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DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING  
WASHINGTON, D. C. 20301



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mjm

31 JAN 1969

MEMORANDUM FOR DEPUTY SECRETARY OF DEFENSE

SUBJECT: MOL Program and Value of Very High Resolution Imagery

I understand that you have recently been advised by the Office of ASD (SA) that the urgency and need for very high resolution imagery is not great enough to support the estimated run-out costs for the MOL program.

This contention and other issues presented by Systems Analysis have been fairly considered in the extensive decision making process applied repetitively to MOL. Also, the options and alternatives recommended for new evaluation have been presented in previous MOL DCP's and other decision documents. Methodology to quantify the cost/effectiveness of intelligence has yet to mature to a level which would preclude judgement decisions regarding the value of additional technical intelligence in DOD force planning decisions.

My conclusion, as presented in the most recent MOL DCP, that the value to DOD of MOL very high resolution photography combined with its mission flexibility justifies the remaining development and estimated operating costs; and my recommendation for proceeding with the baseline (manned and unmanned) program were supported by the Secretary of the Air Force, the President's Scientific Advisor, the Director of the DIA, the Director of the National Reconnaissance Program, and the Assistant Secretary (Comptroller) and approved by the Dep SecDef.

The MOL program is managed by the Secretary of the Air Force and directed by General Ferguson and General Stewart. It has been exceptionally well handled, our guidance always responsively received, and is proceeding towards its objectives in an orderly and effective fashion in consonance with the DCP dated 4 December 1968.

General Stewart, General Carroll, Dr. Flax and I are prepared to brief you at your earliest convenience on the MOL Program, Man in MOL, and the recently completed joint DDRE/DIA study regarding the Value of Very High Resolution Imagery to DOD.

#901-31-030

*John S. Foster, Jr.*  
John S. Foster, Jr.

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cc: ASD (SA)

DORIAN/HEXAGON

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DRAFT

*La All*

18 Feb '68

MOL

The MOL Program was approved on the basis of an investigation of the usefulness of man in space to contribute to military objectives. It was determined that the most useful experiment to perform was a single directed experiment to determine the ability of man in obtaining VHR performance of a photographic reconnaissance satellite. The original program was defined toward this experiment and the optical system specifically tailored to maximize the potential contribution of man. PSAC reviews of this program resulted in technical confirmation of the approach with the statement that the goal of VHR was unquestionably important and that manned operation could increase confidence and timeliness of achieving the goal. However, PSAC observed that the results of the MOL program might lead to a desire, for several reasons, to conduct further VHR operation unmanned. Therefore, the automatic devices to permit and unmanned operation were included in the program / unmanned flights were added to verify their operation. But it was fully accepted at that time that the MOL program was justified on the basis of an experimental program to determine man's utility.

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HEXAGON<sup>N</sup> DORIAN  
GAMBIT

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The output of the program was intended to be a clearer understanding of man's capability and also a set of hardware with VHR capability for either manned or unmanned operation. The program was established outside the NRP and it was approved for a specific limited number of flights with no implicit decision on the nature of the follow-on. USIB has given no specific requirement.

At this time the program is being reviewed and judged on the basis of an operational reconnaissance program in direct competition for intelligence gathering assets. The recent MOL DCP stated acquisition of VHR to be the primary objective with exploration of man's utility as an ancillary objective. The dialogue underway tends to obscure several key factors which are important to the justification of the program both currently and historically.

1. The MOL program will result in data <sup>on</sup> for which to base conclusions regarding man's utility and to permit formulation of plans for possible future military manned space flight activity. The program remains a valid approach to this determination and one which will provide needed supplementary data to NASA activities. If the program is terminated, any

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future decisions must be based on an extrapolation of NASA experience.

2. The MOL program will result in specific data related to man's utility in reconnaissance operations. Such data is necessary for any future consideration of manned space reconnaissance and directly applicable data is not easily extrapolated from NASA programs.

3. The MOL-DORIAN program will result in the development and orbital qualification of an optical system of very advanced performance. The initial manned flights will result in a unique opportunity to understand clearly the orbital performance of such an optical system and may resolve uncertainties of the type now facing us with GAMBIT.

4. The MOL-DORIAN program will obtain VHR photography during its five missions. This photography will have high intelligence value. During any quarter in which MOL/DORIAN flies successfully GAMBIT will be stood down.

5. The MOL/DORIAN program will result in a basis for three types of future programs:

a. If the manned system proves to be of sufficient unique value, it may be continued.

b. If the value of VHR warrants it, but the unique contributions of man do not warrant the added expense, the DORIAN optics may be flown with a simpler control vehicle and replace

the GAMBIT system.

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c. A decision may be reached based on MOL experience to proceed with more ambitious manned endeavors such as rendezvous, ~~result~~, larger optics etc.

6. The unmanned flights of the present program are of dubious value. A misunderstanding appears to exist that these flights are important to the development of an unmanned capability for VHR. In fact, such a capability is best developed through manned flights in the automatic mode. The capability for exploiting the unmanned capability exists, if desired, by a moderately inexpensive integration of the HEXAGON OCV with the DORIAN Mission Model.

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