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DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE SECRETARY

MEMORANDUM FOR THE SECRETARY OF DEFENSE

SUBJECT: MOL Management

This memorandum presents a summary description of the Air Force management and industrial contractor structure for the Contract Definition Phase of the MOL program. As a part of contract definition, these management arrangements will be reaffirmed or suitably modified for Phase II activities. The memorandum specifically requests your approval of a management structure and contractor selection.

I have examined several different Air Force management structures, considering the discrete management levels within the USAF of program review, approval and policy, program direction, and program implementation. As a result, I propose that you approve the following management plan (details are provided in TAB A):

Program policy, review and final Air Force approval will be exercised by SAF, supported by the DNRO and by the MOL Policy Committee as currently constituted. The NRO Staff will provide staff support to the DNRO in those areas of the MOL program which interface with the National Reconnaissance Program. (Specific functions of the NRO Staff are discussed in TAB B).

Strong, centralized, integrated program direction will be exercised from a Washington area office, headed by General B. A. Schriever, as Director, MOL, as an additional duty. He will report directly to the Secretary of the Air Force and be supported by a full-time Vice Director and small program staff located in the Washington area.

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An integrated program implementation office, designated the MOL Systems Office, will be established at the Air Force Space Systems Division, El Segundo, California. This office will be headed by a general officer, designated Deputy Director, MOL, who will report directly to the Director, MOL. The office will be staffed by highly qualified, experienced program management personnel and supported by the Aerospace Corporation in accomplishing general systems engineering and technical direction for the program.

The Director, SAFSP, located at SSD, will be responsible to the DNRO for development, acquisition and test of the sensor payload in response to technical specifications and requirements provided by the Deputy Director, MOL. He will be responsible for all "black" contracting, and will establish a MOL sensor payload office, co-located with the MOL Systems Office, to carry out his responsibilities. He will review and approve implementation of BYEMAN security procedures. In addition, SAFSP will maintain surveillance over the utilization of the critical Air Force, Aerospace and industrial resources of the NRP including the MOL.

The Air Force has recently completed an evaluation of the four contractors who were selected on a competitive basis to undertake preliminary design studies of the laboratory vehicle. The report and findings of the Source Selection Board provided the relative order of merit below:

- a. Douglas Aircraft Company
- b. General Electric Company
- c. Boeing Aircraft Company
- d. Lockheed Missile and Space Company

with the first two companies showing a clear margin of superiority over the last two.

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As you know, the total MOL development program confronting us is a very complex and important one which will demand the very best talent and experience in the industry. The Air Force must assemble the most competent and experienced overall team to define and conduct this development, employing unique capabilities wherever they exist. With the orientation of the MOL program to the primary objective of high resolution manned reconnaissance, there arise two major orbiting vehicle tasks that demand differing specialized industrial talent. One is that of developing a complex space vehicle capable of assuring man's well being in space for extended periods of time. This demands a comprehensive knowledge and appreciation of systems integration and first-hand experience in fabricating large structures answerable to man's needs and safety in the spacecraft environment.

The other task is that of accommodating the large and complex optical reconnaissance payload and providing the supporting functions necessary for very precise operation of such an instrument.

The foregoing suggests that it may be particularly advantageous to draw on the capabilities of the two outstanding contractors to accomplish the task originally envisioned for a single laboratory vehicle contractor. I have carefully reviewed the report and findings of the selection board and have completed an additional examination of contractor past experience and performance, and of security factors pertinent to the MOL program. The Douglas Company offered the best overall technical program and management approach. Its past experience and performance as a system integrator on weapons such as Thor, Genie and Nike-Hercules/Zeus is good and considerably broader than that of the General Electric Company. General Electric, on the other hand, showed superiority in important aspects that bear on mission capability. They have current experience in space vehicle operation as well as expertise in handling the complex interface with large optical systems. They have over 1,000 people immediately clearable for DORIAN work. The Douglas Company has very few cleared personnel. In addition, these contractors possess in aggregate a most imposing array of existing test facilities available for support of the program. I conclude that it is in the Government

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interest to include both of these contractors on the industrial team, with Douglas Aircraft in the role of laboratory vehicle contractor and General Electric as the mission module contractor. Overall systems integration and technical direction will be accomplished by the Air Force with the assistance of the Aerospace Corporation. Physical integration will be assigned to the laboratory vehicle contractor in accordance with our current practice and experience. However, the scope and magnitude of this task will be reviewed in detail during program definition to determine the need of an additional integrating contractor, such as was used in the Minuteman program. The roles of the contractors are defined more completely in TAB C.

The selection of the contractor for the optics sensor is critical to the program and has been the subject of separate correspondence between you and the DNRO. It is my conclusion that the DORIAN task, though complex and demanding, can be accomplished by the optics industry.

Clearly those portions of the MOL program which relate to overhead reconnaissance of denied areas must be subject to the same stringent security measures that are now accorded other portions of the NRP. To insure that effective security control is maintained, the DNRO will be responsible for overall security policy implementation.

As an allied subject, we feel that a carefully planned public information plan for the MOL program must be followed. Such a plan is attached as TAB E and is designed to meet two essential requirements:

a. To maximize protection of classified information related to the primary program objective, i. e., demonstration of manned earth orbital high resolution optical reconnaissance, and such other mission objectives that may be added.

b. To carefully plan the release of public information on all parts of the MOL program, in order to reduce public attention on manned military space activities.

