

1/3-1

UNCLASSIFIED

1125

1 Jan 61

AGENA D

DECLASSIFIED IAW E.O. 12958

REVIEWED

BY

DATE

[Signature]
1 Jan 61

UNCLASSIFIED

Cy#1

SSGB 41-1

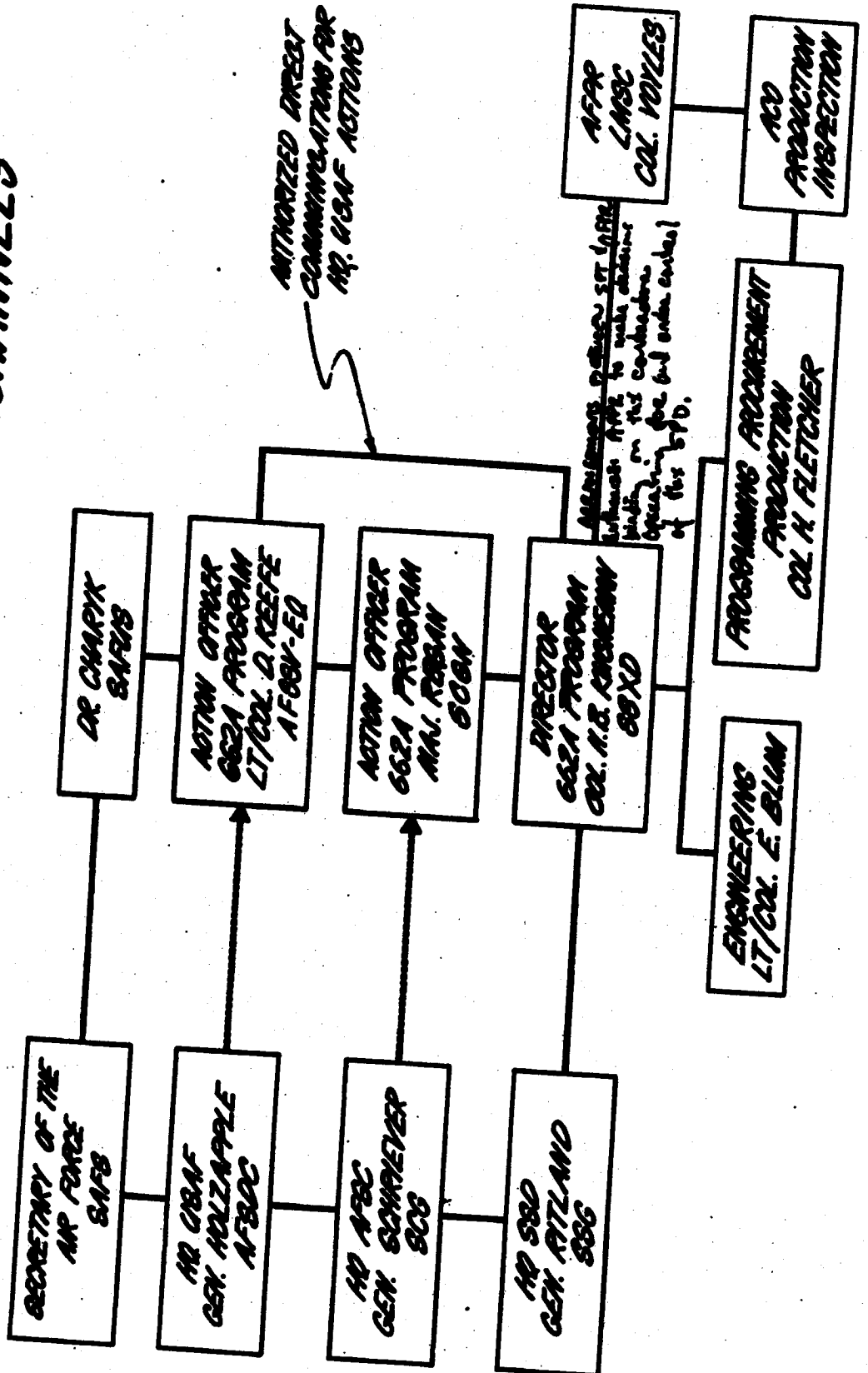


OUTLINE

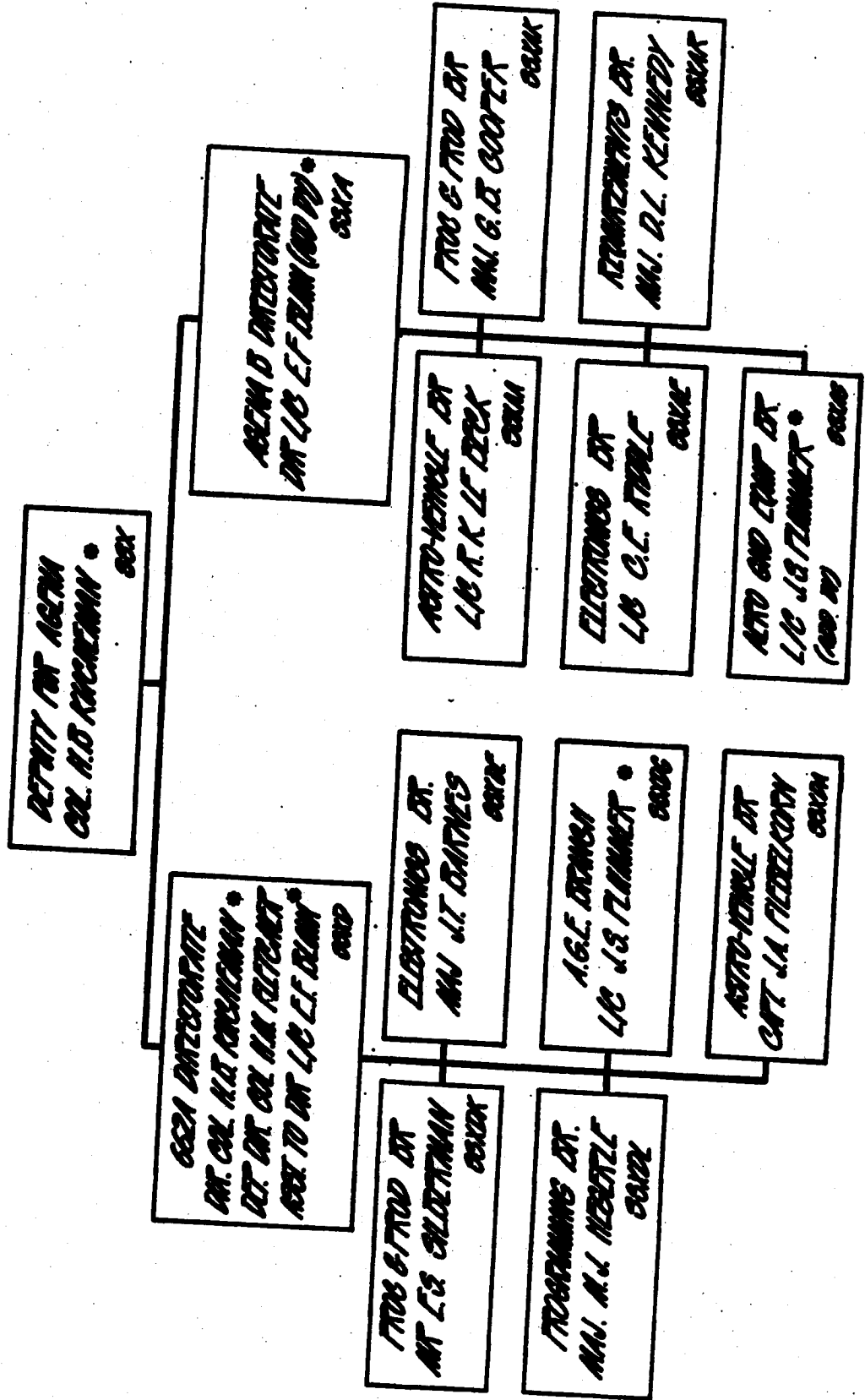
- 1- Introduce
Director, Sum & Organ
- 2- 3-fold purpose
 - (a) - expand to describe for Program Plan
 - (b) - to present the Plan and overall status report. Having first
 - (c) - Outline Action necessary by 1/15/57 to keep Program on schedule
- 3- Review order of Presentation

- INTRODUCTION
- MANAGEMENT & ORGANIZATION
- STATUS REPORT
- INDUSTRIAL FACILITIES
- PROGRAMMING & FISCAL
- SUMMARY

PROGRAM 662A MANAGEMENT CHANNELS



560 ORGANIZATION



LMSC ORGANIZATION PROGRAM 662A

662A PROGRAM
F. O'GREEN
DIRECTOR
J. SINDENHAIR
ASSISTANT DIRECTOR

ADMINISTRATION
MANAGER

- SCHEDULING
- BUDGETS
- CONTRACTS
- PERSONNEL
- SECURITY

OTA ENGR &
RELIABILITY
L. EDWARDS

VEHICLE
ENGINEERING
K. SCHMIDT

ACC ENGR &
SYSTEM TEST
BENZ

MANUFACTURING
M. MELANCONI

INSPECTION
B. TOMEK

PROCUREMENT
T. KENNA

PROGRAM GROUND RULES

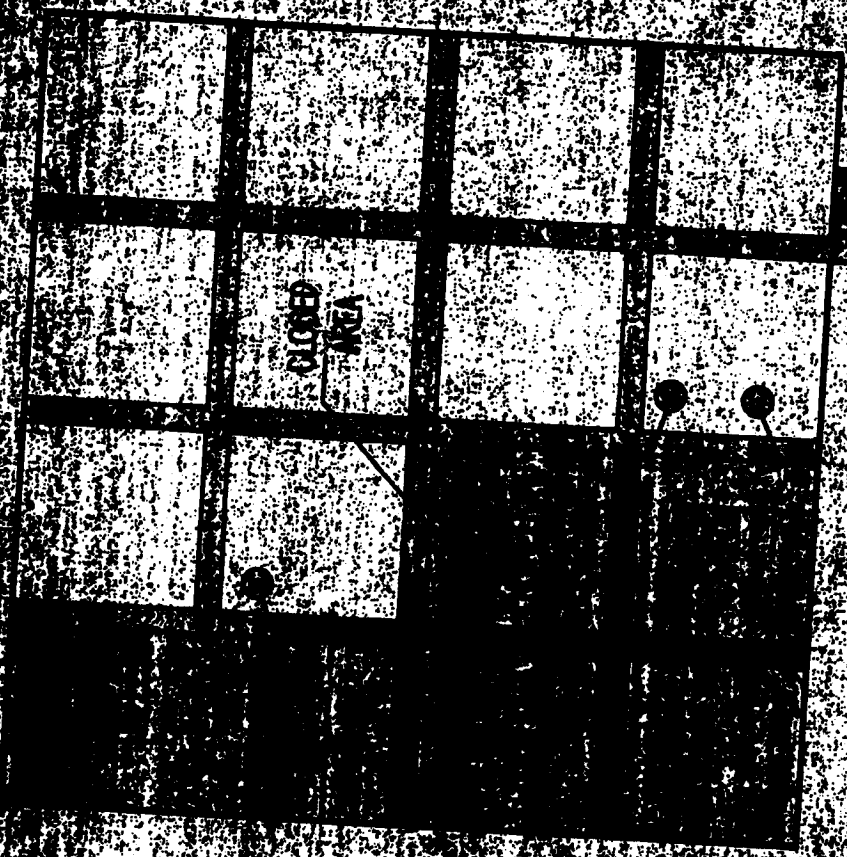
GROUND RULES FOR AGENA D PROCUREMENT

- **DX PRIORITY SHOULD BE ASSIGNED**
- **SIMPLIFIED ENGINEERING SYSTEM**
- **50% CONFIGURATION FREEZE BY 1 DEC 61**
- **ENGINEERING EFFORT IN CLOSED AREA ADJACENT TO
MANUFACTURING AREA**
- **RAPID DRAWING RELEASE (24 HR. MAX)**
- **FUNDING SHALL BE ADEQUATE AND TIMELY**
- **CLOSE LIAISON BETWEEN LMSC AND AIR FORCE PERSONNEL
TO PRECLUDE LARGE TECHNICAL DIRECTION MEETINGS**

GROUND RULES FOR AGENDA D PROCUREMENT (CONT'D)

- **REASONABLE OVERTIME WILL BE APPROVED**
- **AIR FORCE ON-THE-SPOT APPROVAL OF VENDOR SELECTION.
SINGLE SOURCE PROCUREMENT JUSTIFICATION WILL BE
KEPT ON FILE.**
- **NO TOOL DRAWINGS OR APPROVAL REQUIRED**
- **INTERCHANGEABILITY OF FIRST FOUR AGENDA D'S LIMITED TO
MAJOR STRUCTURAL AND EQUIPMENT ITEMS.**
- **NO ENGINEERING ANALYSIS REPORTS REQUIRED**
- **MINIMUM SPECIFICATIONS**

