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SPECIAL HANDLING

GOVERNMENT PLAN FOR PROGRAM MANAGEMENT

FOR THE

MANNED ORBITING LABORATORY SYSTEM (MOL)

PROGRAM

AUGUST 1965

HEADQUARTERS
SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE

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JUL 12 1966

FOREWORD

The primary objective of the "Government Plan for Program Management" is to present an early overview of the key features of the entire MOL Program to top level management officials, at the policy and decision making levels of those Government and industry agencies that may become directly associated with the MOL Program. This will enable early planning by all concerned key officials so that upon program initiation and during the conduct of the program, the combined talents of both Government and industry can be brought to bear in an integrated and orderly manner for the purpose of achieving the optimum product.

The secondary objective of the "Government Plan for Program Management" is that it will be the one key plan and focal point of the entire program to insure continuity. It will be used as the basis by all concerned agencies in formulating their respective Program Plans. In addition, these Program Plans will continually reflect and be in concert with the Government Plan.

This plan relates herein the primary objective of the MOL Program and the number of flights believed required to attain this objective. Further, the plan presents the MOL Program Segments (primary hardware and functional elements) of the entire MOL program; the agencies responsible for these segments; the interrelationship of these agencies relative to time; and, the roles and responsibilities of each agency during the conduct of the MOL Program.

It is emphasized that this plan is not cast in concrete, but will be revised and kept up to date during the Government/industry team formulation and during the conduct of the program.

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DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY, SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045

SPECIAL HANDLING

REPLY TO ATTN OF: MP-4

SUBJECT: Contracting Officer Letter No. One

TO:

1. The attached revision to subject document is directed.

2. This revision is considered within scope, within the level of effort specified in the contract and has no effect on the delivery schedule.

3. The attachment should be included in the front of the Government Plan for Program Management SSMD-77 dated August 1965.

CONTRACTING OFFICER
LETTER NO. 1

CONTRACTING OFFICER
*Signed by Applicable
Contracting Officer

*813 - MAC
904 - DAC
905 - GE
944 - David Clark

1 Atch
Subject - Revision to
Government Plan

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Subject: Revision to the Government Plan for Program Management for the Manned Orbiting Laboratory System Program. SSMD-77 dated Aug 65.

1. (U) The following guidelines for Specification Change Notice #1 to the MOL System Performance/Design Requirements, General Specification, is furnished. Formal specification change notice referencing this revision will follow as soon as internal coordination can be accomplished.

a. (U) The use of the acronym "MUM" and the verbage "manned/unmanned" will be discontinued. Instead, the following terminology will be used. (For clarification in this paper only, the discontinued wording is used in parenthesis.) This, naturally, does not preclude the use of the title "Manned Orbiting Laboratory".

Manual (manned)

Automatic (unmanned)

Manned-Automatic (dual mode; manned/unmanned)

b. (S-3) Seven (7) sets of orbiting vehicle flight hardware will be built and delivered in the manned-automatic configuration. The Gemini B Contractor will provide six (6) qualified Gemini B's (MOL flight 2 included) and one Boilerplate (LVD). The Laboratory contractor will provide two (2) additional Laboratory Vehicle structures for MOL Flight 1 and 2. The T-III SPO will provide nine (9) Boosters.

c. (S-3) MOL Flight No. 3 through MOL Flight No. 9 will be the manned-automatic mode. However, only those Gemini B units identified in paragraph b. will be furnished.

d. (S-3/SAR) It is planned to develop and build three (3) kits which will enable conversion from the manned-automatic configuration to a complete automatic configuration.

e. (S-3/SAR) MOL Flight Six will be flown in the automatic mode. It shall be an option to fly MOL Flight Four automatically, with no crew on board, by utilizing a kit defined in paragraph d.

f. (S-3/SAR) Further design studies will lead to a decision as to the degree to which the automatic capability is designed in the system and identification of removable items to change from the basic manned-automatic configuration to a manual only configuration.

g. (S-3/SAR) As a goal, it shall not take longer than four (4) months to convert from the manned-automatic mode in these three (3) flights to the completely automatic capability. Final determinations of conversion time must result from detail design studies.

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[redacted]

h. (S-3) The AGE checkout equipment shall be fully capable of launching in either a manual only, automatic only, or manned-automatic mode.

i. (S-3/SAR) The fact that the MOL vehicle is being configured in a manned-automatic mode is Confidential. The facts relating to its being configured to fly in a completely automatic mode are S/SAR.

[redacted]

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SECTION 1

PROGRAM OBJECTIVES

ILLUSTRATION

SECTION 1

PROGRAM OBJECTIVES

1.0 INTRODUCTION.

This section presents the primary objective of the MOL Program and the master flight schedule required to attain that objective.

1.1 MOL PROGRAM OBJECTIVE.

~~(S)~~ A primary objective of the MOL program is development of technology to improve capabilities for manned and unmanned operations of military significance. This may include intermediate steps toward operational systems.

~~(S)~~ This objective shall be accomplished as early as possible, with minimum system cost, and with careful attention to safety aspects. Minimizing cost and time for development and test, as well as enhancing safety and reliability, implies a minimum of innovations. Proven vehicle and ground hardware, procedures, and facilities, resulting from prior DOD and NASA programs, will be employed to the greatest extent practicable. Exceptions will be completely justified.

~~(S)~~ Additional objectives are:

(a) Quantitative determination of man's military usefulness in space.

(b) Scientific and technological experiments of national importance.

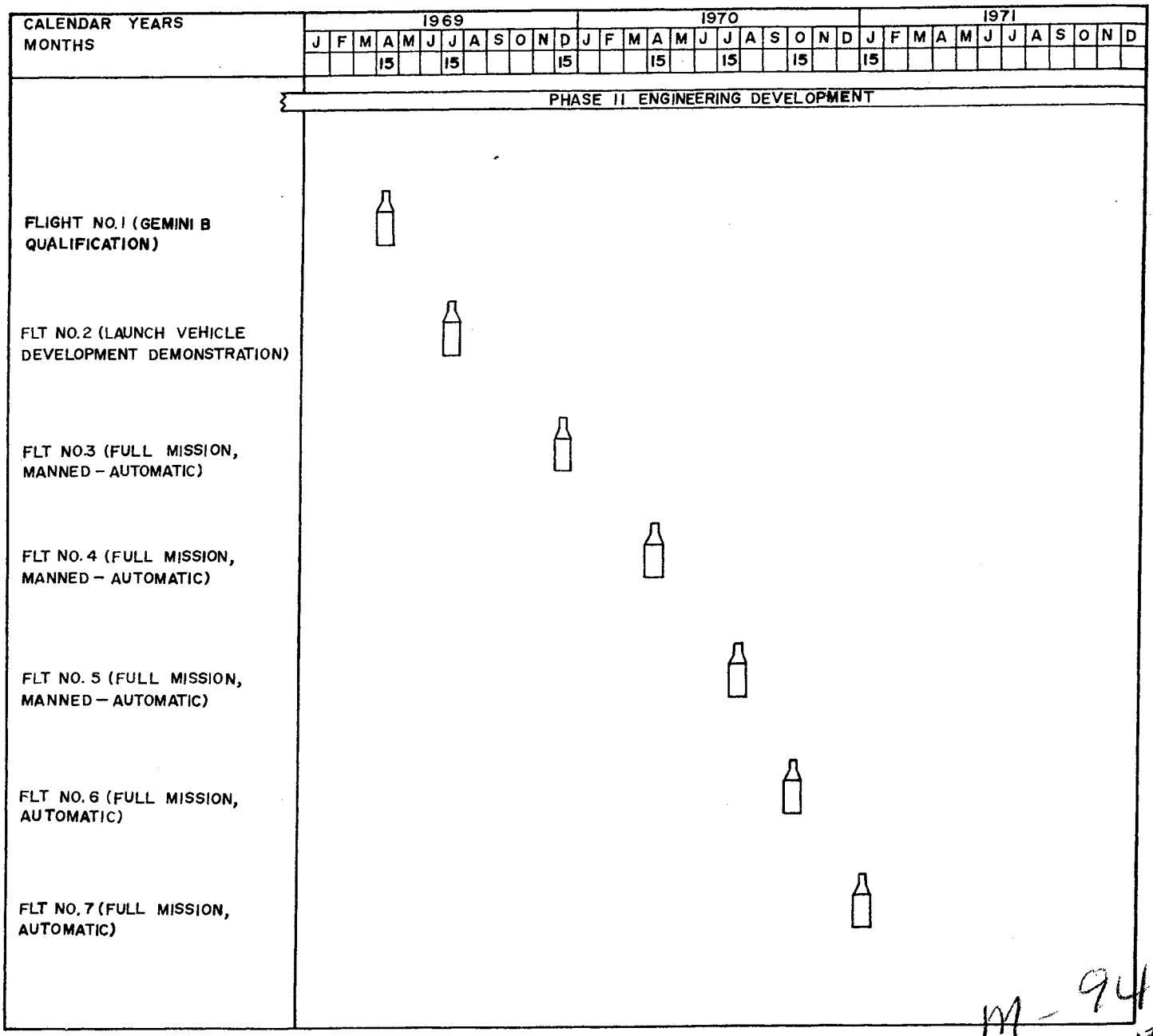
(c) Determine biological responses of man in orbit for 30 days or more.

1.2 MASTER FLIGHT SCHEDULE AND OBJECTIVE.

The following page presents the master MOL flight schedule and primary objective of each flight. This schedule, when finalized, will be the basic schedule to be followed by all concerned agencies.

(This page is Unclassified)

MASTER MOL FLIGHT SCHEDULE



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PROGRAM NO. 623A SENSITIVE AREA IDENTITY E

Figure 1-1. Master MOL Flight Schedule

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SECTION 2

PROGRAM BREAKDOWN STRUCTURE

ILLUSTRATIONS

Illustrations (Cont'd)

SECTION 2

PROGRAM BREAKDOWN STRUCTURE

2.0 INTRODUCTION.

The Program Breakdown Structure (PBS) is considered one of the key management tools that will be utilized by all concerned agencies during the conduct of the MOL Program. The PBS provides the framework for orderly integration of all primary hardware and functional elements, within a manageable boundary, which affords a ready top-level overview of the entire program.

