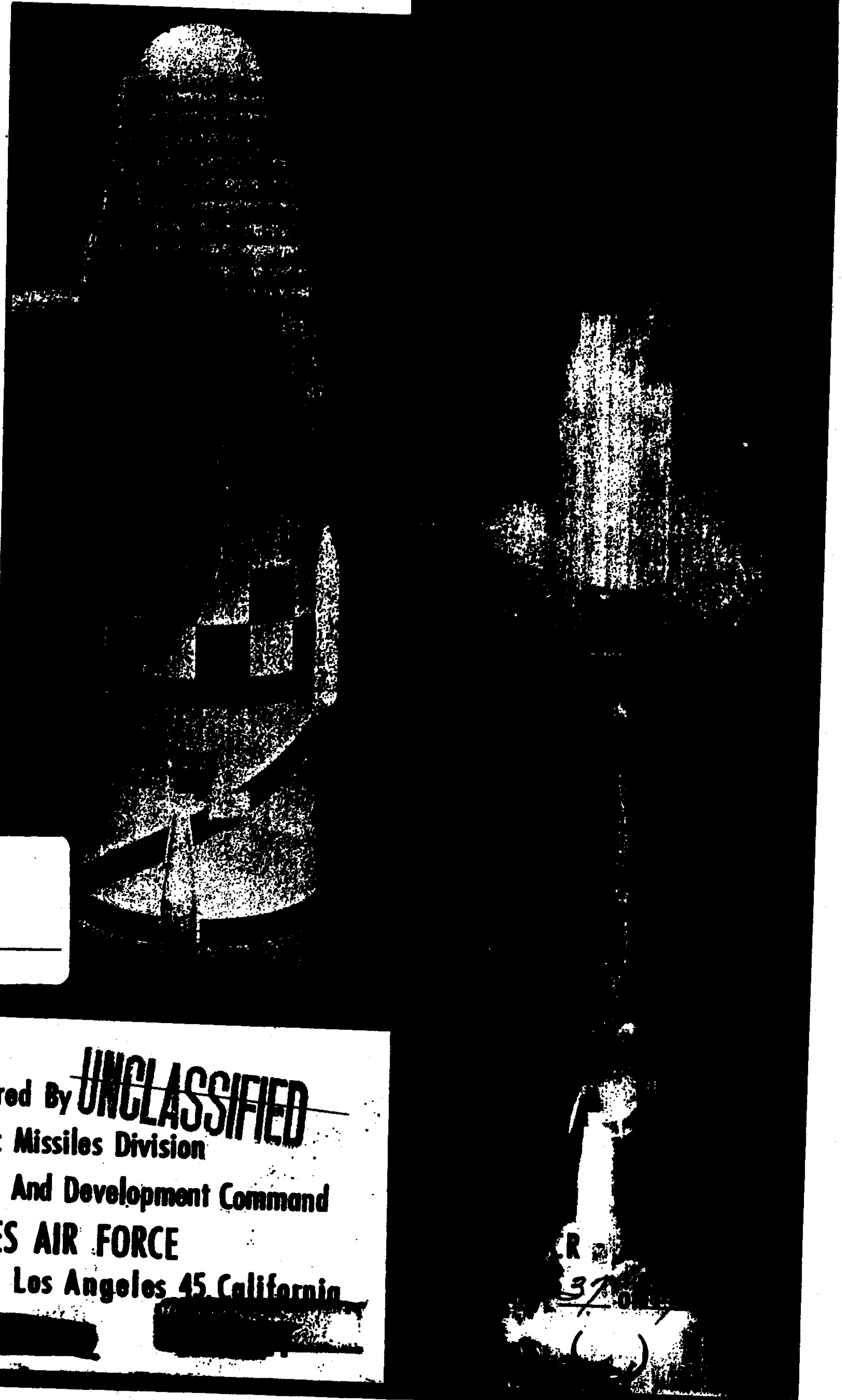
[redacted] [redacted]

MILITARY SATELLITE PROG

FOR QUARTER ENDING 30 SEPTEMBER, 1959

RCS DD-SD (M) 242



DECLASSIFIED IAW E.O. 12958
REVIEWED
BY [signature]
DATE [handwritten date]

Prepared By UNCLASSIFIED

Air Force Ballistic Missiles Division

Headquarters Air Research And Development Command

UNITED STATES AIR FORCE

Air Force Unit Post Office Los Angeles 45 California

[redacted] [redacted]

[redacted]

Figure 4. Mockup of panel configuration for Ferret Reconnaissance (F-2) Command Console.

[redacted]

AIR FORCE BALLISTIC MISSILE DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
UNITED STATES AIR FORCE
Air Force Unit Post Office
Los Angeles 45, California

WDPCR

8 October 1959

MILITARY SATELLITE PROGRAM PROGRESS REPORT
Quarter Ending 30 September 1959
RCS DD-SD(M) 242

FOREWORD

During this reporting period the Military Satellite Program passed a significant milestone in the successful flights of DISCOVERERS V and VI. All program objectives, except recovery of capsules, were achieved. Both flights provided added demonstrations of the already proven reliability of the THOR booster. Performances of the AGENA upper stage vehicle were entirely as planned, providing complete confidence in this Research and Development satellite in its application toward more sophisticated programs.

The SENTRY Program was redesignated the SAMOS Program by ARPA direction. The recovery capability was re-included as one of the Programs' major objectives.

Reorientation of the MIDAS Program combined Phases I and II into a single, 10-vehicle, R&D phase.

Funding problems and absence of approval of total programs including long range advanced objectives, continue to hamper orderly program accomplishment.

for O. J. RITLAND
Maj. Gen., USAF
Commander

WDPCR-78

[redacted]

[redacted]

[redacted] [redacted]

