submission by 1 April. The Contracting Officers at Wright Field will notify contractors of this new requirement. A meeting has been scheduled for 3-4 January, at which the contractors will be further briefed on the requirements and furnished additional information on SM 65 and SM 68 characteristics for incorporation in their studies.
8. Since the responsibility for prosecuting the Pied Piper Program now rests with the WDD, it is felt that the 80-4 plan should essentially be a WDD plan. Transfer of control of the program should take place as soon as a competent team can be assembled to handle the work. Such personnel as can be transferred from the Wright Field WSPO and assimilated in the WDD, should be transferred without delay. Files, contracts, etc. should be physically transferred as soon as feasible. Lt. Col. King expressed the view that transfer would better be delayed

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~~CONFIDENTIAL~~

Memo. to Gen. Schriever
Subject: Program for Execution of WDD Responsibilities with
Respect to Pied Piper Project

until after submission of the Development Plan (1 April) or
until after receipt of a Development Directive. It is felt,
however, that the probable acceleration of the program may make
transfer progressively more difficult as time goes on; i.e.,
the greatest lull in the program will probably take place
immediately after redirection of the study contractors. If this
is the case, transfers should take place between 5 February and
1 March, with 15 February a target date for transfer of mailing
address and assumption by WDD of day-to-day control. It is
believed that if three or more people from the WSPO at Wright
Field can be transferred by that date, control can be assumed
at this end. A decision between these diverging points of view
is required.

9. A decision to release the second half of the study
contract funds was made and a TWX prepared for transmittal to
Lt. Col. King's office.

1 Incl.
Draft of ltr. to
RCA, Martin and
Lockheed (s)

R. C. Truax
R. C. TRUAX
Commander, USN

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1. The Air Force hereby advises your organization of a contemplated redirection of the ARS design study program wherein the Air Force plans to require on or before 1 March 1956 the submission of a preliminary system development plan of the complete ARS, prepared in accordance with instructions contained in ARDC Manual 80-4 dated 15 July 1955.

a. The requirement for final system and subsystem development plans and final report will not be affected by this change except that the final development plans shall likewise be prepared in accordance with ARDC Manual 80-4 dated 15 July 1955.

b. It is intended that the proposed preliminary system development plan be submitted in lieu of the third quarterly progress report.

2. Therefore, your organization is hereby directed to attend a meeting at the Western Development Division of ARDC on 3 to 5 January 1956 to discuss matters incident to the proposed redirection. The following items shall comprise the agenda for the 3-day session:

a. Briefing by Western Development Division and Ramo-Wooldridge Corporation personnel on the ICBM program as it will impinge upon the ARS and thus affect the preparation of a preliminary system development plan of the ARS.

b. Clarification of contractor versus WFO responsibilities in completing various forms for the proposed preliminary system development plan and discussions between the WFO and the individual ARS contractors of the problems of formulating a system development plan at an early date.

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c. Negotiation of changes in the design study contracts necessary to effectuate the proposed redirection of the ARS program.

d. Issuance by the contracting officer of appropriate direction by either letter or change order, pending the outcome of contractual negotiations.

e. Provision of an opportunity for personnel of the respective ARS contractors to confer separately with Western Development and Remo-Wouldridge Corporation personnel in order to obtain any additional ICSM data that each contractor may require in the pursuit of his effort.

3. The representation of each ARS contractor shall be limited to six, including his contractor personnel. Verification of security clearances must be filed ahead of time with the security office of Western Development Division. It would be advisable for each contractor to be represented by at least one person having a Top Secret clearance, as a small portion of the briefing and/or discussions may involve material of that classification. Secret clearances will be required for all personnel in attendance.

4. The contact at Western Development Division will be Commander Truax. However, it is requested that questions with regard to the proposed redirection of the ARS program and the Western Development Division meeting as well be directed to the ARS space WSPD at Wright-Patterson Air Force Base.

(signed) Contracting Officer

CC: (see attached Data Sheet)

1st Lt. Robert S. Nashburn/sh/696

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~~CONFIDENTIAL~~

ROUGH DRAFT



~~CONFIDENTIAL~~

DATA SHEET

Three letters, one each to:

RCA, Attention: Mr. Richard McClure

Lockheed Aircraft Corporation
Attn: Mr. Warren Orr

Glenn L. Martin Company
Attn: Mr. Jack Wright

SUBJECT: Contract AF33(616)-3104, (5), and (6) Information Concerning Redirection Contemplated by USAF of ARS Design Study Program and Meeting Scheduled in Connection thereto at Western Development Division

TO: (see above)

THRU: Air Force Plant Representative Office in the cases of Lockheed and Glenn L. Martin

CC: One each to the following:

Copeland:
Please check this list for completeness.

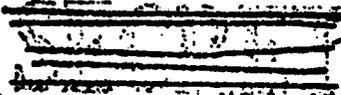
(Commander, Western Development Division
Attn: Commander Robert C. Truax

) RDZSOG

) Commander, ARDC, Baltimore
Attn: Lt Col Victor M. Genes, RDZFI

) A. C. O.

) One copy to each participating Center (these addresses will be furnished by Lt Col King's office)

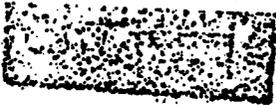


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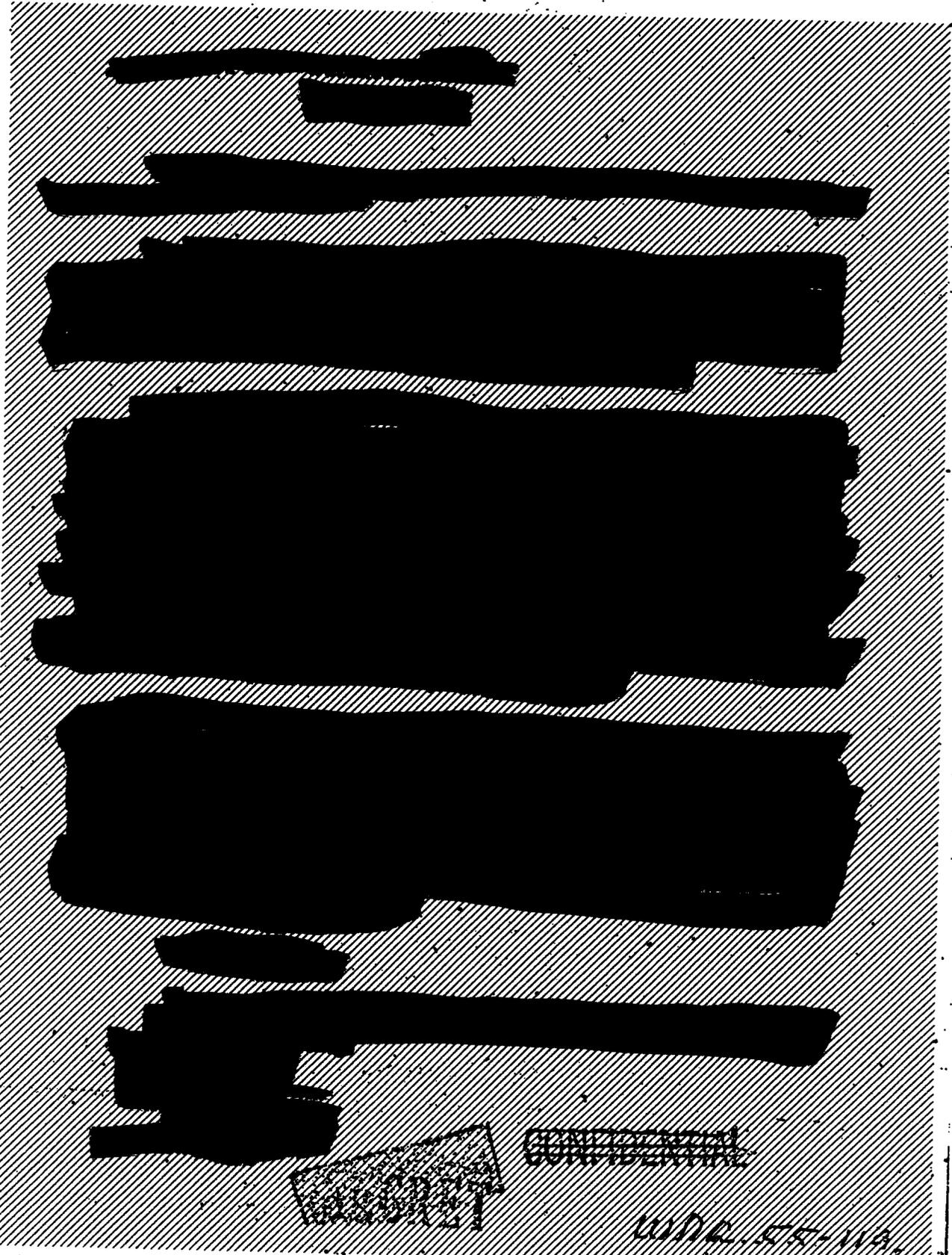
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18 December 1955



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WDG-55-110

- ~~CONFIDENTIAL~~
- c. Transportation tie-ups.
 - d. Shortage of funds.
 - e. Key schedule dates missed, etc.

It is desired that the Control Room Committee develop a system which will accomplish this objective. Some of the key elements of such a system is a rapid 24 hour a day communications system with all of our contractors and ARDC Centers; Plant Representatives at each of our companies under the control of and reporting directly to Colonel Morris; R-W representatives in certain key plants; strong effective field offices at our major test centers composed of WDD and R-W personnel; indoctrination of our contractors to report problem areas which they consider to be of major importance, and on any other problems which they consider may delay the program. This item will be discussed further at the 16 December Control Room meeting.

4. Frequent Inspection of Contractors. In January, we will have assigned a Convair with crew which will have as its primary mission the transporting of teams to visit our contractors. I have previously stated that we must devise a formal procedure for visits to contractors in order that management here can exercise proper supervision, and also to prevent unnecessary harassment of our contractors. This has not been done. It is desired that Colonel Hudson, in conjunction with appropriate representatives from other elements of our organization, establish such a procedure. Among other things, this procedure should include scheduling of aircraft for trips and processing all visits to contractors through one central point. It may be desirable that this central point be manned by representatives from R-W, WDD, and MCPT. An agreed to procedure should be established by 1 January.

5. Interference of IRBM 1 and 2 with ICBM. The Secretary of Defense has established a priority for IRBM 1 and 2 equal to that of ICBM, but not to interfere with the valid requirements of the ICBM. Potential areas of interference are at AFMTC and certain pressures on and with dilutions of ICBM contractors. The following actions will be undertaken:

- a. Letters to all ICBM contractors advising them of the ICBM priority and that they are not to undertake IRBM without prior clearance with WDD. Dr. Ramo will prepare a draft of this letter which

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will be signed by either Mr. Gardner or General Power.

5. Letter to General Power pointing out areas of potential interference and suggesting a letter for his signature to USAF with draft letters to OSD for signature by the Secretary of the Air Force. These letters should indicate areas of potential interference and AF recommendations for action in regard thereto. Colonel Terhune is preparing drafts of these letters.

6. Facilities. There is presently considerable conversation with respect to which element of the organization has the responsibility for construction of the prototype operational facilities. In this connection, it is necessary to bring the facilities DOI up-to-date. The revised DOI should cover both development and operational facilities. I should like to review a draft of this DOI before 1 January. WDT is the action agency.

7. Satellite (ARS). It is necessary that WDD take over the responsibility for supervision of the ARS program as rapidly as possible. WDD will establish a project office and R-W will function as an extension of the WDT technical staff for the ARS program. This differs from their role in the IRBM and ICBM. High priority should be given to staffing both WDT and R-W for proper supervision of this program.

In assuming responsibility for the ARS program, it is most important to assume control of the study contractors at an early date. Emphasis should be given to the establishment of a Development Plan by 1 April 1956, which contains a Phase I vehicle on a schedule compatible with the IGY.

8. Scientific Advisory Committee Meeting on 9 - 10 January 1956. A tentative agenda for this meeting should contain the following:

a. Decision charts for each of the 3 major projects, i. e., XSM-65, 68, and the IRBM. Discussion of these charts might best be made by Dr. Dunn.

b. Report on program. This might follow the control room pattern embellished by a number of short hardware films.

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c. Status report on AFMTC. This should be covered by General Schriever.

d. Report on Pentagon Industry Meeting and our tour of industry.

e. Anti-ICBM. Dr. Stever should be asked to make a brief report on the status of the Anti-ICBM activity. It is desired that Dr. Ramo and Colonel Terhune formulate the agenda in detail in order that it can be made firm prior to 1 January.

9. WDD and R-W Personnel for AFMTC. It is obvious from recent discussions with AFMTC personnel that this organization must assist AFMTC if a Range Plan to meet our requirements is to be forthcoming at an early date. It is agreed that a WDD/R-W field office will be established and manned as quickly as possible. However, during January and February, it will be necessary that the bulk of the manning be accomplished through TDY. Key people must be sent who must remain for a period of several weeks or more. It is desired that Dr. Ramo and Colonel Terhune formulate a plan and designate personnel to accomplish this purpose. It is desired that we submit this plan to General Yates in writing prior to 1 January.

10. Monthly report for Deputy Secretary of Defense Robertson. The President has indicated a desire to be briefed on our programs once a month. It is my understanding that Mr. Robertson will normally make these monthly briefings. We should develop a report which has as its primary purpose the providing of information to Mr. Robertson for the Presidential Briefing. I would visualize this report as not exceeding 2 or 3 pages and occasionally accompanied with a 3 to 5 minute film covering major achievements. It is suggested that the Control Room might develop such a report.

11. Report on Convair. The report recently submitted by Colonel Norton should be reviewed by key WDT and R-W personnel with the objective of recommending actions to be initiated by me for correcting the deficiencies.

cc: Colonel Morris
Colonel Sheppard
Lt Colonel Hudson

B. A. SCHRIEVER
Major General, USAF
Commander

NOTE: This memo supersedes memo 448 Dec 55.

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WDC-55-119

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

IN REPLY ADDRESS COMMUNICATION TO COMDR,
WDD, ATTENTION FOLLOWING OFFICE SYMBOL

WDTST

16 December 1955

MEMORANDUM FOR RECORD

SUBJECT: Report of Trip of 28 November - 8 December 1955

1. During the subject period, I visited Wright Field regarding the Pied Piper Program and the Navy Department with respect to the Navy's Fleet Ballistic Missile Program.
2. At Wright Field, arrangements were made with Lt. Col. King for a meeting to be held at WDD on 13-14 December to discuss details of transfer of administration of the program and necessary contract changes in the system study contracts.
3. At the Navy Department, I talked with R. Adm. Raborn, who has been assigned to head a special group to run the FBM Program. I was advised that it is their intention to arrange the assignment to WDD of a full time liaison officer, Cdr. K. C. Childers. The intention was also expressed by Adm. Raborn to initiate a large scale effort in the solid propellant rocket field leading to a suitable powerplant of this type for the FBM. We should take this program into consideration in formulating our own. It is my opinion that the use of solid propellants offers more gain for Naval application than for Air Force purposes, and that consequently they should be willing to carry the major burden of such a development effort.

EWB

R. C. Truax
R. C. TRUAX
Commander, USN

cc: Col. Glasser

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DECLASSIFIED AT 12 YEARS.
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COMDR WESTERN DEV DIV INGLEWOOD CALIF

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Priority

COMDR
DIRECTORATE OF SYSTEMS MANAGEMENT
DET. NO. 1, ARDC
WRIGHT-PATTERSON AFB, OHIO

WTST 12-2- C-E FOR RDZSGG

FOLLOWING PERSONNEL WILL PARTICIPATE FAMILIARIZATION TOUR PIED PIPER PROGRAM.

FROM WDD COL OTTO J. GLASSER TO LOCKHEED, MARTIN AND RCA: COMDR R. C. TRUAX,

ENTIRE TOUR. FROM R-W, ONE OR TWO INDIVIDUALS WHOSE NAMES WILL NOT BE AVAILABLE

UNTIL 2 JAN. SUGGEST WADC APPOINTMENTS BE SET BACK TO 18 JAN TO ALLOW TIME

FOR EASTERN VISITS IN CONNECTION WITH OTHER PROGRAMS.

***PARAPHRASING NOT REQUIRED EXCEPT PRIOR TO CATEGORICAL ENCRYPTION—PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME GROUP PRIOR TO DECLASSIFICATION—NO UNCLASSIFIED REFERENCE IF DATE-TIME GROUP IS QUOTED.

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DECLASSIFIED AFTER 12 YEARS.
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OTTO J. GLASSER

Colonel, USAF

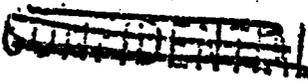
CHARLES H. TERHUNE, COLONEL, USAF

Deputy Commander, Technical Operations

R. C. TRUAX., CDR., USN

WTST

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86

DEC 23 1955

SUBJECT: (U) Support of Advanced Reconnaissance System

TO: Commander
Rome Air Development Center
Griffis AFB, New York

1. Reference is made to paragraph 1, System Requirement Number 5, dated 17 October 1955, which relates to the support of the Western Development Division by ARDC centers, in the preparation of a development plan for the Advanced Reconnaissance System (System 117L). (U)

2. It is requested that Rome Air Development Center provide support and guidance for development of the Advanced Reconnaissance System in those technical areas of responsibility currently assigned to your Center. Specifically, it is requested that you exercise such responsibility as follows:

- a. Intelligence (and other information) parameters, and all data processing and handling techniques for the System.
- b. Ground-air communications, including acquisition, tracking, and command of the flight vehicles. (S)

3. Your continued technical support and advice relating to the above System areas during development of the Advanced Reconnaissance System is requested. (U)

CHARLES H. TERRHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

D. A. SCHRIEVER
Major General, USAF
Commander

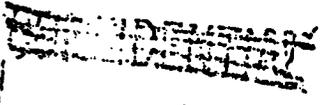
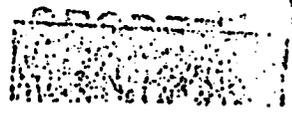
CC: HQ, ARDC
Attn: RDZPI

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DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

REF ID: A66553

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E.H.



~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

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WDTST

DEC 23 1955

SUBJECT: (U) Support of Advanced Reconnaissance System

TO: Commander
Wright Air Development Center
Wright-Patterson Air Force Base, Ohio

1. Reference is made to paragraph 1, System Requirement Number 5, dated 17 October 1955, which relates to the support of the Western Development Division by AFDC centers, in the preparation of a development plan for the Advanced Reconnaissance System (System 117L). (U)

2. It is requested that the Wright Air Development Center provide support and guidance for development of the Advanced Reconnaissance System in those technical areas of responsibility currently assigned to your center. Specifically, it is requested that you exercise such responsibility as follows:

- a. Guidance and control, including aspect control while in flight.
- b. Reconnaissance data collection subsystems.
- c. Auxiliary electrical power sources.
- d. Research on improved propulsion.
- e. Research on improved component operation and reliability.
- f. Spacrafts.
- g. Training equipment.
- h. Ground handling equipment. (S)

DOWNGRADED AT 3 YEAR INTERVALS;

DECLASSIFIED AFTER 12 YEARS.

DOD DIR 5200.10

WDTST

E.H.

RC Truax

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~~CONFIDENTIAL~~

WDTST 55-14

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~~CONFIDENTIAL~~

WDD (Hq ARDC) WDTST, Subject: Support of Advanced Reconnaissance System

3. Your continued technical support and advice relating to the above System areas during development of the Advanced Reconnaissance System is requested.

SIGNED

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

B. A. SCHRIEVER
Major General, USAF
Commander

CC: Hq, ARDC
Attn: RDZPI

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88

WDST

DEC 23 1955

SUBJECT: (U) Support of Advanced Reconnaissance System

TO: Commander
AECRC (Cambridge Research Center)
Cambridge, Mass.

1. Reference is made to paragraph 1, System Requirement Number 5, dated 17 October 1955, which relates to the support of the Western Development Division by ARDC centers, in the preparation of a development plan for the Advanced Reconnaissance System (System 117L). (U)

2. It is requested that the Cambridge Research Center provide support and guidance for development of the Advanced Reconnaissance System in those technical areas of responsibility currently assigned to your Center. Specifically, it is requested that you exercise such responsibility as follows:

a. Provision of environmental data as this affects vehicle design and test.

b. Planning and conduct of a geophysical research program utilizing test vehicles. (S)

3. Your continued technical support and advice relating to the above System areas during development of the Advanced Reconnaissance System is requested. (U)

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations
B. A. SCHRIEVER
Major General, USAF
Commander

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

CC: HQ, ARDC
Attn: RDZPI

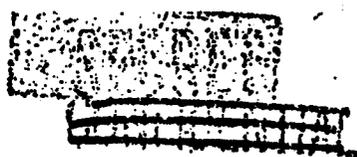
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WDST 55-15

89



WDTST

28 December 1955

MEMORANDUM FOR: All WDT Group Chiefs

SUBJECT: Advanced Reconnaissance System, Meeting Concerning

1. On January 4 to 5th a meeting will be held at KDD, in Building 4, Room 205 at 0900 to brief the three Pied Piper System Study contractors, Lockheed, Martin, and RCA, on the ICMI program.

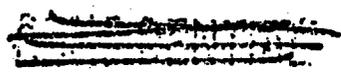
2. Cognizance over this program is being transferred to KDD. The program is being accelerated to the extent that the system study contractors are being directed to submit by 1 March draft system development plans in the general format of SO-4. It is intended that either the SM 65 or SM 63 (interchangeably, if feasible) be used to provide the major boost for the satellite vehicles. This requirement necessitates that the study contractors receive a considerable amount of information on the ICMI program, both regards design, schedules, and ground support. This information is being assembled by Dr. Robert Cornog, of R-W.

3. In order to go over the presentation before hand, a meeting will be held on 3 January in Building 3, Room 146 at 1600. Group Chiefs are invited to send representatives.

SIGNED

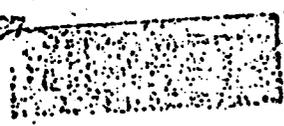
OTTO J. GLASSER
Colonel, USAF
Asst. for Systems Management

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DECLASSIFIED AFTER 12 YEARS.
DOC DIR 5200.10



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WDTST 55-20

Information

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Key
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90

WDT

27 December 1955

MEMORANDUM FOR THE RECORD

SUBJECT: WDD Position on Holloman Facilities

1. The problem of identifying and funding facilities for Holloman associated with -

- a. Present programs at WDD
- b. Master planning at Holloman are presented herein.

2. The problem to be resolved can be broken down into -

- a. Those test stands required by WDD
- b. Those base support facilities required to support the programs of "a" above.

3. A further breakdown of the base support facilities is -

- a. Gen area support such as roads, power, lights, etc.,
- b. Assembly buildings;
- c. Laboratories;
- d. Component test and other support activities.

4. With respect to test stands it is the position of WDD that two stands should be programmed immediately for Martin, two for the IRBM immediately, and no stands for ARS immediately. Two stands have been chosen for Martin to be used later in their program in support of the four stands presently required at Denver (three of these missile test stands and one battleship test stand). With respect to the two stands for the IRBM at Holloman, it is envisioned that these stands will provide the necessary statistical testing, production and acceptance testing late in the IRBM program and will be used in addition to initial battleship test stand which must be provided for the early demonstration and the rocket test facility proposed by Douglas in the local area.

5. With regard to test track activities, WDD programs in nose cone and guidance area will continue to need support of the nature provided by high speed tracks, and it is established as ARDC policy that a track at Holloman will be initiated. Other uses envisioned for such a track are that it might be associated with aircraft or other missiles and it will undoubtedly provide a large workload in the future as well as a large

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DOD DIR 5200.10

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MEMO FOR THE RECORD

SUBJ: WDD Position at Holloman 27 Dec 55

number of supporting facilities. (Note: This area points out one of the difficulties of providing a good definitive test facility for Holloman, i.e., the necessity for differentiating between WDD requirements and satisfying the long-range master development plan for Holloman.

6. With regard to assembly buildings, WDD programs at present require two standard buildings -- one for Martin and one for the IRBM.

7. With regard to other buildings such as laboratories or component test facilities, it is not possible at this time to be specific with regard to WDD requirements. The meeting of 29 December with Holloman should help in defining the uses envisioned by Holloman for the support buildings listed in their AF Form 161 (Justification for Facilities).

8. For the record, it is desired to point out at this time that Holloman requirements as well as the Edwards requirements do not reflect the type of planning we have accepted for Sycamore Canyon Facility at Camp Elliott and thus it is the feeling that both the Edwards and Holloman requirements must be reviewed very carefully to make sure that ample support will be available when needed in the next 12 to 18 months.

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

91
WS 1172 # 12
2 # 12

WDS

10 February 1956

SUBJECT: Reorganization and Realignment of Functions
of Technical Operations (WDT).

TO: See Distribution

1. Announcement is made of the reorganization and realignment of functions and elements under the office of the Deputy Commander, Technical Operations, effective as of 6 February 1956, as indicated. Responsibilities and functions of these offices will be developed by the Deputy Commander, Technical Operations.

a. The office of the Assistant for Systems Management is inactivated and the personnel and functions are transferred as indicated below.

b. The office of the WS-107A Control Group is inactivated and personnel and functions are transferred as indicated below.

c. The office of the WS-315A Control Group is inactivated and personnel and functions are transferred as indicated below.

d. The Programs and Procedures Group is relieved from assignment to the Assistant for Systems Management and is assigned to the Deputy Commander, Technical Operations. (New Organizational Symbol WDT0)

e. There is established the office of "Assistant for Weapons System 107A-1" (WDT0) and Colonel OTTO J GLASSER is appointed as the Assistant and Lieutenant Colonel JOSEPH D HECK, JR as the Deputy Assistant.

f. There is established the office of "Assistant for Weapons System 107A-2" (WDTB) and Colonel BENJAMIN P BLASINGAME is appointed as the Assistant and Lieutenant Colonel OTTO C LEDFORD as the Deputy Assistant.

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Page 2

WDS Subject: Reorganization and Realignment of Functions of
Technical Operations (WDT)

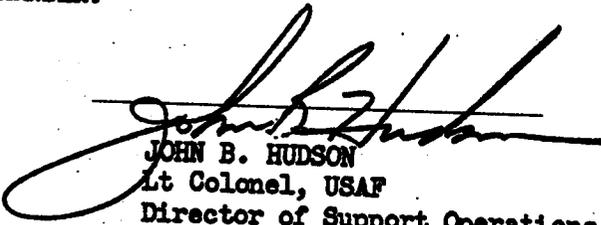
g. There is established the office of "Assistant for Weapons System 315A" (WDTI) and Colonel HAROLD W NORTON is appointed as the Acting Assistant and Commander ROBERT C TRUAX as the Deputy Assistant.

h. There is established the office of "Assistant for Weapons System 117L" (WDTI) and Colonel OTTO J GLASSER is appointed as the Acting Assistant and Commander ROBERT C TRUAX as the Acting Deputy Assistant.

3. The Chief, Manpower Group is responsible for correcting and publishing the necessary official organizational documents. The Chief, Military Personnel Branch is responsible for publishing the necessary Personnel Actions Memorandums to reflect any changes in duty assignment of the personnel concerned.

4. Organizational Charts for elements of Technical Operations will be published by the Chief, Manpower Group, at the earliest practicable date.

BY ORDER OF THE COMMANDER:


JOHN B. HUDSON
Lt Colonel, USAF
Director of Support Operations

DISTRIBUTION:

- 2 - Comdr WDD
- 5 - Ea Dep Comdr, WDD
- 5 - Dir, Support Ops, WDD
- 10 - Ea Gp & Br or Equiv Actvy, WDD
- 5 - RDGB, Hq ARDC
- 5 - AFDDC-A Lt Col Ahola

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

189
SPECIAL ORDERS)
NUMBER 6)

5 March 1956

1. Pursuant to AFR 11-1, an Evaluation Board is convened for the purpose of impartially reviewing various design studies and proposals relating to the Research and Development of WS-117L and, if any of the studies and proposals are found to be acceptable, recommending one of the three prime contractors presently conducting such design studies to receive a firm contract for the design and development of WS-117L. Separate findings will be made on each item as outlined by Western Development Division Office Instruction 70-3, dated 18 April 1955. The Board will consist of COLONEL W. H. BAYNES, 1122A, President, who will normally vote only in the event that other members of the Board are unable to agree, and the following voting members. (Personnel listed below, assigned other than WDD, is with concurrence of their Commander):

LT COL	R. C. HOLUB	10022A	HEDAMC	
COMDR	R. C. TRUAX	82506(USN)	WDD	
LT COL	W. G. KING, JR	8356A	WADC	Recorder
LT COL	V. M. GENEZ	8466A	HEDARDC	
1ST LT	R. S. WASHBURN	A03019565	HEDAMC	
Mr.	R. S. BLOCKER	GS-14	HEDAMC	

This Board will exert every effort to obtain unanimous decisions. Final Board proceedings are to be completed on or before 20 March 1956.

BY ORDER OF THE COMMANDER:

OFFICIAL:



WILLIAM C. BUMM
Major, USAF
Division Adjutant

WILLIAM C. BUMM
Major, USAF
Division Adjutant

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25 - Recorder

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

SPECIAL ORDERS)
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BY ORDER OF THE COMMANDER:

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WILLIAM C. BUMM
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- 5 - HEDAMC
- 25 - Recorder

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WF 20 58

SUBJECT: Report of Contractor Evaluation Board, WS 117L (Uncl)

TO: Commander
Western Development Division
Post Office Box 262
Inglewood, California

1. In compliance with Special Orders No. 6, Western Development Division, dated 5 March 1956, the Evaluation Board met at Wright-Patterson Air Force Base, Ohio, during the period 12 March to 20 March 1956. The Board heard presentations made by and reviewed reports submitted by the Radio Corporation of America, the Glenn L. Martin Company, and the Lockheed Aircraft Corporation. The Board received valuable assistance in this evaluation from the WS 117L Technical Advisory Group and from the Air Materiel Command Special Evaluation Group. The provisions of Western Development Division Office Instruction 70-3, dated 18 April 1955 were understood and followed by the Board.

2. The Board assigned relative weights to specific areas of evaluation as follows:

Technical Evaluation	500 points
Development and Production Aspects	300 points
System Management Potential	200 points

The ratings made by the Technical Advisory Group and the AMC Evaluation Group were thoroughly reviewed by the Board and were accepted with minor revisions. The evaluation of the System Management Potential item was made by the Board and is covered in this report.

3. In the opinion of the Board, all proposals were acceptable but varied considerably in degree of acceptability. All gave promise of delivering a 1958 minimum performance orbital vehicle as an IGT

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INTERVALS: NOT AUTOMATICALLY
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Hq AFHQ to Comdr WDD WR 20 56
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

back-up. The Board finds the relative overall evaluation of the three competing contractors to be as follows:

<u>Contractor</u>	<u>Total Points Scored</u>
Lockheed	758.37
RCA	649.95
Martin	503.13

4. PROPOSAL SUMMARIES

a. Lockheed Aircraft Corporation

The development plan submitted by the Lockheed Aircraft Corporation is very broad in scope and involves multiple approaches in all questionable areas. Earlier systems are simpler and of lower utility, later systems are more complex and produce more information.

In the visual reconnaissance area initial emphasis is placed upon a photographic camera with read-out by a flying spot scanner and transmission to the ground via a steerable antenna. In this case, the film serves not only as the image receiving device, but also as the storage medium. The quantity of film required is small (five pounds per month) for all proposed missions. Early resolutions would be about one hundred feet. Later versions would give resolutions of twenty-five feet. Information would be transmitted to the ground via a six mc bandwidth radio link using a steerable antenna.

Two phases of ferret system development are foreseen. The first uses twenty-six crystal video receivers with antennae directed toward the horizon to provide a density survey in the fifty mc to 12,000 mc frequency range. Sweeping receivers with downward pointing antennae will be used in bands of particular interest to provide more detailed information.

The second ferret system will increase frequency coverage to the fifty mc to 20,000 mc range. It will give improved directive resolution and supply pulse repetition rate pulse width, and frequency analysis.

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Hq ARDC to Comdr WDD : 20 56
Evaluation Board, WS 117L

Subject: "(Uncl) Report of Contractor

In addition to the visual and ferret missions, Lockheed suggested the use of infra-red sensors to detect and track high flying jet aircraft or large ballistic missiles. An eventual complete satellite-borne early warning network is visualized. Power supply for early systems will be batteries. Later a chemical A.F.U. and/or a solar powerplant would be phased in. The nuclear APU was considered as an alternate possibility, particularly for ferret missions. Mission durations would be determined by the power supply and would vary from two weeks upward.

Reconnaissance data would be received at three ground stations located in the continental United States and in Hawaii. For visual data, a parabolic directional antenna slaved to the PPS-16 (or modified SCR-584) would provide gain and security. Incoming data would be recorded by kinescope on master prints.

Transmission of the bulk of the data will be by airplane to the central processing station where it will be put onto a Minicard filing system. A small percentage of selected, high priority data will be transmitted by slowed-down television techniques, to the centers.

Ferret data will be stored on magnetic tape at the receiving stations and transmitted to the Center for analysis.

Two main series of orbiting vehicles are programmed. The first weighs between 3500 and 7000 pounds, depending on loading. The second uses higher performance propellants and weighs about 14,000 pounds. It has the capability of being placed on orbit with smaller payloads by an IRBM.

The test program is very elaborate, involving 43 Sergeant-boosted non-orbiting vehicles, and 63 SM-65 (or SM-68) boosted full size nose sections. Additional missiles are allocated to an initial operational program which the contractor proposes to conduct.

Lockheed proposes to handle the systems management, airframe, guidance, and nuclear APU.

Lockheed proposes to subcontract the major part of the reconnaissance and ground handling equipment to an Eastman Kodak-CES team.

The total program requires 53 Sergeant boosters and 113 SM-65's or SM-68's including approximately one year's operational performance for each operational type.

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Hq ARDC to Comdr WND
Evaluation Board, WS 117L

SEP 20 58

Subject: "(U) Report of Contractor

The major Government-furnished facilities are as follows:

System Test Facility (Hazard)	\$2,000,000
Control and Intercept Stations (3) East Coast, West Coast, Pacific Ocean	15,000,000
AFS Intelligence Center	43,150,000
Test Launch Facility (AFMTC or HADC)	3,500,000
Launch Site (Bosham AFB, TX)	25,000,000

The yearly cost breakdown for the prime contract portion of the program is as follows:

CCST (THOUSANDS OF DOLLARS)

FY	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>TOTAL</u>
	\$22,200	46,000	58,400	56,700	74,600	60,500	41,600	\$370,000

The contractor's estimate of GFR and facilities cost is an additional \$238 million for a total program cost of \$608 million dollars.

b. Radio Corporation of America

The RCA program is of a broad scope and makes extensive use of alternate approaches, so that it is difficult to pick out outstanding technical features. The program does however emphasize television collection of visual data, storage of these data on electrostatic tape and transmission to the ground through first a fixed and later a steerable antenna. Preliminary ground processing by automatic equipment and final evaluation by photo interpreters is visualized. Eventual resolution would be 10-25 feet with location to .1 mile. With this system 40 to 60 days would be required for complete coverage of areas of interest by one vehicle.

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Hq ARDC to Comdr WDD MR 20 58
Evaluation Board, #3 117L

Subject: "(U) Report of Contractor

Three types of ferret systems are suggested. The first would employ five scanning superheterodyne receivers covering the frequency range of 700 to 15,000 mc, coupled with crystal-video pre-amplifiers. Antennas would be fixed and would be directed straight down. Magnetic tape storage would be used. The equipment would determine frequency and locations. The second system would also use five antennas but would cover a wider frequency. The third system would extend the frequency band from about 40 to 40,000 mc. Pulse width would also be determined, and accuracy of other measurements would be increased.

Power availability will pace the above systems. Batteries will be used to power early flights beginning in 1958 and will continue in use until 1960 when low power (75 watts orbital average) solar batteries are expected to be available. In 1961 high power (250 watts orbital average) solar batteries are to be tested. Nuclear APU's to produce 1000 watts or more will be flight tested in the 1962-1963 time period.

Early ferret systems would require thirty days for complete coverage compared to about eight days for later systems.

Tracking will be with the FPS16 radar.

Reconnaissance data would be received by two to four stations located within the continental United States and transmitted by airplane and wire (later by wide band microwave links) to a central processing station.

Separate visual and ferret vehicles are proposed. Vehicle weights would be approximately 5000 pounds. They would be boosted into orbit by SM-65's.

The RCA test program calls for launching a total of seventy-six vehicles. Three orbital flights are scheduled for late 1958. Operational flights over the Soviet Union with limited reconnaissance capability would begin in mid 1960.

RCA proposes to develop the visual reconnaissance equipment, communications and tracking equipment and ground data handling equipment.

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Hq ARDC to Comdr WDD 28 20 58
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

They would subcontract to Bell Aircraft the airframe and powerplant, to Airborne Instruments Laboratory the ferret equipment, and to North American Aviation the nuclear APU.

The Government would be expected to furnish seventy-six flyable SM-65 boosters and two stripped engineering ground models. Also required would be one set of ICBM ground guidance equipment and the following major special facilities:

- (1) A test launch site at AFMTC (including assembly, laboratory and storage facilities) with down range tracking facilities. (\$1,173,000)
- (2) Two to four operational data receiving stations. (Not costed)
- (3) Rocket static test facilities. (\$3,293,000)

Developmental flight testing would be done at AFMTC. It is assumed that operational launches would take place from ICBM sites. Location and manner of acquiring the central processing site are not discussed.

The RCA proposal does not price the Government furnished equipment. The cost of the program (i.e., the RCA contract cost) is:

Calendar Year	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>
Cost (Thousands of dollars)	17,961	41,707	43,497	50,037	47,497	37,416	33,916
	<u>1963</u>	<u>1964</u>	<u>Total</u>				
	28,365	8,761	309,228				

c. Glenn L. Martin Company

The development plan submitted by the Glenn L. Martin Company emphasizes television data collection for visual reconnaissance, use of magnetic tape for storage of data within the vehicle, and a non-steerable airborne antenna. The ferret system utilizes fixed

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Hq ARDC to Comdr WDD 20 58
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

receiving antennas, superheterodyne receivers, magnetic tape storage, and transmission to the ground via a fixed antenna. Considerable redundancy is incorporated to improve reliability.

Primary reliance is placed on a nuclear auxiliary power supply. Airborne equipment is designed to be compatible with the expected high radiation level. This radiation makes impossible the use of photographic film as a data storage means. The magnetic tape storage limits the amount of data that can be handled per revolution of the vehicle.

Tracking and command would be through FPS-16 radars located in the continental United States.

Ground data reception would be through a 50 ft diameter antenna servoed to the tracking radar.

Reconnaissance data would be received by four ground stations, recorded on tape and film, and sent to a central station for examination and further processing. Telephone lines and airplanes are visualized as the transmission media.

Separate visual and ferret vehicles weighing 5,250 pounds each are proposed. These would be boosted into orbit in the early phases by SM-65's, and in later phases by SM-68's.

The test program outlined embraces five non-orbiting flights, using Vanguard boosters. The orbiting test program involves a total of twelve planned launchings backed by five spare vehicles.

The end items of the program would be two intelligence gathering systems. One would give pictures of the terrain with a resolution of 100 ft per TV line. The second system would collect the following information on enemy radars: radio frequency (60-15,000 mc) pulse repetition frequency and approximate geographic location of each intercept. Complete coverage of the areas of interest would be obtained by one vehicle of each kind in eight days.

If the Air Force requires a flight demonstration in 1958, the Martin Company proposes to launch three vehicles before the end of 1958 with the hope that at least one will orbit. Operations over the Soviet Union would commence about 1960.

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Hq ARDC to Comdr WDD 12 20 58
Evaluation Board, WS 117L

Subject: (U) Report of Contractor

Operating time would be approximately one year per vehicle.

The Glenn L. Martin Company proposes to handle System Management, the vehicle, and the ferret subsystem. They propose to subcontract the visual reconnaissance system to the Philco Corporation and the ground data handling to the International Business Machine Corporation.

as follows:

The Martin program requires Air Force booster vehicles

Nine SM-65C's beginning July 1958 and ending about January 1959.

Eight SM-68's beginning February 1959 and ending about July 1959.

Three second stage SM-68's beginning July 1958 and ending September 1958.

The Government would be expected to furnish the following major special facilities:

- (1) A test launch site (AFMTC) with down range tracking and communications facilities.
- (2) An operational launch site.
- (3) A nuclear power plant test facility (suggested location - Idaho Falls).
- (4) A geophysical environment facility (suggested location - Denver).
- (5) A large centrifuge (Martin, Baltimore or Denver).
- (6) A proof test facility (AFMTC).
- (7) Four tracking and communication stations (suggested locations, Washington, California, North Dakota, Texas).

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Hq ARDC to Comdr WDD MR 20 56
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

- (8) One data processing station (may be combined with one of Item 7).

In addition to the above new facilities, extensive use is planned of existing Government and Martin Company facilities, including those being built for the SM-68 program.

The Glenn L. Martin Company proposes to conduct developmental launchings from AFMTC and operational launchings from an undetermined location, probably in the Hawaiian Islands. Four data receiving stations, and a central data processing station, all in the continental United States would be required.

The Martin proposal does not cost any Government furnished equipment or facilities. Notable among these are the auxiliary power units, 8-FPS 16 radars, and the boosters and facilities listed previously. The cost of the Martin Program, less the above items is as follows:

FY	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>Total</u>
Cost (Thousands of dollars)	16,980	27,610	25,300	8,588	78,478

5. EVALUATION SUMMARY

a. Technical Evaluation

A technical evaluation of the Contractors' design studies was conducted by the Technical Advisory Group of the Advanced Reconnaissance System Weapon System Project Office in accordance with previously established Evaluation Rules and a report submitted to the Board for consideration.

A weight of 500 points of a total of 1000 points was assigned by the Board to the Technical Evaluation.

The Board finds on the basis of the Technical Evaluation that the Lockheed Aircraft Corporation is the preferred contractor choice by a small margin over the Radio Corporation of America and by a significant margin over the Glenn L. Martin Company. All three contractors are considered acceptable from a technical standpoint.

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Hq AFDC to Comdr WDD MAR 20 58
Evaluation Board, WS 117L*

Subject: "(U) Report of Contractor

Lockheed Aircraft Corporation (Points Received 354.20).

The technical considerations which indicate the selection of Lockheed as the preferred prime contractor relate primarily to their better system approach to a comprehensive technical program. Lockheed has significant experience in the fields of electronics, airframe design, guidance and control, nuclear powerplants, and missile flight test. RCA, on the other hand, although extremely competent in the electronics field, has so little experience in other areas that their ability to effectively integrate the developmental activities of Bell Aircraft is questionable. Lockheed demonstrated this better overall technical position in the completeness and balance of their proposed development plan. Lockheed's slight margin over RCA in the various component areas stems from a small accumulation of points in fields other than visual reconnaissance and ground handling. The technical competence of Lockheed's principle sub-contractors, Eastman Kodak Company and Columbia Broadcasting Corporation, is adequate and together with Lockheed they comprise the strongest technical team. The extensiveness of the flight test program proposed demands that the Air Force require early decisions and firm resolution of subsystem approach to avoid serious dilution of effort.

Radio Corporation of America (Points Received 342.05).

The Radio Corporation of America is outstanding in electronic research and their proposal was particularly strong in the areas of visual reconnaissance, ferret, data processing, acquisition and tracking, and communication. Because of their lack of technical competence in the related technical areas of this complex system, there is a lack of assurance that RCA could give the technical direction to a program as required of a system manager. The technical team of Radio Corporation of America and Bell Aircraft, although acceptable, is rated below the Lockheed team. Bell's technical competence and performance in the fields of propulsion, airframe, and guidance was recognized to be acceptable but it is believed that their performance would pace the system development. The depth of understanding of the technical problems in many areas as presented in the design studies prepared by RCA was less comprehensive than that of Lockheed.

Glenn L. Martin Company (Points Received 307.30).

Martin's prime weakness in the component areas lies in acquisition, tracking and command, in their geophysical environment test programs, and weather

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reconnaissance. Particular deficiencies were noted in telemetering, command link, programmer, and the type of back-up provided for the IGY Program. The relatively poor rating of Martin in the technical area stems principally from the fact that the limited nature of their approach does not give adequate assurance that the desired intelligence objectives will be achieved. It also appears questionable that the flight test program outlined will achieve even the limited objectives set. The above disadvantages are deemed to outweigh their previous and currently-being-obtained experience as system managers in the airframe, electronics, guidance and flight test areas.

Summary

The Board has carefully reviewed the Technical Evaluation submitted by the Technical Advisory Group and concurs with its findings. A numeration by the points assigned by the Technical Advisory Group and the Board is as follows:

<u>Contractor</u>	<u>Technical Advisory Group (1000 Points Max)</u>	<u>Board Evaluation (500 Points Max)</u>
Lockheed	708.4	354.20
RCA	682.1	342.05
Martin	614.6	307.30

b. Development and Production Aspects

An evaluation of the development and production aspects of the contractors' design studies was conducted in accordance with previously established rules by an Air Materiel Command Evaluation Group and a report submitted to the Board for consideration.

A weight of 300 points of a total of 1000 points was assigned by the Board to the development and production aspects.

With respect, then, to development and production aspects, the Board makes the following statements:

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Lockheed Aircraft Corporation is the preferred contractor choice for systems management of WS 117L.

Radio Corporation of America is second to Lockheed Aircraft Corporation by a significant margin.

The Glenn L. Martin Company is well out of the range of contention in this evaluation area.

The major factors considered by the Board in selecting this order of preference for systems management are summarized, by company, as follows:

Lockheed Aircraft Corporation (Points Received 229.17)

Lockheed's soundly conceived systems management approach, the assignment of enthusiastic, high caliber personnel, and the pledge of top level corporate emphasis contributed to an excellent organizational rating. A comprehensive master plan is presented for what was considered to be the optimum system of those proposed. Manpower requirements however are not uniformly phased. Lockheed proposes to subcontract 45% of their total effort among Eastman Kodak Company, a leader in the photo field, GBS and a very strong group of subcontractors in lesser roles. Total labor requirements, professional and non-professional, were the highest submitted. Facility requirements are the highest, most complete, and realistic of those submitted. Total costs, less fee, facilities and GFAB, are estimated to be \$336.65 million.

Radio Corporation of America (Points Received 172.90)

RCA proposes a rather elaborate ARS organizational structure to be lodged high in the Corporation, headed by a corporate director, and staffed with competent personnel. Their master plan, covering a period of eight years, envisions a progressive development program, recognizes the fundamental and pacing problems, and provides for interim solutions in subsystem areas where development may lag. Fifty-five per cent of RCA's effort will be subcontracted - primarily to Bell Aircraft Corporation. Although RCA is admittedly very strong in the electronics field the selection of Bell Aircraft for vehicle production could well be the pacing factor in RCA's effort. Planning for labor, both professional and non-professional, appears to be well timed except for a heavy labor requirement for Bell Aircraft which is unsupported. Facility requirements and attendant costs are incomplete. Test sites, tracking stations,

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and data handling equipment would be required; however, RCA considered this to be a matter more appropriate for the USAF to resolve. Total costs, less fee, facilities, and GF&E are estimated by the contractor to be \$346.2 million.

Glenn L. Martin Company (Points Received 120.83)

From an organizational viewpoint Glenn L. Martin considers the ARS as "just another project." Their master plan relies heavily on "off the shelf" items to produce a system of early operation but of limited capability. Development programs required to meet the ultimate reconnaissance objectives are omitted. Their plan appears overly optimistic, of short duration, and not comparable to the programs submitted by the other two contractors. Subcontract structure was considered to be excellent. Forty-two per cent of the total effort would be subcontracted. Labor planning reflects Martin's over-simplified approach. Facility requirements and attendant costs are incomplete. Cost information submitted fails to indicate the efforts required to obtain the desired ARS capability. Martin would suggest additional efforts during the prosecution of their proposed limited system. Indicative of this is Martin's present total cost estimates of \$78.7 million, less fee, facilities and GF&E, as compared to well over \$300 million estimated by the other two contractors.

Summation

The Board has carefully reviewed the Development and Production Report submitted by the AMC Evaluation Group and concurs with its findings. At the outset the AMC Evaluation Group proposed that a total of 1000 points be utilized. However, they were unable to evaluate numerically the "facilities" factor as a common base line for comparison is lacking. Therefore, the maximum point score obtainable by any contractor in the AMC Evaluation was reduced to 900. A weight of 300 points, of a total of 1000 points, was assigned by the Board to the development and production aspects. Numerical evaluation of the companies involved as assigned by the Group and the Board is as follows:

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<u>Contractor</u>	<u>AMC Group Evaluation (900 Points Max)</u>	<u>Board Evaluation (300 Points Max)</u>
Lockheed	687.5	229.17
RCA	581.7	172.90
Martin	362.5	120.83

c. Systems Management Potential

(1) The purpose of this section is to make a Board evaluation of the contractors' overall understanding of and approach to the problem of designing, developing, and testing an adequate satellite reconnaissance system to a high degree of reliability in the shortest possible time. The evaluation to be made here considers:

(a) Aspects which, although treated elsewhere, are considered by the Board to have sufficient importance to justify the assignment of additional weight.

(b) Aspects not treated elsewhere and considered by the Board to have significance.

(2) In making this evaluation the Board has considered four broad categories:

- (a) Contractor philosophies - Program adequacy
- (b) Interference from (or with) other programs
- (c) Contractor motivation
- (d) Flight test philosophy

(3) Contractor Philosophies - Program Adequacy - The problem of designing useful systems revolves around a knowledge of the basic intelligence needs, as well as a "feel" for the constantly changing objectives as both nations involved progress in their military technologies. Not only will the collection environment vary with improved enemy defenses;

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intelligence objectives (such as target types) will change also, and sometimes radically, in a relatively short time. Thus a long term development program, leading to an advanced or high order intelligence collection system, must be flexible and amenable to reasonable reorientation without disruption or excessive time loss. In evaluating the proposals for an Advanced Reconnaissance System the Board has given due consideration to the individual program's adaptability to these changing requirements so inherent to the intelligence problem. Needless to say, these same changing intelligence requirements have considerable bearing upon the utility of the systems proposed, and here again, flexibility of thought, initiative, and span of purpose are factors weighting the Board's recommendations.

a. Lockheed Aircraft Corporation

The Lockheed proposal for the Advanced Reconnaissance System is a "building block" plan, providing for alternative subsystem development chosen to yield a system of increasing usefulness on a reasonable time scale. The program is designed to reach a stage of real operational utility as quickly as possible, considering required advances in technology, and shows evidence of much initiative and "forward thinking" on the part of Lockheed Aircraft Corporation in proposing the use of the Advanced Reconnaissance System as a feasible means for an early warning of both air-breathing and long-range ballistic missile attack. It is the opinion of the Board that achieving this single objective could well warrant embarking upon the Advanced Reconnaissance System program. However, in following the Lockheed Aircraft Corporation program through Pioneer, Advanced, and Surveillance milestones, Lockheed has shown a good understanding of intelligence operations by planning (initially) for actual operations and reflecting these plans in a realistic manner insofar as costs, facility and training requirements, and scope of operations is concerned. There is every evidence that Lockheed's program is flexible, with a minimum of non-operational development. Subsystem development order can be varied, within limits, to provide emphasis on visual, ferret, or infra-red reconnaissance, thus permitting quick advantage to be taken of technical advances. This same flexibility is, of course, necessary to meet changing intelligence requirements.

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In examining the Lockheed proposal, it becomes evident that the relatively high quality reconnaissance capability will be attained only through high cost, in money, vehicles, and facilities. In this connection, it should be borne in mind that the Advanced Reconnaissance System is required to fill a positive operational requirement; it will be placed in use as soon as available.

b. Radio Corporation of America

The Advanced Reconnaissance System proposal by Radio Corporation of America features a fairly conservative program of step by step component research and test, leading to demonstration of both visual and ferret systems at the end of the eight year program. Some operational reconnaissance is possible during the test program, but specific operational milestones are not delineated. The thoroughness of RCA's technical approach, while desirable from the standpoint of reliability, does not permit any great degree of flexibility to meet the ever changing requirements for intelligence information. While RCA has developed a reasonable understanding of the intelligence problem, not much initiative has been shown in expanding the potential utility of the Advanced Reconnaissance System, as was done by Lockheed. In addition, little attention was given to developing an operational concept for the system, although this is not normally a contractor function, it does promote (especially in the case of unconventional systems) a better "feel" for the Air Force problems.

On the strong side, the RCA program indicates excellent technical depth to handle development of the reconnaissance and information handling portions of the Advanced Reconnaissance System.

c. Glenn L. Martin Company

From the standpoint of reaction to changing intelligence requirements, the Glenn L. Martin proposal is notably lacking in program flexibility. Basically the Glenn L. Martin plan goes no farther in estimating system requirements and growth than does the original RAND study of the satellite problem. Glenn L. Martin seems satisfied to propose a means for attaining a minimum reconnaissance capability.

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There is no evidence that the operational aspects of the Advanced Reconnaissance System have been studied to any great extent, and the Glenn L. Martin proposal seems to be concentrated in the direction of minimum effort in cost and vehicles. Such an approach had its advantages in economy; however, it fails to satisfy the overall Advanced Reconnaissance System requirement except in the most austere sense.

(4) Interference from (or with) other programs - In considering this subject the Board was influenced to a considerable degree by the extent of scientific and technological effort in many different, and frequently unrelated areas which will be required for the successful prosecution of the Advanced Reconnaissance System program. This fact places a premium on systems management of a high order, and a degree of scientific versatility which is rare.

a. Lockheed Aircraft Corporation

During the past two and a half years this contractor has placed great emphasis on building up a capability for systems management in the guided missiles area. The reputation of the Lockheed Missile Systems Division as individuals is high. Their ability to function as a tightly-knit systems management team has not been demonstrated to date, since they have not had a weapon system to manage. The company's present programs in the Missile Systems Division are all supporting programs, although the re-entry test vehicle for the ICBM program carries a very high priority. They state, however, that this program will be completed in January 1957, leaving them free to turn their entire attention to the Advanced Reconnaissance System. From the standpoint of interference it is believed that the X-17 project is the only effort currently underway at Lockheed which might present difficulty, and if this terminates as planned mutual interference should be relatively minor.

b. Radio Corporation of America

Like Lockheed, RCA is a relative newcomer to the field of guided missile weapon system management, as well as a newcomer to the guided missile area as a whole. It is the understanding of the Board that their present systems management organization was set up

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specifically to manage the Advanced Reconnaissance System program, and it does not seem to be fully staffed as yet. The competence of RCA in the research and development of electronic systems and electronic components is unquestioned but the caliber of their systems management team remains an unknown. Their performance to date on the Advanced Reconnaissance System Study contract has not demonstrated an outstanding ability to organize and direct a major sub-contractor effort. In this area it is considerably inferior to that of Lockheed and Martin. It was reasonably obvious in the RCA oral presentation that both RCA and Ball had suffered from communication difficulty. With respect to interference from or with other programs the fact that RCA's systems management group will be exclusively concerned with the Advanced Reconnaissance System program, since they have no other system development on the books, certainly is an attractive feature. Judged purely on the basis of non-interference from or with other systems RCA is in the strongest position of any of the three competitors.

c. Glenn L. Martin Company

The Martin Company is unique among the bidders in this competition in that they are the only competitor with a broad background of weapon system management experience. They have carried the TM-61A Matador through design, development, testing, and deployment to the using command. They have learned a great many things in this process--some of them the hard way. Considering the complexity of the system management problem presented by ARS, Martin is in a position of strength insofar as proven systems management ability is concerned and this could be a deciding factor if the Martin "first team" were available. It is the feeling of the Board, however, that this is not and will not be the case. Martin is just beginning its personnel build-up in support of the SM-68 operation at Denver and the bleeding off of trained management is already felt in other Martin programs. The TM-61B for instance has just experienced its first schedule slippage in three and a half years, and the RB-57D program is also in some difficulty. When the priorities of the SM-68 and Vanguard programs are considered, together with Martin's other program responsibilities, it becomes reasonably obvious that this company is spreading its trained managerial resources exceedingly thin. The imposition of another program of high priority and great technical difficulty at this time on this relatively small company is considered by the Board to be unwise.

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(5) Motivations and Contractor Relationships - In a program of this type, it is important to answer the question as to why a contractor is interested in participating. On the face of it, the Advanced Reconnaissance System will never be an especially profitable venture for any contractor. On the strong side, there is an undeniable prestige factor to be considered, since the ARS takes the first step toward real space flight. In its contacts with contractors, the Board has received many impressions of contractor reasoning on participation, and indication of their feelings on type of participation. Because such motivations may influence USAF - Contractor relationships during a relatively long program period, the Board has included this area in its consideration of contractor choice.

a. Lockheed Aircraft Corporation

The Lockheed Corporation is presently the only large airframe contractor in the United States which does not have a major missile contract with the military services. Representatives of the company frankly state that their basic interest in the ARS is considerably reinforced by this fact. The important considerations here are Lockheed's avowed intention to cooperate in every way possible with the Air Force on the ARS program, and to establish a good reputation in the missile field. Thus, in addition to an apparent superiority over both RCA and Glenn L. Martin on the system approach to the ARS, Lockheed's attitude leaves no doubt as to their flexibility and willingness to accept Air Force direction on the ARS program.

b. Radio Corporation of America

The Radio Corporation of America has recently developed a strong interest in becoming a weapon system contractor, and representatives of the company have indicated that such a policy is company-wide. Perhaps for this reason, RCA representatives have mentioned to members of this Board that RCA will not be willing to enter the ARS program in any capacity other than as prime system contractor. Experience with RCA during the design study phase of ARS shows the company to resist Air Force direction, and to consider such direction as unwarranted interference by unqualified sources. This attitude, plus the fact

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of RCA's lack of dependence upon military work for its profits, could create many problems during ARS development; reducing program flexibility and attendant requirements for occasional reorientation, and placing the WSPO in a distinctly subservient position with regard to program direction, choice of sub-contractors, and so on.

a. Glenn L. Martin Company

The Glenn L. Martin Company, like every airframe contractor, would like to be first in the "space flight" area. Their initial enthusiasm for the ARS program reflected this desire; however, through association with the IGY satellite project (Vanguard), Glenn L. Martin sees a partial answer to this motivation and their enthusiasm for the much more complex and difficult ARS program seems to have dimmed somewhat. Company representatives have stated that the ARS will take its place with other projects, and the Glenn L. Martin proposal reflects a minimum of real thought and planning.