All public releases will be directly controlled by DNRO and are subject to OASD (PA) review.

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It is recommended that only a brief public announcement be made of MOL program approval and laboratory vehicle contractor selection. Attached as TAB F is a suggested news release.

In summary, I request your approval of:

- a. The Air Force management structure recommended above.
- b. The selection of Douglas Aircraft Company and General Electric Company as laboratory and mission module associate contractors respectively.
- c. A policy of carefully planned public information on the MOL program which described the mission of MOL as the investigation and development of manned orbiting capabilities essential to the national defense.

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TAB A

MANAGEMENT OF THE MOL
PROGRAM

Introduction

The present MOL management structure was established as an interim organizational arrangement for the study phase conducted between January and June 1965. This phase has been completed, and the Air Force has recommended proceeding with the Contract Definition Phase.

The purpose of this paper is to describe the Air Force management plan for future program activities. The principal objectives are to insure that program management is responsive to approved program policy and guidance, and is capable of conducting the program within cost ceilings while meeting schedules and performance goals. The procedures defined are streamlined, simplified, and direct.

Program Summary

The initial objective of the MOL program is the early demonstration of an operational manned high resolution optical reconnaissance system capable of achieving [REDACTED] resolution on the ground. Parallel developments and experiments leading to improved resolutions will also be undertaken. In meeting this objective, provisions will be made to incorporate the advanced optical sensors, to

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extend on-orbit life, and to accommodate other military payloads and DoD/NASA scientific and technological experiments.

In addition, development will be conducted of those elements necessary to apply the MOL optics and optical technology to unmanned reconnaissance systems.

Primary Considerations

The basic management objective is to provide a single, clear line of direction to a fully coordinated MOL program. This requires the designation of a MOL Program Director who has authority to manage and control the program.

The MOL program has been designed to meet guidance issued by the SecDef which provides for improved observational capability and continuing investigation of other manned military space missions. However, since the MOL program will meet some of the proposed long-range objectives of the NRP, it must not proceed independent of the NRP. Hence, direction of the MOL should be responsive to policy, guidance, and approval of the Secretary of the Air Force with assistance and advice from the DNRO.

The critical task in the MOL program is the design, fabrication, assembly, alignment and test of particular optical components of the reconnaissance payload package. Factory workload and needs of other programs for similar components must be continually assessed by the DNRO to correct any imbalance which may arise at particular

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contractor facilities without detriment to the MOL program or to other NRO programs.

Clearly those portions of the MOL program which relate to overhead reconnaissance of denied areas must be subject to the same stringent security measures (BYEMAN System) applied to other NRO programs.

The prime resource of qualified manpower to translate requirements from operational terms into technical planning and to provide systems engineering and technical direction of the MOL program is located at SSD/SAFSP/Aerospace. This dictates that program implementation be carried out from that location.

The responsibility for the implementation of the MOL program should be vested in a single individual at the field operating level. Those functions which he does not directly supervise must be responsive to his stated and defined needs.

Clear and direct funding arrangements must be established for all elements of the program, to permit the Program Director to conduct a balanced program between "black" and "white" efforts to maintain compatible overall program schedules, progress, control, direction, management and decision points, as well as overall system engineering, integration and test.

Management Approach

The foregoing considerations point to the need for:

- a. Responsive streamlined, integrated vertical management for all aspects of the program.

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- b. Highly qualified, experienced program management personnel.
- c. Security control compatible with established policies for overhead reconnaissance, and with program objectives.
- d. Three discrete management levels within the Air Force:
 - (1) program policy, guidance, and approval; (2) program direction;
 - (3) program implementation. Each of these management levels is discussed below.

Figure 1 is a management organization chart for this plan, and Figure 2 summarizes the tasks and interfaces involved.

SAF - Program Policy, Guidance and Approval

The Secretary of the Air Force is responsible for executive management of the MOL program. SAF will be responsible for all Air Force decisions and directions pertaining to the MOL program and will be the final reviewing and committing authority for the Department of the Air Force on this program. He will be supported by the MOL Policy Committee which will provide such advice and assistance as is required, and by the NRO Staff in those areas which interface with the NRP. MOL activities will be conducted using both "black" and "white" channels and procurements. All activities which deal with the reconnaissance aspects of the program will be handled in the BYEMAN control system under the special code word DORIAN. The

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DNRO will be responsible for overall security policy and control. The SAF will assign management responsibility and delegate commensurate authority to the Director, MOL in accordance with the provisions of this management plan.

Director, MOL - Program Direction

The Director, MOL will report directly to SAF. Director, MOL will be responsible to establish, manage and conduct, in accordance with DNRO guidelines, task assignments and requirements, all aspects of the approved MOL program as assigned by the SAF and by the overall provisions of this management plan. He will be the principal operating agent for the direction of the MOL program. Operating activities include overall system performance, integration, testing, coordinating and planning; advanced studies, research, development, test and improvement of performance and effectiveness of manned military satellite vehicles; utilization of Air Force personnel and resources, in addition to any other resources assigned. He and his Washington office will be located in the Pentagon near the office of SAF. His office will handle the Hq USAF and other Washington area Air Force staffing of the program, including liaison with other Government agencies. His office will provide complete and timely program status information available in comprehensive form for OSAF and OSD review. He will be responsible for keeping selected senior members of the Air Staff personally

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informed concerning the MOL program. Major Air Staff offices (such as DCS/R&D, SAFOI, etc.) may provide a well-qualified officer for full-time duty as part of the office of the Director, MOL. Such officers will expedite functional support which the Director, MOL may determine necessary for the MOL program, and will assist in keeping their parent offices informed.

