



DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING  
WASHINGTON 25, D. C.

Mr. James E. Webb  
Administrator  
National Aeronautics and  
Space Administration  
Washington, D. C. - 20546

Dear Jim:

Attached are copies of the documents, as transmitted to the President, which were the subject of our recent discussions on the MOL program. The final Memorandum to the President has been altered somewhat to present Dr. Hornig's position more accurately. The recommendations are almost identical and the discussion is essentially the same as in the document you now have.

Sincerely yours,

*Harold Brown*  
Harold Brown

4 attachments:

1. Memo to President ✓
2. Policy on Public Information ✓
3. Answers to Questions ✓
4. News Release, 25 Aug. 65 - *revised*

cc: Dr. Robert C. Seamans, Jr.

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THE SECRETARY OF DEFENSE  
WASHINGTON

24 August 1965

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Manned Orbiting Laboratory

Your FY 1966 budget request to Congress included, and the Congress is in the process of appropriating, \$150 million for the Manned Orbiting Laboratory (MOL), which was initiated in December of 1963 when the DYNASOAR Program was terminated. When these funds were budgeted in December of 1964, I indicated that I would defer their release until such time as the studies of the nature and value of the program, then underway, were satisfactorily completed.

These studies have now been completed. Based upon a thorough review of the conclusions I recommend the following:

1. Approval of the MOL for full-scale development to begin during FY 1966. The release of the \$150 M in the FY 66 budget and the initiation of contract definition will begin the full-scale development. I plan to request \$330 million for the support of the program in Fiscal Year 1967, plus about \$70 million for the related manned and unmanned optical development.

2. That the MOL program proceed toward the following objectives:

a. Semi-operational use beginning in late 1968 to secure photographs of [redacted] resolutions of significant targets. This is approximately [redacted] better than the best satellite photography we are now obtaining, and approximately [redacted] better than the best expected U-2 photographs or the G3 satellite system, now under development, from which we expect photographs in about 15 months.

b. Development of high-resolution optical technology and systems for either manned or unmanned use. This technology will provide the [redacted] resolution and be aimed at ultimately even better resolution [redacted]

c. Provision of a facility for the development, test and use of other potential military applications such as SIGINT collection, radar observation and ocean surveillance, as the utility and feasibility of such applications become established.

d. Provision of an experimental program for determination of man's utility in assembling large structures, and in adjusting, maintaining and processing the output from complex military equipment in space.

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3. That the MOL program be operated within the guidelines of our existing national policy and within the carefully-ordered security environment which already exists for military space programs. This environment helps to avoid provocation in the international arena, and to forestall initiation of international action that might prevent the United States from using satellites for reconnaissance.

4. To support this objective, that we maintain a firm position to ensure that the public information programs associated with MOL are kept modest and low key and that the publicly announced mission of the MOL continues to be expressed solely as "the investigation and development of orbital capabilities, manned and unmanned, associated with national defense." A press release is attached.

I have the concurrence of Secretary Rusk, Mr. Webb, Admiral Raborn, and Dr. Hornig on the above recommendations. Mr. Schultze concurs subject to his comments on page 3 of this memorandum. The program has been discussed in the Space Council and the Vice President believes we should proceed with it. I have not sought or received concurrence on the parts of the paper other than the recommendations.

I am proposing a development program of six launchings, one unmanned and five manned. The first manned launching would take place late in Calendar Year 1968, and the last early in 1970. The total cost for this program is now estimated at \$1.5 billion, including the optical sensor programs, for both a manned and a parallel unmanned capability.

The payload vehicle for these launchings consists of the basic two-man MOL module and the GEMINI B recovery capsule which has figured in previous Department of Defense studies. It is proposed to launch into polar orbits from the Western Test Range, using the TITAN IIIC booster. Some Eastern Test Range launches may also be included. Orbital operations of 30 days' duration are planned.

The primary emphasis in the six-flight program will be placed on the development, demonstration and use of optical reconnaissance systems of very high resolution, including a system producing resolutions of [REDACTED] on the ground.

The Director of Central Intelligence indicates "It is in the interest of the United States to obtain the highest resolution of photographic coverage feasible over those areas of intelligence interest designated by the United States Intelligence Board, provided that such highest resolution will of course have to be weighed against the relative factors of cost, time, and relative importance of intelligence which could be obtained in an optimum balance of these considerations."

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I believe that there is a vital national need for reconnaissance photography at a resolution of [REDACTED]. The first and obvious need is for technical intelligence. There is also a clear need, particularly during times of crisis, for high resolution photography of tactical objectives. Closely related to these applications is the potential use of high resolution photography to assist in the policing of arms control agreements.

You will remember that in the crisis of 1962 we exerted our reconnaissance capabilities to the utmost to acquire pictures having the detail and the credibility that were necessary to verify and to convince others of the nature of the military activity in Cuba. In other situations, it may be important to accomplish these same ends without the provocation of visible overflights.