PLD8 151



PLD8 151

KEY CARD ENTRANCE

INFORMATION FLOW TO USING PROGRAMS

- AGENA D LIAISON GROUP
- DATA RELEASE
 - ADVANCED VEHICLE DESCRIPTION (CURRENT)
 - IN-BOARD PROFILE & LAYOUT DRAWINGS
 - SYSTEM & SUBSYSTEM SCHEMATICS
- AF AGENA D PROGRAM PERSONNEL

AGENA D-DD 250 SUMMARY

○ PLANNING VEHICLE

	112 2430	0100
DECKERS		
MASA		
ASIA		
SPACEHOT	1 1	1
AGENT		
ORLA		
TELA HOTEL		
GOODS		
MILES		
GENERAL PURPOSES		
TOTAL	112 2430 044 2323 7	7

AGENDA D FINAL ASSEMBLY COMPLETION SUMMARY

- 1 - AGENDA B
- 1 - AGENDA P
- 0 - PLANNING PER

		1	2	3	4	5	6	7	8	9	0	TOTAL
AGENDA B												
AGENDA P												
PLANNING PER												
AGENDA B	2	2	2	2	2	2	2	2	2	2	2	22
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
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AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00
AGENDA B	1	1	1	1	1	1	1	1	1	1	1	11
AGENDA P	1	1	1	1	1	1	1	1	1	1	1	11
PLANNING PER	0	0	0	0	0	0	0	0	0	0	0	00

STATUS REPORT

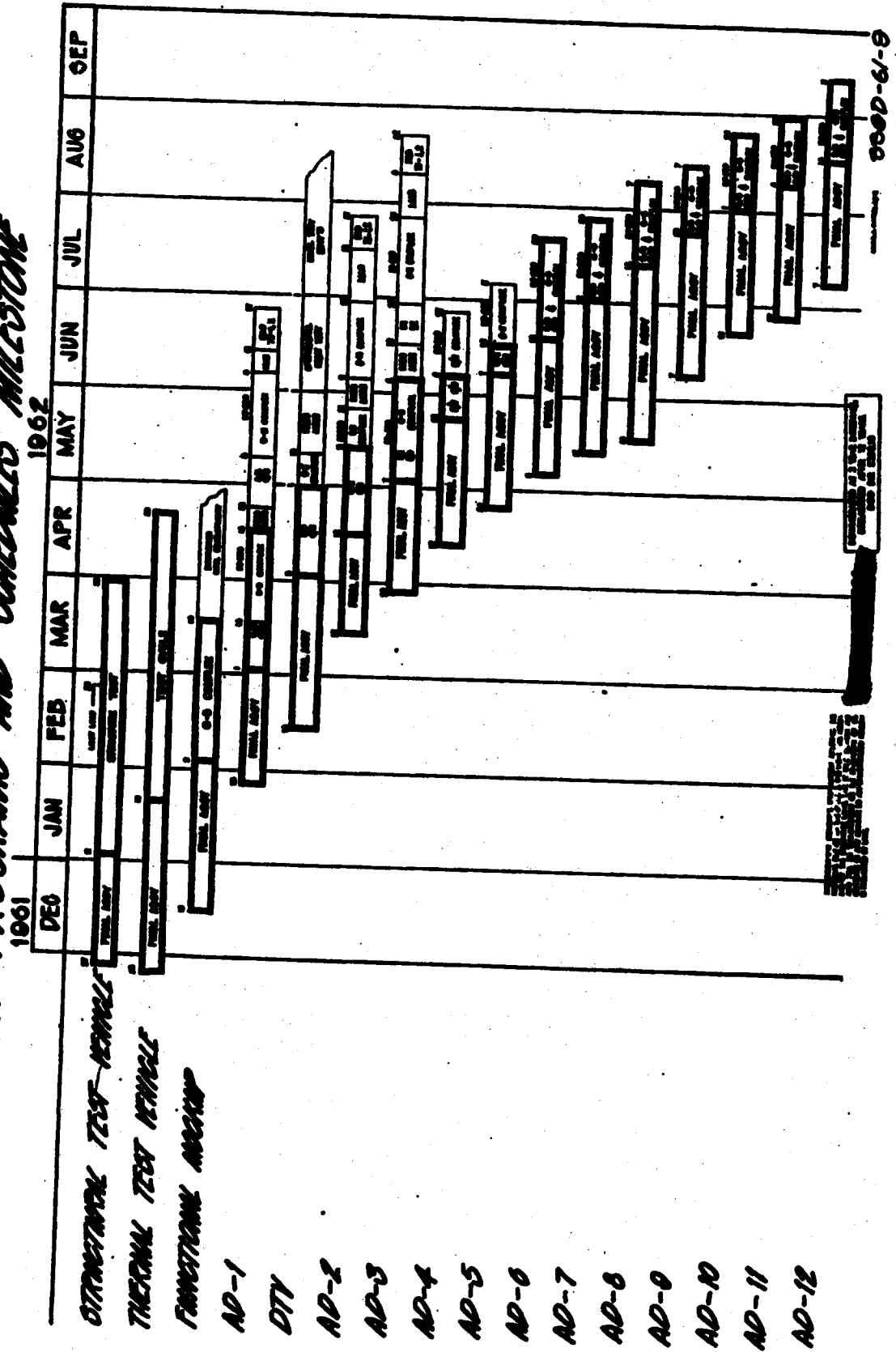
Summary

① WE HAVE ATTEMPTED TO Present Essential Elements of The Program Plan. and ARE A GREAT JOBS AGAINST THE Program Plan. and

② In Particular we have covered the organizational and management plan, the techniques by which we are handling the drawing & organization leads to a fixed price contract, a flexibility plan which we successfully feel is the best compromise between the organization and our recommendations as to how the design & program should be funded

③ It will be clear ~~that~~ by presenting the following recommendations of the DDP in order that the design & DDP may proceed in a schedule

PROGRAM 602A MASTER PROGRAMS AND SCHEDULES MILESTONE



LMSC TOTAL FACILITIES

- USAF 8.3
- NAVY 40.4
- LOCKHEED 78.1

● INCLUDES 31.72 LEASED BLDGS

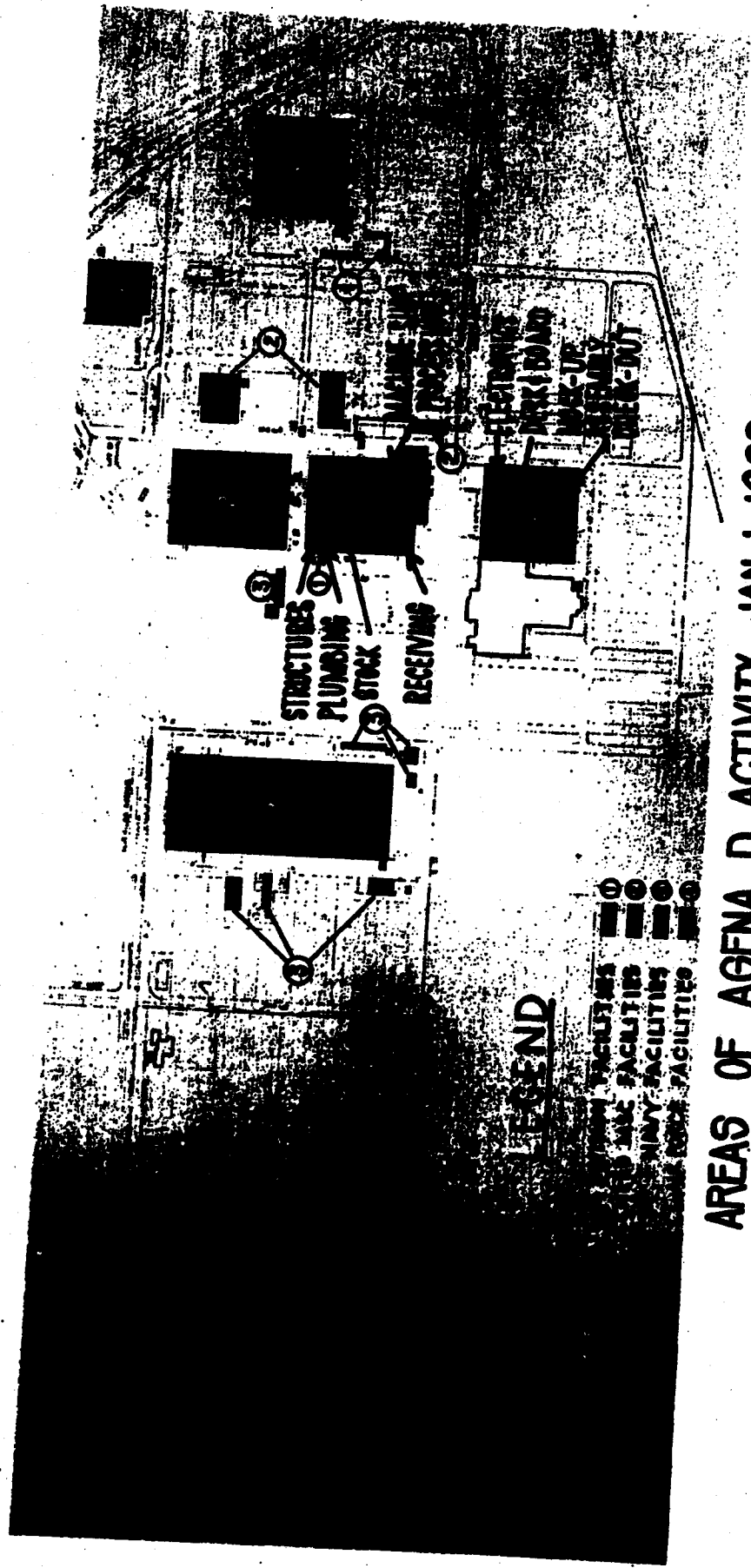
AGENDA D OBJECTIVES

- **CREATE A SEPARATE FACILITY FOR
MANUFACTURING AGENDA D**
- **SKUNK - WORKS APPROACH**
- **EFFICIENT PRODUCTION**
- **ISOLATE COST**

CONDITIONS & REQUIREMENTS

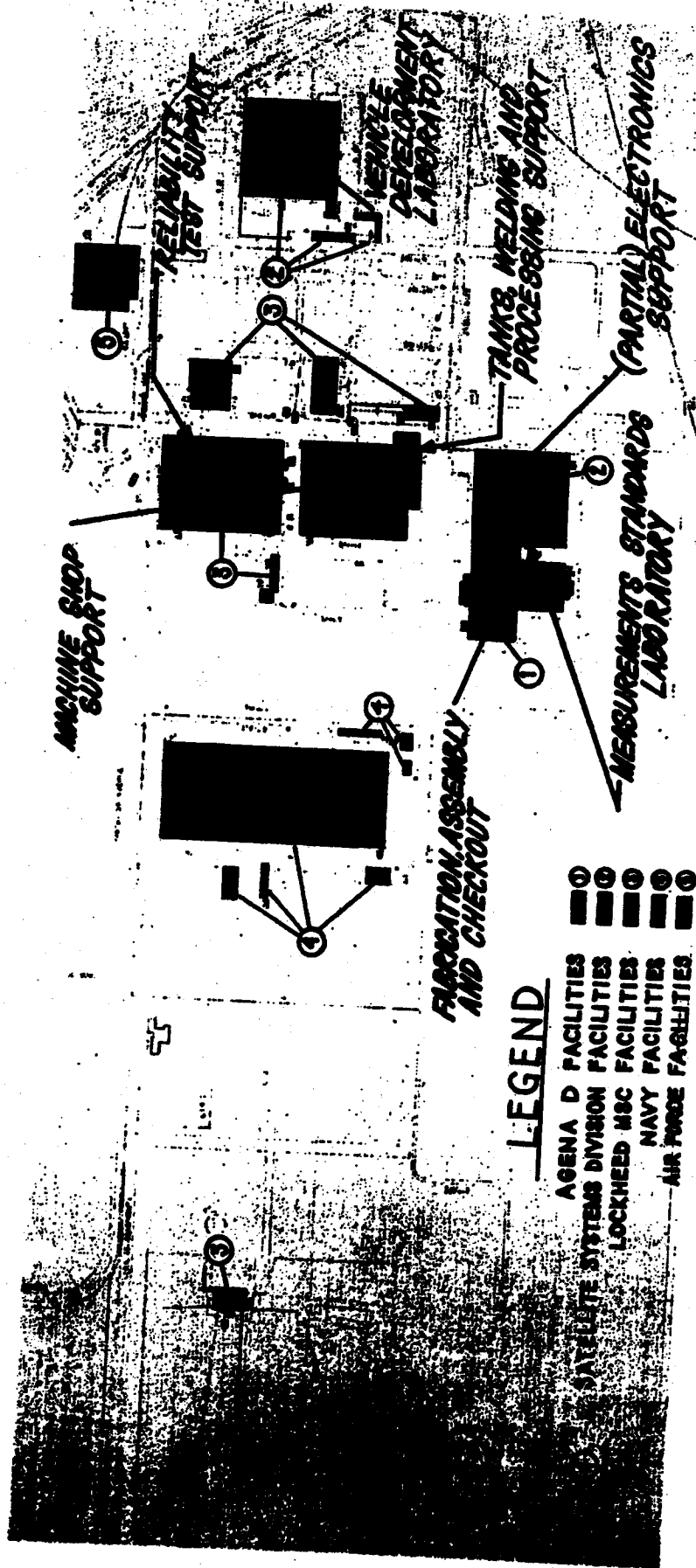
- ALL MANUFACTURING TO BE LOCATED IN BLDG. 152 EXCEPT "MONUMENTS"
 - A. HEAT TREAT
 - B. PROCESSING
 - C. WELDING
- QUALIFICATION & RELIABILITY TESTING FACILITIES TO BE AUGMENTED IN BLDG. 102
- RECEIVING, INSPECTION AND FUNCTIONAL TEST TO BE ESTABLISHED FOR AGENDA D IN BUILDING 152
- PYROTECHNIC TESTING FACILITIES TO BE AUGMENTED AT SANTA CRUZ TEST BASE
- PROVIDE A VEHICLE DEVELOPMENT LABORATORY
- AUGMENT EXISTING MANUFACTURING ELECTRONICS IN BUILDING 151 TO MEET FOLLOW-ON PRODUCTION RATE
- DOES NOT INCLUDE FLUSHING FACILITIES OR LAUNCH STAND MODS