The Director, MOL will establish a strong integrated systems and program implementation office located at SSD, El Segundo, California. That office will be supported by the Aerospace Corporation to perform general systems engineering and technical direction for the MOL program.

Vice Director, MOL

A full-time general officer, Vice Director, MOL, is the principal assistant and advisor of the Director, MOL, coordinating the activities of all offices under the supervision and command of the Director, MOL. He will act with full authority of the Director, MOL, except in those responsibilities specifically reserved to the Director, MOL by the directives of higher authority. All action taken by him shall have the same force and effect as though taken by Director, MOL.

Commander, AFSC

The Commander, AFSC is directly responsible to SAF for providing on a continuing basis the facilities, resources, and personnel

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necessary to support the MOL program. In the event that MOL requirements exceed the AFSC capabilities, then the matter shall be referred to SAF via the Director, MOL and the DNRO.

Deputy Director, MOL - Program Implementation

The Deputy Director, MOL will be a general officer, who will be responsible to the Director, MOL for specific responsibilities and functions assigned by Director, MOL in accordance with provisions of this plan.

The Deputy Director, MOL is responsible for implementing all program direction by the Director, MOL for system procurement, design, development, test and evaluation. He is also responsible for overall mission operations, including man's safety during all phases of manned flight, proper and safe functioning of the flight vehicle, planning for and exercise of on-orbit control of the vehicle and reconnaissance payload in response to intelligence collection tasks established by the DNRO or his designee. SSD offices will provide the required functional assistance to the Deputy Director, MOL to fulfill his overall responsibilities.

From funds provided him by higher authority, the Deputy Director, MOL will have full procurement authority necessary to conduct "white" procurements. "Black" contracting services for the MOL program will normally be accomplished by SAFSP.

The Deputy Director, MOL will implement established security procedures for activities under his control.

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The Deputy Director, MOL will be responsible for overall top-level systems integration and general system engineering and technical direction. The overall system consists of all hardware, software, and personnel elements required for launch through recovery, except for that software which is directly involved with selecting camera programs and orbit profiles in response to intelligence collection requirements. He will be responsible for the development, acquisition and integration of the Gemini B, the laboratory module, and the mission module. The Deputy Director, MOL is also responsible for all technical liaison at field level with other military services and NASA.

The Deputy Director, MOL will have a MOL Systems Office under his direct control and supervision. This office will be manned and organized to perform functions peculiar to the MOL program, and will direct and control supporting agencies in accordance with policies and procedures established by the Director, MOL for the conduct of this program. Offices and agencies participating in major elements of the MOL program (e. g., U.S. Navy) may furnish well-qualified personnel for full-time duty as part of the program office to provide the Deputy Director, MOL the resources necessary for the most efficient and effective conduct of the MOL program.

From funds provided through the Director, MOL, he will obtain the following hardware and services from the normal SSD offices established to handle these areas: all launch and booster vehicles,

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selected AGE, selected equipments and services, launch pads and facilities. For range and tracking station equipments and services funded by other program elements the Deputy Director, MOL will be responsible for insuring that his requirements are furnished on a timely basis to the proper offices and the Director, MOL; the Director, MOL will designate the monitoring responsibility.

All SSD offices will provide functional support as requested by the Deputy Commander (SSD) for MOL, but, except for such requested support, will not be involved in the MOL program management.

The Deputy Director, MOL is responsible for keeping the Director, SAFSP fully informed of all MOL activities to insure that SAFSP can perform its functions effectively.

Director, SAFSP

The Director, SAFSP will be responsible to the DNRO for the development, acquisition and test of the high resolution photographic sensor payload in response to systems integration requirements and interface specifications provided by the Deputy Director, MOL. The Director, SAFSP will be responsible for detailed systems engineering and technical direction for the development and test of the sensor payload, and for providing to the Deputy Director, MOL engineering

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data about the sensor payload interface and requirements imposed by the sensor payload on the mission module and orbiting vehicle. He will be responsible, in coordination with the Deputy Director, MOL, for systems and technical studies of improved sensors, and for research on the improvements in sensor technology applicable to MOL.

The Director, SAFSP will be responsible for all necessary contract management of the high resolution photographic sensor payload. The sensor payload elements involved are principally the primary optics with associated alignment and testing devices, and AGE; cameras and camera handling devices; film and film handling devices including on-board processing and viewing equipment; optical and TV relay equipment; sensor pointing and tracking equipment; telescope and optical element mounts (see Figure 2). These responsibilities include the recommendation to the DNRO of contractors to be selected, and the execution of detailed technical direction over the contracts involved. He may also provide contracting services to the Deputy Director, MOL for all "black" contracts required by the latter.

The Director, SAFSP will also be responsible, in conformance with top-level overall GSE/TD provided by Deputy Director, MOL, for the secondary-level GSE/TD support furnished by Aerospace Corporation for the MOL sensors. He will be responsible to the DNRO for the development of those elements necessary to use the MOL sensors

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in unmanned systems; for the development of technology applicable to improve sensors, manned and unmanned; and for the improvement of the efficiency, reliability, coverage and resolution of satellite photographic reconnaissance payloads. He is responsible to the DNRO for insuring that these objectives are accomplished without detriment to the MOL program or the other programs of the NRP for which he is responsible. He will advise the DNRO and the Director, MOL of conflicts which may arise between the MOL program and other elements of the NRP.