If we had [REDACTED] resolution capability today, it would be of great value in assessing such problems as the hardness of Soviet missile silos and the nature of various possible Soviet anti-missile deployments. Examples of its use in the future are:

1. Estimation of the operating depth for which Soviet and Chinese submarines are designed.
2. Estimation of the use and capability of plants that may be employed for nuclear weapons production.
3. Assessment of Chinese or other nth-country development of weapons-delivery capability by detailed examination of missile and aircraft plants and rocket engine test activity.

I expect the six-flight program to give us:

1. Operational intelligence collection at [REDACTED] resolution [REDACTED]
2. Knowledge of the nature and value of critical contributions of man to photographic reconnaissance and to other military-related space missions; and of the specific differences, in an engineering sense, between manned and unmanned systems of large size and very high resolution.
3. The optical technology and designs for systems which, if manned, can give resolution [REDACTED]

Original estimates for the MOL indicated the cost of the manned system would exceed that of an unmanned system by \$800 - 1,000 million. The Director of the Bureau of the Budget questioned whether the value of the additional resolution [REDACTED] manned vs. [REDACTED] (unmanned) was worth this additional cost and on the basis of these estimates was prepared to recommend proceeding with the development of an unmanned system only. Further Defense Department studies now indicate that the difference in cost between the two systems would be more nearly \$300 - 400 million. On the basis of these revised estimates the Director has

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withdrawn his objection to proceeding with the program as proposed. However, he recommends that, if the studies over the next six months indicate a cost difference substantially greater than \$300 - 400 million (to date only limited studies have been made of the unmanned system), the MOL program be subject to a reappraisal and a new decision made as to whether the additional benefits of the manned system are worth the additional costs. I concur in this recommendation.

Dr. Hornig has recommended that one of the MOL objectives should be the development of a camera system having automatic or ground-control features which will permit it to equal when employed in an unmanned system the ground resolution [redacted] expected from it when operated in the manned mode. He believes that the two modes of operation may well be possible with essentially the same camera. It is his opinion that efforts should be made as part of the MOL program to employ more precise navigation, an appropriate on-board computer, automatic introduction of image motion compensation over the format and methods of remotely-controlled alignment and adjustment. The existence of a camera suitable for both modes of operation would provide high-resolution photography even if international objections or foreign threats should prevent manned operations or if man proves physically unable to perform as expected in MOL for extended periods in orbit. He also believes it possible that, from an operational standpoint, an unmanned system will eventually be desired to complement the manned system by performing the more routine reconnaissance missions, or missions undertaken during times of particular political stress.

Dr. Hornig's recommendations have been incorporated in the program I propose to initiate. During the contract definition period, a clearer identification can be made of the designs for the new devices which will need to be developed for the unmanned operational mode. At that time, it will be clearer whether a common camera system can be employed which optimizes both modes. It is my intention that the system will be designed so that it can operate without a man. It will operate somewhat differently, however, (and with improved overall effectiveness) with a man. Whether the system will produce poorer average resolution without the man depends on how well some of the ideas for such functions as automatic focusing and adjustment, automatic navigation and image motion compensation work out. But in any event, it is agreed that the man's ability to select targets, to override the automatic controls when they function less well than expected, to choose date for prompt transmission, will improve the overall utility of the data. Furthermore, the presence of man in the developmental phase can be expected to shorten the development and improve the capability of the unmanned version of the system.

Beyond the initial objective of producing [redacted] ground resolution photography, successful automation will be increasingly difficult. Conducting the development program with a manned spacecraft will improve the prospect of achieving resolutions in the [redacted] class.

The plan for MOL as proposed by the Department of Defense has been prepared specifically to meet defense needs. Provision has been made, however, for including experiments and technology of special relevance

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to certain military needs other than reconnaissance. As the program proceeds, they may increase in importance. Preliminary study has been made as well to determine what general scientific needs could be included. On the basis of further DoD-NASA cooperative studies, NASA will determine which of its scientific or general technological experiments should be carried out using the MOL capability on the basis of non-interference with defense priority objectives.

My judgment is that we should now proceed to acquire the benefits of an experimental high-resolution reconnaissance system. I conclude that the combination of the specific manned and unmanned reconnaissance development, which I believe will fill a national need for photography at [REDACTED] resolution, and the other more general purposes discussed above is worth the cost of the development and semi-operational launches. I request your approval of this program.

Robert S. McNamara

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POLICY ON PUBLIC INFORMATION ASPECTS  
AND INTERNATIONAL REACTIONS TO THE  
MANNED ORBITING LABORATORY

1. THE MANNED ORBITING LABORATORY AND THE NATIONAL SECURITY

The proposed Manned Orbiting Laboratory will have as its initial objective the development and demonstration at the earliest time of an operationally useful high resolution manned optical system. MOL is scheduled to make its first manned reconnaissance flight in 1968.

