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



9 - OCT 1968

MEMORANDUM FOR GENERAL STEWART

SUBJECT: MOL Monthly Management Report, 25 August - 25 September 1968

Attached is the MOL Monthly Management Report for the period 25 August
25 September 1968.

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Report

J. S. Blymaier
J. S. BLYMAIER, Maj Gen, USAF
Deputy Director, MOL

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MOL Monthly Progress Report
25 August - 25 September 1968

I. Program Management

a. Personnel of the Systems Office, Aerospace Corporation, and the associate contractors are working intensely on contract Statements of Work to assure their inter-contractor consistency, incorporation of upgraded program requirements, clarity and accuracy. Several schedule interface problems have received extensive attention and are near resolution. Complete agreement on hardware delivery dates is required before the unpriced S/A's can be issued. Contractor requests for deviations to requirements have been negotiated and, when technical integrity is not jeopardized, granted. Specification interfaces continue to be worked. Preparation has begun for the next (and final before unpriced S/A issuance) Interface Technical Signoff Meeting (TSOM) at McDonnell Douglas-Western Division the week of 14 October. The Configuration Control Board (CCB) will move to the TSOM to formally approve all no-cost, no-impact interface documentation concurrently with the technical sign-off. This will facilitate inclusion of agreed-to interfaces in the unpriced Supplemental Agreement. Review of contract end item specifications has continued to assure the incorporation of the latest SP/DR and SAFSL Exhibit requirements. This total effort has incurred a tremendous workload on the Systems Office/Aerospace team worthy of top program management recognition.]

b. A Technical Sign-off Meeting (TSOM) was held at McDonnell Douglas-Western Division on the Support Module for flights 6 & 7. All interface Specifications (IFS's) and Interface Control Drawings (ICD) were signed off with the exception of thermal interfaces. A plan to accomplish coordination of this area has been initiated and final signoff is anticipated by the end of October.

c. Negotiations with TRW concerning the Ascent and Reentry Software Program were satisfactorily completed with agreements being reached on the Statement of Work and related costs. The contract provides a ground system that enhances crew safety via malfunction monitoring from the ground and a backup computer capability in the event of on-board computer failure prior to reentry.

d. Preparations have been completed for review of the progress made by McDonnell Douglas-Western Division in correcting the nine discrepancies cited in the Cost Planning and Control System (CPCS) Demonstration/Validation Report. The reviewing team is comprised of representatives from Hq AFSC, AFPRO/Douglas, AFCMD, DCAA, and selected Systems Office personnel. The review at Huntington Beach will begin 1 October.

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e. During the morning of 16 September, Mr. Richard Stubbing and Mr. Howard Barfield received a MOL Program Overview Briefing consisting of a Technical Orientation, Schedules Control and Cost History. Personnel of the McDonnell Douglas Astronautics Corporation provided an afternoon briefing on similar topics. On the following day, a series of presentations was made by the Systems Office in response to specific questions. The visitors expressed their satisfaction with the material presented and the cooperation received.

f. Of the \$154.5M FY 69 funds released to the Systems Office, \$153.7M has been initiated. Systems Office manpower status is:

	<u>Authorized*</u>	<u>Assigned*</u>
Officers	184	159
Airmen	12	10
Civilians	106	95
Hi-grade	(33)	(31)
Clerical	(73)	(64)
	<hr/>	<hr/>
TOTAL	302	264

* Includes Houston Field Office.

II. Technical Status

a. On 17-20 September 1968 Systems Office personnel conducted a First Article Configuration Inspection (FACI) on the Pressure Suit Assembly (PSA) Training Suit. Significant improvements have been made by Hamilton Standard engineers in all areas of the PSA development. However, FACI proceedings were not completed at this time due to several discrepancies noted during inspection. It is anticipated that necessary actions will be accomplished by Hamilton Standard so that FACI can be completed in the near future. Upon completion of FACI the first training PSA will be accepted by the Air Force for subsequent shipment to McDonnell Douglas-Eastern Division as Government Furnished Property.

b. McDonnell Douglas-Western Division has been formally requested to procure a microphone for use within the Lab Module, and direction has been initiated to delete this requirement from the Hamilton Standard contract. This will result in MDAC/WD procuring a separate microphone to be used exclusively for the shirt sleeve environment while HS will procure a microphone to be used exclusively for the PSA.

