

[REDACTED]  
[REDACTED]  
WDD Control of Lockheed Aircraft Corporation  
Presentations on WS 117L

OCT 17 1956

WDGS

WDTR

F. C. E. Oder/ls/1344

1. The Lockheed Aircraft Corporation has been and probably will continue to be requested to give presentations on WS 117L, the Advanced Reconnaissance System, to other governmental agencies. Typical of such presentations was the one recently presented to Dr. Furnas, and that requested by the Air University.

2. Under SDD No. 117L, WDD is charged with maintaining special security precautions on a strict need-to-know interpretation concerned with the divulging of information on the ARS. Furthermore, we are required to maintain a list of those people who require need-to-know of all of the sensitive aspects of the program. From a practical point of view, it is very difficult for an effective presentation to be given by Lockheed which does not at least infer the nature of some of these sensitive aspects of the program.

3. It is requested that Lockheed be advised that in the future, all requests for presentations on WS 117L be referred to WDD for approval. In each case, the proposed list of attendees must be completely specified in order that this office can determine whether or not a need-to-know exists. It is further requested that the instructions to Lockheed be phrased in such a way as to prevent them from voluntarily including discussions of their role in WS 117L on any presentation on over-all company activities.

4. This DF is classified SECRET because it quotes portions of SDD No. 117L, which are similarly classified.

SIGNED

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

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

[REDACTED]  
WDTR 56-182

WDTR  
F C E Oder

ls  
134 [REDACTED]

Presentations on WS 117L

AFCOM-A

Lt. Colonel Ahola

WDR

OCT 17 1956

Lt. Colonel Oder/1343

1. At the request of Hq. USAF, WDD, in the person of Lt. Colonel Oder, aided by Commander Truax, will give a presentation to the OSD Coordinating Committee on Guided Missiles (OASD) (R&D) on 26 October 1956. The presentation will be given a dry run in General Swafford's office on 25 October 1956.

2. It has come to the attention of WDD, that it would be fruitful to advise key personnel of the Directorate of Plans (AFOPD) on WS 117L. It is requested that you contact Colonel James B. Tipton, Chief of Long Range Objectives and Programs Group in Room 4C967, with a view to inviting Colonel Tipton to attend one of the two presentations indicated above. Since this will be a TOP SECRET presentation, and accordingly, attendance at the OSD presentation will be quite limited, it is suggested that you determine whether or not Colonel Tipton could not attend the dry run in General Swafford's office on the 25 October 1956.

3. It is presently planned that the briefing team will arrive on the day time Statesman on 24 October 1956, they will be carrying material up to TOP SECRET. It is requested that arrangements be made for the securing of this material beginning with the night of 24 October 1956 and that Colonel Oder be advised as to what arrangements have been made in this regard.

HAROLD W. NORTON  
Colonel, USAF  
Asst Deputy Commander

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

**Request for Security Investigation in Re  
Magazine Release**

**OCT 15 1956**

**WDSI**

**WDTR**

**F. C. E. Oder/1a/1344**

1. Your attention is invited to the article which appears on the lower right hand side of page 15 on the October 1956 issue of the magazine, "Missiles and Rockets", which is published monthly by American Aviation Publications, Inc., Washington, D.C., in which lists as the managing editor, Erik Bergaust.

2. The article referred to, has as its caption, "Navy's Truax, Guides AF Satellite Work". The article deals with the fact that Commander Truax is assigned to WDD. Discusses his career briefly and states that he is a nominee for the American Rocket Society's Presidency. The problem with the article lies both in the caption and in the last sentence, which states, "Informed sources believe Commander Truax is guiding WDD's satellite work".

3. The fact that the AF (WDD) is engaged in development of a satellite is classified SECRET. Furthermore, WS 117L has special security measures directed by SDD No. 117L. The need for such measures is apparent, in that the premature compromise for a Reconnaissance effort such as this, could easily result in serious national embarrassment and a resulting loss of the investment in the project as well as a denial of the potential results thereof.

4. Accordingly, it is requested that an investigation be conducted to ascertain the circumstances surrounding this release and the determination of responsibility for the classified information concerned appearing in public print. It is further requested that this office be advised as to what steps can be taken to prevent future occurrences of this nature.

**SIGNED**

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

cc: WDCS

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

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

**WDTR-56-180**

**WDTR  
F C E ODER**

**1a**

**1344**

[REDACTED]

Selection of WS 117L Guidance Scheme and/or Contractor.

OCT 15 1956

WDTLG  
WDTI

WDR

Lt. Herther/ls/1344

(In Turn)

*see comment nr 2*

*dt 30 Oct 56*

*comment nr 3*

1. WS 117L, being a satellite-borne reconnaissance system, leans heavily on the Ballistic Missile Program for placing the vehicle on orbit. For instance, the ICDM provides almost 85% of the velocity required for a 300 mile satellite. The basic scheme is to replace the nose cone with a powered third stage. The USAF approved WS 117L Development Plan is based on the use of the SM 65C as a booster, although the SM 68 appears to offer the possibility of more payload on orbit, which may be required in the future.

2. Autonetics and MIT have been involved in parallel guidance and control studies for the satellite for the past seven years. Now that WS 117L is an approved weapon system, with Lockheed Aircraft Corporation about to receive a contract for the System Development, the immediate selection of a guidance contractor is imperative.

3. In the most general case, the question of who the guidance contractor will be can be broken down into two categories, those who are and those who are not in the ballistic missile programs. The answer must be weighed in light of the following:

- a. Cost of putting a new contractor in the ballistic missile guidance business.
- b. Allowable degree of interference to the three other WDD programs.
- c. Degree of relative independence of ballistic missile programs desirable by WS 117L for its optimum development program.
- d. Overall economy to be effected by going to one of those contractors in the other programs which offers the best WS 117L solution.
- e. Relative degree of reliability of a guidance system which will have been flight tested for one of the other programs vs a new item developed for WS 117L alone, which must have allowance for separate flights for guidance tests.

DOWNGRADED AT 12 YEAR  
INTERVALS UNLESS AUTOMATICALLY  
DECLASSIFIED DOD DIR 5200.10

WDR 56-178

WDR

ls

Lt Herther

1344

[REDACTED]

[REDACTED] [REDACTED]

4. None of the guidance schemes under development for the other programs will fulfill the satellite application without modifications, although some are more easily adapted than others. Based on technical promise and early availability to meet WS 117L launch dates, ACSP seems to be best suited of the WDD guidance contractors.

5. R-W has performed a short study and the results are included in inclosure #1. Since these results were presented, however, Mr. Schulman visited the WS 117L study group at MIT and seems to concur in the general idea of making use of as much as possible of AC production units, meanwhile, having MIT perform the necessary R&D to make the system compatible with the SM 65 and the WS 117L orbital vehicle, hence minimizing early engineering interference at AC.

6. Specifically, it is visualized that AC IREM production platforms (IMU) and associated electronics will be used "as is" with modifications of the computer only being required for WS 117L use. These hardware modifications could be performed by AC with little or no interference.

7. WDTR, in the best interest of the Air Force, feels that the possibility of using an MIT-AC spark plug combination for WS 117L guidance contractors should be fully investigated in detail, prior to selecting another contractor such as NAA.

8. Because of the long lead time involved on guidance development, it is requested that this question of feasibility of utilizing AC for WS 117L guidance system production be answered as soon as is practical.

9. The MIT contract for WS 117L study terminates 1 Nov 56, hence, it is desired that the question be resolved in time to extend their contract without a work stoppage, if they are to continue. If this scheme is not satisfactory, this group at MIT will contract with the Navy for a development of a shipborn inertial reference system for Jupiter launchings.

10. WDTR would like to have a discussion between AC-MIT-WDTLG-WDTR representatives to perform this detailed analysis of exactly what is required of AC and the degree of interference with WS 315A.

**SIGNED**

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

1 Incl  
Memo from F.A. Ford to J.G. Fletcher  
5 Sep 56, subj: Inertial Guidance for  
WS 117-L

WDTR  
Lt Harther

1s 2  
1344

WDTR 56-178

[REDACTED] [REDACTED]

V

Subject: Request for Proposal, PR 57-4DD-196  
Lockheed Aircraft Company

OCT 15 1956

TO: MCPTS  
Attn: Major Rowland

FROM: WDTR

COMMENT NO. 2  
Cmdr Truax/dh/1344

1. Lockheed's Proposal of 28 September 1956 (MSD/20302) to the Ballistic Missiles Office suggested a number of changes to the USAF Development Plan of 2 April 1956 for WS 117L. It is not considered necessary that these changes be accepted or rejected prior to issuance of a letter contract, however, the approach should be determined in some detail for the purpose of the definitive contract to follow.