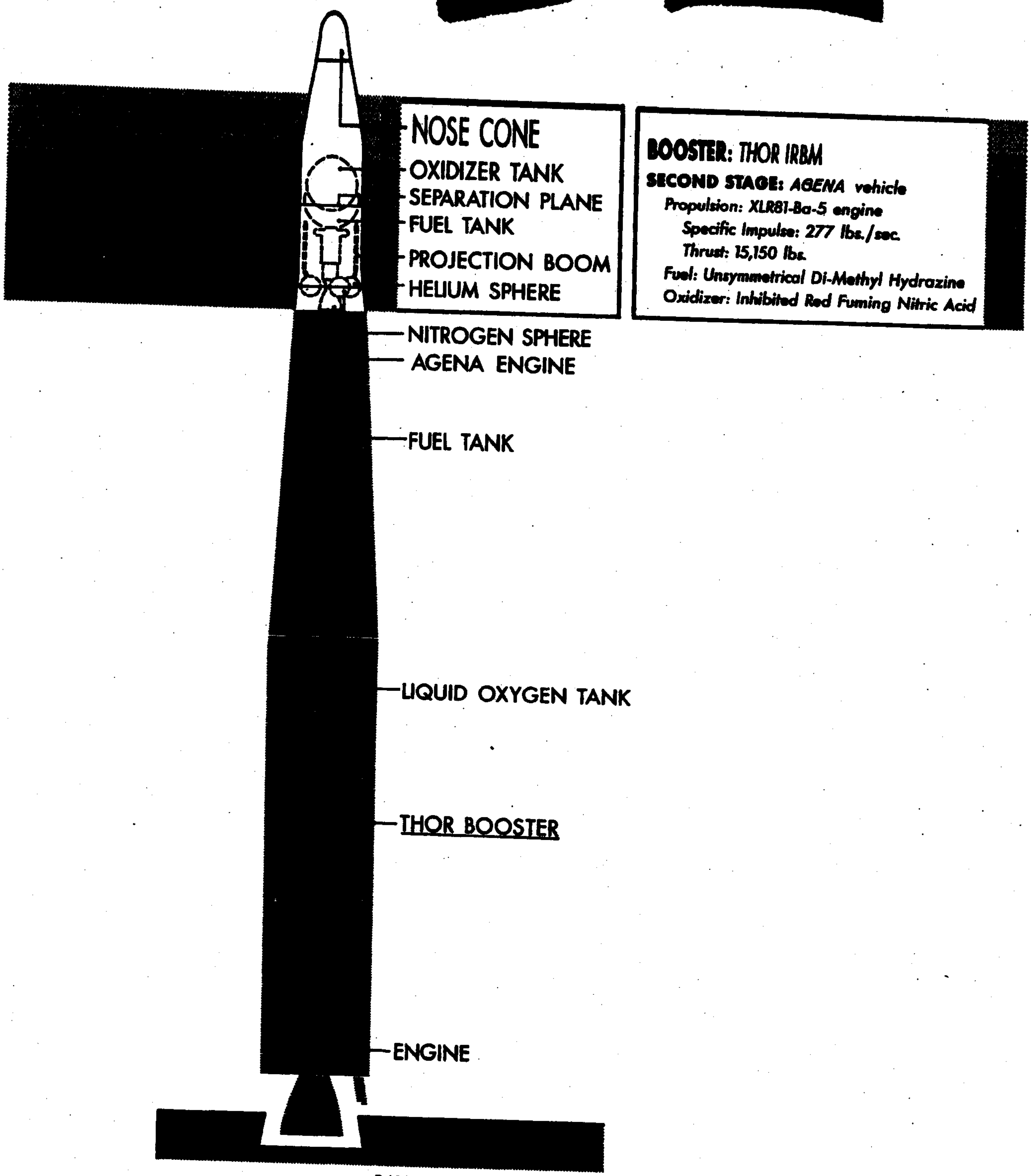
DISTRIBUTION

Advanced Research Projects Agency	7
Headquarters, United States Air Force	12
Air Research and Development Command	2
Strategic Air Command	1
Air Force Cambridge Research Center	1
Rome Air Development Center	2
Wright Air Development Center	1
Air Force Ballistic Missile Division (ARDC)	19
Ballistic Missiles Center (AMC)	4
Assistant CINCSAC (SAC MIKE)	2
Air University Library	1

[redacted]

[redacted]

[redacted]



PAYLOAD OBJECTIVES

[redacted] [redacted]

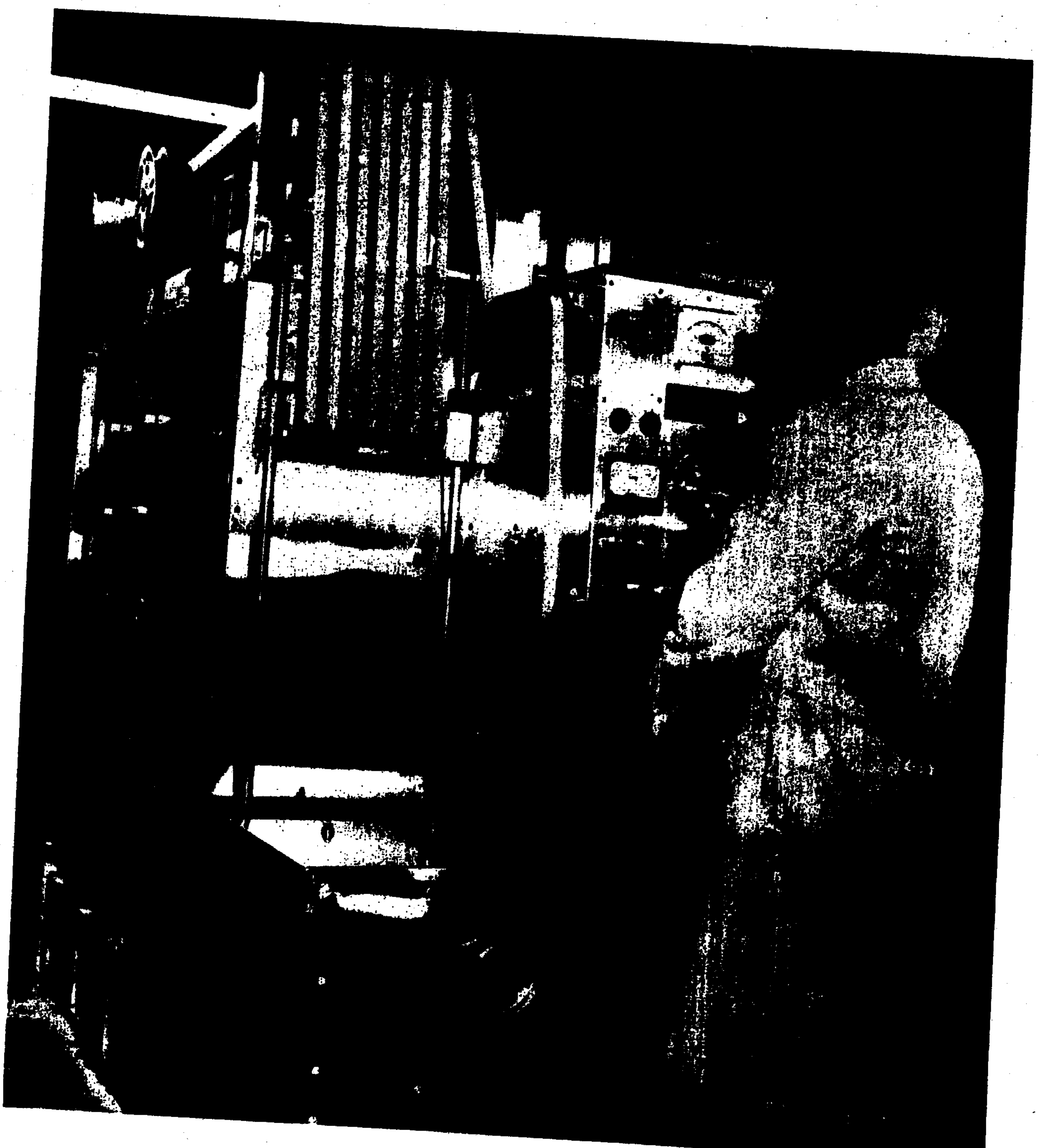
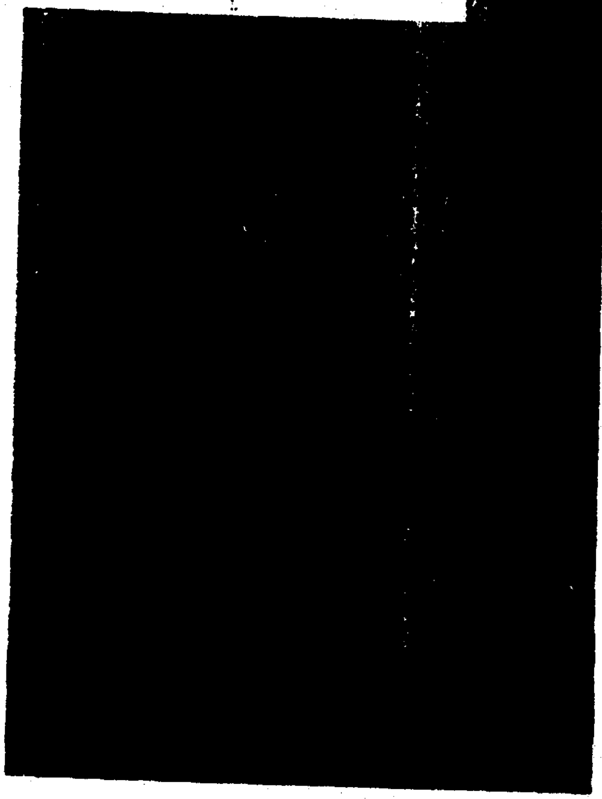


