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DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY DATA ENTRY OFFICE (OSAP)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045



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16 MAY 1969

MEMORANDUM FOR GEN STEWART

SUBJECT: MOL Monthly Management Report

Attached is the MOL Monthly Management Report for the period
26 March - 25 April 1969:

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Report

J. S. Bleymaier
J. S. BLEYMAIER
Major General, USAF
Deputy Director, MOL

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MOL MONTHLY MANAGEMENT REPORT
26 MARCH - 25 APRIL 1969

I. Program Management

A. Contract Status - Systems Office personnel are continuing the preparation of the General Electric contractual document; distribution is scheduled for 30 May. McDonnell Douglas-Eastern Division has been granted a delay for submission of the remaining ten increments of its proposal. A definite date will be established by the Systems Office following an assessment of the remaining effort. Systems Office evaluation of the McDonnell Douglas-Western Division proposal is in process and negotiations are scheduled to begin on 9 June. Negotiations with Martin Marietta Corporation and the United Technology Center are scheduled for 19 May; negotiations with AC Electronics are scheduled to begin on 15 May; and negotiations with the Aerojet General Corporation are in progress and are scheduled to be completed by 9 May. The Hamilton Standard and Eastman Kodak Corporation proposals are scheduled for delivery on 30 May and 20 June respectively.

B. Systems Effectiveness Audit - The Systems Effectiveness Audit at McDonnell Douglas-Eastern Division completed on 17 April concludes the audit of MOL contractors. The audit team is compiling its findings and a report of the audit will be available in early May.

C. Technical Signoff Meeting (TSOM) - Technical Signoff Meeting #10 is scheduled to begin on 28 April at the General Electric Corporation facility in King of Prussia, Pennsylvania. The agendum for this meeting is more extensive than the agenda for previous TSOM's and Systems Office personnel are confident that the results of this meeting will make a significant contribution to finalizing the baseline for the Laboratory Vehicle to Mission Module interface.

D. Gemini B Spacecraft Critical Design Review (CDR) - The second part of the Gemini B Spacecraft CDR has been rescheduled to 14-16 May. This will coincide with fact-finding meetings scheduled during the same week. This will complete the CDRs for the Gemini B Aerospace Vehicle Equipment.

E. Cost/Schedule Planning and Control System (C/SPCS) - A predemonstration of the General Electric C/SPCS will be conducted during the week of 28 April in preparation for the C/SPCS Demonstration scheduled for 12-23 May. At the predemonstration, the Systems Office representative will instruct the contractor on procedures for conducting the actual demonstration and will brief the Defense Contract Audit Agency and Air Force Plant Representative Office personnel on their roles and responsibilities for the demonstration.

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F. Target Training Objectives Study - MOL crew members received two briefings from U.S. Army intelligence personnel and a briefing from National Photo Interpretation Center (NPIC) personnel during the month of April. The NPIC briefing topic was the Sary Shagan Missile Test Range; the Army briefings covered the Soviet Army Missile Test Range at Emba, the new tank production facility at Uzor, and the Moscow Anti-Ballistic Missile System. The Army briefers provided an "Idiot Book" containing an abbreviated text, visual aids and a brief section on intelligence gaps for study by the crew members.

G. Program - McDonnell Douglas-Western Division (MDAC-WD) is preparing an unfunded study on the feasibility of using its portion of the MOL structure and certain subsystems to perform the Program mission. Systems Office personnel have reviewed MDAC-WD's reports for security reasons and are currently reviewing the final report. Instructions have been given to MDAC-WD that without the prior approval of the MOL Systems Office no related documents will be distributed, and no briefings pertaining to this subject will be presented. In addition, the contractor has been instructed to avoid establishing any connection between the Navy mission and the MOL mission.

H. Monthly Financial Report - The Monthly Financial Report (DDR&E Report) will not be submitted this month because of the extensive program reassessment exercise in process. The program financial status was briefed to General Ferguson during his visit on 24 April and will be included in the briefing to the MOL Policy Committee on Friday, 9 May. Pertinent financial information will continue to be submitted to the Office of the Vice Director on a request basis during the remainder of the month.