Since 1962, it has been the announced policy of the United States Government to "avoid situations, statements, or actions which, in the context of our satellite reconnaissance program, could later be exploited as evidence either of alleged U. S. aggressiveness or duplicity." This policy has been advanced through carefully planned security measures: by never openly revealing the nature or extent of U.S. satellite reconnaissance activities we have not forced or influenced other nations (particularly the USSR) to react publicly against our space overflights.

Considering this background, what is the most favorable context for introducing the MOL program to the American and international public? Will growing world-wide interest and enthusiasm for manned space flight minimize the possibility of international protest? Or will the fact that MOL is a military spacecraft carrying military pilots make it more objectionable internationally than current unmanned satellite reconnaissance activity? Will the USSR allege that MOL contains weapons? If so, how could or should the claim be countered? Will the growing tacit acceptance of unmanned satellite reconnaissance develop to a point where by 1968 MOL is entirely acceptable internationally? The answers to these questions may affect the success of MOL operations as well as the total national security.

In recent years satellite reconnaissance has been the major source of United States strategic military intelligence of the Soviet Union and Communist China. The United States has relied greatly on this information in evaluating international military capabilities and in determining its own force structures. The information has been particularly important in the United States' evaluation of Soviet strategic missile and other offensive weapon capabilities and of Soviet and Chinese strategic military research and development programs.

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Denial of satellite reconnaissance information to the United States, or a reduction in the program's effectiveness, would have a significant adverse impact on United States national security.

## II. BACKGROUND ON THE PROBLEM OF "LEGITIMIZATION" AND DISCLOSURE

NSC Action 2454 (Tab A), with its "Eighteen Points", forms the basis for the existing policy of secrecy and carefully controlled efforts to gain acceptance of satellite reconnaissance. In varying circumstances, this policy has been reviewed and re-affirmed periodically since its promulgation in July 1962. The advent of the MOL, with its primary reconnaissance function, has generated concern and comment from various U.S. government agencies concerning the security of existing and future satellite reconnaissance activity..

## III. THE PUBLIC AND INTERNATIONAL IMPACT OF THE MANNED ORBITING LABORATORY: CONSEQUENCES OF DISCLOSURE

The United States' satellite reconnaissance program is a national program conducted in secrecy. The character of the program is based on five major objectives developed in response to NSAM 156, expressing the desire to:

1. "Maintain our freedom of action unilaterally to conduct reconnaissance satellite operations."
2. "Prevent foreign political and physical interference with the conduct of these operations."
3. "Prevent accidental or forced disclosure of details of the operations or end products of the U.S. satellite reconnaissance program."
4. "Avoid situations, statements or actions which, in the context of our satellite reconnaissance program, could later be exploited as evidence either of alleged U.S. aggressiveness or duplicity."
5. "Facilitate the resolution of any conflicts which might arise between the essential technical and security requirements of the U.S. satellite reconnaissance program and the international

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commitments and foreign policy objectives of the United States in a manner which is in the over-all best interests of the national security of the United States."

The primary objective, abstracting those listed above, is to forestall foreign or domestic actions that would prevent the United States from using satellites for reconnaissance. This objective is not changed by the advent of MOL.

Would we enhance the acceptability of MOL by private disclosure to hostile nations? There is great danger in disclosing MOL's essential secret -- the high resolution of its photography -- to hostile nations. Such a disclosure would arouse apprehensiveness over our intelligence capability and might stimulate those nations -- especially the Soviets -- to renew their historic opposition. Further, since Soviet military astronauts overfly the United States routinely, a reconnaissance disclosure by the United States would be a confusing defensive action. The Soviets might presume that the true character of the MOL must be quite different from that offered in disclosure. Therefore, any announcement of high resolution photographic capability could have an unsettling influence upon the Soviets with protest, camouflage, and even physical counteraction as possible responses. No definable "good" would accrue to the United States from a private disclosure of the MOL mission.

Do we enhance acceptability by public disclosure? The existence of a U.S. requirement for effective intelligence of the Sino-Soviet area is generally clear to the governments of the free world. In spite of this acceptance it is unlikely that the U.S. could gain widespread support in any international forum for a positive affirmation to conduct satellite reconnaissance, especially with the introduction of a manned vehicle. The newly emerging small nations are strongly nationalistic. Their representatives could view a Soviet/U.S. debate over manned or unmanned reconnaissance with quiet detachment, but if faced squarely with a vote on the "space rights" of their own nations they would very probably choose to affirm total sovereignty. Friendly large nations are no exception to this rule; they simply enter the debate at an earlier point. Even arguments for "common defense" would normally yield in the face of arguments for sovereignty. The United States could, if necessary, debate the issue of the free use of space in any forum without apprehension. But it should carefully avoid any situation which forces a nation-by-nation roll call on photographic overflight.

