AFDDC

Status of SAMOS, MIDAS and DISCOVERER

AFDDC

1. In 1956 the U.S. AF directed the Rand Corporation to study the feasibility of establishing reconnaissance from satellites. When, in 1957, the study concluded that a reconnaissance satellite was feasible additional emphasis was given to engineering studies of critical subsystems of such a system. By March 1955 a G.O.R. had been published. Finally, after solicitating source selection procedures, a prime contract for development of the NS-117L Advanced Reconnaissance System was awarded to the Lockheed Aircraft Corporation in October 1957. A more complete chronology of these and events subsequent to 1956 is attached.

2. It is quite certain that the launch of Sputnik I by the Soviets on 4 October 1957 gave an acceleration to this program it might not otherwise have had. For this reason mention should be made of some of the more significant post-Sputnik events which occurred:

1 Nov 1957 - Secret authorized acceleration at maximum rate consistent with good management.

1 Jan 1958 - Ready orbital capability of a NS-117L satellite was authorized through use of available THOR boosters (DISCOVERER).

7 Feb 1958 - Authority for fiscal and technical direction over NS-117L vested in ARPA.

5 Nov 1958 - ARPA requested MIDAS (Subsystem 0) from the NS-117L and provided $750,000 for three months work (approximately 5 million U.S. Dollars) loaned to support this program for ARPA's decision from ARPA to provide financial support.

27 Dec 1958 - Study executed by the ARPA in following manner:

a) Initiation of 5' camera development

b) Acceleration of 35' camera readout system
c) Acceleration of recovery program to do: (1) mapping and chartering; (2) high resolution (5') photo reconnaissance.

30 Jan 1959 - Date of submission of current development plans for SAMOS, MIDAS and DISCOVERER.
26 May 1959 - ARPA deleted the mapping and charting development effort from NASDA.

6th June 1959 - ARPA advised AVSEC to defer work on recovery program pending review of the entire program for FY 1960.

30 Jul 1959 - Air Council considered the FY 60 and FY 61 programs which subsequently did not receive approval from NASA.

22 Oct 1959 - AVSEC advised of the DOD established fund ceiling for these programs for FY 60 and FY 61.

17 Nov 1959 - SecDef returns programs to the USAF.

30 Nov 1959 - The last DISCOVERER satellite launched (No. 8) came the closest to achieving all of the objectives: launch, orbit, and recovery.

3. To point up the amount of investment the Department of Defense has made in these programs the following fund history is presented:

**FY 1956**

- WB-117L 300,000

**FY 1957**

- WB-117L 13,900,000

**FY 1958**

- WB-117L 66,972,553

**FY 1959**

- SAMOS 99,966,000
- DISC. 59,874,000
- MIDAS 63,847,000

4. The problem we face today with these programs are complex but, stated simply, it is like this:

- **MIDAS** - the consensus of the scientists who are privy to information on that program is that it should be accelerated but not on the basis of "conspiracy." The scientists have sufficient skepticism as to the reliability of the electronic components in the satellite to operate reliably unattended for the period of time required (up to one year) that they resist the expenditure of any funds for future operation of MIDAS at this time. The Air Force military generally believe the necessary reliability can be attained, and we should plan and fund now for operation of the system by January 1963.
SECRET

BANDS - Dr. York's advisors are of the opinion that the only real valuable reconnaissance information which can be obtained will come from film stored within satellites which are recovered from orbit. This, happily, gives them visions of vast acres of financial saving such as in the tracking and communication stations and the operations and processing center which are required primarily for the photo and secret resident program. The Air Force military generally believe that the present program is sound and that there will be a place for reconnaissance information obtained by both resident and reconnaissance techniques. Over all of this hangs the ever-present concern as to whether, for geopolitical reasons, the President will authorize reconnaissance satellites to be flown over Russia, even in test.

DISCOVERED - There is general agreement that the present 29 flight program is sound and necessary.