SUNNYVALE FACILITIES



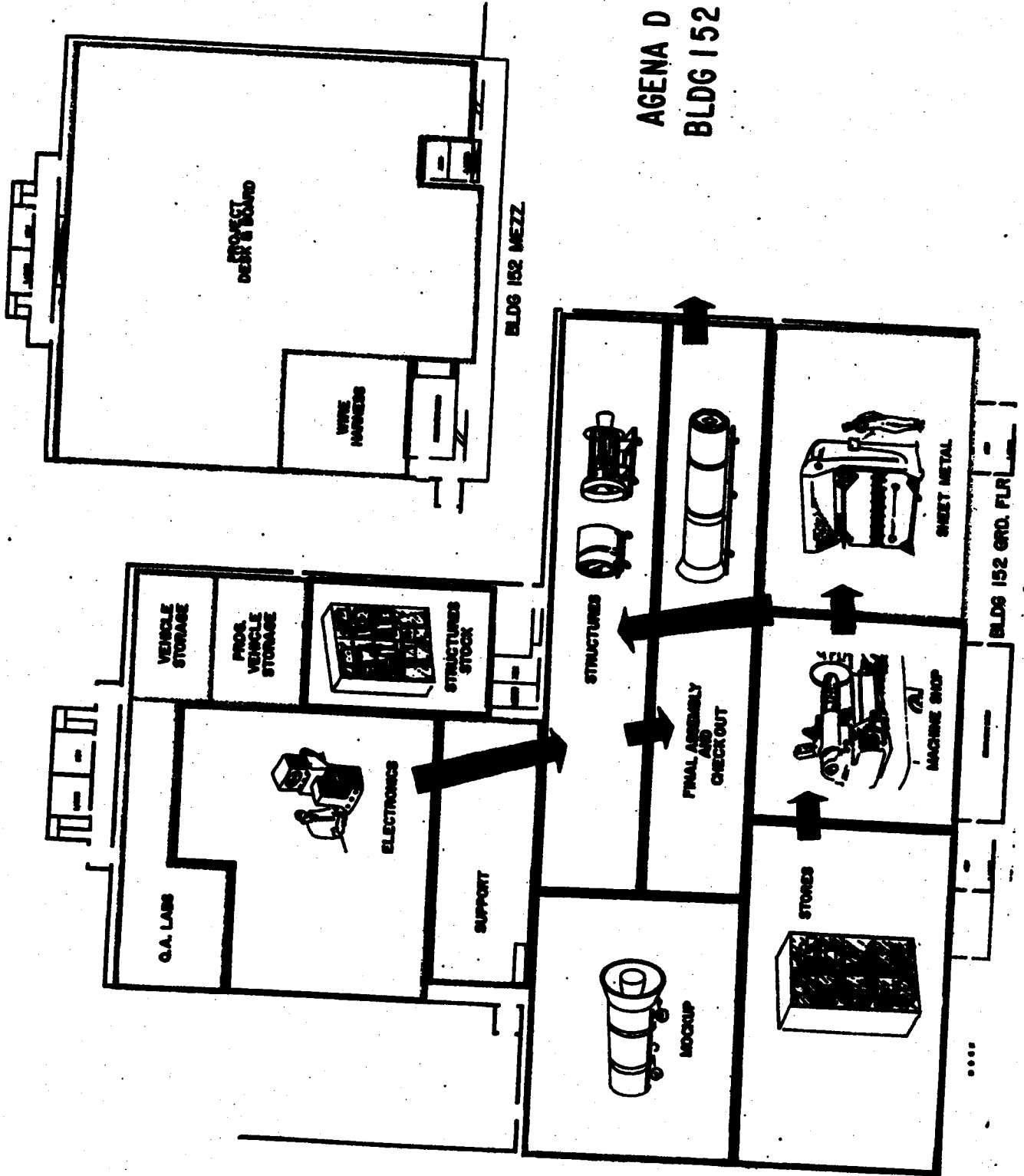
AREAS OF AGENDA D ACTIVITY - JAN 1, 1962

SUNNYVALE ACTIVITIES



AREAS OF AGENA D ACTIVITY - JAN 1963

AGENA D
BLDG 152



AGENDA D FACILITY REQUIREMENTS

5/MO

REQUIRING ORGANIZATION	TOTAL FOR FISCAL YEAR 62	TOTAL FOR FISCAL YEAR 63	PROGRAM TOTALS
MANUFACTURING	[REDACTED]	[REDACTED]	[REDACTED]
SANTA CRUZ TEST BASE	[REDACTED]	[REDACTED]	[REDACTED]
VEHICLE DEVELOPMENT LABORATORY	[REDACTED]	[REDACTED]	[REDACTED]
QUALITY ASSURANCE	[REDACTED]	[REDACTED]	[REDACTED]
TOTALS	[REDACTED]	[REDACTED]	[REDACTED]

AGENDA D FACILITY REQUIREMENTS

4/MO

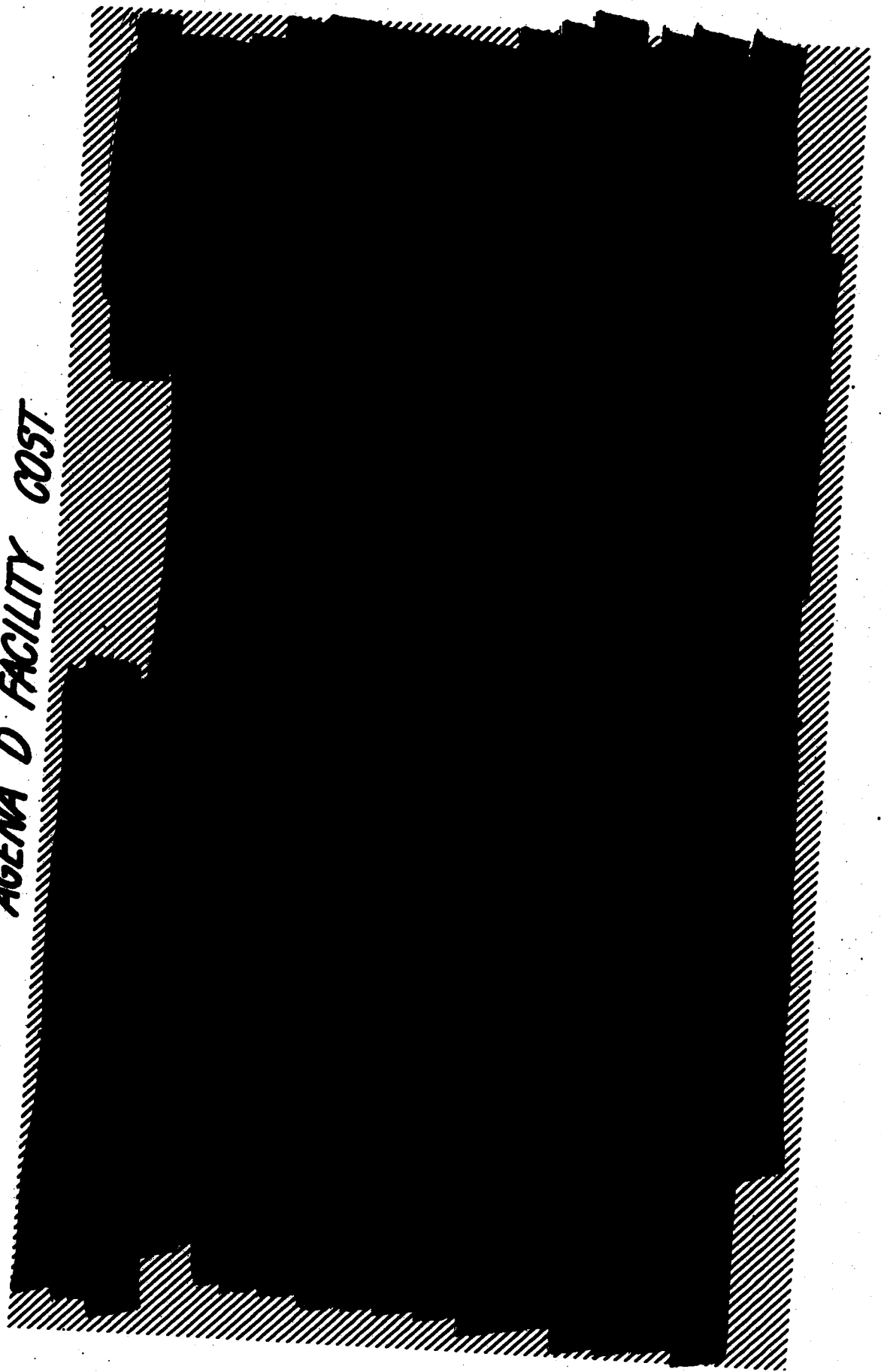
REQUIRING ORGANIZATION	TOTAL FOR FISCAL YEAR 62	TOTAL FOR FISCAL YEAR 63	PROGRAM TOTALS
MANUFACTURING	[REDACTED]	[REDACTED]	[REDACTED]
SANTA CRUZ TEST BASE	[REDACTED]	[REDACTED]	[REDACTED]
VEHICLE DEVELOPMENT LABORATORY	[REDACTED]	[REDACTED]	[REDACTED]
QUALITY ASSURANCE	[REDACTED]	[REDACTED]	[REDACTED]
TOTALS	[REDACTED]	[REDACTED]	[REDACTED]

AGENDA D FACILITY REQUIREMENTS

3/MO

REQUIRING ORGANIZATION	TOTAL FOR FISCAL YEAR 62	TOTAL FOR FISCAL YEAR 63	PROGRAM TOTALS
MANUFACTURING	[REDACTED]	[REDACTED]	[REDACTED]
SANTA CRUZ TEST BASE	[REDACTED]	[REDACTED]	[REDACTED]
VEHICLE DEVELOPMENT LABORATORY	[REDACTED]	[REDACTED]	[REDACTED]
QUALITY ASSURANCE	[REDACTED]	[REDACTED]	[REDACTED]
TOTALS	[REDACTED]	[REDACTED]	[REDACTED]

AGENA D FACILITY COST



PROGRAMMING & FISCAL

GO BACK TO STARTS
AND WRITE UP DATA
to 19 Dec. Per Reproduction
Meeting

PROGRAM PLANNING

- AGENA 'P' PROGRAM OFFICE RESPONSIBILITIES
 - AGENA 'D' UNIT COST
 - AGENA 'D' DELIVERY SCHEDULE
 - AGENA 'D' PROCUREMENT
- USING PROGRAM RESPONSIBILITIES
 - PROGRAM TOTAL UNIT COST IN FY OF DELIVERY
 - INCREMENTAL PROGRAMMING FOR OPTIONAL & REGULAR
 - SEPARATE CONTRACTING