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As in the case of private disclosure, public disclosure would have the additional effect of forcing hostile nations to react, since the announcement would be construed as a deliberate flaunting of a provocative capability. The Soviet reaction to U-2 overflight is well known; public disclosure could provoke Soviet leadership into placing the U-2 and MOL in the same category.

Does continued secrecy create a bad image of the United States? Secrecy does not mean illegality. The practice of conducting legal, secret operations in international waters and air space is well established. There is no reason for the United States to assume the lack of disclosure of details, timing, and results of satellite reconnaissance to be taken as a concession to illegality. The fact that these details are not disclosed becomes relevant only as the United States allows it to become relevant (for example, by reacting defensively to criticism in this regard).

#### IV. THE FEASIBILITY OF CONDUCTING MOL FLIGHT OPERATIONS WITHIN THE EXISTING FRAMEWORK OF NATIONAL POLICY

From the foregoing discussion it can be seen that disclosure of the MOL reconnaissance capability is an irreversible step which would have profound adverse effects on enemies, allies, and neutrals. Furthermore, no gain would appear to flow from disclosure.

MOL should therefore be operated within the guidelines of existing national policy and within the carefully-ordered security environment which already exists for military space programs. Such an environment enhances the achievement of the primary national objective indicated above, "...to forestall international or unilateral actions that would prevent the United States from using satellites for reconnaissance," avoiding unnecessary provocation in the international arena.

Achievement of this objective will require a firm position on several points.

First, there must be determined governmental resistance to any suggestion that MOL requires elaborate justification. MOL requires no more public justification than any other military space projects. The United States has announced that it will have a military space program and it has one. The United States has never made a secret of the fact that a number of its space projects are under military control and have military objectives. MOL must be treated as part of the mainstream of a continuing U.S. military space program.

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Second, and corollary to the above, the public information program associated with MOL must be kept modest, low-key, and carefully planned. Particularly at the time of program approval, it will be in the best interest of the program -- internationally -- to avoid fanfare. Contractor publicity must be controlled. All public information releases must flow through a single DoD point-of-view -- the Assistant Secretary of Defense/Public Affairs. Public information stories will deal exclusively with the non-sensitive technological aspects of MOL, such as the booster system, the life support system, engineering for long life on orbit, launching technology, communication plans, biomedical experiments, etc. Operational goals will not be discussed in news releases. Public releases and response to questions should be designed to cover the flurry of interest which will be associated with a decision to go ahead with the program. It should be recognized that at the time the first MOL is launched the NASA Apollo program will be at a peak of manned earth orbital activity. Public interest in the MOL may be very little.

It is possible, however, that public interest or the international situation at the time of manned launches of MOL may require the release of information on orbital activity to ensure that these launches cannot be reasonably interpreted as some type of covert aggression. The Air Force will have military experiments on board the spacecraft which, while they may be classified, lie outside of reconnaissance-associated activity and therefore may be discussed at least in general terms and often in specific detail. The nature (content and timing) of the release of information on MOL may be considered when the period of manned launches approaches and a decision on the release of information may, at that time, be reached in light of the then existing international and public circumstances.

Third, the publicly announced mission of MOL must continue to be expressed solely as "the investigation and development of manned orbital capabilities associated with national defense." It should not be stated or implied that the mission or justification of the MOL is to provide a general-purpose manned orbital laboratory. More specifically, the concept that the mission of MOL is general scientific and technological experimentation should not be used as a "cover" position, as this might lead to domestic and international demands for information on the nature of the experiment, which could serve to focus more public and international attention on the program. It could also lead to questions in Congress, the press and the scientific community on the relative roles of NASA and Defense in the national space program which

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could not be answered fully without jeopardizing the security of the MOL program. In presenting the MOL as a military program, it can be noted that MOL is not a break with the past military space program. Dynasoar, which was a manned military space program since the 1950's, was cancelled because it was aimed only toward the development of advanced reentry techniques and it was replaced by MOL specifically to study man's military capability in space. MOL should therefore produce no new objection. The MOL program was announced in December 1963 and \$150 million was included in the FY 66 budget.

Fourth, the United States should be prepared to re-affirm its abhorrence of orbiting weapons and advise that no U.S. satellite -- operational or developmental -- carries weapons of any kind. Statements should be made to apply to both manned and unmanned satellites and not in direct context with MOL. In view of its present agreement to ban weapons of destruction from orbit, this re-affirmation is somewhat trivial in impact; the believers will believe and the accusers will remain unconvinced.

Fifth, the tight security surrounding MOL's mission capability must persist regardless of comments and speculation (however accurate or inaccurate) by U.S. trade journals and the public press. Public information experience with unmanned satellite reconnaissance operations has shown that the most "devastating" publicity carries very little impact if completely ignored.