Figure 6. Primary Record Processor - a high speed, spry type 35mm film processor capable of handling 100 feet of fil[illegible]

[redacted]



DISCOVERER PROGRAM

I. GENERAL

Six successful launches to date

Six launches have been made in the DISCOVERER Program to date. Four of these were successful in attaining orbit following excellent booster and second stage performance. DISCOVERERS III and IV also achieved all flight parameters but did not attain orbit due to a slightly less than nominal second stage velocity.

Figure 1. DISCOVERER V prior to erection on launch pad (above) and during launch preparations (top left).

[redacted]

[redacted] [redacted]

The capsule separated, but the recovery aids failed to function due to battery failure caused by low temperatures.

Telemetry indicates that the capsule separated as planned. However, capsule temperatures were so low that the battery used to initiate the recovery sequence could not have functioned. The failure was attributed to this temperature condition.

DISCOVERER VI successfully launched on 19 August.

DISCOVERER VI (Figure 2) was launched successfully from Vandenberg AFB on 19 August. All launch equipment functioned as planned. Orbital tracking of the satellite was satisfactory. However, intermittent malfunctions of the orbital timer command control caused the expected capsule re-entry point to shift 366 nautical miles to the south. The RC-121 aircraft were able to redeploy for the expected capsule re-entry, but the C-119 aircraft and surface vessels could not redeploy in time. No positive indication of capsule re-entry was obtained. The paint on the nose cone was removed to raise capsule temperature, but the temperature rise was only 10°; still below the 40° required for successful battery operation. Since the temperature sensors in the AGENA vehicle did not react to indicate retro rocket firing, it is not known if the rocket fired. The space track station at Laredo, Texas, reported skin-tracking two objects during pass 75, but the cause for failure cannot definitely be established.

Both flights provide invaluable data for top priority space programs.

Even though the capsule recovery experiment failed, these flights were of great value in testing the AGENA vehicle. This satellite vehicle will be utilized with more powerful boosters in the Advanced Military Reconnaissance Satellite programs. The AGENA performed extremely well on both flights as did the satellite propulsion system. The

[redacted]

[redacted]

guidance and stabilization system, controlled by a horizon scanner, functioned as planned. The satellite reoriented to a nose-backward position as programmed on both flights and stabilization was satisfactory. This lends confidence to the success of future programs which will use this satellite.

II. TECHNICAL STATUS

The DISCOVERER flight test program has been halted pending study of recovery aid failures and corrective action required.

An intensive study has been conducted to determine the cause for failure of the capsule recovery aids (telemetry beacon and parachute) on DISCOVERER flights V and VI. The studies concluded:

1. Additional telemetry is required to provide positive indication of the sequential recovery occurrences.

2. To obtain this telemetry, the tracking and telemetry ship, Joseph E. Mann, must take station at a point at which it is able to track the vehicle during the time of capsule separation.

3. Temperatures in the recovery capsule must be stabilized at the desired value.

DISCOVERER VII will be modified as indicated by the results of the study.

The recovery capsule of DISCOVERER VII is being equipped with heaters, to control capsule temperature, and with additional telemetry. This telemetry (Figure 5) will provide positive indication of the sequence of events during capsule separation and operation of the recovery aids. The capsule beacon will be turned on prior to separation, and will broadcast throughout the entire re-entry trajectory. The new telemetry beacon will also provide a backup capability for tracking the capsule. The two surface vessels to be on station in the recovery area are being equipped with additional antennae and receivers to provide additional tracking data.

AGENA vehicle modified for optimum performance with restart engine.

The fuel tank capacity of the AGENA vehicles scheduled for use on flights 18 through 25 has been doubled. This, in conjunction with an engine restart capability, will provide a substantial increase in weight/altitude performance.

A laboratory has been established for testing and evaluation of failed parts.

A reliability and analysis laboratory has been established at Lockheed Sunnyvale. This laboratory will provide a controlled environment for determining the reason for failure of parts, and a facility for environmental and shock testing of new design components.

III. WORK SCHEDULES

All single-burn AGENA configurations are in "pipeline".

The last of the seventeen single-burn satellites has been released from manufacturing. It is now in the "pipeline" between modification and checkout at Sunnyvale, Santa Cruz Test Base (SCTB), and Vandenberg AFB.

Next satellites are currently being prepared for launch at Vandenberg AFB.

In addition to DISCOVERER VII, four vehicles are presently undergoing functional tests at Vandenberg AFB. These constitute presently planned launch vehicles through DISCOVERER XI.

The Santa Cruz Test Base is operating on a busy schedule.

During the report period, pre-acceptance testing of satellite vehicles continued with hot engine firings, inspections, and functional component checks. Two vehicles are currently at SCTB. One is to be erected for testing. The other is being evaluated for acceptance, after incorporation of outstanding Engineering Orders.

[redacted] [redacted]

Modification and Checkout Center prepares three vehicles for test and launch.

Three DISCOVERER vehicles are currently at the Modification and Checkout Center. One is in the systems check position, about 70 percent complete. The other two have been accepted by the Air Force after hot firing at Santa Cruz Test Base and are scheduled for re-shipment to Vandenberg AFB.

IV. FACILITIES

See SAMOS and MIDAS sections.

[redacted]

3. Comparative data which demonstrate the difference between the two flights include: (a) main engine burning duration 158.5 and 163.4 seconds, (b) total thrust at liftoff as indicated by chamber pressures of 151,000 vs 153,000 lbs, (c) average fuel flow rate of 188 lbs/sec and 205 lbs/sec, (d) vernier thrust of 1060 lbs vs 1065 lbs, (e) propellant utilization of 99.8 percent against between 99.9 and 100 percent.

[redacted] [redacted]

SUMMARY

1. During this quarter the DISCOVERER Program provided reassurance in the following three areas:

A. PROGRAM MANAGEMENT. Maintenance of a flexible system of scheduling permits, but monitors closely, slippages, holds, or revision when necessary to achieve long term objectives on schedule. This was demonstrated by the rescheduling of DISCOVERER V and VI launch dates. When DISCOVERER flights III and IV did not attain orbit the decision was made to discontinue further flight tests for study of the problems involved. The problems were defined, necessary modifications were incorporated, and the subsequent flights have attained orbits very close to those planned.