(6) Flight Test Planning - In any unmanned weapon system, development schedules are paced to a large extent by the ability to derive usable development information from the flight test program. Although the adequacy of flight test planning was reviewed by each element of the Technical Evaluation Group as it applied to the sub-systems with which they were concerned, the Board felt that it was mandatory that some overall evaluation in this area be made.

a. Lockheed Aircraft Corporation

Lockheed proposes a phased program consisting of eight overlapping blocks of test effort. From each of these blocks will come a significant demonstration of accomplishment which can be measured and used as a basis for advance to the next step. With the exception of Program I which has as its aim only the demonstration of orbital capability, each succeeding program will result in a vehicle which can perform an actual reconnaissance mission with an increasing degree of sophistication. The Lockheed test plan has been presented in greater detail than that of either of the other contractors and seems to represent a greater depth of planning effort. It is open to criticism in that the planned use of Sergeant boosted payloads could be described as "dead end testing," but this is actually a misnomer since the

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Sergeants are used merely to put full scale components into an environment that is not duplicatable on the ground and about which little factual data is available. Their function is very similar to that of the X-17. An attractive feature of this plan is the fact that Lockheed could conceivably do a large part of this "System Test Vehicle" work at Holloman Air Force Base, thus relieving some of the launch load at Patrick. It also cuts down on the requirements for ICBM boosters by a significant number. Lockheed is believed to have been considerably more realistic than either RCA or Martin in assessing the number of vehicle flights required for component and subsystem development.

b. Radio Corporation of America

RCA also proposes a phased program of growth and increasing sophistication of system testing, similar to that of Lockheed but of considerably less flexibility and showing little operational utility until shortly before the final demonstration flights in the last quarter of 1963 and the first and second quarters of 1964. They propose the launching of seventy-six vehicles beginning with the orbital demonstration during the last quarter of 1958. All of these vehicles would be full scale, Atlas boosted types, although payloads would vary considerably. The fact that RCA uses nothing but full scale vehicles may be a plus point here, but the Board questions whether this approach will in actuality be superior to that of Lockheed in the special case of the ARS. An additional drawback, of course, is the much heavier requirement for SM-65 boosters.

c. Glenn L. Martin Company

The Martin proposed test program appears to be adequate within this company's self-imposed cut-off of development in mid 1960 but totally inadequate to provide the Air Force with a usable reconnaissance system. Martin proposes to utilize seven Vanguard rockets for component testing, three second stage SM-68's for "third stage proof testing," four SM-65's for IGY demonstration, five SM-65's for initial demonstration of satellite feasibility and eight SM-68's for final ARS development and demonstration. This shifting of the full scale third stage satellite back and forth between the SM-65 booster and the SM-68 booster within the space of less than two years seems to the Board to be somewhat short of an optimum approach to a complex development problem. Martin explains it by remarking that they would

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prefer to use the SM-68 booster throughout the program because of its greater performance margin, but were forced to the SM-65 by the requirement for an IGY demonstration. Whatever the explanation, the Martin flight test program as it stands is definitely not recommended by the Board.

The Board evaluates the items discussed in paragraph 5c as follows:

	Possible Points	LAG	RCA	GM
Contractor Philosophy - System Adequacy	50	45	30	20
Interference from (or with) other programs	50	35	40	10
Contractor Motivation	50	50	30	25
Flight Test Planning	50	45	35	20
Total	200	175	135	75

d. Summation of Points Scored.

	Tech Eval	Dev and Prod Aspects	Sys Mgt Potential	Total
Points Possible	500	300	200	1000
Lockheed	354.20	229.17	175.00	758.37
RCA	342.05	172.90	135.00	649.95
Martin	307.30	120.83	75.00	503.13

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6. The Board action to this point in the proceedings has dealt with the selection of the best of the three contractor proposals as submitted. However, there has been generated within the Board a definite feeling that a stronger development team could perhaps be devised if the existing team associations were disregarded and a new team considered. In the following up on this line of thought the Board subdivided the entire development into sub-system areas of effort and re-examined all of the data and opinions summarized in paragraph 5 above. This subdivision of effort required and the opinion of the Board as to a preferred listing of qualified sub-contractors in each case are summarized as follows:

a. Systems Management. All three proposals were predicated on the assumption that the winner would be the prime system manager. The Board rates the three competitors in the field of potential system management in the order: Lockheed, Radio Corporation of America, and Glenn L. Martin. Any change imposed by the Air Force which would establish an additional contractor as system manager would, in the opinion of the Board, be resisted but eventually accepted by Lockheed and Martin and rejected by RCA.

b. Satellite Vehicle. All vehicles are acceptable and the order of Board preference is: (1) Lockheed, (2) Glenn L. Martin, and (3) Bell Aircraft.

c. Guidance and Attitude Control. None of the proposals makes full use of potential guidance systems currently under development. The Board recommends that the winner of the ARS competition be directed to include either North American Aviation, Inc. or Massachusetts Institute of Technology (with A. C. Spark Plug) in the System development team.

d. Visual Reconnaissance. The RCA TV technique indicates good potential for future high order systems. However, film techniques would probably be available first and could develop further into the principal means for ARS visual reconnaissance. Philco's TV approach requires large amounts of electric power, and will depend on availability of a nuclear APU. The Board's order of preference is: (1) Radio Corporation of America, (2) Eastman Kodak-CBS, and (3) Philco.

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e. Ferret Reconnaissance. All ferret proposals are acceptable, with Glenn L. Martin's having somewhat greater versatility. The Board order of preference is: (1) Glenn L. Martin, (2) CBS or RCA.

f. Information Data Handling. All proposals are expected to result in satisfactory techniques for performing this function, with Radio Corporation of America showing slightly better planning in the areas of data extraction and dissemination. The Board order of preference is: (1) Radio Corporation of America, (2) Eastman Kodak Company, and (3) International Business Machines.

7. In summary, the Board finds that:

a. The Advanced Reconnaissance System, as studied by Lockheed Aircraft Corporation, Radio Corporation of America, and Glenn L. Martin Company is a practicable and valuable system which should be exploited by the Air Force.

b. Of the proposals submitted, that of the Lockheed Aircraft Corporation is clearly superior, followed by Radio Corporation of America with Glenn L. Martin a definite last.

c. The Lockheed team would be strengthened by the addition of either Massachusetts Institute of Technology--A.C. Spark Plug or North American Aviation, Inc. in the guidance area, and the addition of Radio Corporation of America in the visual reconnaissance and data handling areas.

8. The Board recommends that:

The Lockheed Aircraft Corporation be awarded a prime contract for the development of WS 117L and that, if practical, the strengthening outlined above be carried out.

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9. The contractor evaluation and this report represent the unanimous opinion of the Evaluation Board.

~~William H. Haynes~~
WILLIAM H. HAYNES
Colonel, USAF, RDZS2/ARDC
President

~~William O. King, Jr.~~
WILLIAM O. KING, JR.
Lt Colonel, USAF, RDZSC0/ARDC
Recorder

~~Victor M. Gomez~~
VICTOR M. GOMEZ
Lt Colonel, USAF, RDZPI/ARDC

~~Robert S. Washburn~~
ROBERT S. WASHBURN
1st Lt, USAF, 3AFO/AMC

~~Richard C. Holub~~
RICHARD C. HOLUB
Lt Colonel, USAF, MCFRP/AMC

~~Raymond S. Blocker~~
RAYMOND S. BLOCKER
RDZSQ/ARDC

~~R. C. Evans~~
R. C. EVANS
Commander, ISN, WDD

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DECLASSIFIED AFTER 12 YEARS.
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~~SECRET~~ CITE RDGB-5-23-E. QUOTED FOR YOUR INFORMATION AND ACTION IS FOLLOWING MESSAGE FROM HQ USAF CLN QTE AFDDC 51002 CMM SUBJ CLN SYS 117L. REF YOUR LTR OF 8 MAY SUBMITTING DEVELOPMENT PLAN AND TWX RDGB-5-8-E DTD 11 MAY. DEVELOPMENT PLAN BEING REVIEWED BY AIR STAFF. NO FY 56 FUNDS AVAILABLE AND NEITHER ARDC NOR USAF FY 57 FINANCIAL PLANS CARRY FUNDS FOR THIS SYS. FY 56 OSD EMERGENCY FUNDS UNAVAILABLE CLN POSSIBILITY OF OBTAINING OSD FY 57 EMERGENCY FUNDS BEING INVESTIGATED. AUTHORITY TO INITIATE CONTRACTUAL ACTION FOR SYS DEVELOPMENT CANNOT BE GRANTED UNTIL FY 57 FUNDING IS RESOLVED. IN MEAN TIME YOU ARE AUTHORIZED TO ANNOUNCE CONTRACT OR SELECTION AND EXPEND REMAINING PROJECT 1115 FUNDS TO MAINTAIN CONTINUITY OF ENGINEERING STUDY BY LOCKHEED

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12 June 1956

MEMORANDUM FOR: Colonel Terhune

SUBJECT: Status of WS 117L Program as of 12 June 1956

1. The WS 117L Development Plan was submitted to Hq ARDC on 20 April 1956. The report of the Contractor Evaluation Board was forwarded on 5 May 1956. On 12 May a TWX was received from ARDC stating, in substance, as follows:

No FY 56 funds are available, no funds have been budgeted for FY 57 for WS 117L. Efforts are being made to secure FY 57 funds from OSD. Pending approval of Development Plan and availability FY 57 funds, authority granted to announce contractor selection and to expend remaining Project 1115 funds to continue engineering studies at Lockheed.

2. Warning and losing contractors were notified on 25 May 1956. A CCN to extend Lockheed's contract to 1 October was issued on 12 June. This extension has been financed with \$322,245 of Project 1115 funds, the entire balance remaining.

3. There is still no firm estimate of facilities cost available. The primary variable is the extent to which it may be possible to coordinate use of the WS 107A IOC west coast site with the WS 117L R&D and operational launch site. Currently, WDTR and WDO agree that the best approach is to plan to conduct all ARS firings, both R&D and operational, from the IOC west coast site. This would relieve the pressure on AFMTC completely. Since a west coast WS 117L site seems to be necessary ultimately, the disruption resulting from moving, and the duplication of facilities could be avoided. A rough estimate of facility money required on this basis would be:

FY 57: P300 - 15.0M, P200 - 5.0M
FY 58: P300 - 6.5 M, P200 - 37M

SIGNED

R. C. TRUAX
Commander, USN
Assistant Deputy for WS 117L
Technical Operations

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WDTR 56-49

(C) W.D.G. 96

**WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California**

PERSONNEL ACTIONS MEMORANDUM)
NUMBER 16)

5 July 1956

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1. VOC, iss 28 Jun 56, Asg LTCOL FRANCIS K BAGEY, 4456A, this Div, this sta, Prim Dy as Proj 0 (Systems Integration) Systems Integration Ofc WS 107A-2, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 2. VOC, iss 2 Jul 56, Asg LTCOL JOHN S CHANDLER, 10102A, this Div, this sta, Prim Dy as Proj 0, Facilities, Facil & Test Ofc WS 107A-2, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 3. VOC, iss 2 Jul 56, Asg LTCOL RICHIE B GOOCH, 7003A, this Div, this sta, Prim Dy as Proj 0 (Systems Integration) Systems Integration Ofc, Asst for WS 107A-1, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 4. VOC, iss 2 Jul 56, Asg LTCOL FREDERICK S PORTER, JR, 12848A, this Div, this sta, Prim Dy as Asst Ch, Test Group, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 5. VOC, iss 2 Jul 56, Asg LTCOL QUEEN A RIEPE, 9883A, this Div, this sta, Prim Dy as Proj 0 (Schedules) Plans & Prog Ofc, Asst for WS 117L, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 6. VOC, iss 1 Jul 56, Asg LTCOL ROY J WELLMAN, A0311160, this Div, this sta, Prim Dy as Asst Ch, Propulsion Gp, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 7. VOC, iss 1 Jul 56, Asg MAJ ALBERT L BUEHLER, A0748057, this Div, this sta, Prim Dy as Ch, Acctg Br, Comptroller, Support Opns (6736), are cfm ESPFWO. FA: 57000.
 8. VOC, iss 2 Jul 56, Asg MAJ DAVID L CARTER, 12035A, this Div, this sta, Prim Dy as Dep Asst for Tech Opns, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 9. VOC, iss 2 Jul 56, Asg MAJ RICHARD L DENNEN, 15837A, this Div, this sta, Prim Dy as Test Proj 0, WS 107A-1 Test Br, Test Gp, Tech Opns (8446), are cfm ESPFWO. FA: 57000.
 10. VOC, iss 2 Jul 56, Asg MAJ WILLIAM E EREKKE, 13235A, this Div, this sta, Prim Dy as R & D Proj Adm, Branch "G", Armament Gp, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

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Para 1 thru 26, FERAM 16, WDD (ARDC) 5 Jul 56

11. VOC, iss 2 Jul 56, Asg MAJ SIMNEY GREENE, 20658A, this Div, this sta, Prim Dy as Proj O, Systems Integration Ofc, Asst for WS 315A, Tech Opns (8446), are cfm ESPWO. FA: 57000.
12. VOC, iss 1 Jul 56, Asg MAJ WILLIAM F HEIBLER, 8979A, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj O (Schedules) WS 107A-1 Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8446) are cfm ESPWO. FA: 57000.
13. VOC, iss 2 Jul 56, Asg MAJ JOHN W HINEY, 12105A, this Div, this sta, Prim Dy as Asst Ch, (WS 107A) Programs Br, Prog & Proc Gp, Tech Opns (8446), are cfm ESPWO. FA: 57000.
14. VOC, iss 2 Jul 56, Asg MAJ ULLIN L HUDSON, 10120A, this Div, this sta, Prim Dy as Ch, Programs Contl Rm Br, Prog & Proc Gp, Tech Opns (8446), are cfm ESPWO. FA: 57000.
15. VOC, iss 1 Jul 56, Asg MAJ JOHN C LE SUER, A0884110, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj O (Schedules), WS 107A-2 Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8446), are cfm ESPWO. FA: 57000.
16. VOC, iss 2 Jul 56, Asg MAJ PETER G. SALMON, 14919A, this Div, this sta, Prim Dy as Ch, Budget Br, Comptroller, Support Opns (6736), are cfm ESPWO. FA: 57000.
17. VOC, iss 1 Jul 56, Asg MAJ ANTHONY J ROSE, 17043A, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj O (Airframe) WS 315A Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8446), are cfm ESPWO. FA: 57000.
18. VOC, iss 2 Jul 56, Asg MAJ ROBERT J RUSHING, A0684899, this Div, this sta, Prim Dy as Proj Assistance O, Proj Asst Sec, Security Gp, Support Opns (7716), are cfm ESPWO. FA: 57000.
19. VOC, iss 2 Jul 56, Asg MAJ JOHN A WEBSTER, 14134A, this Div, this sta, Prim Dy as Proj Assistance O, Proj Asst Sec, Security Gp, Support Opns (7716), are cfm ESPWO. FA: 57000.
20. VOC, iss 24 Jun 56, Asg MAJ RAYMOND E ZELENYKA, 12701A, this Div, this sta, Prim Dy as Proj O (Programs), Plans & Prog Ofc, Asst for WS 117L, Tech Opns (8446), are cfm ESPWO. FA: 57000.
21. VOC, iss 24 Jun 56, Asg CAPT LEWIS B C LOGAN, 17345A, this Div, this sta, Prim Dy as Proj O (Guidance), Systems Integration Ofc, Asst for WS 117L, Tech Opns (8446), are cfm ESPWO. FA: 57000.
22. VOC, iss 1 Jul 56, Asg CAPT ROBERT W ROY, 22332A, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj O X-17, X-17 Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8464), are cfm ESPWO. FA: 57000.

Para 1 thru 26, PERAM 16, EDD (ARBC) 5 Jul 56

23. VOC, iss 1 Jul 56, Asg CAPT WILMER C WALTERS, JR, 27017A, this Div, this sta, Prim Dy as Asst Proj 0 (Systems Integration Ofc) Asst for WS 315A, Tech Opns (8446), are cfm ESPWO. PA: 57090.

24. SMOP 2, PERAM 15, this Div, this sta, ca, PERT to LTCOL LANGDON F AYRES, 9512A, as reads "VOC, iss 18 Jun 56" IATR "VOC, iss 30 Jun 56."

25. SMOP 9, PERAM 14, this Div, this sta, ca, PERT to MAJ BERNARD R ADLER, 13982A, as reads "12982A" IATR "13982A."

26. Functional Category of the FNO is changed from PPA to PFB:

LTCOL FRANCIS K BAGBY, 4456A
LTCOL JOHN S CHANDLER, 10102A
LTCOL RITCHIE B GOOCH, 7003A
LTCOL FREDERICK S PORTER, JR, 12848A
LTCOL QUEFFEN A RIEPE, 9883A
LTCOL ROY J WELLMAN, A031160
MAJ ALBERT L BUEHLER, A0748057
MAJ DAVID L CARTER, 12035A
MAJ RICHARD L DENNEN, 15837A
MAJ WILLIAM H EBELKE, 13235A
MAJ SIDNEY GREENE, 20658A
MAJ WILLIAM F HEISLER, 8979A

MAJ JOHN W HINNEY, 12105A
MAJ ULLIN L HUDSON, 10120A
MAJ JOHN C LE SUER, A0884110
MAJ FRIEDRICH G PALMOS, 14919A
MAJ ANTHONY J ROSE, 17043A
MAJ ROBERT J RUSHING, A0684899
MAJ JOHN A WEBSTER, 14134A
MAJ RAYMOND E ZELENKA, 12701A
CAPT LEWIS B C LOGAN, 17345A
CAPT ROBERT W ROY, 22332A
CAPT WILMER C WALTERS, JR, 27017A

BY ORDER OF THE COMMANDER:

OFFICIAL:

JACK E. TICE
Capt, USAF
Asst Div Adjutant


JACK E. TICE
Capt, USAF
Asst Div Adjutant

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JUL 11 1956

223

Mr. T. A. Smith
Radio Corporation of America
Camden 2, New Jersey

Dear Mr. Smith:

I have noted with interest the offer of the Radio Corporation of America to cooperate with the Lockheed Aircraft Corporation in further prosecution of work on the Advanced Reconnaissance System. The Air Force will encourage the Lockheed Aircraft Corporation to make an expeditious selection of its subcontracting teams. Certain decisions must yet be made at high levels in the Department of Defense however, before the magnitude and timing of the program can be fixed. This may prevent early establishment of firm contractual arrangements.

Your continued interest and enthusiasm for the Advanced Reconnaissance System program is appreciated.

Sincerely,

ORIGINAL SIGNED:
B. A. SCHRIEVER

B. A. SCHRIEVER
Major General, USAF
Commander

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WDTR
H.C. TRUAX

DH
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~~SECRET~~

WDTR 56-97

WDGE

24 July 1956

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MEMORANDUM FOR: Colonel Ritland

SUBJECT: Meeting with Representatives of Cambridge Research Center

224
1. Reference our conversation on 21 July concerning a proposal from Mr. Dick Coons, Geophysics Division of Headquarters ARDC, that we meet with the representatives of the Air Force Cambridge Research Center to discuss concept of management with regard to participation of the Air Force Cambridge Research Center in our programs. They requested that we set such a meeting up for 31 July or 1 August. I further discussed this matter with Colonel Oder who felt it was highly desirable that we have such a meeting inasmuch as the Air Force Cambridge Research Laboratory has apparently become involved to quite an extent with some of our contractors. I further talked to Mr. Coons and then was called by Mr. Greenberg of the Air Force Cambridge Research Center. They agreed to a meeting at WDD at 0930, 7 August 1956. This is a week after the original date and was arranged as per your suggestion.

2. They desire to meet with you and certain of the WDT Project Office Heads such as Colonels Horton, Glasser, Blasingame and Hall, and would also like to have Dr. Dunn sit in on the meeting.

SIGNED

J. L. HAMILTON
Lt Colonel, USAF
Executive Officer

cc: Col Norton, WDTD
Dr. Dunn, R-W

WDGE

al

Lt Col Hamilton 220

8

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225

JUN 25 1956

Mr. James D. McLean
Vice President & General Manager
Philco Corporation
Government & Industrial Division
Philadelphia 44, Pennsylvania

Dear Mr. McLean:

I have noted with interest the offer of the Philco Corporation to cooperate with the Lockheed Aircraft Corporation in further prosecution of work on the Advanced Reconnaissance System. (UNCL)

Conversation with Mr. McKey, your local representative, indicates that your visit to the West Coast will be during the first week of August. We, at Western Development Division, will be most happy to discuss your capabilities in future work on WJ 117L at this time, although responsibility for selection of subcontractors will rest with the Lockheed Aircraft Corporation, subject of course to Air Force approval. (UNCL)

The Air Force will encourage the Lockheed Aircraft Corporation to make an expeditious selection of its subcontracting teams. Certain decisions must yet be made at high levels in the Department of Defense however, before the magnitude and timing of the program can be fixed. This may prevent early establishment of firm contractual arrangements. (SECRET)

Your continued interest and enthusiasm for the Advanced Reconnaissance System program is appreciated. (UNCL)

Sincerely yours,

O. J. RITLAND
Colonel, USAF
Vice Commander

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WDTR

R.C. TRUAX

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WDTR 56-106

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, UNITED STATES AIR FORCE
DIRECTORATE OF RESEARCH AND DEVELOPMENT

D. D. NO. 85

DATE 3 August 1956

DEVELOPMENT DIRECTIVE
FOR

(UNCL) WEAPON SYSTEM 117L ADVANCED RECONNAISSANCE SYSTEM

1. This Directive is applicable to GOR No. 80, dated 16 March 1955, and to the Development Plan for System No. 117L, dated 2 April 1956, approved by Headquarters USAF on 24 July 1956.

2. RELATIVE IMPORTANCE. A vital requirement for the defense of the United States is the earliest possible warning of a Soviet intention to attack. This system, employing an orbiting satellite, can provide at a reasonably early date, surveillance of the whole Soviet complex. The use of the varied sensing devices in the satellite system should reveal Soviet preparations for a possible attack well in advance of the event. ~~Of equal importance is the need for acquisition of accurate target information, kept currently revised for effective counter attack.~~ As a by-product, Soviet knowledge that they are under surveillance will, in itself, provide a forceful deterrent to the initiation of hostilities. This system is presently assigned a 1A priority and a 1-6 precedence rating.

3. FUNDING INFORMATION. Because of fund limitations, only \$3,000,000 of FY 1957 P-600 series funds are available to your Command to initiate this development.

4. The above statements constitute a directive to initiate such developments as can be supported with the above fund limitations.

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/s/ EMK
SPENCER S. HUNN
Colonel, USAF
Chief, Program Control Division
Assistant for Development Programming
Office, DCS/Development

/s/ R. L. Johnston
Colonel, USAF
Deputy Director of
Research & Development
Office, DCS/Development

WD-56-02503

AFCGM-A Control No. 1627

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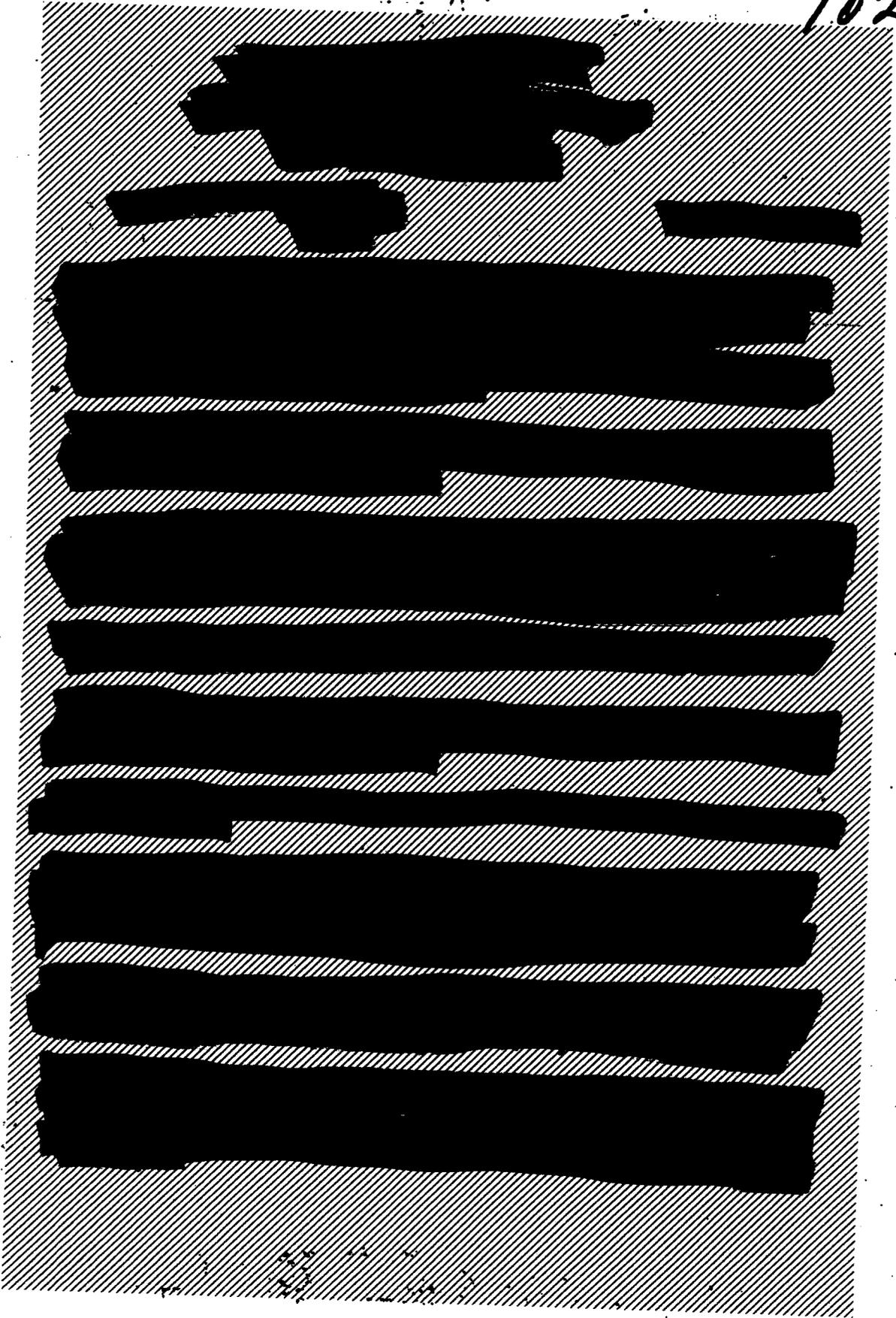
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ILLEG



Para 1 thru 22, PERAM 21, WDD (ARDC) 16 Aug 56

11. VOC, iss 13 Aug 56, Asg LT COL LESLIE F SUMMERFIELD, 7926A, this Div, this sta, Prim Dy as Exec O, Dep Com Tech Opns, Tech Opns (8446), FA: 57000, are cfm ESPWO.

12. The FSSD of MAJ RALPH A BLANKENSHIP, AO 1575759, is chg fr 18 Sep 54 to 17 Mar 56.

13. VOC, iss 9 Aug 56, rel MAJ ROBERT I ELLIS, AO434390, C & E Staff O (Log) Logis Gp, Asst f/ICBM Opns, Plans and Opns (3016), FA: 57000, and Asg new Prim Dy as Opns Staff O (C&E), ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (3016), FA: 57000, are cfm ESPWO.

14. VOC, iss 9 Aug 56, rel MAJ ROY L FERGUSON, JR, AO822032, this Div, this sta, fr Prim Dy as Ch, ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (0071F), FA: 57000, and Asg new Prim Dy as Asst Dep Asst f/Atlas Opns, Asst f/ICBM Opns, Plans and Opns (0076F), FA: 57000, are cfm ESPWO.

15. VOC, iss 1 Aug 56, Asg MAJ EDWARD L LITTLE, 7225A, this Div, this sta, Prim Dy as Ch, Engr Br, Engr Gp, Instal (5516), FA: 57000, are cfm ESPWO.

16. VOC, iss 9 Aug 56, rel MAJ ARNELL R SUIT, JR, AO861122, this Div, this sta, fr Prim Dy as Opns Staff O (C&E), ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (3016), FA: 57000, and Asg new Prim Dy as Ch, IOG Trng Br, ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (7516), FA: 57000, are cfm ESPWO.

17. VOC, iss 3 Aug 56, Asg MAJ TAYLOR B ZINN, AO407777, this Div, Dy sta Patrick AFB, Fla, Prim Dy as Ch WS-315A Proj Ofc, WDD Fld Ofc (AFMTC) Tech Opns (8446), FA: 57000, are cfm ESPWO.

18. PAFSC 6525 of CAPT FLOYD A JOHNSTON, 17822A, this Div, this sta, is conv to PAFSC 6624, UP AFM 36-1.

19. PAFSC 6525 of CAPT SUMNER W WHITE, 28291A, this Div, this sta, is conv to PAFSC 6524, UP AFM 36-1.

20. CAPT FREDERICK L WILSON, AO834079, this Div, this sta, is awd add AFSC 1224C and is desig (2). Old (2) add AFSC 1044C is w/d and w/b del.

21. CAPT FREDERICK L WILSON, AO834079, this Div, this sta, is awd add AFSC 7311.

6
Para 1 thru 22, PERAM 21, WDD (ARDC) 16 Aug 56

22. The functional cat of the FNO is changed fr PPA to PPB:

23
COL DANIEL W WICKLAND, 2628A
LTCOL LESLIE F SUMMERFIELD, 7926A
MAJ EDWARD L LITTLE, 7225A
MAJ TAYLOR B ZINN, A0107777

BY ORDER OF THE COMMANDER:

OFFICIAL:

Jack E. Tice

JACK E. TICE
Capt, USAF
Asst Div Adjutant

JACK E. TICE
Capt, USAF
Asst Div Adjutant

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WDTR

AUG 16 1956

SUBJECT: WS 117L Development Plan

TO: Commander
Air Force Cambridge Research Center
Attn: CRZT
Laurence G. Hanson Field
Bedford, Massachusetts

1. Reference is made to your letter dated 13 July 1956,
Subject: WS 117L Development Plan, Paragraph 2.

2. It is requested that Air Force Cambridge Research
Center independently prepare a work statement in your areas of
competence using the ground rules established in paragraph 2a
and 2b in letter dated 13 June 1956, subject: WS 117L Develop-
ment Plan.

3. It is anticipated that when the definitive contract
for the WS 117L prime contractor is prepared, that representatives
of the participating centers will be requested to meet at Western
Development Division and assist in writing the detailed contract.
Notice of this event will be forwarded to you at the earliest
possible time.

FOR THE COMMANDER:

SIGNED

R. C. TRUAX
Commander, USN
Assistant Deputy for WS 117L
Technical Operations

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WDTR 56-121

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

SDD No. 117L

17 August 1956

ARDC SYSTEM DEVELOPMENT DIRECTIVE
ADVANCED RECONNAISSANCE SYSTEM

1. DIRECTED ACTION

Implementation, within the limits established by the following paragraphs of this directive, of System Development Plan No. WS 117L, dated 2 April 1956, title: "Advanced Reconnaissance System," is directed. (UNCL)

2. ASSIGNMENT OF RESPONSIBILITIES

a. Primary responsibility for the implementation and execution of this Development Plan is assigned to Headquarters ARDC, Western Development Division. (UNCL)

b. At the request of Western Development Division, and to the degree stipulated by that agency, the following Centers will be responsible for technical and/or test support, as appropriate, in the execution of the WS 117L Development Plan:

- (1) Air Force Cambridge Research Center.
- (2) Wright Air Development Center.
- (3) Rome Air Development Center.
- (4) Holloman Air Development Center.
- (5) Arnold Engineering Development Center.
- (6) Air Force Missile Test Center.
- (7) Air Force Personnel and Training Research Center.

(UNCL)

3. CHANGES

No specific changes to the WS 117L Development Plan, dated 2 April 1956, are directed. However, it is desirable that the Advanced Reconnaissance System be capable ultimately of meeting all operational and technical intelligence requirements for visual reconnaissance; thus necessary developments to improve the proposed visual sensor system to permit maximum ground resolution should be incorporated in the Development Plan, and such developments initiated as soon as possible in parallel with the WS 117L development program. (SECRET)

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4. PERTINENT INFORMATION

a. Target Date - As indicated in Top Secret Supplement to WS 117L Development Plan, dated 2 April 1956. (SECRET)

b. Funding Information - This system is being funded under line item 621-117L. (UNCL)

c. References -

(1) USAF General Operational Requirement No. 80 (9A-2c), 16 March 1955.

(2) ARDC System Requirement No. 5, 17 October 1955.

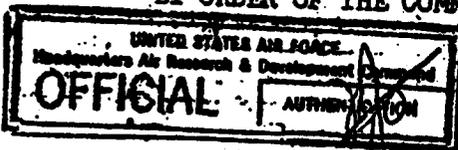
(3) USAF Development Directive No. 85, 3 August 1956. (UNCL)

d. Other -

(1) Security - Maintenance of special security restrictions on information relating to development progress, system status, and planned operational capabilities is directed. A Master Security Classification Guide for WS 117L will be prepared, and a roster maintained of individuals whose position, as known to your organization, requires overall knowledge of the sensitive aspects of the WS 117L development program. An up-to-date copy of this roster will be submitted for retention at this Headquarters, Attn: RDZGW.

(2) Initial Funding - Severe limitations on FY 1957 funds available to this Command permit allocation of only \$3,000,000 to initiate development of WS 117L. As soon as possible, ARDC Form 111, "Research and Development Management Report," should be submitted to Headquarters ARDC, Attn: RDZXP, outlining significant changes to the WS 117L Development Plan which will result from this inadequate initial funding. (SECRET)

BY ORDER OF THE COMMANDER:



JOHN A. CONNOR
Chief, Fiscal &
Documentation Branch
Executive Office
Deputy Comdr/
Weapon Systems

Don R. Ostrander

DON R. OSTRANDER
Brigadier General, USAF
Ass't for Guided Missiles Systems
Deputy Commander/Weapon Systems

This document is classified SECRET because it contains information on technological developments planned for the defense of the nation, the unauthorized disclosure of which would result in serious damage to the nation.

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

Amend. No. 1 to
SDD No. 117L
28 August 1956

AMENDMENT TO ARDC SYSTEM DEVELOPMENT DIRECTIVE
ADVANCED RECONNAISSANCE SYSTEM

1. AMENDMENT

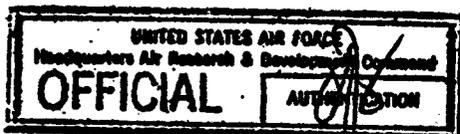
ARDC System Development Directive No. 117L, dated 17 August 1956,
is amended as follows:

a. Add to paragraph 4, as follows:

"e. Priority-Precedence -

The Advanced Reconnaissance System is currently assigned
a development priority of 1A, and USAF Precedence List
rating of I-6." (UNCLASSIFIED)

BY ORDER OF THE COMMANDER:



JOHN A. CONNOR
Chief, Fiscal & Documentation Branch
Executive Office
Deputy Commander/Weapon Systems

Don R. Ostrander
DON R. OSTRANDER
Brigadier General, USAF
Ass't for Guided Missiles Systems
Deputy Commander/Weapon Systems

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

Amend No. 2 to
SDD No. 117L

TITLE: ADVANCED RECONNAISSANCE SYSTEM

AMENDMENT TO ARDC SYSTEM DEVELOPMENT DIRECTIVE

1. AMENDMENT

ARDC System Development Directive No. 117L, dated 17 August 1956, is amended as follows:

a. Add paragraph 5, as follows:

5. ADDITIONS OR CORRECTIONS TO DEVELOPMENT PLAN

a. Project No. 8728, title: "Qualitative Personnel Requirements Information for the Advanced Reconnaissance System (System 117L)", is approved for the inclusion in the System 117L Development Plan. Implementation of Project No. 8728 will be at the discretion of Western Development Division (WDIR) and contingent upon availability of necessary resources."

BY ORDER OF THE COMMANDER:

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
UNITED STATES AIR FORCE
Post Office Box 1395
Baltimore 3, Maryland

Amendment No. 3
to SD No. 117L
15 January 1958

AMENDMENT TO ARDC SYSTEM DIRECTIVE
ADVANCED RECONNAISSANCE SYSTEM

1. AMENDMENT

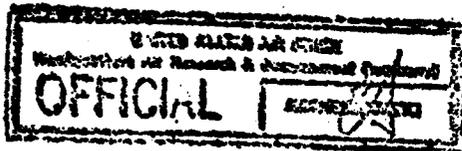
ARDC System Directive No. 117L dated 17 August 1956 is amended
as follows:

Delete paragraph 4d(1) in its entirety and substitute the following:

4d(1) Security.

A Master Security Classification Guide will be prepared for WS 117L. The provisions of the classification guide and Air Force Regulation 205-1 will govern dissemination of information on WS 117L and will be strictly observed."

FOR THE COMMANDER:



B. B. HUNKAPILLER
Colonel, USAF
Chief, Programs & Resources Br
Executive Office
Deputy Commander/Weapon Systems

for H. A. Boore
E. A. KIESSLING
Colonel, USAF
Assistant for Guided Missile
Systems
Deputy Commander/Weapon Systems

UNCLASSIFIED

~~CONFIDENTIAL~~
20 August 1956

Lockheed Ref. No. MSD/13641

Maj. Gen. B. A. Schriever, USAF
Commander, Western Development Division
Headquarters
Air Research and Development Command
Post Office Box 262
Inglewood, California

Dear General Schriever:

731
This will acknowledge receipt of your letter of August 2, 1956, and in response I should like to take this occasion to tell you how pleased we at Lockheed are to receive this notification of our selection as the prime system manager of WS 117L, the Advanced Reconnaissance System. I can assure you that we are particularly pleased that formal notification was given us in the form of your very complimentary letter.

We are deeply appreciative of the opportunity the Air Force has given us to manage this important, highly advanced system, and I assure you that you may rely on the resources and capabilities of our Company as a whole, and in particular those of our Missile Systems Division, in the performance of this work. We will make every effort to confirm that your selection of our Company was a correct one and to merit the confidence you have placed in us.

Sincerely,

LOCKHEED AIRCRAFT CORPORATION

Robert E. Gross

Robert E. Gross
President

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MEMORANDUM FOR RECORD

24 August 1956

SUBJECT: Minutes of meeting on ARMA participation in WS 117L guidance effort - 22 August 1956

1. ARMA Representatives made a formal pitch for participation as a guidance contractor for WS 117L.
2. A brief resume of the WS 107A-2 program underway at ARMA was presented including manpower and production schedules. The first system will be delivered to Martin in November 1957, in May 1958, the first flight test system will be delivered to Martin.
3. ARMA's proposed systems for WS 117L were based on their 4 million gyro and vibrating string accelerometer which are undergoing lab tests at present. Two separate schemes seemed adequate to guide a satellite into orbit.
 - I. A system based on the existing ARMA guidance in the booster. This has a weight of 560 lbs and occupies 15.7 Ft³, power is about 1.2 KVA for 5 minutes. An extrapolator would be mounted in the satellite stage with a weight of 150 lbs and occupying 4 Ft³. (NOTE: This extrapolator could be used with a radio guidance system in the booster).
 - II. The second scheme would be an integrated system tailored for orbit and satellite but based on WS 107A-2 components and techniques, mounted in the satellite vehicle, it might weigh 440 lbs and occupy 12 Ft³.
4. ARMA estimated that delivery of the first flight article might be accomplished in 16 or 17 months after go ahead with about 100 additional engineering personnel required. This was based on either approach, I or II, and can be further broken down into 50 professional and 50 non-profession people.
5. ARMA participation in WS 117L might prove economical, provided that an acceptable degree of interference with WS 107A-2 can be tolerated. Their eligibility for participation must be determined by a coordinated Western Development Division review, and it is this fact that at the present stage makes consideration for the WS 117L job. questionable.
6. The following persons attended the meeting:
 - C. T. Foss - Vice President and General Manager
ARMA Division - America Bosch ARMA
 - F. H. Caterman - Assistant Vice President - Programs

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WDR 56-127

~~CONFIDENTIAL~~

MEMO FOR RECORD

Subject: Minutes of meeting on ARMA participation in WS 117L
guidance effort - 22 August 1956

6. (Cont'd)

J. Statsinger - WS 107A - Project Manager

J. W. Lasur - Liaison

Colonel Blasingame

Lt. Colonel Oder

Captain Protsman

Captain Coolbaugh

1/Lt Herther

SIGNED

cc: Colonel Blasingame
Captain Protsman

FREDERIC G. E. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

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WDTR

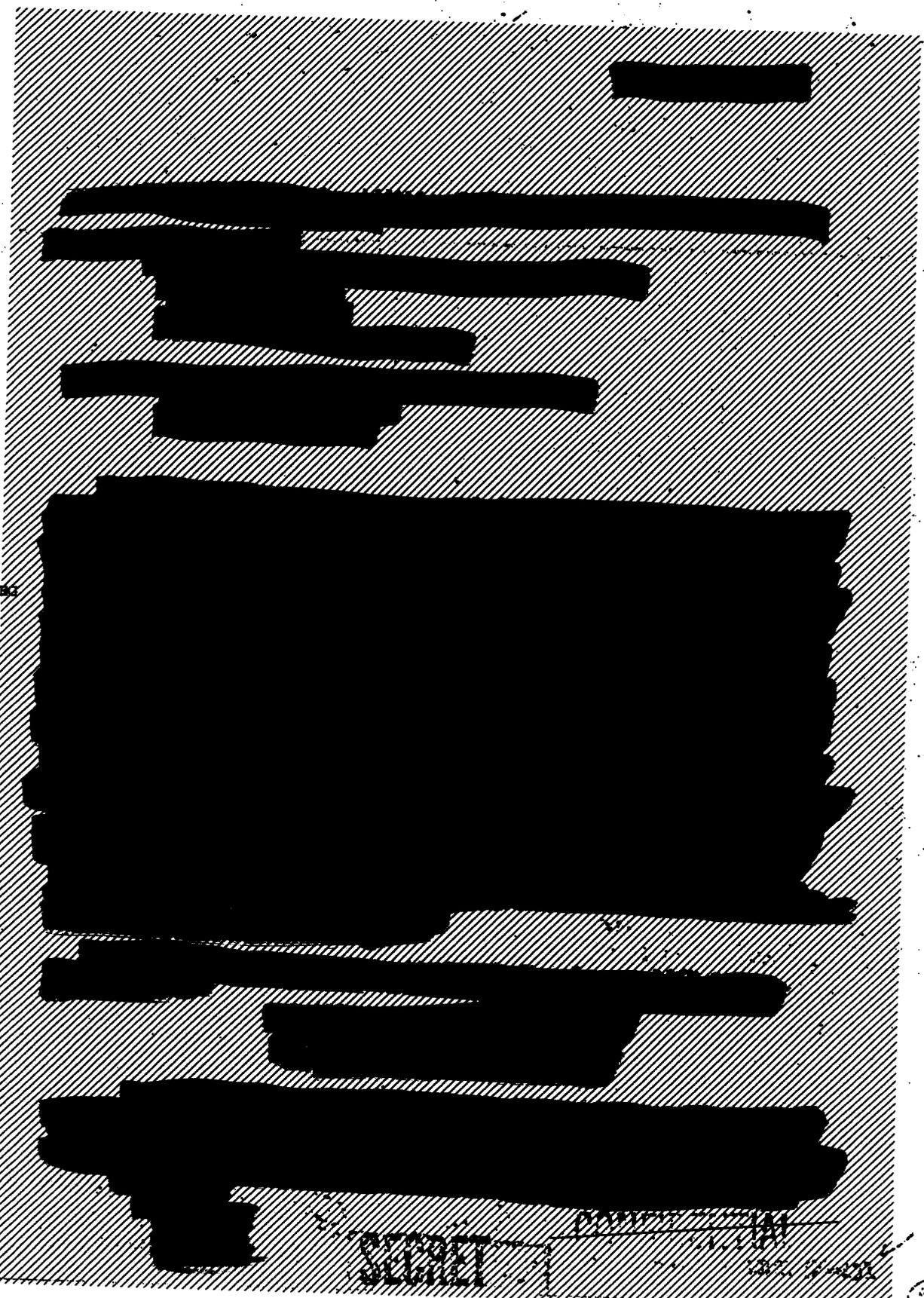
Lt. Herther

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WED (HQ ARDC) Subject: Requirement for Additional FY 1957
Funds for WS 117L

Air Development Center for research and development in technical areas peculiar to Air Research and Development Command Center capabilities, (Incl. 1) the need for early procurement action on long-lead time items (Incl. 3), and a consideration of the many problem areas involved in establishing an integrated, progressive work schedule to provide an operational WS 117L by the established national need dates.

3. A total of three million dollars in RPN 2-117 is currently available for the implementation of the WS 117L program. It is planned to place the available funds on purchase request for a contract with the Lockheed Aircraft Corporation as System Prime Contractor on or about 15 September 1956, and zero dollars into the Air Research and Development Command center directed efforts. This management decision should not be construed as one which lessens the importance of the need for solution of the problems assigned the various Air Research and Development Command centers, but one which emphasizes the importance of holding together the development team as indicated in paragraph 1, above. An early decision regarding additional funds is requested if the WS 117L Project Office is to establish a properly oriented program of research, development and test, and is to effectively direct the contractor's efforts in the various subsystem areas. Early knowledge regarding additional funds is essential for a determination of initial rates of expenditure and level of effort as well as for planning and timing for increased expenditure rates and work effort to the levels originally planned and still deemed a requirement for successful and timely achievement of an operational AFS.

4. It is requested that fiscal year 1957 funds in the totals and by budget project as listed in paragraph two above be made available to the Commander, Western Development Division at the earliest possible date. The additional funds requested are required for the continuation of a properly balanced effort during the remainder of fiscal year 1957, and are essentially those asked for in the System Development Plan No. WS 117L, dated 2 April 1956, title: "Advanced Reconnaissance System" after adjustment for the time presently elapsed in fiscal year 1957.

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Subject: Requirement for Additional Fy 1957
1176

Requirements for fiscal year 1958 will be essentially those
of the above referenced Development Plan with some adjust-
ment to the fact that the program is getting a later start than
shown in the Plan.

AS THE COMMANDER:

SIGNED

CHARLES H. TERHUNE, JR
Colonel, USAF
Deputy Commander
Technical Operations

Center requirements
1957
Prime Contractor
Estimated Fund
Missile Ground
Supporting Equipment

242

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FORM 105-151

COPY

WDD (ARDC), Subject: Requirement for Additional FY 1957 Funds for
WS 117L

PDEGN (28 Aug 56)

1st Ind

HEADQUARTERS, AIR RESEARCH AND DEVELOPMENT COMMAND, Post Office Box
1395, Baltimore 3, Maryland 29 Aug 1956

TO: Deputy Chief of Staff, Development, Headquarters USAF,
Washington 25, D. C.

1. This Headquarters strongly supports the request contained in the basic letter and considers the funds requested as the minimum necessary to an effective prosecution of the WS 117L development program.

2. Funds in the amounts and categories requested are not currently available to this Headquarters. Appropriate action to provide these funds is urgently recommended.

3. Your attention is particularly invited to the need for an early decision in this regard for the reasons stated in paragraph 3 of the basic letter. It should be noted that the development team referred to in paragraphs 1 and 3 of the basic letter covers, in addition to those personnel on the program at Lockheed, major Lockheed subcontractors such as Eastman Kodak and CBS Laboratories as well as contractors on specific component development being controlled by the ARDC Centers. It is estimated that the over-all team amounts at present to approximately 205 people.

FOR THE COMMANDER:

SIGNED

3 Incls
n/d

DON R. OSTRANDER
Brigadier General, USAF
Assistant for Guided Missiles Systems
Deputy Commander/Weapon Systems

This indorsement is not
classified in itself.

Attachment "A"

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AEDC Center Requirements by 1957 P-600 for WS 117L \$4,500,000

MAAC

TASK	TITLE	FUNDS REQUIRED
T-30271	Auxiliary Power Unit (Nuclear)	1,100,000
T-30353	Propulsion	500,000
T-41252	Television Techniques for ARS	420,000
T-41252	Radiation Reconnaissance	500,000
T-70043	Solar Energy Converter	300,000
		<u>2,820,000</u>

AFCCO

T-76770	Weather Reconnaissance & Forecast Techniques	70,000
T-76771	Solar Radiation in Ultra-Violet & X-ray	70,000
T-76772	Interplanetary Matter & Meteor Physics	120,000
T-76773	Atmospheric Density at Altitude of ARS	50,000
T-76774	Thermal Radiation	100,000
T-46230AA	Extra Terrestrial Noise Study	50,000
T-46230G	Radio Astronomy Study	30,000
		<u>\$ 450,000</u>

RADC

T-15000	Intelligence Parameter Study	350,000
T-15001	Intelligence Processing	395,000
T-15002	Acquisition, Tracking, Record & Communications and Command	115,000
		<u>860,000</u>

The AEDC Centers, in the technical areas indicated by the task titles, possess a unique capability based upon the caliber and type of scientific and engineering personnel and long term experience and knowledge in the various fields involved. The continuation of Center efforts in their problem area specialties is considered essential to the timely success of the program.

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System Prime Contractor, Lockheed Aircraft Corporation
Estimated Fund Requirements FY 1957 for WS 117L

1st quarter	\$3,700,000
2nd quarter	6,900,000
3rd quarter	9,600,000
total for FY 1957	<u>\$20,100,000</u>

A-20	\$9,900,000
A-131	8,500,000
A-214	2,000,000
	<u>\$20,400,000</u>

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One of the most important impacts of the early availability of additional funds is that it will permit the Prime Contractor to establish a strong sub-contractor structure in the subsystem problem areas. An effective, operating sub-contractor team is essential to the success of the program. The present allocation of funds in a total of \$3,000,000 is inadequate to establish such a structure. A considerable amount of design and development engineering leading to mock-up and prototype models of most subsystem equipments must be accomplished and requires the expenditure of P-620 funds in the amounts requested.

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ADTK 56-131

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P-244 Guided Missile Ground Handling Equipment \$2,000,000

For the procurement of:

Transport and Test Carriages

Checkout station equipments to include multimeters, signal generators, oscilloscopes, analyzers, digital checkout equipment, power supplies, hydraulics and power plant servicing test units, etc.

Propellant servicing equipment

Engine stands, sling aids, and cradles

Remote control systems to include amplifiers, function generators, multipliers, recorders, signal generators, etc.

Digital Computers

P-131 Strategic Missile

\$8,500,000

For the procurement of:

Air Frame structures

Propulsion Power Plants

Electrical Power Plants

Guidance Equipment

Programmers

Command Receivers

B-Band Beacons

C-Band Beacons

Range Safety destruct equipment

Orbit vehicle destruct equipment

Teleseter equipment

Photographic equipment

Service Test items

Product Improvements

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WDR 56-131

Dr - Rockefeller 108
AD

WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

PERSONNEL ACTIONS MEMORANDUM
NUMBER 28)

7 September 1956

1. LTCOL EDWARD L RANKIN, AO220779, being asg this Div, this sta, per IO 7-15, Hq 16th AF, 27 Jul 56, is asg prim dy as Ch, Eng Gp, Installations(5516), FA: 57000, eff 1 Oct 56.
2. VOC, iss 20 Feb 56, chg the prin dy title of MAJ WILLIAM B ARNOLD, 18091A, this Div, this sta, fr R&D Proj Adm, Flt Test Br, Fld Test Gp, Tech Opns(8446), FA: 57000, to Specl Proj Off, Fld Test Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
3. VOC, iss 1 May 56, chg the prin dy title of MAJ WILLIAM B ARNOLD, 18091A, this Div, this sta, fr Specl Proj Off, Fld Test Gp, Tech Opns(8446), FA: 57000, to Test Proj Off, Specl Tests Br, Test Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
4. VOC, iss 1 May 56, chg the prin dy title of CAPT ARTHUR O BOUVIER, Jr, AO795897, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8441), FA: 57000, to Proj Adm(Aerojet), Propln Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
5. VOC, iss 1 May 56, chg the prin dy title of CAPT ROBERT C BUCKLEY, 17352A, this Div, this sta, fr R&D Proj Adm, Airfr & Arm Gp, Tech Opns(8461), FA: 57000, to R&D Proj Adm, Br "A", Arm Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
6. VOC, iss 1 May 56, chg the prin dy title of CAPT JAMES S COOLBAUGH, 17584A, this Div, this sta, fr R&D Proj Adm, Asst f/WS117L, Tech Opns(8441), FA: 57000, to Proj Off (Aerodynamics), Sys Integ Ofc, Asst f/WS117L, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
7. VOC, iss 1 May 56, chg the prin dy title of CAPT LLOYD E DANIELS, AO785424, this Div, this sta, fr R&D Proj Adm, Hypersonics Design Br, Airfr & Arm Gp, Tech Opns(8461), FA: 57000, to R&D Proj Adm, Br "A", Arm Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.
8. SMOP 10, PERAM 12, cs, this Div, pert to CAPT JOHN B DAVIS, AO780537, this Div, this sta, AS READS, "Propellant Sup Off, Plans & Opns(6454)," IATR, Propellant Sup Off, IREM Log Gp, Plans & Opns(6454).*
9. VOC, iss 20 Feb 56, chg the prin dy title of CAPT BILLY N HOLLIS, 16883A, this Div, this sta, fr Proj Off, Con Sys, Guid & Con Gp, Tech Opns(8691), FA: 57000, to Ch, Research Br, Guid & Con Gp, Tech Opns(8696), FA: 57000, are cfm, ESPWO.
10. VOC, iss 1 May 56, chg the prin dy title of CAPT BILLY N HOLLIS, 16883A, this Div, this sta, fr Ch, Research Br, Guid & Con Gp, Tech Opns(8696), FA: 57000, to Proj Off(Research), Radio-Inertial Br, Guid & Con Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.
11. VOC, iss 1 May 56, chg the prin dy title of CAPT EMMETT S IVERSON, 18424A, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8464), FA: 57000, to Proj Adm(Solid Propln), Propln Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.

Para 1 thru 35, PERAM 28, WDD (ARDC) 7 September 56

12. VOC, iss 1 May 56, chg the prin dy title of CAPT FRANK S JASEN, AO876606, this Div, this sta, fr R&D Proj Adm, Asst f/WS 107A-1, Tech Opns(8464), FA:57000, to Asst Proj Off(Sys Integ) Sys Integ Ofc, Asst f/WS 107A-1, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

13. VOC, iss 1 May 56, chg the prin dy title of CAPT ELROY C LEHMANN, AO813398, this Div, this sta, fr R&D Proj Adm, Airfr & Arm Gp, Tech Opns(8464), FA: 57000, to R&D Proj Adm, Br "G", Arm Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.

14. VOC, iss 1 May 56, chg the prin dy title of CAPT WILLIAM B LIDDICORT, 18455A, this Div, this sta, fr R&D Proj Adm, Asst f/WS 107A-2, Tech Opns(8441), FA: 57000, to Asst Proj Off(Airfr), Airfr Proj Ofc, Asst f/WS 107A-2, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

15. VOC, iss 23 Mar 56, chg the prin dy title of CAPT WILLIAM R MANLOVE, 16842A, this Div, this sta, fr Proj Off, Guid & Con Gp, Tech Opns(8621), FA:57000, to Proj Off, WS 107A-1 Guid Br, Guid & Con Gp, Tech Opns(8626), FA: 57000, are cfm, ESPWO.

16. VOC, iss 1 May 56, chg the prin dy title of CAPT WILLIAM R MANLOVE, 16842A, this Div, this sta, fr Proj Off, WS 107A-1 Guid Br, Guid & Con Gp, Tech Opns(8626), FA: 57000, to Proj Off(WS 107A-1), Radio Inertial Br, Guid & Con Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

17. VOC, iss 16 Apr 56, chg the prin dy title of CAPT EUGENE F. MESSERLY, AO2032993, this Div, this sta, fr Prog & Proj Off, WS 107A Opnl Readiness Gp(6736), FA: 57000, to Prog Off(Budget), Prog Br, Asst f/Atlas Opns, ICBM Opns, Plans & Opns(6736), FA: 57000, are cfm, ESPWO.

18. VOC, iss 1 May 56, chg the prin dy title of CAPT JOHN R MULLADY, AO688455, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8441), FA: 57000, to Proj Adm (NAA), Propln Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

19. VOC, iss 1 May 56, chg the prin dy title of CAPT WARD E PROTSMAN, 16787A, this Div, this sta, fr Proj Off, WS 107A-2 Guid Br, Guid & Con Gp, Tech Opns(8626), FA: 57000, to Proj Off, WS 107A-2, Inertial Br, Guid & Con Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.