REIMBURSABLE FUND

FUNDS TRANSFER

TIME--DD-250 ACCEPTANCE

ACTION DOCUMENT--DD-250

COST-----CURRENT COST AT DELIVERY

TRANSFER---BY DCCA

BUDGET ESTIMATE INITIAL PROGRAM

● MANAGEMENT & CONTROLS	(FROM)	(APPROX)
● ANALYSIS & DESIGN	0.9	0.9
● DEVELOPMENT TEST	4.9	5.1
● RELIABILITY	3.0	3.2
● AGE DESIGN	0.4	0.3
● LOGISTIC SUPPORT	1.6	2.2
● VEHICLE HARDWARE	0.6	0.3
● VEHICLE MAINTENANCE (12+DTV)	17.1	16.2
● MTE, AGE, & TOOLING	0.8	0.7
● TEST HARDWARE & ECTS SUPPORT	6.6	4.8
● SPARES	2.6	2.8
	1.0	3.1
	<u>TOTAL</u>	<u>59.9</u>
		<u>59.6</u>

- CONTRACTOR COST PROPOSAL
 - CONTRACT DEFINITIZED
 - ACTUAL COSTS DETERMINED
- 15 DEC 1961 ✓
 END JAN 1961
 AT DELIVERY

662 A FUNDING REQUIREMENTS

- BASIC CONTRACT

AGENA D - DESIGN, TOOLING, TEST OVERHEAD & I-D TV
12 FLT VEHICLES AND SPARES
TOTALS

- LONG LEAD TIME PROCUREMENT

- FOLLOW ON PROCUREMENT

GRAND TOTALS

- REIMBURSEABLE FUND TRANSFER

R & D COSTS FROM HQ USAF
VEHICLE COSTS FROM ODSNG PROGRAMS

FY 1962 FY 1963

1001

22.4 M
1.5 M/YR

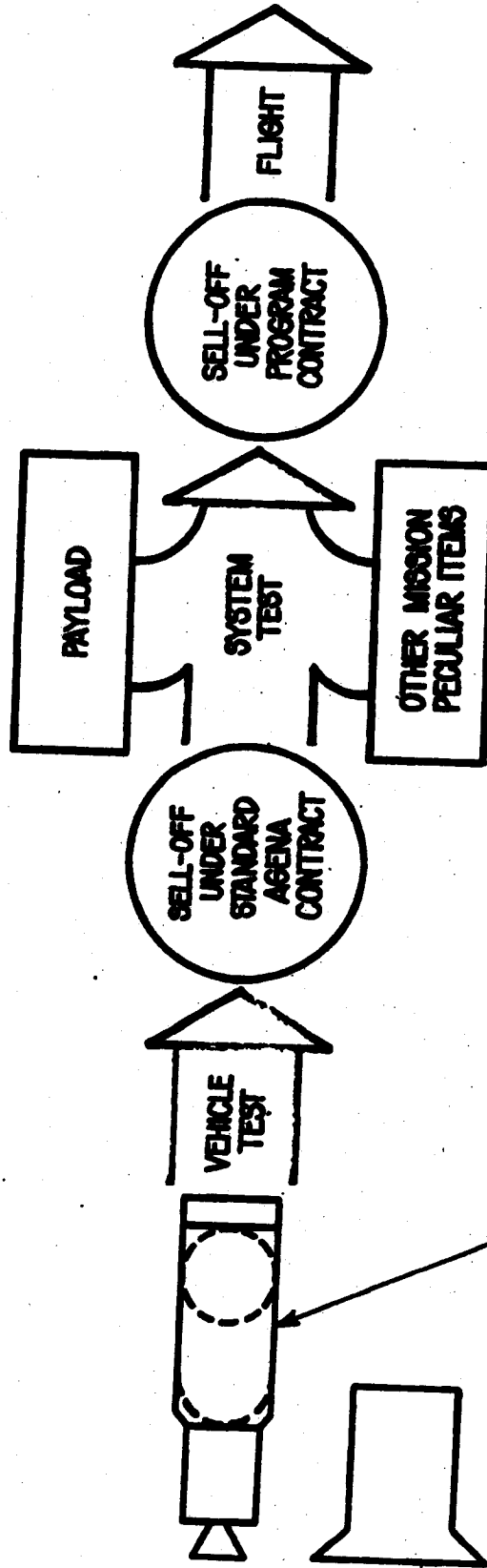
RECOMMENDATIONS

- APPROVE FISCAL REQUIREMENTS FOR BASIC (-21) CONTRACT AND PROVIDE FY 62 FUNDS
- APPROVE AN INITIAL PRODUCTION RATE OF 4/MONTH FOR FOLLOW-ON (-68) CONTRACT & PROVIDE LONG LEAD TIME FUNDS FOR A FY 63 BUY OF 39 AGENA D'S
- APPROVE FY 62 FUNDS FOR INDUSTRIAL FACILITIES TO SUSTAIN A 5/MONTH PRODUCTION RATE
- EXTEND DX PRIORITY TO FOLLOW-ON (-68) CONTRACT

SYSTEM DESCRIPTION

12-4-21

AGENA D CONCEPT



BASIC VEHICLE

ASCENT VEHICLE

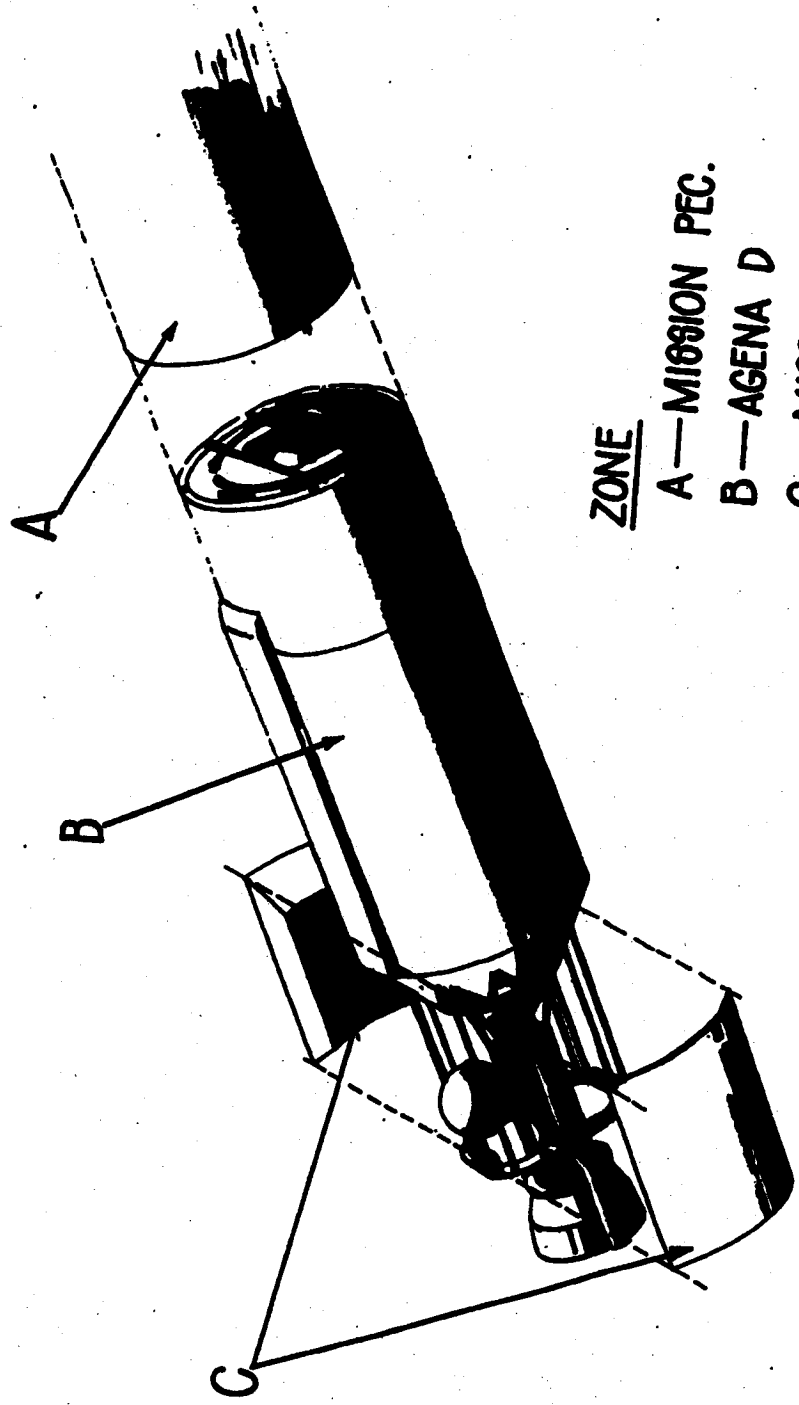
- FRONT RACK, TANK & AFT RACK
- 8090 ENGINE RESTARTABLE
- GUIDANCE & CONTROL FOR ASCENT
- TELEMETRY FOR ASCENT
- BRACKETRY, CABLING JUNCTION BOXES

OPTIONAL EXTRAS

EXAMPLES

- NOSE FAIRING
- SECONDARY PROFUSION SYS.
- EXTRA BATTERIES & GAS BOTTLES
- CONTROL MOMENT GYROS
- BEACONS, PROGRAMMERS
- BRACKETRY, CABLING JUNCTION BOXES

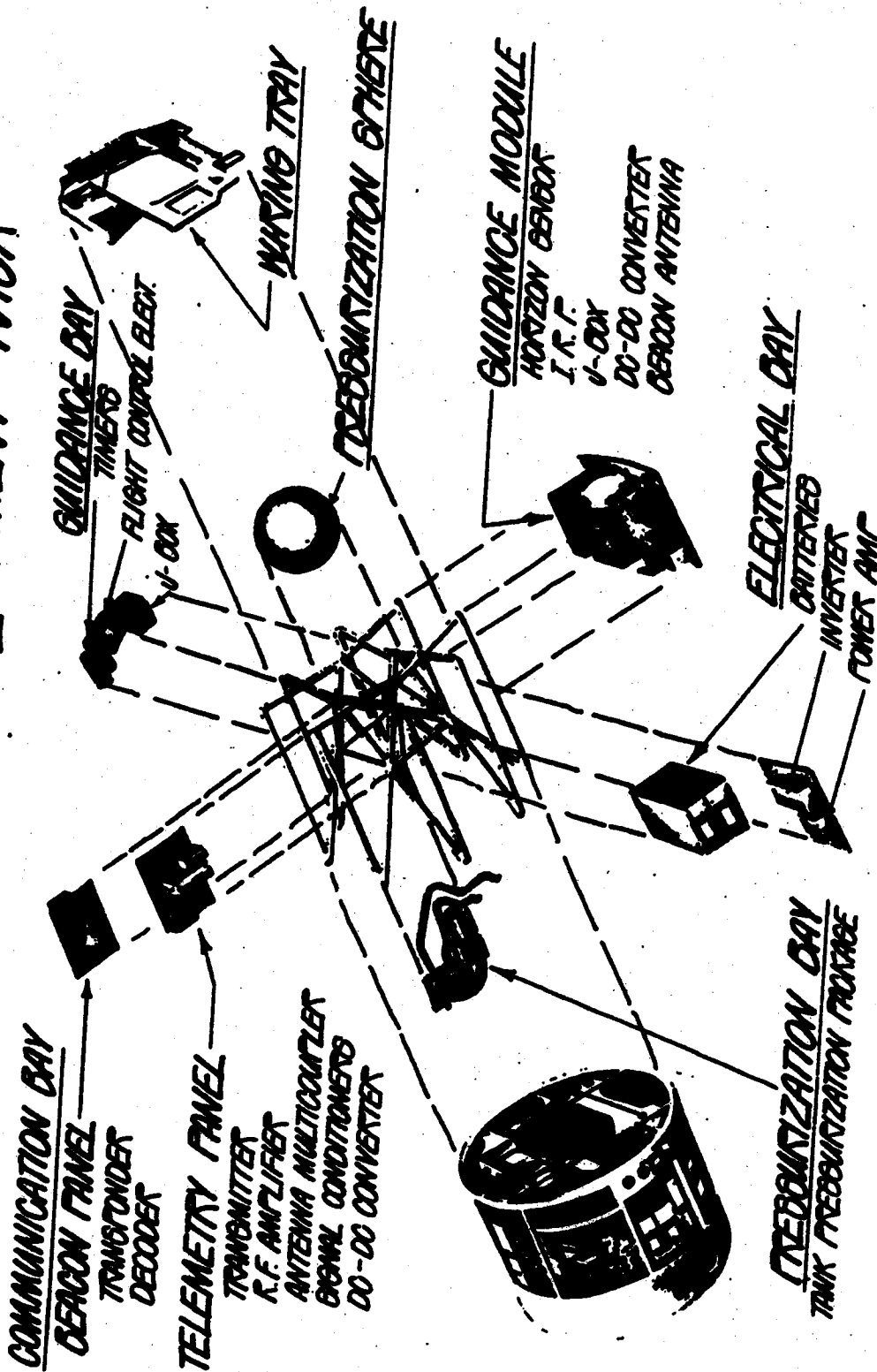
AGENA D MECHANICAL



ZONE

- A—MISSION PEC.
- B—AGENA D
- C—MISSION PEC.