2. The Development Plan of 2 April 1956 was based on that submitted by Lockheed Aircraft Corporation in March 1956. The latter document contained much material to substantiate the program presented. No supporting information has been presented regarding the proposed changes. It is requested that such information be supplied either as special reports or as part of the regular reporting system. This information should be supplied prior to any significant expenditures along the lines of the program changes mentioned. In particular, the following data should be included: (Numbers refer to Inclosure (a) of MSD/20302)

A-1

1a. Characteristics of the X-17 as an environmental test vehicle including:

Cost	State of development
Payload	Launch facilities and location
Altitude	Availability (interference)
Accelerations	Crew training status
Stability	

These characteristics should be compared with the Aerobee-HI.

b. The same information is required for the ATV, with comparable data for Redstones. If it is desired that the number 13 be included in the development plan, a test annex should also be provided showing a test schedule and the general payload and test objectives of each flight.

c. It is assumed that the number of vehicles mentioned was determined by the estimated availability of SM 65's. The time period needs to be fixed more accurately and the test payload and objectives outlined as described for the ATV. In addition, further explanation of the idea of proceeding from simple to complex payloads is desired. In view of the cost of each launching, it would appear that the complexity of the payload should be limited only by the availability or reasonably well ground-tested components or by the reduced success probability for the flight. Whether this last factor actually enters or not would depend on how a given test item interacts with other items.

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

WDTR 56- 04021

[REDACTED]

2. It is not expected that a firm weight limitation for the SM 65 can be established prior to about 1 November 1956. The Western Development Division agrees with the general principal of increasing the orbiting vehicle weight so long as worthwhile gains in payload accrue from such increase.

3. The Western Development Division is particularly interested in a detailed comparison of the Hustler and second stage Vanguard engines. Rough calculations indicate that an inconsequential gain in payload will result from using the more costly and complicated Hustler System. The comparison should include appraisal of the following:

- (a) Relative reliability
- (b) Relative cost
- (c) Payload differences for a realistic gross weight and trajectory due to:
  - (1) Specific impulse including propellant consumed by turbo-pump.
  - (2) Propulsion system weight
  - (3) Different mixture ratio/control tolerances (different propellant utilization).
  - (4) Difference in weight of thrust carry-through structures because of different thrusts of the two engines.
- (d) Summary of problems in Hustler engine because of different attitudes.
- (e) Relative difficulty of varying propulsion program.
- (f) Differences in count-down time launch crew requirements, checkout equipment, etc.
- (g) Guidance and control problem engendered by turbine during coast-down.
- (h) Adequacy of residual gas pressure for post-cut off control for both Systems. (if used)
- (i) Effect of difference in thrust on guidance accuracy and trajectory.

A-4. No special requirement other than a complete evaluation of competing systems.

A-5. Availability of Minitrack system should be considered.

A-6. No additional data required

A-7. No additional data required.

[REDACTED]

3. The request for Lockheed Aircraft Corporation for 2.6 million of government financing for the Captive Systems Test facility is at variance with their cost estimate of March 1956. Since Lockheed stated willingness to provide all brick and mortar at or near their plant had a considerable influence in their selection as contractor, it is felt that further pressure should be brought to bear to encourage them to provide all non severables for this System Test Facility.

4. WDTR has no comment at this time on the selection of subcontractors. It is believed that the Air Force should not signify approval or disapproval of the proposed team until it is reasonably complete.

### SIGNED

1 Incl:  
Contractor's Proposal  
subject as above.

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

WDTR dh  
Cndr Truxx 1344

*QAR, 16 Oct 56*

[REDACTED]

WD 56-04021

[REDACTED]

[REDACTED]

8 OCT 10 1956

WDTR

**SUBJECT:** Request for Study of Optimum Method for Acquisition and Tracking of the WS 117L Orbital Vehicle

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

1. It is requested that Ramo-Wooldridge perform an immediate short study to determine the optimum technique for acquisition and tracking of an orbital vehicle. This study should assume an orbital altitude of 300 miles, and that radar "skin-tracking" will not be used.

2. It is desired that the various systems, i.e., radar interferometer, etc., would be compared with respect to the following general specifications:

- a. Estimated cost.
- b. Ground and support facility requirements.
- c. Vehicle weight and power requirements.
- d. Growth capability, i.e., ability to handle increasing number of vehicle passes.
- e. Settling time, i.e., a measure of the tracking system accuracy vs the number of vehicle passes.
- f. System complexity and/or reliability.
- g. Susceptibility to jamming.
- h. Lead time for obtaining recommended system.
- i. Any other comparison deemed pertinent.

[REDACTED]

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

[REDACTED]

WDTR 56-170

3. It is desired that the results of this study be transmitted to WDTR by 25 October 1956. The system comparisons should be furnished in tabular form with the assumptions and recommendations presented in letter form in sufficient quantity (5 copies) to WDTR. Not more than 2 man-months shall be devoted for this study.

SIGNED

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

*How all this  
to be accomplished  
without interference  
with 107A + 2/5*

*10 working days  
2 man mos = 60  
6 men  
Don't enter time  
!!*

[REDACTED] [REDACTED]

**Subject: Project RAND Recommendation to the Air Staff**

**TO:**  
WDTL  
WDT (In Turn)

**FROM:**  
WDTR

**OCT 10 1956 COMMENT NO. 2**  
Capt. Coolbaugh/dh/1344

1. The inclosed RAND Recommendation has been reviewed by WDTR, and WDT has discussed it with WDTL.

2. As far as WS 117L is concerned, the subject of infrared is not new since the application of infrared techniques to WS 117L is being given serious consideration by both WDTR and Lockheed Missile Systems Division. In fact, Lockheed Missile Systems Division has issued a report, "Preliminary Study of WS 117L Warning System Against ICBM Attack", MSD 1929, dated 6 September 1956, which deals entirely with using infrared detection techniques. This volume should be examined by the people who are concerned with acting on RAND's Recommendation, because the information contained in it is closely related and in some cases is applicable to the RAND defensive system. One copy of the report is inclosed for such use.

3. The attached report, MSD 1929, does not present a firm program which is being incorporated as a part of WS 117L. Rather, the report should be read with Lockheed's introductory qualification in mind, "This system is admittedly not the optimum one, and it is offered here solely for the purposes of discussion".

4. The discussion with Colonel Ely (WDTL) brought out the fact that there are no provisions in the existing programs at WDO to conduct experiments such as RAND suggests. He did state that, possibly, such experiments could be incorporated in the various test programs, and they might even serve a useful function, e.g., tracking of missiles by infrared equipment. The results of these experiments could also be used by WS 117L to better define an infrared reconnaissance system capable of warning of an impending ICBM attack by enemies of this country.

5. No discussions have been held with WDO on this matter.

3 Incls:

1. RAND Reccm. to the Air Staff  
WD 56-02919 (SECRET)

2. Lockheed MSD 1929, Preliminary Study of WS 117L Warning System Against ICBM Attack (DSIT-56-1539 (SECRET))

3. Memo fr Gen. Stranathan above subject, dtd 12 Sep 56

**SIGNED**

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

DOWNGRADED AT 12 YEAR  
INTERVALS, NOT AUTOMATICALLY  
DECLASSIFIED. DGD DIR 5200.10

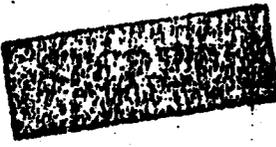
WDTR

dh

Capt. Coolbaugh

1344

WD 56-02919



WDTL

8 October 1956

MEMORANDUM FOR GEN SCHRIEVER  
THRU: Col Terhune

SUBJECT: Report on "Ballistic Missiles, Satellites, and Space Vehicles - 1956 to 1976"

1. Attached is a revised copy of the subject report for your information.

2. With the exception of the recommendations, nearly all of the material has been used in one place or another in the preparation of the draft of the final report of the Ballistic Missile and Space Vehicle Committee.

3. It is interesting to note that, although, many people from R-W, RAND, and WDT have contributed to the material and have discussed technical details at length, there has been little or no controversial discussion about the estimated development program and time schedule. This obviously does not make it correct, but it would indicate that it might not be too far out of line.