B. TESTING AND DATA EVALUATION. The failure of DISCOVERERS III and IV to attain orbit was attributed to slightly less than nominal first and second stage performance. Modifications were designed to upgrade performance and subsequently incorporated into the booster and satellite. Test procedures used were proven valid within close margins by the flights of DISCOVERER V and VI. A comparison of performance figures for DISCOVERERS IV and VI is given in TABLES 1 and 2.

C. BASIC DESIGN AND FABRICATION. The validity of design, engineering, and fabrication have been proven by four successful flights out of six attempts. The two failures were not caused by malfunction of the booster or satellite subsystems. This record was established even though these satellites are by far the heaviest ever attempted in the U.S. with any type of missile.

2. Data evaluation from the DISCOVERER IV flight indicated that increased performance must be obtained by (a) weight reduction, (b) use of RJ-1 in lieu of RP-1 fuel as a THOR propellant, and (c) use of a launch azimuth of 170 instead of 175 degrees. The weight saving was effected by the deletion of structural and mounting components used on THOR IRBM's but not required for space missions. Weight was reduced by approximately 100 lbs. Burning time of the THOR booster was increased by the use of the more dense RJ-1 fuel. Use of a slightly more easterly launch azimuth also contributed to the attainment of increased overall flight performance.

[redacted] [redacted]

[redacted]

TABLE 2. Propulsion System Performance (DISCOVERER IV vs DISCOVERER VI)

	Nominal Values	Actual Values	
		Based on flow rate and acceleration data	Based on recorded acceleration data
Peak Acceleration			
DISCOVERER IV	8.3		
DISCOVERER VI	8.6	7.9	8.2
Average Thrust (lbs)			
DISCOVERER IV	15,000(min)	15,389	15,220
DISCOVERER VI	15,000(min)	15,312	15,420
Average Propellant Flow Rate (lbs/sec)			
DISCOVERER IV	55.7	55.1	54.62
DISCOVERER VI	55.5	55.0	54.4
Weight of Vehicle at Burnout (lbs)			
DISCOVERER IV	1904	1973	2021
DISCOVERER VI	1827	1950	1901

[redacted] [redacted]

TABLE 1. Comparison of Trajectory Data (DISCOVERER IV vs DISCOVERER VI)

	Time from lift-off (sec)		Range (ft)		Altitude (ft)	
	Nominal	Actual	Nominal	Actual	Nominal	Actual
Main Engine Cut-off						
DISCOVERER IV	158.46	158.52	496,696	498,053	262,217	235,498
DISCOVERER VI	163.8	163.35	517,270	509,610	256,950	270,500
Vernier Engine Cut-off						
DISCOVERER IV	167.71	167.62	613,941	614,916	289,526	267,530
DISCOVERER VI	173.07	172.55	637,306	628,794	293,907	310,749
Start of Separation						
DISCOVERER IV		173.55		796,000		277,000
DISCOVERER VI		178.6		776,000		328,000
Orbital Stage Ignition						
DISCOVERER IV	261.5	241.08	1,819,447	1,341,000	479,968	403,300
DISCOVERER VI	273.7	275.7	1,916,900	1,922,000	568,300	627,500
Orbital Stage Burnout						
DISCOVERER IV	375	356.70		3,584,000	323,246	247,700
DISCOVERER VI	387.4	391.1	3,925,300	3,921,000	633,600	738,400

	Velocity (vt)		Flight Path Elevation Angle (deg)	
	Nominal	Actual	Nominal	Actual
Main Engine Cut-off				
DISCOVERER IV	13,493	13,350	17.85	15.9
DISCOVERER VI	13,720	13,790	16.0	17.8
Orbital Stage Ignition				
DISCOVERER IV	12,993	12,826		3.5
DISCOVERER VI	13,340	13,060	7.024	7.3
Orbital Stage Burnout				
DISCOVERER IV	25,590	25,420	-9.62	-8.8
DISCOVERER VI	26,190	25,985	0	-1.2

[redacted] [redacted]

DISCOVERER V was successfully launched on 13 August 1959.

After six aborts, DISCOVERER V was successfully launched from Vandenberg Pad IV on 13 August 1959. Four aborts were caused by weather, one by technical difficulties, and one by a hurricane in the Hawaiian recovery area. The scheduled noon launch was achieved with liftoff at 1200:08, PDT. Launch, booster performance, and orbital injection were normal. A departure azimuth approximately one degree east of the 170 degree nominal azimuth was obtained. The only malfunction was failure of the Vandenberg Mod II radar to maintain satisfactory lock-on.

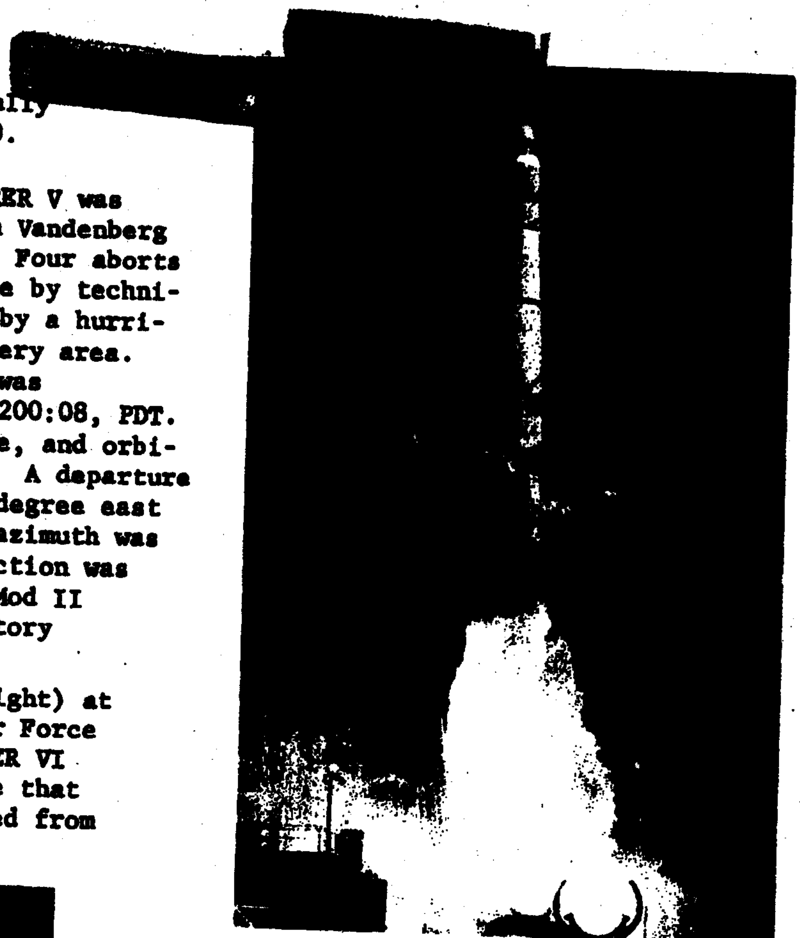


Figure 2. DISCOVERER V (right) at liftoff from Vandenberg Air Force Base launch pad. DISCOVERER VI (below) during launch (note that white paint has been removed from nose cone).