2.1 PROGRAM BREAKDOWN STRUCTURE.

The PBS in this section presents the Program Segments within the MOL Program. These Program Segments specify the tasks which are the primary roles and responsibilities of those agencies selected for the conduct of these Program Segments. The PBS will be the foundation and basis for expansion into greater levels of detail by all concerned government and industrial agencies. The PBS is also the basis and outline for formulating the Acquisition Phase Work Statements. Each Program Segment, when considered separately, is also known as the Work Breakdown Structure for the concerned agency. The PBS will be utilized as the starting point and the common basis for summarizing costs and for constructing top level management networks.

A further refinement of the Roles and Responsibilities relative to the interrelationships between concerned agencies is contained within Tab A.

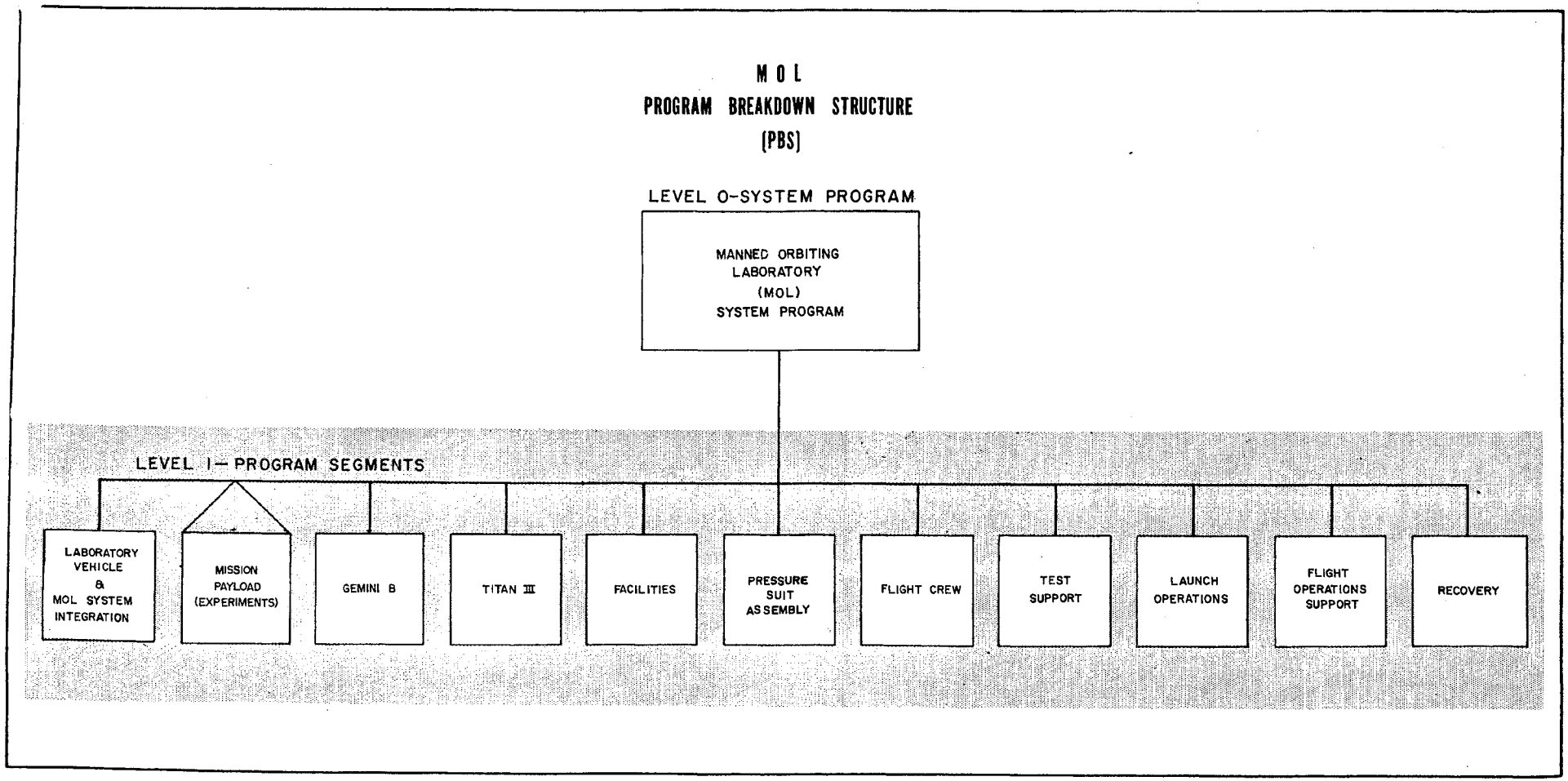

Figure 2-1. MOL Program Breakdown Structure (PBS)

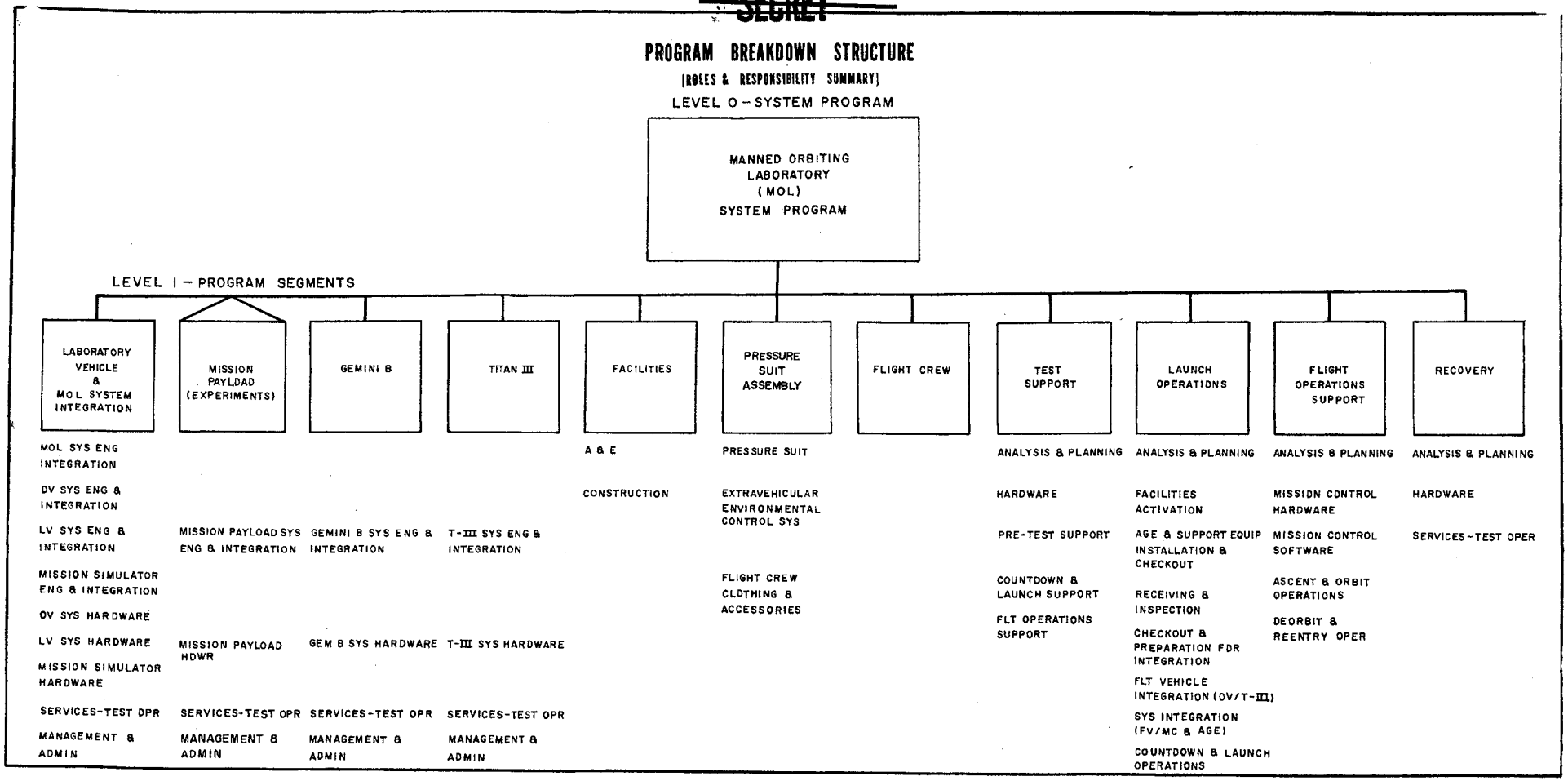

Figure 2-2. Program Breakdown Structure (Roles and Responsibility Summary)

LABORATORY VEHICLE & MOL SYS INTEGRATION PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	LABORATORY VEHICLE & MOL SYSTEM INTEGRATION	SYSTEM ENGINEERING & INTEGRATION	MOL SYSTEM SYSTEM ENGINEERING INTEGRATION		
			ORBITING VEHICLE SYSTEM ENGINEERING & INTEGRATION	OV SYS ENGINEERING	
				OV DETAIL SYS & INTERFACE DESIGN	
				OV SYS ENGINEERING TEST & TEST SUPPORT (OFF-SITE)	
				OV SYS INTEGRATION & CHECKOUT	
			LABORATORY VEHICLE SYSTEM ENGINEERING & INTEGRATION	LV SYS ENGINEERING	
				LV DETAIL SYS,SUB SYS & INTERFACE DESIGN	
				LV SYS ENG TEST & TEST SUPPORT	
				LV SUB SYS ENG TEST & TEST SUPPORT	
				LV SYS INTEGRATION & CHECKOUT	
			MISSION SIMULATOR SYSTEM ENGINEERING & INTEGRATION	MS SYS ENGINEERING	
				MS DETAIL SYS, SUB SYS & INTERFACE DESIGN	
				MS ENG TEST & TEST SUPPORT	
				MS SYS INTEGRATION & CHECKOUT	
		ORBITING VEH SYSTEM HARDWARE	ORBITING VEH SYSTEM	ORBITING VEHICLE	
				AGE	
				SPECIAL TOOLING & TEST EQUIP	
			MISSION SIMULATOR SYSTEM	LAB VEH PROCD TRNR	
				GEM & PROCD TRNR (GFE)	
				PAYLDAO PROCD(S) TRNR (GFE)	
				CONSOLES & DISPLAY	
				SUPPORT EQUIP	
		LABORATORY VEHICLE SYSTEM HARDWARE	LABORATORY VEH	STRUCTURE	
				ELEC POWER & DISTR SUB SYS	
				ENV CONT & LIFE SUPT SUB SYS	
				ATTI CONT & TRANSLATION	
				COMM SUB SYS	
				DATA MANAGEMENT SUB SYS	
				MISSION INFO SUB SYS	
				DISPLAYS & INSTR SUB SYS	
				CREW STATION	
				NAVIGATION SUB SYS	
				DATA RECOVERY SUB SYS	
				PAYLOAD SUB SYSTEM	
				RE.VD. DOCK & TRANS SUB SYS	
				FLT CREW TEST & MONITORING EQUIP	
				FLT CREW EQUIPMENT (GPE)	
			AGE	LABORATORY VEH	
				TRAINERS	
			TRAINERS	PART TASK TRAINERS	
				SUB SYS TRAINERS	
			SPECIAL TOOLS & TEST EQUIP	LABORATORY VEH	
				AGE	
				TRAINERS	