#### VI. POLITICAL AND INTERNATIONAL POLICY FOR THE MOL PROGRAM

##### A. GENERAL

1. The United States should maintain the legal position that the principles of international law and the U.N. charter apply to activities in outer space and, specifically, that outer space is free, as are the high seas. (NSC Action 2454)

2. The United States should continue to avoid any question implying that reconnaissance activities in outer space are not legitimate. Similarly, we should avoid any position declaring or implying that such activities are not "peaceful uses." (NSC Action 2454)

3. It is recognized that the United States cannot entirely avoid or disclaim interest in reconnaissance, so that where feasible the U.S. should also seek to gain acceptance of the principle of the legitimacy of space reconnaissance. (NSC Action 2454)

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4. When confronted by specific international pressure to outlaw reconnaissance activities in space, the United States should continue to take a public stand for the legitimacy of the principle of reconnaissance from outer space, the precise form and extent of which would depend upon the circumstances of the confrontation. (NSC Action 2454)

5. The United States should, to the extent feasible, seek to avoid public use of the term "reconnaissance" satellites, and where appropriate use instead such broader and neutral terms as "observation" or "photographic" satellites. (NSC Action 2454)

6. The United States should not, at this time, publicly disclose the status, extent, effectiveness, or operational characteristics of its reconnaissance program. (NSC Action 2454)

7. Strict control over public statements and backgrounding concerning reconnaissance satellites should be exercised to ensure consistency with the policy guide-lines suggested in these recommendations. (NSC Action 2454)

8. The United States should continue to disclose discreetly to certain allies and neutrals selected information with regard to the U.S. space reconnaissance program, making each disclosure orally while impressing upon them its importance for the security of the Free World. However, no information should be provided on the MOL at this time. If the program is questioned, the response should emphasize the non-aggressive nature of the program. Disclosures should be made in a manner that will preclude acquisition by the Communist Bloc of useable evidence of an official U.S. acknowledgment that we are conducting a satellite reconnaissance program. Proposals for such disclosures should include clearance by the National Reconnaissance Office. (NSC Action 2454)

9. The United States should in private disclosures emphasize the fact of our determination and ability to pursue such programs because of their great importance to our common security, despite any efforts to dissuade us. (NSC Action 2454)

10. The United States should note in connection with private disclosures that, except in some cases for specifically defined disarmament agreements, the U.S. cannot agree to (a) declarations of the precise purpose of all satellites, (b) declarations of the equipment of all satellites, (c) general requirements for advance notification

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of all satellite launchings and the tracks of satellites, (d) pre-launch inspection of the satellites, or (e) a specific definition of peaceful uses of space which does not embrace unlimited observation. (NSC Action 2454)

11. The United States should continue to describe the MOL program as a Department of Defense program. Provision in the design has been made to support general technological experiments and NASA will consider the capability available in conjunction with its needs. However, the classified military objectives will continue to have top priority and no steps should be taken to use any possible NASA interests as a cover.

B. SPECIFIC

1. The United States should continue to preserve the security of the National Reconnaissance Program by conducting Manned Orbiting Laboratory development and operations within a carefully conceived and disciplined security environment consonant with the spirit of NSC Action 2454.

2. The mission of MOL will be described solely as the investigation and development of manned orbital capabilities associated with national defense and not as a general-purpose manned orbital laboratory. It should be described as an improved substitute for Dynasoar and no break from the earlier program of manned military activities.

3. The MOL program will not be justified publicly. MOL is a logical element of a continuing U.S. military space program; as such, it requires no more public justification than any other space program.

4. Public information on MOL will be carefully planned at a modest, low-key level. This will be especially important at the time permissible information on the operational phase will be released at or near launch times. All public information releases or statements on MOL made by representatives of any Executive Department or Agency including contractors involved in the program will process for approval through the Office of the Assistant Secretary of Defense/Public Affairs. Such news stories as are required will deal exclusively with non-sensitive technological aspects of MOL; operational goals will not be discussed.

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5. All MOL launchings will be included on the U.S. portion of the United Nations registry of satellite launchings.

6. MOL reconnaissance products will be controlled in the TALENT-KEYHOLE security system after exposure, during processing and throughout exploitation. The intelligence product will be exploited through established facilities of the intelligence community.

7. The United States will promote, within the bounds of security, the free exchange of bona fide non-sensitive data accruing from MOL experiments.

8. It may become desirable for the United States to re-affirm its abhorrence of orbiting weapons and advise that no U.S. satellite -- operational or developmental -- manned or unmanned -- carries weapons of any kind.

