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DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY, SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045



21 JUL 1967

SAFSL-4

MEMORANDUM FOR GENERAL FERGUSON

The MOL Management Summary Report for the period 25 May 1967 -
25 June 1967 is attached.

- 2. Atchs
- MOL Management Summary Rpt
- Manpower Status Rpt

Lewis S. Norman
 LEWIS S. NORMAN, Col, USAF
 Asst Deputy Director MOL

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MOL MANAGEMENT SUMMARY

25 May 1967 - 25 June 1967

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Attachment 1

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1. EXECUTIVE OFFICE (SAFSL-3)

The status of MOL manpower for the reporting period is attached (see Attachment 1).

2. PROGRAM CONTROL (SAFSL-4)

a. RESOURCES MANAGEMENT AND ANALYSIS (SAFSL-4A)

- (1) Of the 100.9M FY 66 funds received, 100.9M has been initiated.
- (2) Of the 166.4M FY 67 funds received, 166.4M has been initiated.
- (3) Of the 72.4M FY 68 funds received, 64.6M has been initiated.

b. PLANS AND PROCEDURES (SAFSL-4B)

(1) A PERT/Time simulation run with cutoff of 18 Jun was submitted to the MPI (DAC) by program segment contractors for integration. This run was the contractor's first submission using the compact 12 baseline. Results of the integrated run have been delayed because of network and interface problems. The final results are expected on or about 7 Jul. A negative slack of about 25 weeks is anticipated as a result of a MMC/MAC electrical interface simulator delivery problem. This problem is being worked and resolution is anticipated. The PERT network for EKC, derived from schedule data, indicated a negative slack condition. This EK negative slack in the PERT/Time simulation run was possibly attributable to the inability of Gantt type schedules to recognize all interface constraints. An analysis by the MPI/SPO/Aerospace identified where the slack existed and recommendations have been prepared for EKC for elimination of the negative slack. It is believed that a meeting with EK/SPO/Aerospace will bring about resolution of this problem.

(2) A non-DORIAN Schedule Interface Log (SIL) Meeting was held at LAAFS on 27 and 28 Jun. The DORIAN meeting was held on 29 Jun at Huntington Beach. At this time the major portion of the DORIAN SIL is the listing of the hardware exchange items and contains approximately 200 items. However, as the program progresses, it is believed that this log will contain 600. EKC is not on contract to participate in the SIL; however, they were invited to the DORIAN meeting and participated as an observer. EK has agreed to submit an ROM for full SIL participation.

(3) MOL System Integrated Schedules (12-month compact schedule), cutoff date of 5 Jun, has been forwarded to you under separate cover. Because of the internal replanning activity at EK, detail schedules were not available for the Jun submission.

(4) The standardization of contractor Program Review charts is in process.

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(5) The SPO is investigating the use of a computer program for processing the Action Item Log. Action items have been prepared in computer format and a computer run will be made the week of 10 Jul.

(6) The first draft of the Historical Report for the period Jan through Mar 67 (46 pages) is being reviewed. With a DORIAN Monthly Management Report, it is anticipated that it will satisfy the requirement for any future historical reports.]

3. CONFIGURATION MANAGEMENT (SAFSL-5)

a. CONFIGURATION (SAFSL-5A)

(1) As a result of the 24 May Interface Program Review, interface schedules were readjusted so as to reflect new contractor coordinated need dates based on the "Compact Twelve" schedule.

(2) In the period of this report, two interface documents were signed off by contractors and seven contractor-approved interface documents were approved by the MOL SPO Specification Control Group (SCG).

(3) CEI Specification Reviews were held by the MOL SPO for three DAC Part II CEI's and one DAC Part I CEI. Approved were: Shipping Kits, Part II; Mission Module Forward Section (non prime) CEI 207259A, Part II; and Test Set, TTCV Power Amplifier, CEI 207276A, Part I. Disapproved was Mission Module Forward Section (non prime) CEI 207262A, Part II.