AGENA vehicle and subsystems, except recovery aids, performed as planned.

Telemetry indicated that satellite propulsion, guidance and stabilization, and auxiliary power subsystems performed as expected during the orbital period before capsule separation. Command of the orbital timer was maintained throughout the flight. The expected capsule re-entry point was shifted 88 miles northward during the last 85 minutes before separation. Only the aircraft were able to redeploy in time for capsule descent. The recovery forces failed to locate the capsule.

[redacted] [redacted]

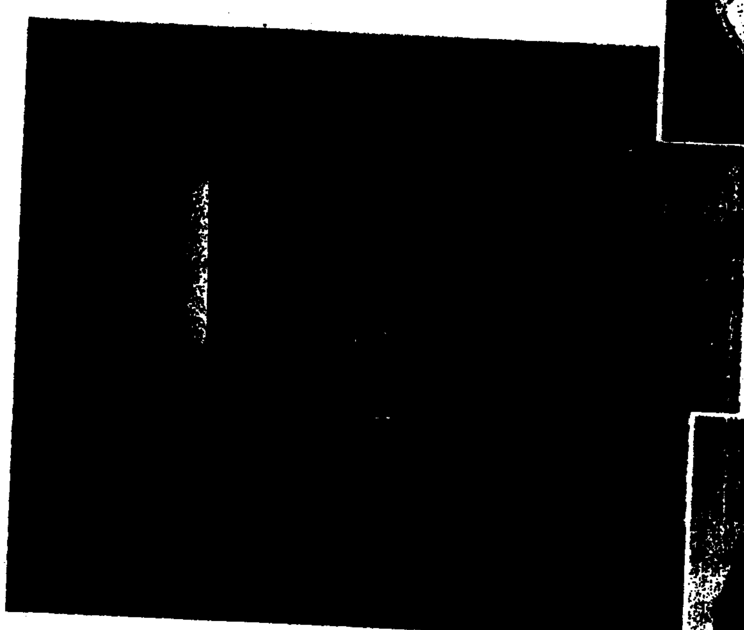
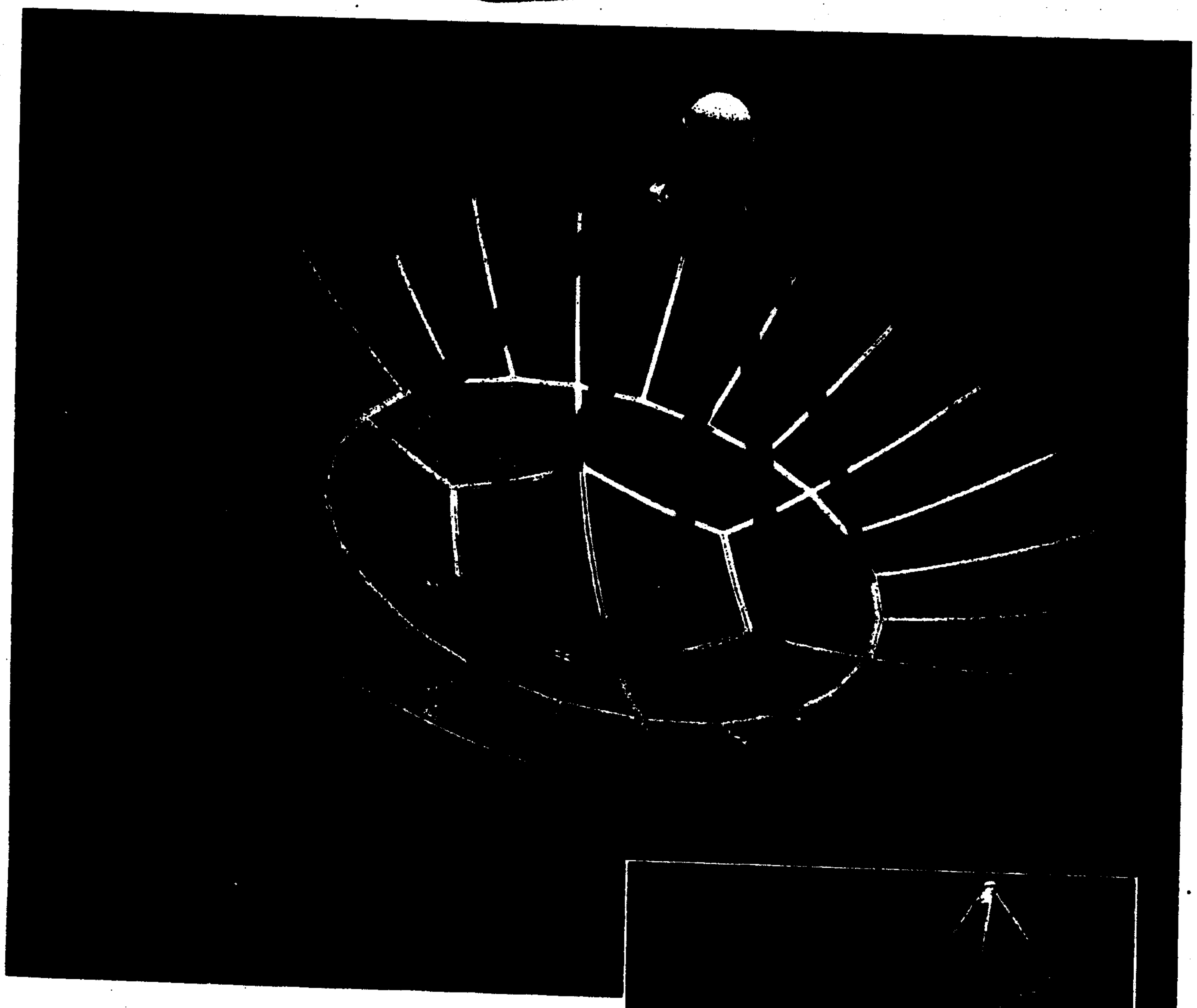


Figure 4. MARK III Recovery Capsule. Top right and center views taken during drop tests. Bottom right shows view looking into capsule.

[redacted] [redacted]



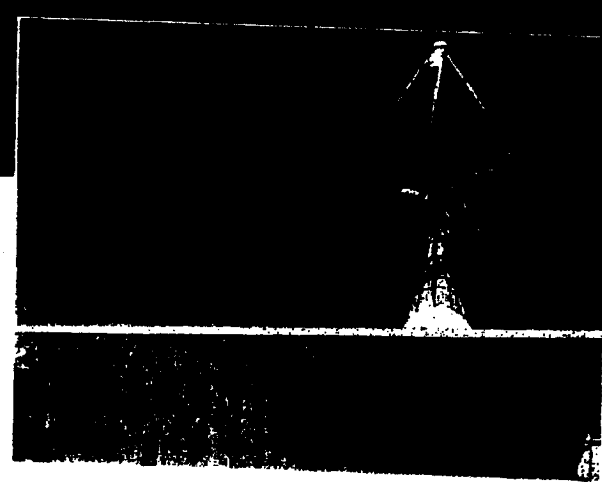


Figure 3.
This 60-foot radar dish antenna at Vandenberg was the first to track the DISCOVERER after launch. It is part of the elaborate network of tracking and telemetry stations extending from the Pacific Coast west to Hawaii and north to Alaska.