20. VOC, iss 15 Aug 56, asg CAPT DONALD E QUAIL, 15469A, this Div, this sta, prin dy as Proj Off (Test), Facil & Test Ofc, Asst f/WS107A-1, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

21. VOC, iss 1 May 56, chg the prin dy title of CAPT JOHN E RICHARDS, 168058A, this Div, this sta, fr Ch, Airfr Br, Airfr & Arm Gp, Tech Opns(8441), FA: 57000, to R&D Proj Adm, Br "G", Armament Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

22. SMOP 11, PERAM 12, cs, this Div, pert to CAPT FLOYD E SAUNDERS, 22793A, this Div, this sta, AS READS, "Transp Stf Off, Plans & Opns(6016)," IATR, "Transp Stf Off, IREM Log Gp, Plans & Opns(6016)".

23. SMOP 8, PERAM 10, cs, this Div, pert to CAPT MELBURN C SPAULDING, AO938627, this Div, this sta, AS READS, "R&D Proj Adm, Propln Gp(8464)", IATR, "R&D Proj Adm (Studies), Propln Gp, Tech Opns(8464)".

Para 1 thru 35, PERAM 28, WDD (ARDC) 7 September 56

24. VOC, iss 1 May 56, chg the prin dy title of CAPT JOHN W THOMAS, AO582585, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8461), FA:57000, to Proj Adm (APS-PUS), Propln Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
25. VOC, iss 20 Feb 56, chg the prin dy title of CAPT EARL M THOMPSON, 16860A, this Div, this sta, fr R&D Proj Adm, Guid & Con Gp, Tech Opns(8441), FA: 57000, to Ch, Inertial Projects Br, Guid & Con Gp, Tech Opns(8696), FA: 57000, are cfm, ESPWO.
26. VOC, iss 1 May 56, chg the prin dy title of CAPT EARL M THOMPSON, 16860A, this Div, this sta, fr Ch, Inertial Projects Br, Guid & Con Gp, Tech Opns(8696), FA: 57000 to Proj Off, WS315A Inertial Br, Guid & Con Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
27. VOC, iss 1 Apr 56, rel CAPT JACK E TICE, AO1580418, this Div, this sta, fr Prim Dy as Asst to Ch, Command Sup Gp, Sup Opns(7311), FA: 57000, and asg new Prim Dy as Ch, MIL Pers Br, Command Sup Gp, Sup Opns(7324), FA: 57000, are cfm, ESPWO.
28. VOC, iss 1 May 56, chg the prin dy title of CAPT WILLIAM O TROETSCHEL, AO1903533, this Div, this sta, fr R&D Proj Adm, Asst f/WS 117L, Tech Opns(8441), FA: 57000, to Proj Off(Facil), Facil & Eqp Ofc, Asst f/WS 117L, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
29. SMOP 15, PERAM 13, cs, this Div, pert to CAPT PAUL G WEINGAND, AO703855, this Div, this sta, AS READS, "Atomic Weapons Off(Logistics), Plans & Opns(3274)", IATR, "Atomic Wpns Off(Log), ICBM Log Gp, Plans & Opns(3274)".
30. SMOP 8, PERAM 15, cs, this Div, pert to CAPT SAM H WOOD, AO888804, this Div, this sta, AS READS, "Proj Off, Construction Opns, Instal(5524)", IATR, "Proj Off, Const Opns Gp, Instal(5524)".
31. VOC, iss 1 May 56, chg the prin dy title of 1LT JOHN C HERTHER, AO3016090, this Div, this sta, fr R&D Proj Adm, Asst f/WS 117L, Tech Opns(8464), FA: 57000, to Asst Proj Off(GFE), Facil & Eqp Ofc, Asst f/WS 117L, Tech Opns(8446), FA:57000, are cfm, ESPWO.
32. 1LT THOMAS A McCREERY, 25178A, being asg this Div, dy sta Patrick AFB, Fla, per para 3, SO 127, Hq USAFIT, W/PAPB, O, 18 Jun 56, is asg prim dy as Proj Off (Nosecone) WS 107A-1 Proj Ofc, WDD Fld Ofc(AFMTC), Tech Opns(8616), FA: 57000, eff 9 Sep 56.
33. SMOP 23, PERAM 13, cs, this Div, pert to 1LT WILLIAM L RENWICK, AO2247746, this Div, this sta, AS READS, "Programs Off(Statistical), Plans & Opns(6816)", IATR, "Prog Off(Stat), THOR Prog Br, Asst f/IRBM Opns, Plans & Opns(6834)".
34. VOC, iss 4 Sep 56, asg 1LT ROBERT W ROGERS, 26228A, this Div, this sta, prim dy as Proj Adm(Nucl Propln), Propln Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.

Para 1 thru 35, PERAM 28, WDD (ARDC), 7 September 56

35. The functional cat of the FNO is changed fr PPA to PFB:

LTCOL EDWARD L RANKIN, AO220779
CAPT DONALD E QUAIL, 15469A
1LT THOMAS A McCREERY, 25178A
1LT ROBERT W ROGERS, 26228A

BY ORDER OF THE COMMANDER:

OFFICIAL:

JACK E TICE
Capt, USAF
Ch, Mil Pers Br.


JACK E TICE
Capt, USAF
Ch, Mil Pers Br.

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AF 33(616) 3105 WA DC

Funds for Contract 3105-Lockheed Design Study

WDTR

Attn: Lt. Col Riepe

WDS

25 Sep 56

Capt. Broden/pjb/436

1. On 27 June WDSCB was requested to reduce the P620 funds on Obligation Authority 620-56-5 to zero, the funds to be made available for addition to the Contract Change Notice for the Lockheed Design Study extension. Action was taken by WDSC to reduce the referenced O/A and WDTR was advised on 29 June 1956 of the availability of the funds for the Lockheed Design Study extension.

2. No action was taken to initiate a Purchase Request to add the above funds (\$50,000) to the Lockheed contract. On 22 August 1956 WDSC was requested to transfer \$50,000 on line item EPSCN 6-2-1115 to Wright Air Development Center, Wright-Patterson AFB for Weapons Guidance Laboratory Task 50558. This action was accomplished on 27 August 1956.

3. Since the contract change notice to the Lockheed contract results in the need for \$372,000 and only \$321,840 is presently available from FY 1956 funds, it is recommended that \$50,160 of the currently available \$3,000,000 FY 1957 funds be utilized for this purpose. This can be accomplished through reducing Purchase Request No. 196 by that amount and issuing a new purchase request in a similar amount, or by citing both PR 156 for an amount of \$321,840 and PR 196 for an amount of \$50,160 on the Administrative Commitment Document held by WDSC.

4. Request your advice as to the use of the \$50,160 FY 57 funds be forwarded immediately. Should you desire to write a new purchase request, initiation action should be forwarded to WDTO, Attn: Capt. Johnston. If the transaction is to be handled by amendment of the Administrative Commitment Document, request for necessary action should be forwarded to BWD, Attn: Mr. Silberman.

5. Request we be advised of the action you take in this matter.

/s/ John B. Hudson
JOHN B. HUDSON
Lt. Colonel, USAF
Director, Support Operations

MEMORANDUM FOR RECORD

25 September 1956

SUBJECT: Funds for Contract 3105 - Lockheed Design Study

1. At 1630, 25 September 1956, the undersigned, together with Lt. Colonel Q. A. Riepe, WDTR, and Mr. Eugene Silberman, RMO, met to discuss the problems posed by Inclosure 1. (DF from WDS to WDTR, subject and date as above). After discussion the following information was developed from Mr. Silberman:

a. He realized that WDD Purchase Request 151 had funds certified by WDSCP as \$322,245.40. He had advised Lockheed, however, that the total available for CCN-1 to the subject contract was \$372,000.00. He stated that he did this because he felt that the exchange of DF's (Incl. 2) from WDTR to WDSCB, dated 27 June 1956, subject: O/A 620-56-5, gave him authority that additional funds were available in the amount of \$50,000.00. The undersigned pointed out to him that these DF's represented only a fund transfer action and were not an initiation action and that these funds had later been transferred to ARDC by O/A. Mr. Silberman further stated that in accordance with AMC practice, the Contracting Officer was within his rights to negotiate on funds in excess of those initiated by a Purchase Request on the basis of cost proposal received from the contractor, provided that he so advise the initiator of this action. Mr. Silberman stated that in this case he had not advised the initiator of his action, however, and that under the circumstances, should have requested an additional Purchase Request for the \$50,160.00. Mr. Silberman agreed that in the future he would under no circumstances enter into contractual actions in regard to WS 117L in excess of the amounts initiated by Purchase Requests.

b. It was pointed out to Mr. Silberman that, in actuality, Lockheed would probably not complete all of the work scheduled under the CCN by the finishing date of that contract, and this work would have to be done under the contract proposed by Purchase Request 196; accordingly, it would be legitimate for RMO to request Lockheed to reduce their cost proposal for the work done under Purchase Request 151.

c. It was further agreed that WDTR would informally investigate the availability of additional P-600 funds from Hq. ARDC for the purpose stated in Inclosure 1.

2. If Lockheed is able to resubmit their proposal in line with the funds on Purchase Request 156 no further problem exists. If this can be done, we will request a reduction and amendment to the Administrative Commitment Document by EMO. If this is not feasible, then we will either add funds to be sought from Hq. ARDC or as a last resort, reduce the amount of money available for the new contract by the amount needed.

SIGNED

CONCUR: SIGNED

QUENTEN A. RIEPE
Lt. Colonel, USAF

FREDERIC C. E. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

cc: WDTO
WDTD

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C.C.

7
Sep 56
Subsequent to
27 Sep 56

111

Summary of Status and Policy Action
Required on WS 117L Program

WDT

WDTR

Commander Truxx/eh/1344

A number of critical problems are now facing the WS 117L program which can be greatly alleviated by either support or decisions on the part of WDT or WDG. Inclosure 1 is a summary of these problems with action recommended by WDT.

1 Incl
Summary of WS 117L Problems
Requiring Action, 3 pp (S)
with 2 Incls.

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

When inclosures are withdrawn the
classification of this correspondence
will be downgraded to SECRET
in accordance with AFR 205-1.

~~SECRET~~

WDTR 56-167

~~CONFIDENTIAL~~

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~~CONFIDENTIAL~~

SUMMARY OF WS 117L PROBLEMS
REQUIRING WDT or WDG ACTION

I. FUNDING:

FY 1957

Status: \$3.0 M P-600 funds on hand. A Request for additional \$11.4 million P-600 is in the hands of DCSD (R&D) awaiting action. (Attachment A). Same letter requests 10.5 million P-131 and P-244 funds.

Background: The WS 117L Development Plan requested FY 1957 funds as follows: P-600 - \$16.1 million; Other-\$16.0 million, facilities - to be submitted later (estimates deleted at General Schriever's direction). It is understood that Lt General Putt requested Major General Swofford to provide \$12.0 million additional P-600 funds. The latter then prepared a reply to our request stating no further funds available. Lt General Putt returned this reply to Major General Swofford unsigned asking that DCSD (R&D) try again to find the money.

Without a reasonable allocation of P-600 funds, DCSD cannot go to DCSE for allocation of required P-131 and P-244 funds. Without both no significant hardware progress can be made on the WS 117L program. The Lockheed contract is currently in negotiation. The 3.0 million can be used to fund the program for a short time, but early provision of requested funds is required to permit a rational build up schedule to be set. The FY 57 P-300 requirements cannot be defined until certain policy decisions outlined below are made.

Action recommended: A telephone call by Major General Schriever to Lt General Putt (and perhaps Major General Swofford) followed by personal contact, if necessary, requesting that the 11.4 million of P-600 funds be supplied as soon as possible and that action be started immediately thereafter to get the P-131 and P-244 monies.

II. MANAGEMENT:

Status: The WS 117L program is currently operating under a somewhat bastardized 80-4 procedure. A proposal has been submitted for overhauling the management (Staff Study - Proposal Management Procedure for WS 117L, dated 12 September 1956, WDR to WDT and WDG). This paper was signed out of WDT to Colonel Ritland about 27 September 1956.

Background: Prior to transfer of the program from Wright Field, 80-4 procedures were followed. If these procedures are to be continued, WS 117L will be handled in a fashion different from the other WDD programs. This will require some special education of WDD echelons other than the System office. A distinct letdown in attention has been noted in PDZ and a positive antipathy in DCSD (R&D) which may originate in lack of enthusiasm for the whole WDD setup rather than any particular desire to plow under the WS 117L program. In any event, the evident lack of a positive sense of responsibility for the program has resulted in the necessity for WDR to constantly "bird dog" the actions in Baltimore and Washington to insure that the program, or essential elements of it, are not inadvertently or deliberately washed down the drain.

DOWNGRADED AT 12 YEAR
INTERVALS; NOT AUTOMATICALLY
DECLASSIFIED. DOD DIR 5200.10

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WDR 56-167

~~SECRET~~

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Action recommended: Either a streamlined management procedure such as outlined in the above mentioned letter, should be adopted as soon as possible, or an intensive effort should be made to insure that the program is represented in Baltimore and Washington by well informed, enthusiastic individuals. WDTR prefers the former if it can be implemented in the near future.

III. WS 107A - WS 117L Coordination:

Status: Many aspects of WS 117L planning cannot be completed without decisions setting the acceptable level of interference between WS 107A and WS 117L. In general, the greater the interference, the less the cost. Several specific items of interaction now require decisions.

1. SM 65 missile allocation: The approved WS 117L Development Plan requires SM 65C missiles to be made available to the ARS program f.o.b. Convair beginning about 1 January 1959. Delivery schedules for 1959 are being prepared now by WDTC. Since SM 65 availability paces the ARS program, earlier delivery of boosters would accelerate the 117L program in an almost one to one ratio. There are currently four SM 65C missiles, scheduled for delivery in July, August, September and October of 1958, which are not required for the WS 107A program and which will probably be eliminated from the program if not allocated to WS 117L. There is also a small number of series "A" missiles designated as "spares" on the WS 107A-1 schedule. Depending on the progress of the SM 65 development, some of these may be left over at the end of the series "A" firing schedule. Series "A" missiles would have substantially the same utility for early, non-orbiting tests of the ARS nose cone as the series "C" or later missiles. Nose cones and other components could be available for flight test as early as January 1958.

2. Facilities: A second interaction area relates to facilities. Because of the loading of AFMTC, and the early requirements for a facility from which northerly or southerly firings can be made, Patrick has been considered only for interim purposes. It would appear inadvisable to spend any great amount of money on facilities at AFMTC for only temporary occupancy. (It is assumed that firings over Miami or the industrial east would be inadmissible.) Use of WS 107A facilities is therefore indicated.

Considerable liaison has been undertaken with WDC and WDI with respect to use of Camp Cooke for the continuing WS 117L program, both the R&D and operational phases. General concurrence has been obtained from WDC and WDI (attachment B), and some detailed planning done.

3. Personnel: The third area of interaction between WS 107A and WS 117L is in the area of personnel and training. The problem appears to be particularly acute in the area of launch crews. There appear to be three possible methods for launching SM 65 boosted ARS vehicles. One would be to train Lockheed people who would then handle checkout and launching. A second would be to have Convair personnel perform booster checkout and missile firing, with Lockheed servicing

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the orbiting vehicle under a relationship similar to that between Convair and GE when GE nose cone tests are the primary flight mission. A third possibility, applicable only at Camp Cooke, would be to have the booster serviced and launched by Air Force crews supplemented by technical representatives from Convair, RA, GE, etc. Considerable difference of opinion appears to exist relative to which of these approaches is the most practical. The WS 117L Project Office prefers the second alternative for flights conducted at AFMTC, and the first for flights from Cooke.

Action recommended: Authorize the following:

1. Missile allocation: Assign to WS 117L all SM 65A missiles, up to four, which remain at the end of the Series "A" launching program. Allocate to the WS 117L program one Series "C" missile per month beginning July 1958.

2. Facilities use: Schedule approximately one WS 117L launching per quarter from WS 107A-1 facilities at AFMTC throughout 1958, and the first quarter of 1959. Schedule one launching per month from AFMTC in the second quarter of 1959. Schedule one launching per month from IOC facilities at Camp Cooke from July 1, 1959 until WS 117L launch facilities at Cooke are completed (estimated fall-winter 1959). The above scheduling action would be with the understanding that the overriding priority of the WS 107A program could lead to cancellation or deferment of WS 117L flight if the situation existing at the time indicates that significant gains to the 107A program would result from such action.

3. Include in WS 107A planning the launching by Convair from AFMTC of one SM 65 (A or C) boosted ARS vehicle per quarter in 1958 and the first quarter of 1959, and one per month in the second quarter of 1959. Begin in the near future to train a nucleus of Lockheed personnel at Rocketdyne and Convair so that the former may assume full responsibility for launching activities by mid 1959. These would be engineers and test operators experienced in the general field but not in the specific SM 65 hardware. The training could be of an on-the-job nature that would permit some benefit to the training activity.

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Organization and Manning for WS 117L Program

SEP 28 1956

WDTD

WDIR

Lt Col Riepe/eh/1344

1. Western Development Division has been assigned the responsibility for the development of WS 117L, a system many times more complex and sophisticated than any yet attempted. It has been determined that the WDD will, with the assistance of the ARDC Centers and other consultants, provide the technical direction and management of this program. The attached organization and manning is what we believe will be required to adequately do this job. Personnel selected to fill the positions in the proposed organization should be carefully selected to assure top quality management and direction of the various facets of the system.

2. This process of screening and selecting personnel to man the organization will take time. However, it is felt that the following goals are the optimum rate of build-up:

a. Personnel on hand as of 28 September 1956:

- | | |
|--|------------------|
| 1 Assistant for WS 117L | Lt Colonel |
| 1 Deputy Assistant for WS | Commander |
| 1 Chief, Plans and Programs Branch | Lt Colonel |
| 1 Chief, Resources Management Section | Major |
| <u>3</u> System Integration Project Officers | 2 Captains and 1 |
| <u>7</u> Total 7 Assigned Officer Personnel | 1/Lt. |

b. Planned build-up to 1 January 1957:

- 1 Chief, Facilities and Test Branch
- 1 Facilities and Equipment Project Officer
- 1 Test Plans and Logistics Project Officer
- 2 Production Engineering Project Officers
- 7 System Integration Project Officers
- 1 Resources Management Project Officer
- 1 Program Management Project Officer
- 14 Total additional personnel
- 21 Total assigned officers

c. Planned build-up to 1 July 1957:

- 2 Program Management Project Officers
- 1 Resources Management Project Officers
- 2 Production Engineering Project Officers
- 2 Facilities and Equipment Project Officers
- 1 Test Plan and Test-Logistics Project Officers
- 9 Total additional personnel
- 30 Total assigned officer personnel

d. By 1 January 1958 certain subsystems of the WS 117L will have reached the point of limited production. This will require six (6) additional military personnel in the System Engineering Section. (Not shown on the organization chart).

Total goal military personnel by 1 January 1958 is estimated to be 36 officers.

e. Civilian support personnel required:

1 GS-6 Administrative Assistant for Assistant for WS 117L
9 Secretary-typists - 8 each GS-4; 1 each GS-5

Secretaries to be assigned as follows:

3 in Plans and Programs
3 in System Engineering
2 in Facilities and Test
1 in the Office of Deputy Assistant for WS 117L

The build-up rate for secretarial help would be proportional to the military personnel build-up rate.

3. As you can see from the proposed organization chart and the job descriptions submitted, we intend to make full use of the presently existing staff functions within WDD. For example, the Facilities Group (WII), of necessity, work very closely with the WDI organization; the Plans and Operations functions will be closely coordinated and accomplished with the assistance of associated parts of WDT, WDS and WDO, etc.

4. Since there will be considerable effort required to recruit the number and type of personnel required to man the proposed organization, it is requested that we be authorized to requisition personnel up to the 1 January 1957 level immediately. Four (4) of this number are on requisition or orders at the present time. They are:

Captain E. J. Conway
Major G. E. Austin
Major H. F. Wienberg
Major L. D. Walker

Reporting 1 October 1956
Reporting 22 October 1956
No Reporting date
Reporting in October 1956

The total military assigned including these will be eleven (11), requiring ten (10) additional vacancies to bring the authorized strength to the proposed twenty-one (21) by 1 January 1957.

SIGNED

4 Incls.

1. Organization Chart
2. Project Officer Requirements
3. Project Office Job Description
4. 1 Package, Job Descriptions

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

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113

OCT 8 1956

WDTR

SUBJECT: Request for Study of SM-65A Performance Relative to
WS 117L Flight Test Program

TO: Ramo-Wooldridge Corporation
Attn: Dr. James C. Fletcher

260

1. It is requested that Ramo-Wooldridge immediately perform a short study to determine maximum performance of an unmodified "A" missile for WS 117L use. This study should assume the same weight of the ARS vehicle that would be compatible with the "C" (i.e. 7200 or 9300 lbs. gross satellite weight).

2. The apogee of the coasting ellipse should be 300 miles.

3. Assuming that the maximum amount of fuel were burned until a reasonable load limit was reached, the velocity at apogee should be determined.

4. It is desired that the results be transmitted to WDTR by 12 October 1956. The trajectory data should be furnished in graphical form and the assumptions and results presented in letter form in sufficient quantity (i.e. five copies) transmitted to Lockheed by WDTR. Not more than 1/2 man month should be required for this phase.

5. As a second phase of this study it is requested that R-W perform a study relative to the use of SM-65A missiles for non-orbital tests of WS 117L equipment during development. This study should indicate the influence of "A" trajectory considerations and limitations which might maximize free fall time, possibly by firing on a near vertical trajectory. Payloads, burnout velocities and burnout angles should be presented in the results. This should take two alternate approaches: (1) assume that payload would replace ballast in the existing "A" and (2) alternately assume the "A" nose section is replaced with the WS 117L vehicle (7200 or 9300 lbs. gross) in order to test separation, third stage ignition, and other vehicle functions.

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DECLASSIFIED AFTER 12 YEARS:
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6. The ultimate utility of an "A" missile flight test program to a logical WS 117L development may depend on the results of this second phase study and the early scheduling of "A's" which may become available. These results should be forwarded to WDR by 12 November 1956. Not more than two man months should be required for this phase.

7. The following data are to be used for the SM-65A (Reference: Convair Report - ZD-7-008A Detail Specification on SM-65A, 16 August 1955).

Weights

Launching Weight	201,254
Weight Empty	13,069
Dry Weight	11,354
(Above weight assume 180 lb. nose group not 3500 lb.)	

Expendable Items	188,185
------------------	---------

LOX	130,152
Fuel	57,045
Lubricating Oil	188

Propulsion

Booster Engine Assembly Sea level thrust	300,000
Minimum sea level Isp	245 sec.
Vernier Engine Assembly Sea level thrust (2) @	1,000 ea.
Minimum sea level Isp	210 sec.

SIGNED

FREDERIC C. Z. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

WDR 56-165

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INTEROFFICE CORRESPONDENCE

117
114

TO: Col. O. J. Ritland

CC: Col. C. H. Terhune
Lt. Col. F. C. Oder
L. G. Dunn
J. C. Fletcher

DATE: October 11, 1956

SUBJECT R-W Responsibility
in WS 117L Program

FROM: Simon Ramo

REF: Letter from Col. O. J. Ritland to S. Ramo
dtd 9/7/56. Subject as above.

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS.

FORM DIR 5000-10

1. The referenced letter is believed to make clear R-W's present responsibilities in this program and makes possible R-W planning as to organization and manpower assignments.

2. R-W desires to be an eligible competitor for certain hardware aspects of WS 117L; namely, in communications, computers, and specialized control subsystems, as well as in any form of electronics instrumentation for testing out the system in stationary facilities or in connection with flight testing. We should also like to be considered for any new developments that may be required in the field of tracking subsystems. We do not expect to be interested in airframe, propulsion, nuclear power supply, or stable platform aspects.

3. The amount of effort allowed to R-W during fiscal '57 is quite limited (six man years according to the referenced letter). It is desirable that this budget be spent as judiciously as possible on those aspects of the program which can be of greatest assistance to WDD in directing the program. We suggest that great care be exercised in the assignment of task to avoid any routine or minor engineering, engineering liaison, or data and record searching or listing functions, since these could probably be more easily obtained in other ways. We believe that the unusual technical staff assembled in R-W can be particularly useful if confined to the more difficult types of technical investigations, or on issues involving major system judgments and interactions with the ICBM program. For virtually any study, it is necessary to insure proper technical and program coordination of the conclusions by assignment of some part-time effort by our top directorial staff. Also, practically any technical investigation requires some competent technical staff assignment for such supporting purposes as computer programming, library research, and the like. When these items are added to the main analytical effort of those individuals assigned full time to a specific study, the year's budget of six man years could be quickly used up. It is thus necessary that R-W avoid any additional and unnecessary expenditures in administrative and managerial assignments relating to this program. Accordingly, some changes in our organizational structure relative to the handling of our work in this field are presently being made. Specifically, we have had in the past a "Program Director's Office" similar to what has been set up for the 65, 68, and 75 programs. The previously contemplated

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To: Col. O. J. Ritland
Subj: R-W Responsibility in WS 117L Program

October 11, 1956
Page 2

assignment of individuals to such a Program Office to handle a technical-executive role seems now unwarranted in view of the small amount of effort expected from R-W, and especially in view of the fact that this effort must come from the most highly technically specialized experts in the Company. We are accordingly abolishing this special program director's office, and instead setting up a special assistant to Dr. Dunn, the Director of the Guided Missile Research Division. This assistant will be responsible for liaison with your office and for arranging the assignment to the appropriate specialists of the specific tasks which you call upon R-W to carry out.

4. This special assistant will be Mr. F. A. Ford. Mr. Ford is an experienced scientist and engineer with over 20 years of pertinent background. He has held responsible positions in frontier problems at The RAND Corporation, then in charge of preliminary missile design work at North American Aviation, and later as Deputy Chief Engineer of Northrop. In the latter capacity, Mr. Ford was in charge of a large part of Northrop's entire engineering effort, including their advanced projects, their guided missile projects, and their research and operational studies. His experience and background with us has confirmed that he is an appropriate person to handle well the direct liaison with Col. Oder's office, and the direct arrangements, as an assistant to Dr. Dunn, necessary with the various technical staffs of R-W who will actually perform the studies. Dr. Fletcher, who on a part time basis has been heading the previous Program Director's Office, with Ford as his assistant, will confine now his attentions to the directing of the Electronics Staff. In that capacity we feel that he will be used to the greater advantage of all of WDD's programs, including WS 117L.

5. Should WS 117L develop in such a way that the R-W role is altered, we shall, of course, be ready at any time to make appropriate organizational changes so as to meet our contractual obligations.

Simon Ramo
Simon Ramo

SR:rm

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THX

PRIORITY

FROM: HQ ARDC

TO COFS, HQ USAF, WASH, D. C.

SECRET FR RDZGW-10-3-E

264
ATTN: AFDDC. REFERENCE WDD SECRET LETTER DATED 28 AUGUST 1956, SUBJ: REQUIREMENT FOR ADDITIONAL FY 57 FUNDS FOR WS 117L AND 1st IND THERETO BY THIS HQ. CURRENT NEGOTIATIONS WITH LOCKHEED AS PRIME SYSTEM CONTRACTOR FOR 117L ARE SERIOUSLY HAMPERED BY LACK OF DEFINITIVE INFORMATION ON FUNDING PROGRAM FOR FY 57. AVAILABILITY OF A FIRM FY 57 FUNDING FORECAST FROM YOUR HEADQUARTERS BY 15 OCTOBER WOULD (A) PERMIT NEGOTIATION TO PROCEED WITH LOCKHEED ON A SOUND PLANNING BASIS, AND (B) PLACE LOCKHEED IN A STABLE POSITION FOR RETAINING THE SUBCONTRACTOR STRUCTURE WHICH IS VITAL TO SUCCESSFUL PROSECUTION OF THE 117L PROGRAM. REQUEST INFORMATION AS SOON AS POSSIBLE ON THE FUNDING PROGRAM, PARTICULARLY IN THE P-600 AREA.

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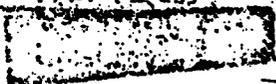
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Oct 56

SYMBOL: RDZGW

Lt Col Paul E. Northman

E. A. Kiessling, Col., USAF
Deputy Assistant for Guided Missiles
Deputy Commander/Weapon Systems

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WD 56-04204

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116

WDTR

OCT 12 1956

SUBJECT: WS 117L Work Under Contract No. AF 18(600)-1190

TO: Ramo-Wooldridge Corporation
Attn: Dr. James C. Fletcher

1. Reference WDTR letter, subject: "Request for Study of SM 65-A Performance Relative to WS 117L Flight Test Program", dated 8 October 1956.
2. The two and one half man months expended on this problem are to be charged against (b) of paragraph 2, letter, WDTR 56-133, subject: "WS 117L Work Under Contract No. AF 18(600)-1190".
3. Reference WDTR letter, subject: "Request for Study of Optimum Method for Acquisition and Tracking of the WS 117L Orbital Vehicle", dated 9 October 1956.
4. The two man months expended on this problem are to be charged against (d) of paragraph 2, letter, WDTR 56-133, subject: "WS 117L Work Under Contract No. AF 18(600)-1190", dated 30 August 1956.

SIGNED

cc: WDTO

FREDERIC G. E. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

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WDTR 56-175

WDTR
Major Zelenka

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DE RJWPNT 4F
P 222021Z

FM HED USAF WASHINGTON DC

TO ZEN/COMARDC BALTO MD

INFO COM WDD INGLEWOOD, CALIF

SECRET FROM AFDRD CITE 57697. REFERENCE YOUR MESSAGE RDZGW 10-3-E AND LETTER 28 AUG 56, SUBJECT "(UNCL) REQUIREMENT FOR ADDITIONAL FY 57 FUNDS FOR WS 117L", LIMITATION OF FUNDS NECESSITATES PROLONGING OF SYSTEM 117L DEVELOPMENT. PHASING WILL BE BASED UPON MINIMUM BALANCED RATE OF DEVELOPMENT PROGRESS ON VEHICLE AND COMPONENTS INSTEAD OF ON DEVELOPMENT PLAN TARGET COMPLETION DATES. THREE MILLION DOLLARS PRESENTLY ALLOCATED CONSTITUTES TOTAL FUNDS NOW AVAILABLE. THIS HEADQUARTERS CONTEMPLATES REPROGRAMMING ADDITIONAL SEVEN MILLION DURING FY 57 FROM P-600 FUNDS. ADVISE REVISING DEVELOPMENT PLAN TO REFLECT AN ANNUAL TEN MILLION DOLLAR RATE OF EXPENDITURE AND DETERMINING EXTENT AND SPECIFIC APPLICATION OF FY 57 AND FY 58 NON-P-600 FUNDS EARLIEST, TO ENABLE REPROGRAMMING. NO NON P-600 FUNDS ARE NOW PROGRAMMED FOR THIS SYSTEM.

BT

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Recd 23 Oct 1956

date recd 1956

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23-26 Oct 56

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WDTR

31 Oct 56

MEMORANDUM FOR Colonel Charles H. Terhune, Jr.

SUBJECT: Trip Report

261

1. During the period 23 - 26 October 1956, the undersigned, accompanied by Lieutenant Colonel Quanten A. Riepe, WDTR, visited Washington D. C. for the primary purpose of presenting a briefing on WS 117L to the Coordinating Committee on Guided Missiles (CCGM) of the Office of the Assistant Secretary of Defense for R & D. A secondary purpose of the trip was to assist Colonel Leonhard, WDI, in informally discussing WDD facility needs in regard to WS 117L with representatives of the Assistant Chief of Staff for Installations, Headquarters USAF. On the afternoon of 24 October 1956, the undersigned made a brief visit to Baltimore, Maryland, to coordinate several minor matters.

2. Prior to the presentation to CCGM, we saw General Putt. Guidance from WDG was to concentrate on the technical aspects of the system and minimize discussion of schedules and funding. General Putt agreed completely with this approach. Colonel R. L. Johnston, AFDRD, (AF member of CCGM) had told us earlier that DOD had not yet officially approved WS 117L for systems development ~~per se, although they have approved WS 117L as a budget line item.~~ General Putt, after a brief discussion with Mr. Horner, thought that no further permission from DOD was needed and that the present USAF Development Directive was quite valid. General Putt indicated for our own benefit that for the ARS Program we should plan on ten million dollars in P-600 funds for FY 57 plus those non P-600 funds which we could justify. This was essentially the information contained in the Headquarters USAF TWX cite 57697 dated 23 October 1956. General Putt is quite evidently making every attempt to avoid bringing up WS 117L before the Secretary until resolution is achieved on pending problems in regard to WS 107A and WS 315A. There was some vagueness as to whether or not WS 117L was actually in the present Air Force FY 58 budget and, if so, for how much.

3. The dry run of the presentation was given as scheduled on 25 October 1956 to Colonel Johnston and members of the Air Staff without particular incident. Colonel Johnston's primary comments were around the political aspects of the situation in CCGM, as well as expected questions and methods for handling these. At his request, we simplified our funding charts down to one chart which merely presented our estimated FY 57 and 58 needs based upon the development plan schedule. A copy of the figures submitted at the

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presentation is attached. Further, the introductory statement as to the need for the ARS as an essential intelligence source was deleted by Colonel Johnston on the grounds that we did not have to justify the requirement.

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4. The presentation to CCGM on 26 October 1956 was made with approximately 25 additional people present. Colonel Johnston took the approach that the presentation was primarily for informational purposes only, since the Secretary of the AF has not yet given final approval to the program. It might be added at this point that we had been unable to determine the specific agenda item in front of CCGM until we actually went into the presentation. It turned out that they were considering \$ six million in P-600 funds for FY 58 for the ARS plus some nine million in FY 58 P-300 funds. Neither of these figures were those submitted by WDD. The presentation to CCGM by the undersigned was made in accordance with the WDG guidance received and cited above, and was apparently satisfactory since there were no specific questions on the technical approach. One representative who appeared to be a Naval Officer in civilian clothes, tried several devices of submarining the entire program by raising such points as "the need for prior approval from the State Department before embarking on the R&D program", "the value of money spent on this program as compared to other missile programs", etc. In response to a question on the total cost of the program, I replied that I did not have this figure available since it would depend upon the specific definition as to what would be included in the over-all program. At this point, Dr. Furnas volunteered (apparently from the Lockheed Aircraft Corporation presentation he had received) the figure of $\frac{1}{2}$ billion dollars for the over-all program, including operational costs. I offered no comment upon this figure. The committee ended their discussion on the item by approving the P-600 item and deferring without prejudice the P-300 item. After the presentation, we were told by Major Dillon (AFDRD Project Officer for WS 117L) that there were presently no FY 58 P-600 funds in the AF budget.

5. In company with Colonel Leonhard, we gave a desk-top presentation on WS 117L to General C. P. Brown, AFCIE, and members of his staff and informally advised them as to the nature of our facility requirements. They agreed to survey existing AF Installations with a view toward determining what of our facility requirements could be met from within the existing inventory. Colonel Leonhard cautioned the group on several occasions as to the fact that this program has not yet received Secretarial approval and, therefore, must be closely held.

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WDTR 56-209

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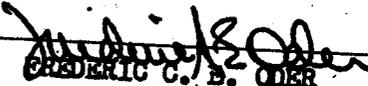
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6. Comment - As the result of this trip, the undersigned has sincere doubts as to the effectiveness of managing WS 117L through present structure and, in some cases, personal (from Hq. ARDC through AFDRD to the OASD (R&D)). Support by Major Dillon appeared to me to be both luke-warm and not too effective in so far as WS 117L is concerned. WDTR has gone to considerable effort to keep Major Dillon advised and to make him feel a member of the development team. One could only attribute his lack of enthusiasm in support of the project to his personal likes and dislikes. To illustrate the problem, he (Dillon) is also responsible for a trainer aircraft development program and stated that WS 117L must compete with this and other "support" projects for that "cut" of the AF R&D budget available to his branch. This is obviously an untenable situation. The most surprising factor was that he was very poorly informed as to the status of various actions in Hq. USAF regarding the program. Colonel Ahola, WED Liaison Officer, was, in fact, much better informed on many of these details than was Major Dillon. In regard to CCGM it was quite apparent that the committee had difficulty because ARS is not a "conventional" missile and that they would develop enthusiasm for the project only if it were directed from above. Only Dr. Furnas appeared to be in complete support of the program. It should be noted that none of the committee showed any familiarity with the intelligence and reconnaissance aspects of the problem, and this causes me to wonder if they are appropriate to the job.

7. In view of General Schriever's concern over the CCGM briefing, the above report may be of interest to him.

1 Incl
WS 117L FY-57 & 58
Fund Breakdown


FREDERICK C. B. ODEH
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

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WS 117L

FI 57

FI 58

P-100

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35.6

P-200

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26.0

P-300

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34.3

P-600

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33.0

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WDTR 56-209

Suchh

W D H # 119
Dr. Rockefeller

WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

277

PERSONNEL ACTIONS MEMORANDUM
40)

2 November 1956

1. VOC, iss 1 Nov 56, asg BRIG GEN OSCAR F. CARLSON, 303A, this Div, this sta, Prim dy as Spec Asst to Comdr, Ofc of Comdr, WDD (0002F), FA: 01000, are cfm, ESPFWO.
2. The AFSC of BRIG GEN OSMOND J. RITLAND, 1731A, this Div, this sta, is del fr 0416 to 0002F; DAFSC is chgd fr 0026F to 0092F.
3. The (2) add AFSC 1221A and (3) add AFSC 0066C of BRIG GEN OSMOND J. RITLAND, 1731A, this Div, this sta, are del.
4. SHOP 6, PERAM 35, cs, this Div, pert to MAJ EDWARD C. TARBUTTON, A0661249, this Div, this sta, AS READS "Prim dy as Stf Plt, Support Opns (1044)," IATR "Prim dy as Stf Plt, VT Flt Sec, Opns Gp, Supp Opns (1044)."
5. Para 23, PERAM 27 and Para 7, PERAM 35, cs, this Div, pert to CAPT FRANK T. BLASKIEWICZ, A0674450, this Div, this sta, are Revo.
6. VOC, iss 14 Sep 56, asg CAPT FRANK T. BLASKIEWICZ, A0674450, this Div, this sta, Prim dy as Stf Plt, VT Flt Sec, Opns Gp, Supp Opns (1044), FA: 57000, are cfm, ESPFWO.
7. VOC, iss 21 Sep 56 asg CAPT EDWARD J. CONWAY, 16673A, this Div, this sta, Prim dy as Proj O (Budget), Plans & Prog Ofc, Asst f/WS 117L, Tech Opns (8446), FA: 57000, are cfm, ESPFWO.
8. CAPT JACK E. TICE, A01580418, this Div, this sta, is asg add dy as Test Control Off, this Div, effective 31 Oct 1956.
9. VOC, iss 27 Oct 56 asg 1ST LT ROBERT J. BOSLER, A02219437, this Div, this sta, Prim dy as Personnel O, Manpower Gp, Supp Opns (7324), FA: 57000, are cfm, ESPFWO.
10. The FSSD of 1ST LT ROBERT J. BOSLER, A02219437, this Div, this sta, is del fr 7 Dec 41 to 8 Sep 56.

actly

Para 1 thru 12, PERAM 40, WDD (ARDC) 1 Nov 1956

11. SMOP 9, PERAM 24, cs, this Div, pert to 1ST LT CHARLES W. FLIPPO, A02246708, this Div, this sta, AS READS "Prim dy as Protocol O (WDD), Supp Opns (7024), FA: 57000" IATR "Protocol O (WDD), Ofc of Comdr (7024), FA: 01000."

12. The Functional Cat of the FNO is chg fr PPA to PPB:

BRIG GEN OSCAR F. CARLSON, 303A
CAPT EDWARD J. CONWAY, 16673A
1ST LT ROBERT J. BOSLER, A02219437

BY ORDER OF THE COMMANDER:

OFFICIAL:

Jack E. Tice
JACK E. TICE
Capt, USAF
Ch, Mil Pers Br

JACK E. TICE
Capt, USAF
Ch, Mil Pers Br

DISTRIBUTION:

- 2 - HEDARDC
- 1 - Ea Officer
- 75 - Pers Serv

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CONFIDENTIAL

120

NOV 21 1956

212

WDTR

SUBJECT: Fund Requirements for Weapon System 117L Program

THRU: Commander
Air Research and Development Command
ATTN: EDZG
Post Office Box 1395
Baltimore, Maryland

TO: Director of Research and Development
Headquarters USAF
Washington 25, D. C.

1. Reference TWX AFDRD 57697, dated 23 October 1956. On 7 November 1956, Lieutenant General Donald Putt was briefed by Lt Colonel Frederic C. E. Oder on the planned program for research, development and engineering test of WS 117L for the balance of FY 57, utilizing \$10,000,000 in P-600 funds. This briefing detailed the planned utilization of funds by the prime contractor, sub-contractor and the ARDC Centers. On the same date, General Putt was briefed on the planned program in the P-100 and P-200 areas as detailed below. General Putt indicated general concurrence with the information as presented. The following information reflects the budget program P-100 and budget program P-200 FY 57 fund requirements for the conduct of a balanced system oriented approach to the development of essential components of the WS 117L program during the remainder of FY 57.

a. Vehicle Subsystem: Two hundred forty thousand dollars (\$240,000) P-100 funds for fabrication of first three orbit test vehicle airframes after mock-up; three hundred forty thousand dollars (\$340,000) P-200 funds for ground-handling carrier, check-out equipment, fuel-carrying and handling equipment.

b. Propulsion Subsystem: Three million two hundred eighty thousand dollars (\$3,280,000) P-100 funds for incremental payments on twelve main engines and twenty eight control verniers; two hundred eighty thousand dollars (\$280,000) P-200 funds for test and ground-handling equipment.

DOWNGRADED AT 12 YEAR
INTERVALS; NOT AUTOMATICALLY
DECLASSIFIED. DOD DIR 5200.10

WDTR 56-231

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c. Auxiliary Power Unit Subsystem: One hundred eighty thousand dollars (\$180,000) P-100 funds for seven battery units for ground and flight test; forty thousand dollars (\$40,000) P-100 funds for cost of three chemical auxiliary power supply propellant feed systems; one hundred forty thousand dollars (\$140,000) P-200 funds for test equipment.

d. Guidance and Control Subsystem: Five hundred ten thousand dollars (\$510,000) P-100 funds for incremental payments on four AC Spark Plug units for FY 59 delivery, one orbital boost guidance unit, two transition control systems, one transition computer and one ascent guidance unit; three hundred forty thousand dollars (\$340,000) P-200 funds for ground support and test equipment for preceding guidance and control units.

e. Visual Subsystem: Sixty thousand dollars (\$60,000) P-200 funds for test equipment for experimental models.

f. Ferret Subsystem: Thirty thousand dollars (\$30,000) P-200 funds for test equipment for experimental models.

g. Infra-red Subsystem: One hundred fifty thousand dollars (\$150,000) P-200 funds for test equipment for experimental models.

h. Ground-Space Communications Subsystem: Four hundred twenty thousand dollars (\$420,000) P-100 funds for airborne communications equipment; one million eight hundred thousand dollars (\$1,800,000) P-200 funds for incremental payment on three nulling interferometers, total cost one MSQ-1A radar and two COTAR systems.

i. Data Processing Subsystem: Eight hundred eighty thousand dollars (\$880,000) P-200 funds for computers, simulators, receivers and duplicators.

2. The sub-total FY 57 P-100 fund requirement is \$4,670,000. The sub-total FY 57 P-200 fund requirement is \$4,020,000.

3. An additional requirement exists for four (4) each SM 65 boosters. Seven million two hundred forty seven thousand dollars (\$7,247,000) P-100 funds for incremental payment on four SM 65 boosters; one million nine hundred sixty four thousand dollars (\$1,964,000) P-200 funds for incremental payment on associated ground-handling equipment.

4. The grand total FY 57 P-100 fund requirement is \$11,917,000. The grand total FY 57 P-200 fund requirement is \$5,984,000.

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WDTR 56-231

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5. The currently established contractor expenditure curve indicates additional FY 57 P-600 funds will need to be placed on Contract AF 04(647)-97 by 25 December 1956. It is requested that an additional seven million dollars (\$7,000,000) of FY 57 P-600 funds be made available to the WS 117L Program by 1 December 1956 to prevent a work stoppage.

6. It is to be emphasized that the detailed, planned program in the non-P-600 area, contained in paragraph 1 of this letter, represents an optimum balanced system oriented approach to the WS 117L Program during the remainder of FY 57. The total FY 57 P-100 and P-200 funds required should be made available at the earliest possible date and no later than 15 December 1956 to allow timely initiation of procurement action on long lead time items if a balanced program schedule is to be maintained.

FOR THE COMMANDER:

SIGNED

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

copy furnished:
Hq USAF
ATTN: AFCCM-A

Major Zelenka

1343

3

WDTR 56-231

~~CONFIDENTIAL~~

WDTR, WDD, 21 Nov 56, Subj: Fund Requirements for Weapon System 117L Program.

RDZGW

1st Ind

Nov 26 1956

HEADQUARTERS, AIR RESEARCH AND DEVELOPMENT COMMAND, Post Office Box 1395,
Baltimore 3, Maryland

TO: Director of Research and Development, Headquarters USAF,
Washington 25, D. C.

1. This Headquarters strongly supports the request contained in the basic letter and considers the funds requested to be a minimum requirement for a balanced system-oriented approach to the WS 117L Program during the remainder of FY-57.

2. Funds in the amounts and categories requested are not currently available to this Headquarters. Appropriate action to provide these funds is urgently recommended.

3. Your attention is particularly invited to paragraph 6 of the basic letter which points out the need for the P-100 and P-200 funds no later than 15 December 1956, and to paragraph 5 which indicates a need for additional P-600 funds by 25 December 1956.

FOR THE COMMANDER:

SIGNED.

DON R. OSTRANDER
Brigadier General, USAF
Assistant for Guided Missiles Systems
Deputy Commander/ Weapon Systems

This indorsement is not
classified in itself.

CY of 1st Ind & ltr fwded to RDSCE
L/C Hart RDZGW

308

26 Nov 56

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~~CONFIDENTIAL~~ 121

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

10 Dec 56

SUBJECT: (Uncl) Requirement for Additional FY 1957 Funds for
 WS 117L

TO: Commander
 Air Research and Development Command
 Post Office Box 1395
 Baltimore 3, Maryland

1. Reference is made to letter, same subject, dated 28 August 1956, from Western Development Division with 1st Indorsement by Headquarters, Air Research and Development Command dated 29 August 1956, and to message from this Headquarters AFIRD 57697 dated 22 October 1956.

2. The three million dollars originally funded for this system in FY 57 has been increased to a total of five million dollars. It is the intention of this headquarters to add another five million P-600 funds during this fiscal year. To obtain this money it will be necessary to reprogram from other systems as soon as the sources can be determined. System 117L will be given first priority in P-600 funds reallocation. You will be notified by message as soon as all or part of the funds are reprogrammed to this system.

3. For management planning purposes it is essential that you plan your expenditures based on a ten million dollar program ceiling for P-600 funds during FY 1957 and FY 1958. No more than \$10,000,000 can be made available in either year. Funds required in the P-100, P-200 and P-300 areas will be handled as separate items and are being reviewed at this time.

4. The following will be used for program planning guidance:

a. Continue the development and testing of all component items.

b. Do not construct a mock-up for inspection purposes or a complete experimental test item until further advised.

c. Do not plan to launch this system prior to FY 1961.

d. Launching facility construction funds are not included in the FY 58 budget.

DOWNGRADED AT 12 YEAR
 INTERVALS: NOT AUTOMATICALLY
 DECLASSIFIED. DOD DIR 5200.10

~~CONFIDENTIAL~~

/s/ D. L. Putt

D. L. PUTT

Lieutenant General, USAF

Deputy Chief of Staff,

Development

WD 56-05231

~~CONFIDENTIAL~~

Confidential 122

WDTR

DEC 14 1956

SUBJECT: Recoverable Payload Package Study

TO: The Ramo-Wooldridge Corporation
Attn: Mr. Art Ford

1. WDTR requests that the Ramo-Wooldridge Corporation accomplish a study of Recoverable Payload Packages which can be utilized by WS 117L. The results of this study are to be forwarded to WDTR by 1 February 1956.¹

2. The subject study should determine the feasibility of recovering payload packages from an orbiting WS 117L vehicle. The following orbital conditions will be considered:

- a. Circular orbits located 300 N.M. above the Earth's surface.
- b. Both Easterly and Westerly launched, low latitude orbits.
- c. Westerly launched, high latitude orbits.

3. The recoverable payload that is under consideration at this time is a film package which weighs fifty (50) pounds. The best known values of the film's sensitivity to accelerations and temperature will be provided to R-11 before 23 December 1956, but in the meantime the film package will be assumed to be insensitive to accelerations and capable of tolerating temperatures up to 160 degrees Fahrenheit.

4. The study will be split into two considerations which are as follows:

- a. The re-entry problem. This will include the complete operation of bringing a package from orbiting conditions to the Earth's surface in a recoverable condition.

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WDTR 56-201

~~CONFIDENTIAL~~

b. The positioning and location of the recoverable package. This will include an analysis of the precision required in initiating and controlling the recovery operation, if available methods for locating and recovering the package are to be utilized.

5. Existing WS 107A information will be used whenever it is applicable to this study.

6. Manhours expended on this problem are to be charged against Paragraph 2(b) of WDR letter, Subject: WS 117L Work Under Contract AF 18(600)-1190, dated 30 August 1956. An estimated maximum of two man months are to be allotted to this task.

SIGNED

FREEMAN C. E. ODLE
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

~~CONFIDENTIAL~~

WDR 56-264

WDR

Capt. Coalbaugh

1344

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ACTION REQUIRED CHANGE SIGNIFICANT EVENT RESULTS

2. REPORTS CONTROL SYMBOL

123

MANAGEMENT REPORT

PAGE 1 OF 1 PAGE

SYSTEM PROJECT TASK ENGINEERING SERVICE

3. DATE
18 December 1956

4. TITLE

(U) Advanced Reconnaissance System

6. NUMBER
WS 117L - MR #2

7. PREPARING AGENCY
HQ ARDC - WDD

7. RESP ORGN

WDD-WDIR

8. PARTICIPATING CENTERS

AFRCR, WADC, RADC, AFPTRC

9. PROGRAM STRUCTURE

100

10. PARTICIPATION/COORDINATION/INTEREST

USAF/AMC-P, APGC-P, ATC-P, SAC-C, ADC-C
USN/CND-I, USA/C/S-I, Other/ CIA-I

11. TECHNICAL GROUP

02

12. APPLICABLE AREAS

A. TECHNICAL B. TEST C. FUNDS D. MATERIEL E. FACILITIES
F. MANPOWER G. PERSONNEL H. TRAINING I. CONTRACTS J. AIRCRAFT

13. NARRATIVE

1. Letter Contract AF 04(647)-97 was let with the Lockheed Aircraft Corporation, Missile Systems Division, on 5 November 1956. Funds allocated against this contract total \$3,000,000. It is expected that a definitive contract will be executed prior to 30 April 1957.

2. Reproduction and distribution of this report is forbidden except on express approval of the WS 117L Project Office.

69 CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

PERSONNEL ACTIONS MEMORANDUM)
NUMBER 48)

19 December 1956

1. LT COL JOHN F MC CARTHY, JR, 6889A, this Div, this sta, is awarded (2) add AFSC of 0076F.
2. Para 2, PERAM 45, cs, this Div, Pert to MAJ HAROLD F WIENBERG, 15220A, is Revo.
3. MAJ HAROLD F. WIENBERG, 15220A, being asg this Div, this sta, per para 1, SO 159, dated 5 Nov 56, and para 7, SO 169, dated 1 Dec 56, Hq RADC (ARDC), Griffiss AFB, New York, N.Y., is asg Prim dy as Proj O (GFE), Facil & Equip Ofc; Asst f/WS-117L, Tech Opns (8446), FA: 57000, eff 19 Dec 1956.
4. VOC, iss 2 Dec 56, asg CAPT THOMAS P COMER, A01852156, this Div, this sta, Prim dy as Dep Ch, Finan Anal Br, Comptlr, Supp Opns (6746), FA: 57000, are cfm, ESPWO.
5. The FSSD of CAPT THOMAS P COMER, A01852156, this Div, this sta, is chgd fr 15 May 46 to 11 Oct 56.
6. VOC, iss 23 Nov 56, Rel CAPT WALTER T GENTILE, 16518A, this Div, this sta, fr Prog O (Stat), Atlas Prog Br, Atlas Opns, Plans & Opns (6834), FA: 57000, and asg new Prim dy as Ch, Stat Serv Br, Comptlr, Supp Opns (6816), FA: 57000, are cfm, ESPWO.
7. VOC, iss 11 Dec 56, asg CAPT DOUGLAS LONDEREE, A01549534, this Div, this sta, Prim dy as Field Liaison O, Materiel Gp, Supp Opns (6424), FA: 57000, are cfm, ESPWO.
8. VOC, iss 23 Nov 56 Rel CAPT EUGENE F MESSERLY, A02032993, this Div, this sta, fr Prim dy as Prog O (Budget), Prog Br, Asst f/Atlas Opns, ICEM Opns, Plans & Opns (6736), FA: 57000, and asg new Prim dy as Ch, WS 107A-1 & 2 Sect, Budget Br, Comptlr, Supp Opns (6736), FA: 57000, are cfm, ESPWO.
9. VOC, iss 1 Dec 56, Rel CAPT DONALD H OFFERMAN, A0663548, this Div, this sta, fr Ch, IREM Thor Prog Br, Plans & Opns (6746), FA: 57000, and asg new Prim dy as Ch, Finan Anal Br, Comptlr, Supp Opns (6746), EA: 57000, are cfm, ESPWO.
10. VOC, iss 23 Nov 56, Rel CAPT WILLIS G SHANEYFELT, 22759A, this Div, this sta, fr Prog O (Budget), Titan Opns, Plans & Opns (6736), FA: 57000, and asg new Prim dy as Ch, Field Svs Sect, Budget Br, Comptlr, Supp Opns (6736), FA: 57000, are cfm, ESPWO.

Para 1 thru 13, PERAM 48, WDD (ARDC), 19 December 1956

11. VOC, iss 18 Dec 56, asg CAPT ALBERT G RHODES, A0589935, this Div, this sta, Prim dy as Comm O, Comm Br, Materiel Gp, Supp Opns (3034), FA: 57000, are cfm, ESPWO.

12. The FSSD of CAPT ALBERT G RHODES, A0589935, this Div, this sta, is chgd fr 14 Nov 49 to 3 Oct 56.

13. VOC, iss 23 Nov 56, Rel 1ST LT WILLIAM L RENWICK, A02247746, this Div, this sta, fr Prog O (Stat), Thor Prog Br, Asst f/IREM Opns, Plans & Opns (6834), FA: 57000, and asg new Prim dy as Ch, RCS Sect, Stat Serv Br, Comptlr, Supp Opns (6834), FA: 57000, are cfm ESPWO.

BY ORDER OF THE COMMANDER:

OFFICIAL:



JACK E TICE
Capt, USAF
Ch, Mil Pers Br

JACK E TICE
Capt, USAF
Ch, Mil Pers Br

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- 2 - HEDARDC
- 1 - Ea Officer
- 75 - Pers Serv

125

DEC 21 1956

WDR

SUBJECT: Contract No. AF OI(647)-97, The Eastman Kodak Company

TO: Mr. John H. McLachlin
Administrative Contracting Officer
Lockheed Aircraft Corporation
Missile Systems Division
Van Nuys, California

1. Reference subcontract material under AF OI(647)-97 for selection of Eastman Kodak Company to perform work as outlined in statement of work.

2. The WS 117L Project Office concurs in the Lockheed Aircraft Corporation's selection of the Eastman Kodak Company.

3. The proposed statement of work is approved for the period of the letter of intent to 31 January 1957. Approval of the work statement does not imply WS 117L Project Office approval of NSD 2011. The cited sections of NSD 2011 are used as a reference document for specifying the areas of work to be covered by the Eastman Kodak Company.

4. No delivery of hardware will be made during the period of the contract to 31 January 1957. The delivery schedules contained in NSD 2011 in the work areas covered by the statement of work are compatible with the over-all WS 117L scheduling and should insure timely incorporation of the subsystems product into the entire Weapon System.

5. The proposed statement of work for the Eastman Kodak Company is within the requirements of the Lockheed Aircraft Corporation statement of work as specified in Contract No. AF OI(647)-97.

6. The spending rate indicated in the letter of intent is compatible with the over-all spending rate on the WS 117L Program as it exists at this time.

7. Minor changes of wording are to be accomplished by Mr. Walter Tybinski of the Lockheed Aircraft Corporation. These changes do not change the intent or scope of work contained in the work statement.

SIGNED

cc:

MCPTS - Mr Silberman

FREDERIC C. E. OBER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

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~~CONFIDENTIAL~~

WDTR

DEC 26 1956

SUBJECT: WS 117L Work Under Contract No. AF 18(600)-1190

TO: The Ramo-Wooldridge Corporation
ATTN: Mr. F. A. Ford

1. WDTR requests that the Ramo-Wooldridge Corporation accomplish the following three (3) items of work in support of WS 117L:

a. Prepare an estimate of the maximum nose cone weight and moment that is compatible with the structural and control limitations of the anticipated "thin skin" version of the SM-65C booster. WDTR understands that the thin skin will be introduced on the seventh (7) SM-65C booster, and that all boosters produced after this one will have the thin skin.

b. Prepare an estimate of the maximum nose cone weight and moment that is compatible with the structural and control limitations of the SM-68. This written study request is in support of a previous verbal request for this work.

c. Comment on the value of using an SM-65A to prove booster integrity when maximum nose cone weights are used. There is a question about the value of such a test, since the SM-65C boosters will have a structure which differs from the SM-65A in some respects.

