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DEPARTMENT OF THE AIR FORCE  
WASHINGTON 20330

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OFFICE OF THE SECRETARY

FEB 7 1969

*Noted by  
SECAF*

MEMORANDUM FOR THE SECRETARY OF THE AIR FORCE

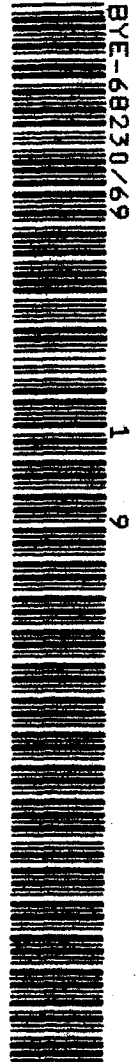
SUBJECT: Manned Orbiting Laboratory Monthly Status Report

The attached Status Report on the Manned Orbiting Laboratory (MOL) Program covers activities through January 31, 1969 and is submitted in accordance with the January 17, 1969 memorandum from the Office of the Secretary.

*J. Stewart*  
for

JAMES FERGUSON  
General, USAF  
Director, MOL Program

1 Atch  
a/s



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Page 1 of 6 pages  
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I. PROBLEM

None.

II. CHANGE PAST MONTH

A. Purchase of Sudden Ranch

The court action for the government purchase of the Sudden Ranch (14,500 acres) was completed December 20, 1968. The judgement established the total price to be \$9,002,500 with 6% interest on the unpaid balance. The Air Force deposited with the court \$3.850M on March 1, 1966, and took possession to initiate construction of the Space Launch Complex No. 6 (MOL launch facility). An additional \$1.912M was deposited May 9, 1968. A request for apportionment of \$4,060,340 was submitted to the Secretary of Defense (OSD) January 14, 1969. As of February 14, 1969 Office of Civil Engineering reports no action from OSD. Interest is accumulating at the rate of \$530<sup>00</sup> per day.

B. COMIREX Interest in MOL/DORIAN

Subsequent to General Stewart's briefing on December 19, the United States Intelligence Board's Committee on Imagery Requirements and Exploitation (COMIREX) has shown interest in the problems of defining DORIAN targeting requirements. A briefing on the development of Master Photo Chips and cue materials was presented by the Aeronautical Chart and Information Center (ACIC) at the January 16 COMIREX meeting. The Chairman of COMIREX has placed emphasis on identifying those targets requiring DORIAN resolution and on working with ACIC towards either a single target nomination system to serve the whole intelligence community, or, if this is not economically feasible, at least achieving the greatest possible compatibility with operational considerations.

The COMIREX will visit the National Reconnaissance Program activities on the West Coast during the period 3-12 February. A briefing at the MOL Systems Office and a tour of the Laboratory Module mockup at Huntington Beach is included for these visits. The Systems Office briefings will cover technical aspects of the Eastman Kodak Company, General Electric Company and McDonnell Douglas Astronautics Company (Western Division) segments of the program; a review of on-orbit operating concepts; mission planning software; and crew training requirements.

C. Approval of Associate Contractor Special Facilities at Eastman Kodak Company

In early December 1968 the Systems Office provided General Stewart with an Eastman Kodak Company (EKC) proposal to contract additional office/

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Page 2 of 6 pages  
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laboratory space, in EKC Building 102, to support General Electric/McDonnell Douglas requirements for on-site personnel located at EKC. The SAFRD signed a request to DDR&E, on December 19, 1968, asking for approval to authorize the additional construction. On January 11, 1969, the DDR&E authorized the Air Force to proceed with the required facilities contract with EKC.

The authorization to proceed has a contingency that if funds in excess of \$2 million are required, an additional review will be made by both the SAFRD and the DDR&E. A second contingency to the authorization, to protect the United States, the new building extension will be included within the special conditions attaching to the basic building.

The Systems Office has been directed to initiate the contract with EKC.

### III. CURRENT STATUS

#### A. Funds

There was no change in the fund release status during January. FY 1969 funds in the amount of \$455 million have been released to the Systems Office. The remaining FY 1969 funds in the amount of \$60 million are retained in Headquarters USAF by the Director, MOL and will be released just prior to the beginning of the fourth quarter.

#### B. Advanced Planning - Space Electrical Power System

DDR&E responded on November 28, 1968 to a request from the Atomic Energy Commission (AEC) for specific delineation of the future needs of the Department of Defense (DOD) for space nuclear power technology. This request was generated by AEC in order to assist them in supporting their budget requirements. SAFSL-6 and SAFSLS assisted in the generation of the DDR&E inputs to AEC by providing projected electrical power requirements for long duration high-power-consumer space systems of the future.

