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APR 5 1966

MEMORANDUM FOR DIRECTOR, DEFENSE RESEARCH AND ENGINEERING

SUBJECT: MOL Program

Reference: Memorandum for the Secretary of Defense from
Secretary of the Air Force, subject: Proposed
MOL Program, dated June 28, 1965

The Secretary of the Air Force memorandum of June 1965 proposed a MOL Program which would demonstrate a manned optical reconnaissance system promising ground resolutions of [REDACTED]. The program as then proposed consisted of seven launches, two unmanned and five manned, from the Western Test Range. The two unmanned development launches were scheduled for early test of system hardware exclusive of optical sensor equipment which was identified as the critical pacing item in the original schedule that projected a first manned flight date of late 1968. This original planning date was structured to provide the desired mission capability at the earliest possible date, and was based on initiation of Phase II engineering development at the beginning of calendar year 1966. On this planning base, total cost of the development program was estimated at \$1.5 billion. It must be emphasized that this original estimate of funding requirements was based entirely on the primary reconnaissance mission of the MOL. It did not include funds for secondary or tertiary experiments nor for any efforts related to additional missions such as SIGINT or ocean surveillance in which the Navy has expressed considerable interest, but which have not yet been approved by the Department of Defense.

Firm cost estimates based on program definition studies will be submitted to DDR&E during mid-May 1966. The schedule baseline for these revised cost estimates has changed appreciably from that submitted last June. A more realistic appraisal of development lead times conducted during the definition phase studies on the DORIAN payload made it

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Page 1 of 3 pages
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*McZink & Dr Zaster saw
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necessary to revise the phasing of development schedules for all major segments of the program. Our best estimate on schedules at this time is that first manned flight cannot occur prior to mid-CY 1969 followed by the first fully-qualified optical reconnaissance manned flight in late 1969. This constitutes a schedule slip of approximately nine months from that originally proposed by the Air Force last June. The results of this schedule revision plus program impact from the budget limitation placed on the MOL Program for FY 1967 made it necessary to reorient Phase I contract schedules and to adjust contractors' level of effort for the remainder of FY 1966 and throughout FY 1967. This required extending the system definition studies on the Laboratory Module and the Gemini B spacecraft at the contractors' current level of effort through June 30, 1966. Sustaining effort after June 30, 1966 is being planned at an increased level to support both additional manpower and added testing. This gradual build-up will allow commencement of Phase II activities on these segments of the program by September 1, 1966 at a pace and level of effort which is balanced with other segments of the program. Concurrently, we are continuing, paced only by technical limitations, with the engineering design, the procurement of long lead items and the industrial facilitization required for the development and acquisition of the optical sensor package. We also are implementing, on a controlled schedule, a moderate level of effort for continuing the development of the Titan III seven-segment solid rocket motors and the necessary modifications to the core Stage I engine to meet MOL requirements.

In addition to the above schedule adjustments, guidance received from the Panel on Reconnaissance of the President's Science Advisory Committee and the Department of Defense has resulted in other changes to the original MOL Program baseline. Specifically, the requirement that the reconnaissance system be designed from the beginning to provide the option to be operable in either a manned or an unmanned mode has been placed in the MOL system specification. Contractors' roles and responsibilities now are aligned to include this dual mode as an integral part of the development program. To demonstrate both the manned and unmanned versions of the system during the development test program, contractors' Phase II cost proposals will be submitted on a planning baseline of nine launches from WTR, instead of the seven launches originally proposed. It is currently planned that three of the nine scheduled launches will be flown in the automatic (unmanned) mode with Flight Six (June 1970) tentatively designated as the first flight in the

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fully automatic mode. As previously proposed, all launches will be predicated on the use of a seven-segment, 120-inch diameter solid rocket motor Titan III with specified improvements on the airframe and liquid rocket engine necessary to meet the MOL payload requirement.


The above constitute the major requirement and schedule changes to the program proposal of last June. These changes will undoubtedly impact on program cost estimates when submission is made in May 1966. While these factors are believed to be understood by the Department of Defense, the purpose of bringing them to your attention now is that you are appraised in advance of the planning baseline and can correct any misunderstandings or omissions which would prevent the Air Force from being totally responsive in the May 1966 submission.

Signed
Harold Brown
Secretary of the Air Force

Colonel Randall/SAF-SL/53889/15Mar66/rad

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