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c. The Preliminary Design Review (PDR) of the laboratory module for development flight # 2 was held on 19-20 September. Twenty-one action items were generated during the meeting.

d. The Booster Interface Functions Simulator (BIFS), which simulates the T-IIIM booster for the interface with the Gemini B, is undergoing acceptance testing at the Martin Marietta Corporation in Denver. The BIFS will be shipped to MDAC (East) for use in the Gemini B test program.

e. A Preliminary Design Review was held at Aerojet General Corporation on the modified Stage II Thrust Chamber Assembly. Aerojet discussed their design approach and progress in both the combustion chamber and injector areas. Special emphasis was placed upon the concurrent development of the combustion chamber, using Hastelloy X or the 347 steel materials. The results of testing several designs, which use both Hastelloy and 347, during the next four months will enable the Systems Office to make a decision on which material should be incorporated in the production engines.

f. NASA has requested the MOL Systems Office to extend the loan period for the Gemini PCM Ground Station and other equipment from 31 December 1968 to 31 March 1969 for additional V/STOL testing. A preliminary check with McDonnell Douglas-Eastern Division indicates the loan period can be extended due to Gemini B schedule changes. NASA will submit a formal request for Systems Office consideration.

g. During a Kapton Wiring Review at McDonnell Douglas-Eastern Division, it was determined that the contractor is having some difficulty developing a new potting technique. The working of Kapton wire does not differ much from Raychen but the temperatures required and the timing of the heat application is much more critical.

h. The Satellite Control Facility has been investigating the Early Orbit Determination problem for MOL. An area of concern is the co-mingling of Satellite Control Facility (SCF) and Aerospace Defense Command (ADC) spacetrack data available on early revolutions. An ADC/SCF working group has tasked Dr. L. Walter, Aeronautics Corporation, to investigate various data formats and to recommend a method of incorporating coephemeris data for early revolutions.

i. As a result of the review of the EK Camera Optical Assembly (COA) Static-Load Structure failure, the following has been determined: (1) The test set up was correct and valid; (2) The COA skin thickness was in accordance with specification; (3) The measured loads in the area of failure were approximately 50% greater than predicted. Prior to initiation of corrective action to resolve the immediate COA structure problem, it was

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recommended that the results of the fourth load cycle be incorporated in the analysis. Aerospace was able to furnish EK a forecast of the load cycle 4 data which indicates a substantial increase in the expected loads. These loads have subsequently been revised and more closely agree with the Martin Company forecast. The revised loads do exceed the present design requirements, however, and they also exceed the 3A load cycle data. EK has been directed to curtail effort on COA assemblies pending completion of the assessment of the impact of load cycle 4. In addition, EK has been asked to recommend COA modifications, a static test program, and effectivity of changes on existing COA test articles. A technical meeting is scheduled for 1 October 68 to plan a course of action for resolving this problem.

j. An ad hoc group met on 20-21 September to evaluate the Image Velocity Sensor (IVS) Program. The members of this group, which was chaired by Dr. Brian O'Brien, were selected from top military and civilian experts in the field of image motion sensing. Background information on the use of the IVS in the MOL Program and a description of each vendor's IVS approach were provided to each member of the committee prior to the meeting. Each of the IVS vendors briefed their system's operation and problem areas. GE briefed the IVS vendor selection program, the system operation utilizing the IVS, the current IVS specification, the IVS tester, breadboard test results and problem areas. The preliminary recommendation of the group is for GE to continue the planned test program. Final selection of the vendor is planned for mid-March 1969.

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