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Figure 2-3. Laboratory Vehicle & MOL System Integration Program Segment

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LABORATORY VEHICLE & MOL SYS INTEGRATION PROGRAM SEGMENT (CONT'D)

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	LABORATORY VEHICLE & MOL SYSTEM INTEGRATION	SERVICES (TEST OPERATIONS)	ORBITING VEHICLE	FLT PREP & LAUNCH	
				ORBIT & RECOVERY	
				TRAINING & REHERSAL	
			MISSION SIMULATOR	FLT PREP & LAUNCH	
				ORBIT & RECOVERY	
				TRAINING & REHERSAL	
		MANAGEMENT & AOMINISTRATION	PROGRAM CONTROL MANAGEMENT	PLANNING & SCHEDULES	
				PERT/TIME/COST	
				BUDGET CONTROL	
				PROG DOCUMENTATION	
				PHOTOGRAPHIC DOCUMENTATION	
			CONFIGURATION MANAGEMENT	CONFIG IDENTIFICATION	
				CONFIG CONTROL	
				CONFIG ACCOUNTING	
			SYSTEM EFFECTIVENESS	RELIABILITY	
				QUALITY ASSURANCE	
				MAINTAINABILITY	
				HUMAN ENGINEERING	
				SAFETY ENG	
				VALUE ENG	
			MATERIAL SUPPORT	MAINTENANCE SUPPORT	
				SUPPLY SUPPORT	
				TRANSPORTATION SUPPORT	
			PROCUREMENT & PRODUCTION MANAGEMENT	PROCUREMENT	
				PRODUCTION	
				INSPECTION & TEST	

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Figure 2-4. Laboratory Vehicle & MOL System Integration Program Segment (Cont'd)

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GEMINI B PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	GEMINI B	GEMINI B SYS ENGINEERING & INTEGRATION	GEM B SYS ENGINEERING		
			GEM B DETAIL SYS, SUB-SYS & INTERFACE DESIGN		
			GEM B SYS. ENG. TEST & TEST SUPPORT		
			GEM B SUB-SYS. ENG. TEST & TEST SUPPORT		
			GEM B SYS. INTEGRATION & CHECKOUT		
		GEMINI B SYSTEM HARDWARE	REENTRY MODULE	STRUCTURE	
				ABLATION SHIELD	
				IGS & ATTITUDE CONTROL	
				REENTRY CONTROL	
				ELECTRIC POWER	
				COMMUNICATIONS	
				INSTRUMENTATION & RECORD	
				RECOVERY	
				POST LANDING & SURVIVAL	
				CREW SYS & DISPLAYS	
				TIME REFERENCE SYS	
				PYROTECHNICS & RELEASE MECH	
				ENVIRONMENTAL CONTROL	
				HORIZON SENSOR	
				EJECTION SEATS	
			ADAPTER MODULE	STRUCTURE	
				CREW TRANSPORT TUNNEL	
				RETROGRADE	
				SEPARATION SYS	
				ENVIRONMENTAL CONTROL-SYS	
				PYROTECHNICS	
			AGE	SPACECRAFT	
				TRAINERS	
			TRAINERS	PROCEDURES TRAINER	
				SUB SYS TRAINER	
				PART TASK TRAINER	
			SPECIAL TOOLS & TEST EQUIPMENT	SPACECRAFT	
				AGE	
				TRAINERS	
		SERVICES (TEST OPERATIONS)	FLT. PREP & LAUNCH		
			ORBIT & RECOVERY		
			TRAINING & REHERSAL		
		MANAGEMENT & ADMINISTRATION	PROGRAM CONTROL MANAGEMENT	PLANNING & SCHEDULES	
				PART/TIME/COST	
				BUDGET CONTROL	
				PROGRAM DOCUMENTATION	
				PHOTOGRAPHIC DOCUMENTATION	
			CONFIGURATION MANAGEMENT	CONFIGURATION IDENTIFICATION	
				CONFIGURATION CONTROL	
				CONFIGURATION ACCOUNTING	
			SYS EFFECTIVENESS	RELIABILITY	
				QUALITY ASSURANCE	
				MAINTAINABILITY	
				HUMAN ENGINEERING	
				SAFETY ENGINEERING	
				VALUE ENGINEERING	
			MATERIEL SUPPORT	MAINTENANCE SUPPORT	
				SUPPLY SUPPORT	
				TRANSPORTATION SUPPORT	
			PROCUREMENT & PRODUCTION MANAGEMENT	PROCUREMENT	
				PRODUCTION	
				INSPECTION & TEST	

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Figure 2-5. Gemini B Program Segment

TITAN III PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	TITAN III	TITAN III SYS ENGINEERING & INTEGRATION	T-III SYS. ENGINEERING		
			T-III DETAIL SYS & SUB-SYS & INTERFACE DESIGN		
			T-III SYS. ENG. TEST & TEST SUPPORT		
			T-III SUB SYS. ENG. TEST & TEST SUPPORT		
			T-III SYS. INTEGRATION & CHECKOUT		
		TITAN III SYSTEM HARDWARE	TITAN III		
			AGE		
			SPECIAL TODLING & TEST EQUIPMENT	TITAN III AGE	
		SERVICES (TEST OPERATIONS)	FLT PREP & LAUNCH		
			TRAINING & REHERSAL		
		MANAGEMENT & ADMINISTRATION	PROGRAM CONTRDL MANAGEMENT	PLANNING & SCHEDULES	
				PERT/TIME/COST	
				BUDGET CONTROL	
				PROGRAM DOCUMENTATION	
				PHOTOGRAPHIC DOC.	
			CONFIGURATION MANAGEMENT	CONFIGURATION IDENT.	
				CONFIGURATION CONTROL	
				CONFIGURATION ACCOUNTING	
			SYSTEM EFFECTIVENESS	RELIABILITY	
				QUALITY ASSURANCE	
				MAINTAINABILITY	
				HUMAN ENGINEERING	
				SAFETY ENG.	
				VALUE ENG.	
			MATERIAL SUPPORT	MAINTENCE SUPORT	
				SUPPLY SUPPORT	
				TRANSPORTATION SUPPORT	
			PROCUREMENT & PRODUCTION MANAGEMENT	PROCURMENT	
				PRODUCTION	
				INSPECTION & TEST	

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Figure 2-6. Titan III Program Segment

FACILITIES PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PRDGRAM	FACILITIES	ARCHITECTURAL & ENGINEERING (A&E CONTR)			
		INITIAL LAUNCH COMPLEX			
		ORBITING VEHICLE ASSY BLDG			
		OPERATIONAL TRNG & EVAL FACILITY			
		OPERATIONAL READINESS UNIT			
		SATELLITE TEST CENTER			
		SPACE SYSTEMS TRNG FCLTY (EAFB ADDN)			
		ENGINEERING & OPERATIONS BLDG			
		HAZARDOUS HANDLING FACILITY			
		PYROTECHNIC STORAGE FACILITY			

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Figure 2-7. Facilities Program Segment

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FLIGHT CREW EQUIPMENT PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	FLIGHT CREW EQUIPMENT	PRESSURE SUIT	SYS ENGINEERING & INTEGRATION	SYS ENGINEERING	
				DETAIL SYS & SUBSYS COMPONENTS, & INTERFACE DESIGN	
				SYS & SUBSYS ENG TEST & TEST SUPPORT	
				SYS INTEG & C/O	
			PRESSURE SUIT SYSTEM (HARDWARE)	FOOTGEAR	
				HELMET	
				SUIT	
				GLOVES	
				PORTABLE GROUND ECS	
				AGE	
				SUPPORTING EQUIP	
			MANAGEMENT & ADMINISTRATION	PROGRAM CONTRDL MGMT	
				CONFIG MGMT	
				SYSTEM EFFECTIVENESS	
				MATERIAL SUPPORT	
				PROCUREMENT & PRODUCTION MANAGEMENT	
			SERVICES (TEST OPERATIONS)	FLIGHT PREP & LAUNCH	
				ORBIT & RECOVERY	
				TRAINING & REHEARSAL	
		EXTRAVEHICULAR ENVIRONMETAL CONTROL SYS	SYS ENGINEERING & INTEGRATION		
			EXTRAVEHICULAR ECS HARDWARE		
			MANAGEMENT & ADMINISTRATION		
			SERVICES (TEST OPERATIONS)		
		FLIGHT CREW CLOTHING & ACCESSORIES	BODY COVERING		
			FOOTGEAR		
			GLOVES		
			TETHERS		
			EYE PROTECTING DEVICES		
			BIO ASSURANCE VEST		
			BLOOD PRESSURE MEASURING DEVICE		
			RADIATION DOSIMETER		
			COMM HEADSET		
			CLEANING TISSUE		
			FOOD PACK		
			FLT MED KIT		
			PERS HYG TOWELS		
			NAIL CLIPPER		
			BODY CLEANING PADS		
			PERS TELEM DEVICE		
			SHAVER		
			ORAL HYGIENE DEVICE		
			DRINKING STRAW		

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Figure 2-8. Flight Crew Equipment Program Segment

