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DEPARTMENT OF THE AIR FORCE

WASHINGTON 20330



OF THE SECRETARY

MAR 26 1969

MEMORANDUM FOR DR. SEAMANS

SUBJECT: MOL Funding

NOTED BY NAME  
SERIALIZED BY  
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Recent events and information concerning DoD's near-term financial prospects, plus the realization that MOL has yet to go through OSD/AF FY 70 Apportionment, lead me to conclude that MOL is unlikely to be funded at or very near the \$556 million level -- assuming it survives the BoB Presidential Budget Issue.

If so, FY 70 will mark the third straight Fiscal Year that MOL has been funded at a level at least \$85 million below program needs for a reasonable development pace, and the third straight year that development will have been stretched out and finances manipulated on the premise that adequate funding would be available "next year".

To minimize past development stretchouts and their related net increases in total program cost, the MOL Program has gradually moved toward an expenditure funding basis, and the maximum possible non-critical work (from a technical difficulty standpoint) has been deferred as far as possible into the future. As a result, there is no financial flexibility whatsoever in the program and the planned future work-flow balance can be described at best as marginal. Further, as the product of numerous cost reduction exercises, except for items related to crew safety or the [redacted] resolution goal, various desirable features of the development program have been eliminated.

PROGRAM FUNDING/SCHEDULE CHRONOLOGY:

When the past history of MOL is reviewed, it is difficult to be optimistic about the future. In that vein, a brief summary of past-to-present MOL funding/schedule gyrations might be helpful:



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1. Phase II (Engineering Development) began in September 1966 and sufficient FY 67 and prior NOA was available to finance all FY 67 work toward a December 1969 first manned launch. Unfortunately, the initial contractor negotiations were still underway at the time the FY 68 Budget Estimate was being compiled and the FY 68 dollar needs were not well defined and could not be adequately justified. The Air Force submitted a requirement to OSD for \$510 million; this was subsequently reduced first to \$480 million and then to \$430 million in the Budget Estimate submitted to Congress.

2. By the Spring of CY 1967, it was obvious that maintaining a development pace toward a December 1969 first manned launch might require as much as \$150 million more than the \$430 million then being considered by the Congress. To reduce FY 68 funding needs, the decision was made to incorporate a "production" camera in the first manned spacecraft rather than the previously planned qualification article (which, at best, would have provided not better than GAMBIT-3 resolution), and to proceed at a somewhat more deliberate development pace. The first manned launch was therefore rescheduled to December 1970, and FY 68 MOL development activity began with the Air Force planning to add \$50 million to the \$430 million NOA appropriated by Congress. For planning purposes, FY 69 funding was assumed at various levels between \$620 and \$661 million.

3. By the Fall of CY 1967, it was quite clear that: (a) the program was expending funds at an annual rate in excess of \$480 million NOA; (b) the Air Force could not reprogram any additional money into MOL beyond the \$430 million appropriated by Congress; and (c) camera system development and production was going to take even longer than anticipated. Meanwhile, estimated fund requirements for MOL in FY 69 had increased to \$680 million at one point but, by September, were reflected in the Five Year Defense Plan (FYDP) at \$640 million.

4. In December 1967, because of both the FY 68 fund shortage and the longer-than-planned camera system development phase, the first manned launch was rescheduled to August 1971. Following a SecDef-level review of program and funding alternatives, \$600 million was included for MOL in the FY 69 Budget Estimate submitted to Congress; and a like amount was reflected in the FYDP for FY 70.

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5. MOL development activity proceeded along in the last half of FY 68 toward an August 1971 first manned launch, with work and expenditures predicated on \$600 million NOA in FY 69. Late in FY 68, because of the impending Congressional \$6 billion reduction in Federal FY 69 expenditures, it was apparent that DoD could not fund MOL at the \$600 million level. In June, USAF/OSD decided to reduce MOL FY 69 NOA to \$515 million, and the first manned flight was rescheduled to December 1971. \$600 million NOA for FY 70 was planned at that time.

6. In the preparation of the FY 70 Budget Estimate in December 1968, the NOA level for MOL was set at \$576 million rather than the previously-planned \$600 million. At about the same time, it was obvious to MOL management that at least \$635-640 million would be needed in FY 70 (contractor estimates were considerably higher) to continue the on-going development pace toward a December 1971 first manned launch. It was understood in the AF and OSD that \$576 million NOA in FY 70 would result in some additional development stretchout and increase in total program cost.