[redacted] [redacted]

[redacted]

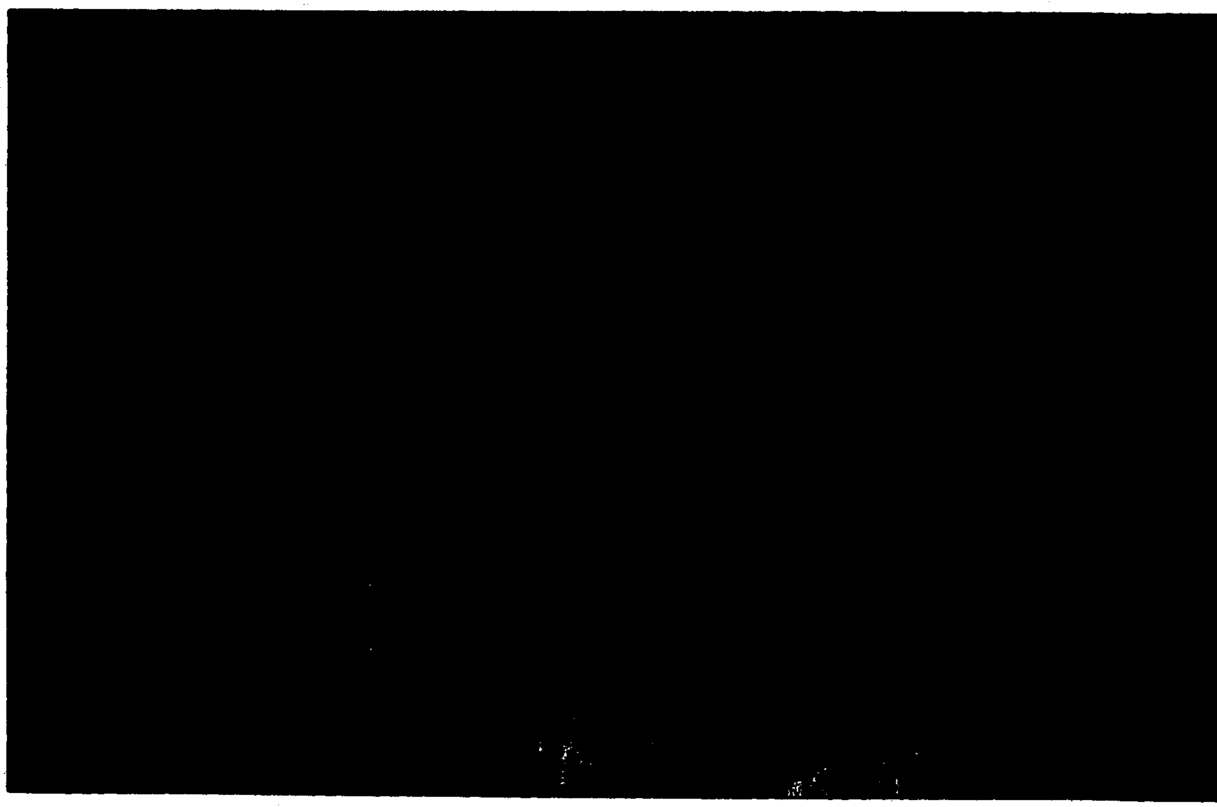


Figure 6. Aerial view of test stand area at Santa Cruz Test Base.

[redacted]

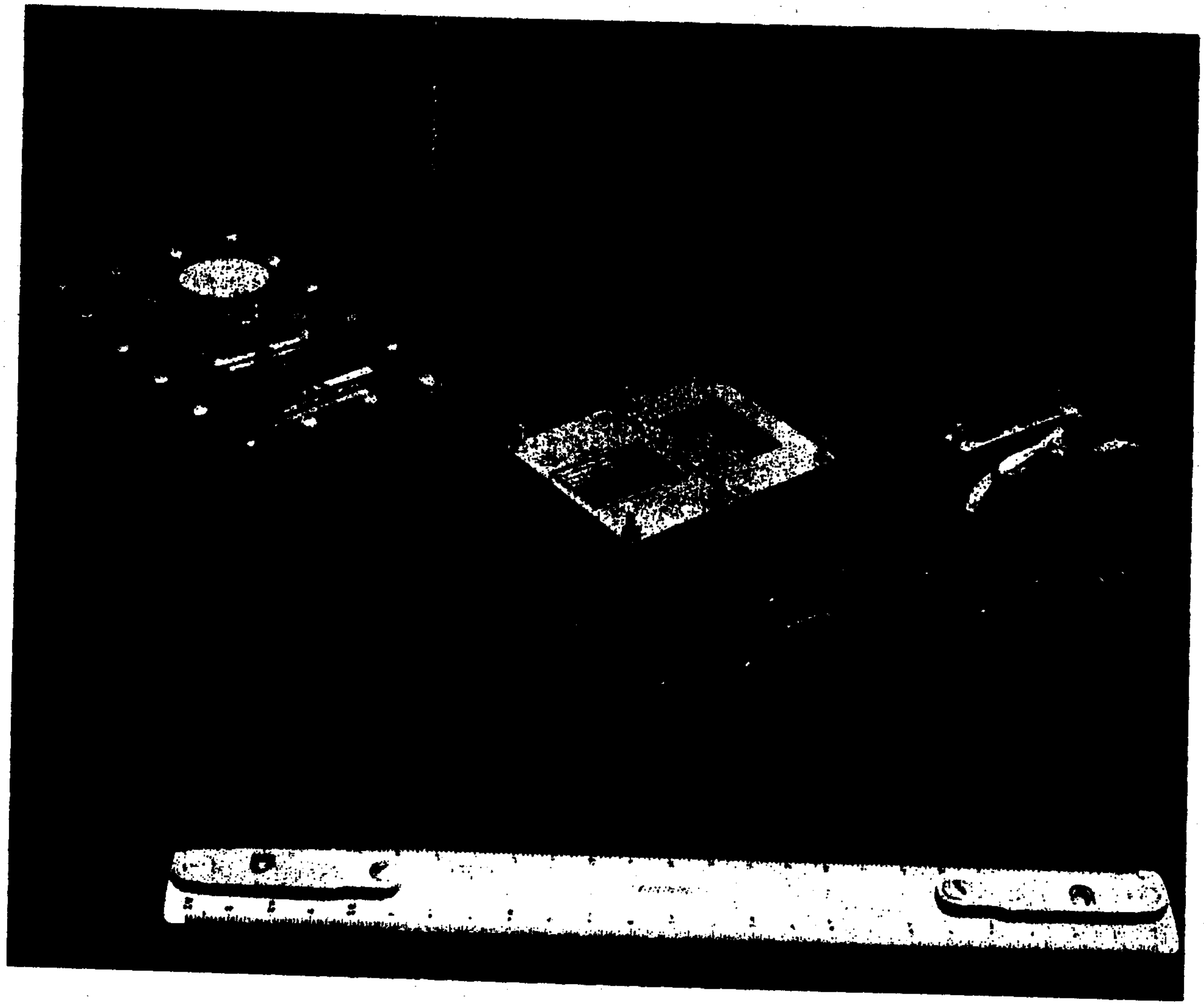
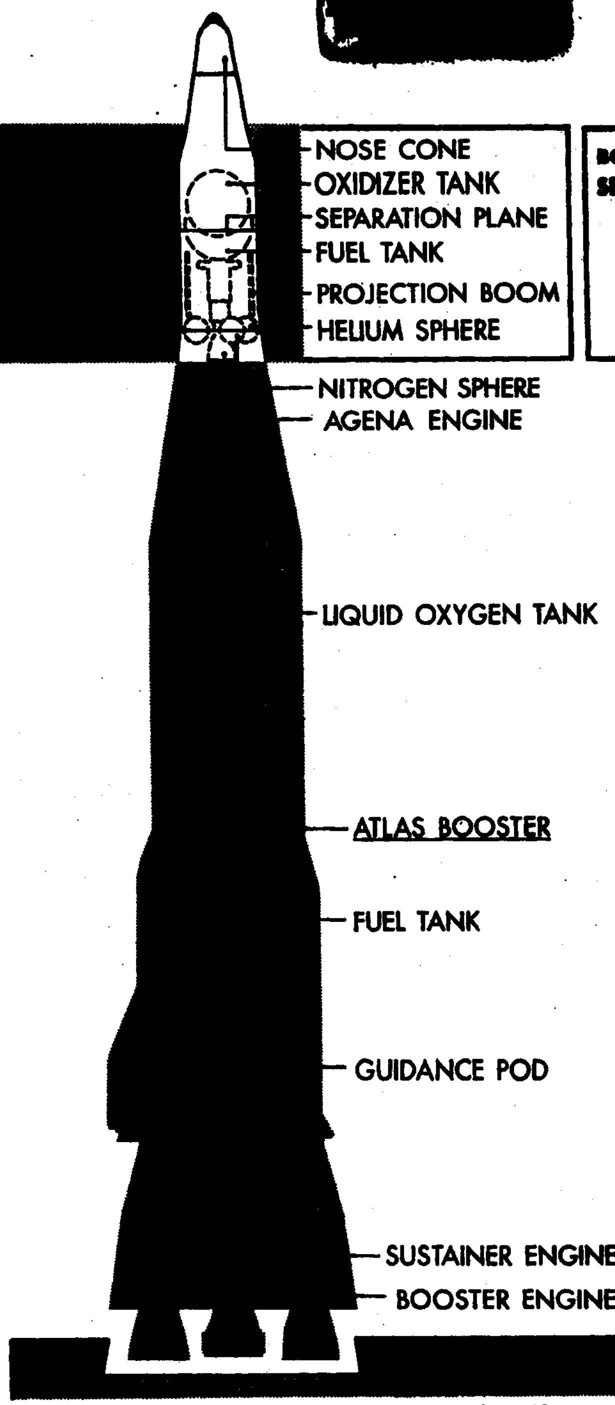