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PROPOSED ANSWERS TO POTENTIAL QUERIES ON THE MOL PROGRAM

1. Reference Dr. Brown's statement before the Senate Committee on Armed Services, March 2, he listed characteristics for the orbiting vehicle as: (a) at least two men (b) 30 days duration; (3) 300 to 700 cubic feet of pressurized volume per man; (d) capability for extra-vehicular activity; (e) precise attitude control; (f) safe crew ascent and descent. Are all of these part of the program now? If not, which are? What about capability of assembling large objects in orbit and rendezvous?

Answer: All of these are still program considerations.

2. How many launches are planned? Manned? Unmanned?

Answer: There are six launches planned in the MOL development program, five of which are manned. We will have one or possibly two "pre-MOL" unmanned launches to qualify subsystems and component development, and to obtain early information on structures and environment.

3. When is the first launch scheduled? Manned? Unmanned?

Answer: A "pre-MOL" launch to qualify subsystems and to obtain early information on structures and environments is planned for late 1966 or early 1967. The first manned launch in the MOL program is planned for late 1968.

4. When will the research and development program be completed?

Answer: The contract definition phase should be completed in about six months. Then we plan to go into full scale development which should be completed in early 1970.

5. How much money have you spent on the MOL program to date? How much do you estimate for the cost of the entire R&D program?

Answer: About 30 million dollars relating to MOL have been spent thus far. (Part of this has been used to protect long lead

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time procurement and for pre-MOL activities such as refurbishing the Gemini-Titan II spacecraft for a pre-MOL launch). Entire program will cost about \$1.5 billion.

6. How far do you think you will get into the program with the \$150 million authorized in the FY 1966 budget?

Answer: This would take us into full scale development.

7. How will the work be contracted? Will there be a prime contractor? Who?

Answer: There will be an associate contractor structure.

8. Will you use the NASA Mission Control Center at Houston? If not, where will the control be?

Answer: The MOL program flights will involve the Air Force Satellite Control Facility, Sunnyvale, California. Relation to the NASA network has yet to be completely worked out.

9. What additional facilities such as tracking stations, etc., will be required?

Answer: No major facilities not now available in the National Ranges or the Satellite Control Facility are expected to be needed.

10. Is there an unmanned portion of the program other than the launches that may be made primarily to test hardware and systems for manned flight? If so, what will it consist of?

Answer: We will be developing technology relating to unmanned capabilities as part of the program.

11. Will all of the launches be made from Cape Kennedy? Which?

Answer: We anticipate launching from both coasts.

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12. Will launches be into polar orbits with the MOL travelling over Russia?

Answer: Any launches over the Western Test Range will be into polar orbits. When you are in a polar orbit, if you stay up long enough, you will pass over the entire surface of the earth. This has been true of the Soviet orbiting vehicles.

13. Will experiments be conducted while traveling over Russia?

Answer: Precise flight profiles are not firm at this time. Experiments will be conducted wherever in orbit seems most appropriate.

14. How will crew move from Gemini B into the laboratory?

Answer: Through a hatch in the Gemini Heat Shield.

15. What is NASA's part in the program?

Answer: NASA provided a base of technology and operational experience upon which DOD drew. For example, certain systems and subsystems from Gemini and Apollo will be incorporated. The Gemini vehicle itself is a NASA development. NASA may participate in the MOL by carrying out certain technological experiments of scientific interest on a non-interference basis.

16. What is the Navy's part in the program?

Answer: The Navy will participate in the MOL program with experiments peculiar to their interests. There is a Navy Field Office located at the Air Force Systems Division Headquarters in California for liaison.

17. Is the Army participating? How?

Answer: The Army has been invited to participate by identifying experiments peculiar to their interests. So far, they have not come in with any.

18. Have the scientific experiments been selected? What are they?

Answer: The selection process has been going on for some time and will continue. The DOD expects to support those experiments with potential relevance to military needs.

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19. Have contracts been let to Martin? What is dollar value?

Answer: Not yet.

20. Has contract been let McDonnell for the Gemini B? What is dollar value?

Answer: Not yet.

21. Will additional facilities be required on the West Coast for manned MOL launches?

Answer: We have included in the FY '66 budget request funds for additional Titan III launch and support facilities at the WTR for both manned and unmanned purposes.

22. Why do you want to launch into a Polar orbit?

Answer: Polar orbits enable us to collect flight data from all the space regions -- north and south as well as east and west. (Some types of data are: radiation measurements, communication phenomena, meteorological data, micro-meteorite density measurements, and geophysical data.)

23. Will the MOL be used as a development vehicle leading to an orbital bombardment system?

Answer: No. There would be no military advantage to developing such a capability.

24. Will it be capable of carrying a nuclear bomb?

Answer: We have no plans for incorporating such a capability. The U. S. fully supports and is committed to complying with the UN Resolution which bans the orbiting or stationing of weapons of mass destruction in outer space. "Carrying" a bomb is useless. Delivering it from space is difficult. We will make no provision for such delivery.