The Director, SAFSP will also insure that the Director, MOL is fully and concurrently advised of all MOL related matters referred to the DNRO for which SAFSP is responsible.

To discharge his responsibilities, the Director, SAFSP will establish a MOL Sensor Payload Office, which will be co-located with the MOL Systems Office. The Chief of the Sensor Payload Office will be responsible to the Director, SAFSP with respect to the execution of detailed technical direction and contract management involving the sensor payload. He will be responsive to the Deputy Director, MOL for overall program direction, schedule requirements, and systems integration and interface specifications.

The Director, SAFSP, as the West Coast representative of DNRO, is responsible for the review and approval of plans implementing BYEMAN security policy and will administer and process security clearances for all West Coast personnel.

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In order to insure proper balance and utilization of critical optical resources which must be applied to both the MOL and other elements of the NRP, the Director, SAFSP will maintain surveillance over the utilization of Air Force/Aerospace and industrial resources of the NRP including the MOL.

Financial Management

Financial management of the MOL program will involve the contracting and expenditure of both "black" and "white" funds.

Budget estimates, apportionment requests, Program Change Proposals, reprogramming actions, and other funding media transmitted to OSD, BOB and Congress will include both the "black" and "white" funds. No details on the "black" portion are to be included in such media. A "black" dollar requirement will be reflected with a notation that "Details are subject to special access." When fiscal year funds are released by OSD, the NRO Comptroller in accordance with guidance from the Director, NRO will cause to be issued appropriate internal budget authorizations in Air Force Budget, and obligation authorities directly to SAFSP for all "black" procurements, citing MOL funds.

Budget authorizations for "white" funds approved by OSD will be issued by Air Force Budget through AFSC budget channels to Deputy Director, MOL. From funds provided him through these channels,

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the Deputy Director, MOL will have full procurement and contract management authority to acquire the identified segments of the MOL program.

Program Change Proposals for MOL "white" and "black" funds which propose adjustments to the MOL program element as reflected in the Five Year Force Structure and Financial Plan and of a magnitude requiring Secretary of Defense approval will be prepared by the Director, MOL. Review and coordination of these requests within the Air Staff will be held to a minimum consistent with the nature of the particular request. Coordination will normally be limited to the following Air Staff agencies:

Director of Aerospace Programs

Director of Budget

Interested DCS or Directorate
(DCS/Research and Development or AFOCE)

After obtaining these coordinations, the request will be submitted for SAF-FM review and signature at Secretarial level. When approved, AFOAP will distribute the change proposals to OSD and the Air Staff.

