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DEPARTMENT OF THE AIR FORCE  
WASHINGTON

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OFFICE OF THE SECRETARY

OCT 6 1966



MEMORANDUM FOR THE SECRETARY OF THE AIR FORCE

SUBJECT: Manned Orbiting Laboratory Monthly Status Report

The attached Status Report on the Manned Orbiting Laboratory (MOL) Program covers activities through September 30, 1966, and is submitted in accordance with the September 15, 1966 instructions from the Office of the Secretary.

*James Ferguson*  
JAMES FERGUSON  
General, USAF  
Director, MOL Program

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a/s

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I. PROBLEMS

A. Contract Negotiations

As was anticipated in the monthly status report for August, there have been some further delays in negotiation of several of the MOL Associate Contracts. It now appears that the McDonnell, Douglas, and General Electric contracts will be negotiated by October 15, November 1, and November 10, respectively. These delays are attributed primarily to the contractors' having to revise their proposals as a result of current negotiations on scope of work and incentive features.

The T-IIIM contract for airframe and systems engineering was negotiated with the Martin Company for \$159.78 million on a fixed price incentive contract. This amount does not involve anticipated additional work and deferred work items estimated to be \$8.23 million, thus bringing the total price for this effort to \$168.01 million.

B. Priorities

Guidance received informally from SAF-RD on the MOL priorities situation indicates that further action to obtain DX industrial priority is to be suspended, pending full-scale Engineering Development Phase approval. Meanwhile, the MOL Systems Office is exercising the authority granted on August 20 to expend FY 66 and FY 67 funds to protect lead times and the present flight schedule. Purchase orders placed by MOL contractors in these circumstances are necessarily DO-rated, and are therefore susceptible to preemption by higher priority orders. General Electric is now encountering difficulty in arranging acceptable delivery dates for electronic and electrical parts; similar problems can be expected with the other major contractors. While there is no clear indication at the moment of an immediate, serious schedule impact, a schedule compromise is probable if the present priorities situation is prolonged.

II. CHANGE PAST MONTH

A. NASA S-IVB Orbital Workshop

At the September 19 meeting of the NASA Manned Space Flight Experiments Board (MSFEB), the Air Force proposed, and the Board accepted, five experiments for flight on the S-IVB Orbital Workshop.

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The experiments, all of which have been approved and funded within the Air Force, are:

1. Integrated Maintenance Experiments.
2. Suit Donning and Sleep Station Evaluation.
3. Alternate Restraints Evaluation.
4. Expandable Airlock Technology.
5. Expandable Structure for Recovery.

The first three experiments are to be conducted by the MOL Systems Office and involve MOL baseline equipment and/or procedures. The last two experiments are to be conducted by the AF Aero Propulsion Laboratory (RTD). Although these two experiments are not directly related to the current baseline MOL, they are of direct interest to the MOL program because of the potential which they offer to follow-on MOL flights or near-term future military manned space programs.

On September 20, the MOL Systems Office was directed to implement the experiments. RTD has also initiated work on their two experiments. The Air Force Field Office at the NASA Manned Space Center, Houston, Texas, has been designated as the focal point for day-to-day technical coordination with NASA on this program.

At the September 19 MSFEB, Dr. Mueller firmly committed the S-IVB Orbital Workshop to Apollo-Saturn flight 209, currently scheduled for March 1968.

B. MOL Launch Complex - VAFB

Site preparations for the MOL launch complex were completed on August 22. This involved approximately 1.4 million cubic yards of earth work, construction of access roadways, a water supply line and railroad siding.

Design of the launch complex has progressed to a point which will permit advertising on November 5 for bids for construction. Award of contract could be made such that actual construction can start the first week of January 1967 with completion scheduled about 18 months later. Some augmentation of the military construction funds will be

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needed because of the MOL-peculiar requirements. Discussions with representatives of the Director of Budget and Director of Civil Engineering revealed that the additional funding requirements can be met.

C. Abort Recovery Staging Base

An analysis of abort recovery plans with and without an island staging base has been completed. The results of this analysis show that the least costly plan is an aircraft/ship mix with aircraft operating from Easter Island. The implementation of this plan will require augmentation of the air base facilities to be constructed on Easter Island by [REDACTED] and approval by the Chilean Government. FY 68 military construction funds (\$996,000) have been requested, and an inquiry has been sent to the American Ambassador to Chile requesting his reaction to the possibility of establishing the abort recovery staging base on Easter Island.

D. PSAC Bioastronautics Briefing

On September 30, a special PSAC subcommittee under the chairmanship of Dr. Ross Adey was briefed on the MOL bioastronautics program. The group received the presentation without substantive comment, but indicated that specific details might be reviewed at some later date.