2. Manhours expended on these problems are to be charged against Paragraph 2(b) of WDTR letter, subject: WS 117L Work Under Contract AF 18(600)-1190, dated 30 August 1956. The following are the estimated maximums of work allotted for these tasks:

- 1.a - 2 Man Months
- 1.b - 4 Man Months
- 1.c - 1/10 Man Month

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS.
DOD-DIR 5200.10

SIGNED

FREDERIC C. E. COHR
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

~~DOWNGRADED AT 12 YEAR INTERVALS~~
~~DECLASSIFIED AUTOMATICALLY~~
~~EXCEPT WHERE SHOWN OTHERWISE~~
~~EXEMPT FROM DOD-DIR 5200.10~~

WDTR

J S Coolbaugh

~~CONFIDENTIAL~~ 53-270
1983

MDTR

DEC 28 1956

MEMORANDUM FOR RECORD

SUBJECT: Telephone Conversation with Mr. J. H. Carter - Lockheed MSD

280

1. On 21 December 1956, I called Mr. Carter, Chief of the WS 117L Project at MSC/LAC, to discuss certain problems concerning the program:

a. I told him that we had been advised by Mr. Carl Hagemmaier of MSD as well as by Dr. Fishman that in response to the WDD/DHO request to MSD for a definitive work statement proposal for the present contract 97, Lockheed was in fact planning only to submit what might be considered an Errata Sheet to publication MSD 2011 (The Lockheed Proposal Development Plan). I told Mr. Carter that in my opinion MSD 2011 was much too loose a document to be considered as the wording of a definitive contract between the Air Force and Lockheed on WS 117L. I cited the experience that we had had in the proposal for the Lockheed subcontract to Eastman Kodak in which MSD 2011 was used as the basis for the work statement of the letter of intent and told him that in my opinion that that part of MSD 2011 which was cited for this purpose was much too loose for use in a letter of intent. Mr. Carter complained that while we were pushing them to get out such things as definitive work statements that the fund situation really made much of this meaningless. I pointed out to him that depending upon the availability of funds a certain proportion of the definitive work statement could be actually costed out and made a part of the contractual agreement; and that we should know what the specifics of the over-all job were to the best of our knowledge at this time with a realization of course that this would be subject to revision as we got closer and closer to the actual hardware. I told Mr. Carter that we had laid on quite a program during the middle of January involving representatives from the AFDC Centers to work with us on finalizing the definitive work statement and that should Lockheed fail to submit anything that was useful, this would put the entire burden of doing the definitive work statement on the Air Force side without the benefit of the engineering knowledge that Lockheed should supply. Mr. Carter stated that he would look into this problem and advise me further.

b. I pointed out to Mr. Carter that a number of his people in their visits to us seemed to be quite inexperienced in how to go about their business. I did not want to mention specific names, inasmuch as this might be embarrassing for the individuals concerned. I gave him as an example, the man who came to us for some things that he could have easily gotten from either the AFPP/LAC or the San Francisco Air Procurement District.

c. I recalled to Mr. Carter that he and I as well as Mr. Doerson and I had discussed the need that LAC felt they had to confer with Comair on certain specific matters. I pointed out to him, that

in order to get such visits approved, I would have to have these specific requests from Lockheed for the visits that they desired and that I had not received any in spite of our discussions. He said that he would look into this matter and advise me further.

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d. In regard to a request from R-W that they get together with MSD individuals on a matter of common concern regarding WS 117L, I pointed out to him that I was not the master of ceremonies in this regard but merely trying to act as a catalyst. I explained that the WS 117L Project Office (WDTR) had been scrupulous in their dealings with R-W in terms of the letter agreements between the two organizations and one important reason for us handling our relations with R-W in this fashion was to insure that if R-W had competence in certain areas their competence was not denied our program by virtue of contractual relationships relevant to other subjects between R-W and the Air Force. I gave him the name of the individual in R-W who was preparing for the meeting and suggested that they deal directly on this matter. I told him that representatives of the Project Office would attend.

2. I was later advised on 21 December by Mr. Carter that (ref. par. 1 a, above) they were going to produce a valid definitive work statement recommendation per our discussion.

SIGNED

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

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128

DEC 28 1956

WDTR

SUBJECT: Distribution of Pied Piper Reports

TO: Chief
Aircraft Reactors Branch
ATTN: Major G. M. Anderson
Division of Reactor Development
Atomic Energy Commission
Atomic Building
Washington 25, D. C.

1. Request your office review the existing distribution of Pied Piper Progress Reports as listed in inclosures 1 and 2, so that agreement may be reached jointly with this office on an approved list. The inclosures were submitted by the Wright Air Development Center.

2. The reports concerned involve the following Contracts:

a. AEC Contract No. AT(04-3)-98 with Lockheed Aircraft Corporation for development of a nuclear reactor heat source.

b. AF Contract No. AF 33(616)-3441 with Lockheed Aircraft Corporation, and involving Thompson Products Incorporated as subcontractor for development of conversion equipment associated with the Lockheed reactor.

c. AEC Contract No. AT(11-1)GEN-8, Supplement 19, with North American Aviation Incorporated for development of a nuclear reactor heat source.

d. AF Contract No. AF 33(616)-3442 with North American Aviation Incorporated, and involving Allresearch, a Division of the Garrett Corporation, as subcontractor for development of conversion equipment associated with the North American reactor.

3. Progress reports on Contracts specified in paragraph 2a and 2b, above, are currently issued by Lockheed under a single cover. This is expedient only if the same distribution is made for both phases of the work. Agreement on a single distribution list would, therefore, appear to be desirable.

EXCLUDED FROM AUTOMATIC
REGRADEING: LOD DIR 5200.10
DOES NOT APPLY

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4. In view of the sensitivity of information concerning WS 117L and the difficulty of excluding from subsystem reports direct or indirect references to the entire system, it is felt that distribution must be very strictly limited. Your comments are requested concerning the necessity for distribution to the Schenectady Operations Office and to the Los Alamos Scientific Laboratory.

WDSI

5. No record exists at this office of a request or need for distribution to the Rome Air Development Center or to the National Advisory Committee for Aeronautics, which appear on the inclosed listings. Any explanation which you may have for inclusion of these addresses on the distribution list is also requested.

FOR THE COMMANDER:

SIGNED

FREDERIC G. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

- 2 Incl
1-Distribution List
for Atomic International
Pied Piper Reports, 2 pgs, 1 cy (U)
2-Distribution List
for Lockheed Aircraft
Corp Pied Piper
Reports, 2 pgs, 1 cy (U)

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~~RESTRICTED DATA~~

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G E Austin

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
DIRECTORATE OF REQUIREMENTS

GOR NO. 80-4
DATE SEP 26 1958

(S) AN ADDENDUM TO A
GOR FOR
A RECONNAISSANCE SATELLITE WEAPON SYSTEM

* * * * *

VII. OPERATIONAL PERFORMANCE.

* * * * *

M. Mapping and Charting Sub-System

1. General

a. The photo mapping and charting sub-system must provide cartographic agencies with photo mapping coverage of the land mass areas of the world including those areas which are not presently accessible either for political or other reasons. The end product of this sub-system must result in maps and charts (or substitutes) of geodetic accuracy.

b. Photography produced by this sub-system must be of high quality with sufficient data recorded on the negative to facilitate reduction to usable form by cartographic agencies. The developing agency should consider the feasibility of utilizing a recoverable sub-system or at least the film cassette if necessary, to provide the required quality of photography.

2. Operational Characteristics

a. Complete coverage of all land mass areas throughout the world is required. Coverage of non-strategic areas of the world is required primarily for use as an aid in affecting geodetic ties.

b. A capability to command the sub-system is required.

c. Accuracy requirements: Identifiable points or objects on the photography must be located to within \pm 1000 feet of their true location in relation to the world geodetic grid.

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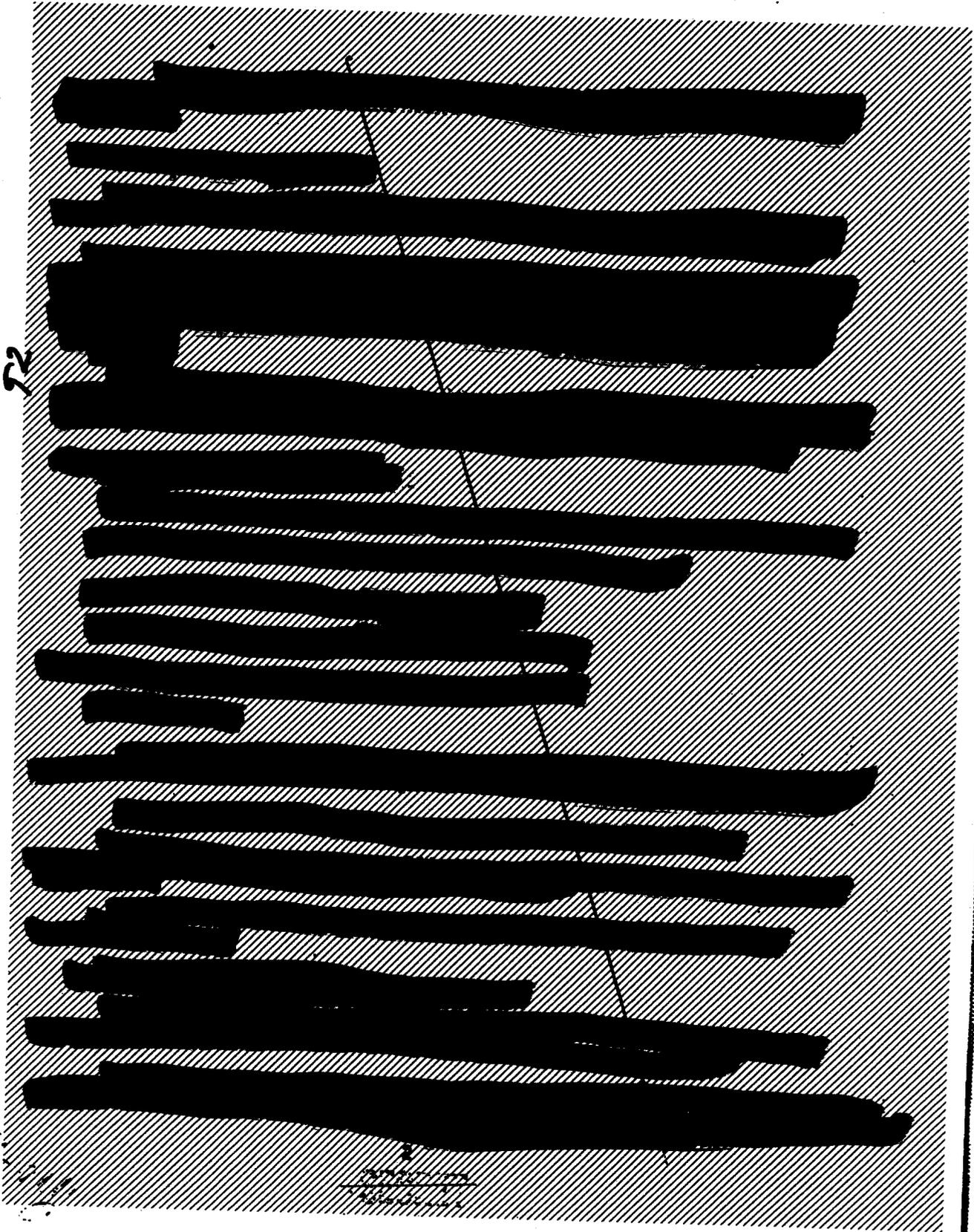
SS: 7307

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INTERVALS; NOT AUTOMATICALLY
DECLASSIFIED

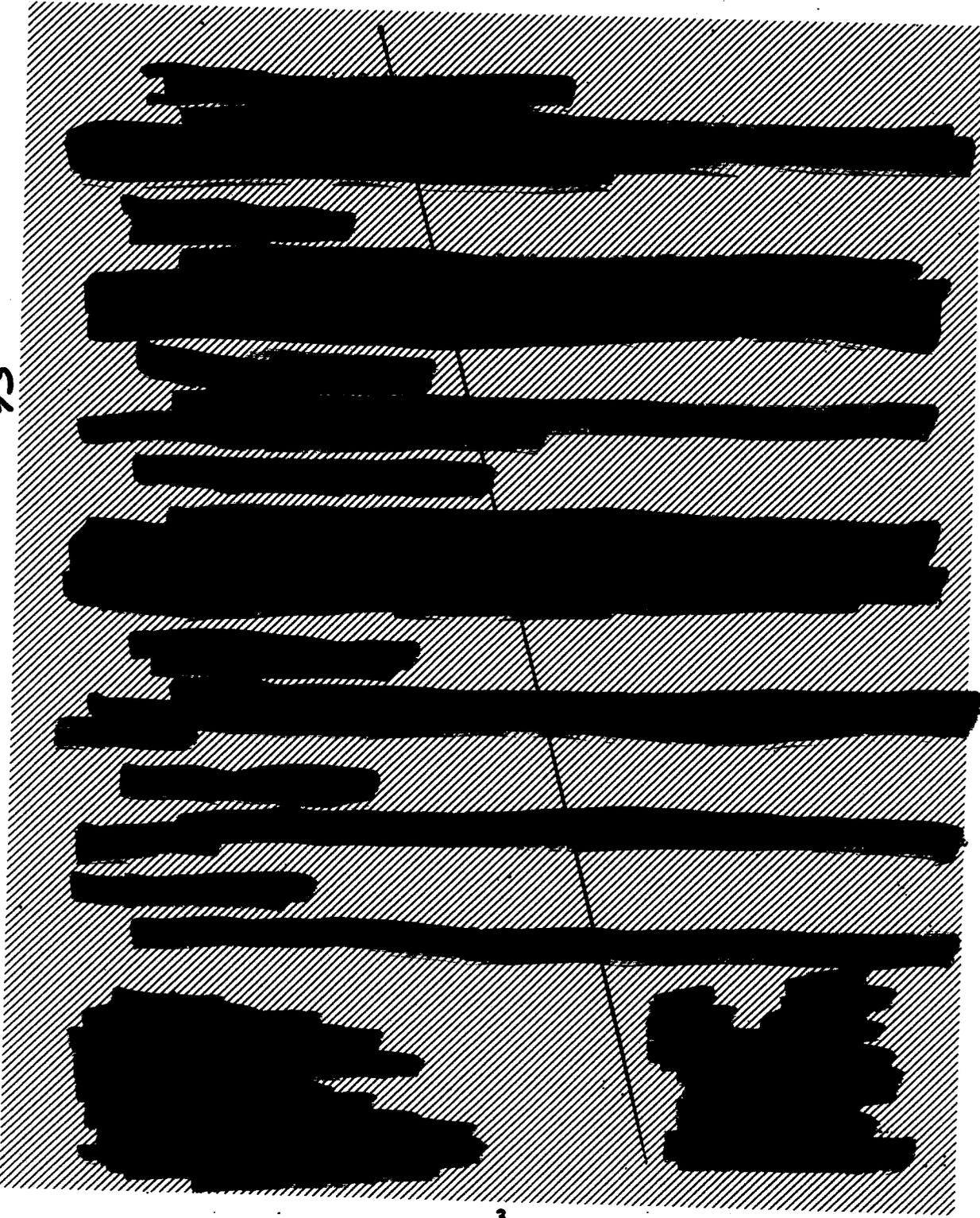
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NO DISSEMINATION

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56

WDTD

1 August 1955

MEMORANDUM FOR: RASO-WOODBRIDGE
ATTN: DR. HETTLER

SUBJECT: (2) Program Data for the Advanced Reconnaissance System

1. Attached hereto is a copy of a letter from Wright Air Development Center requesting information and assistance in the WADC Advanced Reconnaissance System Design Study Program.

2. During the week of 22 August a two-day briefing of the WADC people and their contractors will be conducted here at WDD. It is requested that R-W prepare a presentation on the information requested in paragraph 2a of the attached letter.

3. Colonel Horton will be Project Officer on this for WDD and will make the necessary arrangements for the room, etc., and will advise you as to specific time for this presentation. Please contact him for any further information.

1 Incl
Cy WADC ltr
std 22 Jul 55
(1D-55-12067)

CHARLES H. FERREONE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

cc: Col Glasser, WDTB

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DOD DIR 5200.10

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WDTD-55-10.1

~~CONFIDENTIAL~~

57

WDG

22 August 1955

MEMORANDUM FOR: Colonel Terhune

SUBJECT: Scientific Satellite

1. We can anticipate receiving a directive to undertake the development of a scientific satellite along the lines recommended as Phase II by the Stewart Committee.

2. In accordance with our previous discussions on this matter the scientific satellite should become an integrated part of the Convair program. Ramo-Wooldridge will fill the same role as for the ICBM - namely, have systems engineering responsibility in technical direction. However, it is anticipated that instrumentation and other scientific aspects of the orbital object can be delegated in toto to WADC or Cambridge.

3. The following actions are required:

a. Preparation of a detailed development plan.

b. Organizational readjustment within WDT and R-W to accommodate this program.

I would like to review a first cut at a and b on 2 September.

*7 copies made
Orig - Col. Terhune
1 copy - Gen. Schriever's file*

B. A. SCHRIEVER
Brigadier General, USAF
Commander

cc: Colonel Morris
Dr. Ramo
Lt Colonel Hudson

*Green - Reading file
Yellow - Official file*

WDG
Gen. Schriever X-219

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Convair
ALS 58

WDGH

30 August 1955

Convair Presentation, 29 August 1955

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Representatives from Convair, headed by Mr. Jim Dempsey, gave a presentation to WDD and R-W personnel on a proposed orbital research and test vehicle (ORTV). Their interest in this came about when they were solicited by WADC last year to make proposals for a Satellite program. When this proposal was cancelled, Convair continued on its own to study the problem. Two solutions were offered by Convair both envisioning a "4" series XSM-65 as a booster. In one version a non-powered Satellite, spherical in shape, 40" in diameter with a weight of 500 pounds including instrumentation could be boosted up into space where it would rotate as a Satellite for from 90 to 130 days. Convair proposed that within this weight, of which batteries were the largest part, research programs including cosmic radiation, micrometeorite information, biological research, through the use of television cameras could be obtained. There appeared to be no question that Convair favored the unpowered version as the simplest approach.

Convair also indicated study of a power^{ed} version of the ORTV based upon the XSM-65 series "C" as a booster and a weight of 3500 pounds total for the LHX-hydrocarbon. ^{with} Pay load would be about 1500 pounds including attitude control and the shape might be spherical or otherwise. This powered version might also be used as a lunar research vehicle.

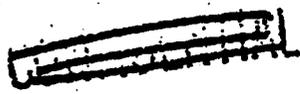
Considering the time limitations the Convair study appeared to be very thorough. They believe that such a system would work and the non-power^{ed} version at least could be gotten into operation very quickly

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DOWNLOADED AT 3 WEEK INTERVALS:
DEC 1955

Convair Presentation (continued)
30 Aug 55, page 2

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after series "6" check-out flights were performed. Convair was very proud of the fact that they spent their own money on this. For full technical details, see the reports which they left. These reports were given to Colonel Norton, WDTD.

A. Schifella Jr.



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~~CONFIDENTIAL~~

59

9 September 1955

MEMORANDUM FOR THE RECORD

SUBJECT: Telephone Conversation with Colonel Genes

1. This date Lt Colonel Genes of EDZFI, who is monitoring the Air Force responsibility for scientific satellite activities at the present time, called Lt Colonel Oder in regard to the receipt by Hq ARDC of a directive regarding the Phase 2 Satellite which was signed by General Thatcher, Hq USAF, on 31 August. A copy of this directive has been furnished to General Schriever.

2. General Boyd has been briefed by Colonel Genes on the status of the scientific satellite program and its relationship to the advanced reconnaissance system and to the ICAN program. General Boyd furnished certain guidance on the management on this matter as follows:

a. He would like to see Holloman Air Development Center participate as much as possible in regard to the utilization of technical manpower. Colonel Genes felt that General Boyd meant that this was to apply only to the satellite part of the over-all missile configuration.

b. General Boyd stated that WDD should be affected to the minimum possible extent. WDD should make available their part of the over-all configuration, and have operation control over scheduling of tests and firings where any part of the WDD production is involved.

c. General Boyd basically concurred in the fundamental relations between the Phase 2 scientific satellite and the advanced reconnaissance system.

3. ARDC is calling a meeting consisting of representatives from WDD, WADC, AFRC and HADC during the week of 19 September with the following aims:

a. The group should come up with a firm statement of requirements for resources for the Phase 2 scientific satellite for transmission to Hq USAF (the basic directive did not provide for any specific resources, but requested Hq ARDC to provide an estimate of the cost of the program.)

b. To come up with a management plan for defining the responsibilities and inter-relations of WDD, the advanced reconnaissance system, WADC and any others involved.

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DOD DIR 5200.10

~~CONFIDENTIAL~~

Interaction T/L R/L

~~CONFIDENTIAL~~

Memo for Record, 9 Sep 55

4. Colonel Genes expressed the hope that the following schedule would be met:

a. By 30 September a paper (agreed upon by all parties) to be sent to Hq USAF regarding the resources needed for the program.

b. As soon as possible (by the end of October) a development plan to go to Hq USAF.

5. Colonel Genes felt that WDD should be represented by a person or persons who could speak for the management aspects of WDD responsibility as well as the technical aspects of the problem.

6. The basic question at this time is, "Is the date of 19 September good for WDD to furnish representatives, and will WADC at Dayton, Ohio be a convenient place to meet?"

7. I advised General Schriever of this conversation with Colonel Genes. He approved the date of 19 September and the meeting place of WADC, and stated that WDD representatives will be chosen subsequently.

8. I will advise Colonel Genes of General Schriever's reaction to this matter. Colonel Genes will relay the whole matter officially to WDD by TEX.

SIGNED

FREDERIC C. ODER
Lt Colonel, USAF
Office of Assistant to Commander
Headquarters ARDC

Copies made:
Original & 1
Official File Cy (WDD)
Green Reading File Cy (WDD)
Copy for Colonel Oder

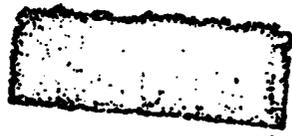
Colonel Oder

J Wehr
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~~CONFIDENTIAL~~



COMDR WDD INGLEWOOD CALIF

192300Z SEP 55

PRIORITY

COMDR ARDC BALTIMORE MD

X

WDG-9-4-E... PERSONAL FOR GENERAL POWER PD ON 16 SEP I RECEIVED A CALL FROM MR. DEMPSEY CMM CONVAIR THAT RCA IS VISITING THEIR PLANT FOR THE PURPOSE OF OBTAINING COMPLETE INFO ON THE ICBM PROGRAM AS IT RELATES TO USE OF SERIES "B" AND "C" VEHICLES FOR THE SCIENTIFIC SATELLITE AND THE ARS PROGRAMS. PD THIS VISIT WAS NOT COORDINATED WITH OR CLEARED BY THIS OFFICE PD DEMPSEY ALSO INFORMED ME THAT RCA HAD RECEIVED INSTRUCTIONS CONCERNING THEIR PARTICIPATION IN THE ARS PROGRAM WHICH INVOLVES THE USE OF ICBM TEST VEHICLES PD ALSO THAT AS A RESULT OF CONVAIR'S BRIEFING TO HQ ARDC THEY WERE REQUESTED TO SUBMIT A PROPOSAL FOR A SIX MONTH'S STUDY INVOLVING INTEGRATION OF ICBM TEST VEHICLES WITH THE ARS PROGRAM PD I AM CONCERNED OVER THE ADVERSE EFFECT WHICH THESE UNCOORDINATED ACTIONS CAN HAVE ON THE ICBM PROGRAM PD SIGNED SCHRIEVER

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1 1

General Schriever

B. A. SCHRIEVER, Brig. Gen. USAF
Commander

WDG

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Contractor = Convair

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COMDR WDD INGLEWOOD CALIF

192330 SEP 55



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PRIORITY

COMDR ARDC BALTIMORE MD
ATTN: GEN SESSURS

ASST DEPUTY COMDR, WEAPON SYSTEMS
HQ ARDC WPAFB OHIO
ATTN: RDZ-1 SSG

RDZPI-9-7-E

SECRET

WDTD-9-19-E ATTN GEN SESSURS PD REURMSG RDZPI-9-7-E CMM BELIEVE GROUP SHOULD CONC
ITSELF ONLY WITH THE ESTABLISHMENT OF A DEVELOPMENT PLAN PD UNTIL SUCH A STUDY IS
COMPLETED NO INTELLIGENT DECISION WITH RESPECT TO THE MANAGEMENT OF A SATELLITE
PROGRAM CAN BE MADE PD BASED ON THIS STUDY A PLAN SHOULD BE PRESENTED TO HQ ARDC
AND MANAGEMENT DECISION BE MADE AT THAT LEVEL PD OF SPECIFIC INTEREST AND SERIOUS
CONCERN OF WDD IS THAT SATELLITE DEVELOPMENT PLAN AND MANAGEMENT APPROACH SHOULD
MEET THE CRITERIA OF MINIMUM INTERFERENCE WITH THE ICBM PD SIGNED SCHRIEVER

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1 1

*Official file copy
to WDTD (Col Norton)*

HAROLD W. NORTON, Col, USAF

B. A. SCHRIEVER, Brig. Gen. USAF
Commander

WDTD

219

1117A-55-8

SECRET

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WTD

22 September 1955

MEMORANDUM FOR THE RECORD

~~CONFIDENTIAL~~

SUBJECT: Attendance at ARS Conference, Wright-Patterson Air Force Base

1. In compliance with a request from Hq ARDC, the undersigned attended a conference on the subject of Scientific Satellites and Advanced Reconnaissance Systems at Wright-Patterson AFB on 19, 20 September. Representatives of the following organizations were present: RADC, AFRC, IADC, WADC, Hq ARDC, and office of Assistant Deputy Commander/Weapon Systems. Lt Colonel Genes from General Boyd's office was in charge of the meeting. Colonel William H. Bynes represented the Weapon Systems office, Wright-Patterson Air Force Base.

2. The first day was spent primarily in a discussion of a technical approach to the problem. Holloman made a rather detailed presentation on how they would go about building a satellite nose cone. In the afternoon of the first day the meeting was divided into two parts: (a) those to consider costs, and (b) those to consider management. I attended the meeting of those to consider management.

3. Colonel Genes proposed three different methods by which a satellite system could be managed. They are as follows:

a. WDD be responsible for everything except the payload and tracking, this to be a responsibility of AFRC, but that AFRC would operate under direction of WDD.

b. That the Weapon Systems office, WPAFB, be responsible for systems management with WDD being responsible for providing ICBM vehicles and having "operational control" over flight test. Holloman, under this system, would be responsible for supervising the design and fabrication of the nose cone and AFRC for the instrumentation and tracking.

c. Same as b, above, except that Holloman would be in charge of systems management with WDD and AFRC supporting.

In all of these the primary purpose would be the scientific satellite but ARS requirements would be considered in the scientific satellite. At my suggestion, a fourth proposition was considered; namely, the same as a, above, except that no consideration would be given to the ARS requirements at this time. I had no real purpose in suggesting this except that I thought it was necessary in order to complete the entire study.

4. At Colonel Genes's suggestion, these four propositions were examined on the following considerations:

a. Meet IGY requirements

b. ICBM interference

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WTD-55-17

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H/R, Subj: Attendance at ARS Conference, WPAFB, dtd 22 Sep 55 (Cont'd)

- c. Additional manpower required
- d. Additional facilities required
- e. Simplicity and speed
- f. Satisfy USAF guidance (letter dated 31 Aug 55 signed by General Thatcher)
- g. Cost
- h. Satisfy ARS needs
- i. Satisfy General Boyd (that ARS and IGY satellite be combined as an integrated system).

The group attempted to evaluate each of the proposals on these items. At the completion of the evaluation, Colonel Genz requested comments from the individual representatives as to which system they recommended. Colonel Barnes spoke up quickly saying that since WDD management was obviously the simplest and easiest, he thought the chances of success were far greater under WDD. I made no comments; I restricted my statements solely to those of a technical nature or in discussions of specific items. I should like to emphasize that at no time did I suggest or imply that responsibility should be with WDD. The only other comment came from Holloman; in their opinion they thought that Holloman should do the job. The meeting adjourned with general agreement that as far as this group is concerned, we had done as much as we were capable of doing and that any decisions were the prerogative of General Power and whenever he wished to consult.

5. Since it is very clear that there can be no satellite, either scientific or otherwise, in the foreseeable future, except as a result of the IGM program, it is strongly recommended that this should become a systems responsibility of WDD.

SIGNED

HAROLD W. BURTON
Colonel, USAF
Assistant Deputy Commander
Technical Operations

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SECURITY CLASSIFICATION (If any)

DISPOSITION FORM

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FILE NO.	SUBJECT Weekly Diary Items
TO Western Development Division ATTN: WDGE	FROM RDGB
DATE 26 Sep 55 Lt Col Oder/id/211	COMMENT NO. 1

19 September 1955

Attended, together with Colonel Norton, as WDD representatives, a meeting called by Headquarters ARDC at WADC on the USAF Scientific Satellite Program. Together with Colonel Norton, I furnished information to the conference commensurate with General Schriever's instructions to Colonel Norton on this subject. (Secret)

20 September 1955

By agreement with Mr. Zeller, RDISI, assigned action to RDISI for letter from AFGCM, "Report of Special Security Survey." (Unclassified)

Arranged with Major Jensen, RDQPP, for release of a copy of FSFO-65-1 to WDD for retention. Also discussed with Lt Colonel Ernst of RDGPL this same item and the furnishing of certain other documents listed in AFM 27-1 to WDD. In view of the limited number of these documents in this headquarters and their limited relevance in WS-107A, it is anticipated that RDGPL will arrange to loan documents to WDD for a limited period. (Unclassified)

21 September 1955

Attended briefings of General Power and members of Headquarters ARDC staff by WDD members on the selection of second source airframe contractor and on the TEM. Assisted in staff work in forwarding results of second source airframe contractor selection board, as approved by General Power and General Schriever to Headquarters USAF for approval. (Unclassified)

22 September 1955

Together with Lt Colonels Pellegrini and Genes of RDZPI briefed General Sessums on the background of subjects covered in TWX's WDG-9-4-E and priority TWX 192330Z. General Sessums reaffirmed the position that no interference with WS-107A by either program concerned under RDZPI cognizance (ARS or the Scientific Satellite) could be continued. RDZPI prepared replies to the two TWX's and coordinated these with RDGB. (Secret)

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DF, Subject: Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: RDGB DATE: 26 Sep 55 COMMENT NO. 1
(CONT'D)

Prepared essentially a forwarding indorsement to WDD for General Power's signature on letter from DCS/D, Subject: "(Secret) Policy Concerning Air Force Support of British TEM Development" and coordinated same with appropriate staff elements. (Secret)

23 September 1955

Discussed with General Schriever his policy concerning WDD participation or involvement in other programs, such as TEM and scientific satellite. Discussed also the organizational position of the ARDC liaison office. General Schriever decided to leave the office where it is organizationally but we will render full informational support to General Ostrander in his new job as Assistant for Guided Missiles to the Deputy Commander/Weapon Systems.

Frederic C. E. Oder

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant Chief
Office of the Assistant to the Commander

This correspondence is classified.
SECRET IAW par 23, AFR 205-1.

~~CONFIDENTIAL~~

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WD 55 12517

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20 Sep 55
Lt Col C E Hughes/1e/697

OCT 3 1955

WDTSP

MEMORANDUM FOR COLONEL TERPINE

SUBJECT: Additional Tasks Assigned to the Ramo-Wooldridge Corporation.

1. The purpose of this memorandum is to reiterate those additional tasks which from time to time have been assigned the Ramo-Wooldridge Corporation and which were not specifically contemplated under the current contract as written or as modified by supplemental agreements. The tasks I refer to are:

a. Studies for the Air Force in connection with the problem of insuring that the ICRM will not be susceptible to the countermeasures that might be employed by the potential enemy. This task is in addition to the anti-countermeasures provisions normally incorporated in a weapon system as a result of anticipating the potential enemy's countermeasure capability.

b. Studies conducted for the Air Force in connection with possible satellite responsibilities of the Western Development Division.

c. Efforts in connection with the Intermediate Range Ballistic Missile Program, including internal studies, reviews of contractor proposals, participation on evaluation groups, etc. Those efforts which are a direct result of Ramo-Wooldridge activities in support of the ICRM Program, although related to the Intermediate Range Ballistic Missile problem, are not considered to constitute new work under the contract.

2. It is requested that you advise the Chief, Special Aircraft Project Office, AMO, of these additional tasks and the nature thereof in order that he may enter negotiations with the Ramo-Wooldridge Corporation for appropriate contractual coverage.

SIGNED

B. A. SCHRIEVER
Brigadier General, USAF
Commander

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DOD DIR 5200.10

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WDTSP

OCT 7 - 1955

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MEMORANDUM FOR COLONEL TERHUNE

SUBJECT: Status of Action Taken to Fund the R-W Contract Over-run.

settled

1. R-W CLAIM

The R-W Corporation has requested that \$1,000,000 (applied to their contract in Sep) not be considered over-run on their original estimates for the contract period ending 31 October. Instead, they claim these costs were incurred as a result of; (1) new work assigned over and above that originally required and, (2) more accomplishment than that originally contemplated. Accordingly, R-W claims a fee is justified. Their claim is based on the following:

- b. Satellite studies (new work) - \$ 96,900
- a. ~~Anticounter measure studies~~
(new work) - \$ 89,700
- c. IRBM - Including "Fall out"
(new work) - \$ 286,300
- d. Operational Base studies
(new work) - \$ 138,700
- e. 107A Acceleration (more than
contemplated)- \$ 367,100
- TOTAL - \$ 978,700

2. SCHRIEVER MEMO TO TERHUNE

General Schriever requests that AMC provide contractual coverage (pay fee) as follows:

- a. Anticounter measure studies (only on work not directly resulting from ICBM effort).
- b. Satellite studies (all new work).
- c. IRBM studies (only on work not directly resulting from ICBM effort).

3. TERHUNE OPINION

Discussions with Joe Frost re R-W claim indicate a Terhune opinion as follows:

Limit of August

WDTSP, SUBJECT: Status of Action Taken to Fund the R-W Contract Over-run.

a. Anticounter measure studies - Twenty-five percent (25%) of the work performed by R-W should be considered new work and above the normal expected under a system-development program. Therefore, Seventy-five percent (75%) X 89,700	\$ 22,425
b. Satellite studies - All new work.	\$ 96,900
c. IRBM studies - New work only where not a direct result of ICBM studies (based on Ramo statement that program dilution by IBM not more than 3 man-months?). R-W estimates sixty percent (60%) of IRBM effort was not "Fall out". Therefore 60% X 286,300. . .	\$ 171,780
d. Operational base studies - not new work	0
e. Acceleration of 107A - not new work	0
	<hr/>
	TOTAL \$ 291,105

4. PROBLEM

Will fee payment on costs amounting to \$291,105 satisfy the intent of General Schriever's memo and thinking as expressed to you?


C. E. HUGHES
Lt. Colonel, USAF
Chief, Programs and Procedures Group

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WDTD

7 October 1955

MEMORANDUM FOR: General Schriever

SUBJECT: Satellites

1. This is a brief resume of activities in WDD on this subject this year. In January Lt Colonel Genes briefed the Advisory Committee on the Advanced Reconnaissance System. As a result of this, R-W was asked to investigate possibilities of using the ICBM as a satellite booster. A low order effort was put on this problem within R-W which resulted in Dr. Fried's report.
2. On 25 May a teletype was received from ARDC, attached as Tab A. This tab should be read in its entirety. To the best of my knowledge, no coordination was made with WDD prior to HADC's presentation at Baltimore on 5 May. As a result of this teletype, we received several requests for ICBM information from HADC. All of this information was supplied. In addition, the undersigned attended an information exchange meeting at HADC in the latter part of May.
3. On 24 June we were notified that we would participate in a presentation to be given to a DOD committee on the subject of satellites (Tab B). On 24 June some members of the Stewart Committee were briefed by Colonel Terhune at WDD on the subject of using the ICBM in connection with the satellite. Dr. Fried's report was the basis for this presentation.
4. On 5 July there was a meeting at ARDC attended by the undersigned and Dr. Fried which put together an Air Force briefing for the Stewart Committee. A dry run of this briefing was given to General Putt on 7 July and presented to the Stewart Committee on 7 July.
5. On 12 August a meeting was held at WDD attended by Mr. Gardner and others in which an Air Force position was established as a result of the Stewart Committee report. As a result of the Stewart report, the IGY Satellite was assigned to the Navy (the Martin Viking to be an integral part).
6. In a letter dated 17 June, General Demlar established a need-to-know for the ARS office at Wright Field in regard to the ICBM data. As a result of this, a briefing was requested on the ICBM program by Wright Field for contractors who are engaged in a study of an ARS (Lockheed, Martin, RCA). A full day's briefing was held at WDD on 23 August on the basic fundamentals of the ICBM program.

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Memo for General Schriever, Subj: Satellites, dtd 7 Oct 55

7. In a letter dated 6 September 1955 (Tab C), the Directorate of Systems Management at Wright Patterson stated their requirements for information on the ICBM program to be used by the ARS contractors. Of particular interest is a letter from Bell Aircraft (subcontractor to RCA) attached to this ARS letter, which indicates a tremendous amount of information which at least one of the ARS contractors feels he should know.

8. Early in September, RCA paid a visit to Convair seeking information on the ICBM for use in an ARS study. Tab D is an explanation of this visit from ARDC. You will note that this explanation indicates that the ARS contractors have been requested to submit a test program by 1 November which uses ICBM vehicle performance as a basis for this program.

9. At the request of Colonel Genex, a meeting was held at Wright Field 19 September to discuss management of an ARS-IGY program (Tab E). The meeting was attended by the undersigned and a trip report is attached as Tab F.

10. On 5 October the local Martin representative requested information on the Convair ICBM which he stated would be necessary for use in Martin's ARS studies.

11. Convair has made a pitch to WDD, Wright Field, Baltimore, and the Pentagon on both a powered and unpowered IGY Satellite. To date, nothing specific has come of this except that Convair (Mr. Dempsey) indicates they have been requested to submit a proposal for a six months' study on this subject.

12. In summation, there has been considerable heat generated by Baltimore, Holloman, and Wright Field on the subject of the IGY and ARS Satellite. Since neither of these projects can proceed in the next several years without utilization of the ICBM, all of these offices have been looking to WDD for information, promises of vehicles, etc. The undersigned has attempted to meet these information requirements and it is believed that we have done so with the exception of detailed information to the ARS study contractors. For the most part, the net result of all of the heat has been the placing of WDD in the unenviable position of not being able to satisfy these agencies with answers they want to hear on either design information or vehicle availability; in particular, it has made us appear uncooperative in the eyes of HADC.

SIGNED

EAROLD W. NORTON
Colonel, USAF
Assistant Deputy Commander
Technical Operations

6 Incls

1. TWX (WD-55-11430) Tab A
2. TWX (WD-55-11743) Tab B
3. Ltr (WD-55-12363) Tab C
4. TWX (WD-55-12484) Tab D
5. TWX (WD-55-12390) Tab E
6. M/R (WD-55-17) Tab F

WD-55-20

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CLASSIFICATION (If any)

DISPOSITION FORM

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FILE NO.	SUBJECT
	RDGB Weekly Diary Items

TO Western Development Division ATTN: WDGE	FROM RDGB	DATE 10 October 1955 L/C Oder/1d/211	COMMENT NO. 1
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3 October 1955

1. Discussion with Colonel Miller, RDSI, regarding TWX, WDTF-9-28-S-E to Headquarters USAF, information to Headquarters ARDC. He was unhappy that the TWX went to AFCIE and said that the item for an extension of the rocket sled track at HADC was contrary to General Power's policy. I pointed out that the TWX went to AFCIE because of a previous AFCIE request concerning an additional ten million in FY 56 P-321 money. After I checked with Lt Colonel Swanke, I reassured Colonel Miller that he "was not being cut out of the pattern" and there apparently was some controversy over just what General Power's position on HADC facilities actually was inasmuch as he had indicated approval of the recommendations of the Board of General Officers chaired by General Yates. (Confidential)

2. Coordinated with RDSI on the preparation of a concurring 1st indorsement to a basic letter from Headquarters AEC requesting approximately 1.7 million for Convair and Edwards facilities. (Confidential)

3. In a discussion with General Sessums was advised that Mr. Gardner was scheduling a meeting for 11 October 1955 concerning ATLAS, subject and time unknown. He asked me to check and advise General Power. (Unclassified)

4. Checked with Lt Colonel Ahola regarding 3 above and was told that meeting would be at 1000 hours, 11 October 1955, in the Secretary of Defense Conference Room and would have present by invitation present and potential ATLAS contractors and major subcontractors. The meeting to be chaired by Secretary Wilson would be to impress the attendees with the fact that ATLAS has highest priority per Presidential directive. Mr. Gardner has advised General Schriever. (Secret)

5. Wrote a memorandum to General Power advising him of 4 above. (Unclassified)

4 October 1955

1. Wrote a DF to WDSI regarding what appears to be a security breach in connection with a 1 October 1955 Associated Press dispatch. (Confidential)

2. Received TWX from Headquarters USAF regarding approval of Glenn L. Martin Company as second airframe contractor for WS-107A and prepared TWX to WDD directing immediate implementation and quoting Headquarters USAF TWX. Coordinated TWX with Generals Ostrander and Demler and got same signed off by General Sessums in General Power's absence. Advised Colonel Norton that the TWX (RDGB-10-1-E) was dispatched. (Secret)

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~~CONFIDENTIAL~~

DF, SUBJECT: EDGB Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: EDGB DATE: 10 Oct 55 COMMENT NO. 1 (CONT'D)

3. Reviewed the Top Secret documents in EDGB. There are a number which could possibly be downgraded. Plan to discuss these with General Schriever the next time he is in Baltimore.

5 October 1955

1. Attended a presentation to General Power by General Davis, HADC, regarding implementation of the Board of General Officers (headed by General Yates) recommendations regarding establishment of a "space center" by ARDC. Also present were Generals Ostrander and Landon and Colonel Miller (RDSI). General Power expressed concern whether the Board had taken a long enough view into the future needs of such an installation, the proximity of Alamogordo to HADC and the limits that the town would place on a future establishment. General Power directed General Ostrander to prepare instructions to reconvene the Board and give the problem of the geographical needs of the proposed installation further consideration. ~~(Secret)~~

2. General Power said that he had discussed with General Boyd that morning the issue of management of the Air Force Scientific Satellite program and asked me to get together with General Boyd in asking General Schriever to come in next Monday (10 October) to get the matter settled. ~~(Secret)~~

3. General Power said that he had been discussing with Dr. Kelly the ARDC (WDD) request to Bell Telephone Laboratories for their participation, that Kelly said there was some confusion in that General Power's letter of 28 July and the views of WDD representatives did not seem to agree, that he had suggested to Kelly that he write a letter for the record as to what BTL understood it was being asked to do. I passed this information on to Colonel Terhune who stated that Colonel Blasingame was in New York today on this subject and he said he would call Kelly's position to his attention with a view to obviating the need for a letter such as Kelly was to write. (Unclassified)

4. Discussed with Lt Colonel Jacobson, WDTT, and Major Harkins, RDSTTG, certain aspects of WDD requirements at AFMTC. (Unclassified)

5. Received a telephone call from Mr. George Grimminger, AFDRD, who wanted information on gravity studies being performed by WDD. I could not answer his question and suggested that any queries he have be handled through Lt Colonel Ahola. (Unclassified)

6. Sent TWX to General Schriever regarding information received from Lt Colonel Genes, RDZPI, on Headquarters USAF views on relationships of Scientific Satellite and ARS programs. ~~(Secret)~~

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DF, SUBJECT: RDGB Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: RDGB DATE: 10 Oct 55 COMMENT NO. 1 (CONT'D)

6 October 1955

1. Received TWX, WDG-10-1-E, 4 October 1955, regarding WDD views on development of nuclear rockets. Brought TWX to the attention of RDGN who hadn't received a copy and determined from Captain Monday, RDGN, that the ANP Program Budget, line 14, presently contains a total of 5.3 million dollars for nuclear rockets and nuclear ramjets. Discussed TWX with General Ostrander, RDZG; Colonel Stefan, RDTD; and Colonel May, RDTDP, and decided to discuss the TWX with General Schriever on 10 October to determine specific action desired. General Power briefed on above per his request. (Secret)

2. General Power concerned about reasons for and/or propriety of TWX, WDS-9-1-E. After discussion with Colonel Terhune and Lt Colonel Hudson, WDD advised him that TWX was sent because WDD had informal information that Headquarters USAF was about to disapprove WDD request for G-131D and that neither WDD nor RDGB were aware of the fact that General Power personally interceding for WDD with Headquarters USAF. General Power accepted the explanation. It turns out that General Power had been asked to intercede by Colonel Ljunggren, RDZ, who had not so advised RDGB. (Unclassified)

3. Wrote DF to RDACT through RDG recommending downgrading of certain portions of Military Operations Order 1-54 (reference WDSIS-10-15-E). (Unclassified)

4. General Power advised me that:

a. At the request of Colonel Terhune, WDD, he had authorized sole source for contract with Bell Telephone Laboratories. He asked that WDD furnish to him justification for this requested sole source. (Unclassified)

b. Mr. Macauley, Acting ASD(R&D), has asked Army representatives to visit WDD "to learn how the project is managed". General Power does not know why the Army needs this information but has acquiesced to the visit. General Putt to send TWX on this. (Unclassified)

7 October 1955

1. Was visited by Captain W. L. Sandidge, AFDFR, SCEL, who wanted information on WS-107A tests at AFMTC this fall and winter for the Applied Physics Group at

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DF, SUBJECT: RDGB Weekly Diary Items

TO: WDD, ATTN: WDGE FROM: RDGB DATE: 10 Oct 55 COMMENT NO. 1 (CONT'D)

130
SCEL (Dr. McAfee) who want to test their new 75 MC radar (called "MOON") against flights from Patrick. The flights must go over 90 miles. I furnished general information to Captain Sandidge on the schedule and expected path of the RTV (X-17). (Secret)

2. Attended General Power's and General Landon's staff meetings. (Unclassified)

3. General Power advised that at the request of Mr. Quarles (because of publicity regarding Martin Company work on satellite and question of workload capability at GLM) relayed through General Putt that he had by telephone advised General Schriever to not sign a letter contract with GLM until approval was received from Headquarters USAF and that he had determined from WDD and so advised General Putt that this should be cleared up by 11 October 1955 at the latest. General Schriever to visit Headquarters USAF regarding this problem on morning of 10 October 1955. At General Power's direction, a TWX was sent to WDD making his verbal instructions a matter of record. (Secret)

4. Discussed procedure for WADC visits to WDD with Mr. Zeller, RDISI, after receiving a query regarding this subject from Mr. Yost, WADC. Mr. Zeller discussed with Lt Colonel Cofield, WDD, who will send TWX on desired procedure. (Unclassified)

Frederic C. E. Oder
FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant Chief
Office of the Assistant to the Commander

cc: Colonel Abola, AFDDC-A
Hq USAF, Wash., D. C.

This DF is classified SECRET
IAW par 23, AFR 205-1.

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

SR No. 5
17 October 1955

ARDC SYSTEM REQUIREMENT

*All ltr 7 Nov 55
re Gen Powers
division of
10 Oct 55*

1. DIRECTED ACTION

Submission, upon request, to Headquarters ARDC (Western Development Division) of information necessary for the preparation of a System Development Plan by the following participating centers is directed:

- ✓ a. Wright Air Development Center.
- ✓ b. Air Force Cambridge Research Center.
- c. Holloman Air Development Center.
- ✓ d. ~~Wright~~ Air Development Center.
- e. Arnold Engineering Development Center.
- f. Air Force Missile Test Center.
- g. Air Force Personnel and Training Research Center.

(UNCLASSIFIED)

2. GENERAL INFORMATION

- a. Title: (UNCLASSIFIED) Advanced Reconnaissance System.
- b. System No: 117L
- c. Responsible Agency: Headquarters ARDC (Western Development Division) is responsible for preparation of a System Development Plan based on the requirements contained herein in accordance with ARDCM 80-4, dated 1 July 1955.
- d. Target Dates:
 - (1) Submission of System Development Plan to Headquarters USAF: 1 April 1956.

This SR supersedes SR No. 5, dated 29 November 1954, title, "Advanced Reconnaissance System."

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SR No. 5

- (2) Operational time period of this system: Prior to 1965 through 1970 (See par 5a).

e. Participation, Coordination, or Interest:

- (1) Air Materiel Command - (F).
(2) Air Proving Ground Command - (P).
(3) Air Training Command - (P).
(4) Strategic Air Command - (C).
(5) Air Defense Command - (C).
(6) CNO, USN - (I).
(7) C/S, USA - (I). (8) CIA (I)

f. Funding Information: Funds for this program are carried for FY 1956 under BPSN 2-1115.

g. References

- (1) GOR No. 80 (SA-2c), dated 16 March 1955.
(2) DD Form 613, title, "Advanced Reconnaissance System", Project No. 1115, dated 19 April 1955, RCS: DD-R&D/A/119.

(SECRET)

3. REQUIREMENT

a. General Philosophy

In order to permit selection of the most effective approach to an Advanced Reconnaissance System concept which utilizes an earth satellite as a system platform, it is essential that the existing and projected state-of-the-art in this field be adequately surveyed, and a determination made through system design studies by selected contractors, of the technical and economical magnitude of full system development effort. From these studies there will be prepared a Development Plan which will be used as a basis for choice of the Advanced Reconnaissance System to be developed for the Air Force inventory. It has been generally accepted that, with the advent of the very high yield super weapon, strategic target intelligence requirements for efficient use of such a weapon have become far less detailed than heretofore; but at the same time, the requirement for routine surveillance of an enemy's territory becomes all the more necessary to

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anticipate and circumvent his effective use of the same caliber weapon. In concept at least, the technical approach to this type of Advanced Reconnaissance System leads one to the artificial earth-satellite which, with its inherent capability for routine, long duration flight and its apparent capabilities for the collection of reasonably detailed information from the surface of the earth, seems to make a satellite system attractive for strategic and national reconnaissance. ~~(SECRET)~~

b. Objectives of the Advanced Reconnaissance System

As a matter of general guidance, the following may be considered the intelligence objectives for the Advanced Reconnaissance System:

- (1) Continuous reconnaissance (visual, electronic, or other) coverage of the USSR and satellite nations, for surveillance purposes. Timeliness of receipt of the intelligence information is essential, with daily reconnaissance coverage at high resolution the ideal. In consideration of the requirement for earliest availability of the Advanced Reconnaissance System, the engineering progression and Air Force acceptance should be from the lesser to the greater resolution.
- (2) The resolvable surface dimension detail should be of the order of 100 feet or smaller. A capability of resolving detail to the degree that objects approximately 20 ft on the side can be positively identified is the optimum in order to positively identify enemy weapon launching sites and associated activity. If this objective can be met, the many other intelligence requirements of larger surface dimension would automatically be satisfied.
- (3) The volume of intelligence delivered by this Advanced Reconnaissance System will be staggering. Therefore, the system, in order to be considered complete, must include a suitable associated data handling, recording, reduction, and filing system. The earliest acceptable system must have provisions for automatic data indexing, filing and storage. Final objective will be for completely automatic data processing, interpretation, presentation, and dissemination. All data handling systems conceived for the Advanced Reconnaissance System will be compatible with data handling equipment in contemporary use within the intelligence community.

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- (4) The accuracy with which points on the earth's surface can be located by the Advanced Reconnaissance System should be studied. While grosser accuracies can be accepted as interim solutions, the finer accuracies should be considered as the optimum and the goal for ultimate complete development.
- (5) Thorough investigation of all possible means of improving the intelligence collection capability of the Advanced Reconnaissance System; such as the application of stereo techniques to the analysis and interpretation of television images.

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c. Mission

- (1) The primary operational mission of the Advanced Reconnaissance System will be to provide pioneer and surveillance reconnaissance coverage of the territories controlled by the USSR and its allies. The system must be capable of obtaining:
 - (a) Routine target, mapping, pioneer terrain, weather, and photo intelligence data.
 - (b) Bomb damage assessment of high yield weapon strikes.
- (2) An alternate and co-equal mission for the Advanced Reconnaissance System will be to provide and maintain continuous and comprehensive surveillance of the electronic activities of the USSR as a means of securing basic Soviet intentions, intelligence, and capabilities intelligence. The electronic reconnaissance (ferret) system should be capable of:
 - (a) Sensing, coding, recording and retransmitting all significant electronic emissions on both a qualitative and quantitative basis.
 - (b) The location of areas of high electronic densities compatible with the resolution capabilities obtainable.
- (3) Each mission carries a firm requirement for a suitable data handling and processing capability

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both in the vehicle and on the ground.

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d. Physical Characteristics

follows:

The Advanced Reconnaissance System can be described as

- (1) A launching base which will consist of all facilities and equipment necessary for the proper launching of the satellite vehicle.
- (2) A satellite vehicle which will consist of the following sub-systems:
 - (a) Propulsion stage or stages necessary to boost the reconnaissance payload to its orbital altitude and once at this altitude to impart the velocity required to establish the satellite on its orbit.
 - (b) Guidance and control equipment to (a) guide the vehicle from the launching base to its orbit and (b) establish and maintain the reconnaissance payload in the correct attitude after it has been placed on orbit.
 - (c) Reconnaissance equipment that provides useable pictorial reconnaissance information for transmission to a ground receiving station. The alternate mission will require sensing equipment that is capable of detecting electromagnetic radiations instead of physiographic features.
 - (d) Information storage equipment with a capability of routinely storing the information gathered by the satellite vehicle until it can be transmitted to a ground receiving station.
 - (e) Transmitter equipment for transmission of the collected reconnaissance information, transmission and reception of any other information that is required to properly operate the satellite and its equipment.
 - (f) Miscellaneous equipment required for the proper functioning of the satellite; e.g., a transponder beacon to aid in the tracking of the

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SR No. 5

satellite by a ground receiving station might conceivably be used.

- (g) An auxiliary power supply to provide sufficient power for all of the satellite's needs.
 - (h) Provision for self-destruction of the satellite vehicle upon termination of its operational usefulness.
- (3) The ground receiving station will consist of the following sub-systems:
- (a) Receiving equipment to (a) receive the transmitted reconnaissance information, (b) enable vehicle tracking, and (c) any other information transmitted from the satellite.
 - (b) Transmitter equipment to transmit any required information to the satellite.
 - (c) Information storage equipment that will retain the reconnaissance information transmitted from the satellite until it is fully used.
 - (d) Display equipment that will display the reconnaissance information as it is received and which can also be used for viewing stored information.
 - (e) Other equipment that is required for the handling, interpretation and dissemination of the reconnaissance data that is received.

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4. GUIDANCE

a. Three parallel system design studies on the "Advanced Reconnaissance System" are currently being conducted under Task No. 21010, Project No. 1115. The purpose of these studies is to determine whether a useful military intelligence system, utilizing an artificial earth satellite as a carrier, can be foreseen with sufficient definitude to indicate full development at this time. Maximum utilization of these design studies in preparing the System Development Plan is directed.

b. In the artificial satellite we see a platform which at the present time appears to be limited in its military usefulness to that of making observations or relaying communications. This is a vehicle system singularly applicable to use as a reconnaissance system.

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SR No. 5

The approach to the design of the overall system must be that of assuring a maximum military utility and reliability (since early models of the Advanced Reconnaissance System will undoubtedly be unmanned) of the reconnaissance sub-system; these factors will determine in turn the design objectives of the vehicle with its propulsion and guidance sub-systems.

c. One of the basic advantages of a satellite is its more-or-less unlimited duration of flight. If we were to try to take full advantage of this flight duration capability, it would be necessary to achieve flight equipment reliability far in excess of that which is possible today. There is a point at which a balance can be struck between efforts aimed at improving the reliability of flight components of the satellite, and the economy to be realized from the extended flight duration characteristics of a satellite. The system design studies directed herein should result in a suggested optimum system flight time, for which in-flight components should be designed.

d. In design of the Advanced Reconnaissance System, full advantage must be taken of those components, in existence or under development for other systems, which have application to a satellite-type vehicle system. Activity resulting from this directive must be fully coordinated, within ARDC, with related system developments to insure that no unwarranted duplication of study or design effort exists. Headquarters USAF will undertake necessary inter-service coordination.

e. The proposed test program for the Advanced Reconnaissance System should be oriented so as to maximize the usefulness of the test vehicles to the scientific community in general, as well as to satisfy environmental and engineering requirements of the Advanced Reconnaissance System. The System Development Plan should contain provisions for the fabrication and launching of "research laboratory models" of the satellite test vehicle, capable of obtaining and transmitting to earth valuable scientific data on the space environment and astronomical bodies. Such vehicles should be planned for launching early in the system test program, with the first "research laboratory model" launching prior to 1 January 1959, if possible.

f. In addition to the three system design studies referred to in 4a above, Project No. 1115 encompasses state-of-the-art study and experimental hardware development in the critical component areas of the Advanced Reconnaissance System. The current technical program involves thirteen separate tasks, carried out principally by contract. This program was established to provide state of art inputs to the system design studies; fullest exploitation of the Project 1115 technical program should be insured in this respect.

