PRO A66

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9 February 1971

MEMORANDUM FOR COLONEL SWEENEY

SUBJECT: Procurement/Launch Rate of the HEXAGON 12-Inch Focal Length Mapping Camera

I understand that Dr. McLucas asked a question on the above subject on the occasion of a recent briefing by SS-4 on HEXAGON operations. Colonel Murphy suggested that SS-7 prepare a follow-up memorandum to you.

Currently, six HEXAGON mapping cameras are under contract, including the qualification model which will be refurbished for flight use. Negotiations for the second increment will be initiated this spring; however, the exact number of units has not been determined. The first launch is scheduled for the seventh HEXAGON vehicle, how projected for the fall of 1972. We have furnished guidance to SAFSP to the effect that they should plan to launch mapping cameras on all subsequent HEXAGONs through FY 1976 (a total of 13) and two per year thereafter.

The above guidance was based on COMIREX recognized MC&G requirements which identify some 33.4M NM^2 to be covered by the mapping camera outside the Sino-Soviet bloc in the first three years of operation and 5.3M NM^2 annually thereafter. After my reminder to the COMIREX MC&G Working Group about a year ago to the effect that the mapping camera would not function with the main sensor as an index camera, they advised that 7.8M NM^2 inside the Sino-Soviet bloc should be added to the above first three years requirement for a total of 41.2M NM^2.

An estimate by the SOC in June 1969 established 3.8M NM^2/ mission as a rough planning factor for mapping camera performance. Applying this to the above requirement, nearly 11 missions are required in the first three years of operation and between one and two missions per year thereafter. The planning guidance given SAFSP and the projected HEXAGON

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launch rate would produce 12 cameras on-orbit in the first three years, three the following year, and two/year thereafter. This allows a slight safety factor against the uncertainty in the planning figures.

Refinement of the above will be accomplished contingent upon a more specific statement of the mapping requirement from the MC&G community and an NRO software capability to realistically simulate mapping camera collection. Both of these are expected to be realized in the next two to three months.

The projected recurring cost of the HEXAGON mapping camera (launched) is about $2.7M/mission.

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