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FLIGHT CREW PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	FLT CREW	PRELIMINARY MDL TRAINING	CURRICULUM	MOL VEHICLE	
				30 DAYS MISSION REQUIREMENTS	
				CREW REQUIREMENTS	
			SPECIAL STUDIES	PAYLOAD REQUIREMENTS	
				CONTINGENCY REQUIREMENTS	
				BIO-MEDICAL NEEDS	
			EQUIPMENTS	MOCK-UPS	
				TRAINING DEVICES	
				SUB-SYSTEM SIMULATION	
				SPECIAL SIMULATION	
			ADMINISTRATION	CARE & HOUSING	
				RECORDS	
				RESPONSIBILITIES	
		SYSTEM DEVELOPMENT & CREW INTEGRATION	PLANNING	ON-ORBIT OPERATIONS	
				GROUND OPERATIONS	
				FLIGHT HARDWARE	
				MISSION SIMULATOR	
				TRAINERS	
				EMERGENCIES	
				FLT CREW EQUIPMENT	
			ENGINEERING DEVELOPMENT & INTEGRATION	LAB VEHICLE	
				GEMINI B	
				MISSION SIMULATORS	
				TRAINERS	
				FLT CREW EQUIPMENT	
				RECOVERY	
		PRE FLIGHT TRAINING	MISSION PLANNING	FLIGHT PLANS	
				GROUND SUPPORT PLANS	
				CONTINGENCY	
			PROFICIENCY TRAINING	FAMILIARIZATION	
				CONDITIONING	
				PROCEDURAL	
			MISSION SIMULATION	COUNTDOWN & LAUNCH	
				ASCENT & ORBIT OPERATION	
				DEORBIT & REENTRY	
				RECOVERY	
			CONTINGENCY	ASCENT	
				ORBIT FLT PLAN DEVIATIONS	
				ON ORBIT EMERGENCIES	
				RECOVERY	
			BASE LINE RECORD	PROCEDURES	
				FACTORS	
				ANALYSIS	
				USE	
			BIOASTIONAUTICS	PHYSICAL CONDITIONING	
				PHYSIOLOGICAL	
				DIET	
				WORK/REST CYCLE	
				ISOLATION	
		FLIGHT TEST OPERATIONS	FLIGHT ASSIGNMENT	CRITERIA	
				PROCEDURES	
				SCHEDULE	
			FLIGHT OPERATIONS	COUNTDOWN & LAUNCH	
				ASCENT & ORBIT INSERTION	
				ON ORBIT	
				DEORBIT & REENTRY	
				RECOVERY	
			GROUND SUPPORT OPNS		

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Figure 2-9. Flight Crew Training Program Segment

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TEST SUPPORT PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	TEST SUPPORT	TEST SUPPORT ANALYSIS & PLANNING	RANGE SAFETY		
			RANGE INSTRUMENTATION		
			ASCENT TRACKING		
			TELEMETRY PROCESSING		
			COMMUNICATIONS		
			LAUNCH OPERATIONS INTERFACE		
			FLIGHT OPERATIONS INTERFACE		
			TRAINING REQMT'S		
			MANPOWER REQMT'S		
			PLANS & PROCEDURES		
			RANGE READINESS DETERMINATION		
			HARDWARE		
			FACILITIES		
			SECURITY		
		HARDWARE	INSTRUMENTATION SHIP		
			TRACKING EQUIPT.		
			COMM & ELECTRONICS		
			AIRCRAFT		
			HELICOPTER		
		PRE-TEST SUPPORT	REMOTE SITE	COMPUTERS	
				TELEMETRY	
				TRACKING	
				COMMAND	
				COMMUNICATIONS	
				PROCEDURES	
			COMMUNICATIONS	CIRCUITS	
				RELIABILITY	
				DEDICATION OR TURN-AROUND	
				PROCEDURES & CHECK-OUT	
			COMPUTER PROGRAMMING	FORMATS-SELECTIVITY	
				TURNAROUND	
				REAL TIME T/M	
				ANALYSIS	
			SIMULATION & REHERSAL	ACTUAL EQUIPMENT TIE-IN	
				SIMULATED EQUIPMENT	
				INTERFACE	
				PROGRAMS & PROCEDURES	
				REMOTE SITE SIMULATION	
				TRAINING	
			MC SUPPORT	COMPUTER TO COMPUTER	
				MC TO LCC	
				REAL TIME DATE (T/M & TRACK)	
				COMMUNICATIONS	
			MOL CHECKOUT AND INTEGRATION SUPPORT	LAB SERVICES, POWER, RADIATION	
				GEMINI B-" " "	
				T-III " " "	
				ILC INTEGRATION SERVICES	

Figure 2-10. Test Support Program Segment

TEST SUPPORT PROGRAM SEGMENT (CONT'D)

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	TEST SUPPORT	COUNTDOWN & LAUNCH SUPPORT	INSTRUMENTATION SUPPORT	T/M CHECK OUT	
				BEACON CHECKS	
				LCC TO MC	
				LAUNCH READINESS	
			LAUNCH SERVICES	FUELS & SUPPLIES	
				POWER-ELEC-MECH	
				SUPPORT EQUIPT OP	
				DATA GATHERING	
			RANGE SAFETY	TRAJECTORY PLOTS-OVER-FLTS	
				RANGE CLEARANCE	
				PAD SAFETY	
				COMMAND DESTRUCT	
			FLIGHT CREW SAFETY	TRACKING & PLOTTING	
				ABORT SUPPORT	
		FLIGHT OPERATIONS SUPPORT	POWERED FLIGHT MC SUPPORT	METRIC DATA	
				REAL TIME T/M	
				COMMUNICATIONS	
				COMPUTERS & DATA DISPLAY	
			REMOTE SITE OPERATION	PERSONNEL PROCEDURES	
				EQUIPMENT SUPPOPT & OPER	
				DATA HANDLING	
				CONTINGENCY OPERATIONS	
			COMMUNICATIONS	ACCURACY & RELIABILITY	
				SWITCHING, CALL UP, DOWNTIME	
				MAINTENANCE & REPAIR	
				EMERGENCY OPERATIONS	
			COMPUTER OPERATION	NORMAL PROGRAM OPERATION	
				CONTINGENCY OPERATION	
				DOWNTIME & BACKUP	
				MODIFIED OR NEW PROGRAM	
			DATA HANDLING	REAL TIME	
				QUICK LOOK	
				POST LAUNCH	
			COMMAND AND CONTROL	VOICE CONTROL SUPPORT	
				SPECIAL CONTROL SUPPORT	
				EMERGENCY CONTROL SUPPORT	
		EVALVATION & REPORTS			

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Figure 2-11. Test Support Program Segment (Cont'd)

LAUNCH OPERATIONS PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	LAUNCH OPERATIONS	LAUNCH OPERATIONS ANALYSIS & PLANNING	MC INTERFACE REQMTS		
			MISSION SIM INTERFACE REQMTS		
			AGE REQMTS		
			TRAINING REQMTS		
			SUPPORT EQUIP REQMTS		
			FACILITY REQMTS		
			TEST SUPPORT REQMTS		
			SERVICES REQMTS		
			PLANS & PROCEDURES		
			MANPOWER REQMTS		
			COMMUNICATION REQMTS		
			FLT READINESS DETERMINATION		
			SECURITY		
			SAFETY		
			HARDWARE		
		FACILITIES ACTIVATION	INITIAL LAUNCH COMPLEX		
			OV ASSEMBLY BLDG		
			OPERATIONAL TRNG & EVAL FACILITY		
			OPERATIONAL READINESS UNIT		
			HAZARDOUS HANDLING FACILITY		
		AGE & SUPPORT EQUIPMENT INSTALLATION & CHECKOUT	ORBITING VEH AGE		
			LAB VEH AGE		
			GEM B AGE		
			PAYLOAD AGE		
			TITAN III AGE		
			FLT CREW EQUIP AGE		
			ILC EQUIP		
			MISSION SIMULATOR		
			BIO ASTRONAUTICS		
			COMM & ELECTRONICS		
		RECEIVING & INSPECTION	OV CONTR SERVICES	LAB VEH	
				GEMINI B	
			T-III CONTR SERVICES	TITAN III	
				SOLID MOTORS	
				GUIDANCE	
		CHECKOUT & PREPARATION FOR INTEGRATION	OV CONTR SERVICES	LAB VEH	
				GEMINI B	
			T-III CONTR SERVICES	TITAN III	
				SOLID MOTORS	
				GUIDANCE	

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Figure 2-12. Launch Operations Program Segment

LAUNCH OPERATIONS PROGRAM SEGMENT (CONT'D)

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	LAUNCH OPERATIONS	FLIGHT VEHICLE (OV/T-III) INTEGRATION	OV CONTR SERVICES	LAB VEH	
				GEMINI B	
			T-III CONTR SERVICES	TITAN III	
				SOLID MOTORS	
				GUIDANCE	
		SYSTEM INTEGRATION (FV/MC & AGE)	FLIGHT VEHICLE CONTRACTOR SERVICES	OV CONTR	
				TITAN III CONTR	
			FLIGHT CREW		
			BIO-ASTRONAUTICS SUPPORT		
			TEST SUPPORT	RANGE SAFETY	
				RANGE INSTRUMENTATION	
			MISSION CONTROL SERVICES		
			RECOVERY SUPPORT		
		COUNTDOWN & LAUNCH OPERATIONS	OV CONTR SERVICES	LAB VEH CONTR	
				GEM B CONTR	
			T-III CONTR SERVICES	T-III CONTR	
				SOLID MOTOR CONTR	
				ENG CONTR	
				GUIDANCE CONTR	
			FLIGHT CREW		
			BIO-ASTRONAUTICS SUPPORT		
			TEST SUPPORT	RANGE SAFETY	
				RANGE INSTRUMENTATION	
				COMMUNICATIONS	
				WEATHER	
				LOCAL RECOVERY	
			FLIGHT OPERATIONS	MISSION CONTROL	
				MISSION SIMULATOR	
				COMMUNICATIONS	
			RECOVERY SUPPORT	SHIPS	
				AIRCRAFT	
				HELICOPTER	
				COMM	
				MEDICAL	
				WEATHER	
		EVALUATION & REPORTS			

Figure 2-13. Launch Operations Program Segment (Cont'd)

FLIGHT OPERATIONS SUPPORT PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	FLIGHT OPERATIONS SUPPORT	FLIGHT OPERATIONS ANALYSIS & PLANNING	MC INTERFACE REQMTS		
			MISSION SIMULATOR INTERFACE REQMTS		
			TRAINING REQMTS		
			SUPPOPT EQUIP REQMTS		
			FACILITY REQMTS		
			TEST SUPPORT REQMTS		
			SERVICES REQMTS		
			RECOVERY REQMTS		
			PLANS & PROCEDURES		
			MANPOWER REQMTS		
			TRACKING REQMTS		
			COMMUNICATIONS REQMTS		
			FLT READINESS DETERMINATION		
			SECURITY		
		MISSION CONTROL HARDWARE	COMPUTER		
			DISPLAYS		
			CONSOLES		
			COMM & ELECTRONICS		
			CHECKOUT EQUIPMENT		
			MC INTERFACE HDWR		
			MC/EXTERNAL INTERFACE HDWR		
		MISSION CONTROL SOFTWARE	ORBIT DETERMINATION COMP PROG		
			MISSION CONTROL COMPUTER PROG		
			TELEMETRY PROCESSING COMP PROG		

Figure 2-14. Flight Operations Program Segment

FLIGHT OPERATIONS SUPPORT PROGRAM SEGMENT (CONT'D.)