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25. Is it intended to use the MOL for detecting nuclear explosions which may be in violation of the Test Ban Treaty?

Answer: We have a program of nuclear detection satellites specifically designed to accomplish this purpose.

26. Would we permit foreign inspection of the MOL vehicle before it is launched?

Answer: The U.S. will permit pre-launch inspection of its space vehicles or missiles in the context of an agreed to verifiable arms control measure, involving such inspection for all parties.

27. What will be the policy on the release of data on MOL experiments?

Answer: All unclassified information will be released as soon as practical.

28. What military information will be released?

Answer: MOL policy on such release will be identical with the practices relating to other types of military information.

29. Why not use the Saturn-Apollo system?

Answer: The Saturn-Apollo system designed for lunar exploration has capabilities beyond those required for the MOL. These capabilities make an Apollo-based system more expensive than a Gemini-based system for the MOL.

29(a) Will NASA make any use of the Gemini B/MOL/Titan IIIC system?

Answer: NASA has indicated that possible use of the Gemini B/MOL/Titan IIIC system in conjunction with the Apollo-Saturn system for future NASA programs will be considered.

30. What will happen to the Titan IIIC pads at the Cape?

Answer: They will be employed for future space launches.

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31. Will the Air Force or NASA procure Gemini B?

Answer: The procurement arrangements will be worked out between the Air Force and NASA.

32. Is there any plan to increase Titan IIIC performance for MOL, for instance, to provide 7-segment solid motors?

Answer: A 7-segment configuration has been studied and may be introduced.

33. On December 10, 1963, Mr. McNamara stated the first MOL launch was expected late in 1967 or early in 1968. Why do you now say late 1968?

Answer: The additional time was required for the Air Force to work out a suitable plan for this expensive program.

34. Will MOL employ any advanced reentry vehicle like the START?

Answer: No. The Gemini B will be used, with the guidelines of changing the NASA Gemini as little as possible.

35. Will the MOL perform rendezvous and docking?

Answer: Rendezvous and docking are not requirements of the currently approved program. However, this capability, which is being developed by NASA for its lunar program, will be employed in the MOL at a later date if required.

36. What will you do if Gemini proves men cannot last 14 days in orbit?

Answer: Studies made by the Air Force have indicated that a vigorous exercise program should assist substantially man's ability to withstand the space environment, and space, facilities, and time would be allowed for such prophylactic activity. The MOL is planned for the development of both manned and unmanned technology. The flight durations may be adjusted to take account of what is learned of man's capabilities in the Gemini and Apollo programs.

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37. What kind of "large structure" are you thinking of building?

Answer: We may investigate means of deploying, extending or erecting such items as a large antenna, a shelter for external repair or a solar energy collector.

38. Deleted.

Will MOL launches be open to the public?

Answer: It is planned that the public information policy on the MOL launch operations will be identical to the current DOD practice. This is in conformity with the December 20, 1961, U.N. Resolution, sponsored by the United States, which requires that nations launching objects into orbit or beyond are to furnish information promptly to the United Nations Committee on the Peaceful Uses of Outer Space through the Secretary General. However, this policy will be reviewed as the time approaches for manned launches.

40. Since the MOL is a military program, can it be expected that safety considerations may be to a degree less controlling than in the NASA manned space program?

Answer: Crew safety is always a primary consideration in military programs. MOL is no exception. In this case, the adaptation of the Gemini as a crew-transportation spacecraft, the incorporation of redundant features in the laboratory and the advantage of previous NASA experience will yield high assurance of safe operation.

41. Will not MOL meet many of the objectives being planned for the NASA Extended Apollo Program?

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41 (Cont'd)

Answer: The MOL is a DOD program to meet specific defense needs. If it can contribute to any important non-defense scientific objectives, this will be jointly worked out by NASA and the DOD. Priority will be given to the DOD needs. This is analogous to the NASA Gemini program which carries Air Force experiments, with priority given, of course, to the NASA objectives.

42. How will MOL crews be trained and selected?

Answer: The Air Force will be responsible for the training. Current training techniques will be applicable to a significant extent. Considerable specialized knowledge and skills will be needed, however, and the training program will be augmented to include them.

43. Who will be in charge of the MOL program?

Answer: The Air Force will manage the MOL through a program office similar to the arrangement for other large programs. Details will be furnished later.

44. What technical experiments will be performed?

Alternate Answer: The following examples are representative: Space structures technology, communications equipment, guidance and navigation and extra-vehicular equipment.

Proposed Answer: The details are classified.

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45. To what extent will the Apollo tracking and control facilities be used in the MOL Program?

Answer: MOL will use the Apollo facilities wherever possible and acceptable to NASA for either direct support or stand-by needs. Details are not yet worked out.

