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6 APR 1964

Dear Bennie,

This letter supplements my 3 March letter concerning the reconnaissance aspects of the MOL (BYE 22570-64).

Within the ~~(S)~~ NRO, I have assigned to the Director, ~~(S)~~ NRO Program A (Major General Greer) the responsibility for studies involving the comparison of manned and unmanned satellite reconnaissance capability, and other reconnaissance matters which will be of interest to, or undertaken in direct support of, the MOL program. Unless I make specific exception to the contrary, all of this work will be conducted under a code word category (DORIAN) within the Byeman system, and handled exclusively within the ~~(S)~~ NRO channels. All instructions to the Director, ~~(S)~~ NRO Program A will come from me directly.

I am enclosing two memoranda for record covering our 21 March discussions on the MOL project. These memoranda confirm and expand my previous instructions, and supersede them in regard to the subject of radar reconnaissance. I do not intend any change in the "black" QUILL project, but otherwise the subject of radar is free for "white" MOL consideration.

I think it is essential that the key personnel associated with the MOL project understand that the existence of "black" aspects cannot be counted on for support of the phase I MOL effort. This latter effort must stand on its own merits; the actual conduct of "black" development is dependent upon successful establishment and completion of phase I MOL work. I will discuss with the Secretary of Defense the general character and schedule of the ~~(S)~~ NRO studies under way and contemplated in support of later phases of the MOL project. The case for the project at the present time however must be made on a completely "white" basis.

DORIAN

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It is also essential that the existence of "black" effort which may later be applied to the project be protected completely. No document outside the ~~(S)~~ NRO should make any reference whatever to the existence of the ~~(S)~~ NRO work, such as stating or intimating that a "classified" or "special handling" annex exists to any plan.

I feel that it is essential for the establishment and maintenance of good working relationships and effective MOL effort that the key personnel understand these arrangements.

Sincerely,

Signed

Brockway McMillan
Director
~~(S)~~ National Reconnaissance
Office

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General B. A. Schriever
Commander
Air Force Systems Command

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DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE UNDER SECRETARY

26 MAR 1964

MEMORANDUM FOR RECORD

SUBJECT: Reconnaissance Experiments in MOL

This memorandum describes the manner in which reconnaissance experiments and reconnaissance-related experiments will be conducted in the military manned orbital laboratory, and policies to be followed in connection with these experiments, as agreed upon by Drs. Brown, Fubini, Hall, McMillan and Flax, and Generals Schriever and Ferguson.

General Objectives for Reconnaissance Related Experiments

Experiments will be performed to determine the possible contribution of man, using appropriate aids, to the performance of reconnaissance and surveillance missions from an orbiting station.

Data derived from these experiments will be used to compare the cost and performance of manned and unmanned systems.

Security Policy

There shall be no compromise to the security policies established by the ~~(S)~~ NRO.

Every effort will be made to conduct experiments at the lowest level of security classification possible. Except as may be directed by the ~~(S)~~ DNRO, no experiments will be conducted that require codeword classification. Study or design of such classified experiments will be only as directed by the ~~(S)~~ DNRO. Experiments related to photographic reconnaissance will be subject to special controls to avoid compromise of classified information. Controls are outlined below.

Experiments with high resolution radar may be considered without special security constraints, except that the existence of related experiments and studies now under special classification will not be revealed.

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Data from these latter will be declassified insofar as is possible without compromising the source.

Experiments related to other image-forming reconnaissance, and to signal intercept, may be subject to special controls. Details of this policy are still being developed.

Experiments involving sensors in the infra-red and higher portions of the electromagnetic spectrum, having angular resolving power coarser than one milliradian, are not subject to special controls.

Experiments Related to Photographic Reconnaissance

These experiments will seek to determine man's capability, with appropriate aids, to point an instrument with accuracy better than 1/2 mile, to adjust for image motion to better than 0.2 percent, and to focus precisely.

They will be conducted using a telescopic system.

Photography of reconnaissance quality will not be used to record or verify performance.

Photography approximating reconnaissance quality may be undertaken on some orbital flights, using an available instrument which it is believed can be declassified without compromise.