(4) The first MOL SPO First Article Configuration Inspection (FACI) will be on the Mission Module Shipping Kits and is presently scheduled for 10 Oct 67 at DAC.

b. DATA MANAGEMENT (SAFSL-5B)

During the month of Jun the Data Management office completed the reconciliation of all significant outstanding contractual incompatibilities. SPO requirements for data from the integrating contractor and MPI requirements for data from the associate contractors have been reviewed and validated. Differences in submittal dates, quantities, and technical content have been eliminated or satisfactorily resolved. Finite definition of essential data has been formally identified for the Air Force Contracting Officers, and we now have a basic data position established and agreed to by the SPO and the associate contractors.

c. CONFIGURATION CONTROL (SAFSL-5C)

(1) Three major program ECP's were received by the SPO and are currently being reviewed: "Accommodations for the Nose Fairing", "Acquisition and Tracking Telescope", and "Internal Sliding Mask".

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(2) A DORIAN supplement of the DAC Configuration Control Plan was reviewed by SPO and DAC personnel at Huntington Beach. This plan will cover all items that are "shaded" with security requirements.

(3) The Configuration Control Board (CCB) reviewed 45 items during the month; 23 items were approved; 7 disapproved; and 15 deferred. The large number of deferrals was due primarily to an extension of review time required by the SPO in reviewing items enumerated in paragraph c(1) above.

4. ENGINEERING (SAFSL-6)

a. LABORATORY VEHICLE (SAFSL-6A)

(1) The DAC Review was held at Huntington Beach in two parts. A Technical Direction Meeting was held on 12 Jun; the Program Review, with a summary of the technical action items, was held on 14 Jun. Approximately 26 action items were generated during these reviews; the most significant item was the increase in power requirements allocated to the major subsystems. It is anticipated that power requirements, by subsystem, will be reduced as time lines and procedural operations are identified.

(2) Review of the ECP's for Experiment Support Equipment (ESE) #1, ESE #2 and ESE #3 has begun and should be finished in the near future. These ECP's are being reviewed from both the technical as well as cost aspects.

(3) The MOL SIVB workshop experiments negotiations are being held in abeyance pending determination of suitable materials by NASA for equipment fabrication. The D-018 experiment is also being held in abeyance pending further instructions from OSAF as to whether it shall be part of the experiment package.

b. MISSION PAYLOAD (SAFSL-6B)

(1) The primary activity in which the Mission Payload Division was engaged during this reporting period was the definition of the SOW for the GE Field Test Planning Effort 6-Month Extension. Final technical negotiations with GE were initiated on 12 Jun 67. Agreements were reached with the company to amend the basic contract SOW and to add four items to the Contract Data Requirements List (CDRL). In addition, a SAFSL Exhibit for the 6-month planning effort was agreed to for incorporation into the basic contract SOW by reference. The compliance documents are now agreed to by the Air Force and GE. The cost negotiations have started and are continuing at the close of this reporting period. Some difficulty is anticipated on the cost negotiation as the proposal is considered high, and the contractor has demonstrated some reluctance to negotiate the difference.

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(2) A Technical Direction (TD) Meeting was convened at the GE Radnor facility on 20-21 Jun 67. A summary of the findings and results of the TD Meeting was prepared and presented to program management at the GE Program Review on 22 Jun.

(3) A review of all GE outstanding deferred items remaining to be defined and negotiated was completed on 8 Jun. Seventy-three items were identified with an ROM cost in the vicinity of 190 million dollars. These items related to three basic areas, the 12-month compact schedule, the field test support activity, and all other specific deferred items. Subsequent to this activity, an agreement has been reached with the contractor whereby complete technical documentation will be prepared by GE and submitted on an incremental basis to the SPO for evaluation during the period from 6 Jul to 20 Aug. The corresponding GE pricing will be finalized during the period of 20 Aug to 29 Sep, at which time a complete cost proposal (which shall include all remaining elements of the program not presently on contract) will be submitted to the SPO. It is anticipated that the SPO cost evaluation can be completed by 15 Nov 67, with final completion of cost negotiations during Dec 67.

c. GEMINI B (SAFSL-6C)

(1) A Gemini B Program Review was conducted at MAC on 8 Jun 67.

(2) RFP's for an abort engineering simulation were sent to LTV and MAC. Proposals have been received from LTV and MAC with go-ahead expected by 1 Jul 67. Martin support of the LTV effort is also expected to commence approximately 1 Jul 67.