4. I plan to distribute copies to the RAND and R-W personnel who contributed, if you have no objection.

WDT

*Lawrence D. Ely*

1 Incl  
Report, "Ballistic  
Missiles, Satellites,  
and Space Vehicles,  
1956 to 1976"  
WDTL 56-40

LAWRENCE D. ELY  
Colonel, USAF  
Asst for Technical Groups  
Deputy for Technical Operations

When inclosures are withdrawn the  
classification of this correspondence  
will be downgraded to *Secret*  
in accordance with AFR 208-1.

WDTL

ba



Col Ely

1513

WDTL 56-42

SUBJECT: Semi-Annual TOP SECRET Inventory

TO: Chief, WDTX FROM: WDTT (Maj Urban) DATE: **OCT 5 1956** COMMENT NO. 3  
 Major Urban/bmg/439

1. In accordance with instructions contained in Paragraph 1, Comment No. 1, the following is a tabulation, by office, of Top Secret documents in WDT as of 30 September 1956:

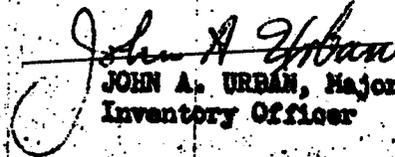
<u>Office</u>	<u>WDD Control No.</u>	<u>Unclassified Title (Long or Short)</u>
a. WDT, WDTD, WDTX	None	None
b. WDTO	WDD-55-TS-46	Proj. Atlas Prog. Progress (cy 5)
	WDD-56-TS-48	WS 117L Dev. Plan (cy 21)
	WDD-55-TS-76 (cy 42)	System 107A Proj. Atlas Dev. Plan
	WDD-55-TS-103 (cy 52)	System 107A Proj. Atlas Dev. Plan
	WDD-55-TS-85 (cy 3)	GOR ICBM Weapons System
c. WDTT	WDD-56-TS-48 (cy 19)	WS 117L Dev. Plan, Supplement
d. WDTO	None	None
e. WDTB	None	None
f. WDTI	WDD-56-TS-25 (cy 30)	AFSWP Report SWP/56-53, 2 pgs, w/ Incl. Letter 27 Feb '56
g. WDTR	WDD-56-TS-48 (cy 7 & 17)	WS 117L Dev. Plan
	WDD-56-TS-41.2A (Slide)	Contribution of ARS Program
	WDD-56-TS-48B (Slide)	Augmented 117L Flight Schedule
	WDD-56-TS-73B (cy 2 & 3)	Air Force Recon Systems
	WDD-56-TS-78B (cy 2)	Augmented 117L Flight Schedule
	WDD-56-TS-77B (cy 2 & 3)	Contribution of ARS Program
	WDD-56-TS-28 (cy 15)	Pied Piper Dev. Plan
	WDD-56-TS-42 (cy 1, 3, 4, & 5)	WS 117L Dev. Plan, Supplement
	WDD-56-TS-31 (cy 12)	Hand Report Letter 12 March 56
	WDD-56-TS-74 (cy 2)	DAPTSC #1212
	WDD-56-TS-75 (cy 1)	AFDAP #1241
	WDD-56-TS-81 (cy 1)	Dupliat Master
	WDD-56-TS-76 (cy 1)	Letter 9 July re ASD 56-TS 004
	WDD-56-TS-39 (cy 1)	DPO Cy No. 4 of 4 series A
	WDD-56-TS-116 (cy 1)	Pied Piper 1st qtr Prog. Rpt (cy 30)
WDD-56-TS-42.2 (cy 1)	One 8g by 11 Valum Chart	
	Augmented ARS Flight Schedule	
WDD-56-TS-38C (cy 1)	Proposed schedule of flights	
WDD-56-TS-26 (cy 15)	Systems Dev. Plan ARS	
h. WDTL	None	None

WDTT

SUBJECT: Semi-Annual TOP SECRET Inventory

i. WDTLA	WDD-56-13-72.1 WDD-56-13-57 WDD-56-13-65 (cy 36)	2 cys numbers 1 and 2 of 3 Memo dated 16 May 56 AFSFAAWTPaza 100,000 A
j. WDTLG	None	None
k. WDTLP	None	None
l. WDTM (AFMTC Project Off)	<u>WDD-56-13-48 (cy 27)</u>	<u>Supplement ARS, 2 April 1956</u> * Confirmed by telecon w/Haj Zinn
m. WDTN (Edwards Rocket Base)	<u>WDD-56-13-48</u>	<u>Supplement ARS, 2 April 1956</u> * In possession of Edwards Base Adjutant

2. I certify that the above-listed material constitutes a complete and accurate inventory of Top Secret in WDTT as of 30 September 1956.

  
JOHN A. URBAN, Major, USAF  
Inventory Officer

[REDACTED]

[REDACTED]

OCT 4 1956

WDTR

SUBJECT: Use of SM-65A Missiles in the WS 117L Flight Test Program

TO: Lockheed Aircraft Corporation,  
Missile Systems Division  
Attn: Mr. J. H. Carter  
P.O. Box 504  
Sunnyvale, California

1. Reference is made to the paragraph at the bottom of page 7 in Pied Piper Progress Report for August, MSD 1958, dated 1 September 1956, in which it is stated that a study is being made of the performance of SM-65A to determine its capabilities as a booster for an orbiting Pioneer Vehicle, "on the assumption that the SM-65A may be available in quantities sufficient to provide a wealth of valuable test data early in the WS 117L program even if only a meager payload can be placed on orbit".

*for*  
2. Because the Weapon System Project Office lacks assurance that the above assumption is correct and, in fact, there is reason to believe that the number of SM-65A's available to the WS 117L Program will be small, the Missile Systems Division is requested to limit the quantity of SM-65A's to be used in the flight test program to a very small number.

3. In the event a few SM-65A missiles are made available to the WS 117L Program, they will be considered as "bonus" test vehicles to be incorporated in the established flight test program. In all probability, their use should be limited to non-orbiting flights and, certainly, because of the lack of assurance of getting them, the Pioneer Vehicle's design must not be biased in order that orbiting flights can be made by using the SM-65A as a booster.

FOR THE COMMANDER:

R. C. TRUAX  
Commander, USN

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

[REDACTED]

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

WDTR

Capt. Coolbaugh

dh

1344

[REDACTED]

WDTR 56-163

Nomination of Camp Cooke Representative

WDO

WDTR

OCT 3 1956

Lt Herther/eh/1344

1. WDTR appoints Lt. John C. Herther as a WS 117L representative planning the phased activation of Camp Cooke.
2. His appointment is primarily to insure the technical integration of WS 117L requirements with current plans for Camp Cooke.
3. In the near future it is expected that additional personnel uniquely qualified in the generation of operations orders will supplement the WDTR staff and assist in preparing the detailed document with Lt Colonel Lyster's group.

R. C. TRUAX  
Commander, USN

*for* FREDERIC O. E. ODER, Lt Colonel, USAF  
Assistant for WS 117L

[REDACTED]

[REDACTED]

OCT 1 1956

**SUBJECT:** Security Consideration Regarding WS 117L in Relation  
to Ramo-Wooldridge Corporation

**TO:** Ramo-Wooldridge Corporation

1. ARDC System Development Directive No. 117L, "Advanced Reconnaissance System", 17 August 1956, directs that special security restrictions be maintained on information relating to the development progress, system status, and planned operational capabilities of WS 117L. It further directs that a roster be maintained of individuals whose position, as known to Western Development Division, requires overall knowledge of the "sensitive aspects" of the WS 117L development program.

2. The "sensitive aspects" referred to above are defined as those items of information shown as classified TOP SECRET in Section XIV, page 31, of the Master Security Classification Guide 117L, 27 August 1956. Six copies of this guide have been attached for your use and retention.

3. Inasmuch as the Ramo-Wooldridge Corporation will have certain access to WS 117L information, the following administrative procedures will be followed by the Ramo-Wooldridge Corporation in the conduct of work relative to WS 117L:

a. R-W will furnish to Western Development Division, Attention: WDTR, a list of individuals whose position requires overall knowledge of the sensitive aspects of the WS 117L program together with justification for such listing. The R-W Corporation will maintain this listing on a current basis to WDTR.

b. R-W will furnish to WDTR, on a monthly basis, a listing of those personnel of R-W who have been involved in WS 117L during the month together with the degree of involvement in the programs and the reason therefor.