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5. OTHER INFORMATION

a. SECURITY

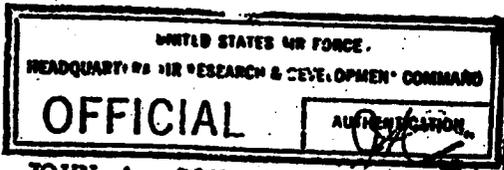
(Maintenance of proper security of this program is of paramount importance. A basic guide to security will be the following: all information which contains or implies a date of operational availability for the Advanced Reconnaissance System; as well as information pertaining to its progress as a Weapons System will be classified TOP SECRET.) Other aspects of the Advanced Reconnaissance System program, including its exploitation of the satellite, will be SECRET. (SECRET)

b. USE OF SCIENTIFIC CONSULTANTS

The broad group of the engineering, physical, and geo-physical sciences, which is encompassed by a development such as that contemplated in the Advanced Reconnaissance System, requires that ARDC make maximum use of the scientific and technical competence within the nation. This competence should be recognized and utilized when required in a consultant and advisory capacity by the Weapons Systems Project Office responsible for the Advanced Reconnaissance System. Wherever possible, civilian scientists who can contribute to the success of this project should be engaged in the capacity of consultant to ARDC, and the results of their efforts made available to all contractors on an equal basis. (CONFIDENTIAL)

c. PRIORITY

Preparation of the System Development Plan directed herein will be carried out under Priority 1A, Precedence II-3. (UNCLASSIFIED)



JOHN A. CONNOR
Chief, Program Control Div
Directorate of Systems Plans

Don R. Ostrander

DON R. OSTRANDER
Brigadier General, USAF
Assistant for Guided Missiles Systems
Deputy Commander/Weapon Systems

This SR is classified ~~SECRET~~
IAW AFR 205-1, par 23c.

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SECURITY CLASSIFICATION (If any)

DISPOSITION FORM

~~CONFIDENTIAL~~

WJ

*12 Oct. Item 2
13 Oct. Item 1*

FILE NO.	SUBJECT RDGB Weekly Diary Items	DATE 19 OCT 1955	COMMENT NO. 1
TO Western Development Division ATTN: WDGE	FROM RDGB	Lt Col Oder/id/211	

10 October 1955

1. Rediscussed with Mr. Morgan, RDSTAB, the possible need of General Electric for a B-57 on bailment. Gave results of this discussion to Colonel Hebner by telephone. (Unclassified)
2. Prepared a TWX to DCS/D regarding clarification of responsibilities to support of British TBM as well as NAA-Rolls Royce Agreement. Showed TWX to General Schriever, coordinated paper with General Boyd and General Wood, and sent to RDG for signature. (Secret)
3. Received a call from Colonel McEwen, RDSM, regarding EP-690 sufficiencies for AFMTC in support of WS-107A. Called Colonel Ahola and requested that he determine status of this action about to be in AFDED and expedite reply, if possible. (Unclassified)
4. General Power advised me (together with General Boyd, General Sessums, General Demler, and General Ostrander) of Secretary Wilson's decision regarding assignment of MRBM responsibility to the Air Force; job to be done by WDD, "use made of Redstone," Navy requirements to be considered, and priority "co-equal with WS-107A." General Power stated aspects of this responsibility remained to be resolved, including priority, which appears to be in conflict with a recent Presidential directive. (Secret)
5. Advised Major Shea, RDSMSA, that WDD approved AFMTC request for RCVI equipment. (Unclassified)

6. Attended conference in General Power's office, together with Generals Schriever, Sessums, Boyd, Estes, Demler, and Davis, Colonel Ljunggren, Lt Colonel Vandayburg, and Mr. Murry regarding assignment of management responsibility for Phase II Scientific Satellite to WDD. (Secret)

11 October 1955

1. At the direction of General Power sent TWX to WDD lifting restrictions on signing second source airframe contract with Glenn L. Martin Company. (Secret)
2. Attended meeting in Pentagon chaired by Secretary Gardner and attended by industry representatives from all major WS-107A contracts. (Unclassified)
3. Discussed briefly with General Schriever his desires regarding the recent WDD TWX on nuclear rockets. (Unclassified)

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DF, SUBJECT: RDCB Weekly Diary Items

TO: WDGE

FROM: RDCB

DATE: 19 OCT 1955

COMMENT NO. 1
(CONT'D)

4. Discussed with General Sessums, and subsequently by phone with Colonel Sheppard and Major Ferguson, the submission by WDD of a preliminary draft Operational Concept. (Unclassified)

12 October 1955

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1. Discussed with Lt Colonel Beckett, RDTF, certain aspects of a letter from Headquarters USAF regarding monitoring of R&D exchange positions in London, one of which was the position to be transferred to WDD in regard to support of British TBM. Sent letter to RDSO for further action. (Secret)

2. Notified by Colonel Genes, RDZPI, that Headquarters USAF was in the process of signing a TWX suspending action on the Phase II Scientific Satellite until certain resolutions of this matter were obtained between General Putt and Mr. Macauley. Advised Colonel Norton, WDD, of this by phone. (Confidential)

3. Advised by Mr. Zeller, RDISI, that Headquarters USAF had taken exception to those provisions of joint AMC-ARDC security agreement on WS-107A concerning visitor control. Furnished certain inputs to Mr. Zeller including pending action of Gillette Committee in order that we might prepare a reply to Headquarters USAF. (Unclassified)

4. In answer to question by Lt Colonel Beard, RDZPS, concerning the use of WS-107A inclusion in the ARDC Command Presentation to the Air Force Security Service, recommended that only the information currently in the Command Presentation (which is meager) concerning this matter be presented to AFSS. (Unclassified)

5. Advised by Lt Colonel Higginbotham, RDZBT, that he has been charged with preparing a systems requirement on MRBM. Advised him of the current state of responsibility in this regard. (Unclassified)

6. Major Simons from the Human Factors Laboratory at HADC asked regarding possibility of WS-107A test vehicles carrying some of their experiments (monkeys and mice). Suggested he contact WDD directly on this matter. (Unclassified)

13 October 1955

1. Advised by Lt Colonel Genes that he had been charged with preparing systems requirement on ARS, transferring systems responsibility to WDD. Advised Colonel Norton of this by phone. (Unclassified)

2. Presented a briefing to Division Chiefs of the Directorate of Development, this headquarters, at their request and with the concurrence of General Schriever. (Unclassified)

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DF, SUBJECT: RDGB Weekly Diary Items

TO: WDGE

FROM: RDGB

DATE: 19 OCT 1955

COMMENT NO. 1
(CONT'D)

3. Together with Major Ferguson, WDD, briefed General Sessums on the draft Operational Concept for the SM-65. General Sessums signed the forwarding indorsement and the papers were handcarried to the Pentagon by Major Ferguson, with the proviso that he brief General Power in Washington on the 14th previous to presenting the papers to AFOOP. (Unclassified)

14 October 1955

1. Discussed with Colonel Miller, RDSI, the procedure agreed upon in recent meeting in Washington for handling all facility matters in connection with WS-107A. (Unclassified)

2. Attended staff meetings of the Deputy Commander for Resources and the Commander and advised them that WDD has prepared a preliminary draft Operational Concept for the SM-65 which will be given appropriate circulation in Headquarters ARDC. (Unclassified)

3. Prepared DF to WDT regarding coordination of AFFTC Test Plan 30151.

Frederic C. E. Odeh

FREDERIC C. E. ODEH
Lt Colonel, USAF
Assistant Chief
Office of the Assistant to the Commander

cc: Colonel Ahola, AFDDC-A
Hq USAF, Wash., D. C.

This DF is classified SECRET
IAW par 23c, AFR 205-1.

~~CONFIDENTIAL~~

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WD 55 12639

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Satellites File 70

WDTD

20 October 1955

MEMORANDUM FOR: Colonel Terhune

SUBJECT: Miscellaneous Events

1. The purpose of this memorandum is to try to bring to your attention certain critical problems or critical areas within WDT. They are as follows:

a. Fund expenditures - Col Hughes is working on a fund expenditure schedule which will be completed by about the 15th of November. So far during this month we have managed to place about 80.0 on PR's. This area is still one that is very critical and needs constant attention on Hughes' part.

b. The Martin contract, as yet, is not signed. I am informed by the local Martin representative that the company is proceeding all-out on the technical matters as if they had a contract; however, this matter is still unsettled.

c. A tentative schedule for production and flight test was outlined in the meetings last week. A copy of this rough schedule is attached to this memorandum. A more detailed schedule will be issued by Dr. Nichols as soon as he returns to duty.

d. I am quite worried about BTL. Up until a few days before BTL agreed to join us, I was operating under the erroneous thought that the BTL system was actually going to provide a backup to the GE radio inertial system. I find however that this is certainly not the case; that what we have done is hired BTL to work on a system for the Martin airframe. Blasingame tells me that it would be a major re-engineering job of something of the order of 9 to 12 months to convert the BTL system to the Convair configuration.

During the two-day meeting here on the 13th and 14th, BTL several times, while not objecting specifically to technical direction by RW, left no doubt that they didn't like the idea too much. They specifically asked to have the TD meetings on the same day and in conjunction with Martin. They also stated that they could see no reason why BTL would be required to come out here on a monthly basis but rather, should come out, say every three or four months.

Lastly, BTL seemed quite shocked when the statement was made that their system would be convertible to the Convair configuration even on a much detailed time schedule. They seemed to feel that the facts had been misrepresented to them in our dealings in an effort to get them into the program. On the afternoon of the 14th, in Dr. Dunn's presence, along with Col Glasser and some people from Martin, I made it as clear as I possibly could to Mr. Hough of BTL that we would have technical direction meetings at least once a month; that the TD meetings would not be on the same day

Hughes

Heck

OK
LPS

will be worked out

will be met in the time

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DECLASSIFIED AFTER 12 YEARS.
GPO: DIR 5200-10

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Memo for Col Terhune, Subj: Misc. Events, dtd 20 Oct 55

as Martin but would be on the day following the Martin meeting; and lastly, that I could not see how we could agree to BTL developing a guidance system for the Martin configuration only and still be in keeping with our primary mission here which is to invent an ICBM the soonast. BTL seemed to accept my statements; at least there was no violent objection. Strangely enough, I found that the most violent opposition to my statements comes from Blasingame himself. I reached a conclusion that Blasingame is certainly opposed to the technical direction system or at least to the technical direction under the system that RW is giving the present guidance contractors. He has not given me any specifics in this matter but contains himself to statements that RW is too much in detail and not doing enough systems engineering. I think this allegation may be partially true. I don't disagree on the amount of detail but I do believe that RW is lacking in the systems engineering.

In any event, I feel now that our weakest link on the XSM-65 is in guidance. We have a reasonable backup for everything else but we are apparently totally dependent upon GE's effort in the radio inertial guidance field. Blasingame assures me that there is enough depth in the GE system to provide backup on its own accord; however, I am of the opinion that we should get at least another radar into the works. Take, for example, the Gilfillan radar and adapt it to one of our computers into the GE airborne components. I have talked to Dr. Dunn briefly about this matter and I find that he shares my feeling. Dunn has stated that sometime within the next ten days he intends to investigate the problem and see if indeed we can get a backup radar into our radio inertial guidance system. I personally feel that this is very necessary.

e. Satellites. I have received no further instructions on what we are going to do about this subject; however, Dr. Ramo has designated Dr. Thiel of RW to commence their satellite effort. I talked to Thiel on the 19th and gave to him our complete file on this subject so that he would have all of the background information on the Holloman studies, Dr. Fried's studies, etc.

f. Facilities. Prior to the SAC meeting, I talked to Swanke and to Nichols and Dunn and I tried to persuade Nichols and Dunn to take an active interest in facilities on the part of RW. Dunn made the statement that RW had been instructed some time ago by Glasser to "stay out of the facilities area because this is an Air Force problem." This is true to some extent, however, we are rapidly being overcome by events. Swanke couldn't possibly handle the job without a considerable increase in his office. I think that it's necessary that RW get a strong facilities team together to carry out their fair share of the burden. Prior to his departure for Washington to the SAC meeting, I told Swanke that upon his return his primary job was to educate RW into the problem in order that RW could set up a staff to give us some help. I think this is very necessary and unless this is done, we're just going to get further and further behind in the facilities area

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One

notes

See Swanke

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Memo for Col Terhune, Subj: Misc. Events, dtd 20 Oct 55

g. Team concept of contractors for the XSM-65 and the XSM-68. You were briefed very briefly by Dr. Dunn on the concept of associating certain contractors with Convair and other contractors with Martin to be the primary teams to develop the 65 and the 68 respectively. I have written to Dunn asking that at least some formal announcement of their policy be made in the near future so that we can get all of our people headed in the same direction. I have also suggested to him that he prepare letters for Schriever's signature to the contractors explaining to the individual contractors our concept. Most of these contractors have been briefed on the subject in TD or special meetings, however, something should go out in writing. On this same subject, we have a tremendous amount of work to do in order to be sure that we actually know where we're going. In other words, do we want to place orders with Aerojet for engines to fit Convair? Do we want to make any provision to force BTL to be able to install their guidance in the Convair missile, etc? Essentially, what this amounts to is we have to rewrite our entire Development Plan.

h. A year ago our mission was quite clear and simple; namely, to get an ICBM. During this past year, more and more effort of the military personnel in WDD is being devoted either to expanding our effort into other missile or satellite fields or warding off raids. I would strongly suggest that you make an appeal to General Schriever to allow the WDT personnel to spend at least the rest of this year in full concentration on the ICBM. If we are to have a MREM or satellite or anything else, let's not take the job on until we get the people in here to handle it.

1 Incl
Schedule (rough)
(WD-55-12647)

H. W. Norton
HAROLD W. NORTON
Colonel, USAF
Assistant Deputy Commander
Technical Operations

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WDTD-55-24

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SUBJECT: The Ramo-Wooldridge Corp., Contract AF18(600)-1190 Proposal for Additional Work Performed Prior to 31 Oct 55

TO: MCPT

FROM: WDT

DATE: OCT 27 1955 **DOCUMENT NO. 2**
Major Caley/hs/326

1. Your attention is invited to the attached memorandum from General Schriever to Colonel Terhune, subject: "Additional Tasks Assigned to the Ramo-Wooldridge Corporation" dated 3 October 1955 which sets forth the areas of additional work.

2. The following percentage allocations are considered to be justified as additional work:

- a. Tactical Ballistic Missile - approximately 60%
- b. Satellite - 100%
- c. Anti-ICEMS Countermeasures - 25-50%

3. Attached is a statement of work covering the additional items to be incorporated into the supplemental agreement.

4. A purchase request is not included herewith. Conversation with Mr. Hinas, MCPT, has indicated that presently available funds on PR-64 are sufficient to cover additional cost.

SIGNED

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

3 Incls

- 1. n/c
- 2. Memo fm Gen Schriever to Col Terhune dtd 3 Oct 55 (Copy) *see under date*
- 3. Statement of Additional Work (Copy)

WDT FILE 00

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MINUTES OF STAFF MEETING
Office of Commander
Western Development Division
26 October 1955

see Page 2

Present: General Schriever
Dr. Dunn
Colonel Terhune
Colonel Morris
Colonel Sheppard
Lt Colonel Hudson
Lt Colonel Boatman
Captain Babcock

General Schriever

Furniture: General Schriever requested of Colonel Hudson the status of furniture with respect to cost of chairs for DD and R-W. Colonel Hudson replied that he had spoken with Colonel Fulton on the subject of our prices against GSA, and other controversial matters. Colonel Hudson quoted the prices paid for chairs by R-W vs prices quoted by GSA. General Schriever requested Colonel Hudson to be prepared to bring this up at the next staff meeting.

A general discussion ensued relative to the cost of furniture purchased by R-W vs cost if purchased by GSA. General Schriever requested that DD figures be checked against RAND and what they pay for furniture. Colonel Morris advised that GSA buys in such tremendous quantities that this may make a difference.

Overtime and Multishifts: Colonel Morris stated that he had sent a draft into the General's office containing material for the General's approval. He said that Generals McKee and Baker feel we should give AFPRs authority to approve overtime and multishifts if they feel it is justified.

NSC Paper, Presidential Directive and Gillette Committee: General Schriever stated that the Gillette Committee's final report recommends setting up a Committee at Air Force Secretary level to review our development plan and have final authority to give approval to plan permitting us to implement plan. Approval and apportionment of necessary funding in accordance with the financial plan could be made at the same time. This in essence means one review and approval agency at the Air Force Washington level. General Schriever advised that a similar body is also being set up at

Dr. Rock

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DDO DR 5200.10

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Staff Minutes - 26 Oct 55

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the DOD level. This DOD group will hear an information presentation on our program once or twice a year and give general approval. Implementing papers were prepared at the Air Force Secretary's level and submitted to Mr. Quarles. Mr. Quarles sent these papers to DOD requesting approval. The implementing papers would waive certain DOD directives now applying on facilities particularly, and delegate authority to approve to Air Force level. Essentially, the streamlined procedures needed to carry out the accelerated program are in the final stages of preparation and should be approved within two weeks. When the implementing documents are received at WDD, we will then sit down and review our internal procedures and see where they change. Approximately the week of 8 November we might have these directives and can start implementing action necessary on our part.

General Schriever advised that we are scheduled to make another briefing to the National Security Council in December of this year. We will receive correspondence directing this.

The General reported that the Von Neumann Committee meeting seemed to go off all right. He stated that the Committee, in addition to being advisory to the Secretary of the Air Force, is also responsible as advisory to the Secretary of Defense. This has been adopted as policy.

Medium Range Ballistic Missile: General Schriever stated that the Medium Range Ballistic Missile field is still vague. It is now the subject of a roles and mission consideration at the Joint Chief of Staff level. The settling of this mission will be given a very high priority by the Secretary of Defense.

General Schriever stated that WDD will be assigned the responsibility for the Reconnaissance Satellite and the MRBM if the Air Force gets the job management-wise. ✓

Reconnaissance Satellite: Colonel Terhune stated that Colonel Genes and his people want to come out and talk with us. Suggested that we need to have some definition of what we are going to do in the program. Colonel Terhune asked if WDD will delegate this work to someone else - would WDD rely on another JPO type organization to do the work for us?

General Schriever stated that we will have to develop a plan for the Satellite. He stated that we will have the MRBM and should plan personnel accordingly. The General advised that WDT and WDS should be concerned with obtaining technical and support personnel for the MRBM and the Satellite. He stated that MCPT may require additional contracting personnel.

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Staff Minutes - 26 Oct 55

Visit to Industry: General Schriever advised that he will start Monday, 31 October, on his tour of the major companies in the program. Mr. Gardner, General Putt, General Power, Colonel Morris and Lt Colonel Ford will accompany him on this tour, visiting 14 companies in 7 days. The General requested that anyone with any points that need to be brought up or discussed during this visit should bring them to his attention. He also requested that the Group Chiefs be advised to inform him of any particular items that need looking into.

Organizational and Functional Chart: The General inquired as to status of this chart. Colonel Hudson reported that the chart is up-to-date and has been coordinated. He stated that it is to be presented to the General next week.

The General advised that he would like to get this chart out, that if he disagrees with parts of it an amendment can be made. He stated that if the staff agrees on the chart, it should be published immediately.

General Schriever directed that a briefing be prepared by WDS on organization and functions and presented at a meeting of the entire staff in his office at an early date. Colonel Hudson stated that he will comply.

Technical Direction: General Schriever inquired as to status of DOI. It was reported that this DOI is still in draft form. The General advised that this should have been out in tentative form back in May, 1955, but now that it is October we have gained a lot in experience and the DOI should be brought up-to-date reflecting the experience we have gained during these months. The General suggested that we need a report on this from the people who are working on it, which means WDD and R-W who are primarily interested. He requested that this be published by next staff meeting, Thursday, 10 November. This was an item the I. G. s found reason to criticize and the General stated that he would like to have a procedural document which is up-to-date.

Medical Support: Colonel Hudson reported that he and his people have had several discussions with Edwards on medical support, also with ARDC, who suggested that we adopt an emergency policy. With this policy WDD military personnel may receive treatment from any civilian doctor desired, in an emergency, process a voucher and the doctor, or the individual, will be paid by the Government. Sawtelle was highly recommended for dental work, etc., rather than Edwards. For dependents, Group Insurance Companies in California were recommended. A meeting is in progress now with the insurance companies to arrive at the type group insurance that can be given. Colonel Hudson stated that he should be able to make up a DOI by Friday, 23 October, on this matter.

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~~CONFIDENTIAL~~

Staff Minutes - 26 Oct 55

Colonel Boatman stated that we should encourage our people to go to a general hospital if they need hospitalization. General Schriever advised that if our people need to be hospitalized this should be so. He requested Colonel Hudson to draft up instructions on military personnel receiving medical treatment in the local area.

General Schriever directed that Colonel Hudson issue a notice to all military personnel that each individual's physical must be completed within the 60 day period preceding his birthday. Anyone who does not complete his physical within this 60 day period will be automatically grounded.

Colonel Hudson

B-25s: Colonel Hudson advised that we have an opportunity to secure two additional B-25s. He stated that we could obtain one VC-47 and one B-25 if this would help our transportation problem. One VC-47 and one B-25 were decided upon. A VT-129 was discussed to replace the request for the C-131D. After discussion the staff felt that the C-131D would better fulfill this organization's requirements. General Schriever suggested that we should request replacement of our C-45 due to the great amount of maintenance.

Colonel Terhune

British Guided Missile: Colonel Terhune stated that we have requested that the PJSM representative be stationed with the AFPR at North American. This will provide the most convenience in the transfer of documents from NAA to Rolls Royce and will, at the same time, give him ready access to JDD in the event we must advise him or the AFPR on certain matters.

Project Control Room Meeting: Colonel Terhune announced that 28 October is the day for review of charts in the control room and that individuals concerned will receive notices by Thursday morning, 27 October.

General Schriever

Staff Titles: The General stated that he is very much concerned about Staff Titles. He would like to have a separate meeting with Colonel Terhune, Colonel Spinks and Mr. Marshall (MCPT). He stated that he would like to discuss the development plan and budget annex. He further stated that the

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Staff Minutes - 26 Oct 55

entire Gillette Committee thinking with respect to review and approval on the part of elements in Washington resolves around the development plan. He said that the basic document will be approved at the Secretarial level. Approval of the development plan by the Secretarial Policy Committee carries with it authority and funds for WDD to proceed according to the approved plan.

General Schriever advised that WDD will be called upon to make a presentation of its development plan as it relates to the '57 budget. He said that he needs an up-to-date briefing on the '57 budget, and the '56 - '57 financial plan. He advised that WDD will probably be directed to give such a briefing in Washington and if not the General will suggest that we do so sometime during the month of November or early December, when the budget which has now gone from Air Force to DOD to Bureau of the Budget is coming back down. He pointed out that the Air Force will shortly be going through the budget exercise in a final go-around for submission to DOD. The General said that what he has in mind is that WDD will give a presentation of our program with the '57 budget as the primary points to focus on with the WDD development plan as the basic document in support of it. He added that this is timely from a budget standpoint and from the standpoint of the Gillette Committee, that it will increase the degree of confidence in us, in that we have the ability to present the complete program.

Colonel Terhune

FRs: Colonel Terhune stated that 15 November is the deadline for assembling dates for FRs to Colonel Morris. He feels that the figures we will have at that time will be the best possible figures to form the basis for our presentation. He stated that Colonel Glasser is responsible for this.

General Schriever

General Schriever directed that we obtain sufficient copies of the Gillette Committee Reports so that all our WDD/MCPT and R-W people might see the changes made. Colonel Boatman stated that Colonel Parry is now in Washington and will bring the copies back with him.

The General advised that we want one document for the total program. This document should be the development plan. The development plan should include an annex showing WDO type requirements and planning.

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Staff Minutes - 26 Oct 55

General Schriever advised that as soon as the Secretarial Policy Committee is established and ready for review we should send a wire to AMC and ARDC with a copy to Washington (General Brentnall). The wire should state: (1) The development plan has been brought up-to-date, including refinement of the '57 Budget; (2) Set forth dates (between 15 and 30 November) when ADD briefing will be ready for presentation to the Secretarial Policy Committee.

SIGNED

B. L. BOATMAN
Lt Colonel, USAF
Executive Officer

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COMDR WED ARDC
ESLERWOOD CALIFORNIA

ROUTINE

COMDR HOLLOWAY AFB
NEW MEXICO

HDTT-10-64-E

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WJED-11-2-S-E

REFERENCE FORECON BETWEEN GEN DAVIS AND COL TEREUNE, REPLY TO HDTT-10-64-E
WILL BE WITHHELD PENDING RESOLUTION OF MANAGEMENT OF SATELLITE PROGRAM.

Handwritten note: next hand of file

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DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

"A—PARAPHRASE NOT REQUIRED EXCEPT PRIOR
TO CATEGORY B ENCRYPTION—PHYSICALLY RE-
MOVE ALL INTERNAL REFERENCES BY DATE-TIME
GROUP PRIOR TO DECLASSIFICATION."

HAROLD W. HORTON, Col, USAF
Asst Deputy Comdr, Tech Operations

SIGNED

HAROLD W. HORTON
Colonel, USAF
Assistant Deputy Commander
Technical Operations

WJED

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NOV 4 - 1955

WDISC

MEMORANDUM FOR: WDT

SUBJECT: Advanced Reconnaissance Satellite (ARS) Program

1. On 1 and 2 November, Major G. R. Vanden Heuvel attended a series of contractor briefings on the ARS system design studies at the WADC. A brief discussion of these briefings, and comments on the program in general as observed during the visit, follow.

2. To supply continuity to this report, it is necessary to say that specific tasks of the overall satellite reconnaissance program have been in being for a number of years. They appeared to vary from recently established programs to as much as three years of effort. At what was considered the proper time, based upon the demonstrated state of the art in this field, three contractors were selected to conduct one year ARS system design studies with two paramount things upon which to base their studies. One, the basic vehicle booster would be provided by the WD-107A program, and two, the inputs from all the tasks would be reflected in the satellite design.

3. With this then in mind, the briefing given by Lockheed Aircraft Co., Glenn L. Martin Co. and Radio Corporation of America consisted of a verbal report of the first three months activity on these respective design studies. The technical details will not be covered here. The printed reports should be received shortly and additional details can be covered in the 9-10 November briefing to WDD by the ARDC ARS project office. The first impression one got was that both the Martin and Lockheed first cuts of the ARS configuration were tailored to boosters that were recently proposed in their alternate airframe effort. This, however, appeared to be a negligible portion of the effort. The major portion seemed to concentrate on the satellite functions that will be required once the platform is "in place". A great deal of effort was expended by all three in the areas of space environment, auxiliary power plants, data gathering techniques, data processing aloft, transmission of data to the ground, and the acquisition, storage and dissemination of this processed data.

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WDD (WDTC) Memo, Subject: Advanced Reconnaissance Satellite (ARS) Program

4. On the subject of the transfer of the program reins to the WDD, a discussion was held among the following:

Lt Col William King	ARDC Project Officer (WPAFB)
Lt Col Frederick Oder	Hqs ARDC
Lt Col Victor Ganes	Hqs ARDC
Maj G.R. Vanden Houvel	WDD
Mr. R.S. Blocker	ARDC (WPAFB)
Dr. Adolph Thiel	R-W.

This discussion was limited to reaching a conclusion as to whether the 9-10 Nov date was satisfactory for briefing the WDD on the ARS program, and to clarify what the briefing would consist of. Both of these points were resolved and concurred in by phone with Col Terhune on 1 Nov 1955. The briefing was established for the 9th and 10th of Nov and would consist of technical briefing of the program as presently established and ARDC (WADC) recommendations on the future management of the program.

5. It is considered and previously unexpressed opinion of the undersigned that:

a. The ARDC effort on the ARS program to date has been a well coordinated, concerted effort in a relatively new field of endeavor.

b. Use of the 107A weapon system, less warhead, as a booster necessitates WDD cognizance of the program.

c. Too rapid a reorientation of the program management could be quite detrimental to the program. (Loss of time, personnel, and/or momentum).

d. This should not be managed by the WDD/R-W group as presently manages the WS 107A program. The introduction of the R-W Corporation into the fields of operation reconnaissance and intelligence appears to be completely contradictory to the present philosophy under which we operate and further, would dilute their present effort on the WS 107A while delaying both the ARS and WS 107A until such time as they could make an order of magnitude increase in their operating personnel. The task of providing suitable boosters on a specific schedule is a reasonable delineation of the R-W portion of the effort. The reconnaissance and intelligence effort should remain under a ARDC WSPO as presently constituted.

6. The above frank and unsolicited opinions are submitted in the best interest of the USAF.

~~CONFIDENTIAL~~

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GEORGE R. VANDEN HOUVEL
Major, USAF

is classified
in accordance with
APR 205-1

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WDTC 55-51

MEMORANDUM
AIR RESEARCH AND DEVELOPMENT COMMAND
MONTGOMERY, MARYLAND

NOV 7 - 1955

75
Brig. Gen. Bernard A. Zahriever
Commander
Western Development Division (AWDG)
P. O. Box 262
Englewood, California

Dear Gen:

SR5 dtd 17 Oct 55

In accordance with Gen. Power's decision on Monday, 10 October 1955, I have had System Requirement No. 5 issued, which establishes management responsibility for the Advanced Reconnaissance System at Western Development Division. System Requirement No. 5, assigning you management of the MREM has also been prepared; however, I am holding up distribution pending formal clarification of Air Force's responsibility for this system.

I believe that we could secure closest coordination on the Advanced Reconnaissance System program if you would submit your Development Plan to USAF through our planning people here (MDEP). Due to the somewhat complex structure of this program at present involving simultaneous conduct of both state-of-the-art and system studies, I recommend that the mechanics of establishing the Advanced Reconnaissance System program at Western Development Division be very carefully planned, so as to avoid unnecessary disruption to any of the current activities. Both the RIDS and MDEP people concerned stand ready to assist you in any way possible.

I would appreciate your views on this matter.

Sincerely,

ALBERT BOYD
Major General, USAF
Deputy Commander/Weapon Systems

DISPOSITION FORM

SECURITY CLASSIFICATION (if any)

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FILE NO.

SUBJECT

RDGB Weekly Diary Items

TO Western Development
Division
ATTN: WDGE

FROM RDGB

DATE 14 Nov 55

COMMENT NO. 1

Lt Col Oder/1f/211

7 November 1955

1. General Ostrander raised certain questions that he wanted me to ask while on TDY at WDD. These were:

a. To suggest a check on control of distribution of contractors films on WS-107A. An incident occurred where a CONVAIR representative at W-P AFB on his own volition offered to show their latest quarterly film to Colonel McCoy. Discussed this briefly with General Schriever, Colonel Boatman, and Colonel Perry.

b. General Estes wants to insure that all offices concerned with the Anti-ICEM are brought in on current Anti-ICBM efforts. Question was what is WDD's interest in Anti-ICBM. Discussed this with General Schriever who felt that at present WDD had little to contribute but was quite willing to cooperate in this matter and had set up a working relationship with Lincoln Labs to this end (as an example).

c. Discussed possible times that Generals Schriever, Ostrander, and Estes might meet to discuss transfer of ARS management (as things stand now the next Commanders' Conference looks like the earliest possible date).

I will advise General Ostrander of these answers.

8, 9, and 10 November 1955

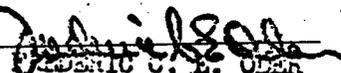
1. Colonel Oder was on TDY at WDD. While there:

a. Attended presentation by Lt Colonel William King, RDZSGG, to General Putt and General Schriever on ARS.

b. Attended a critique by Secretary Gardner, Generals Putt and Schriever, Colonels Morus, Ballweg, Lt Colonels Ford, Boatman, Drs. Ramo and Lauritson, and Captain Babcock on their recent trip to major WS-107A contractors.

c. Discussed a similar trip for General Power with General Schriever and Lt Colonel Ford.

d. Discussed a number of test and support matters with various WDT and WDS personnel.



Lt Colonel, USAF

Assistant Chief

Office of the Assistant to the Commander

cc: Colonel Ahola, AFDEC-A

DD FORM 96

REPLACES NME FORM 96, 1 OCT 48, WHICH MAY BE USED.

16-54901-2 U. S. GOVERNMENT PRINTING OFFICE

~~CONFIDENTIAL~~

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~~CONFIDENTIAL~~

WDTST

14 November 1955

MEMORANDUM TO: Col. Norton

1. On 9-10 November, a delegation from WADC, consisting of Col. William G. King, Jr., Lt. Washburn and Mr. Copeland, visited WDD and conferred at length with the following:

- Cdr. R. C. Truax
- Lt. Col. J. D. Heck
- Major G. R. Vanden Heuvel
- Dr. A. K. Thiel

on the subject of the Advanced Reconnaissance Satellite.

2. It was agreed that the following action is necessary to effect an orderly transfer of cognizance of the Satellite program from the WADC to the WDD.

By WDD:

a. Designate a responsible agent within WDD who will familiarize himself with the A. R. S. program and represent the WDD on the working level in matters relating to the A.R.S. This would include membership on the ARS advisory committee.

b. Create a management organization capable of assuming the administration of the program. This action requires a decision as to the management structure, particularly with respect to R-W participation and the future role of WADC and the other government laboratories. It will also be necessary to arrange to staff such organization as may be created. This requires a decision whether any or all of the WSPO people at WADC will be transferred to WDD. A policy reading between General Estes and General Schriever in this regard would be most helpful.

c. Budget for the ARS program for FY 1957 and subsequent years. A budget estimate of \$15 million for FY 1957 has been prepared by the WSPO and is currently under review at WADC. WDD should either arrange to have the sum finally approved transferred to WDD jurisdiction, or should initiate a new request through WDD channels.

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DOD DIR 5200.10

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WDTST 55-9

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MEMO. TO: Col. Norton 14 November 1955

d. Jointly with WADC, WDD should arrange for transfer of contractual documents to WDD buyers.

By WSPO:

a. Formulate a reorientation of the ARS system studies now being carried out by Martin, Lockheed, and RCA to result in a preliminary development plan by 15 February 1956. This plan must meet with the approval of the WDD wherever it touches upon the ICBM or MREM programs.

b. Continue day to day management of the program until details of transfer have been completed.

c. Cooperate in arranging transfer of contractual documents.

d. Arrange for EDD to receive copies of ARS reports on a continuing basis.

3. Early formulation of a policy with respect to the system design studies is required so that the development plan formulated will not be inconsistent with WDD policy with respect to utilization of contractors.

4. WDTST will be happy to accept any responsibilities with respect to this program that he may be assigned, since it is of great personal interest to him.

SIGNED

R. C. TRUAX
Commander, USN

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WDTST 55-9

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55 1005
Cy 1 of 9
Pg 2 of 3

ARS Program

November 22, 1955

- 2 -

~~CONFIDENTIAL~~

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hardware experimentations on orbiting attitude control, nuclear power supply, radio spectrum sensing, optical pick-ups, communication, etc. The other work presently being sponsored consists of three systems planning projects.

It would be our strong recommendation that the first action that is needed, and this should be taken as soon as possible, is to announce continuation of the first set of tasks on component state of the art development, and simultaneously to drastically alter the tasks of the second group conducting systems studies. This group has been asked to prepare a complete R&D plan for a sophisticated and major satellite system, a task which is considered to be premature, and which requires for its carrying out that the three contractor teams seek a great deal of information from ICBM contractors--a substantial interference to the ICBM project.

The redirection of these studies should, we believe, be as follows. They should be given by WDD/R-W a brief and succinct description of the ICBM vehicle below the nose cone and told to eliminate completely from their studies any other investigations of this vehicle understructure, boost, and trajectory. They then should be asked to prepare preliminary designs of a powered nose cone to be available for launching in the latter half of 1958 on present ICBM understructures and boost-trajectory. The purpose of this first series of flights would be merely to obtain orbiting experience. These first nose cones would contain an absolute minimum of instrumentation, except that associated with the control and tracking of the satellite to assure proper orbiting. The general weight of nose cone would be in the region of, say, three to ten thousand pounds and their studies would, of course, cover the complete package, including the additional rocket power and path control into the orbit, attitude control of the nose cone after reaching orbit, and the satellite-borne portion of the tracking instrumentation.

An additional task these three contractors should be asked to consider is what should be done as the next phase to alter the nature and complexity of the instrumentation carried in the satellite to where it has some minimum usefulness for reconnaissance or intelligence purposes.

Attacked in this way, the satellite program assures the development of techniques that will ultimately make possible the design of more sophisticated and versatile satellite systems. It will give the earliest possible flying experience (even conceivably making possible a backup for the IGY satellite if required), and probably even making possible the earliest possible attainment of some minimum militarily useful satellite.

To implement this program with the greatest of clarity and direction, while assuring the least assignment to WDD of what could be carried by others, it is recommended that WDD take control only of the systems study programs

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Cy 1 of 9
Pg 3 of 3

AS Program

November 22, 1955

immediately effect this redirection, leaving the component development program under its present management for the time being. This latter program should, however, come under increasing scrutiny by WDD/R-W because it may require substantial later modifications or extensions, and background to effect these should be sought as early as possible.

Simon Ramo

(dictated but not read)

rm

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EOD DIR 5200.10

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23 November 1955

Colonel Oder -

General Schriever requests that you give the attached copy of Memo of Understanding to General Ostrander. A copy has also been forwarded to General Estes at WADC.

ARS Management

Please tell General Ostrander that General Schriever had intended to write a covering memo but was called out of town. If he has any questions concerning same to call General Schriever. General Schriever will be in Washington through the first part of the week of 28 November.

Colonel Glasser of WDD is making arrangements for the conference referred to under Para. 1.d.

B. L. BOATMAN
Lt Colonel, USAF
Executive Officer

Sibers. Has file cu

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FM COMDR DR OF SYS MAN HQ ARDC WPAFB OHIO
TO COMDR WESTERN DEV DIV INGLEWOOD CLIF
AF GRNC
BT

RDZSGG-11-951-E A SERIES OF BRIEFINGS WILL BE HELD AT HQ SAC 12 THRU 14 DEC 55. PURPOSE OF BRIEFINGS IS TO INFORM DIRECTOR OF INTELLIGENCE SAC OF ARDC EFFORT IN DEVELOPMENT OF INTEGRATED USAF INTELLIGENCE DATA HANDLING SYSTEM /PROJECT 438L/ AND THE ADVANCED RECONNAISSANCE SYSTEM /PROJECT 1115/ AND SECONDLY TO GAIN FOR ARDC CONTRACTORS ON THE PROJECTS AN INSIGHT INTO SAC OPERATIONAL PROBLEMS. AGENDA WILL BE A ONE DAY TWO BRIEFINGS BY ARDC PERSONNEL COVERING PROJECTS 438L AND 1115. B ONE DAY BRIEFINGS ON AIR INTELLIGENCE BY HQ SAC DIRECTORATE OF INTELLIGENCE. C ONE DAY TOUR OF 544TH RTS ORGANIZATION. ALL ATTENDEES WILL BE REQUIRED TO HAVE A TOP SECRET CLEARANCE. IF YOU

PAGE TWO RJEDWP 71J

DESIE TO ATTEND THE BRIEFINGS IT IS SUGGESTED THAT TWO REPRESENTATIVES FROM W D D WOULD BE APPROPRIATE. A LIST OF PERSONNEL THEIR SECURITY CLEARANCES AND REQUESTS FOR ACCOMMODATIONS SHOULD BE SENT TO CINC SAC OFFUTT AFB NEBRASKA. ALSO REQUEST NAMES OF THOSE ATTENDING BE FORWARDED TO DIRECTORATE OF SYSTEMS MANAGEMENT HQ ARDC DETACHMENT 1 ATTN RDZSGG WPAFB. BOMBARDMENT MISSILES DIVISION

BT

23/1719Z NOV RJEDWP

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SECRET

SECURITY CLASSIFICATION (If any)

DISPOSITION FORM

ARS 7 Dec - 24
4 Dec - 2

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FILE NO.	SUBJECT
	Diary for Week Ending 10 December 1955

TO Western Development Division ATTN: WDGE	FROM RDGB	DATE 12 Dec 55 Lt Col Oder/if/58	COMMENT NO. 1
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5 December 1955

1. Attended with Lt Colonel Boatman a briefing of General Power by Lt Colonel Ford on the 1 December 1955 presentations to the NSC on ballistic missiles programs. ~~(Confidential)~~

2. Sent memorandum to General Schriever regarding Vanguard.

3. Major Eumm called regarding the possible assignment of S/Sgt Fleming Turner from HADC to WDD for duty with WDG. Passed the request to Major Karet then on TDY with RDSB.

4. Brought TX, WDSP-11-1-E, (regarding assignment of ARS people), to the attention of Generals Boyd and Ostrander. The request is in RISP for action.

5. Received call from Mr. Roddy, AFORD, re matter of RAF officer at WDD. General White is sending a memorandum to Mr. Quarles recommending that the British withdraw their request. Subsequently asked AFDC-A to verify; they did so and WDD was informed.

6 December 1955

1. Prepared 3rd indorsement to AFCEM on "(Secret) Policy Concerning Air Force Support of British TEM Development." ~~(Secret)~~

2. Commander Truax visited (no previous notice of the visit) and I put him in touch with Lt Colonel Genez, RDZPI.

3. Called General Schriever and discussed:

- a. Error made by AFMTC in submitting Station 12 program.
- b. Invitations to WDD presentation scheduled for 22 December 1955.
- c. Colonel Tenney's (AMC) problem re the GLM-Denver deal.

4. Directed by General Power to find out about a meeting held between Mr. Gardner, General Schriever, Mr. Smith, Admiral Clark, Mr. Martin, and General Gavin, and to advise General Schriever that General Power desired that a mechanism be established to require proper Army and Navy funding, planning, and coordination regarding TEM No. 2 and AFMTC (plus other AFDC test centers). ~~(Confidential)~~

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~~CONFIDENTIAL~~

DF, SUBJECT: Diary for Week Ending 10 December 1955

TO: WDGE

FROM: RDGB

DATE: 12 Dec 55 COMMENT NO. 1
(CONT'D)

5. Discussed 4 above in unclassified terms with General Schriever and subsequently advised General Power regarding the meeting. Per General Power's direction arranged with Colonel Ahola to get a copy of the memorandum of the meeting (sent to General Schriever by Colonel Ahola at the ARDC Commanders' Conference at Offutt on 9 December).

6. Received a call from Colonel Hebner, WDD, concerning a proposed joint ARDC-AMC supply document. Arranged for RDSM to expeditiously staff out the paper.

7. Sent copy of Department of Army TWX re Army-Navy Meeting at AFMTC to WDD (this TWX reached us the day of the meeting). AFMTC had not seen Department of Army TWX. Suggested that Colonel Soper get it.

7 December 1955

1. General Power asked me to brief him on IRBM. Prepared to do so but as of the end of the week have not been able to get on his calendar.

2. General Ostrander advised Colonel Boone, RDSTGG, and me that General Power desires:

a. Close look at the impact of Project Vanguard on AFMTC. Action to Colonel Boone. ~~(Confidential)~~

b. That every effort be made to have an ARS capability during the IGY. Sent TWX (coordinated with RDZG and RDZPI) to WDD on this. ~~(Secret)~~

3. Per request of Colonel Boatman, sent two copies of the "Gillette Report" to General Yates.

4. Relayed to Mr. Faber, RDSCB, request from WDD for \$30,000 of F-481 needed for December, 1955.

5. Advised by RDSI that the WS-107A Facilities Package had run into considerable nitpicking by DOD. Requested they confer with Colonel Swanke on the problem.

8 December 1955

1. Advised Colonel Friedlander, RDTOR, Colonel Burch, RDZPA, and Mr. Jmer, RDZ, (who are concerned with Anti-ICBM planning) of certain aspects of our test plans at AFMTC.

2. Advised RDZPI (Colonel Pelligrini) that ARS meeting at WDD scheduled at 0900, 13 December 1955, and that General Ostrander had asked that Colonel Genez, RDZPI, attend.

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~~CONFIDENTIAL~~

DF, SUBJECT: Diary for Week Ending 10 December 1955

TO: WDGE

FROM: RDGB

DATE: 12 Dec 55

COMMENT NO. 1
(CONT'D)

3. Prepared IRBM Briefing for General Power.

4. Discussed General Power's suggestion re Hq USAF representatives at 22 December presentation with Colonel Sheppard, WDD.

9 December 1955

1. Attended with Colonel Hudson, WDD, meeting run by Colonel Crumly, RDGP, on new Military Operations Order for ICBM and IRBM.

2. Called by Colonel Glasser and Colonel Boatman on item 8 of 6 December. Got further information from AFDRD and AFCEM to effect that no action taken by Hq USAF. Meeting at AFCEM was held on 6 December but General Yates hadn't been advised that it was to be held. Also advised of TWX sent by General Medaris, Army, to General Schriever.

3. Wrote letters to ARDC centers sending a copy of "Gillette Report".

10 December 1955

Advised Colonel Boatman regarding General Medaris' TWX (item 2 of 9 December).

Fred C. E. Oder

FREDERIC C. E. ODER

Lt Colonel, USAF

Assistant Chief

Office of the Assistant to the Commander

cc: Colonel Ahola, AFDDC-A
Hq USAF, Wash., D.C.

This correspondence is classified
SECRET IAW par 23, AFR 205-1.

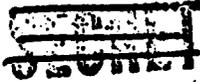
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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 263
Inglewood, California

W. J. [unclear]

IN REPLY ADDRESS COMMUNICATION TO COMDR,
WDD, ATTENTION FOLLOWING OFFICE SYMBOL

WDTST

16 December 1955

MEMORANDUM FOR: General Schriever

SUBJECT: Program for Execution of WDD Responsibilities
With Respect to Pied Piper Project

Returns to Schriever

W. J. [unclear]

1. A meeting was held at WDD at 0900 on 13 December to discuss problems connected with the transferring of cognizance of the Pied Piper Project to the WDD and with acceleration of the program in accordance with SR No. 5 of 17 October 1955.

2. The object of the meeting was to determine the participation of the various centers and the systems study contractors in preparation of the Systems Development plan. This plan is due on 1 April 1956. A second objective was to present the plans of WDD for transferring day-to-day control of the program from WADC to WDD, the management organization after transfer, and to invite comments on the plan.

3. Representatives from the following organizations participated:

Ramo-Wooldridge Corporation

Asst. Dep Comdr, WPN Sys
Hq ARDC WPAFB, Ohio

Comdr. AFCRC, Hanscom Field, Mass.

Comdr. RADC, Griffis AFB, N. Y.

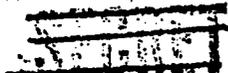
Comdr. HADC, Holloman AFB, New Mexico

Comdr. WADC, WAPFB, Ohio

Comdr. ARDC, Baltimore, Maryland

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INTER-AGENCY REVIEW
DECLASSIFIED



WDTST 55-12 ✓

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~~SECRET~~
Memo. to Gen. Schriever
Subject: Program for Execution of WDD Responsibilities with
Respect to Pied Piper Project

4. The management philosophy proposed was essentially the creation of the equivalent of a Weapons System Project Office at WDD which will exercise overall supervision of the program. The Ramo-Wooldridge Corporation will assist as an extension of the WDD Technical Staff, as requested by the WSPO. This assistance is required to, in a measure, replace the technical support currently being provided by the laboratories at Wright Field. The Ramo-Wooldridge Corporation will continue to participate in the technical component development program, as at present.

5. It is anticipated that the laboratories at Wright Field, and at the other participating centers will continue to do state-of-the-art work substantially in accordance with their present assignments. Draft letters to each center have been prepared confirming this. Hollomon represents a special case since they have not taken part in the program up to now. Representatives from WDD will visit Hollomon during the week of 19 December for further discussions on this point.

6. The systems study contractors will continue to investigate the overall feasibility of the system, the size weight, and interaction of components, etc., with the objective of obtaining the best possible current estimate of a reconnaissance configuration.

7. In view of the requirement of SR-5 for a Development Plan by 1 April, it is the intention to ask each of the three systems study contractors for an initial draft of such a plan by 1 March 1956. It is expected that these drafts, plus the contributions of the various participating centers, will be used by WDD to prepare the Systems Development Plan for submission by 1 April. The Contracting Officers at Wright Field will notify contractors of this new requirement. A meeting has been scheduled for 3-4 January, at which the contractors will be further briefed on the requirements and furnished additional information on SM 65 and SM 68 characteristics for incorporation in their studies.

8. Since the responsibility for prosecuting the Pied Piper Program now rests with the WDD, it is felt that the 80-4 plan should essentially be a WDD plan. Transfer of control of the program should take place as soon as a competent team can be assembled to handle the work. Such personnel as can be transferred from the Wright Field WSPO and assimilated in the WDD, should be transferred without delay. Files, contracts, etc. should be physically transferred as soon as feasible. Lt. Col. King expressed the view that transfer would better be delayed

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WDTST 55-12

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Memo. to Gen. Schriever

Subject: Program for Execution of WDD Responsibilities with
Respect to Pied Piper Project

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until after submission of the Development Plan (1 April) or
until after receipt of a Development Directive. It is felt,
however, that the probable acceleration of the program may make
transfer progressively more difficult as time goes on; i.e.,
the greatest lull in the program will probably take place
immediately after redirection of the study contractors. If this
is the case, transfers should take place between 5 February and
1 March, with 15 February a target date for transfer of mailing
address and assumption by WDD of day-to-day control. It is
believed that if three or more people from the WSP0 at Wright
Field can be transferred by that date, control can be assumed
at this end. A decision between these diverging points of view
is required..

9. A decision to release the second half of the study
contract funds was made and a TWX prepared for transmittal to
Lt. Col. King's office.

1 Incl.
Draft of ltr. to
RCA, Martin and
Lockheed (s)

R. C. Truax
R. C. TRUAX
Commander, USN

~~CONFIDENTIAL~~

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1. The Air Force hereby advises your organization of a contemplated redirection of the ARS design study program wherein the Air Force plans to require on or before 1 March 1956 the submission of a preliminary system development plan of the complete ARS, prepared in accordance with instructions contained in ARDC Manual 80-4 dated 15 July 1955.

a. The requirement for final system and subsystem development plans and final report will not be affected by this change except that the final development plans shall likewise be prepared in accordance with ARDC Manual 80-4 dated 15 July 1955.

b. It is intended that the proposed preliminary system development plan be submitted in lieu of the third quarterly progress report.

2. Therefore, your organization is hereby directed to attend a meeting at the Western Development Division of ARDC on 3 to 5 January 1956 to discuss matters incident to the proposed redirection. The following items shall comprise the agenda for the 3-day session:

a. Briefing by Western Development Division and Ramo-Wooldridge Corporation personnel on the ICRM program as it will impinge upon the ARS and thus affect the preparation of a preliminary system development plan of the ARS.

b. Clarification of contractor versus WSPO responsibilities in completing various forms for the proposed preliminary system development plan and discussions between the WSPO and the individual ARS contractors of the problems of formulating a system development plan at an early date.

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c. Negotiation of changes in the design study contracts necessary to effectuate the proposed redirection of the ARS program.

d. Issuance by the contracting officer of appropriate direction by either letter or change order, pending the outcome of contractual negotiations.

e. Provision of an opportunity for personnel of the respective ARS contractors to confer separately with Western Development and Remo-
Woldridge Corporation personnel in order to obtain any additional ICSM data that each contractor may require in the pursuit of his effort.

3. The representation of each ARS contractor shall be limited to six, including his contractor personnel. Verification of security clearances must be filed ahead of time with the security office of Western Development Division. It would be advisable for each contractor to be represented by at least one person having a Top Secret clearance, as a small portion of the briefing and/or discussions may involve material of that classification. Secret clearances will be required for all personnel in attendance.

4. The contact at Western Development Division will be Commander Truax. However, it is requested that questions with regard to the proposed redirection of the ARS program and the Western Development Division meeting as well be directed to the ARS space WEPO at Wright-Patterson Air Force Base.

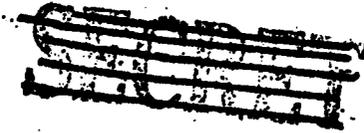
(signed) Contracting Officer

CC: (see attached Data Sheet)
1st Lt. Robert S. Nashburn/sh/696

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ROUGH DRAFT



~~CONFIDENTIAL~~

DATA SHEET

Three letters, one each to:

RCA, Attention: Mr. Richard McGlure

Lockheed Aircraft Corporation
Attn: Mr. Warren Orr

Glenn L. Martin Company
Attn: Mr. Jack Wright

SUBJECT: Contract AF33(616)-3104, (5), and (6) Information Concerning
Redirection Contemplated by USAF of ARS Design Study Program and
Meeting Scheduled in Connection thereto at Western Development
Division

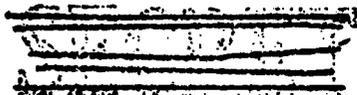
TO: (see above)

THRU: Air Force Plant Representative Office in the cases of
Lockheed and Glenn L. Martin

CC: One each to the following:

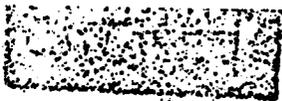
Copeland:
Please check
this list
for
completeness.

- (Commander, Western Development Division
Attn: Commander Robert C. Truax
- (RDZSGG
- (Commander, ARDC, Baltimore
Attn: Lt Col Victor M. Genes, RDZFI
- (A. C. O.
- (One copy to each participating Center (these addresses
will be furnished by Lt Col King's office)



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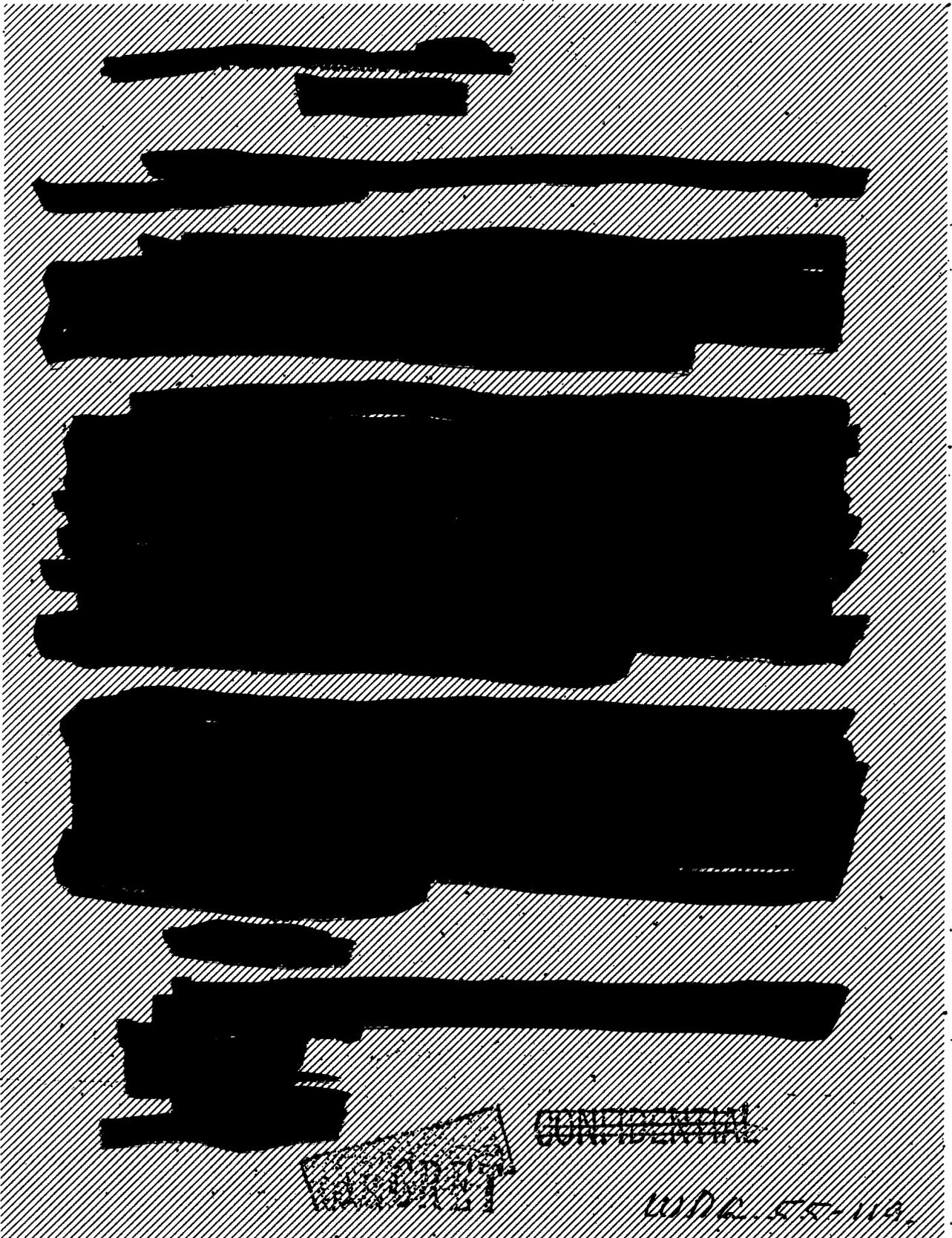
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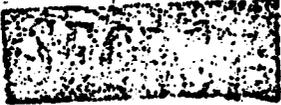
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18 December 1955



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WDG-55-119



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- c. Transportation tie-ups.
- d. Shortage of funds.
- e. Key schedule dates missed, etc.

It is desired that the Control Room Committee develop a system which will accomplish this objective. Some of the key elements of such a system is a rapid 24 hour a day communications system with all of our contractors and ARDC Centers; Plant Representatives at each of our companies under the control of and reporting directly to Colonel Morris; R-W representatives in certain key plants; strong effective field offices at our major test centers composed of WDD and R-W personnel; indoctrination of our contractors to report problem areas which they consider to be of major importance, and on any other problems which they consider may delay the program. This item will be discussed further at the 16 December Control Room meeting.