Orbital experiments will not be undertaken until it is determined that they are desirable or necessary, on the basis of simulation on the ground or in airborne tests.

Comparison of Manned and Unmanned Systems

A comparison of the potential cost and performance of very high resolution photographic systems, manned and unmanned, and a comparison of unmanned photographic systems with competitive visual manned systems, will be conducted separately, within the ~~(S)~~ NRO under special security (DORIAN).

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These studies will keep current with the data from the MOL program, with the objective to insure that, should the experimental results warrant a decision to develop a manned system, the basis for initiating such a development will be at hand.

The ~~(S)~~ NRO, under special security controls, will examine the present experimental program and, if necessary, will undertake to design experiments to measure the limiting optical properties of the atmosphere. Comparisons will be made of experiments which (a) can be unmanned, (b) require manned orbital flight and can be conducted at a security level other than codeword (perhaps by use of suitable cover), (c) require manned orbital flight and must be given special classification. Results of this design study will determine policy for the conduct of such experiments.

Brookway McMillan

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DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE UNDER SECRETARY

26 MAR 1964

MEMORANDUM FOR RECORD

SUBJECT: Policy for Conduct of MOL Program

This memorandum records certain basic policy for the planning of the MOL program, incorporating discussions on 21 March between ODDR&E and USAF.

General Policy

The primary objectives of the program are experimental: to obtain authoritative data, in an economical way, on the possible contributions of man to the performance of military missions in space, and to obtain data on man's performance sufficient to form a basis for design and evaluation of manned systems.

No requirement to develop an operational system will interfere with the requirements imposed by the experiments to be performed; costs and schedules will be defined by the needs of the experimental program.

Experiments will be performed on orbit only after prior tests on the ground and, if necessary, in aircraft, adequately define and justify orbital tests.

Granted that an orbital flight is justified by its primary experimental purposes, such secondary experiments as are desirably and conveniently carried along may also be conducted.

Experimental Areas

Missions of military interest include observation of the earth and earthbound events, and detection of an interaction with other space vehicles, both cooperative and uncooperative. Observation of

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and control of the environment, as it may influence the performance of military missions, defines a third general domain of experimental interest.

Experiments of general scientific interest will be included to the degree that this is possible without interference with the primary military experiments. Consideration will be given to the possibility that flights beyond those justified by military objectives will be undertaken in the interest of basic scientific experiments.

Functional Experiments

The primary function of man appear to be

Search for and selection of targets or subjects for observation,

Precise navigation,

Adjustment and maintenance,

Summarization and reporting.

Man's ability to perform in these functions can be exploited to facilitate experiments of all kinds. Man's ability at these functions will be measured in mission-related experiments of the following kinds:

Detection, classification, identification, and, if appropriate, examination and tracking with instruments, of such targets as

fixed installations at known locations

fixed installations having varying degrees of ambiguity
as to signature and location

ground vehicles

ships



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missile launches

explosions, including nuclear

Observing and reporting meteorological phenomena

Measurement of radiation in the infra-red and ultra-violet spectrum, of background and of selected sources such as

thunderheads

cold clouds, as may influence performance of horizon sensors

missile plumes and explosions.

These radiation measurements are not impossible in unmanned systems, but are much more definitive if performed by a man, since a man can directly and immediately, rather than merely statistically, associate each measurement with an event identified and classified by him from other data, including sensory data.

"Housekeeping" experiments - adjustments and repairs, compiling abstracting and reporting observational data, influence of man's motion on critical vehicle stabilization, processing of film and records, and general "time and motion" analyses of mission performance.

Psycho-physical observations to determine the influence of basic environmental factors. In this connection, the possible influence on the design of the system of experiments with centrifugal gravity will be examined.

Experiments involving interaction with other space vehicles are likely to impose serious design constraints on the system. However, examination will be made of the possibilities for, and the impact of, experiments involving

rendezvous

extra vehicular activity

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inspection

transfer of materiel and personnel

Basic Scientific Experiments

Such basic scientific experiments as can be included and do not compromise the military-oriented experiments will be considered.

Brookway McMillan

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