I. Vandenberg AFB Construction Status - On 25 April, construction of Package 2 of the launch complex facilities was 85.9% complete. The pacing item of the package, the Mobile Service Tower scheduled for completion on 1 September 1969, is now 60.5% complete. In their latest status report, personnel from the Los Angeles District Office of the Corps of Engineers expressed confidence that the scheduled completion date of 1 September will be met. Package 1 of the MOL Support Facilities at VAFB is now approximately 82% complete. Work on Package 2 of these facilities has begun, and completion of this package is scheduled for 8 October 1969.

J. Funds and Manpower Status - Of the \$515.0M FY 69 funds released to the Systems Office, \$505.9M has been initiated.

Systems Office manpower status is as follows:

	Authorized*	Assigned*
Officers	168	155
Airmen	12	12
Civilians	102	97
High Grades	(33)	(32)
Clerical	(69)	(65)
TOTAL	<u>282</u>	<u>264</u>

*Includes Houston Field Office

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II. Technical Status

A. Image Velocity Sensor - General Electric Corporation has completed its evaluation of the Image Velocity Sensor (IVS) tester. As a result of this study minor modifications to the equipment and test procedures are planned. The testing of the Hycon and Goodyear IVS systems will resume in May; selection of a final vendor is anticipated by the end of May.

B. Mission Development Simulator - A series of technical difficulties, including a mechanical malfunction in the slide viewing subsystem and a timing error in the 360/930 computer adapter, have continued to delay the completion of the Mission Development Simulator (MDS) Phase Zero Demonstration Testing by the General Electric Corporation. Contractor personnel are working to overcome these difficulties and estimate final hardware/software verification tests will be completed by mid-June.

C. Cue Data Production System - Proposals for the Cue Data Production System (CDPS) have been received from both Perkin-Elmer and the ITEK Corporation. The Perkin-Elmer proposal did not have sufficient information for a complete evaluation and the company has been asked to provide additional data. Systems Office personnel are evaluating the ITEK proposal. The Systems Office will issue 90-day study contracts to both firms.

D. Nonmetallic Materials Program - The MOL Nonmetallic Materials Status Report was published following the completion of Systems Office studies conducted during the first quarter of this calendar year. The report includes a brief summary of the Nonmetallic Materials Program, a statement of associate contractor roles and responsibilities, a description of the materials accountability program and a listing of significant flammable/toxic materials by contractor. Systems Office personnel continued their close monitorship of the Nonmetallic Materials Program by participation in a Materials meeting with the LV associate contractors at the McDonnell Douglas-Western Division facility on 8-10 April. The Full Scale Laboratory Module Flammability Verification Test Program was the major item of discussion.

E. Orbital Support Software - Revisions to the Orbital Support Software System Module Specification, necessitated by the redefinition of the Advanced Data System, have been coordinated with representatives of the Satellite Control Facility. A new Systems Requirements Baseline has been established as a result of these revisions.

F. Crew Conditioning Unit - Systems Office Bioastronautical personnel met with representatives of McDonnell Douglas-Western Division (MDAC-WD) and Southwest Research during the past month to discuss the Crew Conditioning

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Unit (CCU) design. It was agreed that MDAC-WD would continue with the system which utilizes a constant force electric generator. Southwest Research will continue work on their spring and torsion approach for possible future applications. The Aerospace Medical Division will perform an evaluation of the physiological benefits that can be derived from a CCU loaded by means of an electric generator.

G. Flotation-Egress Trainer - A preliminary copy of McDonnell Douglas-Eastern Division's (MDAC-ED's) plan for refurbishing a NASA static article for use as the MOL flotation-egress trainer has been reviewed by the Systems Office. Systems Office comments will be transmitted to MDAC-ED prior to their formal submittal. A listing of required government furnished property which accompanied the preliminary plan is also being reviewed by Systems Office personnel for validity.