4. Frequent Inspection of Contractors. In January, we will have assigned a Convair with crew which will have as its primary mission the transporting of teams to visit our contractors. I have previously stated that we must devise a formal procedure for visits to contractors in order that management here can exercise proper supervision, and also to prevent unnecessary harassment of our contractors. This has not been done. It is desired that Colonel Hudson, in conjunction with appropriate representatives from other elements of our organization, establish such a procedure. Among other things, this procedure should include scheduling of aircraft for trips and processing all visits to contractors through one central point. It may be desirable that this central point be manned by representatives from R-W, WDD, and MCPT. An agreed to procedure should be established by 1 January.

5. Interference of IRBM 1 and 2 with ICBM. The Secretary of Defense has established a priority for IRBM 1 and 2 equal to that of ICBM, but not to interfere with the valid requirements of the ICBM. Potential areas of interference are at AFMTC and certain pressures on and with dilations of ICBM contractors. The following actions will be undertaken:

- a. Letters to all ICBM contractors advising them of the ICBM priority and that they are not to undertake IRBM without prior clearance with WDD. Dr. Ramo will prepare a draft of this letter which

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will be signed by either Mr. Gardner or General Power.

b. Letter to General Power pointing out areas of potential interference and suggesting a letter for his signature to USAF with draft letters to OSD for signature by the Secretary of the Air Force. These letters should indicate areas of potential interference and AF recommendations for action in regard thereto. Colonel Terhune is preparing drafts of these letters.

6. Facilities. There is presently considerable conversation with respect to which element of the organization has the responsibility for construction of the prototype operational facilities. In this connection, it is necessary to bring the facilities DOI up-to-date. The revised DOI should cover both development and operational facilities. I should like to review a draft of this DOI before 1 January. WDT is the action agency.

7. Satellite (ARS). It is necessary that WDD take over the responsibility for supervision of the ARS program as rapidly as possible. WDD will establish a project office and R-W will function as an extension of the WDT technical staff for the ARS program. This differs from their role in the IRBM and ICBM. High priority should be given to staffing both WDT and R-W for proper supervision of this program.

In assuming responsibility for the ARS program, it is most important to assume control of the study contractors at an early date. Emphasis should be given to the establishment of a Development Plan by 1 April 1956, which contains a Phase I vehicle on a schedule compatible with the IGY.

8. Scientific Advisory Committee Meeting on 9 - 10 January 1956. A tentative agenda for this meeting should contain the following:

a. Decision charts for each of the 3 major projects, i.e., XSM-65, 68, and the IRBM. Discussion of these charts might best be made by Dr. Dunn.

b. Report on program. This might follow the control room pattern embellished by a number of short hardware films.

WDR-55-119

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c. Status report on AFMTC. This should be covered by General Schriever.

d. Report on Pentagon Industry Meeting and our tour of industry.

e. Anti-ICBM. Dr. Stever should be asked to make a brief report on the status of the Anti-ICBM activity. It is desired that Dr. Ramo and Colonel Terhune formulate the agenda in detail in order that it can be made firm prior to 1 January.

9. WDD and R-W Personnel for AFMTC. It is obvious from recent discussions with AFMTC personnel that this organization must assist AFMTC if a Range Plan to meet our requirements is to be forthcoming at an early date. It is agreed that a WDD/R-W field office will be established and manned as quickly as possible. However, during January and February, it will be necessary that the bulk of the manning be accomplished through TDY. Key people must be sent who must remain for a period of several weeks or more. It is desired that Dr. Ramo and Colonel Terhune formulate a plan and designate personnel to accomplish this purpose. It is desired that we submit this plan to General Yates in writing prior to 1 January.

10. Monthly report for Deputy Secretary of Defense Robertson. The President has indicated a desire to be briefed on our programs once a month. It is my understanding that Mr. Robertson will normally make these monthly briefings. We should develop a report which has as its primary purpose the providing of information to Mr. Robertson for the Presidential Briefing. I would visualize this report as not exceeding 2 or 3 pages and occasionally accompanied with a 3 to 5 minute film covering major achievements. It is suggested that the Control Room might develop such a report.

11. Report on Convair. The report recently submitted by Colonel Norton should be reviewed by key WDT and R-W personnel with the objective of recommending actions to be initiated by me for correcting the deficiencies.

B. A. SCHRIEVER
Major General, USAF
Commander

cc: Colonel Morris
Colonel Sheppard
Lt Colonel Hudson

NOTE: This memo supersedes memo dtd 8 Dec 55.

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~~CONFIDENTIAL~~

WDG-55-119

~~CONFIDENTIAL~~

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

IN REPLY ADDRESS COMMUNICATION TO COMDR,
WDD, ATTENTION FOLLOWING OFFICE SYMBOL

WDTST

16 December 1955

MEMORANDUM FOR RECORD

SUBJECT: Report of Trip of 28 November - 8 December 1955

1. During the subject period, I visited Wright Field regarding the Pied Piper Program and the Navy Department with respect to the Navy's Fleet Ballistic Missile Program.
2. At Wright Field, arrangements were made with Lt. Col. King for a meeting to be held at WDD on 13-14 December to discuss details of transfer of administration of the program and necessary contract changes in the system study contracts.
3. At the Navy Department, I talked with R. Adm. Raborn, who has been assigned to head a special group to run the FBM Program. I was advised that it is their intention to arrange the assignment to WDD of a full time liaison officer, Cdr. K. C. Childers. The intention was also expressed by Adm. Raborn to initiate a large scale effort in the solid propellant rocket field leading to a suitable powerplant of this type for the FBM. We should take this program into consideration in formulating our own. It is my opinion that the use of solid propellants offers more gain for Naval application than for Air Force purposes, and that consequently they should be willing to carry the major burden of such a development effort.

END

R. C. Truax
R. C. TRUAX
Commander, USN

cc: Col. Glasser

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DECLASSIFIED AT 12 YEARS.
DOD DIR 5200.10

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COMDR WESTERN DEV DIV INGLEWOOD CALIF

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COMDR
DIRECTORATE OF SYSTEMS MANAGEMENT
DET. NO. 1, APDC
WRIGHT-PATTERSON AFB, OHIO

WTST 12-2- C-E FOR RDZSCG

FOLLOWING PERSONNEL WILL PARTICIPATE FAMILIARIZATION TOUR PIED PIPER PROGRAM.
FROM WDD COL OTTO J. GLASSER TO LOCKHEED, MARTIN AND RCA; COMDR R. C. TRUAX,
ENTIRE TOUR. FROM R-W, ONE OR TWO INDIVIDUALS WHOSE NAMES WILL NOT BE AVAILABLE
UNTIL 2 JAN. SUGGEST WADC APPOINTMENTS BE SET BACK TO 18 JAN TO ALLOW TIME
FOR EASTERN VISITS IN CONNECTION WITH OTHER PROGRAMS.

"XC-PARAPHRASING NOT REQUIRED EXCEPT PRIOR TO CATE-
GORY B ENCRYPTION-PHYSICALLY REMOVE ALL INTERNAL REF-
ERENCES BY DATE-TIME GROUP PRIOR TO DECLASSIFICATION-
NO UNCLASSIFIED REFERENCE IF DATE-TIME GROUP IS QUOTED."

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

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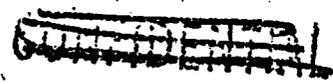
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for
OTTO J. GLASSER
Colonel, USAF
CHARLES H. TERHUNE, COLONEL, USAF
Deputy Commander, Technical Operations

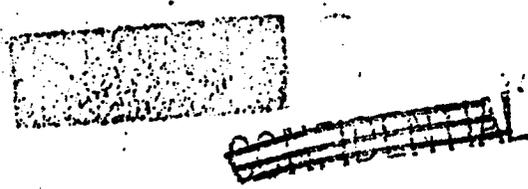
R. C. TRUAX., CDR., USN

WTST

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DEC 23 1955

WDZSP

SUBJECT: (U) Support of Advanced Reconnaissance System

TO: Commander
Rome Air Development Center
Griffis AFB, New York

1. Reference is made to paragraph 1, System Requirement Number 5, dated 17 October 1955, which relates to the support of the Western Development Division by ARDC centers, in the preparation of a development plan for the Advanced Reconnaissance System (System 117L). (U)

2. It is requested that Rome Air Development Center provide support and guidance for development of the Advanced Reconnaissance System in those technical areas of responsibility currently assigned to your Center. Specifically, it is requested that you exercise such responsibility as follows:

- a. Intelligence (and other information) parameters, and all data processing and handling techniques for the System.
- b. Ground-air communications, including acquisition, tracking, and command of the flight vehicles. (S)

3. Your continued technical support and advice relating to the above System areas during development of the Advanced Reconnaissance System is requested. (U)

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

D. A. SCHRIEVER
Major General, USAF
Commander

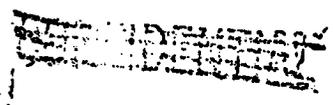
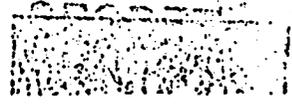
CC: HQ, ARDC
Attn: RDZPI

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WDST

DEC 23 1955

SUBJECT: (U) Support of Advanced Reconnaissance System

TO: Commander
Wright Air Development Center
Wright-Patterson Air Force Base, Ohio

1. Reference is made to paragraph 1, System Requirement Number 5, dated 17 October 1955, which relates to the support of the Western Development Division by ARDC centers, in the preparation of a development plan for the Advanced Reconnaissance System (System 117L). (U)

2. It is requested that the Wright Air Development Center provide support and guidance for development of the Advanced Reconnaissance System in those technical areas of responsibility currently assigned to your center. Specifically, it is requested that you exercise such responsibility as follows:

- a. Guidance and control, including aspect control while in flight.
- b. Reconnaissance data collection subsystems.
- c. Auxiliary electrical power sources.
- d. Research on improved propulsion.
- e. Research on improved component operation and reliability.
- f. Spaceframes.
- g. Training equipment.
- h. Ground handling equipment. (S)

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WDD (Hq ARDC) WDTST, Subject: Support of Advanced Reconnaissance System

3. Your continued technical support and advice relating to the above System areas during development of the Advanced Reconnaissance System is requested.

SIGNED

CHARLES H. TERHUNE, JR.

Colonel, USAF

Deputy Commander

Technical Operations

B. A. SCHRIEVER

Major General, USAF

Commander

CC: Hq, ARDC

Attn: RDZPI

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88

WDTST

DEC 23 1955

SUBJECT: (U) Support of Advanced Reconnaissance System

TO: Commander
AECRC (Cambridge Research Center)
Cambridge, Mass.

1. Reference is made to paragraph 1, System Requirement Number 5, dated 17 October 1955, which relates to the support of the Western Development Division by ARDC centers, in the preparation of a development plan for the Advanced Reconnaissance System (System 117L). (U)

2. It is requested that the Cambridge Research Center provide support and guidance for development of the Advanced Reconnaissance System in those technical areas of responsibility currently assigned to your Center. Specifically, it is requested that you exercise such responsibility as follows:

a. Provision of environmental data as this affects vehicle design and test.

b. Planning and conduct of a geophysical research program utilizing test vehicles. (3)

3. Your continued technical support and advice relating to the above System areas during development of the Advanced Reconnaissance System is requested. (U)

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations
B. A. SCHRIEVER
Major General, USAF
Commander

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CC: HQ, ARDC
Attn: RDZPI

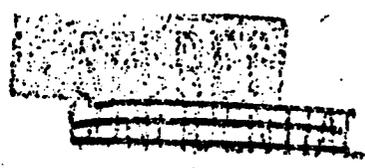
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WDTST

28 December 1955

MEMORANDUM FOR: ALL WDT Group Chiefs

SUBJECT: Advanced Reconnaissance System, Meeting Concerning

1. On January 4 to 5th a meeting will be held at WDD, in Building 4, Room 205 at 0900 to brief the three Pied Piper System Study contractors, Lockheed, Martin, and RCA, on the ICRM program.

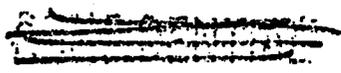
2. Cognizance over this program is being transferred to WDD. The program is being accelerated to the extent that the system study contractors are being directed to submit by 1 March draft system development plans in the general format of SO-4. It is intended that either the SM 65 or SM 63 (interchangeably, if feasible) be used to provide the major boost for the satellite vehicles. This requirement necessitates that the study contractors receive a considerable amount of information on the ICRM program, both regards design, schedules, and ground support. This information is being assembled by Dr. Robert Cornog, of R-W.

3. In order to go over the presentation before hand, a meeting will be held on 3 January in Building 3, Room 146 at 1000. Group Chiefs are invited to send representatives.

SIGNED

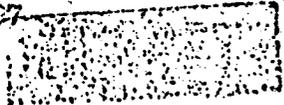
OTTO J. GLASSER
Colonel, USAF
Asst. for Systems Management

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WDTST 55-20

Information

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WDT

27 December 1955

MEMORANDUM FOR THE RECORD

SUBJECT: WDD Position on Holloman Facilities

- 184
1. The problem of identifying and funding facilities for Holloman associated with -
 - a. Present programs at WDD
 - b. Master planning at Holloman are presented herein.
 2. The problem to be resolved can be broken down into -
 - a. Those test stands required by WDD
 - b. Those base support facilities required to support the programs of "a" above.
 3. A further breakdown of the base support facilities is:-
 - a. Gen area support such as roads, power, lights, etc.,
 - b. Assembly buildings;
 - c. Laboratories;
 - d. Component test and other support activities.
 4. With respect to test stands it is the position of WDD that two stands should be programmed immediately for Martin, two for the IRBM immediately, and no stands for ARS immediately. Two stands have been chosen for Martin to be used later in their program in support of the four stands presently required at Denver (three of these missile test stands and one battleship test stand). With respect to the two stands for the IRBM at Holloman, it is envisioned that these stands will provide the necessary statistical testing, production and acceptance testing late in the IRBM program and will be used in addition to initial battleship test stand which must be provided for the early demonstration and the rocket test facility proposed by Douglas in the local area.
 5. With regard to test track activities, WDD programs in nose cone and guidance area will continue to need support of the nature provided by high speed tracks, and it is established as ARDC policy that a track at Holloman will be initiated. Other uses envisioned for such a track are that it might be associated with aircraft or other missiles and it will undoubtedly provide a large workload in the future as well as a large

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MEMO FOR THE RECORD

SUBJ: WDD Position at Holloman 27 Dec 55

number of supporting facilities. (Note: This area points out one of the difficulties of providing a good definitive test facility for Holloman, i.e., the necessity for differentiating between WDD requirements and satisfying the long-range master development plan for Holloman.

6. With regard to assembly buildings, WDD programs at present require two standard buildings -- one for Martin and one for the IRBM.

7. With regard to other buildings such as laboratories or component test facilities, it is not possible at this time to be specific with regard to WDD requirements. The meeting of 29 December with Holloman should help in defining the uses envisioned by Holloman for the support buildings listed in their AF Form 161 (Justification for Facilities).

8. For the record, it is desired to point out at this time that Holloman requirements as well as the Edwards requirements do not reflect the type of planning we have accepted for Sycamore Canyon Facility at Camp Elliott and thus it is the feeling that both the Edwards and Holloman requirements must be reviewed very carefully to make sure that ample support will be available when needed in the next 12 to 18 months.

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

91
WS 1172 # 12
2 # 12

WDS

10 February 1956

SUBJECT: Reorganization and Realignment of Functions
of Technical Operations (WDT).

TO: See Distribution

1. Announcement is made of the reorganization and realignment of functions and elements under the office of the Deputy Commander, Technical Operations, effective as of 6 February 1956, as indicated. Responsibilities and functions of these offices will be developed by the Deputy Commander, Technical Operations.

a. The office of the Assistant for Systems Management is inactivated and the personnel and functions are transferred as indicated below.

b. The office of the WS-107A Control Group is inactivated and personnel and functions are transferred as indicated below.

c. The office of the WS-315A Control Group is inactivated and personnel and functions are transferred as indicated below.

d. The Programs and Procedures Group is relieved from assignment to the Assistant for Systems Management and is assigned to the Deputy Commander, Technical Operations. (New Organizational Symbol WDTO)

e. There is established the office of "Assistant for Weapons System 107A-1" (WDTC) and Colonel OTTO J GLASSER is appointed as the Assistant and Lieutenant Colonel JOSEPH D HECK, JR as the Deputy Assistant.

f. There is established the office of "Assistant for Weapons System 107A-2" (WDTB) and Colonel BENJAMIN P BLASINGAME is appointed as the Assistant and Lieutenant Colonel OTTO C LEDFORD as the Deputy Assistant.

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Page 2

WDS Subject: Reorganization and Realignment of Functions of
Technical Operations (WDT)

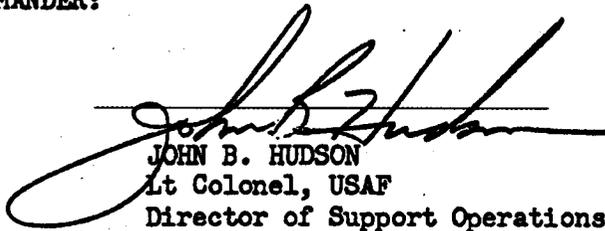
g. There is established the office of "Assistant for Weapons System 315A" (WDTI) and Colonel HAROLD W NORTON is appointed as the Acting Assistant and Commander ROBERT C TRUAX as the Deputy Assistant.

h. There is established the office of "Assistant for Weapons System 117L" (WDTI) and Colonel OTTO J GLASSER is appointed as the Acting Assistant and Commander ROBERT C TRUAX as the Acting Deputy Assistant.

3. The Chief, Manpower Group is responsible for correcting and publishing the necessary official organizational documents. The Chief, Military Personnel Branch is responsible for publishing the necessary Personnel Actions Memorandums to reflect any changes in duty assignment of the personnel concerned.

4. Organizational Charts for elements of Technical Operations will be published by the Chief, Manpower Group, at the earliest practicable date.

BY ORDER OF THE COMMANDER:


JOHN B. HUDSON
Lt Colonel, USAF
Director of Support Operations

DISTRIBUTION:

- 2 - Comdr WDD
- 5 - Ea Dep Comdr, WDD
- 5 - Dir, Support Ops, WDD
- 10 - Ea Gp & Br or Equiv Actvy, WDD
- 5 - RDGB, Hq ARDC
- 5 - AFDDC-A Lt Col Ahola

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

189

SPECIAL ORDERS)
NUMBER 6)

5 March 1956

1. Pursuant to AFR 11-1, an Evaluation Board is convened for the purpose of impartially reviewing various design studies and proposals relating to the Research and Development of WS-117L and, if any of the studies and proposals are found to be acceptable, recommending one of the three prime contractors presently conducting such design studies to receive a firm contract for the design and development of WS-117L. Separate findings will be made on each item as outlined by Western Development Division Office Instruction 70-3, dated 18 April 1955. The Board will consist of COLONEL W. H. BAYNES, 1122A, President, who will normally vote only in the event that other members of the Board are unable to agree, and the following voting members. (Personnel listed below, assigned other than WDD, is with concurrence of their Commander):

LT COL	R. C. HOLUB	10022A	HEDAMC	
COMDR	R. C. TRUAX	82506(USN)	WDD	
LT COL	W. G. KING, JR	8356A	WADC	Recorder
LT COL	V. M. GENEZ	8466A	HEDARDC	
1ST LT	R. S. WASHBURN	A03019565	HEDAMC	
Mr.	R. S. BLOCKER	GS-14	HEDAMC	

This Board will exert every effort to obtain unanimous decisions. Final Board proceedings are to be completed on or before 20 March 1956.

BY ORDER OF THE COMMANDER:

OFFICIAL:



WILLIAM C. BUMM
Major, USAF
Division Adjutant

WILLIAM C. BUMM
Major, USAF
Division Adjutant

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- 25 - Recorder

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WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

SPECIAL ORDERS)
NUMBER 6)

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BY ORDER OF THE COMMANDER:

OFFICIAL:



WILLIAM C. BUMM
Major, USAF
Division Adjutant

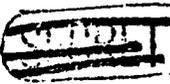
WILLIAM C. BUMM
Major, USAF
Division Adjutant

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- 5 - HEDARDC
- 5 - HEDAMC
- 25 - Recorder

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MR 20 56

SUBJECT: Report of Contractor Evaluation Board, WS 117L (Uncl)

**TO: Commander
Western Development Division
Post Office Box 262
Inglewood, California**

1. In compliance with Special Orders No. 6, Western Development Division, dated 5 March 1956, the Evaluation Board met at Wright-Patterson Air Force Base, Ohio, during the period 12 March to 20 March 1956. The Board heard presentations made by and reviewed reports submitted by the Radco Corporation of America, the Glenn L. Martin Company, and the Lockheed Aircraft Corporation. The Board received valuable assistance in this evaluation from the WS 117L Technical Advisory Group and from the Air Materiel Command Special Evaluation Group. The provisions of Western Development Division Office Instruction 70-3, dated 18 April 1955 were understood and followed by the Board.

2. The Board assigned relative weights to specific areas of evaluation as follows:

- Technical Evaluation 500 points
- Development and Production Aspects 300 points
- System Management Potential 200 points

The ratings made by the Technical Advisory Group and the AMC Evaluation Group were thoroughly reviewed by the Board and were accepted with minor revisions. The evaluation of the System Management Potential item was made by the Board and is covered in this report.

3. In the opinion of the Board, all proposals were acceptable but varied considerably in degree of acceptability. All gave promise of delivering a 1958 minimum performance orbital vehicle as an IGV

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DATE: 10/15/2010
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Hq ARDC to Comdr WDD MAR 20 56
Evaluation Board, WS 117L*

Subject: "(U) Report of Contractor

back-up. The Board finds the relative overall evaluation of the three competing contractors to be as follows:

<u>Contractor</u>	<u>Total Points Scored</u>
Lockheed	758.37
RCA	649.95
Martin	503.13

4. PROPOSAL SUMMARIES

a. Lockheed Aircraft Corporation

The development plan submitted by the Lockheed Aircraft Corporation is very broad in scope and involves multiple approaches in all questionable areas. Earlier systems are simpler and of lower utility, later systems are more complex and produce more information.

In the visual reconnaissance area initial emphasis is placed upon a photographic camera with read-out by a flying spot scanner and transmission to the ground via a steerable antenna. In this case, the film serves not only as the image receiving device, but also as the storage medium. The quantity of film required is small (five pounds per month) for all proposed missions. Early resolutions would be about one hundred feet. Later versions would give resolutions of twenty-five feet. Information would be transmitted to the ground via a six mc bandwidth radio link using a steerable antenna.

Two phases of ferret system development are foreseen. The first uses twenty-six crystal video receivers with antennae directed toward the horizon to provide a density survey in the fifty mc to 12,000 mc frequency range. Sweeping receivers with downward pointing antennae will be used in bands of particular interest to provide more detailed information.

The second ferret system will increase frequency coverage to the fifty mc to 20,000 mc range. It will give improved directive resolution and supply pulse repetition rate pulse width, and frequency analysis.

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Hq ARDC to Comdr WDD : NR 20 56
Evaluation Board, WS 117L

Subject: "(Uncl) Report of Contractor

In addition to the visual and ferret missions, Lockheed suggested the use of infra-red sensors to detect and track high flying jet aircraft or large ballistic missiles. An eventual complete satellite-borne early warning network is visualized. Power supply for early systems will be batteries. Later a chemical A.F.U. and/or a solar powerplant would be phased in. The nuclear APU was considered as an alternate possibility, particularly for ferret missions. Mission durations would be determined by the power supply and would vary from two weeks upward.

Reconnaissance data would be received at three ground stations located in the continental United States and in Hawaii. For visual data, a parabolic directional antenna slaved to the PPS-16 (or modified SCR-584) would provide gain and security. Incoming data would be recorded by kinescope on master prints.

Transmission of the bulk of the data will be by airplane to the central processing station where it will be put onto a Minicord filing system. A small percentage of selected, high priority data will be transmitted by slowed-down television techniques, to the centers.

Ferret data will be stored on magnetic tape at the receiving stations and transmitted to the Center for analysis.

Two main series of orbiting vehicles are programmed. The first weighs between 3500 and 7000 pounds, depending on loading. The second uses higher performance propellants and weighs about 14,000 pounds. It has the capability of being placed on orbit with smaller payloads by an IRBM.

The test program is very elaborate, involving 43 Sergeant-boosted non-orbiting vehicles, and 63 SM-65 (or SM-68) boosted full size nose sections. Additional missiles are allocated to an initial operational program which the contractor proposes to conduct.

Lockheed proposes to handle the systems management, airframe, guidance, and nuclear APU.

Lockheed proposes to subcontract the major part of the reconnaissance and ground handling equipment to an Eastman Kodak-CES team.

The total program requires 53 Sergeant boosters and 113 SM-65's or SM-68's including approximately one year's operational performance for each operational type.

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Hq ARDC to Comdr WDD
Evaluation Board, WS 117L*

20 56

Subject: "(U) Report of Contractor

The major Government-furnished facilities are as follows:

System Test Facility (Hazard)	\$2,000,000
Control and Intercept Stations (3) East Coast, West Coast, Pacific Ocean	15,000,000
AFS Intelligence Center	43,150,000
Test Launch Facility (AFMTO or HADC)	3,500,000
Launch Site (Bonham AFB, TX)	25,000,000

The yearly cost breakdown for the prime contract portion of the program is as follows:

COST (THOUSANDS OF DOLLARS)

FY	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>TOTAL</u>
	\$22,200	46,000	58,400	56,700	74,600	60,500	41,600	\$370,000

The contractor's estimate of GFR and facilities cost is an additional \$238 million for a total program cost of \$608 million dollars.

b. Radio Corporation of America

The RCA program is of a broad scope and makes extensive use of alternate approaches, so that it is difficult to pick out outstanding technical features. The program does however emphasize television collection of visual data, storage of these data on electrostatic tape and transmission to the ground through first a fixed and later a steerable antenna. Preliminary ground processing by automatic equipment and final evaluation by photo interpreters is visualized. Eventual resolution would be 10-25 feet with location to .1 mile. With this system 40 to 60 days would be required for complete coverage of areas of interest by one vehicle.

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Hq ARDC to Comdr WDD MAR 20 58
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

Three types of ferret systems are suggested. The first would employ five scanning superheterodyne receivers covering the frequency range of 700 to 15,000 mc, coupled with crystal-video pre-amplifiers. Antennas would be fixed and would be directed straight down. Magnetic tape storage would be used. The equipment would determine frequency and locations. The second system would also use five antennas but would cover a wider frequency. The third system would extend the frequency band from about 40 to 40,000 mc. Pulse width would also be determined, and accuracy of other measurements would be increased.

Power availability will pace the above systems. Batteries will be used to power early flights beginning in 1958 and will continue in use until 1960 when low power (75 watts orbital average) solar batteries are expected to be available. In 1961 high power (250 watts orbital average) solar batteries are to be tested. Nuclear APU's to produce 1000 watts or more will be flight tested in the 1962-1963 time period.

Early ferret systems would require thirty days for complete coverage compared to about eight days for later systems.

Tracking will be with the FPS16 radar.

Reconnaissance data would be received by two to four stations located within the continental United States and transmitted by airplane and wire (later by wide band microwave links) to a central processing station.

Separate visual and ferret vehicles are proposed. Vehicle weights would be approximately 5000 pounds. They would be boosted into orbit by SM-65's.

The RCA test program calls for launching a total of seventy-six vehicles. Three orbital flights are scheduled for late 1958. Operational flights over the Soviet Union with limited reconnaissance capability would begin in mid 1960.

RCA proposes to develop the visual reconnaissance equipment, communications and tracking equipment and ground data handling equipment.

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Hq ARDC to Comdr WDD ^{MR 20 58}
Evaluation Board, WS 117L"

Subject: "(U) Report of Contractor

They would subcontract to Bell Aircraft the airframe and powerplant, to Airborne Instruments Laboratory the ferret equipment, and to North American Aviation the nuclear APU.

The Government would be expected to furnish seventy-six flyable SM-65 boosters and two stripped engineering ground models. Also required would be one set of ICBM ground guidance equipment and the following major special facilities:

- (1) A test launch site at AFMTC (including assembly, laboratory and storage facilities) with down range tracking facilities. (\$1,173,000)
- (2) Two to four operational data receiving stations. (Not costed)
- (3) Rocket static test facilities. (\$3,293,000)

Developmental flight testing would be done at AFMTC. It is assumed that operational launches would take place from ICBM sites. Location and manner of acquiring the central processing site are not discussed.

The RCA proposal does not price the Government furnished equipment. The cost of the program (i.e., the RCA contract cost) is:

Calendar Year	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>
Cost (Thousands of dollars)	17,961	41,707	43,497	50,037	47,497	37,416	33,912
	<u>1963</u>	<u>1964</u>	<u>Total</u>				
	28,365	8,761	309,228				

c. Glenn L. Martin Company

The development plan submitted by the Glenn L. Martin Company emphasizes television data collection for visual reconnaissance, use of magnetic tape for storage of data within the vehicle, and a non-steerable airborne antenna. The ferret system utilizes fixed

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Hq ARDC to Comdr WDD 20 58
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

receiving antennas, superheterodyne receivers, magnetic tape storage, and transmission to the ground via a fixed antenna. Considerable redundancy is incorporated to improve reliability.

Primary reliance is placed on a nuclear auxiliary power supply. Airborne equipment is designed to be compatible with the expected high radiation level. This radiation makes impossible the use of photographic film as a data storage means. The magnetic tape storage limits the amount of data that can be handled per revolution of the vehicle.

Tracking and command would be through FPS-16 radars located in the continental United States.

Ground data reception would be through a 50 ft diameter antenna serviced to the tracking radar.

Reconnaissance data would be received by four ground stations, recorded on tape and film, and sent to a central station for examination and further processing. Telephone lines and airplanes are visualized as the transmission media.

Separate visual and ferret vehicles weighing 5,250 pounds each are proposed. These would be boosted into orbit in the early phases by SM-65's, and in later phases by SM-68's.

The test program outlined embraces five non-orbiting flights, using Vanguard boosters. The orbiting test program involves a total of twelve planned launchings backed by five spare vehicles.

The end items of the program would be two intelligence gathering systems. One would give pictures of the terrain with a resolution of 100 ft per TV line. The second system would collect the following information on enemy radars: radio frequency (60-15,000 mc) pulse repetition frequency and approximate geographic location of each intercept. Complete coverage of the areas of interest would be obtained by one vehicle of each kind in eight days.

If the Air Force requires a flight demonstration in 1958, the Martin Company proposes to launch three vehicles before the end of 1958 with the hope that at least one will orbit. Operations over the Soviet Union would commence about 1960.

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Hq ARDC to Comdr WDD NR 20 58
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

Operating time would be approximately one year per vehicle.

The Glenn L. Martin Company proposes to handle System Management, the vehicle, and the ferret subsystem. They propose to subcontract the visual reconnaissance system to the Philco Corporation and the ground data handling to the International Business Machine Corporation.

The Martin program requires Air Force booster vehicles as follows:

Nine SM-65C's beginning July 1958 and ending about January 1959.

Eight SM-68's beginning February 1959 and ending about July 1959.

Three second stage SM-68's beginning July 1958 and ending September 1958.

The Government would be expected to furnish the following major special facilities:

- (1) A test launch site (AFMTC) with down range tracking and communications facilities.
- (2) An operational launch site.
- (3) A nuclear power plant test facility (suggested location - Idaho Falls).
- (4) A geophysical environment facility (suggested location - Denver).
- (5) A large centrifuge (Martin, Baltimore or Denver).
- (6) A proof test facility (AFMTC).
- (7) Four tracking and communication stations (suggested locations, Washington, California, North Dakota, Texas).

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Hq ARDC to Comdr WDD MAR 20 56
Evaluation Board, WS 117L

Subject: "(U) Report of Contractor

- (8) One data processing station (may be combined with one of Item 7).

In addition to the above new facilities, extensive use is planned of existing Government and Martin Company facilities, including those being built for the SM-68 program.

The Glenn L. Martin Company proposes to conduct developmental launchings from AFMTC and operational launchings from an undetermined location, probably in the Hawaiian Islands. Four data receiving stations, and a central data processing station, all in the continental United States would be required.

The Martin proposal does not cost any Government furnished equipment or facilities. Notable among these are the auxiliary power units, 8-FPS 16 radars, and the boosters and facilities listed previously. The cost of the Martin Program, less the above items is as follows:

FY	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>Total</u>
Cost (Thousands of dollars)	16,980	27,610	25,300	8,588	78,478

5. EVALUATION SUMMARY

a. Technical Evaluation

A technical evaluation of the Contractors' design studies was conducted by the Technical Advisory Group of the Advanced Reconnaissance System Weapon System Project Office in accordance with previously established Evaluation Rules and a report submitted to the Board for consideration.

A weight of 500 points of a total of 1000 points was assigned by the Board to the Technical Evaluation.

The Board finds on the basis of the Technical Evaluation that the Lockheed Aircraft Corporation is the preferred contractor choice by a small margin over the Radio Corporation of America and by a significant margin over the Glenn L. Martin Company. All three contractors are considered acceptable from a technical standpoint.

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Lockheed Aircraft Corporation (Points Received 354.20).

The technical considerations which indicate the selection of Lockheed as the preferred prime contractor relate primarily to their better system approach to a comprehensive technical program. Lockheed has significant experience in the fields of electronics, airframe design, guidance and control, nuclear powerplants, and missile flight test. RCA, on the other hand, although extremely competent in the electronics field, has so little experience in other areas that their ability to effectively integrate the developmental activities of Bell Aircraft is questionable. Lockheed demonstrated this better overall technical position in the completeness and balance of their proposed development plan. Lockheed's slight margin over RCA in the various component areas stems from a small accumulation of points in fields other than visual reconnaissance and ground handling. The technical competence of Lockheed's principle sub-contractors, Eastman Kodak Company and Columbia Broadcasting Corporation, is adequate and together with Lockheed they comprise the strongest technical team. The extensiveness of the flight test program proposed demands that the Air Force require early decisions and firm resolution of subsystem approach to avoid serious dilution of effort.

Radio Corporation of America (Points Received 342.05).

The Radio Corporation of America is outstanding in electronic research and their proposal was particularly strong in the areas of visual reconnaissance, ferret, data processing, acquisition and tracking, and communication. Because of their lack of technical competence in the related technical areas of this complex system, there is a lack of assurance that RCA could give the technical direction to a program as required of a system manager. The technical team of Radio Corporation of America and Bell Aircraft, although acceptable, is rated below the Lockheed team. Bell's technical competence and performance in the fields of propulsion, airframe, and guidance was recognized to be acceptable but it is believed that their performance would pace the system development. The depth of understanding of the technical problems in many areas as presented in the design studies prepared by RCA was less comprehensive than that of Lockheed.

Glenn L. Martin Company (Points Received 307.30). Martin's prime weakness in the component areas lies in acquisition, tracking and command, in their geophysical environment test programs, and weather

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reconnaissance. Particular deficiencies were noted in telemetering, command link, programmer, and the type of back-up provided for the IGY Program. The relatively poor rating of Martin in the technical area stems principally from the fact that the limited nature of their approach does not give adequate assurance that the desired intelligence objectives will be achieved. It also appears questionable that the flight test program outlined will achieve even the limited objectives set. The above disadvantages are deemed to outweigh their previous and currently-being-obtained experience as system managers in the airframe, electronics, guidance and flight test areas.

Summation

The Board has carefully reviewed the Technical Evaluation submitted by the Technical Advisory Group and concurs with its findings. A numeration by the points assigned by the Technical Advisory Group and the Board is as follows:

<u>Contractor</u>	<u>Technical Advisory Group (1000 Points Max)</u>	<u>Board Evaluation (500 Points Max)</u>
Lockheed	708.4	354.20
RCA	682.1	342.05
Martin	614.6	307.30

b. Development and Production Aspects

An evaluation of the development and production aspects of the contractors' design studies was conducted in accordance with previously established rules by an Air Materiel Command Evaluation Group and a report submitted to the Board for consideration.

A weight of 300 points of a total of 1000 points was assigned by the Board to the development and production aspects.

With respect, then, to development and production aspects, the Board makes the following statements:

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Lockheed Aircraft Corporation is the preferred contractor choice for systems management of WS 117L.

Radio Corporation of America is second to Lockheed Aircraft Corporation by a significant margin.

The Glenn L. Martin Company is well out of the range of contention in this evaluation area.

The major factors considered by the Board in selecting this order of preference for systems management are summarized, by company, as follows:

Lockheed Aircraft Corporation (Points Received 229.17)

Lockheed's soundly conceived systems management approach, the assignment of enthusiastic, high caliber personnel, and the pledge of top level corporate emphasis contributed to an excellent organizational rating. A comprehensive master plan is presented for what was considered to be the optimum system of those proposed. Manpower requirements however are not uniformly phased. Lockheed proposes to subcontract 45% of their total effort among Eastman Kodak Company, a leader in the photo field, CBS and a very strong group of subcontractors in lesser roles. Total labor requirements, professional and non-professional, were the highest submitted. Facility requirements are the highest, most complete, and realistic of those submitted. Total costs, less fee, facilities and GFAE, are estimated to be \$336.65 million.

Radio Corporation of America (Points Received 172.90)

RCA proposes a rather elaborate ARS organizational structure to be lodged high in the Corporation, headed by a corporate director, and staffed with competent personnel. Their master plan, covering a period of eight years, envisions a progressive development program, recognizes the fundamental and pacing problems, and provides for interim solutions in subsystem areas where development may lag. Fifty-five per cent of RCA's effort will be subcontracted - primarily to Bell Aircraft Corporation. Although RCA is admittedly very strong in the electronics field the selection of Bell Aircraft for vehicle production could well be the pacing factor in RCA's effort. Planning for labor, both professional and non-professional, appears to be well timed except for a heavy labor requirement for Bell Aircraft which is unsupported. Facility requirements and attendant costs are incomplete. Test sites, tracking stations,

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and data handling equipment would be required; however, RCA considered this to be a matter more appropriate for the USAF to resolve. Total costs, less fee, facilities, and GF&E are estimated by the contractor to be \$346.2 million.

Glenn L. Martin Company (Points Received 120.83)

From an organizational viewpoint Glenn L. Martin considers the ARS as "just another project." Their master plan relies heavily on "off the shelf" items to produce a system of early operation but of limited capability. Development programs required to meet the ultimate reconnaissance objectives are omitted. Their plan appears overly optimistic, of short duration, and not comparable to the programs submitted by the other two contractors. Subcontract structure was considered to be excellent. Forty-two per cent of the total effort would be subcontracted. Labor planning reflects Martin's over-simplified approach. Facility requirements and attendant costs are incomplete. Cost information submitted fails to indicate the efforts required to obtain the desired ARS capability. Martin would suggest additional efforts during the prosecution of their proposed limited system. Indicative of this is Martin's present total cost estimates of \$78.7 million, less fee, facilities and GF&E, as compared to well over \$300 million estimated by the other two contractors.

Summation

The Board has carefully reviewed the Development and Production Report submitted by the AMC Evaluation Group and concurs with its findings. At the outset the AMC Evaluation Group proposed that a total of 1000 points be utilized. However, they were unable to evaluate numerically the "facilities" factor as a common base line for comparison is lacking. Therefore, the maximum point score obtainable by any contractor in the AMC Evaluation was reduced to 900. A weight of 300 points, of a total of 1000 points, was assigned by the Board to the development and production aspects. Numerical evaluation of the companies involved as assigned by the Group and the Board is as follows:

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<u>Contractor</u>	<u>AMC Group Evaluation (900 Points Max)</u>	<u>Board Evaluation (300 Points Max)</u>
Lockheed	687.5	229.17
RCA	581.7	172.90
Martin	362.5	120.83

c. Systems Management Potential

(1) The purpose of this section is to make a Board evaluation of the contractors' overall understanding of and approach to the problem of designing, developing, and testing an adequate satellite reconnaissance system to a high degree of reliability in the shortest possible time. The evaluation to be made here considers:

(a) Aspects which, although treated elsewhere, are considered by the Board to have sufficient importance to justify the assignment of additional weight.

(b) Aspects not treated elsewhere and considered by the Board to have significance.

(2) In making this evaluation the Board has considered four broad categories:

(a) Contractor philosophies - Program adequacy

(b) Interference from (or with) other programs

(c) Contractor motivation

(d) Flight test philosophy

(3) Contractor Philosophies - Program Adequacy - The problem of designing useful systems revolves around a knowledge of the basic intelligence needs, as well as a "feel" for the constantly changing objectives as both nations involved progress in their military technologies. Not only will the collection environment vary with improved enemy defenses;

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intelligence objectives (such as target types) will change also, and sometimes radically, in a relatively short time. Thus a long term development program, leading to an advanced or high order intelligence collection system, must be flexible and amendable to reasonable reorientation without disruption or excessive time loss. In evaluating the proposals for an Advanced Reconnaissance System the Board has given due consideration to the individual program's adaptability to these changing requirements so inherent to the intelligence problem. Needless to say, these same changing intelligence requirements have considerable bearing upon the utility of the systems proposed, and here again, flexibility of thought, initiative, and span of purpose are factors weighting the Board's recommendations.

a. Lockheed Aircraft Corporation

The Lockheed proposal for the Advanced Reconnaissance System is a "building block" plan, providing for alternative subsystem development chosen to yield a system of increasing usefulness on a reasonable time scale. The program is designed to reach a stage of real operational utility as quickly as possible, considering required advances in technology, and shows evidence of much initiative and "forward thinking" on the part of Lockheed Aircraft Corporation in proposing the use of the Advanced Reconnaissance System as a feasible means for an early warning of both air-breathing and long-range ballistic missile attack. It is the opinion of the Board that achieving this single objective could well warrant embarking upon the Advanced Reconnaissance System program. However, in following the Lockheed Aircraft Corporation program through Pioneer, Advanced, and Surveillance milestones, Lockheed has shown a good understanding of intelligence operations by planning (initially) for actual operations and reflecting these plans in a realistic manner insofar as costs, facility and training requirements, and scope of operations is concerned. There is every evidence that Lockheed's program is flexible, with a minimum of non-operational development. Subsystem development order can be varied, within limits, to provide emphasis on visual, ferret, or infra-red reconnaissance, thus permitting quick advantage to be taken of technical advances. This same flexibility is, of course, necessary to meet changing intelligence requirements.

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In examining the Lockheed proposal, it becomes evident that the relatively high quality reconnaissance capability will be attained only through high cost, in money, vehicles, and facilities. In this connection, it should be borne in mind that the Advanced Reconnaissance System is required to fill a positive operational requirement; it will be placed in use as soon as available.

b. Radio Corporation of America

The Advanced Reconnaissance System proposal by Radio Corporation of America features a fairly conservative program of step by step component research and test, leading to demonstration of both visual and ferret systems at the end of the eight year program. Some operational reconnaissance is possible during the test program, but specific operational milestones are not delineated. The thoroughness of RCA's technical approach, while desirable from the standpoint of reliability, does not permit any great degree of flexibility to meet the ever changing requirements for intelligence information. While RCA has developed a reasonable understanding of the intelligence problem, not much initiative has been shown in expanding the potential utility of the Advanced Reconnaissance System, as was done by Lockheed. In addition, little attention was given to developing an operational concept for the system, although this is not normally a contractor function, it does promote (especially in the case of unconventional systems) a better "feel" for the Air Force problems.

On the strong side, the RCA program indicates excellent technical depth to handle development of the reconnaissance and information handling portions of the Advanced Reconnaissance System.

c. Glenn L. Martin Company

From the standpoint of reaction to changing intelligence requirements, the Glenn L. Martin proposal is notably lacking in program flexibility. Basically the Glenn L. Martin plan goes no farther in estimating system requirements and growth than does the original RAND study of the satellite problem. Glenn L. Martin seems satisfied to propose a means for attaining a minimum reconnaissance capability.

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There is no evidence that the operational aspects of the Advanced Reconnaissance System have been studied to any great extent, and the Glenn L. Martin proposal seems to be concentrated in the direction of minimum effort in cost and vehicles. Such an approach had its advantages in economy; however, it fails to satisfy the overall Advanced Reconnaissance System requirement except in the most austere sense.

(4) Interference from (or with) other programs - In considering this subject the Board was influenced to a considerable degree by the extent of scientific and technological effort in many different, and frequently unrelated areas which will be required for the successful prosecution of the Advanced Reconnaissance System program. This fact places a premium on systems management of a high order, and a degree of scientific versatility which is rare.

a. Lockheed Aircraft Corporation

During the past two and a half years this contractor has placed great emphasis on building up a capability for systems management in the guided missiles area. The reputation of the Lockheed Missile Systems Division as individuals is high. Their ability to function as a tightly-knit systems management team has not been demonstrated to date, since they have not had a weapon system to manage. The company's present programs in the Missile Systems Division are all supporting programs, although the re-entry test vehicle for the ICBM program carries a very high priority. They state, however, that this program will be completed in January 1957, leaving them free to turn their entire attention to the Advanced Reconnaissance System. From the standpoint of interference it is believed that the X-17 project is the only effort currently underway at Lockheed which might present difficulty, and if this terminates as planned mutual interference should be relatively minor.

b. Radio Corporation of America

Like Lockheed, RCA is a relative newcomer to the field of guided missile weapon system management, as well as a newcomer to the guided missile area as a whole. It is the understanding of the Board that their present systems management organization was set up

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specifically to manage the Advanced Reconnaissance System program, and it does not seem to be fully staffed as yet. The competence of RCA in the research and development of electronic systems and electronic components is unquestioned but the caliber of their systems management team remains an unknown. Their performance to date on the Advanced Reconnaissance System Study contract has not demonstrated an outstanding ability to organize and direct a major sub-contractor effort. In this area it is considerably inferior to that of Lockheed and Martin. It was reasonably obvious in the RCA oral presentation that both RCA and Bell had suffered from communication difficulty. With respect to interference from or with other programs the fact that RCA's systems management group will be exclusively concerned with the Advanced Reconnaissance System program, since they have no other system development on the books, certainly is an attractive feature. Judged purely on the basis of non-interference from or with other systems RCA is in the strongest position of any of the three competitors.

c. Glenn L. Martin Company

The Martin Company is unique among the bidders in this competition in that they are the only competitor with a broad background of weapon system management experience. They have carried the TM-61A Matador through design, development, testing, and deployment to the using command. They have learned a great many things in this process--some of them the hard way. Considering the complexity of the system management problem presented by ARS, Martin is in a position of strength insofar as proven systems management ability is concerned and this could be a deciding factor if the Martin "first team" were available. It is the feeling of the Board, however, that this is not and will not be the case. Martin is just beginning its personnel build-up in support of the SM-68 operation at Denver and the bleeding off of trained management is already felt in other Martin programs. The TM-61B for instance has just experienced its first schedule slippage in three and a half years, and the RB-57D program is also in some difficulty. When the priorities of the SM-68 and Vanguard programs are considered, together with Martin's other program responsibilities, it becomes reasonably obvious that this company is spreading its trained managerial resources exceedingly thin. The imposition of another program of high priority and great technical difficulty at this time on this relatively small company is considered by the Board to be unwise.

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(5) Motivations and Contractor Relationships - In a program of this type, it is important to answer the question as to why a contractor is interested in participating. On the face of it, the Advanced Reconnaissance System will never be an especially profitable venture for any contractor. On the strong side, there is an undeniable prestige factor to be considered, since the ARS takes the first step toward real space flight. In its contacts with contractors, the Board has received many impressions of contractor reasoning on participation, and indication of their feelings on type of participation. Because such motivations may influence USAF - Contractor relationships during a relatively long program period, the Board has included this area in its consideration of contractor choice.

a. Lockheed Aircraft Corporation

The Lockheed Corporation is presently the only large airframe contractor in the United States which does not have a major missile contract with the military services. Representatives of the company frankly state that their basic interest in the ARS is considerably reinforced by this fact. The important considerations here are Lockheed's avowed intention to cooperate in every way possible with the Air Force on the ARS program, and to establish a good reputation in the missile field. Thus, in addition to an apparent superiority over both RCA and Glenn L. Martin on the system approach to the ARS, Lockheed's attitude leaves no doubt as to their flexibility and willingness to accept Air Force direction on the ARS program.

b. Radio Corporation of America

The Radio Corporation of America has recently developed a strong interest in becoming a weapon system contractor, and representatives of the company have indicated that such a policy is company-wide. Perhaps for this reason, RCA representatives have mentioned to members of this Board that RCA will not be willing to enter the ARS program in any capacity other than as prime system contractor. Experience with RCA during the design study phase of ARS shows the company to resist Air Force direction, and to consider such direction as unwarranted interference by unqualified sources. This attitude, plus the fact

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of RCA's lack of dependence upon military work for its profits, could create many problems during ARS development; reducing program flexibility and attendant requirements for occasional reorientation, and placing the WSPO in a distinctly subservient position with regard to program direction, choice of sub-contractors, and so on.

c. Glenn L. Martin Company

The Glenn L. Martin Company, like every airframe contractor, would like to be first in the "space flight" area. Their initial enthusiasm for the ARS program reflected this desire; however, through association with the IGY satellite project (Vanguard), Glenn L. Martin sees a partial answer to this motivation and their enthusiasm for the much more complex and difficult ARS program seems to have dimmed somewhat. Company representatives have stated that the ARS will take its place with other projects, and the Glenn L. Martin proposal reflects a minimum of real thought and planning.

(6) Flight Test Planning - In any unmanned weapon system, development schedules are paced to a large extent by the ability to derive usable development information from the flight test program. Although the adequacy of flight test planning was reviewed by each element of the Technical Evaluation Group as it applied to the sub-systems with which they were concerned, the Board felt that it was mandatory that some overall evaluation in this area be made.

a. Lockheed Aircraft Corporation

Lockheed proposes a phased program consisting of eight overlapping blocks of test effort. From each of these blocks will come a significant demonstration of accomplishment which can be measured and used as a basis for advance to the next step. With the exception of Program I which has as its aim only the demonstration of orbital capability, each succeeding program will result in a vehicle which can perform an actual reconnaissance mission with an increasing degree of sophistication. The Lockheed test plan has been presented in greater detail than that of either of the other contractors and seems to represent a greater depth of planning effort. It is open to criticism in that the planned use of Sergeant boosted payloads could be described as "dead end testing," but this is actually a misnomer since the

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Sergeants are used merely to put full scale components into an environment that is not duplicatable on the ground and about which little factual data is available. Their function is very similar to that of the X-17. An attractive feature of this plan is the fact that Lockheed could conceivably do a large part of this "System Test Vehicle" work at Holloman Air Force Base, thus relieving some of the launch load at Patrick. It also cuts down on the requirement for ICBM boosters by a significant number. Lockheed is believed to have been considerably more realistic than either RCA or Martin in assessing the number of vehicle flights required for component and subsystem development.

b. Radio Corporation of America

RCA also proposes a phased program of growth and increasing sophistication of system testing, similar to that of Lockheed but of considerably less flexibility and showing little operational utility until shortly before the final demonstration flights in the last quarter of 1963 and the first and second quarters of 1964. They propose the launching of seventy-six vehicles beginning with the orbital demonstration during the last quarter of 1958. All of these vehicles would be full scale, Atlas boosted types, although payloads would vary considerably. The fact that RCA uses nothing but full scale vehicles may be a plus point here, but the Board questions whether this approach will in actuality be superior to that of Lockheed in the special case of the ARS. An additional drawback, of course, is the much heavier requirement for SM-65 boosters.

c. Glenn L. Martin Company

The Martin proposed test program appears to be adequate within this company's self-imposed cut-off of development in mid 1960 but totally inadequate to provide the Air Force with a usable reconnaissance system. Martin proposes to utilize seven Vanguard rockets for component testing, three second stage SM-68's for "third stage proof testing," four SM-65's for IGY demonstration, five SM-65's for initial demonstration of satellite feasibility and eight SM-68's for final ARS development and demonstration. This shifting of the full scale third stage satellite back and forth between the SM-65 booster and the SM-68 booster within the space of less than two years seems to the Board to be somewhat short of an optimum approach to a complex development problem. Martin explains it by remarking that they would

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prefer to use the SM-68 booster throughout the program because of its greater performance margin, but were forced to the SM-65 by the requirement for an IGY demonstration. Whatever the explanation, the Martin flight test program as it stands is definitely not recommended by the Board.

The Board evaluates the items discussed in paragraph 5c as follows:

	Possible Points	LAC	RCA	GM
Contractor Philosophy - System Adequacy	50	45	30	20
Interference from (or with) other programs	50	35	40	10
Contractor Motivation	50	50	30	25
Flight Test Planning	50	45	35	20
Total	200	175	135	75

d. Summation of Points Scored.

	Tech Eval	Dev and Prod Aspects	Sys Mgt Potential	Total
Points Possible	500	300	200	1000
Lockheed	354.20	229.17	175.00	758.37
RCA	342.05	172.90	135.00	649.95
Martin	307.30	120.83	75.00	503.13

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6. The Board action to this point in the proceedings has dealt with the selection of the best of the three contractor proposals as submitted. However, there has been generated within the Board a definite feeling that a stronger development team could perhaps be devised if the existing team associations were disregarded and a new team considered. In the following up on this line of thought the Board subdivided the entire development into sub-system areas of effort and re-examined all of the data and opinions summarized in paragraph 5 above. This subdivision of effort required and the opinion of the Board as to a preferred listing of qualified sub-contractors in each case are summarized as follows:

a. Systems Management. All three proposals were predicated on the assumption that the winner would be the prime system manager. The Board rates the three competitors in the field of potential system management in the order: Lockheed, Radio Corporation of America, and Glenn L. Martin. Any change imposed by the Air Force which would establish an additional contractor as system manager would, in the opinion of the Board, be resisted but eventually accepted by Lockheed and Martin and rejected by RCA.

b. Satellite Vehicle. All vehicles are acceptable and the order of Board preference is: (1) Lockheed, (2) Glenn L. Martin, and (3) Bell Aircraft.

c. Guidance and Attitude Control. None of the proposals makes full use of potential guidance systems currently under development. The Board recommends that the winner of the ARS competition be directed to include either North American Aviation, Inc. or Massachusetts Institute of Technology (with A. C. Spark Plug) in the System development team.

d. Visual Reconnaissance. The RCA TV technique indicates good potential for future high order systems. However, film techniques would probably be available first and could develop further into the principal means for ARS visual reconnaissance. Philco's TV approach requires large amounts of electric power, and will depend on availability of a nuclear APU. The Board's order of preference is: (1) Radio Corporation of America, (2) Eastman Kodak-CBS, and (3) Philco.

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e. Ferret Reconnaissance. All ferret proposals are acceptable, with Glenn L. Martin's having somewhat greater versatility. The Board order of preference is: (1) Glenn L. Martin, (2) CBS or RCA.

f. Information Data Handling. All proposals are expected to result in satisfactory techniques for performing this function, with Radio Corporation of America showing slightly better planning in the areas of data extraction and dissemination. The Board order of preference is: (1) Radio Corporation of America, (2) Eastman Kodak Company, and (3) International Business Machines.

7. In summary, the Board finds that:

a. The Advanced Reconnaissance System, as studied by Lockheed Aircraft Corporation, Radio Corporation of America, and Glenn L. Martin Company is a practicable and valuable system which should be exploited by the Air Force.

b. Of the proposals submitted, that of the Lockheed Aircraft Corporation is clearly superior, followed by Radio Corporation of America with Glenn L. Martin a definite last.

c. The Lockheed team would be strengthened by the addition of either Massachusetts Institute of Technology--A.C. Spark Plug or North American Aviation, Inc. in the guidance area, and the addition of Radio Corporation of America in the visual reconnaissance and data handling areas.

8. The Board recommends that:

The Lockheed Aircraft Corporation be awarded a prime contract for the development of WS 117L and that, if practical, the strengthening outlined above be carried out.

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9. The contractor evaluation and this report represent the unanimous opinion of the Evaluation Board.

~~William H. Baynes~~
WILLIAM H. BAYNES
Colonel, USAF, RDZS2/ARDC
President

~~William C. King, Jr.~~
WILLIAM C. KING, JR.
Lt Colonel, USAF, RDZSQ/ARDC
Recorder

~~Victor M. Genz~~
VICTOR M. GENZ
Lt Colonel, USAF, RDZPI/ARDC

~~Robert S. Washburn~~
ROBERT S. WASHBURN
1st Lt, USAF, 3APC/AMC

~~Richard C. Holub~~
RICHARD C. HOLUB
Lt Colonel, USAF, MCPRP/AMC

~~Raymond S. Elocker~~
RAYMOND S. ELOCKER
RDZSQ/ARDC

~~R. C. Enax~~
R. C. ENAX
Commander, USN, WDD

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117L

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AND ACTION IS FOLLOWING MESSAGE FROM HQ USAF CLN QTE AFDDC 51002 CMM
SUBJ CLN SYS 117L. REF YOUR LTR OF 8 MAY SUBMITTING DEVELOPMENT
PLAN AND TWX RDGB-5-8-E DTD 11 MAY. DEVELOPMENT PLAN BEING
REVIEWED BY AIR STAFF. NO FY 56 FUNDS AVAILABLE AND NEITHER ARDC NOR
USAF FY 57 FINANCIAL PLANS CARRY FUNDS FOR THIS SYS. FY 56 OSD
EMERGENCY FUNDS UNAVAILABLE CLN POSSIBILITY OF OBTAINING OSD FY 57
EMERGENCY FUNDS BEING INVESTIGATED. AUTHORITY TO INITIATE CONTRACTUAL
ACTION FOR SYS DEVELOPMENT CANNOT BE GRANTED UNTIL FY 57 FUNDING IS
RESOLVED. IN MEAN TIME YOU ARE AUTHORIZED TO ANNOUNCE CONTRACT OR
SELECTION AND EXPEND REMAINING PROJECT 1115 FUNDS TO MAINTAIN CONTINUITY
OF ENGINEERING STUDY BY LOCKHEED

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"AC—PARAPHRASING NOT REQUIRED EXCEPT PRIOR TO CATEGORY B ENCRYPTION—PHYSICALLY REMOVE ALL INTERNAL REFERENCES BY DATE-TIME GROUP PRIOR TO DECLASSIFICATION UNLESS UNCLASSIFIED REFERENCE IF DATE-TIME GROUP IS QUOTED."
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12 June 1956

MEMORANDUM FOR: Colonel Terhune

SUBJECT: Status of WS 117L Program as of 12 June 1956

1. The WS 117L Development Plan was submitted to Hq ARDC on 20 April 1956. The report of the Contractor Evaluation Board was forwarded on 5 May 1956. On 12 May a TWX was received from ARDC stating, in substance, as follows:

No FY 56 funds are available, no funds have been budgeted for FY 57 for WS 117L. Efforts are being made to secure FY 57 funds from OSD. Pending approval of Development Plan and availability FY 57 funds, authority granted to announce contractor selection and to expend remaining Project 1115 funds to continue engineering studies at Lockheed.