AGENA D FORWARD EQUIPMENT RACK



AGENA D AFT EQUIPMENT RACK AND ADAPTER

CONTROL GAS IN
VALVE PACKAGE
SUPPLY ORIFICE



VALVE CONTROL ROCKETS



HYDRAULIC POWER PACKAGE



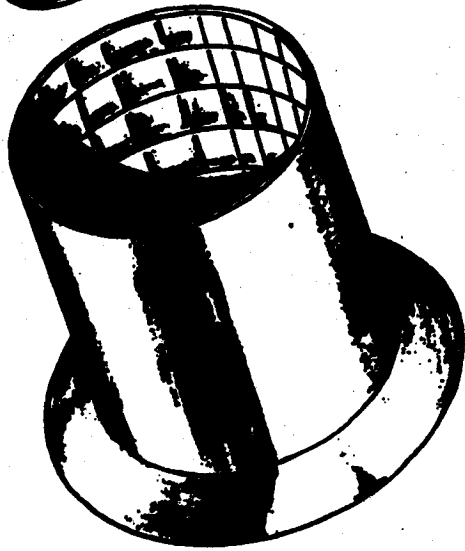
FILL & DUMP
SYSTEM



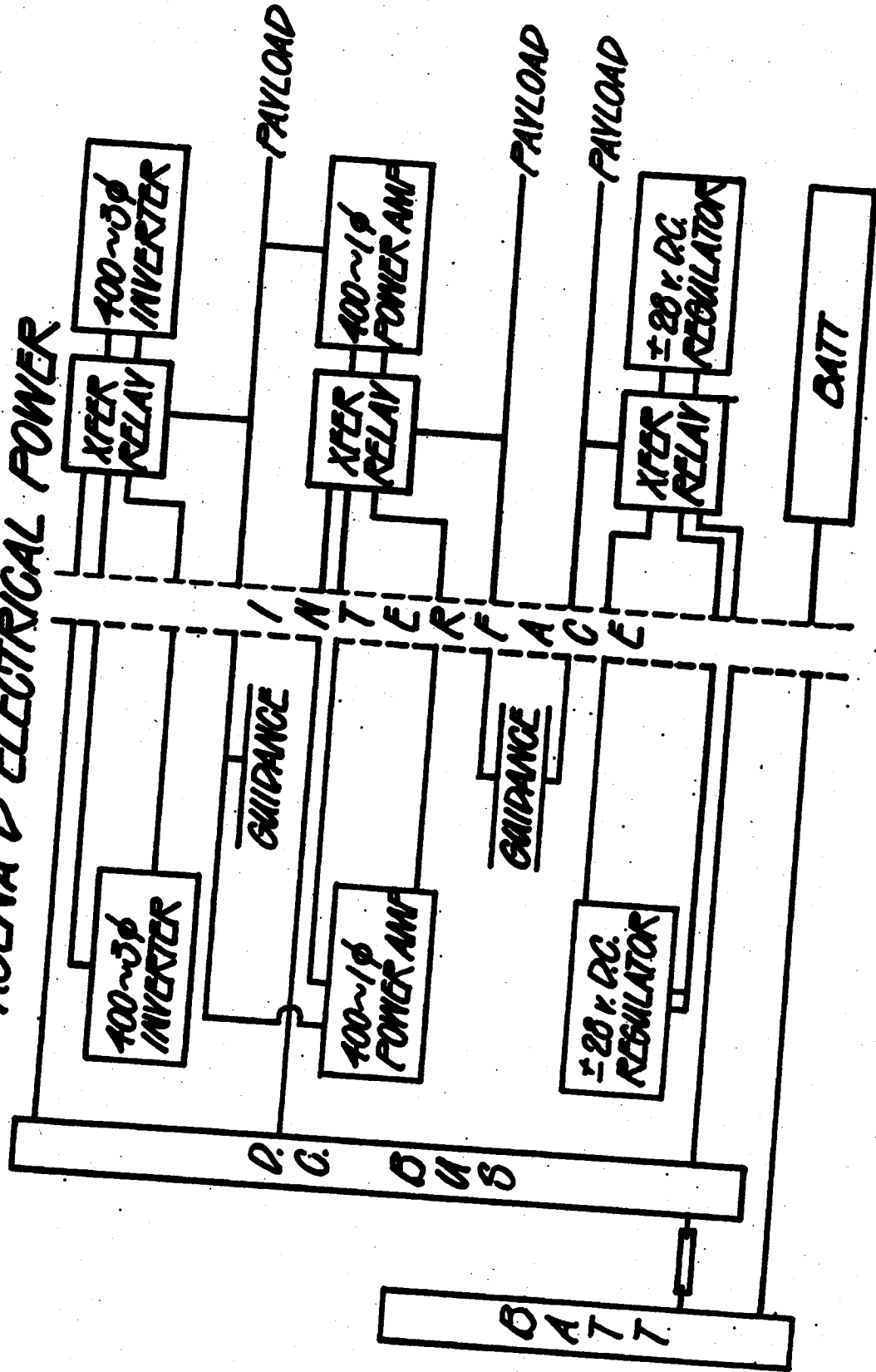
VALVE PACKAGE



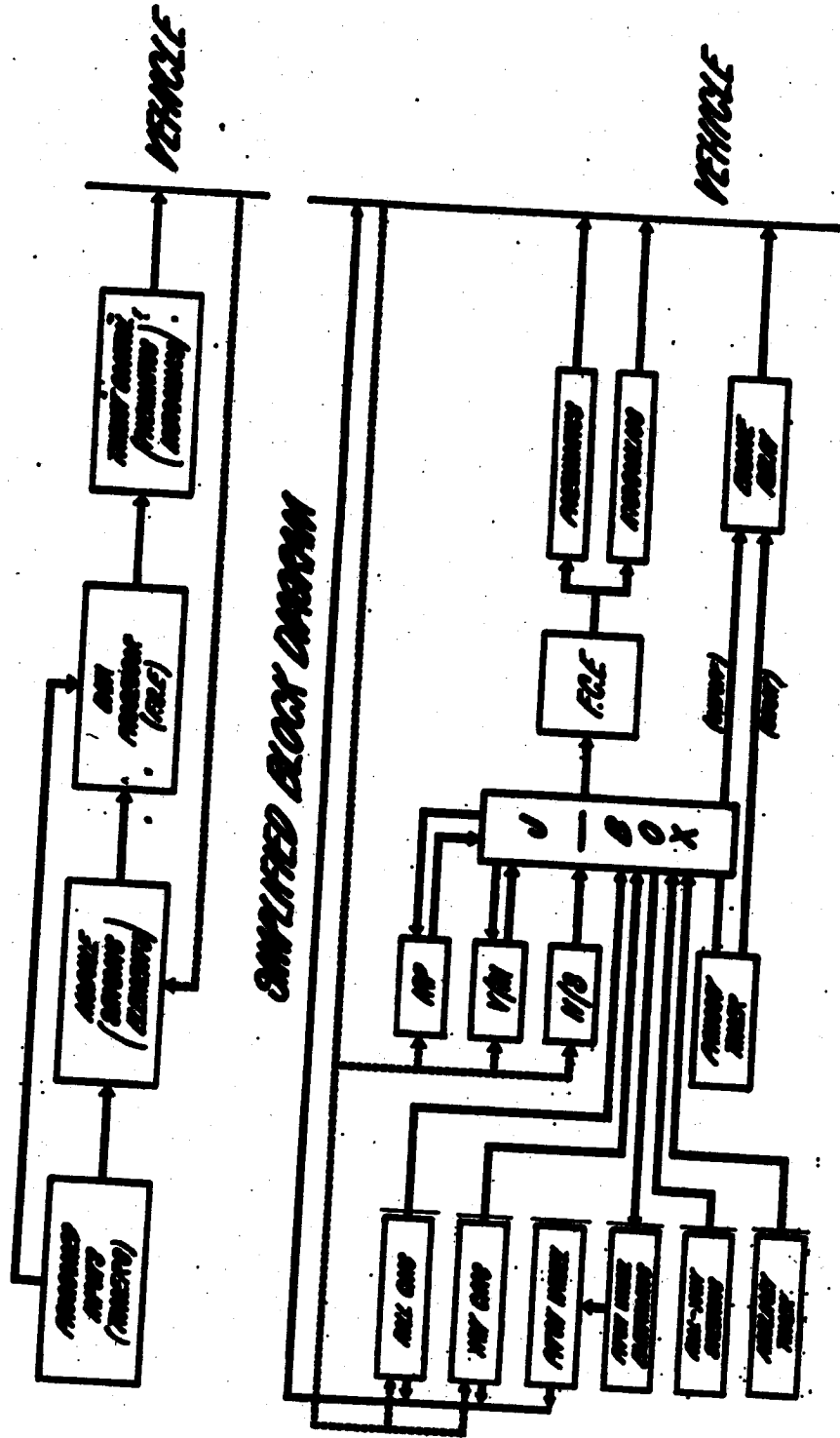
VALVE CONTROL ROCKETS



AGENA D ELECTRICAL POWER



AGENA O GUIDANCE & CONTROL DRAIN FLOW DIAGRAM



AGENA "D" AGE/SITE

DEFINITION: FACTORY LOCATED HANDLING AND CHECKOUT EQUIPMENT (MANUAL & AUTOMATIC) REQUIRED THRU TO ESO ACCEPTANCE OF AGENA D.

FUNCTION: TO PERFORM AN INTEGRATED SYSTEM CHECKOUT OF THE AGENA D. THE AUTOMATIC EQUIPMENT (FACE) IS SCHEDULED FOR USE ON THE 18TH AGENA D.

CHECKOUT EQUIPMENT MODIFICATIONS
(EQUIPMENT LOCATED FACTORY, AMK, PMS)

- GUIDANCE SUB SYSTEM % EQUIPMENT - CHANGE IN GUIDANCE SYSTEM
- SYSTEM COMPLEXES
SIGNAL DISTRIBUTION & MONITOR CONSOLE
CONTROL & INDICATOR CONSOLE
- MINOR MODS TO BOTH SYSTEM & SUBSYSTEM CHECKOUT EQUIPMENT

● PROGRAMS AFFECTED - DISCOVERER

NASA (AMK)
MIDAS
ADVENT

102
NASA (PMS)
SNAPSHOT

201
VELA HOTEL } MINOR
621A

ESTIMATED COST 1.8

**HANDLING & SERVING EQUIPMENT
EQUIPMENT LOCATED FACTORY, AMPS, AMPS, TRANSITORY**

NEW

- **HANDLING RACKS**
CHANGING CHANGES IN THE VEHICLE FRONT END AND DESIGN
- **ROCK REMOVAL SLANDS**
RELOCATION OF FINISHES ON VEHICLE CHASSIS RELOCATION OF FEET OF PARTS
- **CRUSHER AGONTER PROTECTIVE COVER**
INCREASED LENGTH OF AGONTER
- **CHASSIS ASSEMBLY CONTAINER**
NEW CHASSIS MODEL

MODIFICATIONS

- **VEHICLE TRANSPORTER**
CHANGE IN THE SPACING AND POSITIONING AIDS
- **VEHICLE HANDLING DOLLY**
SAME AS ABOVE
- **CRUSHER AGONTER HANDLING DOLLY**
INCREASED LENGTH OF AGONTER
- **VERTICAL WORK STAND**
RELOCATION OF FINISHES

PROGRAMS AFFECTED

- | | |
|-------------|------------|
| ● DISCOVERY | ● 102 |
| ● 201 | ● AMOS |
| ● MUSH AMP | ● MUSH AMP |
| ● NEA AMTEL | ● C21 A |
| ● BENT | ● AMP/201 |