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

[REDACTED]

[REDACTED]

WDTR 56-147

[REDACTED] [REDACTED]

WDD (HQ ARDC) Subject: Security Consideration Regarding WS 117L  
in Relation to Ramo-Wooldridge Corporation

c. R-W will obtain written approval from Western Development Division prior to the distribution of all R-W documents relevant to WS 117L. R-W requests for approval of distribution will be routed through WDSIT to WDTR.

4. Because of these security considerations, R-W should, insofar as possible, stabilize the personnel that are to be involved with WS 117L.

SIGNED

1 Incl:  
6 Copies of  
Master Security Guide

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

cc: WDTO  
WDSIS

WDTR  
Lt. Col Riepe

[REDACTED]

1344

[REDACTED]

WDTR. 56-147

*copy*

*SAC*

*LIAISON*

*Why not  
air photo &  
clustering services?*

ROUTINE

X AF

COMDR WDD, INGLE, CALIF

COMDR IN CHIEF  
STRATEGIC AIR COMMAND  
OFFUTT AFB, NEBRASKA

~~SECRET FROM WDTR 10-1~~

FOR DIRECTORATE OF INTELLIGENCE

THE RAND CORPORATION GMM IN ATTEMPT TO SIMULATE THE ARS SYSTEM'S  
OPERATIONAL CAPABILITIES AS REALISTICALLY AS POSSIBLE GMM REQUIRES  
PHOTOGRAPHIC COVERAGE OF THE FOLLOWING DOMESTIC AREAS GLN MISSILE  
TEST INSTALLATIONS AND FACILITIES AT PATRICK AFB GMM EDWARDS AFB GMM  
CONVAIR'S INSTALLATION AT SYCAMORE CANYON NEAR SAN DIEGO AND AERO-  
JET'S INSTALLATION AT SACRAMENTO NEAR MATHER AFB PD ANY EXISTING  
PHOTOGRAPHS YOU HAVE GMM CAN BE USED GMM AND IF GMM IN THE FUTURE  
GMM PHOTOGRAPHS CAN BE TAKEN OF THESE AREAS BY YOUR ORGANIZATION  
ON A REGULAR SCHEDULE GMM PREFERABLY EVERY TWO MONTHS GMM THEY WILL  
BE EXTREMELY USEFUL IN DETERMINING HOW TARGETS CHANGE WITH TIME PD  
RAND SUGGESTED THAT GMM IF POSSIBLE GMM FUTURE PHOTOGRAPHS BE MADE  
AT 30,000 TO 40,000 FEET ALTITUDE BY CAMERAS USING LENSES WITH

1 2200Z

OCT 56

DOWNGRADED AT 12 YEAR  
INTERVALS; NOT AUTOMATICALLY  
DECLASSIFIED; DDD DIR 5200:10

R. C. TRUAX  
Commander, USN

Captain Coolbaugh  
1344

*2 for*

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

SECRET

WDTR 56-161

[REDACTED]

COMDR WDD, INGLE, CALIF

[REDACTED]

FOCAL LENGTHS OF 10MM 2 6 AND 12 INCHES PD THESE PHOTOGRAPHS  
WILL PERMIT THEM TO SIMULATE A SCALE OF 250,000 GMM WHICH IS  
APPLICABLE TO THE ARS GMM 117L PD YOUR HELP IN GATHERING THIS  
MATERIAL WILL BE GREATLY APPRECIATED PD BOTH RAND AND WDD ARE  
READY TO COOPERATE WITH YOU IN ANY WAY POSSIBLE PD MR AMROM KATZ  
IS THE CONTACT AT RAND PD

[REDACTED]

WDTB

2 2

[REDACTED]

[REDACTED]

FCEO

~~UNCLASSIFIED~~  
UNCLASSIFIED

MEMORANDUM FOR THE RECORD

23 December 1987

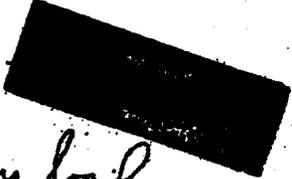
SUBJECT: Telephone Call from Colonel Nunnally to General  
Riland

Colonel Nunnally stated that Mr. Douglas made the following statement before the Johnson Committee -- this was the unclassified portion of the hearings:

Secretary Douglas stated that both we and the Russians had an engine with sufficient thrust to launch a 1000 lb satellite and an engine and guidance sufficient to test a 1000 lb satellite in orbit.

The Committee Council requested that Secretary Douglas check on his testimony in this regard. In his testimony, Secretary Douglas had stated that he was speaking of a single engine supplemented by a single stage engine.

BMD was requested to supply Colonel Nunnally with an answer to the above by this afternoon. In addition, we are to let him know what we can do now, including the NAVARD.

  
Pay load  
Structure

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

Thor + Vanguard 2<sup>nd</sup> stage

600# payload including 225# guidance  
430# structure

Thor + Flamingo 2<sup>nd</sup> stage

2800# payload including 225# guidance  
1000# structure

  
UNCLASSIFIED

WDGE

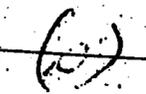
18 December 1957

MEMORANDUM FOR GENERAL KITLAND

SUBJECT: 117L Presentation at Ballistic Missile Orientation Course

1. Lt Colonel Walter of the A. U. Liaison Office has requested permission to have someone from Colonel Oder's shop give a briefing on the 117L Program to the attendees in the next local Ballistic Missile Orientation Course (approximately 20 January).
2. It would seem proper to release this type briefing to our own people since the Department of Defense has approved the Air University adding a briefing on the 117L to both the command and staff and the Air War College courses in January.
3. Your concurrence is required since a request to include this briefing in the orientation course approximately six months ago was not approved.

mjp

  
ERICK FOX, II  
Major, USAF  
Assistant Executive Officer

12 December 1957

**Subject:** Report of the Joint Committee on the Administration of the Federal Reserve System, 1957

**To:** The President, The Vice President, The Speaker of the House of Representatives, The Senate, The Federal Reserve Board, The Federal Reserve Bank of New York, The Federal Reserve Bank of Chicago, The Federal Reserve Bank of Cleveland, The Federal Reserve Bank of Dallas, The Federal Reserve Bank of Kansas City, The Federal Reserve Bank of Minneapolis, The Federal Reserve Bank of Philadelphia, The Federal Reserve Bank of St. Louis, The Federal Reserve Bank of San Francisco, The Federal Reserve Bank of San Antonio, The Federal Reserve Bank of St. Paul, The Federal Reserve Bank of Seattle, The Federal Reserve Bank of Tampa, The Federal Reserve Bank of Washington, D.C., The Federal Reserve Bank of Atlanta, The Federal Reserve Bank of Boston, The Federal Reserve Bank of Cincinnati, The Federal Reserve Bank of Denver, The Federal Reserve Bank of Detroit, The Federal Reserve Bank of Houston, The Federal Reserve Bank of Louisville, The Federal Reserve Bank of Memphis, The Federal Reserve Bank of Miami, The Federal Reserve Bank of Milwaukee, The Federal Reserve Bank of New Orleans, The Federal Reserve Bank of New York, The Federal Reserve Bank of Omaha, The Federal Reserve Bank of Oklahoma City, The Federal Reserve Bank of Portland, The Federal Reserve Bank of Richmond, The Federal Reserve Bank of San Diego, The Federal Reserve Bank of St. Louis, The Federal Reserve Bank of Toledo, The Federal Reserve Bank of Wichita.

**Date:** December 12, 1957

- 1. The Federal Reserve System is the central bank of the United States and is responsible for the monetary and financial policies of the country.
- 2. The Federal Reserve System is composed of the Board of Governors and the Federal Reserve Banks.
- 3. The Federal Reserve System is a government-owned institution.

The Federal Reserve System is the central bank of the United States and is responsible for the monetary and financial policies of the country. It is composed of the Board of Governors and the Federal Reserve Banks. The Federal Reserve System is a government-owned institution.

The Federal Reserve System is the central bank of the United States and is responsible for the monetary and financial policies of the country. It is composed of the Board of Governors and the Federal Reserve Banks. The Federal Reserve System is a government-owned institution.