2. Warning and losing contractors were notified on 25 May 1956. A CCN to extend Lockheed's contract to 1 October was issued on 12 June. This extension has been financed with \$322,245 of Project 1115 funds, the entire balance remaining.

3. There is still no firm estimate of facilities cost available. The primary variable is the extent to which it may be possible to coordinate use of the WS 107A IOC west coast site with the WS 117L R&D and operational launch site. Currently, WDTR and WDO agree that the best approach is to plan to conduct all ARS firings, both R&D and operational, from the IOC west coast site. This would relieve the pressure on AFMTC completely. Since a west coast WS 117L site seems to be necessary ultimately, the disruption resulting from moving, and the duplication of facilities could be avoided. A rough estimate of facility money required on this basis would be:

FY 57: P300 - 15.0M, P200 - 5.0M
FY 58: P300 - 6.5 M, P200 - 37M

SIGNED

R. C. TRUAX
Commander, USH
Assistant Deputy for WS 117L
Technical Operations

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WDTR 56-49

(initials) W D G N
96

**WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California**

PERSONNEL ACTIONS MEMORANDUM)
NUMBER 16)

5 July 1956

- 220
1. VOC, iss 28 Jun 56, Asg LTCOL FRANCIS K BAGBY, 4456A, this Div, this sta, Prim Dy as Proj 0 (Systems Integration) Systems Integration Ofc WS 107A-2, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 2. VOC, iss 2 Jul 56, Asg LTCOL JOHN S CHANDLER, 10102A, this Div, this sta, Prim Dy as Proj 0, Facilities, Facil & Test Ofc WS 107A-2, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 3. VOC, iss 2 Jul 56, Asg LTCOL RICHIE B GOUGH, 7003A, this Div, this sta, Prim Dy as Proj 0 (Systems Integration) Systems Integration Ofc, Asst for WS 107A-1, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 4. VOC, iss 2 Jul 56, Asg LTCOL FREDERICK S PORTER, JR, 12848A, this Div, this sta, Prim Dy as Asst Ch, Test Group, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 5. VOC, iss 2 Jul 56, Asg LTCOL QUEENEN A RIEPE, 9883A, this Div, this sta, Prim Dy as Proj 0 (Schedules) Plans & Prog Ofc, Asst for WS 117L, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 6. VOC, iss 1 Jul 56, Asg LTCOL ROY J WELLMAN, A0311160, this Div, this sta, Prim Dy as Asst Ch, Propulsion Gp, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 7. VOC, iss 1 Jul 56, Asg MAJ ALBERT L BUEHLER, A0748057, this Div, this sta, Prim Dy as Ch, Acctg Br, Comptroller, Support Opns (6736), are cfm ESPWO. FA: 57000.
 8. VOC, iss 2 Jul 56, Asg MAJ DAVID L CARTER, 12035A, this Div, this sta, Prim Dy as Dep Asst for Tech Gps, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 9. VOC, iss 2 Jul 56, Asg MAJ RICHARD L DENNEN, 15837A, this Div, this sta, Prim Dy as Test Proj 0, WS 107A-1 Test Br, Test Gp, Tech Opns (8446), are cfm ESPWO. FA: 57000.
 10. VOC, iss 2 Jul 56, Asg MAJ WILLIAM E EBECKE, 13235A, this Div, this sta, Prim Dy as R & D Proj Adm, Branch "G", Armament Gp, Tech Opns (8446), are cfm ESPWO. FA: 57000.

8

Para 1 thru 26, PERAM 16, WDD (ARDC) 5 Jul 56

11. VOC, iss 2 Jul 56, Asg MAJ SIDNEY GREENE, 20658A, this Div, this sta, Prim Dy as Proj 0, Systems Integration Ofc, Asst for WS 315A, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

12. VOC, iss 1 Jul 56, Asg MAJ WILLIAM F HEIBLER, 8979A, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj 0 (Schedules) WS 107A-1 Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8446) are cfm ESPFWO. FA: 57000.

13. VOC, iss 2 Jul 56, Asg MAJ JOHN W HINEY, 12105A, this Div, this sta, Prim Dy as Asst Ch, (WS 107A) Programs Br, Prog & Proc Gp, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

14. VOC, iss 2 Jul 56, Asg MAJ ULLIN L HUDSON, 10120A, this Div, this sta, Prim Dy as Ch, Programs Contl Rm Br, Prog & Proc Gp, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

15. VOC, iss 1 Jul 56, Asg MAJ JOHN C LE SUER, A0884110, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj 0 (Schedules), WS 107A-2 Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

16. VOC, iss 2 Jul 56, Asg MAJ PEPPER G BALMOS, 14919A, this Div, this sta, Prim Dy as Ch, Budget Br, Comptroller, Support Opns (6736), are cfm ESPFWO. FA: 57000.

17. VOC, iss 1 Jul 56, Asg MAJ ANTHONY J ROSE, 17043A, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj 0 (Airframe) WS 315A Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

18. VOC, iss 2 Jul 56, Asg MAJ ROBERT J RUSHING, A0684899, this Div, this sta, Prim Dy as Proj Assistance O, Proj Asst Sec, Security Gp, Support Opns (7716), are cfm ESPFWO. FA: 57000.

19. VOC, iss 2 Jul 56, Asg MAJ JOHN A WEBSTER, 14134A, this Div, this sta, Prim Dy as Proj Assistance O, Proj Asst Sec, Security Gp, Support Opns (7716), are cfm ESPFWO. FA: 57000.

20. VOC, iss 24 Jun 56, Asg MAJ RAYMOND E ZELENKA, 12701A, this Div, this sta, Prim Dy as Proj 0 (Programs), Plans & Prog Ofc, Asst for WS 117L, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

21. VOC, iss 24 Jun 56, Asg CAPT LEWIS B C LOGAN, 17345A, this Div, this sta, Prim Dy as Proj 0 (Guidance), Systems Integration Ofc, Asst for WS 117L, Tech Opns (8446), are cfm ESPFWO. FA: 57000.

22. VOC, iss 1 Jul 56, Asg CAPT ROBERT W ROY, 22332A, this Div, Dy Sta Patrick AFB, Fla, Prim Dy as Proj 0 X-17, X-17 Proj Ofc, WDD Field Ofc, AFMTC, Tech Opns (8464), are cfm ESPFWO. FA: 57000.

Para 1 thru 26, PERAM 16, EDD (ARDC) 5 Jul 56

23. VOC, iss 1 Jul 56, Asg CAPT WILMER C WALTERS, JR, 27017A, this Div, this sta, Prim Dy as Asst Proj O (Systems Integration Ofc) Asst for WS 315A, Tech Opns (8446), are cfm ESPWO. FA: 57000.

24. SMOP 2, PERAM 15, this Div, this sta, cs, PERT to LTCOL LANGDON F AYRES, 9512A, as reads "VOC, iss 18 Jun 56" IATR "VOC, iss 30 Jun 56."

25. SMOP 9, PERAM 14, this Div, this sta, cs, PERT to MAJ BERNARD R ADLER, 13982A, as reads "12982A" IATR "13982A."

26. Functional Category of the FNO is changed from PFA to PFB:

LTCOL FRANCIS K BAGBY, 4456A
LTCOL JOHN S CHANDLER, 10102A
LTCOL RITCHIE B GOOCH, 7003A
LTCOL FREDERICK S PORTER, JR, 12848A
LTCOL QUENTEN A RIEPE, 9883A
LTCOL ROY J WELLMAN, A031160
MAJ ALBERT L BUEHLER, A0748057
MAJ DAVID L CARTER, 12035A
MAJ RICHARD L DENNEN, 15837A
MAJ WILLIAM H ERELKE, 13235A
MAJ SIDNEY GREENE, 20658A
MAJ WILLIAM F HEISLER, 8979A

MAJ JOHN W HINEY, 12105A
MAJ ULLIN L HUDSON, 10120A
MAJ JOHN C LE SUEUR, A0884110
MAJ PETER G PALMOS, 14919A
MAJ ANTHONY J ROSE, 17043A
MAJ ROBERT J RUSHING, A0684899
MAJ JOHN A WEBSTER, 14134A
MAJ RAYMOND E ZELENKA, 12701A
CAPT LEWIS B C LOGAN, 17345A
CAPT ROBERT W ROY, 22332A
CAPT WILMER C WALTERS, JR, 27017A

BY ORDER OF THE COMMANDER:

OFFICIAL:

JACK E. TICE
Capt, USAF
Asst Div Adjutant


JACK E. TICE
Capt, USAF
Asst Div Adjutant

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~~CONFIDENTIAL~~

JUL 11 1956

223

Mr. T. A. Smith
Radio Corporation of America
Camden 2, New Jersey

Dear Mr. Smith:

I have noted with interest the offer of the Radio Corporation of America to cooperate with the Lockheed Aircraft Corporation in further prosecution of work on the Advanced Reconnaissance System. The Air Force will encourage the Lockheed Aircraft Corporation to make an expeditious selection of its subcontracting teams. Certain decisions must yet be made at high levels in the Department of Defense however, before the magnitude and timing of the program can be fixed. This may prevent early establishment of firm contractual arrangements.

Your continued interest and enthusiasm for the Advanced Reconnaissance System program is appreciated.

Sincerely,

ORIGINAL SIGNED:
B. A. SCHRIEVER

B. A. SCHRIEVER
Major General, USAF
Commander

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DECLASSIFIED AFTER 12 YEARS.
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WDTR
H.C. Truax

DH
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~~SECRET~~

WDTR 56-97

WDGE

24 July 1956

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MEMORANDUM FOR: Colonel Ritland

SUBJECT: Meeting with Representatives of Cambridge Research Center

224
1. Reference our conversation on 21 July concerning a proposal from Mr. Dick Coons, Geophysics Division of Headquarters ARDC, that we meet with the representatives of the Air Force Cambridge Research Center to discuss concept of management with regard to participation of the Air Force Cambridge Research Center in our programs. They requested that we set such a meeting up for 31 July or 1 August. I further discussed this matter with Colonel Oder who felt it was highly desirable that we have such a meeting inasmuch as the Air Force Cambridge Research Laboratory has apparently become involved to quite an extent with some of our contractors. I further talked to Mr. Coons and then was called by Mr. Greenberg of the Air Force Cambridge Research Center. They agreed to a meeting at WDD at 0930, 7 August 1956. This is a week after the original date and was arranged as per your suggestion.

2. They desire to meet with you and certain of the WDT Project Office Heads such as Colonels Horton, Glasser, Blasingame and Hall, and would also like to have Dr. Dunn sit in on the meeting.

SIGNED

J. L. HAMILTON
Lt Colonel, USAF
Executive Officer

cc: Col Norton, WDD
Dr. Dunn, R-W

WDGE

al

Lt Col Hamilton 220

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~~CONFIDENTIAL~~

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JUN 25 1956

275

Mr. James D. McLean
Vice President & General Manager
Philco Corporation
Government & Industrial Division
Philadelphia 44, Pennsylvania

Dear Mr. McLean:

I have noted with interest the offer of the Philco Corporation to cooperate with the Lockheed Aircraft Corporation in further prosecution of work on the Advanced Reconnaissance System. (UNCL)

Conversation with Mr. McKey, your local representative, indicates that your visit to the West Coast will be during the first week of August. We, at Western Development Division, will be most happy to discuss your capabilities in future work on W3 117L at this time, although responsibility for selection of subcontractors will rest with the Lockheed Aircraft Corporation, subject of course to Air Force approval. (UNCL)

The Air Force will encourage the Lockheed Aircraft Corporation to make an expeditious selection of its subcontracting teams. Certain decisions must yet be made at high levels in the Department of Defense however, before the magnitude and timing of the program can be fixed. This may prevent early establishment of firm contractual arrangements. (SECRET)

Your continued interest and enthusiasm for the Advanced Reconnaissance System program is appreciated. (UNCL)

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Sincerely yours,

O. J. RITLAND
Colonel, USAF
Vice Commander

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WDTR

R.C. TRUAX

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WDTR 56-106

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, UNITED STATES AIR FORCE
DIRECTORATE OF RESEARCH AND DEVELOPMENT

D. D. NO. 85

DATE 3 August 1956

DEVELOPMENT DIRECTIVE
FOR

(UNCL) WEAPON SYSTEM 1-17L ADVANCED RECONNAISSANCE SYSTEM

1. This Directive is applicable to GOR No. 80, dated 16 March 1955, and to the Development Plan for System No. 117L, dated 2 April 1956, approved by Headquarters USAF on 24 July 1956.

2. RELATIVE IMPORTANCE. A vital requirement for the defense of the United States is the earliest possible warning of a Soviet intention to attack. This system, employing an orbiting satellite, can provide at a reasonably early date, surveillance of the whole Soviet complex. The use of the varied sensing devices in the satellite system should reveal Soviet preparations for a possible attack well in advance of the event. ~~Of equal importance is the need for acquisition of accurate target information, kept currently revised for effective counter attack.~~ As a by-product, Soviet knowledge that they are under surveillance will, in itself, provide a forceful deterrent to the initiation of hostilities. This system is presently assigned a 1A priority and a 1-6 precedence rating.

3. FUNDING INFORMATION. Because of fund limitations, only \$3,900,000 of FY 1957 P-600 series funds are available to your Command to initiate this development.

4. The above statements constitute a directive to initiate such developments as can be supported with the above fund limitations.

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/s/ ~~EMK~~
SPENCER S. HUNN
Colonel, USAF
Chief, Program Control Division
Assistant for Development Programming
Office, DCS/Development

/s/ R. L. Johnston
Colonel, USAF
Deputy Director of
Research & Development
Office, DCS/Development

WD-56-02503

AFCGM-A Control No. 1627

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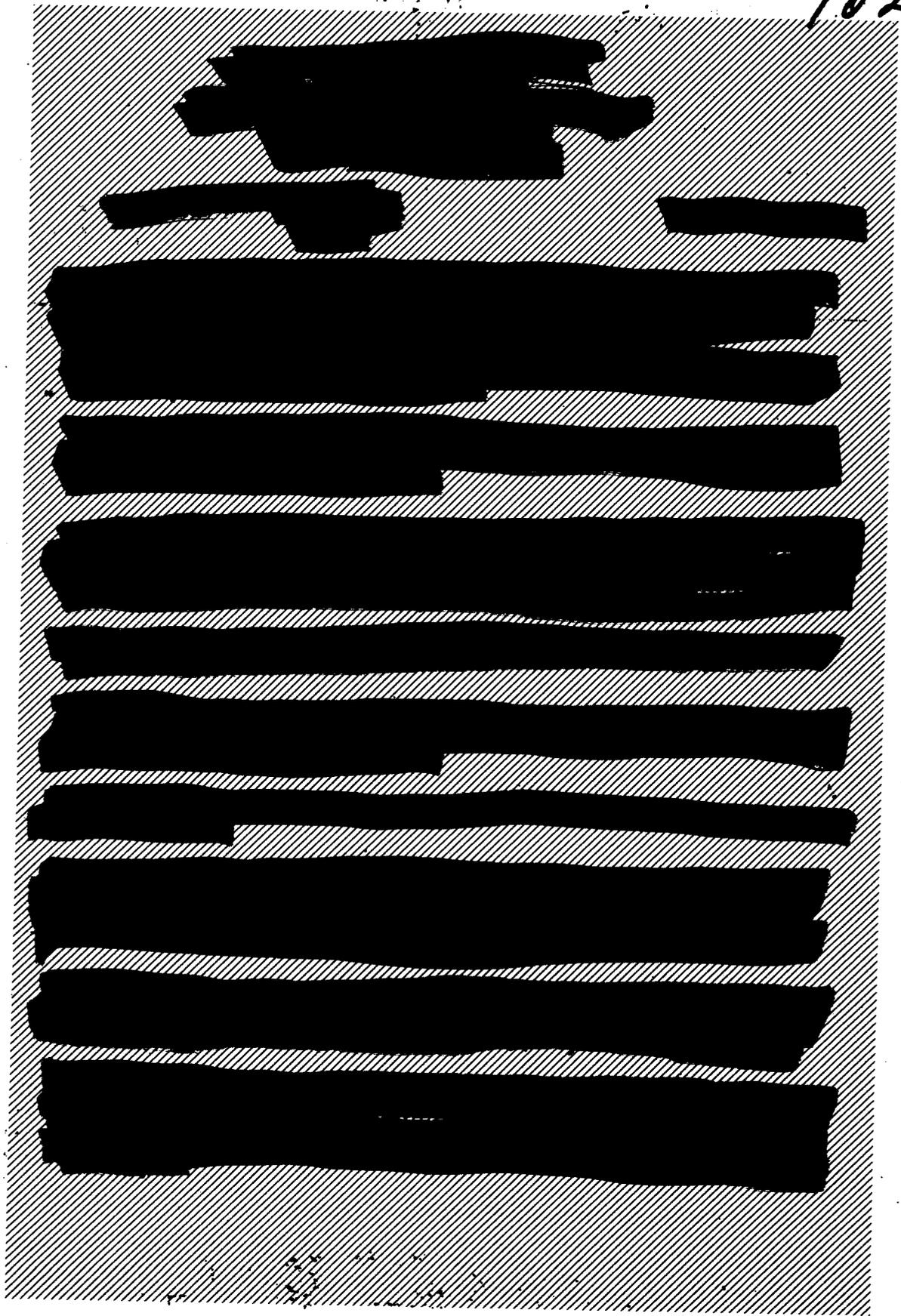
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Para 1 thru 22, PERAM 21, WDD (ARDC) 16 Aug 56

11. VOC, iss 13 Aug 56, Asg LT COL LESLIE F SUMMERFIELD, 7926A, this Div, this sta, Prim Dy as Exec O, Dep Com Tech Opns, Tech Opns (8446), FA: 57000, are cfm ESPWO.

12. The FSSD of MAJ RALPH A BLANKENSHIP, AO 1575759, is chg fr 18 Sep 54 to 17 Mar 56.

13. VOC, iss 9 Aug 56, rel MAJ ROBERT I ELLIS, AO434390, C & E Staff O (Log) Logis Gp, Asst f/ICBM Opns, Plans and Opns (3016), FA: 57000, and Asg new Prim Dy as Opns Staff O (C&E), ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (3016), FA: 57000, are cfm ESPWO.

14. VOC, iss 9 Aug 56, rel MAJ ROY L FERGUSON, JR, AO822032, this Div, this sta, fr Prim Dy as Ch, ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (0071F), FA: 57000, and Asg new Prim Dy as Asst Dep Asst f/ Atlas Opns, Asst f/ICBM Opns, Plans and Opns (0076F), FA: 57000, are cfm ESPWO.

15. VOC, iss 1 Aug 56, Asg MAJ EDWARD L LITTLE, 7225A, this Div, this sta, Prim Dy as Ch, Engr Br, Engr Gp, Instal (5516), FA: 57000, are cfm ESPWO.

16. VOC, iss 9 Aug 56, rel MAJ ARNELL R SUELT, JR, AO861122, this Div, this sta, fr Prim Dy as Opns Staff O (C&E), ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (3016), FA: 57000, and Asg new Prim Dy as Ch, IOC Trng Br, ICBM Opns Gp, Asst f/ICBM Opns, Plans and Opns (7516), FA: 57000, are cfm ESPWO.

17. VOC, iss 3 Aug 56, Asg MAJ TAYLOR B ZINN, AO407777, this Div, Dy sta Patrick AFB, Fla, Prim Dy as Ch WS-315A Proj Ofc, WDD Fld Ofc (AFMTC) Tech Opns (8446), FA: 57000, are cfm ESPWO.

18. PAFSC 6525 of CAPT FLOYD A JOHNSTON, 17822A, this Div, this sta, is conv to PAFSC 6624, UP AFM 36-1.

19. PAFSC 6525 of CAPT SUMNER W WHITE, 28291A, this Div, this sta, is conv to PAFSC 6524, UP AFM 36-1.

20. CAPT FREDERICK L WILSON, AO834079, this Div, this sta, is awd add AFSC 1224C and is desig (2). Old (2) add AFSC 1044C is w/d and w/b del.

21. CAPT FREDERICK L WILSON, AO834079, this Div, this sta, is awd add AFSC 7311.

Para 1 thru 22, PERAM 21, WDD (ARDC) 16 Aug 56

22. The functional cat of the FNO is changed fr PPA to PPB:

COL DANIEL W WICKLAND, 2628A
LTCOL LESLIE F SUMMERFIELD, 7926A
MAJ EDWARD L LITTLE, 7225A
MAJ TAYLOR B ZINN, A040777

BY ORDER OF THE COMMANDER:

OFFICIAL:

JACK E. TICE
Capt, USAF
Asst Div Adjutant

Jack E. Tice
JACK E. TICE
Capt, USAF
Asst Div Adjutant

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NDTR

AUG 16 1956

SUBJECT: WS 117L Development Plan

TO: Commander
Air Force Cambridge Research Center
Attn: CRZT
Laurence G. Hanscom Field
Bedford, Massachusetts

1. Reference is made to your letter dated 13 July 1956,
Subject: WS 117L Development Plan, Paragraph 2.

2. It is requested that Air Force Cambridge Research
Center independently prepare a work statement in your areas of
competence using the ground rules established in paragraph 2a
and 2b in letter dated 13 June 1956, subject: WS 117L Develop-
ment Plan.

3. It is anticipated that when the definitive contract
for the WS 117L prime contractor is prepared, that representatives
of the participating centers will be requested to meet at Western
Development Division and assist in writing the detailed contract.
Notice of this event will be forwarded to you at the earliest
possible time.

FOR THE COMMANDER:

SIGNED

R. C. TRUAX
Commander, USN
Assistant Deputy for WS 117L
Technical Operations

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NDTR 56-121

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

SDD No. 117L

17 August 1956

ARDC SYSTEM DEVELOPMENT DIRECTIVE
ADVANCED RECONNAISSANCE SYSTEM

1. DIRECTED ACTION

Implementation, within the limits established by the following paragraphs of this directive, of System Development Plan No. WS 117L, dated 2 April 1956, title: "Advanced Reconnaissance System," is directed. (UNCL)

2. ASSIGNMENT OF RESPONSIBILITIES

a. Primary responsibility for the implementation and execution of this Development Plan is assigned to Headquarters ARDC, Western Development Division. (UNCL)

b. At the request of Western Development Division, and to the degree stipulated by that agency, the following Centers will be responsible for technical and/or test support, as appropriate, in the execution of the WS 117L Development Plan:

- (1) Air Force Cambridge Research Center.
- (2) Wright Air Development Center.
- (3) Rome Air Development Center.
- (4) Holloman Air Development Center.
- (5) Arnold Engineering Development Center.
- (6) Air Force Missile Test Center.
- (7) Air Force Personnel and Training Research Center.

(UNCL)

3. CHANGES

No specific changes to the WS 117L Development Plan, dated 2 April 1956, are directed. However, it is desirable that the Advanced Reconnaissance System be capable ultimately of meeting all operational and technical intelligence requirements for visual reconnaissance; thus necessary developments to improve the proposed visual sensor system to permit maximum ground resolution should be incorporated in the Development Plan, and such developments initiated as soon as possible in parallel with the WS 117L development program. (SECRET)

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116-36

4. PERTINENT INFORMATION

a. Target Date - As indicated in Top Secret Supplement to WS 117L Development Plan, dated 2 April 1956. (SECRET)

b. Funding Information - This system is being funded under line item 621-117L. (UNCL)

c. References -

(1) USAF General Operational Requirement No. 80 (SA-2c), 16 March 1955.

(2) ARDC System Requirement No. 5, 17 October 1955.

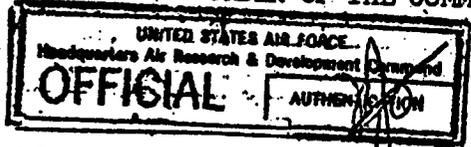
(3) USAF Development Directive No. 85, 3 August 1956. (UNCL)

d. Other -

(1) Security - Maintenance of special security restrictions on information relating to development progress, system status, and planned operational capabilities is directed. A Master Security Classification Guide for WS 117L will be prepared, and a roster maintained of individuals whose position, as known to your organization, requires overall knowledge of the sensitive aspects of the WS 117L development program. An up-to-date copy of this roster will be submitted for retention at this Headquarters, Attn: RDZGW.

(2) Initial Funding - Severe limitations on FY 1957 funds available to this Command permit allocation of only \$3,000,000 to initiate development of WS 117L. As soon as possible, ARDC Form 111, "Research and Development Management Report," should be submitted to Headquarters ARDC, Attn: RDZXP, outlining significant changes to the WS 117L Development Plan which will result from this inadequate initial funding. (SECRET)

BY ORDER OF THE COMMANDER:



JOHN A. CONNOR
Chief, Fiscal &
Documentation Branch
Executive Office
Deputy Comdr/
Weapon Systems

Don R. Ostrander
DON R. OSTRANDER
Brigadier General, USAF
Ass't for Guided Missiles Systems
Deputy Commander/Weapon Systems

This document is classified SECRET because it contains information on technological developments planned for the defense of the nation, the unauthorized disclosure of which would result in serious damage to the nation.

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C6-110994

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

Amend. No. 1 to
SDD No. 117L
28 August 1956

AMENDMENT TO ARDC SYSTEM DEVELOPMENT DIRECTIVE
ADVANCED RECONNAISSANCE SYSTEM

1. AMENDMENT

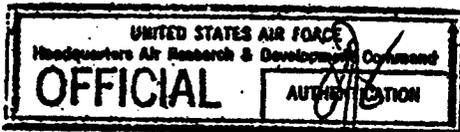
ARDC System Development Directive No. 117L, dated 17 August 1956,
is amended as follows:

a. Add to paragraph 4, as follows:

"e. Priority-Precedence -

The Advanced Reconnaissance System is currently assigned
a development priority of 1A, and USAF Precedence List
rating of I-6." (UNCLASSIFIED)

BY ORDER OF THE COMMANDER:



Don R. Ostrander

DON R. OSTRANDER
Brigadier General, USAF
Ass't for Guided Missiles Systems
Deputy Commander/Weapon Systems

JOHN A. CONNOR
Chief, Fiscal & Documentation Branch
Executive Office
Deputy Commander/Weapon Systems

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HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 1395
Baltimore 3, Maryland

Amend No. 2 to
SDD No. 117L

TITLE: ADVANCED RECONNAISSANCE SYSTEM

AMENDMENT TO ARDC SYSTEM DEVELOPMENT DIRECTIVE

1. AMENDMENT

ARDC System Development Directive No. 117L, dated 17 August 1956, is amended as follows:

a. Add paragraph 5, as follows:

5. ADDITIONS OR CORRECTIONS TO DEVELOPMENT PLAN

- a. Project No. 8728, title: "Qualitative Personnel Requirements Information for the Advanced Reconnaissance System (System 117L)", is approved for the inclusion in the System 117L Development Plan. Implementation of Project No. 8728 will be at the discretion of Western Development Division (WDIR) and contingent upon availability of necessary resources."

BY ORDER OF THE COMMANDER:

UNCLASSIFIED

HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
UNITED STATES AIR FORCE
Post Office Box 1395
Baltimore 3, Maryland

Amendment No. 3
to SD No. 117L
15 January 1958

AMENDMENT TO ARDC SYSTEM DIRECTIVE
ADVANCED RECONNAISSANCE SYSTEM

1. AMENDMENT

ARDC System Directive No. 117L dated 17 August 1956 is amended
as follows:

Delete paragraph 4d(1) in its entirety and substitute the following:

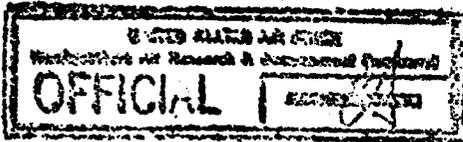
4d(1) Security.

A Master Security Classification Guide will be prepared for WS 117L. The provisions of the classification guide and Air Force Regulation 205-1 will govern dissemination of information on WS 117L, and will be strictly observed."

FOR THE COMMANDER:

for H.A. Boone

E. A. KIESSLING
Colonel, USAF
Assistant for Guided Missile
Systems
Deputy Commander/Weapon Systems



B. B. HUNKAPILLER
Colonel, USAF
Chief, Programs & Resources Br
Executive Office
Deputy Commander/Weapon Systems

UNCLASSIFIED

20 August 1956

Lockheed Ref. No. MSD/13641

Maj. Gen. B. A. Schriever, USAF
Commander, Western Development Division
Headquarters
Air Research and Development Command
Post Office Box 262
Inglewood, California

Dear General Schriever:

This will acknowledge receipt of your letter of August 2, 1956, and in response I should like to take this occasion to tell you how pleased we at Lockheed are to receive this notification of our selection as the prime system manager of WS 117L, the Advanced Reconnaissance System. I can assure you that we are particularly pleased that formal notification was given us in the form of your very complimentary letter.

We are deeply appreciative of the opportunity the Air Force has given us to manage this important, highly advanced system, and I assure you that you may rely on the resources and capabilities of our Company as a whole, and in particular those of our Missile Systems Division, in the performance of this work. We will make every effort to confirm that your selection of our Company was a correct one and to merit the confidence you have placed in us.

Sincerely,

LOCKHEED AIRCRAFT CORPORATION

Robert E. Gross
Robert E. Gross
President

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DOD DIR 5200.10

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MEMORANDUM FOR RECORD

21 August 1956

SUBJECT: Minutes of meeting on ARMA participation in WS 117L guidance effort - 22 August 1956

1. ARMA Representatives made a formal pitch for participation as a guidance contractor for WS 117L.
2. A brief resume of the WS 107A-2 program underway at ARMA was presented including manpower and production schedules. The first system will be delivered to Martin in November 1957, in May 1958, the first flight test system will be delivered to Martin.
3. ARMA's proposed systems for WS 117L were based on their 4 million gyro and vibrating string accelerometer which are undergoing lab tests at present. Two separate schemes seemed adequate to guide a satellite into orbit.
 - I. A system based on the existing ARMA guidance in the booster. This has a weight of 560 lbs and occupies 15.7 Ft³, power is about 1.2 KVA for 5 minutes. An extrapolator would be mounted in the satellite stage with a weight of 150 lbs and occupying 4 Ft³. (NOTE: This extrapolator could be used with a radio guidance system in the booster).
 - II. The second scheme would be an integrated system tailored for orbit and satellite but based on WS 107A-2 components and techniques, mounted in the satellite vehicle, it might weigh 440 lbs and occupy 12 Ft³.
4. ARMA estimated that delivery of the first flight article might be accomplished in 16 or 17 months after go ahead with about 100 additional engineering personnel required. This was based on either approach, I or II, and can be further broken down into 50 professional and 50 non-profession people.
5. ARMA participation in WS 117L might prove economical, provided that an acceptable degree of interference with WS 107A-2 can be tolerated. Their eligibility for participation must be determined by a coordinated Western Development Division review, and it is this fact that at the present stage makes consideration for the WS 117L job. questionable.

6. The following persons attended the meeting:

- C. T. Foss - Vice President and General Manager
ARMA Division - America Bosch ARMA
- F. H. Cuterman - Assistant Vice President - Programs

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DATE 11/12/2010
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WDTR 56-127

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MEMO FOR RECORD

Subject: Minutes of meeting on ARMA participation in WS 117L
guidance effort - 22 August 1956

6. (Cont'd)

J. Statsinger - WS 107A - Project Manager

J. W. Lazur - Liaison

Colonel Blasingame

Lt. Colonel Oder

Captain Protsman

Captain Coolbaugh

1/Lt Herther

SIGNED

cc: Colonel Blasingame
Captain Protsman

FREDERIC C. E. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

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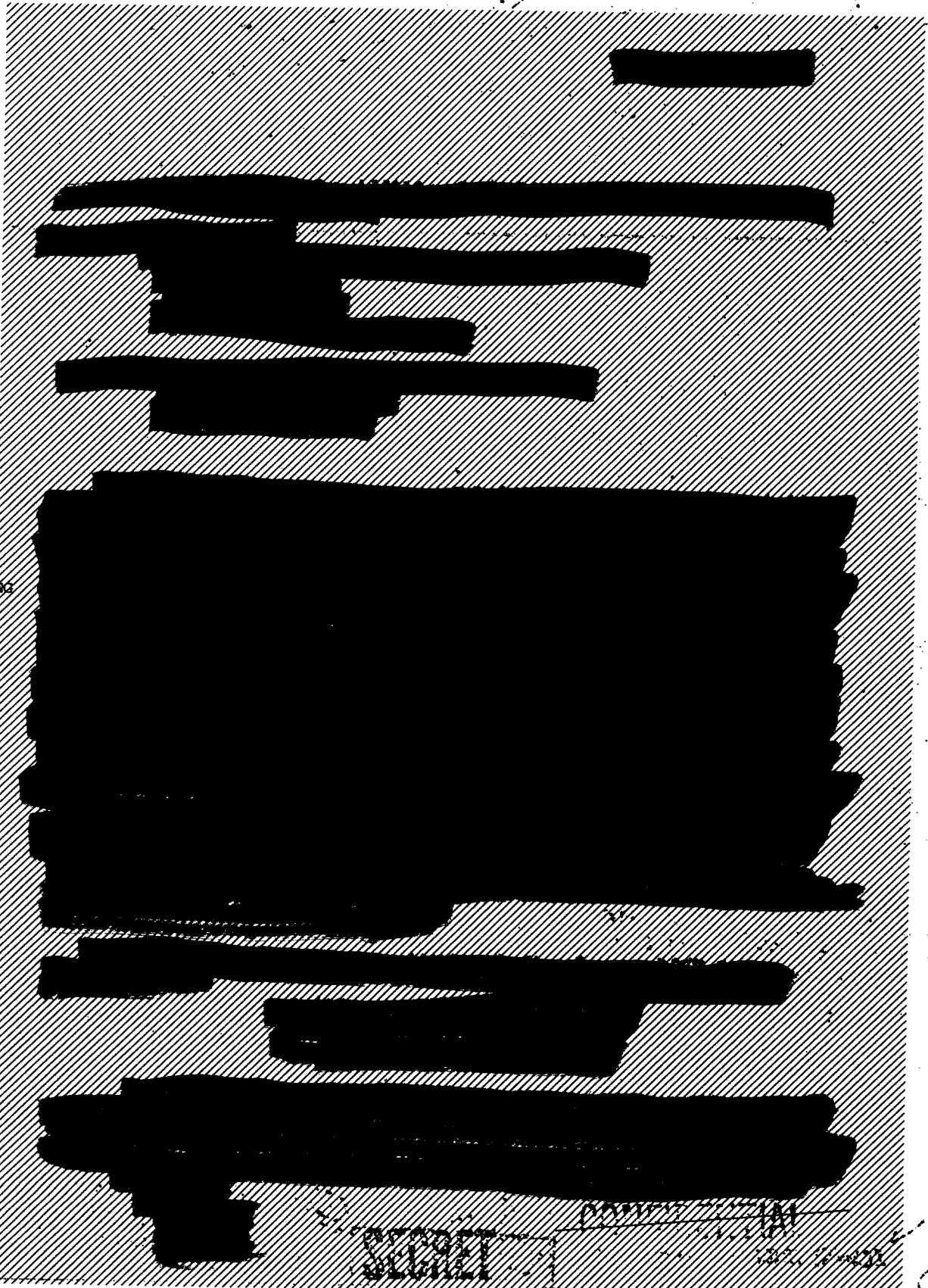
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Lt. Herther

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WED (HQ ARDC) Subject: Requirement for Additional FY 1957
Funds for WS 117L

Air Development Center for research and development in technical areas peculiar to Air Research and Development Command Center capabilities, (Incl. 1) the need for early procurement action on long-lead time items (Incl. 3), and a consideration of the many problem areas involved in establishing an integrated, progressive work schedule to provide an operational WS 117L by the established national need dates.

3. A total of three million dollars in OPEN 2-117 is currently available for the implementation of the WS 117L program. It is planned to place the available funds on purchase request for a contract with the Lockheed Aircraft Corporation as System Prime Contractor on or about 15 September 1956, and zero dollars into the Air Research and Development Command center directed efforts. This management decision should not be construed as one which lessens the importance of the need for solution of the problems assigned the various Air Research and Development Command centers, but one which emphasizes the importance of holding together the development team as indicated in paragraph 1, above. An early decision regarding additional funds is requested if the WS 117L Project Office is to establish a properly oriented program of research, development and test, and is to effectively direct the contractor's efforts in the various subsystem areas. Early knowledge regarding additional funds is essential for a determination of initial rates of expenditure and level of effort as well as for planning and timing for increased expenditure rates and work effort to the levels originally planned and still deemed a requirement for successful and timely achievement of an operational AFS.

4. It is requested that fiscal year 1957 funds in the totals and by budget project as listed in paragraph two above be made available to the Commander, Western Development Division at the earliest possible date. The additional funds requested are required for the continuation of a properly balanced effort during the remainder of fiscal year 1957, and are essentially those asked for in the System Development Plan No. WS 117L, dated 2 April 1956, title: "Advanced Reconnaissance System" after adjustment for the time presently elapsed in fiscal year 1957.

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WED 56-131

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Subject: Requirement for Additional Fy 1957
1176

Requirements for fiscal year 1958 will be essentially those
in the above referenced Development Plan with some adjust-
ment to the fact that the program is getting a later start than
shown in the Plan.

AS THE COMMANDER:

SIGNED

CHARLES H. TERHUNE, JR
Colonel, USAF
Deputy Commander
Technical Operations

Center requirements
Prize Contractor
Estimated Fund
Missile Ground
Loading Equipment

242

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FORM 56-151

COPY

WDD (ARDC), Subject: Requirement for Additional FY 1957 Funds for
WS 117L

RDEGW (28 Aug 56)

1st Ind

HEADQUARTERS, AIR RESEARCH AND DEVELOPMENT COMMAND, Post Office Box
1395, Baltimore 3, Maryland 29 Aug 1956

TO: Deputy Chief of Staff, Development, Headquarters USAF,
Washington 25, D. C.

1. This Headquarters strongly supports the request contained
in the basic letter and considers the funds requested as the minimum
necessary to an effective prosecution of the WS 117L development
program.

2. Funds in the amounts and categories requested are not currently
available to this Headquarters. Appropriate action to provide these funds
is urgently recommended.

3. Your attention is particularly invited to the need for an early
decision in this regard for the reasons stated in paragraph 3 of the basic
letter. It should be noted that the development team referred to in paragraphs
1 and 3 of the basic letter covers, in addition to those personnel on the
program at Lockheed, major Lockheed subcontractors such as Eastman Kodak and
CBS Laboratories as well as contractors on specific component development
being controlled by the ARDC Centers. It is estimated that the over-all
team amounts at present to approximately 205 people.

FOR THE COMMANDER:

SIGNED

3 Incls
n/d

DON R. CSTRANDER
Brigadier General, USAF
Assistant for Guided Missiles Systems
Deputy Commander/Weapon Systems

This indorsement is not
classified in itself.

ATTACHED "A"

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AEDC Center Requirements by 1957 P-600 for WS 117L \$4,500,000

NAAC

TASK	TITLE	FUNDS REQUIRED
T-30291	Auxiliary Power Unit (Nuclear)	1,100,000
T-30363	Propulsion	500,000
T-41262	Television Techniques for AR3	420,000
T-41262	Radiation Reconnaissance	500,000
T-70013	Solar Energy Converter	300,000
		<u>63,120,000</u>

AEDC

T-76770	Weather Reconnaissance & Forecast Techniques	70,000
T-76771	Solar Radiation in Ultra-Violet & X-ray	70,000
T-76772	Interplanetary Matter & Meteor Physics	120,000
T-76773	Atmospheric Density at Altitude of AFS	50,000
T-76774	Thermal Radiation	100,000
T-46230AA	Extra Terrestrial Noise Study	50,000
T-46230C	Radio Astronomy Study	50,000
		<u>\$ 450,000</u>

RAAC

T-15000	Intelligence Parameter Study	350,000
T-15001	Intelligence Processing	395,000
T-15002	Acquisition, Tracking, Control of Space Communications and Command	115,000
		<u>860,000</u>

The AEDC Centers, in the technical areas indicated by the task titles, possess a unique capability based upon the caliber and type of scientific and engineering personnel and long term experience and knowledge in the various fields involved. The continuation of Center efforts in their problem area specialties is considered essential to the timely success of the program.

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ADTH 56-131

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System Prime Contractor, Lockheed Aircraft Corporation
Estimated Fund Requirements Fy 1957 for WS 117L

1st Quarter	\$3,700,000
2nd Quarter	6,900,000
3rd Quarter	9,600,000
remainder Fy 1957	\$20,100,000

4-50	\$9,900,000
4-131	8,500,000
4-214	2,000,000
	\$20,400,000

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One of the most important aspects of the early availability of additional funds is that it will permit the Prime Contractor to establish a strong sub-contractor structure in the subsystem problem areas. An effective, operating sub-contractor team is essential to the success of the program. The present allocation of funds in a total of \$3,000,000 is inadequate to establish such a structure. A considerable amount of design and development engineering leading to mock-up and prototype models of most subsystem equipments must be accomplished and requires the expenditure of P-520 funds in the amounts requested.

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ADTR 56-131

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P-244 Guided Missile Ground Handling Equipment \$2,000,000

For the procurement of:

Transport and Test Carriages

Checkout station equipments to include multimeters, signal generators, oscilloscopes, analyzers, digital checkout equipment, power supplies, hydraulics and power plant servicing test units, etc.

Propellant servicing equipment

Engine stands, sling sets, and cradles

Remote control systems to include amplifiers, function generators, multipliers, recorders, signal generators, etc.

Digital Computers

P-131 Strategic Missile

\$8,500,000

For the procurement of:

Air Frame structures

Propulsion Power Plants

Electrical Power Plants

Guidance Equipment

Programmers

Command Receivers

S-Band Beacons

C-Band Beacons

Range Safety destruct equipment

Orbit vehicle destruct equipment

Telesensor equipment

Photographic equipment

Service Test items

Product Improvements

DIR 56-131

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Mr - Rockefeller 108
AMH

WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

PERSONNEL ACTIONS MEMORANDUM)
NUMBER 28)

7 September 1956

1. LTCOL EDWARD L RANKIN, AO220779, being asg this Div, this sta, per LO 7-15, Hq 16th AF, 27 Jul 56, is asg prim dy as Ch, Eng Gp, Installations(5516), FA: 57000, eff 1 Oct 56.
2. VOC, iss 20 Feb 56, chg the prin dy title of MAJ WILLIAM B ARNOLD, 18091A, this Div, this sta, fr R&D Proj Adm, Flt Test Br, Fld Test Gp, Tech Opns(8446), FA: 57000, to Spec1 Proj Off, Fld Test Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
3. VOC, iss 1 May 56, chg the prin dy title of MAJ WILLIAM B ARNOLD, 18091A, this Div, this sta, fr Spec1 Proj Off, Fld Test Gp, Tech Opns(8446), FA: 57000, to Test Proj Off, Spec1 Tests Br, Test Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
4. VOC, iss 1 May 56, chg the prin dy title of CAPT ARTHUR O BOUVIER, Jr, AO795897, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8441), FA: 57000, to Proj Adm(Aerobet), Propln Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
5. VOC, iss 1 May 56, chg the prin dy title of CAPT ROBERT C BUCKLEY, 17352A, this Div, this sta, fr R&D Proj Adm, Airfr & Arm Gp, Tech Opns(8461), FA: 57000, to R&D Proj Adm, Br "A", Arm Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
6. VOC, iss 1 May 56, chg the prin dy title of CAPT JAMES S COOLBAUGH, 17584A, this Div, this sta, fr R&D Proj Adm, Asst f/WS117L, Tech Opns(8441), FA: 57000, to Proj Off (Aerodynamics), Sys Integ Ofc, Asst f/WS117L, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
7. VOC, iss 1 May 56, chg the prin dy title of CAPT LLOYD E DANIELS, AO785424, this Div, this sta, fr R&D Proj Adm, Hypersonics Design Br, Airfr & Arm Gp, Tech Opns(8461), FA: 57000, to R&D Proj Adm, Br "A", Arm Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.
8. SMOP 10, PERAM 12, cs, this Div, pert to CAPT JOHN B DAVIS, AO780537, this Div, this sta, AS READS, "Propellant Sup Off, Plans & Opns(6454)," IATR, Propellant Sup Off, IRBM Log Gp, Plans & Opns(6454)."
9. VOC, iss 20 Feb 56, chg the prin dy title of CAPT BILLY N HOLLIS, 16883A, this Div, this sta, fr Proj Off, Con Sys, Guid & Con Gp, Tech Opns(8691), FA: 57000, to Ch, Research Br, Guid & Con Gp, Tech Opns(8696), FA: 57000, are cfm, ESPWO.
10. VOC, iss 1 May 56, chg the prin dy title of CAPT BILLY N HOLLIS, 16883A, this Div, this sta, fr Ch, Research Br, Guid & Con Gp, Tech Opns(8696), FA: 57000, to Proj Off(Research), Radio-Inertial Br, Guid & Con Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.
11. VOC, iss 1 May 56, chg the prin dy title of CAPT EMMETT S IVERSON, 18424A, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8464), FA: 57000, to Proj Adm(Solid Propln), Propln Gp, Tech Opns(8464), FA: 57000, are cfm ESPWO.

Para 1 thru 35, PERAM 28, WDD (ARDC) 7 September 56

12. VOC, iss 1 May 56, chg the prin dy title of CAPT FRANK S JASEN, A0876606, this Div, this sta, fr R&D Proj Adm, Asst f/WS 107A-1, Tech Opns(8464), FA:57000, to Asst Proj Off(Sys Integ) Sys Integ Ofc, Asst f/WS 107A-1, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

13. VOC, iss 1 May 56, chg the prin dy title of CAPT ELROY C LEHMANN, A0813398, this Div, this sta, fr R&D Proj Adm, Airfr & Arm Gp, Tech Opns(8464), FA: 57000, to R&D Proj Adm, Br "G", Arm Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.

14. VOC, iss 1 May 56, chg the prin dy title of CAPT WILLIAM B LIDDICOET, 18455A, this Div, this sta, fr R&D Proj Adm, Asst f/WS 107A-2, Tech Opns(8441), FA: 57000, to Asst Proj Off(Airfr), Airfr Proj Ofc, Asst f/WS 107A-2, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

15. VOC, iss 23 Mar 56, chg the prin dy title of CAPT WILLIAM R MANLOVE, 16842A, this Div, this sta, fr Proj Off, Guid & Con Gp, Tech Opns(8621), FA:57000, to Proj Off, WS 107A-1 Guid Br, Guid & Con Gp, Tech Opns(8626), FA: 57000, are cfm, ESPWO.

16. VOC, iss 1 May 56, chg the prin dy title of CAPT WILLIAM R MANLOVE, 16842A, this Div, this sta, fr Proj Off, WS 107A-1 Guid Br, Guid & Con Gp, Tech Opns(8626), FA: 57000, to Proj Off(WS 107A-1), Radio Inertial Br, Guid & Con Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

17. VOC, iss 16 Apr 56, chg the prin dy title of CAPT EUGENE F MESSERLY, A02032993, this Div, this sta, fr Prog & Proj Off, WS 107A Opnl Readiness Gp(6736), FA: 57000, to Prog Off(Budget), Prog Br, Asst f/Atlas Opns, ICBM Opns, Plans & Opns(6736), FA: 57000, are cfm, ESPWO.

18. VOC, iss 1 May 56, chg the prin dy title of CAPT JOHN R MULLADY, A0688455, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8441), FA: 57000, to Proj Adm (NAA), Propln Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

19. VOC, iss 1 May 56, chg the prin dy title of CAPT WARD E PROTSMAN, 16787A, this Div, this sta, fr Proj Off, WS 107A-2 Guid Br, Guid & Con Gp, Tech Opns(8626) FA: 57000, to Proj Off, WS 107A-2, Inertial Br, Guid & Con Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.

20. VOC, iss 15 Aug 56, asg CAPT DONALD E QUAIL, 15469A, this Div, this sta, prim dy as Proj Off (Test), Facil & Test Ofc, Asst f/WS107A-1, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

21. VOC, iss 1 May 56, chg the prin dy title of CAPT JOHN E RICHARDS, 168058A, this Div, this sta, fr Ch, Airfr Br, Airfr & Arm Gp, Tech Opns(8441), FA: 57000, to R&D Proj Adm, Br "G", Armament Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.

22. SMOP 11, PERAM 12, cs, this Div, pert to CAPT FLOYD E SAUNDERS, 22793A, this Div, this sta, AS READS, "Transp Stf Off, Plans & Opns(6016)", IATR, "Transp Stf Off, IREM Log Gp, Plans & Opns(6016)".

23. SMOP 8, PERAM 10, cs, this Div, pert to CAPT MELBURN C SPAULDING, A0938627, this Div, this sta, AS READS, "R&D Proj Adm, Propln Gp(8464)", IATR, "R&D Proj Adm (Studies), Propln Gp, Tech Opns(8464)".

Para 1 thru 35, PERAM 28, WDD (ARDC) 7 September 56

24. VOC, iss 1 May 56, chg the prin dy title of CAPT JOHN W THOMAS, AO582585, this Div, this sta, fr R&D Proj Adm, Propln Gp, Tech Opns(8461), FA:57000, to Proj Adm (APS-PUS), Propln Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
25. VOC, iss 20 Feb 56, chg the prin dy title of CAPT EARL M THOMPSON, 16860A, this Div, this sta, fr R&D Proj Adm, Guid & Con Gp, Tech Opns(8441), FA: 57000, to Ch, Inertial Projects Br, Guid & Con Gp, Tech Opns(8696), FA: 57000, are cfm, ESPWO.
26. VOC, iss 1 May 56, chg the prin dy title of CAPT EARL M THOMPSON, 16860A, this Div, this sta, fr Ch, Inertial Projects Br, Guid & Con Gp, Tech Opns(8696), FA: 57000 to Proj Off, WS315A Inertial Br, Guid & Con Gp, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
27. VOC, iss 1 Apr 56, rel CAPT JACK E TICE, AO1580418, this Div, this sta, fr Prim Dy as Asst to Ch, Command Sup Gp, Sup Opns(7311), FA: 57000, and asg new Prim Dy as Ch, Mil Pers Br, Command Sup Gp, Sup Opns(7324), FA: 57000, are cfm, ESPWO.
28. VOC, iss 1 May 56, chg the prin dy title of CAPT WILLIAM O TROETSCHEL, AO1903533, this Div, this sta, fr R&D Proj Adm, Asst f/WS 117L, Tech Opns(8441), FA: 57000, to Proj Off(Facil), Facil & Eqp Ofc, Asst f/WS 117L, Tech Opns(8446), FA: 57000, are cfm, ESPWO.
29. SMOP 15, PERAM 13, cs, this Div, pert to CAPT PAUL G WEINGAND, AO703855, this Div, this sta, AS READS, "Atomic Weapons Off(Logistics), Plans & Opns(3274)", IATR, "Atomic Wpns Off(Log), ICBM Log Gp, Plans & Opns(3274)".
30. SMOP 8, PERAM 15, cs, this Div, pert to CAPT SAM H WOOD, AO888804, this Div, this sta, AS READS, "Proj Off, Construction Opns, Instal(5524)", IATR, "Proj Off, Const Opns Gp, Instal(5524)".
31. VOC, iss 1 May 56, chg the prin dy title of 1LT JOHN C HERTHER, AO3016090, this Div, this sta, fr R&D Proj Adm, Asst f/WS 117L, Tech Opns(8464), FA: 57000, to Asst Proj Off(GFE), Facil & Eqp Ofc, Asst f/WS 117L, Tech Opns(8446), FA:57000, are cfm, ESPWO.
32. 1LT THOMAS A McCREERY, 25178A, being asg this Div, dy sta Patrick AFB, Fla, per para 3, SO 127, Hq USAFIT, W/PAFB, O, 18 Jun 56, is asg prim dy as Proj Off (Nosecone) WS 107A-1 Proj Ofc, WDD Fld Ofc(AFMTIC), Tech Opns(8616), FA: 57000, eff 9 Sep 56.
33. SMOP 23, PERAM 13, cs, this Div, pert to 1LT WILLIAM L RENWICK, AO2247746, this Div, this sta, AS READS, "Programs Off(Statistical), Plans & Opns(6816)", IATR, "Prog Off(Stat), THOR Prog Br, Asst f/IREM Opns, Plans & Opns(6834)".
34. VOC, iss 4 Sep 56, asg 1LT ROBERT W ROGERS, 26228A, this Div, this sta, prim dy as Proj Adm(Nucl Propln), Propln Gp, Tech Opns(8464), FA: 57000, are cfm, ESPWO.

Para 1 thru 35, PERAM 28, WDD (ARDC), 7 September 56

35. The functional cat of the FNO is changed fr PPA to PPB:

LTCOL EDWARD L RANKIN, AO220779
CAPT DONALD E QUAIL, 15469A
1LT THOMAS A McCREERY, 25178A
1LT ROBERT W ROGERS, 26228A

BY ORDER OF THE COMMANDER:

OFFICIAL:

JACK E TICE
Capt, USAF
Ch, Mil Pers Br.


JACK E TICE
Capt, USAF
Ch, Mil Pers Br.

DISTRIBUTION:

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95 - Pers Serv

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AF 33(616) 3105

WA DS

Funds for Contract 3105-Lockheed Design Study

WDTR

WDS

25 Sep 56

Attn: Lt. Col Riepe

Capt. Broden/pjb/436

1. On 27 June WDSCB was requested to reduce the P620 funds on Obligation Authority 620-56-5 to zero, the funds to be made available for addition to the Contract Change Notice for the Lockheed Design Study extension. Action was taken by WDS to reduce the referenced O/A and WDTR was advised on 29 June 1956 of the availability of the funds for the Lockheed Design Study extension.

2. No action was taken to initiate a Purchase Request to add the above funds (\$50,000) to the Lockheed contract. On 22 August 1956 WDS was requested to transfer \$50,000 on line item EPSN 6-2-1115 to Wright Air Development Center, Wright-Patterson AFB for Weapons Guidance Laboratory Task 50558. This action was accomplished on 27 August 1956.

3. Since the contract change notice to the Lockheed contract results in the need for \$372,000 and only \$321,840 is presently available from FY 1956 funds, it is recommended that \$50,160 of the currently available \$3,000,000 FY 1957 funds be utilized for this purpose. This can be accomplished through reducing Purchase Request No. 196 by that amount and issuing a new purchase request in a similar amount, or by citing both PR 156 for an amount of \$321,840 and PR 195 for an amount of \$50,160 on the Administrative Commitment Document held by WDS.

4. Request your advice as to the use of the \$50,160 FY 57 funds be forwarded immediately. Should you desire to write a new purchase request, initiation action should be forwarded to WDTO, Attn: Capt. Johnston. If the transaction is to be handled by amendment of the Administrative Commitment Document, request for necessary action should be forwarded to EMO, Attn: Mr. Silberman.

5. Request we be advised of the action you take in this matter.

/s/ John B. Hudson
JOHN B. HUDSON
Lt. Colonel, USAF
Director, Support Operations

MEMORANDUM FOR RECORD

25 September 1956

SUBJECT: Funds for Contract 3105 - Lockheed Design Study

1. At 1630, 25 September 1956, the undersigned, together with Lt. Colonel Q. A. Riepe, WDTR, and Mr. Eugene Silberman, IMO, met to discuss the problems posed by Inclosure 1. (DF from WDS to WDTR, subject and date as above). After discussion the following information was developed from Mr. Silberman:

a. He realized that WDD Purchase Request 151 had funds certified by WDSOP as \$322,245.40. He had advised Lockheed, however, that the total available for CCN-1 to the subject contract was \$372,000.00. He stated that he did this because he felt that the exchange of DF's (Incl. 2) from WDTR to WDSCB, dated 27 June 1956, subject: O/A 620-56-5, gave him authority that additional funds were available in the amount of \$50,000.00. The undersigned pointed out to him that these DF's represented only a fund transfer action and were not an initiation action and that these funds had later been transferred to WADC by O/A. Mr. Silberman further stated that in accordance with AMC practice, the Contracting Officer was within his rights to negotiate on funds in excess of those initiated by a Purchase Request on the basis of cost proposal received from the contractor, provided that he so advise the initiator of this action. Mr. Silberman stated that in this case he had not advised the initiator of his action, however, and that under the circumstances, should have requested an additional Purchase Request for the \$50,160.00. Mr. Silberman agreed that in the future he would under no circumstances enter into contractual actions in regard to WS 117L in excess of the amounts initiated by Purchase Requests.

b. It was pointed out to Mr. Silberman that, in actuality, Lockheed would probably not complete all of the work scheduled under the CCN by the finishing date of that contract, and this work would have to be done under the contract proposed by Purchase Request 196; accordingly, it would be legitimate for IMO to request Lockheed to reduce their cost proposal for the work done under Purchase Request 151.

c. It was further agreed that WDTR would informally investigate the availability of additional P-600 funds from Hq. ARDC for the purpose stated in Inclosure 1.