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MOL MANAGEMENT ORGANIZATION

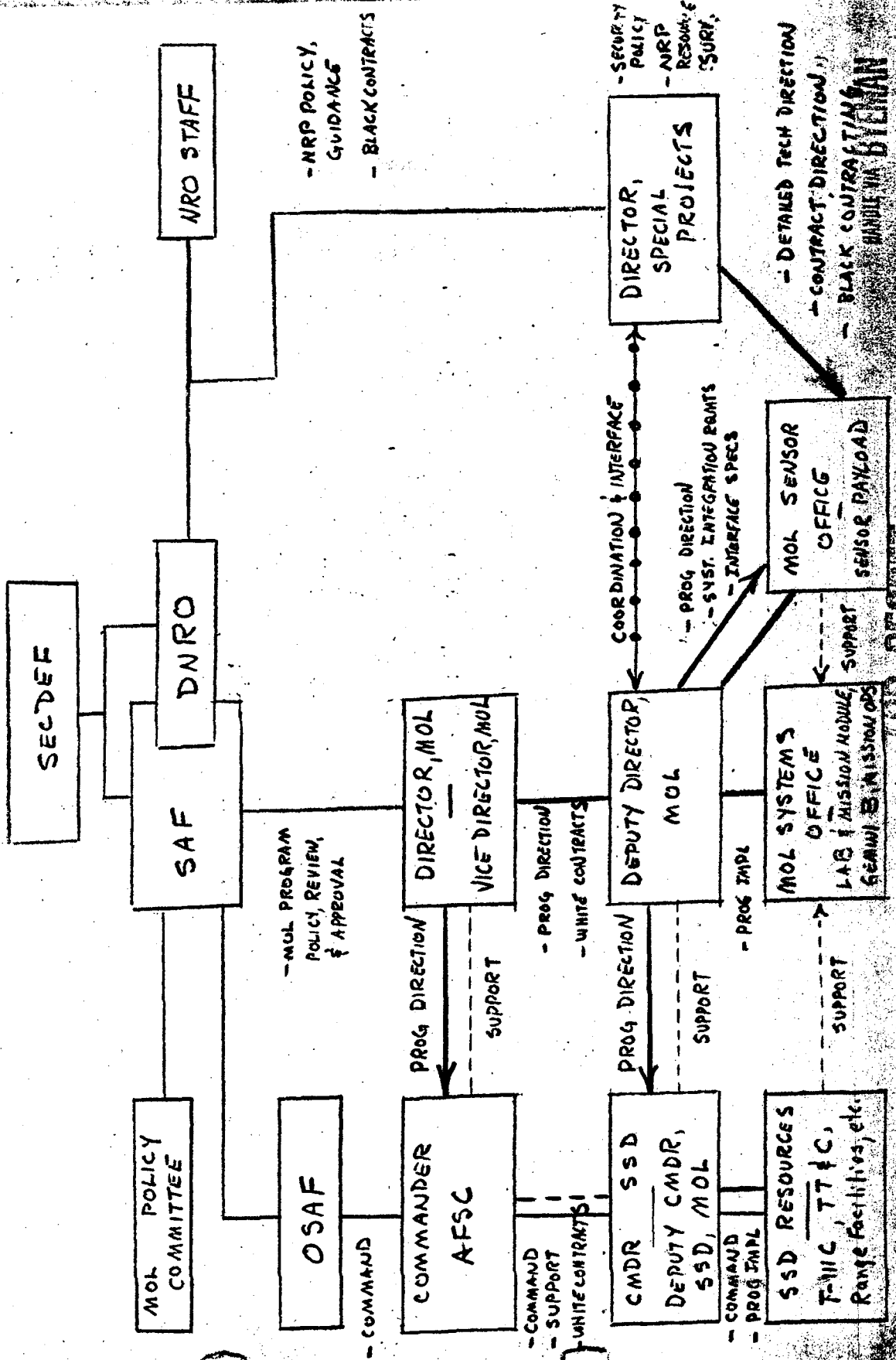


FIGURE 1.

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MOL TASK ASSIGNMENTS

<u>LABORATORY MODULE</u>	<u>MISSION MODULE</u>	<u>SENSOR PAYLOAD</u>
Orbiting Vehicle Integration Lab Module Structure Design and Fabrication Subsystem Acquisition and Integration: Propulsion Power Life Support Environmental Control Stabilization & Control Navigation Computer Communications Controls & Displays	Mission Module Requirements (Mech. Elec., Manual) Mission Module AGE *Payload Data Processing and Return *Payload Control Station Expanding Structure Design Environmental Control for Payload Reconnaissance Simulator Payload Integration Testing Module Pointing Gimbals Module Pointing Power Gyros Mission Module Structure Design and Fabrication T&C Requirements Interface Requirements *Accommodated on Laboratory Module.	Optical Equipment Alignment Equipment Cameras Film Cassettes On-Board Film Processor and Viewer Optics AGE Optics Testing *Pointing & Tracking Scopes Payload Operational Modes Programming & Computer Requirements TV Link for Pointing Module Drive for Tracking Mirror Optical Relay T, T&C Requirements Interface Requirements
Telemetry, Tracking, Control & Voice Requirements System Testing Flight Test Planning & Support Lab Module AGE Crew Activities Planning Integration of Certain Mission Module Elements Booster and Gemini B Interface Design		

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TAB B

FUNCTIONS OF THE NRO STAFF WITH RESPECT
TO THE MOL PROGRAM

General

The NRO Staff will be involved with the MOL Program as the staff agency to the DNRO in those areas which interface with the NRP. The objective of this arrangement is to provide a means by which coordination with related elements of the NRP and an overview of the total program can be assured. Responsibilities in specific areas are summarized in the following paragraphs.

Security

The Chief Security Officer of the NRO Staff will continue to exercise security review and control for all aspects of the MOL Program in accordance with his presently assigned responsibilities for security of the NRP. Because of the complex nature of the MOL Program, the present arrangement wherein a Security Officer from the NRO Staff is detailed to the MOL Program for day-to-day operation will be continued.

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Policy

The NRO Staff will provide a point of mandatory coordination for the MOL program office in matters and relationships of concern to the NRO involving the State Department, ACDA, the United Nations, NASA, Congress, the Executive Department, and release of public information. Conversely, the NRO Staff will coordinate similar matters in which it is involved and which are of concern to the MOL program with the Washington MOL program office.

Reporting

The NRO Staff will be responsible for including data on the MOL program as required in overall NRO reports such as those to the President's Foreign Intelligence Advisory Board, total budget summaries, and documents and presentations of a similar nature. The MOL program office will supply the required data to the NRO Staff.

Support

The NRO Staff will continue to provide secure teletype communications support to the MOL program office in the Pentagon. Other administrative support within existing capabilities may be approved by the Director of the NRO Staff.

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Technical

The NRO Staff will maintain that current knowledge of the technical status and plans of the MOL program necessary to provide staff support to the DNRO in those areas of interface between the NRP and the MOL program. The NRO Staff will be the principal working interface with the intelligence community, and will maintain currency on planned and approved intelligence targets, priorities, and requirements.

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TAB C

INDUSTRIAL TEAM AND RELATIONSHIPS WITH
MILITARY STRUCTURE

The major elements of the MOL System will be acquired through a team of associate contractors. These contractors will be supported by a structure of subsystem and component subcontractors. Certain supporting elements of the MOL System will be acquired through existing organizations of the Air Force Systems Command.

The major system and supporting elements to be acquired are listed below:

- a. Laboratory Module
- b. Mission Module
- c. Gemini B
- d. Sensor Payload
- e. Titan IIC
- f. Launch and Range Facilities
- g. Test and Recovery Support
- h. Flight Crew and Equipment
- i. Mission Control Equipment

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The first three elements will be acquired through three associate contractors under the direction of the Deputy Director, MOL, as described in TAB A. The sensor payload will be acquired through a fourth associate contractor under the direction of the Director, SAFSP, in response to interface specifications and requirements provided by the Deputy Director, MOL. The design and adaptation of the Titan III for MOL, launch facilities and services, range and tracking equipment and services, as well as some test and recovery support, will be acquired by the Deputy Director, MOL, through established SSD offices now responsible for those functional activities. The Deputy Director, MOL, will direct the acquisition of other necessary items, such as space suits, crew support and training equipment, and mission control equipment. The responsibility for overall systems engineering rests with the Deputy Director, MOL, supported by the Aerospace Corporation.

