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10 APR 1967

MEMORANDUM FOR GENERAL MARTIN AND COLONEL HERAN

SUBJECT: Proposed Plan to Reduce Early Fiscal Year and Overall  
MOL Funding Requirements

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1. In the course of the scheduling and funding exercises that have taken place during the past several weeks a course of action has become apparent that I feel would not only solve the present funding problems, but would actually provide a more sound technical program. The solution I propose is to eliminate the present booster development flights (MOL Flights 1 and 2) and interchange the two automatic flights (6 and 7) with the first two manned flights (3 and 4). That is, replace the present 7 shot program with a five shot program consisting of 2 automatic flights followed by 3 manned/automatic flights. I fully realize that on the surface such a reordering of the flight schedule is undoubtedly politically unacceptable. However, before such an approach is arbitrarily ruled out, I feel that serious consideration should be given to the advantages of this schedule.

2. The following rationale was used in arriving at this solution. In the recent 12 and 15 month schedule slip exercises the early fiscal year funding problem was approached by delaying to the maximum the start of all fabrication and test efforts. To reduce overall program costs all unnecessary tasks and hardware were eliminated. From having participated personally in these exercises I am convinced that very little more can be done in the way of reduction in either of these areas under the present program structure and ground rules. However, if changes were allowed in the program structure or ground rules, I feel that significant reductions would be possible. It is obvious that a change in associate contractor structure would significantly reduce the amounts of exchange hardware, test spans, and management overhead for the program. Since this course of action is apparently not possible, I will not pursue it further in this memorandum. A less obvious ground rule change that has the potential for large savings in hardware and time is the revocation of the requirement to fly the manned flights before the automatic flights. The discussion supporting this change follows.

3. The following program ground rules have currently been established as to the events which must be accomplished before the first <sup>ned</sup> flight on a T-IIIM:



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- a. Two successful T-IIIM booster flights.
- b. One successful Gemini B qualification (GBQ) flight.
- c. One successful laboratory vehicle (LV) structure flight.

The above requirements have resulted in the present scheduling of flights 1 and 2, one of which carries the GBQ and the other a boiler plate Gemini B and with both carrying prime LV structure. The mission module SDM (Structural Development Model) components are to go on one flight. The source of Mission Module mass substitutes for the other flight has not yet been determined nor has the question of MM instrumentation been resolved.

4. All of the above is required in preparation for the man on flight three. Now let us consider the situation if we flew the two automatic MOL/Dorian systems before the manned flights with a GBQ vehicle on the first flight and a boiler plate Gemini on the second. Such an approach would fulfill all present requirements as specified before the manned flights and would eliminate the need for the present flights 1 and 2. In addition it would provide the significant bonus of providing two all up lab vehicle flights through orbital conditions thereby qualifying all subsystems prior to manned flight. There is also a security benefit by having the external configuration of all flight vehicles in the baseline program to appear identical. Obviously by carrying Gemini hardware on these two automatic flights instead of the proposed Support Module a 30 day quantity of film return has been forfeited. However, I would propose that a simple film chute be provided to the single DRV in the laboratory thereby providing for return of 60 pounds of film. This would be more than adequate to determine system performance. This 60 pounds could be the first week's take or spread through the mission. The vehicle would be operated with all systems performing all programmed cycles and functions on a full mission timeline in order to determine failure modes for a full 30 day mission.

5. It is felt that this reduced take capability on the first two automatic flights can be justified when it is considered that these are R&D flights and all other objectives of the flights are satisfied and two complete launches of a T-IIIM are eliminated. If more film return is desired it would certainly be feasible to include a second DRV in the lab. Also with the cost savings inherent in this approach one might consider an automatic readout system to provide for data return after the single bucket is filled.

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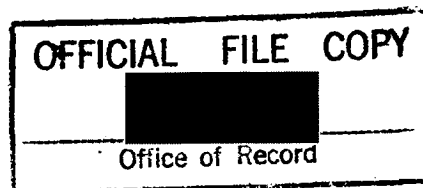
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6. This approach eliminates the development costs for an automatic mode support module from the baseline program which is another significant cost saving. This seems to be a definite advantage because it isn't apparent that the support module presently contemplated is necessarily the most desirable approach for the follow-on program. In any event this decision can now be delayed by several years. However, if some overriding factor dictates the need for the presently planned support module it could be developed and flown on the second automatic flight instead of the boiler plate Gemini. This approach is not recommended.

7. To this point I have only indicated a straight substitution of flights 6 and 7 into the dates for flight 3 (Mar 71) and flight 4 (Jul 71). It seems highly probable that the cost reductions resulting from the elimination of flights 1 and 2 and the support module together with a detail work of the test flow would show that these dates could be accelerated and still remain within present fiscal year funding limitations. Any acceleration reduces the overall period of performance and overall program costs. It also reduces the slip time for the first manned flight over the 15 month slip schedule date for this flight.

8. In summary, the present program is flying two T-IIIM boosters with considerable hardware on-board to qualify the T-IIIM, LV structure, and Gemini B for manned flight. These two flights could have a complete system on-board and accomplish both the man rating and automatic mode requirements. Savings from such an approach may well result in less than a 15 month slip for the first payload flight.

BYRON F. KNOLLE, JR, Col, USAF  
Deputy Director, [REDACTED]



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