2. If Lockheed is able to resubmit their proposal in line with the funds on Purchase Request 156 no further problem exists. If this can be done, we will request a reduction and amendment to the Administrative Commitment Document by EMO. If this is not feasible, then we will either add funds to be sought from Hq. ARDC or as a last resort, reduce the amount of money available for the new contract by the amount needed.

SIGNED

CONCUR:

SIGNED

QUENTEN A. RIEPE
Lt. Colonel, USAF

FREDERIC C. E. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

cc: WDTG
NDTD

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~~CONFIDENTIAL~~

C.C.

7
Sep 56
Subsequent to
27 Sep 56
111

Summary of Status and Policy Action
Required on WS 117L Program

WDT

WDTR

Commander Truax/eh/1344

A number of critical problems are now facing the WS 117L program which can be greatly alleviated by either support or decisions on the part of WDT or WDC. Inclosure 1 is a summary of these problems with action recommended by WDTR.

1 Incl
Summary of WS 117L Problems
Requiring Action, 3 pp (S)
with 2 Incls.

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

When inclosures are withdrawn the
classification of this correspondence
will be downgraded to CONFIDENTIAL
in accordance with AFR 205-1.

~~SECRET~~

WDTR 56-167

~~CONFIDENTIAL~~

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~~CONFIDENTIAL~~

SUMMARY OF WS 117L PROBLEMS
REQUIRING WDT or WDG ACTION

I. FUNDING:

FY 1957

Status: \$3.0 M P-600 funds on hand. A Request for additional \$11.4 million P-600 is in the hands of DCSD (R&D) awaiting action. (Attachment A). Same letter requests 10.5 million P-131 and P-244 funds.

Background: The WS 117L Development Plan requested FY 1957 funds as follows: P-600 - \$16.1 million; Other-\$16.0 million, facilities - to be submitted later (estimates deleted at General Schriever's direction). It is understood that Lt General Putt requested Major General Swofford to provide \$12.0 million additional P-600 funds. The latter then prepared a reply to our request stating no further funds available. Lt General Putt returned this reply to Major General Swofford unsigned asking that DCSD (R&D) try again to find the money.

Without a reasonable allocation of P-600 funds, DCSD cannot go to DCSM for allocation of required P-131 and P-244 funds. Without both no significant hardware progress can be made on the WS 117L program. The Lockheed contract is currently in negotiation. The 3.0 million can be used to fund the program for a short time, but early provision of requested funds is required to permit a rational build up schedule to be set. The FY 57 F-300 requirements cannot be defined until certain policy decisions outlined below are made.

Action recommended: A telephone call by Major General Schriever to Lt General Putt (and perhaps Major General Swofford) followed by personal contact, if necessary, requesting that the 11.4 million of P-600 funds be supplied as soon as possible and that action be started immediately thereafter to get the P-131 and P-244 monies.

II. MANAGEMENT:

Status: The WS 117L program is currently operating under a somewhat bastardized 80-4 procedure. A proposal has been submitted for overhauling the management (Staff Study - Proposed Management Procedure for WS 117L, dated 12 September 1956, WDR to WDT and WDG). This paper was signed out of WDT to Colonel Ritland about 27 September 1956.

Background: Prior to transfer of the program from Wright Field, 80-4 procedures were followed. If these procedures are to be continued, WS 117L will be handled in a fashion different from the other WDD programs. This will require some special education of WDD echelons other than the System office. A distinct letdown in attention has been noted in R2Z and a positive antipathy in DCSD (R&D) which may originate in lack of enthusiasm for the whole WDD setup rather than any particular desire to plow under the WS 117L program. In any event, the evident lack of a positive sense of responsibility for the program has resulted in the necessity for WDR to constantly "bird dog" the actions in Baltimore and Washington to insure that the program, or essential elements of it, are not inadvertently or deliberately washed down the drain.

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WDR 56-167

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Action recommended: Either a streamlined management procedure such as outlined in the above mentioned letter, should be adopted as soon as possible, or an intensive effort should be made to insure that the program is represented in Baltimore and Washington by well informed, enthusiastic individuals. WDTR prefers the former if it can be implemented in the near future.

III. WS 107A - WS 117L Coordination:

Status: Many aspects of WS 117L planning cannot be completed without decisions setting the acceptable level of interference between WS 107A and WS 117L. In general, the greater the interference, the less the cost. Several specific items of interaction now require decisions.

1. SM 65 missile allocation: The approved WS 117L Development Plan requires SM 65C missiles to be made available to the ARS program f.o.b. Convair beginning about 1 January 1959. Delivery schedules for 1959 are being prepared now by WDTC. Since SM 65 availability paces the ARS program, earlier delivery of boosters would accelerate the 117L program in an almost one to one ratio. There are currently four SM 65C missiles, scheduled for delivery in July, August, September and October of 1958, which are not required for the WS 107A program and which will probably be eliminated from the program if not allocated to WS 117L. There is also a small number of series "A" missiles designated as "spares" on the WS 107A-1 schedule. Depending on the progress of the SM 65 development, some of these may be left over at the end of the series "A" firing schedule. Series "A" missiles would have substantially the same utility for early, non-orbiting tests of the ARS nose cone as the series "C" or later missiles. Nose cones and other components could be available for flight test as early as January 1958.

2. Facilities: A second interaction area relates to facilities. Because of the loading of AFMTC, and the early requirements for a facility from which northerly or southerly firings can be made, Patrick has been considered only for interim purposes. It would appear inadvisable to spend any great amount of money on facilities at AFMTC for only temporary occupancy. (It is assumed that firings over Miami or the industrial east would be inadmissible.) Use of WS 107A facilities is therefore indicated.

Considerable liaison has been undertaken with WDC and WDI with respect to use of Camp Cooke for the continuing WS 117L program, both the R&D and operational phases. General concurrence has been obtained from WDC and WDI (Attachment B), and some detailed planning done.

3. Personnel: The third area of interaction between WS 107A and WS 117L is in the area of personnel and training. The problem appears to be particularly acute in the area of launch crews. There appear to be three possible methods for launching SM 65 boosted ARS vehicles. One would be to train Lockheed people who would then handle checkout and launching. A second would be to have Convair personnel perform booster checkout and missile firing, with Lockheed servicing

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the orbiting vehicle under a relationship similar to that between Convair and GE when GE nose cone tests are the primary flight mission. A third possibility, applicable only at Camp Cooke, would be to have the booster serviced and launched by Air Force crews supplemented by technical representatives from Convair, MA, GE, etc. Considerable difference of opinion appears to exist relative to which of these approaches is the most practical. The WS 117L Project Office prefers the second alternative for flights conducted at AFMTC, and the first for flights from Cooke.

Action recommended: Authorize the following:

1. Missile allocation: Assign to WS 117L all SM 65A missiles, up to four, which remain at the end of the Series "A" launching program. Allocate to the WS 117L program one Series "C" missile per month beginning July 1958.
2. Facilities use: Schedule approximately one WS 117L launching per quarter from WS 107A-1 facilities at AFMTC throughout 1958, and the first quarter of 1959. Schedule one launching per month from AFMTC in the second quarter of 1959. Schedule one launching per month from IOC facilities at Camp Cooke from July 1, 1959 until WS 117L launch facilities at Cooke are completed (estimated fall-winter 1959). The above scheduling action would be with the understanding that the overriding priority of the WS 107A program could lead to cancellation or deferment of WS 117L flight if the situation existing at the time indicates that significant gains to the 107A program would result from such action.
3. Include in WS 107A planning the launching by Convair from AFMTC of one SM 65 (A or C) boosted ARS vehicle per quarter in 1958 and the first quarter of 1959, and one per month in the second quarter of 1959. Begin in the near future to train a nucleus of Lockheed personnel at Rocketdyne and Convair so that the former may assume full responsibility for launching activities by mid 1959. These would be engineers and test operators experienced in the general field but not in the specific SM 65 hardware. The training could be of an on-the-job nature that would permit some benefit to the training activity.

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112

Organization and Manning for WS 117L Program

SEP 28 1956

WDTD

WDTR

Lt Col Riepe/eh/1344

1. Western Development Division has been assigned the responsibility for the development of WS 117L, a system many times more complex and sophisticated than any yet attempted. It has been determined that the WDD will, with the assistance of the ARDC Centers and other consultants, provide the technical direction and management of this program. The attached organization and manning is what we believe will be required to adequately do this job. Personnel selected to fill the positions in the proposed organization should be carefully selected to assure top quality management and direction of the various facets of the system.

2. This process of screening and selecting personnel to man the organization will take time. However, it is felt that the following goals are the optimum rate of build-up:

a. Personnel on hand as of 28 September 1956:

- | | |
|--|------------------|
| 1 Assistant for WS 117L | Lt Colonel |
| 1 Deputy Assistant for WS | Commander |
| 1 Chief, Plans and Programs Branch | Lt Colonel |
| 1 Chief, Resources Management Section | Major |
| <u>3</u> System Integration Project Officers | 2 Captains and 1 |
| <u>7</u> Total 7 Assigned Officer Personnel | 1/Lt. |

b. Planned build-up to 1 January 1957:

- 1 Chief, Facilities and Test Branch
- 1 Facilities and Equipment Project Officer
- 1 Test Plans and Logistics Project Officer
- 2 Production Engineering Project Officers
- 7 System Integration Project Officers
- 1 Resources Management Project Officer
- 1 Program Management Project Officer
- 14 Total additional personnel

21 Total assigned officers

c. Planned build-up to 1 July 1957:

- 2 Program Management Project Officers
- 1 Resources Management Project Officers
- 2 Production Engineering Project Officers
- 2 Facilities and Equipment Project Officers
- 1 Test Plan and Test-Logistics Project Officers
- 9 Total additional personnel
- 30 Total assigned officer personnel

d. By 1 January 1958 certain subsystems of the WS 117L will have reached the point of limited production. This will require six (6) additional military personnel in the System Engineering Section. (Not shown on the organization chart).

Total goal military personnel by 1 January 1958 is estimated to be 36 officers.

e. Civilian support personnel required:

1 GS-6 Administrative Assistant for Assistant for WS 117L
9 Secretary-typists - 8 each GS-4; 1 each GS-5

Secretaries to be assigned as follows:

3 in Plans and Programs
3 in System Engineering
2 in Facilities and Test
1 in the Office of Deputy Assistant for WS 117L

The build-up rate for secretarial help would be proportional to the military personnel build-up rate.

3. As you can see from the proposed organization chart and the job descriptions submitted, we intend to make full use of the presently existing staff functions within WDD. For example, the Facilities Group will, of necessity, work very closely with the WDI organization; the Plans and Operations functions will be closely coordinated and accomplished with the assistance of associated parts of WDT, WDS and WDO, etc.

4. Since there will be considerable effort required to recruit the number and type of personnel required to man the proposed organization, it is requested that we be authorized to requisition personnel up to the 1 January 1957 level immediately. Four (4) of this number are on requisition or orders at the present time. They are:

Captain E. J. Conway
Major G. E. Austin
Major H. F. Wienberg
Major L. D. Walker

Reporting 1 October 1956
Reporting 22 October 1956
No Reporting date
Reporting in October 1956

The total military assigned including these will be eleven (11), requiring ten (10) additional vacancies to bring the authorized strength to the proposed twenty-one (21) by 1 January 1957.

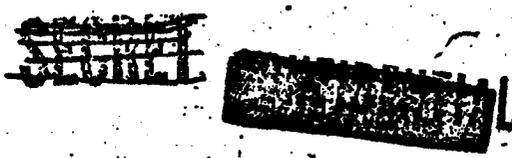
SIGNED

4 Incls.

1. Organization Chart
2. Project Officer Requirements
3. Project Office Job Description
4. 1 Package, Job Descriptions

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

Was this
coordinated with WS 7?
Funds?



113

OCT 8 1956

WDTR

SUBJECT: Request for Study of SM-65A Performance Relative to
WS 117L Flight Test Program

TO: Ramo-Wooldridge Corporation
Attn: Dr. James C. Fletcher

260

9

1. It is requested that Ramo-Wooldridge immediately perform a short study to determine maximum performance of an unmodified "A" missile for WS 117L use. This study should assume the same weight of the ARS vehicle that would be compatible with the "C" (i.e. 7200 or 9300 lbs. gross satellite weight).

2. The apogee of the coasting ellipse should be 300 miles.

3. Assuming that the maximum amount of fuel were burned until a reasonable load limit was reached, the velocity at apogee should be determined.

4. It is desired that the results be transmitted to WDTR by 12 October 1956. The trajectory data should be furnished in graphical form and the assumptions and results presented in letter form in sufficient quantity (i.e. five copies) transmitted to Lockheed by WDTR. Not more than 1/2 man month should be required for this phase.

5. As a second phase of this study it is requested that R-W perform a study relative to the use of SM-65A missiles for non-orbital tests of WS 117L equipment during development. This study should indicate the influence of "A" trajectory considerations and limitations which might maximize free fall time, possibly by firing on a near vertical trajectory. Payloads, burnout velocities and burnout angles should be presented in the results. This should take two alternate approaches: (1) assume that payload would replace ballast in the existing "A" and (2) alternately assume the "A" nose section is replaced with the WS 117L vehicle (7200 or 9300 lbs. gross) in order to test separation, third stage ignition, and other vehicle functions.

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6. The ultimate utility of an "A" missile flight test program to a logical WS 117L development may depend on the results of this second phase study and the early scheduling of "A's" which may become available. These results should be forwarded to WDTR by 12 November 1956. Not more than two man months should be required for this phase.

7. The following data are to be used for the SM-65A (Reference: Convair Report - ZD-7-008A Detail Specification on SM-65A, 16 August 1955).

Weights

Launching Weight	201,254
Weight Empty	13,069
Dry Weight	11,354
(Above weight assume 180 lb. nose group not 3500 lb.)	

Expendable Items	188,185
------------------	---------

LOX	130,152
Fuel	57,045
Lubricating Oil	188

Propulsion

Booster Engine Assembly Sea level thrust	300,000
Minimum sea level Isp	245 sec.
Vernier Engine Assembly Sea level thrust (2) @	1,000 ea.
Minimum sea level Isp	210 sec.

SIGNED

FREDERIC C. E. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

WDTR 56-165

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INTEROFFICE CORRESPONDENCE

TO: Col. O. J. Ritland

CC: Col. C. H. Terhune
Lt. Col. F. C. Oder
L. G. Dunn
J. C. Fletcher

DATE: October 11, 1956

SUBJECT R-W Responsibility
in WS 117L Program

FROM: Simon Ramo

REF: Letter from Col. O. J. Ritland to S. Ramo
dtd 9/7/56. Subject as above.

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DD FORM 500-10

1. The referenced letter is believed to make clear R-W's present responsibilities in this program and makes possible R-W planning as to organization and manpower assignments.

2. R-W desires to be an eligible competitor for certain hardware aspects of WS 117L; namely, in communications, computers, and specialized control subsystems, as well as in any form of electronics instrumentation for testing out the system in stationary facilities or in connection with flight testing. We should also like to be considered for any new developments that may be required in the field of tracking subsystems. We do not expect to be interested in airframe, propulsion, nuclear power supply, or stable platform aspects.

3. The amount of effort allowed to R-W during fiscal '57 is quite limited (six man years according to the referenced letter). It is desirable that this budget be spent as judiciously as possible on those aspects of the program which can be of greatest assistance to WDD in directing the program. We suggest that great care be exercised in the assignment of task to avoid any routine or minor engineering, engineering liaison, or data and record searching or listing functions, since these could probably be more easily obtained in other ways. We believe that the unusual technical staff assembled in R-W can be particularly useful if confined to the more difficult types of technical investigations, or on issues involving major system judgments and interactions with the ICBM program. For virtually any study, it is necessary to insure proper technical and program coordination of the conclusions by assignment of some part-time effort by our top directorial staff. Also, practically any technical investigation requires some competent technical staff assignment for such supporting purposes as computer programming, library research, and the like. When these items are added to the main analytical effort of those individuals assigned full time to a specific study, the year's budget of six man years could be quickly used up. It is thus necessary that R-W avoid any additional and unnecessary expenditures in administrative and managerial assignments relating to this program. Accordingly, some changes in our organizational structure relative to the handling of our work in this field are presently being made. Specifically, we have had in the past a "Program Director's Office" similar to what has been set up for the 65, 68, and 75 programs. The previously contemplated

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To: Col. O. J. Ritland
Subj: R-W Responsibility in WS 117L Program

October 11, 1956

Page 2

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assignment of individuals to such a Program Office to handle a technical-executive role seems now unwarranted in view of the small amount of effort expected from R-W, and especially in view of the fact that this effort must come from the most highly technically specialized experts in the Company. We are accordingly abolishing this special program director's office, and instead setting up a special assistant to Dr. Dunn, the Director of the Guided Missile Research Division. This assistant will be responsible for liaison with your office and for arranging the assignment to the appropriate specialists of the specific tasks which you call upon R-W to carry out.

4. This special assistant will be Mr. F. A. Ford. Mr. Ford is an experienced scientist and engineer with over 20 years of pertinent background. He has held responsible positions in frontier problems at The RAND Corporation, then in charge of preliminary missile design work at North American Aviation, and later as Deputy Chief Engineer of Northrop. In the latter capacity, Mr. Ford was in charge of a large part of Northrop's entire engineering effort, including their advanced projects, their guided missile projects, and their research and operational studies. His experience and background with us has confirmed that he is an appropriate person to handle well the direct liaison with Col. Oder's office, and the direct arrangements, as an assistant to Dr. Dunn, necessary with the various technical staffs of R-W who will actually perform the studies. Dr. Fletcher, who on a part time basis has been heading the previous Program Director's Office, with Ford as his assistant, will confine now his attentions to the directing of the Electronics Staff. In that capacity we feel that he will be used to the greater advantage of all of WDD's programs, including WS 117L.

5. Should WS 117L develop in such a way that the R-W role is altered, we shall, of course, be ready at any time to make appropriate organizational changes so as to meet our contractual obligations.

Simon Ramo
Simon Ramo

SR:rm

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TWX

PRIORITY

FROM: HQ ARDC

TO COFS, HQ USAF, WASH, D. C.

SECRET FR RDZGW-10-3-E

264

ATTN: AFDDC. REFERENCE WDD SECRET LETTER DATED 28 AUGUST 1956, SUBJ: REQUIREMENT FOR ADDITIONAL FY 57 FUNDS FOR WS 117L AND 1st IND THERETO BY THIS HQ. CURRENT NEGOTIATIONS WITH LOCKHEED AS PRIME SYSTEM CONTRACTOR FOR 117L ARE SERIOUSLY HAMPERED BY LACK OF DEFINITIVE INFORMATION ON FUNDING PROGRAM FOR FY 57. AVAILABILITY OF A FIRM FY 57 FUNDING FORECAST FROM YOUR HEADQUARTERS BY 15 OCTOBER WOULD (A) PERMIT NEGOTIATION TO PROCEED WITH LOCKHEED ON A SOUND PLANNING BASIS, AND (B) PLACE LOCKHEED IN A STABLE POSITION FOR RETAINING THE SUBCONTRACTOR STRUCTURE WHICH IS VITAL TO SUCCESSFUL PROSECUTION OF THE 117L PROGRAM. REQUEST INFORMATION AS SOON AS POSSIBLE ON THE FUNDING PROGRAM, PARTICULARLY IN THE P-600 AREA.

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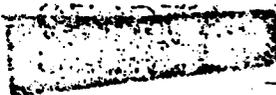
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SYMBOL: RDZGW

Lt Col Paul E. Worthman

E. A. Kiessling, Col., USAF
Deputy Assistant for Guided Missiles
Deputy Commander/Weapon Systems

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WD 56-04204

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116

OCT 12 1956

WDTR

SUBJECT: WS 117L Work Under Contract No. AF 18(600)-1190

TO: Ramo-Wooldridge Corporation
Attn: Dr. James C. Fletcher

1. Reference WDTR letter, subject: "Request for Study of SM 65-A Performance Relative to WS 117L Flight Test Program", dated 8 October 1956.

2. The two and one half man months expended on this problem are to be charged against (b) of paragraph 2, letter, WDTR 56-133, subject: "WS 117L Work Under Contract No. AF 18(600)-1190".

3. Reference WDTR letter, subject: "Request for Study of Optimum Method for Acquisition and Tracking of the WS 117L Orbital Vehicle", dated 9 October 1956.

4. The two man months expended on this problem are to be charged against (d) of paragraph 2, letter, WDTR 56-133, subject: "WS 117L Work Under Contract No. AF 18(600)-1190", dated 30 August 1956.

SIGNED

cc: WDT0

FREDERIC C. E. ODER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

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WDTR 56-175

WDTR
Major Zelenka

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DE RJWPNT 4F
P 222021Z

Recd 23 Oct 1956

date recd 1956

117

FM HED USAF WASHINGTON DC

TO ZEN/COMARDC BALTO MD

INFO COM WDD INGLEWOOD, CALIF

SECRET FROM AFDRD CITE 57697. REFERENCE YOUR MESSAGE RDZGW 10-3-E AND LETTER 28 AUG 56, SUBJECT "(UNCL) REQUIREMENT FOR ADDITIONAL FY 57 FUNDS FOR WS 117L", LIMITATION OF FUNDS NECESSITATES PROLONGING OF SYSTEM 117L DEVELOPMENT. PHASING WILL BE BASED UPON MINIMUM BALANCED RATE OF DEVELOPMENT PROGRESS ON VEHICLE AND COMPONENTS INSTEAD OF ON DEVELOPMENT PLAN TARGET COMPLETION DATES. THREE MILLION DOLLARS PRESENTLY ALLOCATED CONSTITUTES TOTAL FUNDS NOW AVAILABLE. THIS HEADQUARTERS CONTEMPLATES REPROGRAMMING ADDITIONAL SEVEN MILLION DURING FY 57 FROM P-600 FUNDS. ADVISE REVISING DEVELOPMENT PLAN TO REFLECT AN ANNUAL TEN MILLION DOLLAR RATE OF EXPENDITURE AND DETERMINING EXTENT AND SPECIFIC APPLICATION OF FY 57 AND FY 58 NON-P-600 FUNDS EARLIEST, TO ENABLE REPROGRAMMING. NO NON P-600 FUNDS ARE NOW PROGRAMMED FOR THIS SYSTEM.

BT

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23-26 Oct 56

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WDTR

31 Oct 56

MEMORANDUM FOR Colonel Charles H. Terhune, Jr.

SUBJECT: Trip Report

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1. During the period 23 - 26 October 1956, the undersigned, accompanied by Lieutenant Colonel Quanten A. Riepe, WDTR, visited Washington D. C. for the primary purpose of presenting a briefing on WS 117L to the Coordinating Committee on Guided Missiles (CCGM) of the Office of the Assistant Secretary of Defense for R & D. A secondary purpose of the trip was to assist Colonel Leonhard, WDI, in informally discussing WDD facility needs in regard to WS 117L with representatives of the Assistant Chief of Staff for Installations, Headquarters USAF. On the afternoon of 24 October 1956, the undersigned made a brief visit to Baltimore, Maryland, to coordinate several minor matters.

2. Prior to the presentation to CCGM, we saw General Putt. Guidance from WDG was to concentrate on the technical aspects of the system and minimize discussion of schedules and funding. General Putt agreed completely with this approach. Colonel R. L. Johnston, AFDRD, (AF member of CCGM) had told us earlier that DOD had not yet officially approved WS 117L for systems development ~~per se, although they have approved WS 117L as a budget line item.~~ General Putt, after a brief discussion with Mr. Horner, thought that no further permission from DOD was needed and that the present USAF Development Directive was quite valid. General Putt indicated for our own benefit that for the ARS Program we should plan on ten million dollars in P-600 funds for FY 57 plus those non P-600 funds which we could justify. This was essentially the information contained in the Headquarters USAF TWX cite 57697 dated 23 October 1956. General Putt is quite evidently making every attempt to avoid bringing up WS 117L before the Secretary until resolution is achieved on pending problems in regard to WS 107A and WS 315A. There was some vagueness as to whether or not WS 117L was actually in the present Air Force FY 58 budget and, if so, for how much.

3. The dry run of the presentation was given as scheduled on 25 October 1956 to Colonel Johnston and members of the Air Staff without particular incident. Colonel Johnston's primary comments were around the political aspects of the situation in CCGM, as well as expected questions and methods for handling these. At his request, we simplified our funding charts down to one chart which merely presented our estimated FY 57 and 58 needs based upon the development plan schedule. A copy of the figures submitted at the

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WDTR 56-209

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presentation is attached. Further, the introductory statement as to the need for the ARS as an essential intelligence source was deleted by Colonel Johnston on the grounds that we did not have to justify the requirement.

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4. The presentation to CCGM on 26 October 1956 was made with approximately 25 additional people present. Colonel Johnston took the approach that the presentation was primarily for informational purposes only, since the Secretary of the AF has not yet given final approval to the program. It might be added at this point that we had been unable to determine the specific agenda item in front of CCGM until we actually went into the presentation. It turned out that they were considering a six million in P-600 funds for FY 58 for the ARS plus some nine million in FY 58 P-300 funds. Neither of these figures were those submitted by WDD. The presentation to CCGM by the undersigned was made in accordance with the WDG guidance received and cited above, and was apparently satisfactory since there were no specific questions on the technical approach. One representative who appeared to be a Naval Officer in civilian clothes, tried several devices of submarining the entire program by raising such points as "the need for prior approval from the State Department before embarking on the R&D program", "the value of money spent on this program as compared to other missile programs", etc. In response to a question on the total cost of the program, I replied that I did not have this figure available since it would depend upon the specific definition as to what would be included in the over-all program. At this point, Dr. Furnas volunteered (apparently from the Lockheed Aircraft Corporation presentation he had received) the figure of $\frac{1}{2}$ billion dollars for the over-all program, including operational costs. I offered no comment upon this figure. The committee ended their discussion on the item by approving the P-600 item and deferring without prejudice the P-300 item. After the presentation, we were told by Major Dillon (AFDRD Project Officer for WS 117L) that there were presently no FY 58 P-600 funds in the AF budget.

5. In company with Colonel Leonhard, we gave a desk-top presentation on WS 117L to General C. P. Brown, AFCIE, and members of his staff and informally advised them as to the nature of our facility requirements. They agreed to survey existing AF Installations with a view toward determining what of our facility requirements could be met from within the existing inventory. Colonel Leonhard cautioned the group on several occasions as to the fact that this program has not yet received Secretarial approval and, therefore, must be closely held.

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WDTR 56-209

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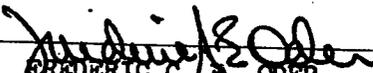
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6. Comment - As the result of this trip, the undersigned has sincere doubts as to the effectiveness of managing WS 117L through present structure and, in some cases, personnel (from Hq. ARDC through AFDRD to the OASD (R&D)). Support by Major Dillon appeared to me to be both luke-warm and not too effective in so far as WS 117L is concerned. WDTR has gone to considerable effort to keep Major Dillon advised and to make him feel a member of the development team. One could only attribute his lack of enthusiasm in support of the project to his personal likes and dislikes. To illustrate the problem, he (Dillon) is also responsible for a trainer aircraft development program and stated that WS 117L must compete with this and other "support" projects for that "cut" of the AF R&D budget available to his branch. This is obviously an untenable situation. The most surprising factor was that he was very poorly informed as to the status of various actions in Hq. USAF regarding the program. Colonel Ahola, WDD Liaison Officer, was, in fact, much better informed on many of these details than was Major Dillon. In regard to CCGM it was quite apparent that the committee had difficulty because ARS is not a "conventional" missile and that they would develop enthusiasm for the project only if it were directed from above. Only Dr. Furnas appeared to be in complete support of the program. It should be noted that none of the committee showed any familiarity with the intelligence and reconnaissance aspects of the problem, and this causes me to wonder if they are appropriate to the job.

7. In view of General Schriever's concern over the CCGM briefing, the above report may be of interest to him.

1 Incl
WS 117L FY-57 & 58
Fund Breakdown


FREDERIC C. B. ODEH
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

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WS 117L

	<u>FY 57</u>	<u>FY 58</u>
P-100	8.5	35.6
P-200	2.0	26.0
P-300	0	34.3
P-600	14.4	33.0

270

~~CONFIDENTIAL~~

WDTR 56-209

~~SECRET~~

Incl. 1

W D H 119
Dr Rockefeller

WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

PERSONNEL ACTIONS MEMORANDUM
(40)

2 November 1956

1. VOC, iss 1 Nov 56, asg BRIG GEN OSCAR F. CARLSON, 303A, this Div, this sta, Prim dy as Spec Asst to Comdr, Ofc of Comdr, WDD (0002F), FA: 01000, are cfm, ESPWO.
2. The AFSC of BRIG GEN OSMOND J. RITLAND, 1731A, this Div, this sta, is del fr 0416 to 0002F; DAFSC is chgd fr 0026F to 0092F.
3. The (2) add AFSC 1221A and (3) add AFSC 0066C of BRIG GEN OSMOND J. RITLAND, 1731A, this Div, this sta, are del.
4. SMOP 6, PERAM 35, cs, this Div, pert to MAJ EDWARD C. TARBUTTON, A0661249, this Div, this sta, AS READS "Prim dy as Stf Plt, Support Opns (1044)," IATR "Prim dy as Stf Plt, VT Flt Sec, Opns Gp, Supp Opns (1044)."
5. Para 23, PERAM 27 and Para 7, PERAM 35, cs, this Div, pert to CAPT FRANK T. BLASKIEWICZ, A0674450, this Div, this sta, are Revo.
6. VOC, iss 14 Sep 56, asg CAPT FRANK T. BLASKIEWICZ, A0674450, this Div, this sta, Prim dy as Stf Plt, VT Flt Sec, Opns Gp, Supp Opns (1044), FA: 57000, are cfm, ESPWO.
7. VOC, iss 21 Sep 56 asg CAPT EDWARD J. CONWAY, 16673A, this Div, this sta, Prim dy as Proj O (Budget), Plans & Prog Ofc, Asst f/WS 117L, Tech Opns (8446), FA: 57000, are cfm, ESPWO.
8. CAPT JACK E. TICE, A01580418, this Div, this sta, is asg add dy as Test Control Off, this Div, effective 31 Oct 1956.
9. VOC, iss 27 Oct 56 asg 1ST LT ROBERT J. BOSLER, A02219437, this Div, this sta, Prim dy as Personnel O, Manpower Gp, Supp Opns (7324), FA: 57000, are cfm, ESPWO.
10. The FSSD of 1ST LT ROBERT J. BOSLER, A02219437, this Div, this sta, is del fr 7 Dec 41 to 8 Sep 56.

Para 1 thru 12, PERAM 40, WDD (ARDC) 1 Nov 1956

avll

11. SMOP 9, PERAM 24, cs, this Div, pert to 1ST LT CHARLES W. FLIPPO, A02246708, this Div, this sta, AS READS "Prim dy as Protocol O (WDD), Supp Opns (7024), FA: 57000" IATR "Protocol O (WDD), Ofc of Comdr (7024), FA: 01000."

12. The Functional Cat of the FNO is chg fr PPA to PPB:

BRIG GEN OSCAR F. CARLSON, 303A
CAPT EDWARD J. CONWAY, 16673A
1ST LT ROBERT J. BOSLER, A02219437

BY ORDER OF THE COMMANDER:

OFFICIAL:

Jack E. Tice
JACK E. TICE
Capt, USAF
Ch, Mil Pers Br

JACK E. TICE
Capt, USAF
Ch, Mil Pers Br

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75 - Pers Serv

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NOV 21 1956

WDTR

SUBJECT: Fund Requirements for Weapon System 117L Program

THRU: Commander
Air Research and Development Command
ATTN: RDZG
Post Office Box 1395
Baltimore, Maryland

TO: Director of Research and Development
Headquarters USAF
Washington 25, D. C.

1. Reference TWX AFDRD 57697, dated 23 October 1956. On 7 November 1956, Lieutenant General Donald Putt was briefed by Lt Colonel Frederic C. E. Oder on the planned program for research, development and engineering test of WS 117L for the balance of FY 57, utilizing \$10,000,000 in P-600 funds. This briefing detailed the planned utilization of funds by the prime contractor, sub-contractor and the ARDC Centers. On the same date, General Putt was briefed on the planned program in the P-100 and P-200 areas as detailed below. General Putt indicated general concurrence with the information as presented. The following information reflects the budget program P-100 and budget program P-200 FY 57 fund requirements for the conduct of a balanced system oriented approach to the development of essential components of the WS 117L program during the remainder of FY 57.

a. Vehicle Subsystem: Two hundred forty thousand dollars (\$240,000) P-100 funds for fabrication of first three orbit test vehicle airframes after mock-up; three hundred forty thousand dollars (\$340,000) P-200 funds for ground-handling carrier, check-out equipment, fuel-carrying and handling equipment.

b. Propulsion Subsystem: Three million two hundred eighty thousand dollars (\$3,280,000) P-100 funds for incremental payments on twelve main engines and twenty eight control verniers; two hundred eighty thousand dollars (\$280,000) P-200 funds for test and ground-handling equipment.

DOWNGRADED AT 12 YEAR
INTERVALS; NOT AUTOMATICALLY
DECLASSIFIED. DOD DIR 5200.10

WDTR 56-231

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c. Auxiliary Power Unit Subsystem: One hundred eighty thousand dollars (\$180,000) P-100 funds for seven battery units for ground and flight test; forty thousand dollars (\$40,000) P-100 funds for cost of three chemical auxiliary power supply propellant feed systems; one hundred forty thousand dollars (\$140,000) P-200 funds for test equipment.

d. Guidance and Control Subsystem: Five hundred ten thousand dollars (\$10,000) P-100 funds for incremental payments on four AC Spark Plug units for FY 59 delivery, one orbital boost guidance unit, two transition control systems, one transition computer and one ascent guidance unit; three hundred forty thousand dollars (\$340,000) P-200 funds for ground support and test equipment for preceding guidance and control units.

e. Visual Subsystem: Sixty thousand dollars (\$60,000) P-200 funds for test equipment for experimental models.

f. Ferret Subsystem: Thirty thousand dollars (\$30,000) P-200 funds for test equipment for experimental models.

g. Infra-red Subsystem: One hundred fifty thousand dollars (\$150,000) P-200 funds for test equipment for experimental models.

h. Ground-Space Communications Subsystem: Four hundred twenty thousand dollars (\$420,000) P-100 funds for airborne communications equipment; one million eight hundred thousand dollars (\$1,800,000) P-200 funds for incremental payment on three nulling interferometers, total cost one MSQ-1A radar and two COTAR systems.

i. Data Processing Subsystem: Eight hundred eighty thousand dollars (\$880,000) P-200 funds for computers, simulators, receivers and duplicators.

2. The sub-total FY 57 P-100 fund requirement is \$4,670,000. The sub-total FY 57 P-200 fund requirement is \$4,020,000.

3. An additional requirement exists for four (4) each SM 65 boosters. Seven million two hundred forty seven thousand dollars (\$7,247,000) P-100 funds for incremental payment on four SM 65 boosters; one million nine hundred sixty four thousand dollars (\$1,964,000) P-200 funds for incremental payment on associated ground-handling equipment.

4. The grand total FY 57 P-100 fund requirement is \$11,917,000. The grand total FY 57 P-200 fund requirement is \$5,984,000.

~~CONFIDENTIAL~~

5. The currently established contractor expenditure curve indicates additional FY 57 P-600 funds will need to be placed on Contract AF 04(647)-97 by 25 December 1956. It is requested that an additional seven million dollars (\$7,000,000) of FY 57 P-600 funds be made available to the WS 117L Program by 1 December 1956 to prevent a work stoppage.

6. It is to be emphasized that the detailed, planned program in the non-P-600 area, contained in paragraph 1 of this letter, represents an optimum balanced system oriented approach to the WS 117L Program during the remainder of FY 57. The total FY 57 P-100 and P-200 funds required should be made available at the earliest possible date and no later than 15 December 1956 to allow timely initiation of procurement action on long lead time items if a balanced program schedule is to be maintained.

FOR THE COMMANDER:

SIGNED

CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

copy furnished:
Hq USAF
ATTN: AFCCM-A

Major Zelenka

1343

3

WDTR 56-231

~~CONFIDENTIAL~~

WDTR, WDD, 21 Nov 56, Subj: Fund Requirements for Weapon System 117L Program.

RDZGW

1st Ind

Nov 26 1956

HEADQUARTERS, AIR RESEARCH AND DEVELOPMENT COMMAND, Post Office Box 1395,
Baltimore 3, Maryland

TO: Director of Research and Development, Headquarters USAF,
Washington 25, D. C.

1. This Headquarters strongly supports the request contained in the basic letter and considers the funds requested to be a minimum requirement for a balanced system-oriented approach to the WS 117L Program during the remainder of FY-57.

2. Funds in the amounts and categories requested are not currently available to this Headquarters. Appropriate action to provide these funds is urgently recommended.

3. Your attention is particularly invited to paragraph 6 of the basic letter which points out the need for the P-100 and P-200 funds no later than 15 December 1956, and to paragraph 5 which indicates a need for additional P-600 funds by 25 December 1956.

FOR THE COMMANDER:

SIGNED

DON R. OSTRANDER
Brigadier General, USAF
Assistant for Guided Missiles Systems
Deputy Commander/ Weapon Systems

This indorsement is not
classified in itself.

CY of 1st Ind & ltr fwded to RDSCH
L/C Hart RDZGW

308

26 Nov 56

if

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

10 Dec 56

SUBJECT: (Uncl) Requirement for Additional FY 1957 Funds for
WS 117L

TO: Commander
Air Research and Development Command
Post Office Box 1395
Baltimore 3, Maryland

1. Reference is made to letter, same subject, dated 28 August 1956, from Western Development Division with 1st Indorsement by Headquarters, Air Research and Development Command dated 29 August 1956, and to message from this Headquarters AFDRD 57697 dated 22 October 1956.

2. The three million dollars originally funded for this system in FY 57 has been increased to a total of five million dollars. It is the intention of this headquarters to add another five million P-600 funds during this fiscal year. To obtain this money it will be necessary to reprogram from other systems as soon as the sources can be determined. System 117L will be given first priority in P-600 funds reallocation. You will be notified by message as soon as all or part of the funds are reprogrammed to this system.

3. For management planning purposes it is essential that you plan your expenditures based on a ten million dollar program ceiling for P-600 funds during FY 1957 and FY 1958. No more than \$10,000,000 can be made available in either year. Funds required in the P-100, P-200 and P-300 areas will be handled as separate items and are being reviewed at this time.

4. The following will be used for program planning guidance:

- a. Continue the development and testing of all component items.
- b. Do not construct a mock-up for inspection purposes or a complete experimental test item until further advised.
- c. Do not plan to launch this system prior to FY 1961.
- d. Launching facility construction funds are not included in the FY 58 budget.

DOWNGRADED AT 12 YEAR
INTERVALS: NOT AUTOMATICALLY
DECLASSIFIED. DOD DIR 5200.10

~~CONFIDENTIAL~~

/s/ D. L. Putt
D. L. PUTT
Lieutenant General, USAF
Deputy Chief of Staff,
Development

WD 56-05231

~~CONFIDENTIAL~~

Confidential 122

WDTR

DEC 14 1956

SUBJECT: Recoverable Payload Package Study

TO: The Ramo-Wooldridge Corporation
Attn: Mr. Art Ford

1. WDTR requests that the Ramo-Wooldridge Corporation accomplish a study of Recoverable Payload Packages which can be utilized by WS 117L. The results of this study are to be forwarded to WDTR by 1 February 1956.

2. The subject study should determine the feasibility of recovering payload packages from an orbiting WS 117L vehicle. The following orbital conditions will be considered:

- a. Circular orbits located 300 N.M. above the Earth's surface.
- b. Both Easterly and Westerly launched, low latitude orbits.
- c. Westerly launched, high latitude orbits.

3. The recoverable payload that is under consideration at this time is a film package which weighs fifty (50) pounds. The best known values of the film's sensitivity to accelerations and temperature will be provided to R-47 before 23 December 1956, but in the meantime the film package will be assumed to be insensitive to accelerations and capable of tolerating temperatures up to 160 degrees Fahrenheit.

4. The study will be split into two considerations which are as follows:

- a. The re-entry problem. This will include the complete operation of bringing a package from orbiting conditions to the Earth's surface in a recoverable condition.

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INTERVALS; NOT AUTOMATICALLY
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WDTR 56-261

~~CONFIDENTIAL~~

b. The positioning and location of the recoverable package. This will include an analysis of the precision required in initiating and controlling the recovery operation, if available methods for locating and recovering the package are to be utilized.

5. Existing WS 107A information will be used whenever it is applicable to this study.

6. Manhours expended on this problem are to be charged against Paragraph 2(b) of WDR letter, Subject: WS 117L Work Under Contract AF 18(600)-1190, dated 30 August 1956. An estimated maximum of two man months are to be allotted to this task.

SIGNED

FREEMAN C. E. OBER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

~~CONFIDENTIAL~~

2

WDR 56-204

WDR

Capt. Coolbaugh

1344

279

~~CONFIDENTIAL~~

1. ACTION REQUIRED CHANGE SIGNIFICANT EVENT RESULTS

2. REPORTS CONTROL SYMBOL

123

MANAGEMENT REPORT

PAGE 1 OF 1 PAGE

SYSTEM PROJECT TASK ENGINEERING SERVICE

3. DATE
18 December 1956

4. TITLE

(U) Advanced Reconnaissance System

5. NUMBER
WS 117L - MR #2

6. PREPARING AGENCY
HQ ARDC - WDD

7. RESP ORGN
WDD-WDTR

8. PARTICIPATING CENTERS
AFRCR, WADC, RADC, AFPTRC

9. PROGRAM STRUCTURE
100

10. PARTICIPATION/COORDINATION/INTEREST
USAF/AMC-P, AFGC-P, ATC-P, SAC-C, ADC-C
USN/CND-I, USA/C/S-I, Other/ CIA-I

11. TECHNICAL GROUP
02

12. APPLICABLE AREAS
A. TECHNICAL B. TEST C. FUNDS D. MATERIEL E. FACILITIES
F. MANPOWER G. PERSONNEL H. TRAINING I. CONTRACTS J. AIRCRAFT

13. NARRATIVE
1. Letter Contract AF 04(647)-97 was let with the Lockheed Aircraft Corporation, Missile Systems Division, on 5 November 1956. Funds allocated against this contract total \$3,000,000. It is expected that a definitive contract will be executed prior to 30 April 1957.
2. Reproduction and distribution of this report is forbidden except on express approval of the WS 117L Project Office.

69 
CHARLES H. TERHUNE, JR.
Colonel, USAF
Deputy Commander
Technical Operations

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124

WESTERN DEVELOPMENT DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Post Office Box 262
Inglewood, California

PERSONNEL ACTIONS MEMORANDUM)
NUMBER 48)

19 December 1956

1. LT COL JOHN F MC CARTHY, JR, 6889A, this Div, this sta, is awarded (2) add AFSC of 0076F.
2. Para 2, PERAM 45, cs, this Div, Pert to MAJ HAROLD F WIENBERG, 15220A, is Revo.
3. MAJ HAROLD F. WIENBERG, 15220A, being asg this Div, this sta, per para 1, SO 159, dated 5 Nov 56, and para 7, SO 169, dated 1 Dec 56, Hq RADC (ARDC), Griffiss AFB, New York, N.Y., is asg Prim dy as Proj 0 (GFE), Facil & Equip Ofc; Asst f/WS-117L, Tech Opns (8446), FA: 57000, eff 19 Dec 1956.
4. VOC, iss 2 Dec 56, asg CAPT THOMAS P COMER, A01852156, this Div, this sta, Prim dy as Dep Ch, Finan Anal Br, Comptlr, Supp Opns (6746), FA: 57000, are cfm, ESPWO.
5. The FSSD of CAPT THOMAS P COMER, A01852156, this Div, this sta, is chgd fr 15 May 46 to 11 Oct 56.
6. VOC, iss 23 Nov 56, Rel CAPT WALTER T. GENTILE, 16518A, this Div, this sta, fr Prog 0 (Stat), Atlas Prog Br, Atlas Opns, Plans & Opns (6834), FA: 57000, and asg new Prim dy as Ch, Stat Serv Br, Comptlr, Supp Opns (6816), FA: 57000, are cfm, ESPWO.
7. VOC, iss 11 Dec 56, asg CAPT DOUGLAS LONDEREE, A01549534, this Div, this sta, Prim dy as Field Liaison O, Materiel Gp, Supp Opns (6424), FA: 57000, are cfm, ESPWO.
8. VOC, iss 23 Nov 56 Rel CAPT EUGENE F MESSERLY, A02032993, this Div, this sta, fr Prim dy as Prog 0 (Budget), Prog Br, Asst f/Atlas Opns, ICBM Opns, Plans & Opns (6736), FA: 57000, and asg new Prim dy as Ch, WS 107A-1 & 2 Sect, Budget Br, Comptlr, Supp Opns (6736), FA: 57000, are cfm, ESPWO.
9. VOC, iss 1 Dec 56, Rel CAPT DONALD H OFFERMAN, A0663548, this Div, this sta, fr Ch, IRBM Thor Prog Br, Plans & Opns (6746), FA: 57000, and asg new Prim dy as Ch, Finan Anal Br, Comptlr, Supp Opns (6746), FA: 57000, are cfm, ESPWO.
10. VOC, iss 23 Nov 56, Rel CAPT WILLIS G SHANEYFELT, 22759A, this Div, this sta, fr Prog 0 (Budget), Titan Opns, Plans & Opns (6736), FA: 57000, and asg new Prim dy as Ch, Field Svs Sect, Budget Br, Comptlr, Supp Opns (6736), FA: 57000, are cfm, ESPWO.

Para 1 thru 13, PERAM 48, WDD (ARDC), 19 December 1956

11. VOC, iss 18 Dec 56, asg CAPT ALBERT G RHODES, A0589935, this Div, this sta, Prim dy as Comm O, Comm Br, Materiel Gp, Supp Opns (3034), FA: 57000, are cfm, ESPWO.

12. The FSSD of CAPT ALBERT G RHODES, A0589935, this Div, this sta, is chgd fr 14 Nov 49 to 3 Oct 56.

13. VOC, iss 23 Nov 56, Rel 1ST LT WILLIAM L RENWICK, A02247746, this Div, this sta, fr Prog O (Stat), Thor Prog Br, Asst f/IRBM Opns, Plans & Opns (6834), FA: 57000, and asg new Prim dy as Ch, RCS Sect, Stat Serv Br, Comptlr, Supp Opns (6834), FA: 57000, are cfm ESPWO.

BY ORDER OF THE COMMANDER:

OFFICIAL:



JACK E TICE
Capt, USAF
Ch, Mil Pers Br

JACK E TICE
Capt, USAF
Ch, Mil Pers Br

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- 1 - Ea Officer
- 75 - Pers Serv

125

DEC 21 1956

WDR

SUBJECT: Contract No. AF O1(647)-97; The Eastman Kodak Company

TO: Mr. John H. McLachlin
Administrative Contracting Officer
Lockheed Aircraft Corporation
Missile Systems Division
Van Nuys, California

1. Reference subcontract material under AF O1(647)-97 for selection of Eastman Kodak Company to perform work as outlined in statement of work.

2. The WS 117L Project Office concurs in the Lockheed Aircraft Corporation's selection of the Eastman Kodak Company.

3. The proposed statement of work is approved for the period of the letter of intent to 31 January 1957. Approval of the work statement does not imply WS 117L Project Office approval of WSD 2011. The cited sections of WSD 2011 are used as a reference document for specifying the areas of work to be covered by the Eastman Kodak Company.

4. No delivery of hardware will be made during the period of the contract to 31 January 1957. The delivery schedules contained in WSD 2011 in the work areas covered by the statement of work are compatible with the over-all WS 117L scheduling and should insure timely incorporation of the subsystems product into the entire Weapon System.

5. The proposed statement of work for the Eastman Kodak Company is within the requirements of the Lockheed Aircraft Corporation statement of work as specified in Contract No. AF O1(647)-97.

6. The spending rate indicated in the letter of intent is compatible with the over-all spending rate on the WS 117L Program as it exists at this time.

7. Minor changes of wording are to be accomplished by Mr. Walter Tywinski of the Lockheed Aircraft Corporation. These changes do not change the intent or scope of work contained in the work statement.

SIGNED

cc:

MCPTS - Mr Silberman

FREDERIC C. E. OBER
Lt. Colonel, USAF
Assistant for WS 117L
Technical Operations

1342

Major Zolentz

1344-11

~~CONFIDENTIAL~~

WDTR

DEC 26 1956

SUBJECT: WS 117L Work Under Contract No. AF 18(600)-1190

TO: The Ramo-Wooldridge Corporation
ATTN: Mr. F. A. Ford

1. WDTR requests that the Ramo-Wooldridge Corporation accomplish the following three (3) items of work in support of WS 117L:

a. Prepare an estimate of the maximum nose cone weight and moment that is compatible with the structural and control limitations of the anticipated "thin skin" version of the SM-65C booster. WDTR understands that the thin skin will be introduced on the seventh (7) SM-65C booster, and that all boosters produced after this one will have the thin skin.

b. Prepare an estimate of the maximum nose cone weight and moment that is compatible with the structural and control limitations of the SM-68. This written study request is in support of a previous verbal request for this work.

c. Comment on the value of using an SM-65A to prove booster integrity when maximum nose cone weights are used. There is a question about the value of such a test, since the SM-65C boosters will have a structure which differs from the SM-65A in some respects.

2. Manhours expended on these problems are to be charged against Paragraph 2(b) of WDTR letter, subject: WS 117L Work Under Contract AF 18(600)-1190, dated 30 August 1956. The following are the estimated maximums of work allotted for these tasks:

- 1.a - 2 Man Months
- 1.b - 4 Man Months
- 1.c - 1/10 Man Month

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS.
DOD-DIR 5200.10

SIGNED

FREDERIC G. E. SMITH
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

~~DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS
DOD-DIR 5200.10~~

WDTR

J S Goolbaugh

~~CONFIDENTIAL~~ 53-270
1958

MDTR

DEC 28 1956

MEMORANDUM FOR RECORD

SUBJECT: Telephone Conversation with Mr. J. H. Carter - Lockheed MSD

1. On 21 December 1956, I called Mr. Carter, Chief of the WS 117L Project at MSC/LAC, to discuss certain problems concerning the program:

a. I told him that we had been advised by Mr. Carl Hagenmaier of MSD as well as by Dr. Fishman that in response to the WDD/ENO request to MSD for a definitive work statement proposal for the present contract 97, Lockheed was in fact planning only to submit what might be considered an Errata Sheet to publication MSD 2011 (The Lockheed Proposed Development Plan). I told Mr. Carter that in my opinion MSD 2011 was much too loose a document to be considered as the wording of a definitive contract between the Air Force and Lockheed on WS 117L. I cited the experience that we had had in the proposal for the Lockheed subcontract to Eastman Kodak in which MSD 2011 was used as the basis for the work statement of the letter of intent and told him that in my opinion that that part of MSD 2011 which was cited for this purpose was much too loose for use in a letter of intent. Mr. Carter complained that while we were pushing them to get out such things as definitive work statements that the fund situation really made much of this meaningless. I pointed out to him that depending upon the availability of funds a certain proportion of the definitive work statement could be actually costed out and made a part of the contractual agreement; and that we should know what the specifics of the over-all job were to the best of our knowledge at this time with a realization of course that this would be subject to revision as we got closer and closer to the actual hardware. I told Mr. Carter that we had laid on quite a program during the middle of January involving representatives from the AFDC Centers to work with us on finalizing the definitive work statement and that should Lockheed fail to submit anything that was useful, this would put the entire burden of doing the definitive work statement on the Air Force side without the benefit of the engineering knowledge that Lockheed should supply. Mr. Carter stated that he would look into this problem and advise me further.

b. I pointed out to Mr. Carter that a number of his people in their visits to us seemed to be quite inexperienced in how to go about their business. I did not want to mention specific names, inasmuch as this might be embarrassing for the individuals concerned. I gave him as an example, the man who came to us for some things that he could have easily gotten from either the AFPP/LAC or the San Francisco Air Procurement District.

c. I recalled to Mr. Carter that he and I as well as Mr. Doerson and I had discussed the need that LAC felt they had to confer with Comair on certain specific matters. I pointed out to him, that

in order to get such visits approved, I would have to have these specific requests from Lockheed for the visits that they desired and that I had not received any in spite of our discussions. He said that he would look into this matter and advise me further.

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d. In regard to a request from R-W that they get together with MSD individuals on a matter of common concern regarding WS 117L, I pointed out to him that I was not the master of ceremonies in this regard but merely trying to act as a catalyst. I explained that the WS 117L Project Office (WDTR) had been scrupulous in their dealings with R-W in terms of the letter agreements between the two organizations and one important reason for us handling our relations with R-W in this fashion was to insure that if R-W had competence in certain areas their competence was not denied our program by virtue of contractual relationships relevant to other subjects between R-W and the Air Force. I gave him the name of the individual in R-W who was preparing for the meeting and suggested that they deal directly on this matter. I told him that representatives of the Project Office would attend.

2. I was later advised on 21 December by Mr. Carter that (ref. par. 1 a, above) they were going to produce a valid definitive work statement recommendation per our discussion.

SIGNED

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

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128

DEC 28 1956

WDTR

SUBJECT: Distribution of Pied Piper Reports

TO: Chief
Aircraft Reactors Branch
ATTN: Major G. M. Anderson
Division of Reactor Development
Atomic Energy Commission
Atomic Building
Washington 25, D. C.

1. Request your office review the existing distribution of Pied Piper Progress Reports as listed in inclosures 1 and 2, so that agreement may be reached jointly with this office on an approved list. The inclosures were submitted by the Wright Air Development Center.

2. The reports concerned involve the following Contracts:

a. AEC Contract No. AT(04-3)-98 with Lockheed Aircraft Corporation for development of a nuclear reactor heat source.

b. AF Contract No. AF 33(616)-3441 with Lockheed Aircraft Corporation, and involving Thompson Products Incorporated as subcontractor for development of conversion equipment associated with the Lockheed reactor.

c. AEC Contract No. AT(11-1)GEN-8, Supplement 19, with North American Aviation Incorporated for development of a nuclear reactor heat source.

d. AF Contract No. AF 33(616)-3442 with North American Aviation Incorporated, and involving Ailessearch, a Division of the Garrett Corporation, as subcontractor for development of conversion equipment associated with the North American reactor.

3. Progress reports on Contracts specified in paragraph 2a and 2b, above, are currently issued by Lockheed under a single cover. This is expedient and if the same distribution is made for both phases of the work. Agreement on a single distribution list would, therefore, appear to be desirable.

EXCLUDED FROM AUTOMATIC
REGRADING: DOD DIR 5200.10
DOES NOT APPLY

WDTR 56-272

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~~SECRET~~
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4. In view of the sensitivity of information concerning WS 117L and the difficulty of excluding from subsystem reports direct or indirect references to the entire system, it is felt that distribution must be very strictly limited. Your comments are requested concerning the necessity for distribution to the Schenectady Operations Office and to the Los Alamos Scientific Laboratory.

WDSI

5. No record exists at this office of a request or need for distribution to the Rome Air Development Center or to the National Advisory Committee for Aeronautics, which appear on the inclosed listings. Any explanation which you may have for inclusion of these addresses on the distribution list is also requested.

FOR THE COMMANDER:

SIGNED

FREDERIC C. E. ODER
Lt Colonel, USAF
Assistant for WS 117L
Technical Operations

- 2 Incl
1-Distribution List
for Atomic International
Pied Piper Reports, 2 pgs, 1 cy (U)
2-Distribution List
for Lockheed Aircraft
Corp Pied Piper
Reports, 2 pgs, 1 cy (U)

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~~RESTRICTED DATA~~

WDTR
G E Austin

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WDTR 56-272

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
DIRECTORATE OF REQUIREMENTS

~~CONFIDENTIAL~~

GOR NO. 80-4
DATE SEP 26 1958

(S) AN ADDENDUM TO A
GOR FOR
A RECONNAISSANCE SATELLITE WEAPON SYSTEM

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VII. OPERATIONAL PERFORMANCE.

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M. Mapping and Charting Sub-System

1. General

a. The photo mapping and charting sub-system must provide cartographic agencies with photo mapping coverage of the land mass areas of the world including those areas which are not presently accessible either for political or other reasons. The end product of this sub-system must result in maps and charts (or substitutes) of geodetic accuracy.

b. Photography produced by this sub-system must be of high quality with sufficient data recorded on the negative to facilitate reduction to usable form by cartographic agencies. The developing agency should consider the feasibility of utilizing a recoverable sub-system or at least the film cassette if necessary, to provide the required quality of photography.

2. Operational Characteristics

a. Complete coverage of all land mass areas throughout the world is required. Coverage of non-strategic areas of the world is required primarily for use as an aid in affecting geodetic ties.

b. A capability to command the sub-system is required.

c. Accuracy requirements: Identifiable points or objects on the photography must be located to within \pm 1000 feet of their true location in relation to the world geodetic grid.

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SS: 7307

DOWNGRADED AT 12 YEAR
INTERVALS; NOT AUTOMATICALLY
DECLASSIFIED

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