The Laboratory Module is defined as that element of the MOL orbiting vehicle which is designed to provide pressurized crew quarters and orbital sustenance for 30 days, navigation, stabilization and control, propulsion, computation facilities, communications and power. It must accommodate the man and provide for his safety in

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orbit. It will accommodate all controls, displays, and auxiliary subsystems necessary for manned operation of the mission payload. The Laboratory Module interfaces with the Gemini B system on one hand and the Mission Module on the other.

The Mission Module is defined as that element of the MOL orbiting vehicle which is primarily designed to support the operation of the Sensor Payload. It provides structural support, on-orbit deployment, and environmental control for the sensor payload and provides for manned access to the essential elements for servicing and alignment, as required.

The Sensor Payload is defined as the assembly of the essential elements of the optical system and includes the primary optics, alignment system, cameras, film drives, film cassettes, and film processing and viewing equipment.

In reviewing the total MOL System, it is essential to recognize that the majority of its elements and subsystems are already in existence or under active development and hence subject to sole source procurement. The major integrating associate contractors, i. e., the laboratory module and mission module contractors, will work with established external interfaces, an essentially fixed set

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of internal subsystems, and a reasonably firm laboratory design concept. Therefore, the planned roles and responsibilities of each of the associate contractors are clear for the Contract Definition Phase. Any adjustments identified during Phase I can be made before Phase II is initiated. The principal task for the Contract Definition Phase is the establishment of firm specifications, costs and schedules.

A tabular comparison of the tasks to be performed by the associate contractors for the Laboratory and Mission Modules, and for the Sensor Payload is attached. The major responsibilities planned for these contractors during Phase I and II are summarized below:

a. The Laboratory Module contractor will define, design and fabricate the laboratory structure and will be responsible for laboratory subsystem integration. He will also have the additional responsibility for overall orbiting vehicle (Gemini, Laboratory Module, Mission Module) integration and for the man rating of the orbiting vehicle system. He will perform structural analysis of the entire laboratory system through the launch phase and assure successful operation through the 30-day mission of all elements

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except those actually contained in the mission module. He will be responsible for all module interface documentation, laboratory subsystem documentation, integrated testing, and spacecraft preparation at the launch site. He will also provide the structure for the mission module up to the booster interface.

b. The Mission Module contractor will define, design, engineer and integrate a discrete structural carrier for the sensor package as well as integrate all necessary subsystems and environmental control elements supporting the operation of the mission module. He will also provide associated crew operating equipment, consoles and displays, data processing equipments and data return capsules, which may be located and integrated within the laboratory module. This equipment will be acquired in accordance with mission derived requirements specified by the Deputy Director, MOL, and technical and functional requirements provided by the Sensor Payload contractor. The Mission Module contractor will furnish to the Laboratory Vehicle contractor both mission module, and appropriate sensor payload interface requirements. He will also assemble, integrate, and test mission module elements, and prepare them for launch.

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c. The Sensor Payload contractor will be responsible for defining, designing, fabricating and testing of the essential optical elements and associated AGE and drives; alignment system; camera; film drives, cassettes, processing and viewing equipment; and pointing and tracking scopes. The Sensor Payload contractor will interface principally with the Mission Module contractor.

Technical interface and integration problems will be resolved, as they arise, by the Aerospace Corporation. They also will perform technical integration during development phases of major supporting elements, such as booster, on-orbit control, range support, recovery operations, and launch services.

A number of alternate management arrangements involving associate and subcontractor roles has been considered. The advantages to be gained in dealing with the Mission Module contractor as an associate, rather than subcontractor, far outweigh any disadvantages attributable to an additional associate in the contractor structure. The Mission Module contractor selected has a large number of specially cleared people and hence can provide a rapid start-up capability. This approach allows the Air Force to apply this contractor's existing special technical capability and experience

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directly and rapidly to primary mission objectives. The resultant well-defined interfaces will allow the Air Force significantly more flexibility as other MOL missions are defined and other payload contractors brought into the system. Finally, this arrangement will permit that compartmentalization necessary to minimize the number of sensitive clearances required and enhance security control.

The major objectives of the Contract Definition Phase are:

- a. Generate firm overall vehicle specifications and firm total program costs and schedules.
- b. Prepare detailed system and end item design/performance requirements and specifications for all major MOL elements.
- c. Prepare plans for systems integration, assembly, and checkout, as well as ground support requirements.
- d. Prepare simulation test and quality control plans, in addition to overall flight mission assignment and mission operations plans.
- e. Analyze sensor pointing versus tracking flat. Recommend a configuration for the flight test program and provide associated MOL vehicle interface data.

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f. Study larger aperture optical systems and determine their possible phasing into the MOL Program.

g. Determine requirements for specific flight experiments relating to the development of large aperture optical systems.

h. Continue feasibility studies on SIGINT and Ocean Surveillance and recommend flight test programs if appropriate.

