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~~TOP SECRET~~ NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

GAMBIT
UPWARD

OFFICE OF THE DIRECTOR

████████████████████
April 28, 1967

MEMORANDUM FOR: Mr. Vance
Mr. Helms
Dr. Hornig

SUBJECT: NASA Lunar Mapping and Survey System (LM&SS)

The agreement which formalized arrangements between the DOD/CIA and NASA on lunar reconnaissance programs was signed by Mr. Gilpatric and Mr. Webb on August 28, 1963. This agreement recognized the NASA requirement to perform both unmanned and manned lunar reconnaissance and the probable requirement for NASA to test equipments in earth orbit prior to conducting lunar operations. Although not stated in the agreement, it is my understanding that the rationale for making available highly sensitive high-resolution equipment for NASA use was to provide a high degree of capability to assess proposed lunar sites for manned landings in the event that results obtained from the Lunar Orbiter Program (with equipment of poorer resolution) were inadequate or the program was unsuccessful.

The agreement recognized the covert and highly sensitive capabilities of the NRO to produce the equipments required by NASA and the existing security measures designed to preserve these capabilities. The agreement charged the NRO with reviewing NASA stated requirements, verifying the applicability and classification of NRO developed technologies, selecting a contractor, developing the equipment in a secure and protected "black" fashion, controlling access and disclosure of equipment under NRP security procedures, and managing the development of the actual flight payload. NASA, on the other hand, was charged with providing the vehicle to carry the equipments, providing management guidance for the "white" aspects, and conducting any operation with these equipments in accordance with NRO security practices. A security annex to the agreement was signed by Dr. McMillan (then DNRO) and Dr. Seamans (then Associate Administrator, NASA) on March 24, 1964. This annex lists security policy on major items and actions associated with the agreement. Specifically, on reconnaissance products, it requires classifications as follows:

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Lunar photography as initially processed	SECRET
Sanitized lunar photography (i. e. remove fiduciaries and enlarge)	UNCLASSIFIED
Earth photography, if any	TOP SECRET TALENT-KEYHOLE

The program which resulted from this agreement was designated UPWARD (a BYEMAN classification) and called for the provision by the NRO to NASA of a photographic system consisting of a GAMBIT camera (modified) in a GAMBIT-CUBED spacecraft. The NASA unclassified designation of the UPWARD system is Lunar Mapping and Survey System (LM&SS). Although the UPWARD equipment has not been listed by NASA as directed toward Apollo Applications Program objectives, its inclusion in such flights has been explained by the reasoning that the Apollo Applications flights represent the first opportunity to obtain an in-space test of the entire UPWARD system.

On February 9, 1967, the Manned Space Flight Policy Committee (MSFPC) discussed the subject of NASA's plan for flying UPWARD in earth orbit as a part of the Apollo Applications Program.

At that meeting, a DOD/NASA working group was assigned the task of examining in detail the security and public information problems associated with NASA's proposed flight test or use of the UPWARD system in Earth orbit. Shortly thereafter, I noted my intention to inform you of the findings and recommendations of the DOD/NASA working group as soon as they were reported to the MSFPC.

The Manned Space Flight Policy Committee (MSFPC) met on April 20 to review the recommendations of the DOD/NASA working group. The group had presented for MSFPC consideration four alternative plans for handling the security and public information aspects of an Earth-orbital test of the UPWARD system. The Committee found these alternatives to be unacceptable when assessed against the risks to the National Reconnaissance Program and the possible adverse international reactions to NASA and the U.S.

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As we now understand it, the results achieved thus far by Orbiter and Surveyor have caused NASA to shift the major focus of the LM&SS program from that of site selection for the manned lunar landing to one of general scientific lunar orbital exploration, originally a secondary objective for the UPWARD program.

Although NASA is still assessing the results of the Orbiter and Surveyor programs it appears that the goal established originally for the LM&SS may have been achieved. In this regard, Dr. Seamans has asked Drs. Mueller and Newell to meet early next week to begin a complete review of NASA plans for the LM&SS program. Dr. Seamans noted that this review would be continued by the NASA Utilization Board and would be completed by the end of June 1967.

Although other alternative arrangements for handling the security and public information aspects of an Earth-orbital flight of the UPWARD system were discussed, the Committee concluded that further consideration of these arrangements would be premature in view of the present uncertainty of NASA's plans for the LM&SS program.

The Committee agreed that such a review was essential and suggested that NASA consider in its review several options discussed by the Committee:

1. Cancellation of the LM&SS program
2. Continuation of the LM&SS program, dispensing with the Earth-orbital test
3. Continuation of the LM&SS program, including an Earth-orbital test

With regard to Option 3 above, NASA was asked to define explicitly the system configuration and hardware it would propose to fly in any Earth-orbital test of UPWARD, and to consider that an entirely satisfactory security and public information plan had not yet been defined.

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NASA has agreed to consider, on the basis of the results of its program review, the alternative arrangements for the procedural handling of information related to and products resulting from any Earth-orbital flights of the UPWARD system and to submit its findings and recommendations to the MSFPC for review. I must, therefore, delay a more definitive report to you until NASA has presented its findings and recommendations.

From a program management standpoint there are additional problems relating to any extended use by NASA of the UPWARD system. Since we will be closing out the GAMBIT program at the end of June 1967, it will be necessary to maintain an Eastman Kodak capability to support GAMBIT on behalf of NASA for an extended period. This will inevitably raise the costs to NASA over those estimated originally. Further, since GAMBIT hardware is designed specifically for a straight-line flow from factory to launch pad, new and perhaps more costly procedures will have to be developed for hardware requalification and checkout to meet NASA's requirement for long period on-the-shelf storage of manufactured equipments.

I have called these and other problems to NASA's attention and have strongly recommended their consideration in any decision on extended use of the UPWARD system.

Alexander H. Flax

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