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	FLIGHT OPERATIONS SUPPORT	ASCENT & ORBIT OPERATIONS	FLIGHT CREW	NORMAL MISSION PROCEDURES	
				CONTINGENCY & EMER PROCEDURES	
				PERSONAL REQMTS	
				DATA ANALYSIS	
			BIO-ASTRONAUTICS		
			OV CONTR SERVICES	LAB VEH CONTR	
				GEM B CONTR	
			TEST SUPPORT	RANGE SAFETY	
				RANGE INSTRUMENTATION	
			RECOVERY SUPPORT	PAD ABORT	
				POWERED FLT ABORT	
			MISSION CONTROL SERVICES	MISSION CONTROL	
				GLOBAL TRACKING NET	
				GLOBAL COMM NET	
		DE-ORBIT & RE-ENTRY OPERATIONS	FLIGHT CREW		
			BIO-ASTRONAUTICS SUPT		
			OV CONTR SERVICES	LAB VEH CONTR	
				GEM B CONTR	
			TEST SUPPORT		
			RECOVERY SUPPORT	NORMAL DEORBIT	
				CONTINGENCY DEORBIT	
			MISSION CONTROL SERVICES	MISSION CONTROL	
				GLOBAL TRACKING NET	
				GLOBAL COMM NET	
		EVALUATION & REPORTS			

Figure 2-15. Flight Operations Program Segment (Cont'd)

RECOVERY PROGRAM SEGMENT

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM	RECOVERY	RECOVERY ANALYSIS & PLANNING	MC INTERFACE REQMTS		
			TRAINING REQMTS		
			MANPOWER REQMTS		
			PLANS & PROCEDURES		
			DEORBIT PLANNING & PREP		
			ABORT PLANNING & PREP		
			RECOVERY SITES		
			WEATHER		
			SUPPORT FORCES		
			COMMUNICATIONS		
			SECURITY		
			READINESS DETERMINATION		
			EMERGENCIES		
			HARDWARE		
			GROUND MEDICAL		
			TERMINAL DECENT TRACKING		
		HARDWARE	FLOTATION COLLARS		
			COMMUNICATION EQUIP		
			SHIPS		
			AIRCRAFT		
			HELICOPTERS		
			MC INTERFACE HARDWARE		
			HANDLING EQUIP		
		RECOVERY OPERATIONS	FLIGHT CREW		
			BIO-ASTRONAUTICS SUPT		
			GEMINI B SERVICES		
			SUPPORT FORCES		
			COMMUNICATIONS		
			MISSION CONTROL SERVICES		
		EVALUATION & REPORTS			

SPECIAL HANDLING

SPECIAL HANDLING

Figure 2-16. Recovery Program Segment

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SECTION 3

PROGRAM MANAGEMENT NETWORK

ILLUSTRATIONS

SECTION 3

PROGRAM MANAGEMENT NETWORK

3.0 [redacted] INTRODUCTION.

The Program Management Network (PMN) herein portrays the significant milestones and the interactions of the Program Segments. This PMN will serve as the starting point for all concerned agencies in construction of their respective more detailed PMN.

3.1 [redacted]MOL PROGRAM MANAGEMENT NETWORK - DEFINITION PHASE.

Figure 3-1 presents the PMN which outlines the time phasing and significant events of the Program Segments during the Definition Phase.

3.2 [redacted]MOL PROGRAM MANAGEMENT NETWORK - ACQUISITION PHASE.

Figure 3-2 presents the PMN format which will outline the time phasing of significant events of the Program Segments relative to flight dates, during the Acquisition Phase. This PMN will be expanded during the Definition Phase.

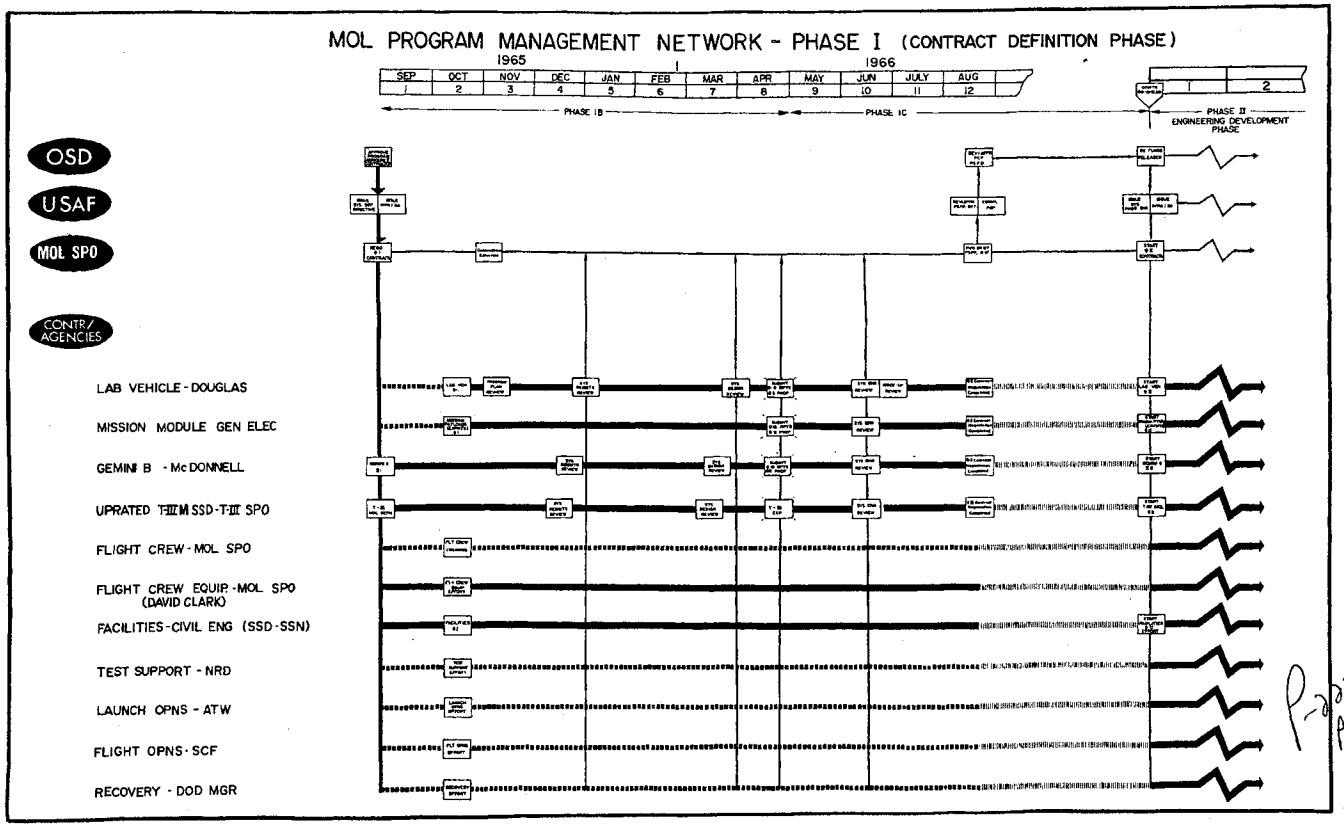

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Figure 3-1. MOL Program Management Network - Definition Phase