46. To what extent will existing DOD satellite control facilities be used? Will additions or modifications be made?

Answer: All of the existing Satellite Control Facility, with its center at Sunnyvale, California, will support MOL. In some cases, augmentation which is already planned will apply to the MOL. A modest amount of further addition and alteration will be needed.

47. Will any new stations be needed?

Answer: We do not foresee at this time the need for any.

48. Will the new systems of NASA and DOD, which combine the tracking, data and communication functions, both be suitable for MOL?

Answer: The two systems are basically compatible.

49. What special training for MOL astronauts is planned?

Answer: The MOL astronauts will receive a basic training program. This will be followed by detailed training with the specific equipments planned for launch, orbital support, mission experiments and recovery.

50. What type of power sources are under consideration for the MOL?

Answer: Fuel cells, nuclear reactor and isotope power supplies have been studied. The planned mission duration of MOL for 30 days favors the fuel cell type of system. Specific conclusions on this matter will be reached during Phase I.

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51. Will public information arrangements for the personal stories of MOL astronauts permit the type of private contractual arrangements which have been entered into by NASA astronauts?

Answer: It is general policy within the Department of Defense and the Air Force to encourage its personnel to write for publication, and in fact, many Air Force officer and civilian personnel do write for profit. The restrictions that apply are essentially three in number: First, private literary efforts must be accomplished during off-duty hours. Second, all material on military subjects must be submitted for review for accuracy, propriety, and security, and for clearance by the Department of Defense. Finally, the author may not use information from a privileged source or on an exclusive basis. In the case of MOL, any proposed arrangement would be subject to prior approval of the Department of Defense.

52. Since the peaceful nature of the manned space program has been continually emphasized, would you not expect that the initiation of a manned military program would be regarded as a change in national policy with regard to space?

Answer: The introduction of a man into an established and well known Department of Defense space program does not indicate, as such, a significant change in the nature of the nation's over-all space program. The purpose of MOL is the investigation and development of manned orbital capabilities essential to the national defense. It should be noted that MOL is a laboratory: It "investigates" and "develops." The same has been true of a number of DOD space projects; whether they are manned or unmanned is not as important as the fact that they are all in the mainstream of a continuing U. S. military space program.

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52. If the purpose of MOL is for experiments, why cannot the orbits available from launches at Cape Kennedy be employed for these experiments?

Answer: We anticipate launching from both Cape Kennedy and WTR. Orbits of high inclination enable us to collect flight data from all space regions -- north and south as well as east and west. Representative of the types of data to be collected are: radiation measurements, communication phenomena, meteorological data and micrometeorite velocity measurements.

53. In view of the military security covering the MOL program, what steps, if any, do you plan to take to assure the international community that there is not a hidden aggressive intent in the initiation and development of this program?

Answer: On October 17, 1963, the United States government joined the United Nations General Assembly in adopting by acclamation a resolution calling upon all States "to refrain from placing in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, installing such weapons on celestial bodies, or stationing such weapons in outer space in any manner." The international community should continue in its assurance that the United States has no plan to deviate from this position which it supported strongly for many years before its U. N. adoption and which it considers to be a milestone in progress toward peace. No further assurance should be necessary.

54. Does this mean that the MOL is not a "weapon system" in the usual connotation?

Answer: MOL is not a weapon system.

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55. Is MOL a reconnaissance program?

Answer: As pointed out before, MOL is an experimental program in which the activities are identified best as investigating, testing and developing.

56. Is the basic purpose of MOL to investigate and develop a space intelligence system, reputed to be a major element in the DOD space program?

Answer: The identification of MOL as a development program is correct. As stated before, it will include experiments to determine man's utility in a military role.

57. What is the reason for the DOD policy against discussing intelligence or reconnaissance?

Answer: The reason should be obvious.

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58. You have announced that Douglas and the GE Company are teamed as associate contractors. Why was this done; what are their responsibilities?

Answer: As more detailed investigation of the MOL capabilities has evolved, it became increasingly apparent that because of the importance and complexity of the MOL program, it was in the government's interest to divide the MOL laboratory vehicle tasks into two parts. One would deal primarily with the overall orbital vehicle, integration and test and the design, development and fabrication of the laboratory vehicle, which together with the Gemini B and T-III transtage form the orbital vehicle. The second major task is the design and development of various experiments and the incorporation of these equipments into the experiments module of the laboratory vehicle. Due to the differences in the two types of tasks, DAC and GE have been teamed as associates to perform these two tasks.

59. What are the orbiting components of the MOL?

Answer: The orbital vehicle for the Manned Orbiting Laboratory is composed of the reentry capsule, a modified Gemini, provided by the McDonnell Aircraft Corporation; the laboratory vehicle to be provided by the associate team of DAC and GE and the T-III transtage, provided by the T-III Martin team.

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