Very truly yours,  
The Federal Reserve Board

**Signature:** [Illegible Signature]

RICHARD S. RUSSELL, SA, CHAIRMAN  
HARRY FLOOD BYRD, VA  
LYNDON B. JOHNSON, TEX.  
ESTEL RUFFALO, TENN.  
JOHN STENNIS, MISS.  
STUART SYMONS, MO.  
HENRY M. JACKSON, WASH.  
SAM J. ERVIN, JR., N. C.  
LEVERETT SALTONSTALL, MASS.  
STYLES BRIDGES, N. H.  
RALPH E. FLANDERS, VT.  
MARGARET CHASE SMITH, MAINE  
FRANCIS CASE, S. DAK.  
PRESCOTT BUSH, CONN.  
FRANK A. BARRETT, WYO.  
HARRY F. WINGATE, JR., CHIEF CLERK

**United States Senate**  
COMMITTEE ON ARMED SERVICES

December 2, 1957

Dear Sir:

The Preparedness Subcommittee of the Senate Armed Services Committee is presently engaged in an intensive inquiry into the missile and satellite programs of the Department of Defense. The principal purpose of the inquiry is to determine the present status of those programs, the reasons why those programs have not proceeded at a faster rate, and what actions can be taken to accelerate such programs.

In connection with this investigation we are now writing to each of the principal manufacturing companies which have been engaged in research and development or production, or both, of missiles covered by the program, in order to ascertain certain information which is necessary to shed light on the past and present status of the programs and the future development thereof. While the information we seek must, of course, be answered with reference to particular missiles, it is not our purpose to identify particular manufacturers but rather to get an overall picture of our past, present and future missile situation.

We would, therefore, greatly appreciate it if you would answer the following questions with respect to your participation in the missile program. These questions should be answered separately with respect to each missile project in which your company is engaged. Wherever directives are involved, please indicate the dates, numbers and pertinent provisions.

**I. RESEARCH AND DEVELOPMENT**

- A. With respect to each missile on which you are working, when did you start research and development work?
- B. What is the present status of research and development with respect to each missile on which you are working?
- C. Has there been any limitation imposed at any time on your use of overtime? If so, has there been any change with respect thereto?
- D. Have you been hampered directly or indirectly in your research and development work by lack of funds? If so, please explain.
- E. Have you at any time been hampered in your research and development work by lack of sufficient manpower? If so, please explain.
- F. Has your research and development work been delayed by change orders? If so, please explain.
- G. What other principal bottlenecks, if any, have you encountered in your research and development work on each missile?

**II. PRODUCTION**

- A. With respect to the production of each missile, please specify when a letter of intent was issued, when the contract was executed and when production was started.

- B. Please furnish the original production schedule on each missile. Indicate what changes, if any, have been made in such schedule. Indicate what production has been obtained to date.
- C. What have been the principal factors limiting or deterring production of each missile?
- D. Has there been any limitation imposed at any time on your use of overtime? If so, has there been any change with respect thereto?
- E. Has production been hampered directly or indirectly by lack of funds? If so, please explain.
- F. Have you at any time been hampered in production by lack of sufficient manpower? If so, please explain.
- G. Has production been delayed by change orders? If so, please explain.

### III. RECOMMENDATIONS

Please outline your recommendations for accelerating the development and production of the missiles which you are developing or producing.

As you know, the Subcommittee has set for itself a very rigid schedule so that its investigation can be completed at the earliest possible date consonant with a thorough investigation. It is the hope of the Subcommittee that it will be able to make its conclusions and recommendations to the Senate shortly after Congress reconvenes.

The next set of hearings for the presentation of testimony and data to the Subcommittee has been fixed for Friday, December 13, 1957. We should like very much to have the requested information ready for presentation to the Subcommittee at the opening

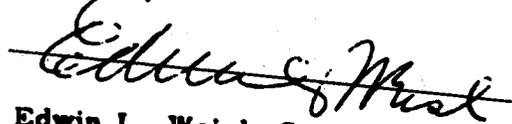
Mr. Eugene Root

- 4 -

December 2, 1957

of these hearings. We should, therefore, appreciate it very much if you would give this your prompt consideration and attention.

Sincerely,



Edwin L. Weisl, Special Counsel  
Senate Preparedness Investigating  
Subcommittee

Mr. Eugene Root, Division Manager  
Lockheed Aircraft Corporation  
Palo Alto, California

RICHARD B. RUSSELL, GA., CHAIRMAN  
HARRY FLOOD BYRD, VA.  
LYNDON B. JOHNSON, TEX.  
ESTES KEFAUVER, TENN.  
JOHN STENNIS, MISS.  
STUART SYMINGTON, MO.  
HENRY M. JACKSON, WASH.  
SAM J. ERVIN, JR., N. C.  
LEVERETT SALTONSTALL, MASS.  
STILES BRIDGES, N. H.  
RALPH S. FLANDERS, VT.  
MARGARET CHASE SMITH, MAINE  
FRANCIS CASE, E. DAK.  
PRESBURY BUSH, CONN.  
FRANK A. BARRETT, WYO.  
HARRY L. WINGATE, JR., CHIEF CLERK

## United States Senate

COMMITTEE ON ARMED SERVICES

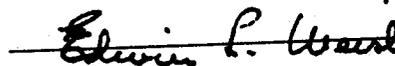
December 5, 1957

Dear Sir:

Supplementing my letter to you of December 2, 1957, I would appreciate very much if in connection with the information requested, you furnish the Subcommittee with copies of any directives issued by the Department of Defense or the military service from and after October 4, 1957, having as their purpose the acceleration of the production programs or the research and development programs being conducted by your company or which provide for increased funds for such programs.

Thank you for giving this request your prompt attention.

Sincerely,



Edwin L. Weisl, Special Counsel,  
Senate Preparedness Investigating  
Subcommittee

Mr. Eugene Root, Division Manager  
Lockheed Aircraft Corporation  
Palo Alto, California

December 13, 1957

Mr. Edwin L. Weisl, Special Counsel  
Senate Preparedness Investigating  
Subcommittee  
United States Senate  
Washington, D. C.

Dear Mr. Weisl:

Attached is the information which you requested in your letter of December 2, 1957 and your supplementing letter of December 5, 1957.

You will note that data is provided only under your Research and Development category. This is due to the fact that the missiles on which the Lockheed Missile Systems Division has contracts are all under development at this time and have not yet entered the production phase. Answers to your alphabetical items are submitted under each missile program. To supply the information requested in your supplementing letter we have added Item "H" under the Research and Development category. As you will note, answers to Items B, C, D, E and G are identical for they apply to each missile program. The information for Lockheed Missile Systems Division missile programs is contained in enclosures as listed below.

Enclosure 1 Fleet Ballistic Missile, Polaris  
Enclosure 2 WS-117L, New Horizon  
Enclosure 3 X-7A, Ramjet Test Vehicle  
Enclosure 4 XQ-5, Supersonic Drone  
Enclosure 5 Recommendations

I trust that the enclosed information provided will be of value to the Senate Armed Services Subcommittee.

Sincerely,

L. Eugene Root  
Vice President and General Manager

Attach.

Encs. 1, 2, 3, 4, & 5

FLYING BALLISTIC MISSILE PROGRAM

I. RESEARCH AND DEVELOPMENT

- A. Research and development work started in October, 1956.
- B. Research and Development work is generally on contract schedule.

C. All cost reimbursement type contracts such as those held by the Lockheed Missile Systems Division contain certain restrictions covering the use of overtime. Until mid 1957, it had been the prerogative of the local administrative contracting agencies of the government to approve, prior to its being worked, such overtime as was reasonable and necessary. At that time, however, certain instructions and directives from the Department of Defense to the various agencies eliminated the use of all overtime except on ballistic missile production thereby restricting other vital research and development work to a routine 40-hour week. The implementation of these directives caused some confusion and re-planting with respect to many important projects. Approvals for overtime were difficult to secure and were for limited amounts. Recent action on the part of the Department of Defense has indicated vast improvements concerning this overtime situation.

Pertinent overtime directives are:

Memorandum addressed to Material Secretaries from Assistant Secretary of Defense (Supply and Logistics) dated 16 May 1957 subject, "Curtailment of Overtime", which limited overtime except for very special purposes. Overtime policy was suspended in DOD-4103.45, 19 June 1957 and DOD-4103.45 repeated October 1, 1957 entitled, "Overtime Policy for Reimbursement Contracts."