Figure 5. This small telemetering unit will be installed in the capsule of DISCOVERER VII, and will transmit data on the sequence of recovery system operations following capsule ejection. The telemetry ship, Private Joe E. Mann, will cruise in the area in which ejection is expected to occur and will record telemetry signals received.

[redacted]

[redacted]



BOOSTER: *ATLAS ICBM SM65-D*
SECOND STAGE: *AGENA vehicle*
Propulsion: XLR81-Ba-5 engine
Specific Impulse: 277 lbs./sec.
Thrust: 15,150 lbs.
Fuel: Unsymmetrical Di-Methyl Hydrazine
Oxidizer: Inhibited Red Fuming Nitric Acid

PAYLOAD OBJECTIVES

VISUAL (Photographic Reconnaissance) —airborne equipment to collect, process and store high resolution photographic information and convert stored images into video signals for transmission to ground. Ground equipment to

data from 30 to 300,000 mc/sec electromagnetic spectrum region; store, filter and reconvert into electrical signals for transmission to ground. Ground equipment for in-flight calibration and adjustment of airborne equipment engineer-

[redacted] [redacted]

SAMOS PROGRAM

I. GENERAL

Program renamed.

A. ARPA has renamed the SENTRY Program the SAMOS Program.

Recovery capability reincluded.

B. By secret letter DEF 965117, dated 10 September, ARPA directed that the recovery capability be reincluded in the program and that the readout portion be reoriented to accommodate this effort.

Satellite coverage considerations analyzed.

C. An analysis of satellite operational coverage considerations was completed. The results indicate (1) the frequency of coverage of a target at any latitude by a single satellite for various orbit inclinations and altitudes, and (2) the number of satellites required for 100% coverage of the earths' surface by polar orbiting vehicles as a function of altitude.

System design studies continue.

D. Design studies are continuing of a system capable of controlling and distributing data received from various simultaneously orbiting satellites, with particular application being made to the SAMOS and MIDAS programs.

II. TECHNICAL STATUS AND WORK SCHEDULES

A. Visual Reconnaissance System

Visual system payloads are designated by the letter E. E-1 payloads are designed to use prototype components for early availability and are tor the purpose of testing the validity of component design in actual space environment. E-2 and subsequent payloads are based on progressively more sophisticated designs.

Acceptance test of first flyable E-1 payload 50% complete.

1. Acceptance testing of the first flyable prototype (E-1) payload (Figure 1) is 50% complete, with delivery to

[redacted] [redacted]

[redacted]

LMSD scheduled for 23 November. Subsystem checkout of the Service Test Model E-1 payload was completed with no equipment malfunctions.

Fabrication of E-2 payloads progressing satisfactorily.

2. Fabrication of the first flyable E-2 prototype steerable payload, with the 36-inch focal length lens is approximately 60% complete. Component subassembly was started on schedule. The Engineering model of the E-2 payload is in final stages of development test and modification. Completion of this nonflyable, functional test model is expected by mid-October. The 36-inch lens and camera assembly has been completed and tests show compatibility with design requirements. The payload readout equipment (including the line-scan tube, photomultiplier, and scanning system) was assembled, tested and operated as a complete system. This system was connected to the ground reconstruction electronics (GRE) via the data link simulator and a final reassembled film record was obtained.

E-1 Thermal Model in temperature testing.

3. Testing of the Thermal Model E-1 payload in the LMSD high altitude temperature simulator indicated close adherance to required temperature tolerances. The payload-vehicle attachments will be insulated further to reduce heat loss. A retest is scheduled for October. The Thermal Mockup of the E-2 payload was completed and will be subjected to environmental testing by LMSD on 12 October.

Visual reconnaissance system checkout equipment installed.

4. Installation of test and operation equipment in the visual reconnaissance (Subsystem E) checkout area at LMSD Sunnyvale has begun. The first primary record film processor, chemical process tanks, E-1 payload collimator, and payload handling equipment have been

[redacted] [redacted]

delivered. E-1/E-2 ground reconstruction electronics and associated equipment was completed and delivered to LMSD.

Specifications and Analysis Report completed.

5. Final subsystem specifications for the E-1 and E-2 airborne and ground equipment were completed. The Visual Reconnaissance Readout Subsystem Engineering Analysis Report was revised during September.