(3) A fact finding of the MAC proposal for the 6-month extension to their operations effort was conducted on 20-21 Jun 67 at MAC, and an evaluation prepared. Negotiations were started with MAC on 27 Jun 67.

d. INTEGRATION (SAFSL-6D)

(1) SAFSL-6D, in conjunction with Aerospace, prepared the proposed Orbiting Vehicle Materials Combustion and Atmospheric Control Standard. It is intended that this document become a SAFSL Exhibit on all contracts. On 12 Jun a draft copy was transmitted to each of the MOL associate contractors for review. Comments resulting from these individual reviews will be discussed at a consolidated SPO/contractor meeting.

(2) MAC proposed inclusion of SED for the GBQ flight. This effort of approximately \$700,000 has been taken under consideration. It was decided to defer this unsolicited portion of the MAC proposal pending completion of internal SPO resolution as to its acceptability.

5. TEST OPERATIONS (SAFSL-7)

a. The Test Operations Documentation Plan with Aerospace Corp. was finalized for publication.

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b. A revised Planning Estimate (NRD Form 1) was forwarded to the 6595th ATW for publication by WTR.

c. SAFSL-7 and Aerospace personnel visited Hamilton AFB during this reporting period to discuss MOL recovery requirements with personnel of the 41st ARRS. While in Hawaii for Apollo spacecraft recovery tests, Aerospace observed that the Fulton Retrieval Equipment containers, which are normally disposed of after a drop, have possible utility as DRC protective containers for use in a contingency pickup situation. LtCol Gamble of the 41st ARRS located two of the containers for loan to the Recovery Branch of SAFSL-7. The next step will involve transport of the containers to MAC for tests of their applicability for DRC pre-pickup packaging.

d. Arrangements were made through Bell Aerosystems for a West Coast (VAFB) demonstration of the launch site abort recovery capability of the Bell Air Cushion Vehicle. The test is expected in early Aug.

e. An initial organization meeting was held for a Command Working Group, formed under the auspices of the Operations Sub-Group of the Software Management Group. The purpose of this group is to provide the necessary assurance that hardware/software operations meeting operational requirements. The initial meeting brought together hardware, software, and operational personnel from the MOL SFO, Aerospace, FTFD, DAC and GE. The next meeting will be held in Jul, with the group represented making presentations on what command information they feel is necessary to accomplish this objective.

f. Personnel attended a meeting on 13 Jun at VAFB between the ATW and the T-III SFO. The meeting was held to present to the ATW the overall booster programs under the control of the T-III SFO, and to discuss the role of the ATW in the acquisition of the T-IIIM for the MOL.

g. A draft version of SAFSL Exhibit 22012A has been prepared and is presently in coordination with members of the Software Management Group, both Air Force and Aerospace, and with the prime contractors, DAC and GE. The revision basically spells out a system of progressive buy-offs of baseline requirements.

h. Nine of the fifteen Powered Flight Controllers scheduled to report in Oct 67 visited the MOL SFO during this period. Briefings were presented by Aerospace, TRW, and the AF on the MOL Program, the proposed Control Center displays, and the Satellite Control Facility (SCF).

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i. This directorate attended a presentation by DAC on the ECP's concerned with Experimental Support Equipment 1, 3 and 4 to determine the impacts of VAFB facilities and support. The relocation of the Space Ground Link System (SGLS) antenna may create a major problem for the RF Transmission System. Investigation is in progress.

j. The current MOL ORD calls out real time and post pass processing requirements for MOL support which are generally compatible with ADS, except for special requirements for support of powered flight. In the interval Mar - Jun 67 this directorate has performed a study of acquisition, processing and evaluation of MOL data throughout all test and operations phases. This study is being published. A significant result of the study is the clarification of data processing required to support the actual flight operations, as well as to support post flight analysis.

k. This directorate identified (to SAFSL-4) the need for additional monies (\$150K) in FY 69 for WTR to provide hardware for the WTR/VTS interface.

6. PROCUREMENT AND PRODUCTION (SAFSL-8)

a. Negotiations are in process with DAC, MAC and GE on 6-month extension of the Test Operations Planning effort (1 Jul 67 thru 31 Dec 67).

b. Contract [REDACTED] with GE for the Engineering Development Phase was distributed 29 May.