DDR&E may request an AFSC study to further define the potential applications of the organic-Rankine system of space electrical power generation. NASA has conducted similar work relative to the Brayton cycle. The results of these studies should be beneficial to the AEC in developing optimum isotope heat sources.

#### C. Depleted Uranium

McDonnell Douglas (Western Division) has notified the Systems Office that lead will be an acceptable mass substitute for the LOX Tanks

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Page 3 of 6 pages  
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on Flight Vehicle 2. Accordingly, lead (instead of the previously considered depleted uranium, as reported in our November 1968 monthly report) will be used for the simulation of these tanks.

D. [REDACTED]

[REDACTED]

1. [REDACTED]

[REDACTED]

2. [REDACTED]

[REDACTED]

3. [REDACTED]

4. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

E. Mission Simulator Development

System Office representatives visited classified facilities of the 9th Strategic Reconnaissance Wing, Beal AFB, California. The primary purpose of the visit was to study the SR-71 simulator technology, operation of the simulator, and the simulator support concept. The use of photographic stimulus materials to simulate an optical view of vehicle ground track was of special interest. This visit was arranged to broaden the experience of Systems Office personnel assigned to the development of the MOL mission simulator.

F. General Stewart's Visit to the MOL Systems Office

On 27-28 January 1969 General Stewart visited the MOL Systems Office for the purpose of reviewing the MOL financial situation, astronaut time-lines for the first two days in orbit, and advanced planning activities.

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MOL Fiscal Situation - The MOL financial review covered actual fiscal performance for FY 68 and the first half of FY 69, estimated performance for the last half of FY 69 and a preliminary assessment of the FY 70 situation. The funding figures were compared with related contractor manpower figures (direct or indirect) for the corresponding periods. The program has been tracking very well to date with obligations and expenditures following rates compatible with available funding. The review disclosed that the contractors were proposing expenditure increases for the balance of FY 69 which will exceed our target figures unless they are slightly depressed. General Bleymaier plans to meet with senior contractor officials in early February 1969 to reaffirm our FY 69 figures and to caution them to keep expenditures within established ground rules. It is not expected that the contractors will have any difficulty in meeting these constraints.

The FY 70 picture is a little less clear. The amount of work which has been deferred into FY 70 due to fiscal constraints in FY 68/69 poses some problem. The exact size of the problem is somewhat obscured by a number of factors, including the contractors desire to enter into contract negotiations in a favorable position. The FY 70 situation will be carefully analyzed.

Astronaut Time-Line - The review of the astronaut time-lines showed that the work is proceeding satisfactorily with all reasonable alternatives (work-rest cycles) being examined. Guidance was given to the Systems Office to give first preference to the solution which had both astronauts rested and awake for the photographic operations over the target area.

MOL Advanced Planning - Review of MOL advanced planning activities included a discussion of a McDonnell Douglas proposal to conduct a study of the life support systems required to extend duration of MOL to 45 days. The unmanned system design has a wafer section in the unpressurized section of the Laboratory Module which contains the necessary expendables to obtain the on-orbit duration. Conceptually, this study will perform the engineering and design analysis that will permit selection of a configuration of the wafer required to support longer duration manned missions.

A proposal from EKC was reviewed. This proposal was prepared as a follow-up to a preliminary study completed in December 1968 on defining methods of improving MOL camera performance to the maximum possible within the basic optical envelope (larger oval tracking mirror, improved Ross corrector design, reduced obstruction, etc.)

It was concluded that the EKC proposal required additional definition and a more detailed break-out of tasks providing greater flexibility of choices.

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The status of the Systems Office study on electronic photo read-out was reviewed. A large number of options are under consideration with the view of proposing the inclusion of a read-out capability in the follow-on MOL buy.

General Stewart concluded the meeting by outlining the priority for the application of the limited MOL advanced planning resources to (1) efforts to improve MOL camera resolution, (2) increased on-orbit vehicle life and (3) other system improvements and/or capabilities, e.g. read-out.

IV. FORECAST FOR FUTURE

A. Space Station Technology Symposium

The MOL Program Office has been invited to participate in a space station technology symposium at Langley Research Center on February 11 through 13. The symposium is jointly sponsored by the Office of Manned Space Flight and the Office of Advanced Research and Technology in NASA. An unclassified paper will be given by the Systems Office and will treat unique MOL contributions to space station technology as well as this Program's view of gaps in technology required for a space station development program.

B. Program Review Council Meeting

An MOL Program Review Council (PRC) meeting is scheduled for February 11 at the MOL Systems Office in Los Angeles.

The agenda will include a review and status report on financial and schedule matters, and a technical report which will include the camera system, and astronaut training simulator, contamination studies and results, and the Image Velocity Sensor.

V. DUE DATE FOR NEXT STATUS REPORT

The next monthly MOL Program Progress Report will be submitted March 7, 1969.

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