MOL PROGRAM MANAGEMENT NETWORK-ACQUISITION PHASE

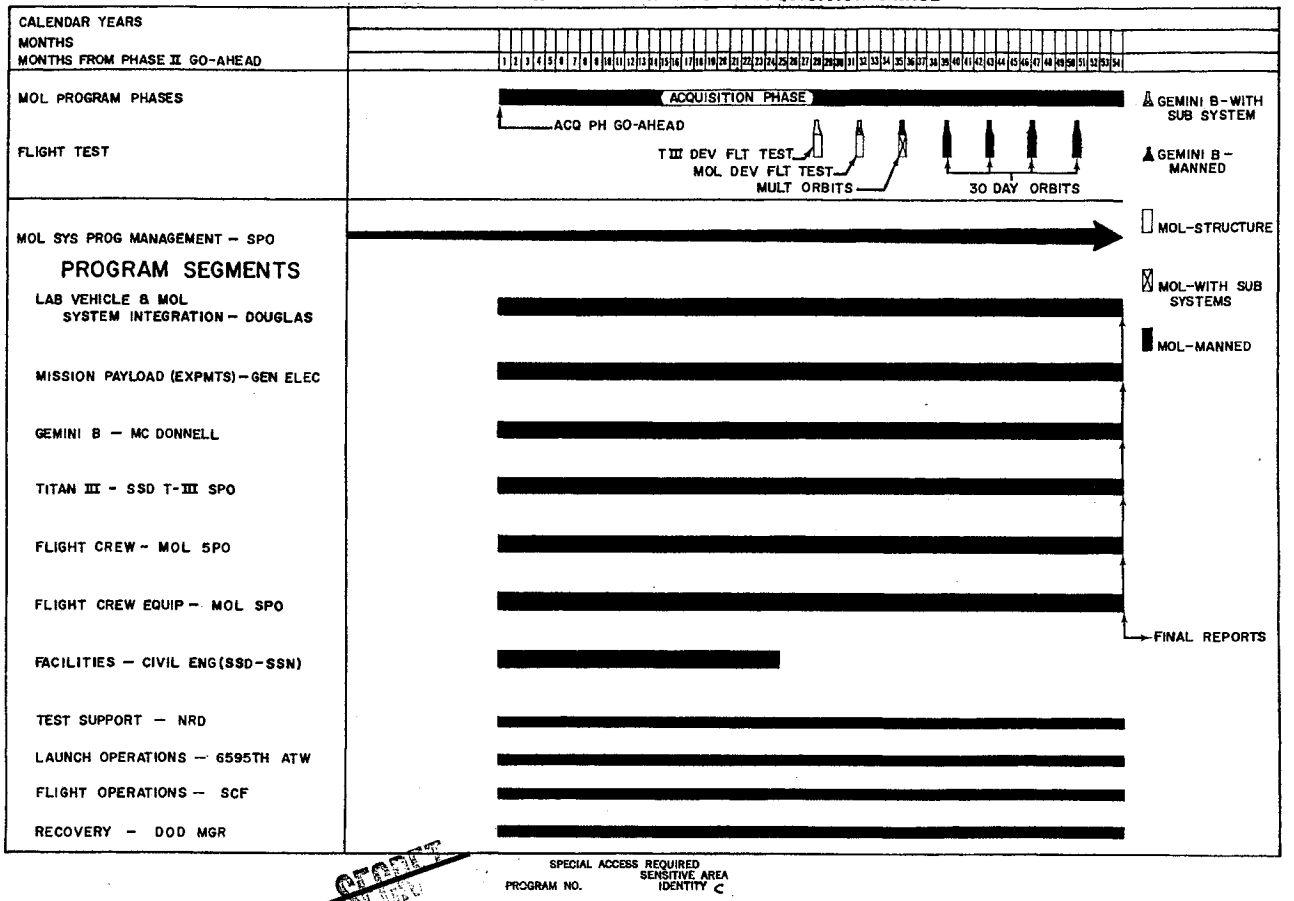

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Figure 3-2. MOL Program Management Network - Acquisition Phase

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SECTION 4

TOP LEVEL MANAGEMENT

ILLUSTRATIONS

SECTION 4

TOP LEVEL MANAGEMENT

4.0 INTRODUCTION.

The purpose of this section is to present the top-level management officials who will be directly involved and responsible for the MOL System Program and the associated Program Segments.

4.1 USAF MANAGEMENT ORGANIZATION FOR MOL PROGRAM.

The basic management objective of the MOL Program is to provide a single clear line of direction. In view of this, the USAF has formulated a responsive streamlined, integrated vertical management structure (Figure 4-1) which is defined by three discrete functional levels:

a. Policy, guidance and final AF approval -- SAF.

b. Program Direction -- Director, MOL (SAF-SL).

c. Program Implementation -- Deputy Director, MOL (SSD).

4.1.1 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. The SAF will assign management responsibility and delegate commensurate authority to the Director, MOL.

4.1.2 Director, MOL - Program Direction.

The Director, MOL will report directly to SAF. Director, MOL will be responsible to establish, manage and conduct all aspects of the approved MOL Program as assigned by the SAF. He will be the principal operating agent for the direction of the MOL Program. 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 informed concerning the MOL Program. The Director, MOL will establish a strong integrated systems and program implementation office located at SSD, El Segundo, California.

4.1.3 Deputy Director, MOL - Program Implementation.

The Deputy Director, MOL will be responsible to the Director, MOL for specific responsibilities and functions assigned by Director, MOL. 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. SSD offices will provide the required functional assistance to the Deputy Director, MOL to fulfill his overall responsibilities.

The Deputy Director, MOL will be responsible for overall 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. 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. He 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.

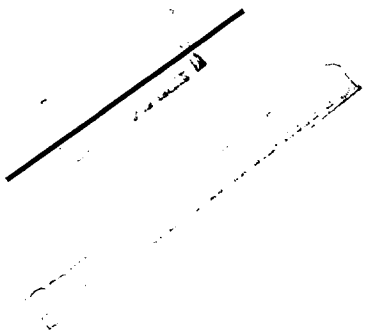
All SSD offices will provide functional support as requested by the Deputy Commander (SSD) for MOL, but, except for such requested support, will not be involved in the MOL program management.

4.2 [redacted] MOL SYSTEM PROGRAM OFFICE (MOL SPO).

Figure 4-2 outlines the MOL SPO organization that is responsible for implementing the MOL Program.

4.3 MOL SPO AND ASSOCIATE AGENCIES TOP-LEVEL MOL MANAGEMENT OFFICIALS.

Figure 4-3 relates the individuals within the MOL SPO that are directly responsible to the Deputy Director, MOL for conduct of Program Segments as outlined in the MOL Program Breakdown Structure. The key top-level management officials of associate contractor and government agencies are also shown. It is the desire of the MOL SPO that the Associate Program Manager of each Program Segment be delegated the responsibility for "policy and decision making" relative to the conduct of their respective Program Segment.