In addition, during Contract Definition Phase, the lower levels of Program Breakdown Structure will be prepared to define the detailed functions, interfaces, and end-items of hardware at the lowest reasonable level for discrete management, planning and control. In addition to complete program identification this will provide the basis for assigning tasks and responsibilities for Phase II. For example, the tasks and interfaces among the Gemini B, Titan IIIC, Laboratory Module, Mission Module and Sensor Payload contractors will be reduced to prescribed performance requirements and design criteria.

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MOL CONTRACTOR TASKS

LABORATORY MODULE

MISSION MODULE

SENSOR PAYLOAD

Orbiting Vehicle Integration
 Lab Module Structure Design and Fabrication
 Subsystem Acquisition and Integration:
 Propulsion
 Power
 Life Support
 Environmental Control
 Stabilization and Control
 Navigation
 Computer
 Communications
 Controls and Displays
 Telemetry, Tracking and Control Requirements
 System Testing
 Flight Test Planning & Support
 Lab Module AGE
 Crew Activities Planning
 Integration of Certain Mission Module Elements
 Booster and Gemini B Interface Design

Mission Module Requirements (Mech. Elec., Manual)
 Mission Module AGE
 *Payload Data Processing and Return
 *Payload Control Station
 Expanding Structure Design
 Environmental Control for Payload
 Reconnaissance Simulator
 Payload Integration Testing
 Module Pointing Gimbals
 Module Pointing Power Gyros
 Mission Module Structure Design and Fabrication
 T&C Requirements
 Interface Requirements
 * Accommodated on Laboratory Module

Optical Equipment
 Alignment Equipment
 Cameras
 Film Cassettes
 On-Board Film Processor and Viewer
 Optics AGE
 Optics Testing
 *Pointing & Tracking Scopes
 Payload Operational Modes
 Programming & Computer Requirements
 TV Link for Pointing Module
 Drive for Tracking Mirror
 Optical Relay
 T, T&C Requirements
 Interface Requirements

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TAB D

SECURITY CONSIDERATIONS

Clearly those portions of the MOL program which relate to overhead reconnaissance must be subjected to the same stringent security measures (BYEMAN System) applied to other NRO programs. The existing policy, which requires that BYEMAN security procedures be applied to the development of all terrestrial image forming and SIGINT sensing systems of practical intelligence application, regardless of their intended geographic area of usage, is appropriate. The broad application of DOD Directive 5200.13 to all military mission/payload data relating to MOL provides overt direction with respect to control of public information and sets a framework for security compartmentation. To insure that effective security control is maintained, the DNRO will be responsible for overall security policy and control. The Director, MOL, will be responsible to DNRO for implementation of the BYEMAN Security System for reconnaissance aspects of the MOL program. To insure consistent implementation of BYEMAN Security, SAFSP, acting as the West Coast representative of DNRO, will review and approve plans for implementation of the BYEMAN System with industry and

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administer and process security clearances for West Coast personnel. The DNRO and his Staff will provide for administration and processing of clearances in the Washington area.

It is also clear that the MOL program is and will remain in the public view. It cannot be conducted on a totally covert basis. Although military missions served by the MOL must be kept secure, man in space, his well-being, and his safety, will be subjected to public scrutiny. It is necessary then that a carefully controlled public information plan for the MOL program be followed. Such a plan is attached as TAB E, and is designed to meet two essential requirements:

a. To maximize protection of classified information related to the primary program objective, i. e., demonstration of manned earth orbital high resolution optical reconnaissance, and such other mission objectives that may be added.

b. To provide a carefully-planned, modest release of public information on the MOL program. Those releases which are made will describe the mission of MOL solely as "the investigation and development of manned orbital capabilities essential to national defense."

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All public information releases or statements on MOL made by representatives of any Executive Department or Agency will be processed for approval through the Office of the Assistant Secretary of Defense (Public Affairs). Such news stories as are required will deal exclusively with the non-sensitive technological aspects of MOL; operational goals will not be discussed.

It is considered prudent to have available suitable unclassified information on segments of the MOL Program, such as the Titan IIC launch vehicle, Gemini spacecraft, bioastronautics and scientific experiments, so that responses to press queries may be made. A highly trained, experienced information officer has been cleared for access to DORIAN information and assigned for these purposes, to the office of the Director, MOL.

It is recommended further that a brief announcement of MOL Program approval and of laboratory vehicle contractor selection be made. Attached as TAB F is a proposed release.

Because of the fundamental security problem, which renders it difficult to justify publicly a program of the size and scope of the MOL, the feasibility of conducting a limited number of MOL launches

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from the ETR during the CY 1969 time period will be carefully re-examined during the Contract Definition Phase. These launches must, of course, contain meaningful and worthwhile experimental payloads.

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TAB E

INFORMATION PLAN

CLASSIFICATION: CONFIDENTIAL

TITLE: Information Responsibilities for Manned
Orbiting Laboratory Program (MOL)

REFERENCES:

1. Air Force Information Plan 63-6, TITAN III
2. Department of the Air Force Letter:
"Security Policy and Procedures, MOL
Program," (Confidential), 25 February 1965,
to Hq AFSC (MSF)
3. AFSDC-S message #89459 (Confidential),
26 February 1965

1. TASK ORGANIZATIONS:

U. S. Air Force (SAF-OI)

Air Force Systems Command

U. S. Navy (CHINFO)

Participating Contractors

2. PURPOSE:

To establish general information policies and responsibilities
relative to the Manned Orbital Laboratory Program (MOL).

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3. OBJECTIVE:

To provide for a carefully planned program of public information on the Manned Orbiting Laboratory (MOL) program which can be released as required.

