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MANANNED ORBITTING

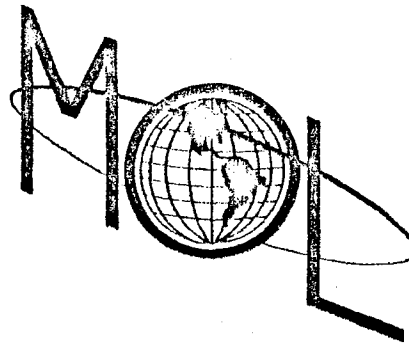
LABORATORY

PROGRAM DIRECTIVE

MANAGEMENT OF THE MOL PROGRAM

NO. 65-1

25 August 1965



HEADQUARTERS UNITED STATES AIR FORCE

WASHINGTON, D.C.

MOL PROGRAM OFFICE

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TAB 13

MOL PROGRAM OFFICE

DIRECTIVE 65-1

PROGRAM REQUIREMENT DOCUMENT

THIS DOCUMENT IS AN OFFICIAL RELEASE OF THE
MOL PROGRAM OFFICE AND ITS REQUIREMENTS ARE
DIRECTIVE ON ALL COGNIZANT ELEMENTS OF THE MOL PROGRAM

APPROVED

B. A. SCHRIEVER
General, USAF
Director, MOL

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MANAGEMENT OF THE MOL PROGRAM

I. PURPOSE

Due to the nature, scope, and principal objectives of the Manned Orbiting Laboratory (MOL) program, and in view of the intense public scrutiny to which man in space, his well being, and his safety will be subjected, it has been determined that special management arrangements for the conduct of the MOL program will be placed in effect. This directive provides authority to establish and commence management functional activity as described herein for the Manned Orbiting Laboratory System (Program 632A).

II. SCOPE

This directive is applicable to all aspects of the Manned Orbiting Laboratory (MOL) program conducted by elements or agencies of the U.S. Air Force.

III. SECURITY

Those portions of the MOL program which relate to overhead reconnaissance of denied areas must be subject to the same stringent security measures as 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.

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IV. MANAGEMENT STRUCTURE

A. 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.

The Air Force management plan for program activities during the Contract Definition Phase is designed 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.

B. Program Summary

The initial objective of the MOL program is the early demonstration of an operational high resolution optical reconnaissance system capable of achieving [REDACTED] resolution on the ground. The camera-optical system will be designed to be operated and serviced by man or be adapted to automatic unmanned operation with manned override and supervision. A comparative analysis of incorporating this dual capability will be performed. 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 extend on-orbit life, and

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to accommodate other military payloads and DoD/NASA scientific and technological experiments.

C. 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.

D. 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.

E. 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

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BYEMAN control system under the special code word DORIAN. The 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.

F. 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.

G. 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.

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H. Commander, AFSC

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

I. 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

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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.

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

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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, 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.

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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.

J. 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 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

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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 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

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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.

In order to insure proper balance and utilization of critical optical resources which must be applied to both the MOL and other

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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.

K. 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

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channels, 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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V. GENERAL DISTRIBUTION

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A resume of this basic management directive suitable for general distribution as the need arises will be distributed through normal administrative channels.

VI. MANAGEMENT TASK SUMMARY

In accordance with the preceeding, the Deputy Director, MOL will:

A. Prepare and forward to the Director, MOL for review and approval no later than 15 September 1965 a Management Plan for the implementation of this Directive, including but not limited to:

1. A MOL Systems Office Organizational Chart, accompanied by brief but complete functional descriptions of each MOL Systems Office element, to and including branch level.
2. Job descriptions of all MOL Systems Office key personnel to and including chiefs of branches and comparable offices.
3. A list of all personnel, by function, now on duty or in-bound to the MOL Systems Office to include name, permanent and temporary grades with dates of rank, AFSN, date of birth, primary and duty AFSC's, date reported or due to report on station, date eligible for reassignment.
4. A brief descriptive biography of all MOL Systems Office officer personnel, including a recent 8" X 10" photograph.

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5. Current MOL Systems Office manpower authorizations plus time-phased (by quarter) projected needs for fiscal years 1966 and 1967.

B. Prepare and forward to the Director, MOL for review not later than 30 September 1965 the Aerospace Corporation management plan proposed in support of MOL, to include a list of key people by function with brief biographical sketches of each, and list of all other MTS, direct and indirect. This plan should contain direct and indirect equivalent MTS needs by quarter for fiscal years 1966 and 1967, organizational charts, functional descriptions of major organizational elements, and appropriate extracts from the Aerospace Corporation contract Work Statement relating to MOL support.

C. Jointly, with the Director SAFSP, develop details of their interface activities for the implementation of the foregoing Management Plan and submit them by 15 September 1965 for review and approval of the Director, MOL and the DNRO.