7. REQUIREMENTS (SAFSL-9)

a. Members of the SAFSL-9 staff and Aerospace attended a series of briefings at GE, Radnor, Pa., on 8 and 9 Jun. The briefings were related primarily to MOL Advanced Planning Activities. The following subjects are considered worth summation:

(1) Long Life Subsystems for MOL - The approach is to get at the causes of failures in design, fabrication, inspection, and test which will provide the mechanism to correct weaknesses in the system. GE is utilizing the documented lessons learned from Program 206 in this effort.

(2) Manned Maintenance in Space - The study plan is to examine fundamentally man's role in space maintenance with two phases over a two-year period. The first phase consists of analytical studies on what maintenance activities man can and should do in space, and the second phase is developing empirical data for a handbook. Such data should be very valuable in developing concepts for advanced manned space systems.

(3) MOL Applications - GE is starting studies concerning MOL applications such as the [REDACTED] Astronomy Missions. They appear to be behind in those studies that we have conducted. The MOL SPO offered to brief GE on what has been accomplished within the SPO.

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b. On 12 Jun the SPO responded to Gen Stewart's memorandum of 10 May concerning Advanced Planning. In summary, our response stated that:

(1) Concerning the subject of "Advanced Planning Activities Associated with Achieving a [REDACTED] Resolution Capability," our efforts consist of identifying and refining the advanced sensor system tasks, and directing the "Long Duration Operations" study under contract with DAC. In the sensor area we plan to have a preliminary assessment of all critical tasks by 1 Aug. The Mid-Term Review of the "Long Duration Operations" study was conducted at Huntington Beach on 21 Jun. A copy of the Mid-Term briefing has been provided by DAC direct to SAFSL. The final report on the study will be available on 25 Aug and a final briefing will be available shortly before that date.

(2) Concerning the [REDACTED] "Astronomy Missions," the Test Operations Directorate (SAFSL-7) will conduct extensive in-house studies during the next two months with limited contractor participation in the latter stages. By 1 Sep, a detailed report will be available stating costs, impacts, and recommendations. The Requirements Directorate (SAFSL-9) will maintain responsibility for the camera back study pending guidance from SAFSL.

c. On 19 Jun, the SPO answered Gen Stewart's memorandum of 31 May concerning "Review of Proposed Experiment." The SPO analysis of the NASA proposed experiment "EVA Hardware Evaluation", M-508, indicates that any substantive duplication among the NASA experiment and MOL experiments D-018 and D-020 is minimal and that conduct of all three would be mutually beneficial to both the DOD and NASA through cross-correlation of the resulting data.

d. By letter from Detachment 2, SSD, subject: Astronaut Maneuvering Unit Hardware Disposal, 19 May, the MOL SPO was requested to identify any Astronaut Maneuvering Unit (AMU) hardware that could be used in the baseline MOL program and follow-on MOL because the Air Force had withdrawn its sponsorship of the AMU from the Apollo Applications Program (AAP). On 21 Jun the SPO responded that:

(1) In baseline MOL operation the only extravehicular activity (EVA) planned is a backup mode for transfer between Gemini B and Laboratory Vehicle in event the intervehicular passage is precluded.

(2) The use of AMU hardware was reviewed in conjunction with our MOL training program and no practical application for the hardware was identified.

(3) Concerning the follow-on MOL program, it is doubtful that experimental hardware designed in 1964 would be adequate to meet flight requirements in the mid-70's if a requirement for an AMU were to exist. Consequently, the SPO can see no MOL use of the AMU hardware at this time.

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MONTHLY MOL MANPOWER STATUS REPORT

25 MAY - 25 JUN 67

I.	AUTHORIZED	ASSIGNED	DIFFERENCE
*OFFICER	121	96	-25
AIRMEN	3	2	-1
CIVILIANS	72	65	-7
HIGHGRADES	(22)	(19)	(-3)
CLERICAL	(50)	(46)	(-4)
TOTAL	196	163	-33

II. LOSSES (MILITARY)

Capt William F. Walkenhorst
1st Lt Marvin H. Shaub
MSgt Robert F. Hyatt

III. GAINS (MILITARY)

Col Robert S. Buchanan, FR18292
Capt James E. Foley, FV3130719

IV. NET GAIN/LOSSES

OFFICERS	0
AIRMEN	-1
CIVILIANS	+3
HIGHGRADES	(+1)
CLERICAL	(+2)

*MOL Flight Crew included. Six attached officers (4 Navy/Marine Flight Crew, 1 SAC and 1 MAC) are not included.

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Attachment 2

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