4. SITUATION:

a. Background

(1) Study of space station concepts by the Air Force goes back to about 1958. Since then, various concepts and design proposals were studied. These included the Military Test Space Station (MTSS); NASA's Manned Orbital Space Station (MOSS); the Military Orbital Development Systems (MODS) -- which provided specific hardware proposals and clearer concepts -- and, a National Orbital Space Station (NOSS).

(2) On 10 December 1963, the Secretary of Defense announced the assignment of a space station development program to the Air Force and identified it as a "near-earth Manned Orbiting Laboratory."

(3) On 23 January 1965, the Secretary of Defense announced the issuance of Request for Proposals (RFP's) from industry for design studies to assist in developing cost and technical information required to proceed with full-scale development of the MOL. At that time, DOD outlined broadened guidance concerning the program.

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(4) On 1 March 1965, the Department of Defense announced that the Air Force had selected four contractors to perform preliminary design studies for the MOL. The four were selected from seven contractors which responded to the RFP's. The four announced were: Boeing Company, General Electric Corporation, Douglas Aircraft Company, and Lockheed Aircraft Corporation. Each contractor was to perform 60-day design studies at a cost of about \$400,000 each.

b. Policy

(1) The mission of MOL will be described solely as the investigation and development of manned orbiting capabilities essential to national defense. It should be described as an improved substitute for Dynasoar with no break from the earlier program of manned military activities.

(2) 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.

(3) 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 launching times. All public information releases or statements on MOL made by representatives of any Executive Department

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or Agency 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.

(4) All MOL launchings will be included on the U. S. portion of the United Nations' registry of satellite launchings.

(5) Public Affairs policy and guidance not otherwise included in this Plan (or referenced) will emanate from SAF-OI subject to OASD (PA) approval.

(6) Proposed public participation or appearance of designated MOL astronauts will be forwarded to SAF-OI for action. Participation of Navy astronauts will be coordinated with Navy Office of Information (CHINFO) by SAF-OI.

5. ASSUMPTION:

There may be occasions when it will be advantageous to generate public information materials in support of program goals or for other special requirements.

6. RESPONSIBILITIES:

a. Within the policies approved by the Assistant Secretary of Defense (Public Affairs), the Director of Information, Office Secretary of the Air Force (SAF-OI), is responsible for the implementation of this plan and overall monitorship.

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b. Air Force Systems Command will carry out Information actions for SAF-OI as outlined in this plan and future annexes and/or specific procedural plans to be developed.

c. Agencies of the U. S. Navy, as well as the Air Force, participating in the MOL program will follow the policy and procedures in this plan.

d. All Major Commands will follow closely the policies and procedures of the MOL Information Plan.

7. INFORMATION ACTIONS:

a. Tasks

(1) SAF-OI will:

(a) Assign a qualified Information Officer as a single point of contact to work with the Office of the Director, MOL. All SAF-OI Divisions will assist this officer as required.

(b) Prepare answers to queries to be used as required in the accomplishment of this very limited information program.

(c) Monitor implementation of this Plan.

(2) AFSC will:

Coordinate the Information activities of all participating AFSC divisions and centers along with those of the contractors and insure their compliance with this plan.

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(3) Major Air Commands will:

Provide support to SAF-OI and AFSC as may be directed.

(4) U. S. Navy will coordinate any proposed information activity relating to MOL with SAF-OI prior to execution.

8. ADMINISTRATIVE ACTIONS:

Recommend changes to this plan will be submitted to SAF-OI for approval subject to policy decisions of OASD (PA).

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TAB F

PROPOSED RELEASE

Secretary of Defense Robert S. McNamara announced today that he had directed the Air Force to proceed with the contract definition phase of a Manned Orbiting Laboratory (MOL) research and development program. _____ and _____ were selected to form a team to accomplish Phase I work on the laboratory module.

The MOL project was initiated in December 1963 when the DYNA SOAR, a project dating from the 1950's, was cancelled. At that time it was concluded that the principal DoD effort in manned orbiting vehicles should go toward determining man's capabilities, and developing the appropriate technology for man to exercise those capabilities rather than to continue to place principal emphasis on maneuverable reentry. Subsequent study, concept evaluation, and preliminary development have confirmed that conclusion. \$30 million was committed in FY 1965, and \$150 million has been budgeted for FY 1966.

During this next phase of the program, contract definition and engineering data for the module will be developed based on the

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TITAN IIC-GEMINI B configuration. Contract definition work also will begin on booster integration and on the adaptation of the GEMINI spacecraft for MOL.

The contract definition phase should be completed in about six months. At that time, work could begin on fabrication of the hardware for the MOL program.

The primary objectives of the program are to:

1. Develop technology contributing to improved military capability for manned and unmanned space operation.
2. Conduct experimentation with the apparatus so developed.
3. Carry out experiments to determine man's utility in space for military purposes.

There will be six launches in the basic MOL development program, five of which will be conducted with two-man crews. The first manned launch is planned for late 1968.

Prior to this there will be unmanned launches. The first of these to qualify subsystems and to obtain early information on structures and environment is planned for late 1966 or early 1967.

Astronaut candidates will be military test pilots and graduates of the Aerospace Research Pilot School at Edwards AFB, California.

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Cooperative studies by the National Aeronautics and Space Administration (NASA) and DoD will determine which scientific or general technological experiments are carried out in the MOL.

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