ESTIMATED COST \$5M

LAUNCH STAND EQUIPMENT MODIFICATIONS

- LAUNCH CONTROL
 - ELECTRICAL & GUIDANCE CONSOLE -- CHANGE IN GUIDANCE SYSTEM
 - PNEUMATIC & PROPULSION CONSOLE -- ADDITIONAL TEMPERATURE & PRESSURE MONITORING
 - UMBILICAL PLUG, ELECTRICAL -- CHANGE IN PIN/FUNCTION ASSIGNMENT
 - TEST PLUGS -- CHANGE IN PIN/FUNCTION ASSIGNMENT
 - COMMUNICATIONS CONSOLE -- MINOR MODS
 - R.F. % CONSOLE
 - PAD SIGNAL PROCESSING SET
- GROUND SERVICING
 - UMBILICAL SYSTEMS INSTALLATION -- RELOCATION OF QUICK DISCONNECT COUPLINGS
 - PROGRAMS AFFECTED - DISCOVER
 - NR
 - NASA
 - MIDAS
 - ZOI
 - NASA
 - ADVENT
 - COMPLEX 75-1, PAD 1 - PNR
 - 75-3, PADS 4, 5 - PNR
 - FALC #1, PADS 1, 2 - PNR
 - STAND 12 AMR

ESTIMATED COST 2.13 M (LESS UMBILICAL SYSTEM)

AGE SUMMARY

1. NON-AGENA "D" CONTRACT AGE COSTS - 4.88M

2. NUMBER OF LAUNCH PADS REQUIRING MOPS-6

3. NUMBER OF SYSTEM CHECKOUT COMPLETES REQUIRING MOPS-8

4. NUMBER OF PROGRAMS AFFECTED - 10

DIVISION OF RESPONSIBILITY BETWEEN AGENA "D" AND PROGRAM CONTRACTS

AGENA "D"
FACTORY LOCATED EQUIPMENT FROM AGENA "D" PD 150

C-0 AND OF MANUAL EQUIPMENT
C-3 AND " "
FACE-KEY AND EQUIPMENT
HANDLING EQUIPMENT

PROGRAM
FACTORY LOCATED AGENA "D" PD 200
THRU INTELLITE O/S PD 150

C-0
C-1
C-2
C-3
C-4
C-7
C-8A
C-1A
AND OF MANUAL
EQUIPMENT

LAUNCH BASE EQUIPMENT

HANDLING EQUIPMENT
C-10
PD 10 #1 PD 1
PD 2
PD 1
PD 4
PD 5
STAND 12 (MARK)

ALL NEW SYSTEM & COMPLETES WILL BE UNDER
PROGRAM CONTRACTS.

AGENA D OPTIONAL EQUIPMENT LIST

- **STRUCTURE**
 - SOFT A88Y-ADAPTER (ATLAS)
 - DIAPHRAGM, FORWARD PRESSURE
 - TIE ROD ASSEMBLIES, BATTERY INSTALLATION
- **PROPULSION**
 - SYSTEM INSTALLATION, PROPELLANT DUMP
 - KIT, DELAYED RESTART
 - ROCKET, RETARDING
- **ELECTRICAL**
 - METER, AMPER HOUR
 - BATTERY, PRIMARY, TYPE I
 - BATTERY, PRIMARY, TYPE II
 - BATTERY, PRIMARY, TYPE II-A
- **GUIDANCE & CONTROL**
 - TIMER, SEQUENCE
 - TANK A88Y, GAS STORAGE (1728 CU. IN.)
 - TANK A88Y, GAS STORAGE (2200 CU. IN.)

AGENA D OPTIONAL EQUIPMENT LIST (CONT'D)

● COMMUNICATIONS & CONTROL

- S- TRANSponder, RADAR BEACON, TRANSDORIZED
- S- DECODER, COMMAND, RADAR BEACON TRANSDORIZED
- TRANSponder, RADAR BEACON, G-BAND
- COAXIAL SWITCH, SPDT TYPE TNC CONNECTOR
- TRANSMITTER, VHF, ACQUISITION, 40 MW, OUTLINE & DMS
- MULTICOUPLER, TWO-CHANNEL, VHF, TYPE I
- FM/FM OSCILLATOR, SUB CARRIER, VOLTAGE CONTROLLED
- FM/FM MOUNT ASSY, OSCILLATOR
- FAIRCHILD PROGRAMMER, TYPE VI
- ANTENNA ASSY, BEACON, S-BAND
- ANTENNA ASSY, BEACON, G-BAND
- 400 MG TRANSMITTER, DOPPLER TRANSDOPNER
- 400 MG RECEIVER, DOPPLER TRANSDOPNER
- 400 MG DIPLEXER, DOPPLER TRANSDOPNER
- 400 MG ANTENNA, ASCENT, 400 MG
- VHF TRANSMITTER ASSY, TR-10
- VHF AMPLIFIER ASSY, POWER, PA-10
- KIT, DESTRUCT SYSTEM, COMMAND

SECRET

WS 117L
DISCOVERER, SENTRY AND MIDAS PROGRAM AND FUNDING CHRONOLOGY
1946-1959*

- 1946-47 RAND Corporation investigated the feasibility of a satellite as a reconnaissance vehicle. These studies continued through 1953.
- 12 Jan 48 General Hoyt S. Vandenberg, in a policy statement on a satellite vehicle, noted that R and D on a satellite vehicle should be pursued as rapidly as state of the art permitted.
- 1951 Air Force let feasibility studies for critical satellite subsystems to RCA, NAA, Bendix, Flader, Chalmers and Vitro Companies.
- Feb 54 Final RAND report on Advanced Reconnaissance System. System feasibility was established. Development was recommended.
- 27 Nov 54 ARDC published System Requirement No. 5 on Advanced Reconnaissance System.
- 16 Mar 55 Air Force issued GOR 80(SA-2c) for a strategic reconnaissance satellite weapon system.
- Mar 55 Design study proposals solicited from IAC, RCA, Martin, Bell Telephone. Bell Telephone declined to propose.
- May 55 NSC action 5520 directed the Department of Defense to develop capability of launching small scientific satellite by 1958. Effort not to prejudice or interfere with other satellites for research or intelligence. Emphasized peaceful purposes. Would be a technical step to demonstrated satellite achievement with prestige and psychological benefits. Cost estimated as \$15-20M. (Vanguard the result).
- Oct 55 General Power directed that Advanced Reconnaissance System development program be transferred to WDD.
- 13 Jan 56 Memorandum of Understanding on transfer of Advanced Reconnaissance System from ARDC Detachment No. 1 to WDD. Generals Schriever and Estes agreed WDD office would be established about 15 February 1956, take over Advanced Reconnaissance System program.

* Prepared by the Air Force Ballistic Missile Division Historian.

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

SECRET

WDGEE-2

~~SECRET~~

CHRONOLOGY

- 14 Jan 56 WDD published a WS 117L Preliminary Development Plan in response to a request from Hq ARDC. Based on a possible need to demonstrate an orbital capability within the IOY, total cost was estimated at \$95.5M.
- 18-20
Mar 56 A joint ARDC-WDD-WADC-AMC contractor evaluation board met at Wright-Patterson AFB to evaluate the 117L design studies prepared by RCA, Glenn L. Martin, and Lockheed Aircraft. Board found Lockheed as best qualified and recommended award of contract to Lockheed for development of WS 117L.
- 2 Apr 56 WDD published WS 117L Advanced Reconnaissance System Development Plan. R and D contract funds for system estimated at: FY 1956, \$7.0M; FY 1957, \$32.1M; FY 1958, \$75.6M.
- 22 May 56 WDD authorized to announce Lockheed selection, expend remaining Project 1115 funds on 117L. No other funds available at moment.
- 24 Jul 56 WDD Development Plan for WS 117L approved by Hq USAF.
- 3 Aug 56 USAF (DCE/D) issued Development Directive No. 85 on WS 117L, Advanced Reconnaissance System. WS 117L given 1A priority, 1-6 precedence rating. But "because of fund limitations, only \$3M of FY 1957 P-600 series funds are available to your Command to initiate this development."
- 28 Aug 56 WDD pointed out the effect of FY 1957 WS 117L fund limitations on WS 117L development, and requested \$21.9M additional FY 1957 funds for the program.
- 23 Oct 56 USAF again cited limitations on WS 117L P-600 funds. Guidance given WDD included: 1) prolong development, 2) maintain minimum balanced rate of development progress on vehicle and components instead of on Development Plan target completion dates. TWX stated that Headquarters attempting to reprogram \$7.M more P-600 FY 1957 funds.
- 29 Oct 56 USAF source selection board awarded prime contract on WS 117L to Missile Systems Division, Lockheed Aircraft (Contract AF 04(647)-97).
- 21 Nov 56 WDD submitted FY 1957 WS 117L fund requirements totalling \$17.8M in P-100 and 200 to DCE/D.
- 29 Nov 56 Secretary of the Air Force Donald Quarles was briefed on WS 117L status and program.

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10 Dec 56

Lt General D. L. Putt, DCS/D, informed ARDC that FY 1957 P-600 funds for WS 117L had been increased from \$3M to \$5M, and efforts were under way to reprogram \$5M more. For management planning, WSS should count on \$10M total P-600 for FY 1958 also. Other efforts would be made to get P-100 and 200 funds. Other guidance: 1) develop and test components, 2) do not make mockup until advised, 3) do not plan launch before FY 1961.

30 Jan 57

Commander, WDD, informed DCS/D that lack of FY 1957 P-100 and 200 funds was preventing procurement of materiel and equipment essential to maintaining a balanced system oriented development program, and that P-600 funds ceilings for FY 1958 were considered inadequate to meet the program minimum component development and test needs.

9 Feb 57

Answering a Department of Defense request, WDD furnished DCS/D with material on possible use of WS 117L as IGY satellite. Indicated it could be done at cost of \$66M by late 1958 or early 1959 if ATLAS development was satisfactory. WDD not enthusiastic about approach because of possible interference, short development time, order of confidence.

11 Feb 57

WDD warned LMSD that they had \$8.5M on contract through 30 June 1957, and that they should not overcommit.

6 Mar 57

ARDC received guidance letter from DCS/D, USAF on planning and funding requirements for WS 117L. Indicated that P-100 and 200 FY 1957 funds were over-programmed. Mention was made of Secretary Quarles' views regarding a definite slowdown, and emphasis on component development to insure greater success. No orbital testing was to be undertaken in development prior to January 1960. Development of WS 117L should be conducted along conventional lines. Establish a Weapons System Program Office at WDD. \$10M P-600 funds were available. For FY 1958, estimates were that a total of \$35M would be available for WS 117L.

2 Apr 57

WDD published Systems Development Plan, Advanced Reconnaissance System, WS 117L for various degrees of operational uses, 1960-1965. Funding needs estimated through 1965 totalled \$223.7M.

8 Jul 57

LMSD informed AFEMD* they needed \$7.9M to fund the WS 117L program between 15 August and 30 November 1957.

* Name of Western Development Division (WDD) was changed to Air Force Ballistic Missile Division (AFEMD) 1 June 1957.

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- 10 Jul 57 WS 117L assigned unclassified nickname New Horizon.
- 13 Aug 57 IMED informed by AFEMD that WS 117L FY 1958 funds totaling \$3.9M were available to carry the program through 30 October 1957. Adjust program accordingly.
- 21 Aug 57 AFEMD informed IMED that WS 117L FY 1958 P-600 funds could not exceed \$9.6M, with no more than 50% expended in the first six months.
- 3 Sep 57 AFEMD informed by DCS/D that only \$10M P-600 FY 1957 WS 117L funds were available, and as yet no P-100 or 200 funds, though efforts were being made. Limit activity to \$10M funds. Authority to mockup vehicles granted.
- 16 Sep 57 Air Council reviewed, approved WS 117L program as presented, approved go-ahead as fast as possible consistent with good management.
- 19 Sep 57 AFEMD submitted WS 117L FY 1958 and 1959 austere funding requirements to DCS/D. Stated that \$48M in FY 1958 would allow initiation of the flight test program by mid-CY 1958.
- 9 Oct 57 Following Sputnik, in answer to Hq USAF request as to efforts and resources required to accelerate the ICBM and IRBM, an estimate was made for WS 117L. AFEMD pointed out that a large amount of funds would be needed to regain lost time due to fund strictures and lack of firm program approval. With \$99.2M FY 1958 and \$121.7M FY 1959 funds program could be advanced six months to one year if priority were given effort.
- 10 Oct 57 AFEMD requested interim FY 1958 procurement authority of at least \$4M P-100 and \$1M P-200 funds by 25 October to prevent a work stoppage.
- 10 Oct 57 Secretary of the Air Force James Douglas approved the WS 117L program as presented to the Air Council as a planning objective, subject to Mr. Quarles' review.
- 15 Oct 57 \$35.1M (FY 1958) P-100 funds authorized WS 117L by DCS/D. Later (19 October) AFEMD told to limit obligations on this procurement authorization to \$15.5M through January 1958. This was rescinded in November. No P-200 funds to date.
- 16 Oct 57 DS/D Donald Quarles was again briefed on WS 117L, without resolution of need for acceleration.