H. Zero G Testing - As a result of discussions at the first session of the Gemini B Critical Design Review, final zero G testing in aircraft and the final verification of crew transfer requirements will be held in abeyance until flight representative equipment is available. The equipment involved includes Data Return Containers, Pressure Suit Assemblies, internal and extra-vehicular latches and updated Gemini B zero G test vehicles. It is felt that this action will provide more meaningful results from the final zero G tests.

I. McDonnell Douglas Altitude Chamber Review - Further discussions on man-rating plans for the McDonnell Douglas-Western Division (MDAC-WD) 35-foot altitude chamber were held by Systems Office and MDAC-WD personnel at a meeting in late March. The NASA man-rating document was used as a basis for the discussion. The Systems Office has subsequently notified the contractor in writing of changes which should be made to the NASA document for the purpose of man-rating the MDAC-WD chamber. The MDAC-WD procedures and documentation will be available for Systems Office review when they are finalized.

J. Crew Water Balance Study - At the first session of the Gemini B Critical Design Review, it was established that only 1.88 gallons of useable water will be available for the crew instead of the previously assumed 2.12 gallons. Preliminary indications are that 1.88 gallons would be sufficient in nominal situations, but that each crew member would have a water deficit between 2 and 2 1/2% of his body weight in worst-case situations. Systems Office analysis of this area will continue.

K. Computerized Aerospace Ground Equipment Core Space - A recent study by Logicon revealed that Martin Marietta Corporation may not have sufficient core storage in their Computerized Aerospace Ground Equipment (CAGE) to handle required display programs. This situation could be

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corrected by increasing the number of memory banks from 5 to 6, making major modifications to the present program, or adding a program to provide minimal data on the teletypewriters. The Systems Office is presently studying each of the proposed solutions.

L. Main Door Ejection Shock Levels - Preliminary data from the McDonnell Douglas-Western Division's (MDAC-WD's) testing of the LM main door indicates that a peak shock level of approximately 40,000 G's occurs during "blow-off" of the main door. The Environmental Design Criteria (SAFSL Exhibit 10003) specifies a maximum shock of 3,000 G's. Systems Office and contractor personnel are currently examining the test data to ascertain its validity, and the contractor plans to repeat the door ejection test on 20 June 1969. If study results indicate that the test data are valid, the Systems Office will direct MDAC-WD to alter its design in order to reduce the shock to a level that will preclude damage to other Laboratory Module equipment.

M. MOL Support Facilities Communications Plan - Systems Office personnel are continuing the preparation of a communications plan for the MOL Support Facilities (MSF) at Vandenberg AFB. Requirements have been received from the contractors and Air Force agencies involved and are being incorporated in the plan. A TWX outlining the Byeman communications equipment that will be available at the MSF has been transmitted to Martin Marietta, General Electric, McDonnell Douglas-Western Division, and Eastman Kodak.

N. Missile Guidance Computers - The Systems Office has requested that AC Electronics stop all qualification and procurement activity on Raytheon integrated circuits for use with the Univac 1824 computers. This action was taken to reduce the costs being incurred against the 7 MOL guidance computers until the TIII Systems Program Office submits its new guidance computer concept for DOD approval in May. If the proposed computer is approved, the Systems Office may be able to procure computers of this type through the TIII Program Office for use as MOL guidance computers. Procurement of the new TIII computers would negate the requirement for Raytheon integrated circuitry.

O. Pressure Suit Assembly Leakage - During a Pressure Suit Assembly (PSA) fitting test on 10 April at the Hamilton Standard facility, the application of radial force to the PSA helmet, particularly in the area adjacent to the neck ring, caused leakage and a resultant drop in suit pressure. Further investigation revealed that this condition applied to all PSA's. Preliminary evaluation indicates that this situation may necessitate fitting the neck rings to closer tolerances and making a minor change in the ring design. All PSA's have been limited to ground level testing until the Systems Office evaluation of the neck rings is completed.

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