- D. The contractor has operated at the maximum rate permitted by the funds available. Had there been additional funds available the schedule for development and testing could have been set at a faster pace.
- E. There is a nation-wide heavy demand for highly qualified managerial and scientific personnel and it is difficult to acquire such personnel on a timely basis, although in general we are able to meet our personnel requirements.
- F. Change orders have delayed the Polaris development. The complexity of governmental procedures for processing changes are costly in time and effort.
- G. Research and Development effort in our missile work proceeds most effectively when it is carried out under a well planned long-term program.

Item "D" Cont'd

The support of our programs by annual funds makes difficult the orderly programming of long-term effort because of uncertainties and variations in the funding support levels available from year-to-year.

A governmental security system which would provide for more expeditious processing of security clearances would be of material assistance.

- H. The contractor has received classified technical instructions from the Department of the Navy which in effect serve to accelerate the POLARIS Program. Due to the Security classification of these instructions the contractor is not at liberty to provide copies.

I. RESEARCH AND DEVELOPMENT

- A. Research and development work started in July, 1955.
- B. Research and Development work is generally on contract contracts.
- C. All cost reimbursement type contracts such as those held by the Lockheed Missile Systems Division contain certain restrictions covering the use of overtime. Until mid 1957, it had been the prerogative of the local administrative contracting agencies of the government to approve, prior to its being worked, such overtime as was reasonable and necessary. At that time, however, certain instructions and directives from the Department of Defense to the various agencies eliminated the use of all overtime except on ballistic missile production thereby restricting other vital research and development work to a routine 40-hour week. The implementation of these directives caused some confusion and re-planning with respect to many important projects. Approvals for overtime were difficult to secure and were for limited amounts. Recent action on the part of the Department of Defense has indicated vast improvements concerning this overtime situation.

Pertinent overtime directives are:

Memorandum addressed to Materiel Secretaries from Assistant Secretary of Defense (Supply and Logistics) dated 16 May 1957 subject, "Curtailement of Overtime", eliminated overtime except for very special purposes. Overtime policy was amended in DOD-4105.43, 19 June 1957 and DOD-4105.43 repeated October 1, 1957 entitled, "Overtime Policy for Procurement Contracts."

- D. The contractor has operated at the maximum rate permitted by the funds available. Had there been additional funding available the schedule for development and testing could have been set at a faster pace.
- E. There is a nation-wide heavy demand for highly qualified managerial and scientific personnel and it is difficult to acquire such personnel on a timely basis, although in general we are able to meet our personnel requirements.
- F. Change orders per se have not delayed the NS-117L Program but changing objectives have had a delaying effect.
- G. Research and Development effort in our missile work proceeds most effectively when it is carried out under a well planned long-term program.

Item "G" Cont'd

The support of our programs by annual funds makes difficult the orderly programming of long-term effort because of uncertainties and variations in the funding support level available from year-to-year.

A governmental security system which would provide for more expeditious processing of security clearances would be of material assistance.

2. No accelerating directives or increased funds for the purpose of accelerating this contract have been received.

The Air Force has requested the contractor to prepare a proposal for acceleration of the program. The contractor's initial proposal will be submitted to the Air Force prior to the end of the year.

X-7A, RAMJET TEST VEHICLE

I. RESEARCH AND DEVELOPMENT

- A. Research and development work started in February, 1943.
- B. Research and Development work is generally on contract schedule.
- C. All cost reimbursement type contracts such as those held by the Lockheed Missile Systems Division contain certain restrictions covering the use of overtime. Until mid 1957, it had been the prerogative of the local administrative contracting agencies of the government to approve, prior to its being worked, such overtime as was reasonable and necessary. At that time, however, certain instructions and directives from the Department of Defense to the various agencies eliminated the use of all overtime except on ballistic missile production thereby restricting other vital research and development work to a routine 40-hour week. The implementation of these directives caused some confusion and replanning with respect to many important projects. Approvals for overtime were difficult to secure and were for limited amounts. Recent action on the part of the Department of Defense has indicated vast improvements concerning this overtime situation.

Pertinent overtime directives are:

Memorandum addressed to Materiel Secretaries from Assistant Secretary of Defense (Supply and Logistics) dated 16 May 1957 subject, "Curtailement of Overtime," eliminated overtime except for very special purposes. Overtime policy was enunciated in DOD-4105.43, 19 June 1957 and DOD-4105.48 repeated October 1, 1957 entitled, "Overtime Policy for Procurement Contracts."

- D. The contractor has operated at the maximum rate permitted by the funds available. Had there been additional monies available the schedules for development and testing could have been set at a faster pace.
- E. There is a nation-wide heavy demand for highly qualified managerial and scientific personnel and it is difficult to acquire such personnel on a timely basis, although in general we are able to meet our personnel requirements.
- F. Change orders have not hampered research and development work.
- G. Research and Development effort in our missile work proceeds most effectively when it is carried out under a well planned long-term program.

Item "G" Cont'd

The support of our programs by annual funds makes difficult the orderly programming of long-term effort because of uncertainties and variations in the funding support level available from year-to-year.

A governmental security system which would provide for more expeditious processing of security clearances would be of material assistance.

- ii. No accelerating directives or increased funds for the purpose of accelerating this contract have been received.

1A-5 SUPERSONIC DEFENSE

I. RESEARCH AND DEVELOPMENT

- A. Research and development started in May, 1954.
- B. Research and Development work is generally on contract schedule.
- C. All cost reimbursement type contracts such as those held by the Lockheed Missile Systems Division contain certain restrictions covering the use of overtime. Until mid 1957, it had been the prerogative of the local administrative contracting agencies of the government to approve, prior to its being worked, such overtime as was reasonable and necessary. At that time, however, certain instructions and directives from the Department of Defense to the various agencies eliminated the use of all overtime except on ballistic missile production thereby restricting other vital research and development work to a routine 40-hour week. The implementation of these directives caused some confusion and replanning with respect to many important projects. Approvals for overtime were difficult to secure and were for limited amounts. Recent action on the part of the Department of Defense has indicated vast improvements concerning this overtime situation.

Pertinent overtime directives are:

Memorandum addressed to Materiel Secretaries from Assistant Secretary of Defense (Supply and Logistics) dated 16 May 1957 subject, "Curtailement of Overtime," eliminated overtime except for very special purposes. Overtime policy was enunciated in DOD-4105.43 17 June 1957 and DOD-4105.43 repeated October 1, 1957 entitled, "Overtime Policy for Procurement Contracts."

- D. The contractor has operated at the maximum rate permitted by the funds available. Had there been additional monies available the schedules for development and testing could have been set at a faster pace.
- E. There is a nation-wide heavy demand for highly qualified managerial and scientific personnel and it is difficult to acquire such personnel on a timely basis, although in general we are able to meet our personnel requirements.
- F. Change orders have not delayed our research and development work.
- G. Research and Development effort in our missile work proceeds most effectively when it is carried out under a well planned long-term program.

Item "G" Cont'd

The support of our programs by annual funds makes difficult the orderly programming of long-term effort because of uncertainties and variations in the funding support level available from year-to-year.

A governmental security system which would provide for more expeditious processing of security clearances would be of material assistance.

- H. No accelerating directives or increased funds for the purpose of accelerating this contract have been received.

### III. RECOMMENDATIONS

Streamlined procedures which will allow timely consummation of contractual authorizations.

Adequate and stable long-term funding so that contract objectives may be established and planning and implementation may proceed on an effective basis.

Eliminate overtime restrictions so that management may utilize this important tool when warranted.

Accelerate the process of granting security clearances.

Adequate basic research is fundamental to the expeditious development of new weapons. The contractor firmly believes that company sponsored research constitutes one of the outstanding opportunities for long-term "profit" to the government's defense effort. To encourage this privately sponsored research the government should adopt a much more liberalized view regarding this activity in its contractual requirements. At the present time general research must be negotiated separately on each contract. As a consequence different interpretations are applied to each contract and the contractor is never certain of the government's position with respect to this vital support of its defense program.

**MEMORANDUM FOR THE RECORD**

15 December 1957

**SUBJECT:** Call from Colonel Nunsie to General Rifkind.

**Summary of Meeting.** Reference is made to Colonel Nunsie's telephone call of 15 December. He was unable to postpone his meeting until the 17th of December, Thursday, and it is planned to visit on 20th at the same place as the RAND Corporation. Colonel Nunsie has been advised that a big briefing is not necessary, however, he doesn't see how we can get around it judging from the questions being asked.