7. However, with the impending change in Administration, it was assumed that a reappraisal of MOL was in the offing. Therefore, because of uncertainty of the level at which MOL might be supported and because of the sizable effort and cost involved in a major rescheduling exercise, action was not initiated immediately to replan the MOL Program on the basis of \$576 million NOA in FY 70. Development activity continued toward a December 1971 first manned launch (and still is) with the understanding that required rescheduling would be accomplished before the end of FY 69.

8. In early March 1969, as you know, the unmanned MOL system development was deferred, a fourth manned launch was added to the program in lieu of the previously planned two unmanned reconnaissance flights, and the \$576 million in the Budget Estimate was reduced accordingly to \$556 million.

9. On March 25, Gen Crow requested and received an impact statement on a possible further FY 70 MOL NOA reduction to \$525 million. The MOL response pointed out that \$525 million would represent an approximate \$85 million

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reduction below that needed to continue the development pace maintained to date toward a December 1971 first manned launch (even with the recent deferral of the unmanned development effort), and although a precise assessment had not yet been made, at least a 4-6 month development stretchout and \$160-210 million total program cost increase was forecast. (Note: For your information, the estimated stretchout and cost increase corresponding to \$556 million FY 70 NOA was included in the program alternatives submitted to Mr. Packard in late February. . . . And, while on the subject of rescheduling, the Systems Office and MOL contractors should begin at an early date the 4-6 week exercise involved in replanning the program towards a specific FY 70 NOA total.)

PROGRAM IMPACT:

In December 1966, the total estimated cost of the MOL seven launch manned/unmanned program was \$1.98 billion. By December 1968, as a result of the earlier decision to fly a production camera at the outset; the necessity to stretchout development and launch schedules because of inadequate or unanticipated reductions in funds; recognition of a lengthier camera development period than originally planned; plus detailed system definition and refined cost estimates, the estimated total cost had increased to \$3.04 billion. . . . The recent change to a six launch manned system program should result in a net reduction of approximately \$200 million in total cost.

The attached table and graph reflect most of the major financial fluctuations the MOL Program has undergone and the effect of fund/schedule changes on Associate Contractor manpower loading. The impact on the contractors has been severe in terms of both stability and efficiency.

SUMMARY/RECOMMENDATION:

At the \$556 million level in FY 70, and assuming adequate future-year financial support, the first manned launch in the MOL Program will take place at least 27 months behind the initial Phase II target date of December 1969. Approximately half of those 27 lost months can be attributed to inadequate funding, and the remainder to the decision to fly a production model camera system at the outset plus the longer-than-anticipated time required for camera system development.

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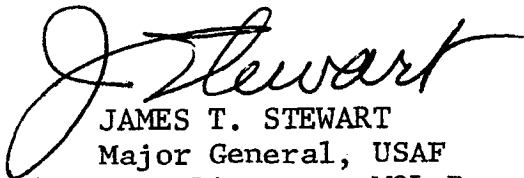
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Of the more than \$1 billion increase in estimated total cost since December 1966, as much, perhaps, as a third can be attributed to more detailed program definition and refined cost estimates; however, the majority of the increase is a direct result of development and flight schedule stretchout for the reasons cited above.

The MOL Program development status today is such -- sizable quantities of test hardware are flowing between contractors; initial flight hardware is in fabrication; approximately 80 percent of peak contractor manpower is on board, etc. -- that what seem to be relatively minor fund reductions result in disproportionately large development stretchouts and net increases in total program cost. . . . In retrospect, because of the many major variations between planned and allocated funds, certainly not all of the \$1.2 billion spent to date has been used as effectively as it could have been.

Past events leave little doubt that the AF and OSD believe MOL is a worthwhile undertaking. However, the real question is whether the DoD/AF can really "afford" MOL (e.g. fund the program at levels commensurate with a reasonable return from the large dollar amounts which must be committed). MOL history and current financial discussions indicate that we either will be unable or unwilling to fund the program properly. And if that is a correct assessment of future prospects, then we should face the facts and terminate MOL now.