B. <u>Ferret Reconnaissance System</u>

Ferret system payloads are designated by the letter F. F-1 payloads are designed to use prototype components for early availabiltiy and are for the purpose of testing the validity of component design in actual space environment. F-2 and subsequent payloads are based on progressively more sophisticated designs..

Final acceptance of first F-1 payload near.

1. The first prototype F-1 vehicle equipment (to be flown with the E-1 payload) is nearing completion of final acceptance tests with the ground checkout equipment at Airborne Instruments Laboratory (AIL). Inhibit action tests were continued on the first service test model F-1 payload (see Figure 3). Both frequency bands have been tested and the results are being evaluated. The second service test model (Figure 2) was given environmental tests. Results will determine the most desirable skin coating characteristics for maintaining optimum equipment temperature in orbit. A retest for verification of the thermal design is being made. Other environmental tests for this model are nearing completion.

F-1 ground equipment checked out.

2. Checkout was completed of the first deliverable ground data handling equipment, including the signal reconstructor, digital test work generator,

power supplies and tape transports. Also completed was testing of the band 1 and band 2 antennas for use with the calibration vans. These vans will be used in early flight testing to transmit known signals from the Southwestern U. S. to the payload in orbit. The second subsystem checkout console was delivered to LMSD; the first console was accepted by LMSD but retained by AIL for checkout of prototype F-1 payloads.

F-2A payload components near completion.

3. Fabrication of the assemblies and subassemblies of the first deliverable F-2A payload is complete except for the band 1 and band 2 receivers and the power and control unit. Testing of completed subassemblies has been started. Environmental tests of the F-2A thermal mockup payload are underway.

F-2A checkout console 80% fabricated.

4. Component fabrication of prototype models 1 and 2 of the F-2A checkout console is 80% complete and assembly of components is 40% complete. Systems testing of the F-2A service test model console is 50% complete.

F-2B payload design on schedule.

5. Design of the F-2B payload is nearing completion and fabrication of the first prototype article is approximately 50% complete. Testing of the various subassemblies is underway. A mockup of the evaluation and command console (Figure 4) for the F-2 payloads was completed and fabrication of components started.

F-3 payload design nears completion.

6. Design of the F-3 payload is nearly complete. Procurement, fabrication and assembly have begun on various components of the first prototype.

[redacted] [redacted]

F-4 payload defined.

7. Greater definition of the F-4 development program was achieved and a subcontract negotiated with AIL.

C. Data Handling Equipment (Subsystem I) (See Figures 5 through 7)

Data handling procedures being prepared.

1. Satisfactory progress was made in the preparation of standard procedures for Subsystem I photo data reduction. Computer programs were written for the AN/FSQ-27 Data Processing.

Photo data processing equipment on schedule.

2. Development of photo data processing equipment for interim use in the System Test and Evaluation Program progressed on schedule. Design and fabrication of several photo processing components was nearly completed. Initial models of Center Format equipment will be delivered during the next quarter.

Data reduction design criteria started.

3. Work was started on system and equipment design criteria for the Analog Ferret Data Reduction Subsystem.

Interpretation console engineering models nearly complete.

4. Final assembly and test of the first three engineering models of the Elint Interpretation Console were essentially completed. Work continued on programs for automatic ferret data reduction operations and console routines.

Data Processing Central modules 70% complete.

5. Fabrication of the initial modules, for the Data Processing Central, was 70% complete and an initial test cell 80% complete. The test cell will be delivered by 1 December for use in the System Test and Evaluation Program.

Display system equipment progress on schedule.

6. Equipment design for the Subsystem I Display System neared completion, with fabrication progressing

on schedule. Cabinet control drawings were completed for the Display Projector and assembly wiring was started for both the Display Projector and the Display Generator. Delivery of these items is scheduled before the end of 1959.

System Test and Evaluation program underway.

7. System Test and Evaluation Program facilities neared completion, with Subsystem I equipment being installed and early test and evaluation of components underway. Planning was started for the initial orientation and training for operation and maintenance of Subsystem I. A Proposed Manning Table for October, November, December and January has been coordinated at AFBMD and ATC. Subsystem I requirements for manuals, logistics, maintenance specifications, and exhibits were reviewed and preliminary phasing charts prepared.

USAF directive causes Subsystem I acceleration.

8. Due to USAF direction requiring all SAMOS Program intelligence data processing to be performed by military personnel at an Air Force base, the Subsystem I construction and activation schedules have been accelerated. Non-automated Subsystem I equipment will be installed in Building D, Offutt AFB, to support the first three SAMOS flights. Installation of automated equipment in the Intelligence Processing Center (also Building D) will support subsequent SAMOS flights.

D. <u>Facilities</u>

Facilities work at Offutt AFB placed on accelerated schedule.

1. Offutt AFB - All SAMOS work at this base has been placed on an accelerated schedule. Equipment will be installed in Building D to provide a small interim data processing capability for the first three SAMOS flights. The main

[redacted] [redacted]

Intelligence Processing Center will be activated on an incremental basis to permit support of all subsequent SAMOS flights. Design of the Technical Operations Control Center (to be located adjacent to the Intelligence Processing Center) will be initiated in October and completed in January. Full Operational capability will be attained by October 1961.

Fund availability may delay construction.

2. Development Control Center - Completion of Increment 1 construction is scheduled for December. Design of Increment 2 was complete, and in the hands of the construction agency for advertising for construction bids on 10 August; however, advertising has been delayed pending release of funds. The scheduled beneficial occupancy date of March 1960 cannot now be met. A revised date will be established upon receipt of funds.

Launch complex occupancy initiated.

3. Point Arguello Launch Complexes 1 and 2 - Beneficial occupancy of Launch Complex 1 blockhouse began in August, with beneficial occupancy of the launch pad scheduled for January 1960. Joint occupancy for the installation of equipment began in August. Beneficial occupancy of launch pad 2 is scheduled for February 1960.

Tracking station construction continues on schedule.

4. Vandenberg AFB Tracking and Data Acquisition Station construction is scheduled for completion on an incremental basis from October through January 1960. Completion of the various facilities of the New Boston Station is scheduled on an incremental basis from February to September 1960. Plans and Specifications for the technical facilities at the Ottumwa Station are complete

and ready for contract advertising. Design of support facilities is currently being initiated. Construction of the Ottumwa technical facilities is scheduled to begin in December, with completion scheduled for February 1961.

III. PROBLEMS ENCOUNTERED

A. The delay in receipt of funds is causing slippage in completion of the second increment of the Development Control Center.

B. The slippage of beneficial occupancy of the Arguello launch pad mentioned above will result in a substantial slippage of the first SAMOS launch. This launch was originally scheduled for April 1960. It now appears that installation and checkout of equipment which follows beneficial occupancy will dictate a first launch date near the end of June 1960. All possible action to compress the installation and checkout schedule is being taken.

C. The FY 60 SAMOS program is based on a $168.5 million budget request. ARPA has approved $148 million, directed that the recovery portion of the program be pursued, and that the readout portion be reoriented to accomodate the recovery effort within this amount. Such a reorientation will impose grave effects on the program. Hq USAF has been queried for guidance on reorientation in light of SAMOS requirements and priority.

IV. ARPA ACTION REQUIRED

Action is required to release the funds for construction of the second increment of the Development Control Center.