The Committee would like information on the following:

- Reason systems
- Revisions
- Scaling
- Calculator
- Amount of work covered
- Data processing
- Rate of handling data
- Selectivity
- Order of magnitude -- people, machinery, etc. involved in handling data

Lockhead has been alerted to be prepared for the above -- it is planned to rely completely on contractor personnel in this effort.

On the "quick" one - they want to know what can be done with the TRSR. General Rifkind stated that it wouldn't be possible to tell the group specifically what can be done because approval has not been received yet, however, that a report would be made of a preliminary nature.

The Committee would like some discussion on the June 1959 date for the 1171 regarding what capability we will have at that time.

They will probably ask the question, "what are you going to do with the Navaho boosters that are available?" Although Colonel Nunsie informed the group that the boosters were allocated to the Aerodynamics Department, they are under the impression that the Air Force is looking into this. Colonel Nunsie suggested the following reply to

any question as to the prospects for utilizing these resources seem to be very small and don't lead to anything forward looking. Also, that we are more favorable toward the THOR because of its growth characteristics.

General Hunsaker that a continuing wire will be coming in on the show. General Hunsaker advised that Mr. Carter's people at Lockheed will be giving the briefing headed up by General Oden as project officer.



WDID

26 November 1957

NOTE FOR COLONEL TERHUNE

The following must be solved:

- a. Program for super RTV.
- b. Immediate satellite effort using THOR and the third stage VANGUARD. Conflict between this and the super RTV.
- c. What is Colonel Nunziato doing?
- d. What is our recommended program which we will present ARDC during the week of the 2nd in regard to the Air Force satellite effort.
- e. Do we or do we not wish to establish a solid weapon system office?

The above are rather curtly stated but nonetheless you and General Ritland must take time out to make decisions. In addition to the above, we must pin down this presentation for Anderson which is now scheduled for 10 December. More specifically, shall we proceed in the awarding of contracts for studies, etc., based upon our follow-on effort?

  
H. W. NORTON  
Colonel, USAF

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

2 2 NOV 1957

ROUTINE  
ROUTINE

X AF

COMDR, AFBMD, INGLEWOOD, CALIFORNIA

COFS  
HQ USAF  
WASHINGTON, D. C.

INFO: COMMANDER  
ARDC  
BALTIMORE, MARYLAND

~~CONFIDENTIAL~~ FROM WDTR 11-14-E FOR COLONEL NUNZIATO, AFDDC-SP

INFO FOR LT COLONEL PAUL WORTHEMAN, RDZGW

THIS HEADQUARTERS HAS BEEN ASKED TO ASSIST IN PREPARING A BRIEFING ON WS 117L TO BE USED IN CONJUNCTION WITH FORMAL PERIODS OF INSTRUCTION ON BALLISTIC MISSILES FOR THE STUDENTS OF THE SCHOOLS AND COLLEGES OF THE AIR UNIVERSITY PD PRESENTATION TO COMMAND AND STAFF SCHOOL IS SCHEDULED FOR 9 and 10 JANUARY 1958. AIR WAR COLLEGE SCHEDULE IS APRIL 1958 PD AUTHORITY TO INCLUDE WS 117L IN THESE INSTRUCTION PERIODS HAS BEEN DENIED BY YOUR HEADQUARTERS IN THE PAST ON THE BASIS THAT AIR UNIVERSITY STUDENTS HAVE INSUFFICIENT NEED TO KNOW PD WE RECOMMEND THAT THIS POLICY BE MODIFIED AND REQUEST AUTHORITY TO INCLUDE WS 117L IN THE COURSE OF INSTRUCTION AS REQUESTED BY AIR UNIVERSITY PD

NOV 57

WDTR

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

Captain David D. Bradburn  
2594

1 1

SIGNED

J. L. HAMILTON  
Colonel, USAF  
Executive Officer

MEMORANDUM FOR THE RECORD

20 November 1957

SUBJECT: Telephone Call from Colonel Kiessling to General Ritland

Astronautics and Space Technology Briefing. Colonel Kiessling called regarding the ARDC wire which placed a requirement on BMD for someone to visit Baltimore on 25-26 November to assist in replying to General Pett's wire to General Anderson. Colonel Kiessling emphasized that it was extremely important that someone be present during this meeting for two reasons: (1) to give the 117L portion, and (2) to sit in on the RDT technical development presentation to General Anderson on the 26th.

General Ritland felt that this would not give us sufficient time to prepare a reply and suggested having the ARDC meeting delayed until around the 2nd of December. He will call Colonel Nunziato to find out whether it is possible to delay the 1 December briefing in Washington.

Note: In a later telephone conversation with Colonel Nunziato, the briefing in Hq USAF was postponed until the 16th of December.

Anti-ICBM. At least initially, AFBMD is to assume complete responsibility for anti-ICBM developments, including the course selection which is due in by 1 January. This means that BMD must have a management philosophy, document procedures, and organization. General Ritland advised Colonel Nichols that BMD must rely heavily on ARDC for the people to work on this project. Arrangements will be made to send ARDC representatives out to BMD to start work on this Monday.

*Cal Tuckner*

*LMY*

**MEMORANDUM FOR THE RECORD**

14 November 1957

**SUBJECT:** Telephone Call from Mr. Root, Lockheed, Sunnyvale

Lockheed people (Dr. Ridenour, Menzies, Root, Johnson, Carter, and Hawkins) are scheduled to see General Schriever and Riffand from 1000-1200 on Wednesday, 20 November.

They want to discuss what Lockheed should be doing in order to accomplish the most optimum program on "New Horizons." They have a lot of ideas and can go in a number of different directions. This will be a preliminary meeting to determine in what areas they should concentrate their efforts. They want to know what they should be doing in accordance with RMD desires and their own ideas on acceleration-wise, etc., in view of the developments which have taken place. The Lockheed people have a great feeling of urgency in this respect since they don't want a competitor to get these things done first.

Mr. Root advised that they will be in around 0930 on the 20th for this meeting.

WDT

13 November 1957

MEMORANDUM TO COL ELY

SUBJECT: Space Flight Program

1. At the present time we are busily pulling together for consumption by Hq ARDC and the AF Scientific Advisory Committee during the month of December, a program to identify the follow-on areas of R&D associated with ballistic weapon programs.

2. As of this date Gen Schriever has directed that a central point of contact be established for identification of a program of approximately ten to fifteen years leading to development of man-carrying systems for space use. In this respect you are designated as the office of contact for AFEMD and you will be responsible for completing on as accelerated a schedule as possible, such a program.

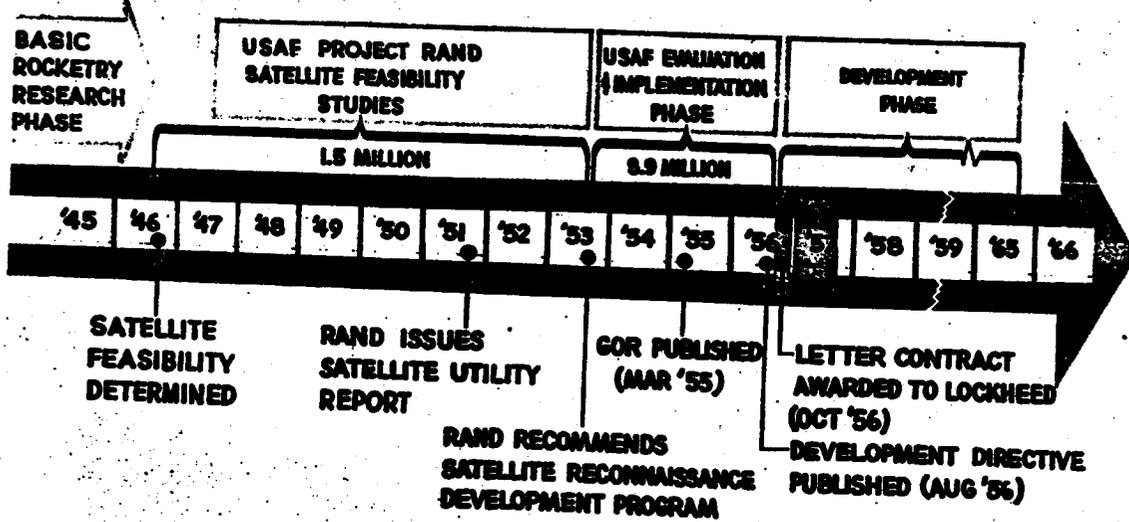
3. Please contact Dr. Dunn of STL to determine their part of the contract for this work.

