

14 August 1969

MEMORANDUM

SUBJECT: Background on Near-Real-Time Imagery Issues

1. One of the issues at ExCom will be the relative urgency of near-real-time system development compared with the urgency of obtaining higher resolution photography than GAMBIT will provide. The very high resolution photography (called "VHR") would be obtainable from continuing developmental aspects of the MOL technology.

a. Some DoD elements, including John Foster, use the following line of argument on this issue: The main strategic problems of the 1970's will be technical and qualitative and therefore the imagery requirements will center on technical details such as are visible only with higher resolution than the present GAMBIT  is the most quoted VHR figure). Moreover, very high resolution photography is the most important collection capability to have in the context of monitoring arms limitation agreements -- for the same reasons.

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b. Those who argue for very high resolution photography tend also to downplay the need for near-real-time imagery. They do not question its value with respect to crises or fast breaking events, but question the value of its multi-purpose capabilities and the frequency of occurrence of situations requiring positive control over collection and interpretation.

2. To some degree I believe that the technically-oriented officials, such as Foster, do not fully appreciate the day-to-day intelligence processes which can be supported by near-real-time photography and which in turn would contribute to a much better overall intelligence product, and consequently better DoD programming with attendant savings in both money and efficiency.

3. Dr. Land has defined the three major requirements for overhead photography as follows: (a) see it well; (b) see it all; and (c) see it now. The "see it well" requirement is currently met by the high resolution GAMBIT system and is, of the three aspects, relatively the most advanced. The "see it all" requirement is covered to a degree by CORONA and will be brought to the relative

advancement of the first requirement by HEXAGON. The "see it now" requirement is not met at all at present and is the most deficient of the three. In that sense, it is the aspect of overhead reconnaissance which is most in need of development next, if all three requirements are to be addressed and some attempt made to keep them in balance.

4. There are two very recent examples of military situations in which near-real-time capabilities would have materially improved intelligence -- similar examples appear regularly:

Sino-Soviet border:

The August 14 Washington Post carried the following lead:

"Soviet and Chinese forces clashed in bloody fighting yesterday along their border in remote Central Asia. It appeared to be the most serious incident since the March fighting along the Ussuri River between Soviet Siberia and Chinese Manchuria.

"American officials, with little more to go on than broadcasts of the rival claims contained in protest notes delivered in Moscow and Peking, were uncertain how serious the new incident might be."

Intelligence sources, in this instance, had no additional contribution to make.

Recent Standdown of Soviet Air Units

5. From 1 to 10 August there was a general standdown of Soviet military air operations, involving all components -- air defense, tactical air, naval air, and strategic bombers.

6. Imagery on a near-real-time basis would offset the critical loss of knowledge suffered in such situations. In this instance it could have given the following kinds of valuable information:

Deployment and Dispersal. Counting and observing dispositions of aircraft at various fields would have indicated whether deployment or dispersal was taking place under communications security.

Maintenance. Aircraft parking patterns would have indicated whether a heavy maintenance effort was taking place.

Alert Posture. The numbers of aircraft at fighter airfields on alert aprons or near alert hangars, would have indicated whether the alert posture had been changed.

Movement of Ordinance. Activities at

airforce ammunition storage points and aircraft arming areas on the airfields would have indicated whether there was a significant effort to arm the aircraft which were stood down.

7. During the same period a near-real-time system would have produced similar kinds of valuable information on other Soviet forces -- ground and naval -- increasing confidence in our assessments of the meaning of the air standdown. The Watch Committee of the USIB met in extended sessions during the period of the standdown in a continuing attempt to gauge the seriousness of this activity. Its scope and meaning are still not fully understood.

8. With respect to very high resolution it is self-evident that the clearer the photography the more possible and efficient it will be to derive intelligence from it. Virtually all previous studies, including CIA studies, have identified benefits to be derived from photography having a [ ] resolution compared with photography of GAMBIT quality [ ] (twenty inches). The question has always been that of weighing the marginal benefit of having higher resolution photography against the cost of obtaining it. The MOL was too costly.

9. COMIREX concluded in its 7 August 1969 NRO guidance paper that there is a sufficiently well identified requirement at present to warrant continued development of very high resolution technology. It also pointed out, however, that the priority of such development, the ultimate resolution which should be obtained, and system options will have to be studied on a longer term basis and be considered in terms of cost and relative priority of other programs.

10. COMIREX could identify no specific major intelligence problem whose solution lay below the [ ] resolution threshold of the GAMBIT system but which clearly would be solved by [ ] very high resolution photography. There are, however, many intelligence problems which would profit from having the higher quality photography. These are principally in the field of technical intelligence on objects or equipment where small differences in detail can affect the technical intelligence evaluation of system characteristics or capabilities.

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11. It is important to maintain balance in the NRO imagery program. Even in the face of the practical problems associated with discontinuing the present effort on very high resolution optical technology, it would be a mistake to allow those considerations to divert the sense of urgency away from the near-real-time system developments.

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