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- 12 Nov 57 RAND Research Memorandum 2012, A Family of Recoverable Reconnaissance Satellites published. Prepared by M. E. Davies, A. H. Katz and others, it proposed using THOR plus Aerojet (second stage of Vanguard) as boosters.
- 27 Nov 57 AFEMD requested that ICBM/IRBM overtime policies be extended to WS 117L, replacing the existing 2% of programmed manhours overtime limitation.
- 20 Dec 57 Subsystem "G", WS 117L, (ICBM Attack Alarm) preliminary design completed. Fabrication of experimental payload units begun.
- 6 Jan 58 IMED submitted a program acceleration plan for WS 117L (IMED-2832) as requested by AFEMD in November 1957. Accelerated program was based on Thor-boosted early flight with a recoverable capsule as proposed by RAND. Flights to begin in late 1958. Increase manufacture of IMED vehicles. Atlas-boosted flights to begin in early 1959. General Schriever approved plan in principle, subject to reviews of special areas.
- 21 Jan 58 AFEMD notified that Assistant Secretary of Air Force (Material) had approved use of overtime on WS 117L "as may be necessary to meet the approved objective".
- 22 Jan 58 Program acceleration plan submitted. Plan included a photographic reconnaissance configuration of a Thor-boosted recoverable reconnaissance package.
- 23 Jan 58 Chief of Staff USAF approved acceleration of WS 117L program. FY 1958 funds would be provided when actually required.
- 29 Jan 58 Contract AF 04(647)-181 given IMED for Thor-boosted test vehicles. This became the DISCOVERER program.
- Feb 58 Hq USAF considered expanding Project Able to include WS 117L test vehicles. AFEMD recommended against this because 1) Able configuration not yet proven; 2) would disrupt Able schedules. After several successful launches, their use as WS 117L test vehicles could be reprogrammed if authority to proceed were given immediately.
- 3 Feb 58 President Dwight D. Eisenhower directed that highest and equal national priority be given to ballistic missiles, satellites and defense programs. (ICBM, IRBM, WS 117L, WS 224A)

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- 24 Feb 58 Secretary of Defense Neil McElroy approved in principle the proposed acceleration of WS 117L to be conducted under direction of ARPA. AFPMO to submit a development plan.
- 26 Feb 58 WS 117L Site Selection Board convened at AFPMO. Board chaired by Colonel F. C. E. Oder, members from AFPMO, SAC, AMC, Hq USAF. Board to select tracking and data acquisition sites for the system.
- 28 Feb 58 Mr. Roy Johnson, ARPA, in a memorandum to the Secretary of the Air Force concluded that:
- a. ATLAS/WS 117L Project should be accelerated and given highest national priority in order to attain IOC at earliest date.
 - b. Thor-boosted interim reconnaissance system with light-weight recoverable capsule was a duplication of "a." Do not pursue this program.
 - c. To attain early flights of Lockheed second stage, Air Force may find it desirable to use Thor-boosted test firings. Thor boosters cheaper and available sooner than ATLAS, also could be used with second-stage Lockheed vehicle for experimental recovery flights with animals.
- Mar 58 AFPMO activity in interim visual reconnaissance program (II A) terminated in accordance with Mr. Johnson's message of 28 February.
- 4 Mar 58 Chief of Staff, USAF, directed that WS 117L and other space projects which depend on the use of IC/IREM's be administered in same manner and with same procedures as IC/IREM programs. ("Gillette procedures"). AFPMO to be central point of contact, coordination. Approved development plans would constitute action documents.
- 4 Mar 58 OED approved acceleration of WS 117L to include launching satellite test vehicles based on THOR booster.
- 12 Mar 58 Lockheed notified that Hq USAF had disapproved the WS 117L recoverable reconnaissance payload program. (WS 117L Program IIA). LMSD notified to reorient THOR-boosted WS 117L program for acceleration using THOR-boosted flights for early WS 117L tests--orbital flights for exercise of ground-space communication network, concept for recoverable capsule, for aero-medical research flights.

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- 14 Mar 58 AFMBC reviewed accelerated WS 117L program, agreed on use of THOR booster for system test in orbital satellites.
- 19 Mar 58 AFMBC informed that all statements on the nature and timing of ARPA missile and satellite projects will come from OSD.
- Apr 58 AFMBC requested by USAF to revise 15 March WS 117L Development Plan financial annex to downward from \$214M to \$152M. Keep program flexible.
- Apr 58 Biosatellite programs added to Advanced Reconnaissance System--recoverable capsule.
- Apr 58 UMDE engine development initiated.
- 28 Apr 58 DOD directed interchange of technical information and visits on satellites and space programs between US Army and Air Force up to SECRET. Refer other cases to headquarters.
- 30 Apr 58 NORAD expressed interest in infrared capability of WS 117L as an air defense attack alarm against ICBM launches.
- May-Jun 58 Ft Stevens, Oregon, selected as location of WS 117L NW tracking and data acquisition station.
- May 58 Advanced Reconnaissance System renamed SENTRY.
- 9 May 58 Lt General Francis H. Griswold, V/CinC/SAC, in a letter to Commander ARDC, pointed out that SAC enthusiastically supported WS 117L. Reconnaissance features a tremendous potential, especially infrared, photographic, electronic. Also a requirement for a communications satellite, high altitude (22,000 miles) advanced surveillance systems.
- 19 May 58 Cognizance over WS 117L assigned to ARPA. (DOD Directive 3200.5)
- 19 May 58 Subsystem "G" (ICBM Attack Alarm) Engineering Analysis completed.
- 21-22
May 58 First meeting, ARS Weapon System Phasing Group.
- 20 Jun 58 USAF informed major commands that WS 117L carried highest national priority, DX rating of .011 Brickbat, precedence rating of 1-1. Informed commands that field activities would begin in early 1959.

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- 30 Jun 58 ARPA Order No. 9-58 issued. Announced Sec Defense had approved the assumption of responsibility for the Advanced Reconnaissance System (WS 117L) by ARPA. AFMSD to continue the project: to submit a detailed development and financial plan to ARPA. \$22.7M made available initially.
- 1 Jul 58 AFMSD Advanced Reconnaissance System (WS 117L) "New Horizon" Development Plan published. Funding program FY 58, \$60M; FY 59, \$215M, later revised to FY 58, \$67M; FY 59, \$198M. Plan contained both THOR-boosted version for component test and demonstration of orbital capability, and ATLAS-boosted reconnaissance program.
- Jul 58 Initial arrangements made by AFMSD to organize a unit capable of aerial recovery of WS 117L capsules. 9/CI19J aircraft to be used. "Aerial Snatch" called Project Hot Hand. Aircraft to come from TAC, 6593d Test Squadron (Special) activated by ARDC GO 38, effective 1 August 1958. Unit to be based at Hickam AFB.
- Jul 58 WS 117L Site Selection Board selected NE tracking and data acquisition station site at New Boston Gunnery Range, N.H. Only site which met criteria and BOD needs.
- 8 Jul 58 ARPA noted to Secretary of Defense that the question of the operating agency for WS 117L should be reviewed in the light that many agencies have an interest in the information.
- Jul 58 ARPA expressed interest in features of WS 117L (subsystem "G") as an infrared attack alarm system.
- 15 Jul 58 ARPA directed that monthly and quarterly progress reports on WS 117L be forwarded directly to them. Form prescribed by ARPA.
- 17 Jul 58 ARPA Order No. 9-58 funds increased to \$30.7M to purchase four WS 117L upper stages. (Amendment No. 1)
- 18 Jul 58 Air Force authorized by ARPA to procure long lead time items to support THOR-WS 117L firing schedule which is to begin in November 58.
- 20 Jul 58 ARPA requested briefing on WS 117L with special reference to applicability of subsystems and components to other uses such as communications, weather, and scientific measurements, use of ground components for general satellite tracking. Also wanted information on advanced reconnaissance satellite--engines, television, infrared, power supplies.

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- 20 Jul 58 Director, ARPA, informed Sec Air Force \$215M was programmed for WS 117L in FY 1959. \$30.7M available to AFEMD. Balance subject to Congressional action, BOB apportionment. Total included bio-medical project. AFEMD informally requested to submit a new development and funding plan within these limitations, and to indicate how they would use more money if additional funds are available.
- 22 Jul 58 ARDC GO No. 38 designated and organized 6593d Test Squadron (Special)--purpose - for aerial recovery of satellite payloads. (In place of AFFTC for training, Aug-Dec 58, then to Hickam AFB, Hawaii.) Squadron assigned to Det #2, ARDC, AFEMD, for administrative and operational control.
- 22 Jul 58 Ottumwa, Iowa (Naval Air Station) picked for location of WS 117L Central Tracking and Data Acquisition station.
- 28 Jul 58 AFEMD held technical review of Attack Alarm System. Probability of success quite high.
- Aug 58 New Boston Bombing Range, Grenier AFB, N.H., approved as site of Northeast tracking and data acquisition station.
- 4 Aug 58 ARPA Order No. 9-58 funds increased to \$50.7M. (Amendment No. 2).
- 5 Aug 58 Procurement of long lead time items authorized. THOR-WS 117L vehicle procurement increased an additional 9 over the 10 authorized to a total of 19. Intent to utilize these for bio-medical and other measurements of space phenomena. Prepare new development plan based on \$215M FY 1959 ARPA program.
- 22 Aug 58 AFEMD established a Management Survey Team to look into all aspects of WS 117L Program Management at IMED, IAC. (ARDC SO M-770)
- 25 Aug 58 ARPA Order No. 9-58 funds increased to \$70.7M. (Amendment No. 3).
- Sep 58 WS 117L interim tracking and telemetry facilities beneficially occupied at Vandenberg AFB, California; Naval Air Station, Pt Mugu, California; Kaena Point, Oahu, Hawaii; Annette Island, Alaska; Kodiak Island, Alaska.
- Sep 58 Former Naval Air Station at Ottumwa, Iowa, approved as the site of the WS 117L central tracking and data acquisition station.

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- 15 Sep 58 AFMMD published Advanced Reconnaissance System (WS 117L) Development Plan. Contained both THOR and ATLAS-boosted phases of program. Funding program, FY 59, \$231M; FY 60, \$296M. Plan is profusely illustrated and explanatory in detail.
- 15 Sep 58 AFMMD published SENTRY Operational Annex to Advanced Reconnaissance System Development Plan. Contained operational concept, command responsibilities, system characteristics. Operations, personnel and training, logistics, facilities, schedules, funding program.
- 17 Sep 58 AFMMD recommended acceleration of Attack Alarm Development. Development Plan prepared which included: August 1959 first test launch and January 1961 first operational launch.
- 17 Sep 58 ARPA requested that term SENTRY instead of WS 117L be applied to Atlas Operational Capability previously designated as Pioneer visual, Pioneer ferret. Budget these separately, budget rest of program as improved military space systems.
- 22 Sep 58 General Power, CINCSAC, briefed on Attack Alarm Development Plan. General Anderson, ARDC, Air Force Ballistic Missile Committee and Air Force Staff briefed on Attack Alarm Development Plan.
- 23 Sep 58 In a personal TTX, General Power informed General LeMay that he was distressed over the reluctance of agencies to support an early reconnaissance and infrared attack alarm features of WS 117L.
- 25 Sep 58 ARPA Order No. 9-58 funds increased to \$136.2M. (Amendment No. 4).
- 25 Sep 58 Attack Alarm Development Plan transmitted to ARPA.
- 25 Sep 58 Director, ARPA, informed AFMMD he was not able to approve current SENTRY Development Plan. Reasons: AFMMD FY 1959 funding plan exceeded ceiling of \$215.M; achievements of major program objectives have been substantially delayed in spite of proposed funding level increases; FY 1960 budget is in excess of a considered realistic funding level. ARPA sent an Ad Hoc Project Group out to investigate, evaluate and recommend.
- 27 Sep 58 GOR No. 80(SA-2c) amended to include specific requirement for ICBM warning and tracking.