Cy to Dr. Dunn-STL

SIGNED

CHARLES H. TERRELL, JR.  
Colonel, USAF  
Deputy Commander  
Weapon Systems

# ADVANCED RECONNAISSANCE SYSTEM EVOLUTION



I-1-3

NDP-38-14

PH (2) S 11/1/57

LOCKHEED AIRCRAFT CORPORATION  
MEMPHIS, TENNESSEE

MEMORANDUM FOR COLONEL ODER

5 November 1957

SUBJECT: Analysis of Complex 65-1 at Cooke AFB

Request that you develop a complete analysis of Complex 65-1 at Cooke AFB for launchings of WS 117L missiles. This analysis should be complete with regard to costs, numbers of stands to be modified, instrumentation required, time schedule of launchings, and capability of SM 65's vs satellite vehicles.

It is important that this be accomplished as soon as possible so that final cost estimates and course of action can be pursued. Please advise as soon as possible.

SIGNED

1 Incl  
Memo for Record,  
29 Oct 57 (WDI-57-78)

O. J. RITLAND  
Brigadier General, USAF  
Vice Commander

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

WDGV  
Gen Ritland

vb  
2221

WDI-57-85





[REDACTED]

4. Arrangements will be made for the final coordination sessions planned for the week of 18 November at AFHSD. A list of the personnel who will attend these sessions is requested. (U)

9 Incls

1. Summary (7 cys)
2. Tab 1 (7 cys)
3. Tab 2 (7 cys)
4. Tab 3 (7 cys)
5. Tab 4 (7 cys)
6. Tab 5 (7 cys)
7. Tab 6 (7 cys)
8. Tab 7 (7 cys)
9. Tab 8 (7 cys)

SIGNED

O. J. RITLAND  
Brig. Gen., USAF  
Vice Commander

SIGNED

C O P Y

WDTR

Oct 18, 1957

MEMORANDUM FOR RECORD:

SUBJECT: Telecon between Col. Nunziato, Col. Oder, Lt. Col. Seay,  
and Major Zelenka, 18 October 1957

1. Col. Seay explained our plans for definitization namely:
  - a. Submission of LAC Proposal 28 October 57
  - b. Agreement on Terms and Work Effort November 57
  - c. Final definitization February 1958.

The importance of proceeding on this schedule was emphasized by Col. Seay, and Col. Nunziato agreed we should proceed as outlined.

2. The requirements for funds to cover this program to Final Definitization were submitted as follows:

\$ 15.0 Million	P-100	IAC
.5 Million	P-100	Convair
<u>\$ 15.5 Million</u>	P-100	

3. It was agreed to allow IAC to proceed without P-200 funds until such time as the issues were resolved at USAF Hqs.

4. Col. Nunziato also approved proceeding with commitments in the P-600 area to the total of 4.5 million on a tentative allocation as follows:

RADC	3.5	P-600
AFCRC	.3	P-600
WADC	.1	P-600
MIT	<u>.6</u>	P-600
Total	4.5	

5. Hq USAF does not require a TWX confirming this go ahead, however, they will send us authority to proceed on the above basis.

6. USAF will not withdraw the PA for \$35.1 Million P-100 money, but will place an administrative freeze on \$19.6 Million of the total pending resolution of program issues.

/s/ Raymond Zelenka

Raymond Zelenka  
Major, USAF

RECEIVED  
WDD ARDC  
ACTION \_\_\_\_\_

TO 29

-8 OCT 1957 19 19

INFO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(1)

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

[REDACTED]  
[REDACTED]  
AF ITEM 1 X-SECRET/  
FOLLOWING IS TWX DISPATCHED TODAY--  
REQUEST ADVICE AS SOON AS POSSIBLE AS TO  
ANY RECOMMENDED ACTIONS AND THE ESTIMATED  
RESOURCES REQUIRED THEREFORE THAT COULD  
BE INITIATED TO FURTHER ACCELERATE THE  
ICBM/IRBM PROGRAMS. CONSIDERATIONS SHOULD  
INCLUDE ADVISABILITY OF INCREASING SIZE  
OF ICG FORCES ADVANCING SCHEDULES BY SIX  
PLUS MONTHS & EMPLOYING ALTERNATIVE BASE  
CONSTRUCTION CONCEPTS I.E. SOFT VS HARD  
FOR TITAN UNITS & ETC ESTIMATED RESOURCES  
NEED NOT BE LIMITED TO FY 59 BUDGET CYCLE  
AND MAY INCLUDE INCREASES IN CURRENT FISCAL  
YEAR. INFO IS DESIRED BY CHIEF OF STAFF  
SOONEST DATE REPLY CAN BE FURNISHED.  
ANTICIPATED SIMILAR INFO WILL BE REQUESTED  
REGARDING WS-187L PROGRAMS SUGGEST PREPARATORY  
ACTION ACCORDINGLY.  
END USAF ITEM 1 XSECRET/

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

STAND BY

[REDACTED]  
[REDACTED]  
RGR  
USAF ITEM 2/SECRET/  
IF AT ALL POSSIBLE DESIRE YOU PROVIDE  
ROUGH ESTIMATES IMMEDIATELY FOR PRELIMINARY  
DISCUSSION BY C/S AT NSG MEETING  
AM 10 OCT. SUBJECT OF MEETING PRIMARILY  
SATELLITE BUT HAS OBVIOUS ICBM/IRBM  
IMPLICATIONS. DO YOU HAVE ANY QUESTIONS QUES  
END USAF ITEM 2/SECRET/

(2)

AFEND ITEM 1/SECRET/  
WILL TAKE A QUICK LOOK-  
HAVE ANTICIPATED SOME OF YOUR QUESTIONS  
BUT ANSWERS NOT IMMEDIATELY AVAILABLE .  
ESTIMATE PRELIMINARY ANSWER CAN BE  
AVAILABLE WED PM VIA TWX.  
THIS ALSO ANSWERS UR ITEM 2.

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

USAFBND ITEM 1 AND [REDACTED]

USAF ITEM 1/SECRET/  
I DO NOT KNOW EXACT BACK-GROUND OF ITEM 1  
QUEST. WE GUESS THAT IT IS ONLY FOR PURPOSES  
OF BEING PREPARED IN CASE TOP AUTHORITIES  
ASK WHAT WE NEED FOR OUR PROGRAMS. BASIS  
OF COURSE IS IMPLICATIONS OF SOVIET-SATELLITE  
ACCOMPLISHMENTS WITH RESULTING POSSIBILITY  
OF DEMANDS ON OUR OWN BALLISTIC MISSILE  
PROGRAM AS OUR BEST FIRST GUESSES AS 5-AREA PIECE  
FOR OUR CHIEF TO INITIATE CONVERSIONS  
WHICH MIGHT LEAD TO FUNDING OUTSIDE NORMAL  
PROGRAM LIMITATIONS.  
END USAF ITEM 1/SECRET/

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

[REDACTED]

[REDACTED]

[REDACTED]

ITEM 3 /SECRET/  
WANT UNDERSTAND BACKGROUND OF  
SITUATION AND WILL EXERT MAXIMUM  
EFFORT FOR PRELIMINARY ANSWER.  
END ITEM 3 /SECRET/

ITEM 4 /SECRET/  
WE IN CONFERRING GROUP ARE THINKING IN TERMS  
OF HOW MUCH IMPACT THESE RECENT DEVELOPMENTS  
MIGHT HAVE TOWARD BREAKING FUNDING RESTRICTIONS.  
IT COULD BE POSSIBLE TO GAIN AS MUCH AS  
200-250 MILLION FY 1958 AND 300-500  
MILLION FY 1959 IF SUFFICIENT NATIONAL  
IMPETUS WERE PLACED ON THESE PROGRAMS  
INCLUDING 157L. WE WANT TO BE PREPARED TO STATE  
WHAT WE COULD DO WITH THE FOREGOING  
CMA OR LESSER AMOUNTS CMA SHOULD THEY BE MADE AVAILABLE.  
END ITEM 4 /SECRET/

(4)

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

"A—PARAPHRASE NOT REQUIRED EX  
TO CATEGORY B ENCRYPTION—PHY  
MOVE ALL INTERNAL REFERENCES B  
GROUP PRIOR TO DECLASSIFICATION

[REDACTED]

[REDACTED]