E. Update of MOL Program Plan and Funding Requirements

During the week of September 18, the Program Plan previously forwarded to SAF by General Schriever's memorandum of July 20 was revised to incorporate the present factory-to-pad flow, current program cost estimates, and other program changes. The total new obligating authority (RDT&E) required for FY 1967 and subsequent years is now estimated at \$1841.2 million. This figure will be further refined as firm negotiated costs become available.

F. Draft Presidential Memorandum Reclama

On September 9, the Vice Director, MOL submitted to AFRRP information to be included in the Secretary of the Air Force reclama to the Secretary of Defense on the FY 68 MOL Program. The Draft Presidential Memorandum (DPM) listed \$480 million for the MOL Program for FY 68. In contrast, the MOL Program Plan and Funding Requirements document, prepared in July 1966 and submitted to DDR&E, supported a FY 1968 funding requirement of \$556.8 million. In the final review

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of the reclama action, the Secretary of the Air Force settled on a FY 68 funding request of \$510.0 million. The SAF also noted that any adjustment in total program costs and FY 68 funding requirements would be reported at the time of review of negotiated contract costs.

G. Mr. Hyman Fine, AFABF, Visit to MOL Systems Office

General Crow, AFABF, was asked to provide the SAF with his personal review and appraisal of reasonable funding obligation rates for the MOL Program for FY 67 and FY 68. Mr. Hyman Fine, Office of the Director of Budget, visited the MOL Systems Office at SSD during the week of September 19, during which time he had discussions with General Berg and members of his staff to obtain a first-hand insight into program details. Information supplied Mr. Fine emphasized and supported the fact that FY 1967 and FY 1968 requirements represent only the amounts which will be obligated in each year to cover associate contractors' incurred costs and profit, sub-contractors' incurred costs, profit, and vendor billings. Normal contract obligations for termination liability have been excluded from total program costs, and thus the costs shown in the MOL Program Plan and Funding Requirements document of July 1966 represent minimum funding requirements to continue with MOL development without affecting the primary objective or schedule.

III. CURRENT STATUS

A. MOL Funds Status

Obligation Authority issued during September 1966 to MOL activities totalled \$43.6 million. The total of funds released against the MOL line item since program approval in August 1965 is now approximately \$151.7 million. The FY 66 carry-over balance held by the Director, MOL Program, is approximately \$14.5 million as of September 30.

B. Heat Shield Test (HST)

Preparations for the HST launch are continuing on schedule. The simulated laboratory and Gemini spacecraft have been installed on the booster at Pad 40, ETR. The HST launch is now scheduled for November 4, in lieu of November 9, to accommodate a Vela program launch on February 15, 1967. The new HST launch date eliminates a potential conflict with the Gemini GT-12 flight which recently slipped from October 31 to November 9. Planning for a contingency launch as back-up to the HST is being deferred pending results of the flight test. DDR&E has advised the Air Force that Titan IIIC Vehicle #16 is no longer available as back-up for the HST flight.

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An annex to the MOL Information Plan has been prepared to establish information policy guidelines for the Heat Shield Test. ASD/PA approval of the annex is expected by October 7.

C. NASA Assignee to the MOL Systems Office

Direct discussions are underway between the Engineering Directorate of the MOL Systems Office and NASA at Houston to identify a NASA individual to be assigned as Assistant to the MOL Director of Engineering.

D. T-III/MOL Support of NASA Apollo Application Program (AAP)

An addendum to an earlier report provided NASA on T-III/MOL capabilities to support the NASA AAP program was submitted to NASA in September. This addendum responded to an additional NASA query on what long-duration mission capability could be achieved per flight with the MOL baseline system and what modifications to the system would be needed to provide rendezvous and resupply capability for further extension of mission duration. Costs associated with both approaches were also requested.

The response provided to NASA indicated an ability to increase orbit duration up to ninety days by cryogenic tankage modifications and, through rendezvous and resupply, to a nominal one-year orbit duration. In both cases, the study was based on use of MOL structural segments with minimum modification. Achievable payload weight and costs were detailed.

No additional requests for data on the overall subject of T-III/MOL support for AAP is currently in work.

E. Electromagnetic Pointing System (EPS)

A briefing on the projected capabilities of the EPS was presented to the NSA staff on September 21. The NSA evaluation of the utility of combined photo/ELINT data to the intelligence analyst is expected on November 1.

IV. FORECAST FOR FUTURE

A. October Program Review

The review is scheduled for the afternoon of October 28 at Los Angeles. The agenda will include a briefing on the status of contract negotiations.

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B. Availability of Negotiated Cost Data

Completion of price negotiations with the three major MOL associate contractors is now anticipated as follows: McDonnell, October 15; Douglas, November 1; General Electric, November 10.

V. DUE DATE OF NEXT STATUS REPORT

Next Status Report to be submitted November 7, 1966.

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