JAMES T. STEWART  
Major General, USAF  
Vice Director, MOL Program

Atch  
a/s

cc: Dr. McLucas  
Mr. Hansen  
Gen Ferguson

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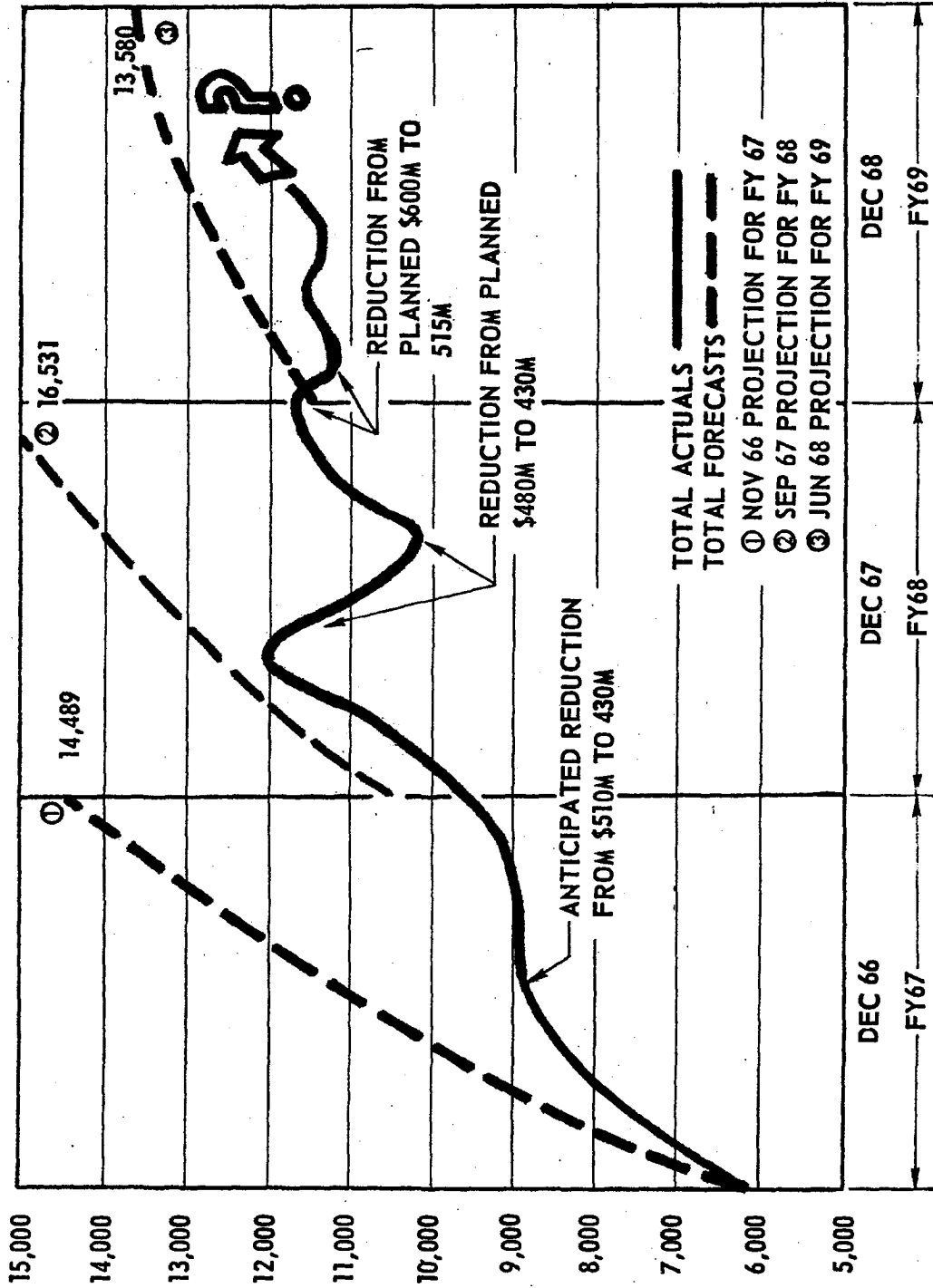
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MOL FINANCIAL SUMMARY  
(Millions)

	<u>First Manned Launch</u>	<u>FY 67 and Prior</u>	<u>FY 68</u>	<u>FY 69</u>	<u>FY 70</u>	<u>To Completion</u>	<u>Total</u>	
Fall 66	Dec 1969	286	587	646	344	117	1,980	Start of Development
Dec 66	"	"	510					AF Request to OSD
Jan 67	"	"	430					FY 68 DoD Budget Est.
Mar 67	"	"	520-80					MOL Pgm Est
Jun 67	Dec 1970	288	480	620-80	541	361	2,350	MOL FY 68 Financial Plan
Sep 67	"	"	"	640				FYDP
Dec 67	Aug 1971	292	430	600	600	918	2,840	FY 69 DoD Budget
Jun 68	Dec 1971	"	"	515	600	1,110	2,947	Expenditure Reduction
Dec 68	"	"	"	"	635-40			MOL Program Est
Dec 68	Early CY72	"	"	"	576	1,225	3,038	FY70 DoD Budget Est
Mar 69	"	"	"	"	556	1,042	2,835	Six Flight Pgm
Mar 69	Mid CY72	"	"	"	525?			

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# MOL CONTRACTOR MANPOWER REQUIREMENTS



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