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- 29 Sep 58 Responsibility for execution of ARPA Order No. 9-58 transferred from Commander AFEMD, to Commander ARDC. (Amendment No. 5)
- 3 Oct 58 ARPA Ad Hoc Committee advised contractor that Attack Alarm would not be supported as part of SENTRY program.
- 7 Oct 58 In a personal message, General LeMay informed General Power that the Air Staff was solidly behind WS 117L, but basic budgetary restrictions prevented reprogramming response to this problem in a manner similar to wholly Air Force programs. In his opinion ARPA was also sympathetic but was suffering under the curse of an arbitrarily imposed financial ceiling. Assured General Power that USAF was providing support for ICBM Attack Alarm System.
- 8 Oct 58 AFEMD informed ARDC of ARPA apparent intent not to fund Attack Alarm development during FY 1959.
- 10 Oct 58 ARPA directed AFEMD to cancel all actions in WS 117L SENTRY program directed toward an ATLAS launch capability at AFMTC, but not to cancel boosters since they may be used at Vandenberg AFB.
- 10 Oct 58 AFEMD informed ARDC that \$1.8M required to continue Attack Alarm from 15 October thru 15 December.
- 14 Oct 58 Hq USAF directed work continue on Attack Alarm development with funds to be provided.
- 24 Oct 58 Hq USAF provided Attack Alarm funds required to continue program to 15 December.
- 27 Oct 58 General Partridge briefed on Attack Alarm Development Plan.
- 1 Nov 58 DCS/D authorized \$2.4M FY 1958 P-244 funds for WS 117L.
- 5 Nov 58 ARPA Order No. 38-59 proposed THOR-boosted flight to test Attack Alarm payload, ARPA funds program \$.75M for period November thru January 1959. The study and development begun as subsystem "G" of WS 117L was to be continued in accordance with order as an independent project to result in an orbitally flight tested missile defense alarm satellite. (MIDAS).
- 17 Nov 58 ARPA Order No. 41-59 authorized the design and construction of Sentry launch complex at Pt Arguello at \$6.65M.

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- 20-21
Nov 58 Strategic, Air Defense and Reconnaissance panels of Weapons Board briefed on capability of MIDAS system.
- 25 Nov 58 ARPA directed ARDC to eliminate two of the small primate shots from the DISCOVERER test series. Two mouse, and one small primate shot were authorized. The two cancelled small primate boosters were to be reassigned.
- 4 Dec 58 Mr. Roy W. Johnson, Director, ARPA, informed the Under Secretary of the Air Force that a program to develop a number of systems and techniques which would be employed in the operation of space vehicles had been inaugurated. This program, to be known as DISCOVERER, was to include THOR launchings associated with WS 117L plus other similar projects not operationally oriented. DISCOVERER-THOR costs were to be separated from WS 117L program (SENTRY). Separate development plans and progress reports were to be made for each. Tentative reallocation of funds were as follows: DISCOVERER, FY 1959, \$108M; FY 1960, \$60M. SENTRY, FY 1959, \$10M; FY 1960, \$100M. Secretary of Defense and ARPA agreed to assign IOC for SENTRY to ARDC "for the next several years and until final objectives are obtained." Tentative "centers" for the program were to be operated by ARDC.
- 5 Dec 58 Mr. Roy W. Johnson, Director, ARPA, informed Under Secretary of the Air Force that reorientations of the DISCOVERER and SENTRY programs were proposed, and a study and review would be made. For this review, Air Force was to assume that \$213.3M was available in FY 1959 and \$160M in FY 1960. AFPM should not exceed these resources. In areas where cancellations were contemplated, no procurements beyond those absolutely necessary should be made.
- 7 Dec 58 Mr. Roy W. Johnson revised his 25 November 1958 letter concerning biomedical payloads for DISCOVERER program to provide for one successful primate recovery up to a total of three attempts, if necessary and desired, to be in lieu of payloads in the series of 13 flight vehicles.
- 11 Dec 58 Responsibility for execution of ARPA Order No. 9-58 transferred from Commander, ARDC to Secretary of the Air Force (Amendment No. 6).
- 11 Dec 58 AFPM informed USAF that \$9.3M was needed to continue Super "G" Attack Alarm (MIDAS) from 15 December 1958 to 15 February 1959.

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- 15 Dec 58 Hq USAF funded MIDAS \$1.5M for 15 December thru 15 January 1959.
- 15 Dec 58 AFMND briefed AF and ARPA on WS 117L reorientation in response to 4, 5 December ARPA directives. AFMND also submitted alternate program reorientation suggestions.
- 16 Dec 58 ARPA Order No. 48-59 to Sec AF requested Sec AF to continue study, development, and launch operations originally associated with the THOR phase of SENTRY program under ARPA Order No. 9-58, as an independent project identified as DISCOVERER-THOR Project. Earlier costs will be transferred to the new project. Prepare a new financial plan by 15 January 1959.
- 17 Dec 58 Mr. Roy Johnson, in a memorandum for the U/Sec AF, stated that the fundamental objectives of the ARPA SENTRY R and D program should be development of improved area reconnaissance with recovery techniques, point reconnaissance development. Surveillance should be based on planned film readout, reconnaissance on film recovery. Fly recoverable ATLAS-boosted capsule early in 1961, with surveillance camera system in mid-1961. Funds for ARPA SENTRY: FY 59, \$215M; FY 60, \$160M. 1959 figure includes 13 DISCOVERER flights. To meet fund limitations, USAF requested to delete: 1) high energy fuels program for second stage; 2) development and test of 6 readout cameras and to consider use of recoverable ATLAS space vehicle as test bed for surveillance camera and ferret systems; and to consider use of ATLAS with 1960 operational recovery program for additional uses, etc. Mr. Johnson announced that ARPA supported USAF proposed operational program as presented.
- 19 Dec 58 Amendment No. 1 to ARPA Order 41-59 authorized construction of a Guided Missile Assembly Building for SENTRY program at Vandenberg AFB site. Increased funds from \$6.65M to \$9.82M.
- 19 Dec 58 Air Force contracts with LMSD (-97, -181) combined.
- Late Dec 58 First THOR boosted DISCOVERER on pad at Vandenberg AFB awaiting launch.
- Dec 58 - Jan 59 Intense activity at AFMND in separating various phases of the WS 117L program, preparing separate development plans on THOR-DISCOVERER, SENTRY, MIDAS, and CARROUSEL phases of the program.

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- 15 Jan 59 Hq USAF funded MIDAS \$1.5M (P-600) for 15 January 1959 thru 15 February 1959.
- 19 Jan 59 Amendment No. 7 to ARPA Order 9-58 increased available WS 117L funds from \$136.2M to \$138.2M.
- 21 Jan 59 First launch attempt of a DISCOVERER from Vandenberg AFB. Launch terminated at T-60 by premature firing of the ullage rockets. Both the satellite vehicle and the THOR booster suffered damage. Launch date was set back to late February.
- 28-30
Jan 59 Mr. McIntyre, Mr. Johnson and Air Staff briefed on proposed joint ARPA/USAF development of MIDAS.
- 30 Jan 59 AFM&D published four new development plans--DISCOVERER, MIDAS, SENTRY and CARROUSEL. Plans in accordance with ARPA-directed reoriented program.
- 2-4 Feb 59 Hq USAF, ARDC and ARPA briefed on DISCOVERER, SENTRY and CARROUSEL Development Plans. The proposed CARROUSEL was removed from further consideration.
- 12 Feb 59 Mr. McIntyre in a memorandum for Secretary of Defense re-emphasized Air Force position as to the urgency of the development of the MIDAS system and stated that the Air Force considered MIDAS to be of highest priority. Mr. McIntyre recommended that the SAF approve the fund augmentation requested by the ARPA stating ARPA's request for emergency funds for MIDAS be considered as a prior claim to any Air Force requests for emergency funds.
- 16 Feb 59 Amendment No. 1 to ARPA Order 48-59 approved "in general" the DISCOVERER program as presented to the ARPA on 4 February 1959. The approval authorized a 13-vehicle program and made available \$104.3M for FY 1959.
- 16 Feb 59 Amendment No. 8 to ARPA Order 9-58 approved "in general" the reoriented SENTRY program as presented to the ARPA on 4 February. Total funds authorized on ARPA Order 9-58 were decreased from \$148.2M to \$96.6M for FY 1959.
- 17 Feb 59 ARPA Order 60-59 made \$1.1M available to defray the cost of modification and operation of the downrange telemetry ship, Pvt Joe E. Mann, thru 30 June 1959. The order announced that effective 1 July 1959 operational and funding responsibility for the ship would be transferred to the Pacific Missile Range.

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- 28 Feb 59 DISCOVERER I-163-1022 successfully launched at 1349 hours from Vandenberg AFB.
- 2 Mar 59 Amendment No. 1 to ARPA Order 38-59 approved, subject to review, Phase I only of the MIDAS program and increased available funds under the order from \$.75M to \$8.0M. Instructions were given to AFEMD to submit plan for the procurement of ATLAS boosters and space vehicles for Phases II and III, long lead time items.
- 18 Mar 59 AFEMD directed by AFABF to hold the six boosters removed by ARPA in Amendment 1 to ARPA Order 48-59, (Program reduction from 19 to 13) on production, notify AF when funds for these six were required.
- 24 Mar 59 Amendment No. 2 to ARPA Order 48-59 approved the development and funding plan dated 30 January 1959 for the DISCOVERER Program. The approval provided for a 13-vehicle program.
- 3 Apr 59 Amendment No. 10 to ARPA Order 9-58 approved the AFEMD SENTRY Development Plan of 30 January 1959 "to the extent it pertains to payload programs of visual readout visual recovery, and ferret readout".
- 10 Apr 59 Amendment No. 4 to ARPA Order 17-50 directed AFEMD to modify the Ball-Hustler stage to obtain dual burning capability, simplify guidance and control, and structures to contain payloads of arbitrary shapes that may be carried; increase propellant capacity (\$5.1M). Deliver and launch at Pacific Missile Range two THOR-HUSTLER vehicles suitable for 215 pound TRANSIT #2 payload in 400 n.mi. circular orbit.
- 13 Apr 59 DISCOVERER II launched from Vandenberg AFB. Satellite orbited, but because of cumulative adjustment of the orbital ejection timer, the capsule was probably ejected in the Spitzbergen, Norway, area. An unsuccessful area search (terminated 22 April) was conducted.
- 16 Apr 59 By ARPA Order 38-59, Amendment No. 3, Phase I of the MIDAS Development Plan (FY \$20.2M) was approved. Program objective strongly reoriented to give priority to quantitative scientific and engineering data, with objective to predict success or failure of an operational alarm system, improvement and design.

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- 1 May 59 AFMMD submitted DISCOVERER Development Plan dated 30 April to Mr. Malcolm A. MacIntyre, Under Secretary of the Air Force. Major change over earlier 1 January plan was addition of ten flights, making a total of 25 flights.
- 8 May 59 Mr. M. A. MacIntyre, Under Secretary of the Air Force, requested that the Secretary of Defense designate the Air Force as service responsible for operational employment and utilization of the MIDAS system.
- 18 May 59 AFMMD informed by AFDAT that WB 117L had been removed from Master Urgency List, and DISCOVERER and SENTRY put on it with DX ratings. Action was underway to obtain (from NBC or NASC) a DX rating for MIDAS. AF priority for all three programs remained as 1-A with 1-1 precedence.
- 20 May 59 Amendment No. 4, ARPA Order 48-59 approved DISCOVERER Development and Funding Plan dated 30 April 1959, on the 25-vehicle program. Funds were increased from \$104.3M to \$121.9M.
- 20 May 59 Amendment No. 4 to ARPA Order 38-59 increased funds for MIDAS from \$10.8M to \$22.8M.
- 26 May 59 ARPA directed that the mapping program be deleted from SENTRY. IMED notified.
- 3 Jun 59 DISCOVERER III launched from Vandenberg AFB. Failed to achieve orbit because of less than nominal second stage performance and incorrect Pt. Mugu radar data indicating firing time. Data was received on the four mice passengers.
- 24 Jun 59 AFMMD was informed that ARPA had laid down ground rules for the initial FY 1960 budget determination. These were: SENTRY \$135.M, with SENTRY recovery program (\$25M) to be deferred pending review; DISCOVERER, \$35.M for extension and completion of the series; MIDAS \$18.M ARPA funds, with assumption Air Force will fund \$28.9M when Phase II was approved. No increments to the above funds were available. AFMMD was to submit revised development plans based on the above instructions. Until FY 1960 appropriations word was received, funds would be on a monthly basis.
- 25 Jun 59 DISCOVERER IV launched from Vandenberg AFB on a Polar orbit. While the launch was successful, the vehicle failed to achieve orbit because of less than normal second stage performance.

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- 15 Jul 59 Revised DISCOVERER, SENTRY, MIDAS development plans submitted to ARPA, as required in 24 June instructions.
- 20 Jul 59 ARPA, USAF, ARDC, briefed on programs outlined in the revised development plans.

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FROM: (Activity transferring documents)

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DOCUMENT

DATE	PACKAGE NUMBER	CONTROL NUMBER	SUSPENSE DATE
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CLASSIFICATION	FILE DESIGNATION		
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INTERNAL ROUTING			
TO	DATE	TO	DATE
Hoffman	10/2	4. SAUER-P	28 Feb 61
1. Ford	10/2	5. Maj Guy	28 Feb 61
2. Flats	10/2	6. FILE	

DATE DISPATCHED 2 Oct 59

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CHRONOLOGY - 1. Short Historical Explanation, WS 117L, Miscoverer, Sentry, and Midec Chronology, 1946-1959 17pp

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