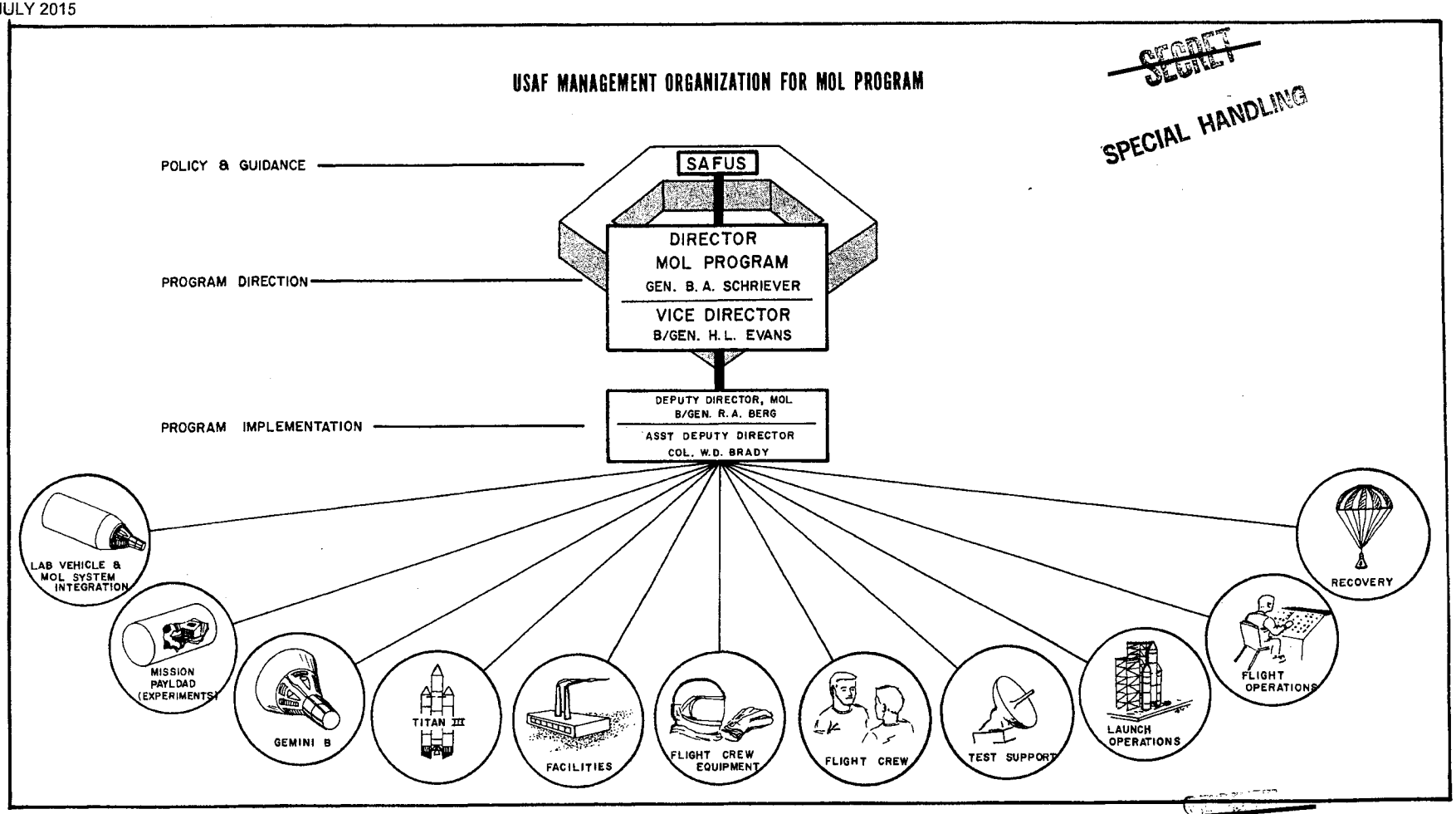


Figure 4-1. USAF Management Organization for MOL Program

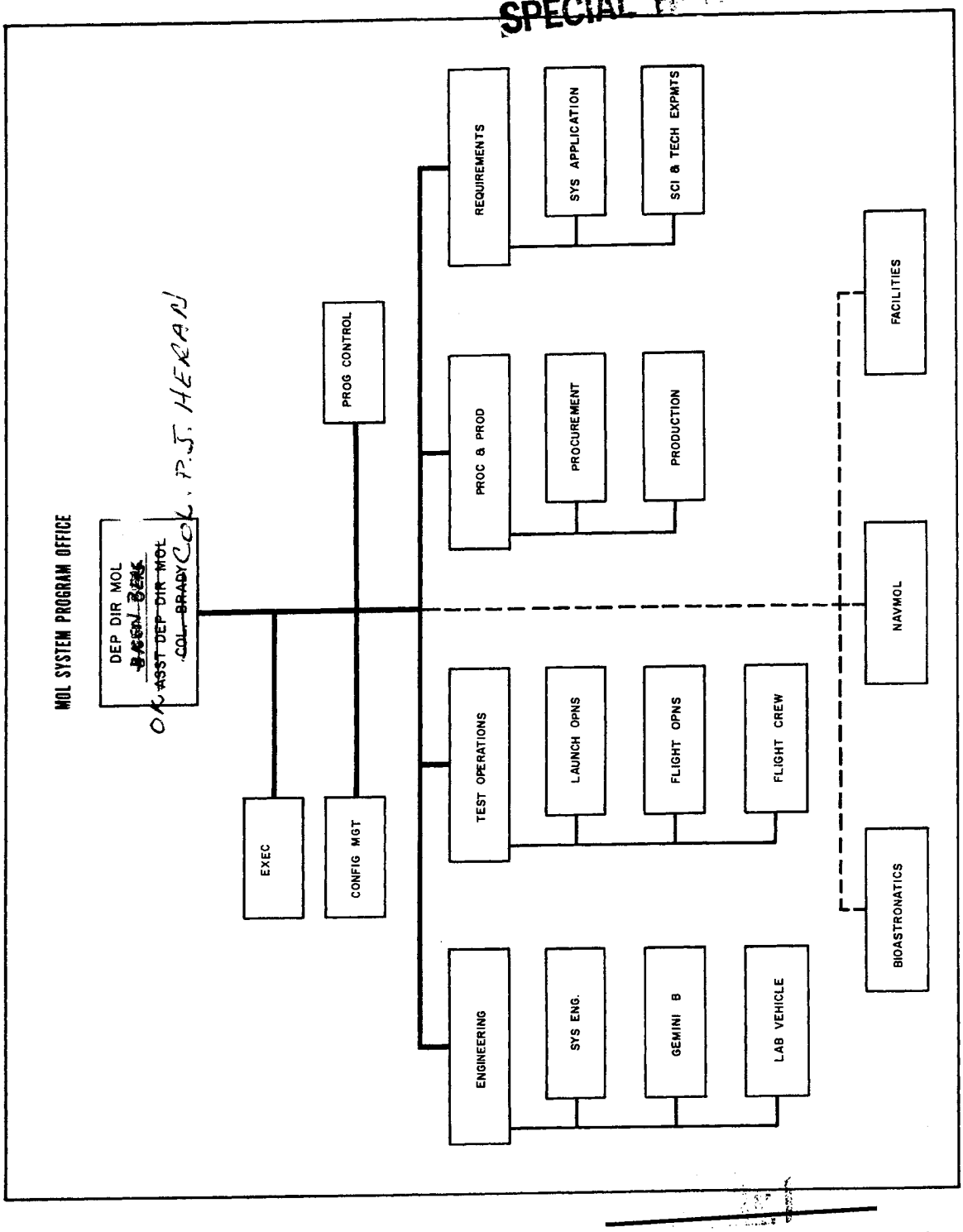


Figure 4-2. MOL System Program Office (MOL SPO)

MOL SPO & ASSOCIATE AGENCY KEY TOP-LEVEL M O L MANAGEMENT OFFICIALS

(BY PROGRAM BREAKDOWN STRUCTURE)

BRIG GEN R A BERG
DEPUTY DIR MOL PROGRAM
~~COL W D BRADY~~ Col P. J. Hezan
ASST DEPUTY DIR MOL PROGRAM
MOL SYS PROG OFFICE SSD

MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM

COL RM HERRINGTON (L/C RR REGNIER) DEPUTY MOL SPO	COL RM HERRINGTON DEPUTY MOL SPO	COL RM HERRINGTON (L/C CJ GANDY) DEPUTY MOL SPO	COL RM HERRINGTON (MAJ IB HANSON) DEPUTY MOL SPO	COL T W MORGAN (MAJ G M HREBEC) DEPUTY MOL SPO	COL A I KARSTENS (MAJ E F WESTLAKE) DEPUTY MOL SPO	COL T W MORGAN DEPUTY MOL SPO	COL T W MORGAN (MAJ G M HREBEC) DEPUTY MOL SPO	COL T W MORGAN (MAJ G M HREBEC) DEPUTY MOL SPO	COL T W MORGAN (L/C J P O'TOOLE) DEPUTY MOL SPO	COL T W MORGAN (L/C J P O'TOOLE) DEPUTY MOL SPO
LABORATORY VEHICLE & MOL SYSTEM INTEGRATION	MISSION PAYLOAD (EXPERIMENTS)	GEMINI B	TITAN III	FACILITIES	FLIGHT CREW EQUIPMENT	FLIGHT CREW	TEST SUPPORT	LAUNCH OPERATIONS	FLIGHT OPERATIONS SUPPORT	RECOVERY

ASSOCIATE CONTRACTOR & GOVERNMENT AGENCIES

R L JOHNSON V P MOL DIRECTOR DOUGLAS	E. Miller PROG MANAGER G. E.	R A PEPPING PROG MANAGER MC DONNELL	COL D V MILLER (L/C F W KNISS) PROG MANAGER T-III SPO	COL E JACKSON PROG MANAGER CIVIL ENG., SST	LT/GEN L I DAVIS (COL R C ANDERSON) PROG MANAGER NRD	COL R C NEWTON PROG MANAGER ATW	COL W R HEDRICK PROG MANAGER AF SAT CONT FACIL	LT/GEN L I DAVIS (COL R OLSON) PROG MANAGER DOD MANAGER
LABORATORY VEHICLE & MOL SYSTEM INTEGRATION	MISSION PAYLOAD (EXPERIMENTS)	GEMINI B	TITAN III	FACILITIES	TEST SUPPORT	LAUNCH OPERATIONS	FLIGHT OPERATIONS SUPPORT	RECOVERY

Figure 4-3. MOL SPO and Associate Agencies Top-Level Management Officials

Sept 1965

TAB A

ROLES AND RESPONSIBILITIES FOR THE MANNED ORBITING LABORATORY SYSTEM (MOL) PROGRAM

SEPTEMBER 1965

INDEX

TAB A

ROLES AND RESPONSIBILITIES FOR THE MANNED ORBITING LABORATORY PROGRAM

LIST OF TABLES

ROLES AND RESPONSIBILITIES FOR THE MANNED ORBITING LABORATORY PROGRAM

1.0 (U) INTRODUCTION.

This tab contains a further refinement of the roles and responsibilities relative to the interrelationships between concerned agencies responsible for the conduct of the MOL Program Segments. The roles and responsibilities herein are intended to be consistent with contractor work statements, the Program Breakdown Structure, and working agreements between government agencies.

2.0 (U) TASK CATEGORIES.

The tasks listed are divided into categories which correspond to the principal activities as the program proceeds through definition phase to completion of acquisition phase. The categories of tasks and activities are:

A. System Engineering and Analysis.

The tasks in this category include generation and integration of system engineering data and analysis of system operations. It includes computation of trajectory and orbit mechanics, tracking, orbit determination, and ground station coverage as well as analysis of flight test data.

B. Engineering Design.

Tasks include establishment of equipment design, production of drawings and hardware specifications and design integration of interfacing equipment of several contractors/agencies.

C. Fabrication.

The task of providing both developmental prototypes for ground test and flight articles for test operations. This includes both make and buy items of supplying contractors.

D. Test and Integration.

The tasks include testing of contractor equipment for development, qualification and acceptance, as well as integration of equipment and conduct of system compatibility tests.

E. Test Operations.

This task category includes all launch site operations in direct support of a flight mission as well as mission operations while on orbit and during re-entry and recovery. It includes preparatory tasks and documentation which contribute directly to mission operations, and crew training and bioastronautics functions related to experimentation and flight crew monitoring.

F. ~~Facilities~~ "EAFB" per 5/1/66 change #6 SAFSL-1

This task category includes establishment of criteria for facilities at the launch site and EAFB, conduct of facility design, and supervision of facility construction.

3.0 ~~(U)~~ ORGANIZATIONAL ROLES.

The relationship of responsibilities of contractors and agencies for the tasks shown are designated as follows:

▲ Primary Responsibility

S Support: A task of providing support in the form of information or assistance to the organizations with primary responsibility.

R Establish Requirements: A task of establishing requirements to be met by the organization with primary responsibility.

I Interface: An organization with responsibility for equipment with a physical or functional interface.

4.0 CONTRACTOR OR AGENCY IDENTITY

Program roles and responsibilities shown in this document have been assigned only to the principal participating contractors and agencies. In some instances tasks can be assigned unambiguously to a single contractor or agency with clear interfaces with other organizations. In other cases, the relationship of some supporting agencies is not well defined and some such functions have been designated as though they were to be performed by a single organization.

4.1 ASSOCIATE CONTRACTORS AND AGENCIES.

4.1.1 Laboratory Vehicle (Contractor). Douglas

4.1.2 Gemini B (Contractor). McDonnell

4.1.3 Titan III (Agency).

The Titan III portion of the MOL system is the responsibility of the SSD Titan III SPO. However, the equipment and services will be provided by contractors. Responsibilities are designated here as though they were to be performed by a single contractor whereas all Titan III associate contractors will actually participate with Martin acting as Titan III integrator.

4.1.4 Flight Crew Equipment (Contractors).

This area of responsibility is treated as though it were to be assigned to a single contractor; however, it will actually include several contractors which provide pressure suits, extra-vehicular environmental control equipment, and other crew personal equipment.

4.1.5 Test Support (Agency), NRD.

All test operations support not identified as a direct responsibility of either the Launch Operations Agency or the Flight Operations Agency is the responsibility of the National Range Division (NRD). This test support includes the assignment of resources not only in the vicinity of the launch site, but other remote station support as may be required for the MOL Program.

4.1.6 (U) Launch Operations (Agency), Aerospace Test Wing.

This function will be the responsibility of the 6595th Aerospace Test Wing (ATW). They are responsible, as a direct arm of the MOL SPO, for direction of all assigned pre-launch and launch operations occurring at the launch site.

4.1.7 (U) Flight Operations (Agency), SCF.

The Air Force Satellite Control Facility is responsible for developing and providing those resources at the Satellite Test Center as well as the global tracking and communications networks necessary to support the MOL Test Operations during the flight preparation and through all flight phases including recovery. As assigned, SCF will function as a direct arm of the MOL SPO.

4.1.8 (U) Recovery (Agency), DoD Manager.

The DoD Manager for Manned Space Flight Support is responsible for planning and providing through all flight phases those recovery resources (including aircraft, helicopters, ships, recovery support teams, etc.) necessary to support the MOL Test Operations and, as assigned, will function as a direct arm of the MOL SPO.

4.1.9 (U) Deputy for Civil Engineering (Agency).

Acquisition of MOL facilities will be delegated by the MOL SPO to the SSD Deputy for Civil Engineering. This agency will monitor and direct contractors in preparation of facility criteria in association with Architect and Engineer Contractors. Upon completion of the criteria, the facility designs will be prepared under the direction of the Deputy for Civil Engineering by the A&E Contractor. Stearns-Rogers is the contractor for ILC facilities and Daniel, Mann, Johnson and Mendenhall are associates for MOL-peculiar facilities. When the designs are complete they will be delivered to the Corps of Engineers for construction with monitoring by the Deputy for Civil Engineering. These activities are largely separate from other program activities and therefore this agency is included in the roles and responsibilities tables only under Task Category F, Facilities.