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MOL MANAGEMENT ORGANIZATION

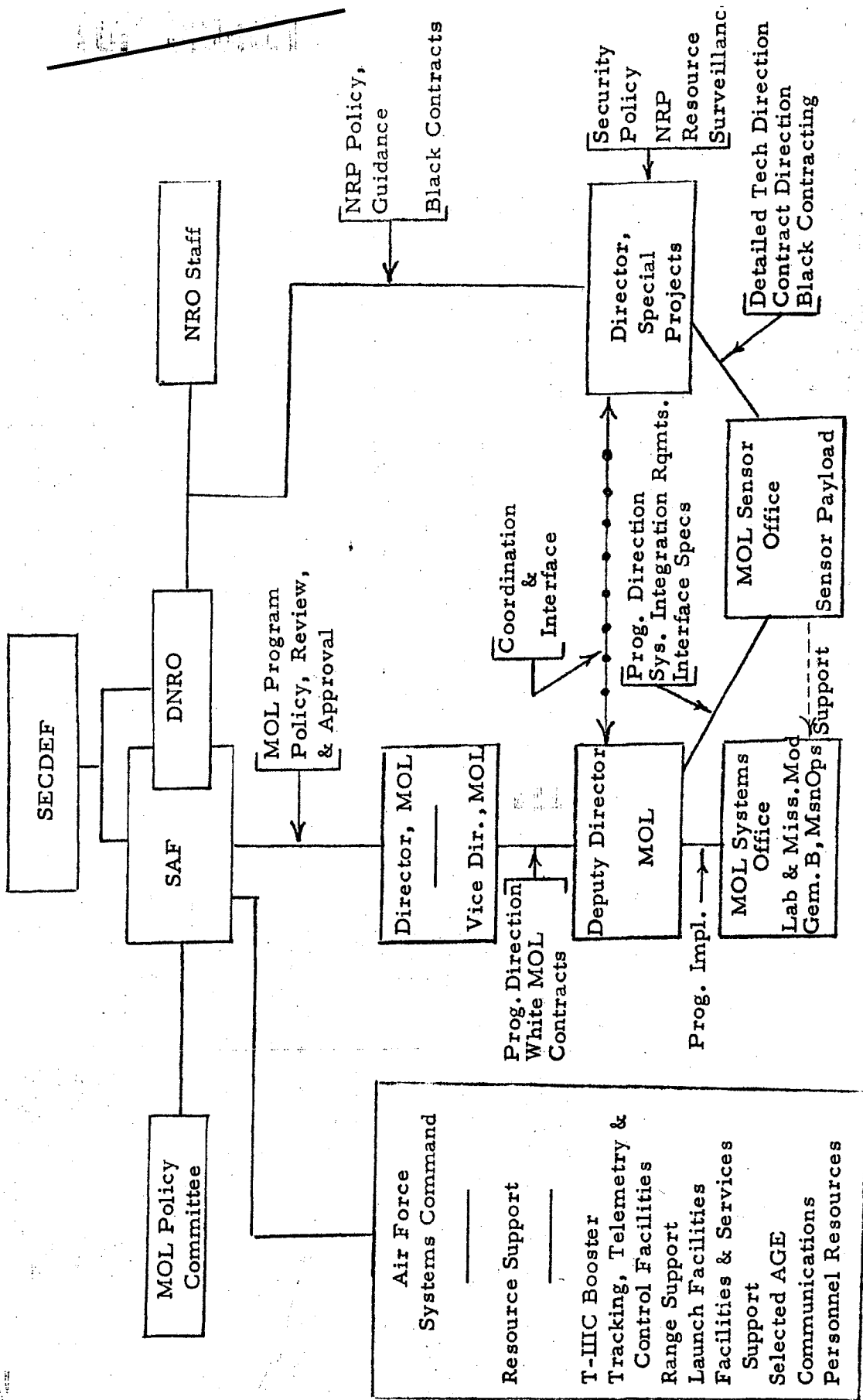


Figure 1

MOL TASK ASSIGNMENTS

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 & 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	Optical Equipment Alignment Equipment Cameras Film Cassettes On-Board Film Processor and Viewer Optics AGE Optics Testing *Pointing & Tracking Scopes
Telemetry, Tracking, Control & Voice Requirements System Testing Flight Test Planning & Support Lab Module AGE Crew Activities Planning	Payload Integration Testing Module Pointing Gimbals Module Pointing Power Gyros Mission Module Structure Design and Fabrication T&C Requirements Interface Requirements	Payload Operational Modes Programming & Computer Requirements TV Link for Pointing Module Drive for Tracking Mirror Optical Relay T, T&C Requirements Interface Requirements
Integration of Certain Mission Module Elements Booster and Gemini B Interface Design	*Accommodated on Laboratory Module.	

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Figure 2

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ATTACHMENT 1 -- SAF MEMORANDUM: MANAGEMENT OF THE
MANNED ORBITING LABORATORY (MOL)
PROGRAM, WITH TAB B AND 2 ATTACHMENTS

ATTACHMENT 2 -- SAF MEMORANDUM TO CHIEF OF STAFF USAF
MANAGEMENT OF THE MOL PROGRAM

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