FUNDING - To accomplish the 29 flight DISCOVERED program and meet an operational date of July 1962 for BANDS and January 1963 for MIDAS it is expected that the following fund deficiencies must be made up by internal Air Force reprogramming action subject to further approval by the DOD:

<table>
<thead>
<tr>
<th>DISCOVERED</th>
<th>FY 1960</th>
<th>FY 1961</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL DEFICIT</td>
<td>72</td>
<td>72</td>
</tr>
</tbody>
</table>

| MIDAS      |         |         |
| TOTAL DEFICIT | 72     | 72      |

| SAMOS      |         |         |
| TOTAL DEFICIT | 111    | 111     |
5. The following schedule has been established for the purpose of scheduling to resolve an Air Force position on these programs for submission to the DOD:

   1 Feb - Meeting of various Weapons Board Panels
   3 Feb - Meeting of Weapons Board
   10 Feb - Meeting of ARMCO
   15 Feb - Submission to DOD

6. In the event an Air Staff position relative to FY '60 and FY '61 programming of additional funds is required prior to 10 February, a "minimum necessary program" needed to maintain the present momentum is submitted below and further discussed in Atch. #2.

   DC9/6 post judgment for finding #1:

<table>
<thead>
<tr>
<th>DISCOVERER</th>
<th>FY '60</th>
<th>FY '61</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMOS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDAS</td>
<td></td>
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</tbody>
</table>

Ceiling

<table>
<thead>
<tr>
<th>DISCOVERER</th>
<th>FY '60</th>
<th>FY '61</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMOS</td>
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<tr>
<td>MIDAS</td>
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</tbody>
</table>

Note: Facility costs not included in these estimates.

6th
ROGERS, C. WILSON
LT. GEN. USAF
DCS/DEVELOPMENT

7th

2 Atch
1. Background: SAMOS, MIDAS & DISCOVERER
2. DC9/6 Proposed Program

* SAMOS and MIDAS had earned priority for highest priority and next highest national priority requested for MIDAS not yet approved
SECRET

RE/CAP RECOMMENDATIONS

The minimum acceptable position of the Air Force should be one that is logical, acceptable, fully agreed to by all of interested people. The "requirements" must be realistically unattainable and the proposed program must support "only" this requirement. From our understanding of the requirements the following program is recommended:

A. REQUIREMENTS

1. 29 Flight programs.
2. Maximum effort to develop MHEO and MHEA vehicles and adaptations.
3. Re-evaluate ground environment to consolidate or eliminate duplicative functions.
4. Possible reduction in funds required.

B. PROGRAM

1. 1st Flight (June 1962).
2. Re-evaluate MHE program with objective of reducing number of flights (less than 10).
3. Restrict ground environment to WAFB (TRA - launch), 500 (LMD), EN TRA, 300-I (Dev.(Denver)-Exploit. (LMD))
4. Maximize use of DISCOVERER net and re-evaluate launch and requirements.
5. Establish and data link WAFB to DDC (LMD).
6. Provide for EO exploitation of intelligence at Denver.
7. Provide MHE enough equipment to exploit take from MHE flights.
8. No real time data (intelligence) from EN to MHE or Denver except as necessary for vehicle control on orbit and that necessary for development at Denver.
9. Emphasize recovery system (payload compromise to be in Secret not photo random).

SECRET
10. M-1 released to (a) collection of satellite data (b) reconstruption (c) put data on canvas format (d) design and develop equipment to satisfy specific job as outlined here, (e) producing specified number of copies (f) re-evaluate entire M-I with objective of simplifying and refining specifications and scope.

11. Re-evaluate 62A Test Wing requirements in accordance with realigned program.

12. Determine new IOC (fuels - FIA - EOCG - 62A - etc.).

13. Move M-I from Denver to SAC as soon as practicable.

C. MIDAS

1. 1st and 2nd flight (Feb-May 1960 and) with special emphasis on producing data (reliability, scope, capability) aimed at getting operational go ahead on 1 July 1960 (MD-HEC).

2. Re-evaluate total MID flight schedule.

3. Restrict general environment to MID (FIA - launch), E Africa injection station, Alaska readiness, and communications to include MID.

4. Maximum use of DISCOVERER and MIDAS net and integration with MIDAS.

5. Development objective remains firm - slip schedule.

6. Re-evaluate launch pad requirements.

7. Get Bradford priority (other than 41).

8. Re-evaluate 62A Test Wing requirements.

9. Determine new IOC (Central FIA - 200C - UK - N. Atlantic, etc.).

III. FY 60 and 61 Fund Requirements

1. MIDAS and DISCOVERER enjoy nation's highest priority, MIDAS request for next highest.

2. No operational funds in FY 60 and 61 but operational funds become heavy in FY 62-63.