

15 MAY 1968

MEMORANDUM

SUBJECT: The Intelligence Value of the MOL Program

1. This memorandum presents an assessment of the MOL Program in terms of its potentially unique contribution to the solution of important national intelligence problems and its cost. The principal justification for the MOL Program is its anticipated capability to collect very high resolution photography of denied areas. According to a paper recently approved by Secretary Nitze, the MOL's "sole objective was and is to secure [redacted] resolution photography of significant targets and to develop systems for either manned or unmanned use." The focus of our assessment is the benefits to be derived from the acquisition of such photography.

2. If the MOL performs as specified, almost all of its photography would have ground resolutions between [redacted]. In order to determine how this very high resolution photography would affect national intelligence, we have reviewed each estimate which has a critical bearing on our assessment of the Soviet and Chinese threat over the coming years. These reviews take into account the likely contributions of other sources of information, especially the SIGINT satellites and the KH-8 satellite with its [redacted] resolution photography.

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These reviews--summarized under such headings as nuclear weapons, ground forces, and ground-based, long-range missiles--are available for study.

3. Our conclusion is that the very high resolution photography of the MOL would make a valuable contribution to intelligence, particularly on detailed information relating to Soviet and Chinese weapon systems and programs. Satellite photography with resolution of [REDACTED] would facilitate identification of a large number of small items or features now beyond our capabilities. It would also increase our confidence in identifying items we can now discern and would reduce the error of measurement of such items. Obviously, these additional capabilities would be most pertinent to technical details about various weapon systems. Higher resolution could also improve our understanding of some operating procedures and construction methods at military installations and technical processes and capacities of certain industrial facilities.

4. To date, our review has failed to uncover any important estimates of Soviet or Chinese military posture--weapon performance or the size and composition of forces--which would be changed significantly by MOL photography. This conclusion is based partly on our judgment that some of our outstanding intelligence problems are more likely to be solved by the acquisition of technical information other than satellite photography. For example, electronic intelligence is needed for solving certain problems critical to our estimates of the capabilities of surface-to-air and ABM systems [REDACTED]
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5. Our conclusion is also based on the judgment that estimates of the size and disposition of forces will not be improved significantly by the very high resolution photography unique to the MOL. For example, current collection capabilities permit highly reliable estimates of the size, composition, and deployment of the Soviet long-range missile force for about two years into the future. Higher resolution photography would, however, facilitate detection of modification to associated equipment and even to the missiles if they happened to be out of the silo when a site was photographed. Similarly, in the case of the Soviet ground force problem, currently available photography provides information sufficient to estimate the disposition of such forces and the number and general categories of equipment present; other information from COMINT and documents is required to identify the title of the unit involved. Very high resolution photography would facilitate a more confident identification of the model of vehicle or weapon present.

6. There are also many critical performance characteristics about which we have too little information, but satellite photography of even [REDACTED] resolution would have no effect on our estimates. Examples of these characteristics are the accuracy, reliability, and yield of ICBM's and whether they are equipped with MIRV's.

7. In sum, there is no question that satellite photography with ground resolutions of [REDACTED] would provide useful intelligence, especially on technical details of weapon systems. The pivotal question with respect to the MOL Program is whether these

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contributions are worth the expenditure involved. By the end of FY 1968 some \$855 million will have been expended on the MOL Program, and about \$2.5 billion is planned for the period FY 1969 through FY 1973.

8. The question of whether MOL's contributions to intelligence are worth the further expenditure of \$2.5 billion can be approached from several points of view. One is to determine how the information collected by the MOL would affect US defense expenditures. It has been claimed that the US spends additional money on the development and procurement of its weapon systems to provide margins of safety because of uncertainties in intelligence estimates of Soviet and Chinese military capabilities. The decisions to deploy the Sentinel ABM system and to equip our strategic missiles with MIRV's and penetration aids are given as examples of this effect. A study of how the information acquired by the MOL would actually reduce US military expenditures would provide a useful input in evaluating the MOL Program. It is recommended that the Department of Defense carry out a study along these lines.

9. Certainly, cost savings should not be the sole basis for approving or rejecting the MOL Program. Because we cannot foresee all the intelligence problems that could possibly arise in the future, we cannot state in absolute terms that photography of the quality provided by the MOL would not provide intelligence worth its cost. With respect to cost alone, it is, of course, even possible that the information collected by MOL would require increased US military expenditures to counter a military threat that we would otherwise not know about.

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10. Another approach is to consider whether other satellite systems could be modified or developed to acquire essentially the same quality of photography as the MOL but at significantly lower costs. The current MOL Program, which includes the very costly unmanned version, was conceived in terms of the technological environment of the early 1960's; much has been learned about satellite photography since then. What is necessary is a study of possible alternative photographic satellite systems that could be developed to acquire this very high resolution photography. We believe that the NRO mechanism would be most appropriate for such a study.

11. Finally, consideration of how the expenditures for the MOL Program compare with the costs of other photographic satellite programs is pertinent to the decision. We note that the MOL expenditures for FY 1969 are programmed for \$600 million. Coincidentally, the FY 1969 expenditures for all the photographic satellite systems under the National Reconnaissance Program are just under this figure. The NRP provides for the procurement and operation of the KH-4 and KH-8 systems which collect the broad-swath and detailed photography currently available; it also provides sizable expenditures for the development of the KH-9 system. On balance, it is unlikely that the intelligence value of the MOL alone is equivalent to the combined contribution of these NRP systems.

12. In sum, on the basis of our assessment, we have been unable to find potential benefits from the MOL Program of sufficient importance to national intelligence alone to justify the expenditures programmed for the future. Nevertheless, should the program be approved for other reasons, the intelligence community should have the major role in tasking the MOL for collection and exploiting its product just as it does for other collection systems which have important contributions to make to intelligence.