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MEMORANDUM FOR DR. FLAX

NOV 9 1966

SUBJECT: Contingency Planning for MOL Flights 5, 6 and 7

Because of our many scrub-downs and cost reduction efforts, we find that the current MOL flight schedule and hardware procurement plan is based on a complete success philosophy. In case of any single failure in the early stages of the flight program, there is little chance to achieve all fundamental program objectives without very long delays and high expenditures caused by delayed hardware replenishment. This situation can be alleviated by a considerable measure by some timely contingency planning and limited procurement action.

There are at least three scenarios which, if they occur, could have a major adverse impact on the MOL Program. The first is the failure of the initial unmanned Gemini B Qualification (GBQ) flight. In case of failure, it is planned to repeat the test on Flight 2 by advancing the use of the next Gemini B spacecraft. Since we currently have under procurement only four Gemini B's, this type of failure would leave Flight 5 without a manned capability unless an additional spacecraft is procured in advance. The second eventuality would result as a consequence of any malfunction on manned flights 3, 4 and 5 which would cause us not to complete at least one 30-day manned mission profile. Under these conditions, we would not have completed the objective of a 30-day manned mission by Flight 6 and would either have to forego that objective or delay the unmanned flights. Conversely, something could occur to the automatic devices which would render us unwilling to fly Flight 6 on an unmanned basis. The final possibility is that the manned flights may provide sufficient enhancement of intelligence content that the decision to go unmanned on Flights 6 and 7 might be inappropriate from the standpoint of intelligence collection. In any of these three eventualities, under our current Gemini B procurement plan, long delays would be encountered until either additional Gemini B spacecrafts were procured or refurbished.

The preceding discussion suggests the merit of providing the options for flying MOL Flights 6 and 7 manned as well as backing up Flight 5 in the event its assigned Gemini B spacecraft has to be used to repeat the qualification because of flight failure. It is in this context that we have examined the lead times and funds required to provide these options.

DORIAN

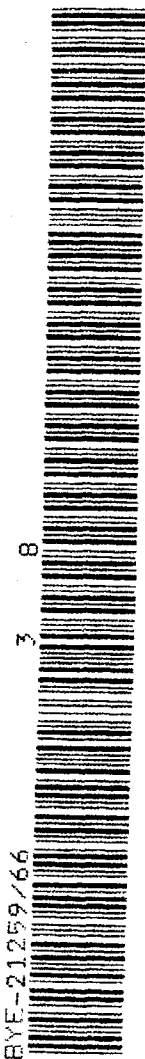
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The lead time for a Gemini B spacecraft is presently two years from order to launch. The cost of the spacecraft is approximately \$19.2 million and the other associated costs to convert from an automatic to a manned/automatic capability adds another \$9.3 million. The cost of a refurbished Gemini B spacecraft would be \$14.2 million and would require 16 months from decision to launch.

Another interesting aspect for contingency planning is that the spacecraft used on the first flight (GBQ), if successful, is available for refurbishment in time to be available for Flight 7. This option is a rather cost effective way of further protecting mission accomplishment in spite of possible automatic system difficulties. The decision to exercise the manned option of Flight 7 depends to some measure on the composition of the operational follow-on program.

The option to have a back-up for Flight 5, in case of GBQ failure, and fly Flight 6 manned can be protected without any formal direction to the MOL Systems Office until June 1968. The decision to refurbish a vehicle for Flight 7 would not require a decision until September 1969 with funding starting in FY 1970. Exercising both options would entail a total additional cost to the program of \$52.0 million.

The attached chart shows the options discussed and the dates on which decisions are required. It is possible to protect these options without expenditure of FY 1967 or FY 1968 funds, although early purchases of spare parts and long lead time items in FY 1967 would effect some net cost savings.

I recommend that we provide for these two options, i.e., ordering an additional spacecraft for back-up of Flight 5 and refurbishing of the GBQ spacecraft for Flight 7, by including the following additional funding requirement in our baseline program:

<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>TOTAL</u>
\$17.2	\$28.1	\$ 6.7	\$52.0

With your concurrence, I will dispatch the enclosed message to General Berg.

Copies:  
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Green Read  
SCG Read  
General Berg

**SIGNED**

HARRY L. EVANS  
Major General, USAF  
Vice Director, MOL Program

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