4.1.10 ~~(K)~~ SPO and GSE/TDC.

The MOL SPO has over-all responsibility for the program. The SPO and the GSE/TDC will review all significant program decisions and SPO approval is required for their implementation. SPO and GSE/TDC specific responsibilities are indicated in this document only where they represent a specific direct program responsibility which is not performed by another organization designated in another column, or where such designation will clarify the responsibilities of other contractors or agencies not identified at this time.

4.1.11 ~~(L)~~ Mission Payload (Experiments) (Contractor), See Tab A Addendum.

5.0 ~~(M)~~ CONFIGURATION NOMENCLATURE.

The nomenclature used in describing tasks defines the orbiting vehicle as consisting of the Laboratory Vehicle, Gemini B, and Flight Crew Equipment. The Titan III system consists of the launch vehicle, supporting AGE, and the ILC. The Gemini B spacecraft includes the re-entry module and the adapter section.

6.0 ~~(N)~~ OTHER CONTRACTOR/AGENCY RESPONSIBILITIES.

Other management or administrative activities such as control of drawings, configuration management and interface control, production and quality control, and schedule and cost control, are considered normal program functions which must be accomplished by all contractors/agencies and therefore are not enumerated as specific tasks in this document.

7.0 ~~(O)~~ ACTIVITY DESIGNATIONS.

Activities which have been assigned as specific responsibilities of contractors or agencies are identified briefly in the following roles and responsibilities tables. Wherever further explanation is required to clarify tasks or activities, see definition of tasks which follow tables.

MOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING AND ANALYSIS

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
1	Analyze Detailed System Operation	▲	SR	SR	SR	SR	SR	SR	SR	
2	System Engineering Integration	▲	SR	SR	SR	SR	SR	SR	R	
3	Prepare Mission Profile	▲	S	S	S	S	S	S	S	
4	Conduct Launch Trajectory Analysis	SR	SR	▲		S				
5	Analyze Launch Abort		▲	SR		S	S	S	S	
6	Analyze On Orbit Abort	▲	SR		S	S		S	S	
7	Analyze De-orbit Operations	S	▲		S			S	S	
8	Analyze Recovery Operations		▲		S	S		S	SR	
9	Analyze Orbital Communications	▲	SR		S	S		SR	S	
10	Analyze On-Orbit Data Handling	▲	S					SR		
11	Analyze Ground Data Handling	R	R	R	R	R		▲	R	
12	Analyze Gemini B Flt Crew Tasks	S	▲	S	S			S	S	
13	Analyze Lab Veh Flt Crew Tasks	▲	S		S			S		
14	Analyze Flt Crew Transfer (factors affecting Gemini B)	S	▲		S			S		
15	Analyze Flt Crew Transfer (factors affecting Laboratory Vehicle)	▲	S		S			S		
16	Analyze Gemini B Separation	S	▲							

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MOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING AND ANALYSIS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
17	Analyze Launch Vehicle	SR	SR	▲			S			
18	Analyze Laboratory Vehicle	▲	SR	SR	SR					
19	Analyze Gemini B Spacecraft	SR	▲	SR	SR					
20	Analyze Launch Vehicle Induced Environment	S	S	▲	S					
21	Analyze Laboratory Vehicle On-Orbit Checkout	▲	S		SR			S		
22	Analyze Gemini B On-Orbit Checkout	S	▲		SR			S		
23	Analyze Flight Vehicle Combined Systems Checkout	▲	S	S	S		S	S		
24	Analyze Laboratory Vehicle Ground Checkout	▲		S	S		S			
25	Analyze Gemini B Ground Checkout		▲	S	S		S			
26	Analyze Flight Crew Checkout and Preparation	SR	SR		SR					▲
27	Analyze Flt Crew Equipment and Supplies Checkout & Preparation	SR	SR		▲					
28	Analyze Flt Crew Training	SR	SR	SR	SR	S		SR	SR	▲
29	Analyze Flt Crew Personal Equipment and Supplies	SR	SR		▲		S		SR	
30	Analyze Medical Monitoring and Operations	SR	SR		SR			SR	SR	▲
31	System Engineering Intermediate Integration of "Test, Accept and Deliv. MOL Sys."	▲	SR	SR	SR					
32	System Engineering Intermediate Integration of "Conduct Checkout, Pre-launch Operations & Launch"	▲	SR	SR	SR		S		S	

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TABLE A (Cont'd)

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ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING AND ANALYSIS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
33	System Engineering Intermediate Integration of "Perform Boost Injection and Separation"	S	S	▲	S	S		S	S	
34	System Engineering Intermediate Integration of "Perform Insertion & Transfer of Flt Crew into Lab"	SR	▲		S	S		S	S	
35	System Engineering Intermediate Integration of "Perform On-Orbit Objectives"	▲	S		S			S		
36	Sys Eng Intermediate Integration of "Perform Transfer of Flt Crew, Separation, Loiter & De-Orbit"	S	▲		S			S	S	
37	System Engineering Intermediate Integration of "Retrieval Operations"		▲		S			S	S	
38	System Engineering Intermediate Integration of "Evaluate MOL Sys."	▲	S	S	S	S	S	S	S	
39	Sys Eng Intermediate Integration of "Pre-Launch or Ascent Abort Operations"	S	▲	S	S	S	S	S	S	
40	Deleted									
41	System Engineering Intermediate Integration of "Define Rqmts for Flt Crew Trng & Preparation"	▲	S	S	S	S	S	S	S	
42	System Engineering Intermediate Integration of "Maintain System"	▲	S	S	S		S			
43	System Engineering Intermediate Integration of "Perform Mission Control"	▲	S	S	S	S	S	SR	S	
44	System Engineering Intermediate Integration of "Perform Simulations"	▲	S	S	S	S	S	S	S	
45	Post-Flight Analysis of Countdown and Ascent Data	▲	S	S	S	S	S	S	S	
46	Post-Flight Analysis of Gemini B Data	S	▲		S			S	S	
47	Post-Flight Analysis of Laboratory Veh Data	▲	S		S			S		
48	Post-Flight Analysis of Flight Crew Performance	S	S		S			S		▲

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MOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING AND ANALYSIS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD) Manager)	SPO and GSE/TDC
49	Post-Flight Analysis of Re-entry Data		▲		S			S	S	
50	Post-Flight Analysis of Mission Control Data	S	S		S	S		▲		
51	Post-Flight Analysis of Flt Crew Transfer Data	S	▲		S			S		
52	Post-Flight Analysis of Flt Bioastronautics Data	S	S		S			S		▲
53	Post-Flight Analysis of Flt Crew Equipment Data	S	S		▲			S	S	
54	Analyze Launch Facilities, AGE Installation and Launch Operations	▲	SR	SR	S		S		S	
55	Analyze Launch Vehicle and Orbiting Vehicle Separation	S	S	▲				S		
56	Analyze Checkout, Countdown, Launch and Ascent	▲	S	SR	S	S	S	S	S	
57	Analyze Flight Vehicle Combined System Test	▲	SR	SR	SR		S	S		
58	Analyze Bioastronautics Instrumentation & Procedures	▲	S		SR			S	R	
59	Analyze Flight Vehicle	S	S	▲	S	S	S	S		
60	Post Flt Analysis of Launch Vehicle Data	S		▲		S	S	S		

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MOL PROGRAM
ROLES AND RESPONSIBILITIES

B. ENGINEERING DESIGN

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
1	Laboratory Vehicle	▲	SRI	SRI	SRI		R	R		
2	Laboratory Veh Communication and Telemetry System	▲	SI		RI	R	R	R		
3	MOL Communications and Data Processing	▲			SRI			S		
4	Laboratory Vehicle Control Consoles	▲	SRI		SRI			R		
5	Laboratory Vehicle Power System	▲	SRI		SRI					
6	Laboratory Vehicle Attachment to Launch Vehicle	▲		SRI						
7	Gemini B	SRI	▲	SRI	SRI		R	R	R	
8	Flt Crew Transfer Equipment	SRI	▲		SRI					
9	Gemini B Attachments	SRI	▲							
10	Pressure Suit and Other Flight Crew Personal Equipment	SRI	SRI		▲		R		R	
11	Integrate Orbiting Vehicle Design	▲	SI	SI	SI		R	R		
12	Titan III Modifications	SRI	SRI	▲			S			
13	Flight Vehicle Structural Integrity	SRI	SRI	▲						
14	Engineering Design Integration	▲	SRI	SRI	SRI	SR	SR	SR	SRI	
15	Laboratory Vehicle AGE	▲		SRI	SRI		R	R		
16	Gemini B AGE	SRI	▲	SRI	SRI		R	R	R	

MOL PROGRAM ROLES AND RESPONSIBILITIES B. ENGINEERING DESIGN (Cont'd)		CONTRACTORS OR AGENCIES										
No.	ACTIVITIES	Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC	Experiment Payload (Contractor)	Experiment Integration (Contractor)
17	Flight Crew Equipment AGE	SI	SI	SI	▲		S					
18	Orbiting Vehicle Special Tools and Test Equip (AGE)	▲	SR	R	R							
19	Integrate Orbiting Vehicle AGE Design	▲	SRI	SRI	SRI		R					
20	Titan III AGE Modifications	R	R	▲			S					
21	Recovery Force Retrieval Equipment		SRI		SRI	S			▲			
22	Mission Control Center Consoles	SR	SR	SRI		SR	S	▲				
23	Telemetry and Tracking Station Equipment	R	R	R	R			▲				
24	Mission Simulator	▲	SRI	SR	SRI	S	S	SI	S			
25	Laboratory Vehicle Procedures Trainer	▲			SRI			S				
26	Gemini B Procedures Trainer		▲	SR	SRI			S				
27	Subsystem Trainers--Lab Veh	▲										
28	Part Task Trainers--Lab Veh	▲			SR							
29	Subsystem Trainers--Gemini B		▲									
30	Part Task Trainers--Gemini B		▲		SR							
31	Bioastronautics Instrumentation	▲	R		SR			R	R			
32	Software Overlap Programs	▲						RI				RSI

MOL PROGRAM
ROLES AND RESPONSIBILITIES

B. ENGINEERING DESIGN (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES											
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC	Experiment Payload (Contractor)	Experiment Integration (Contractor)
33	Lab Vehicle Software	▲						RI				SI

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MOL PROGRAM
ROLES AND RESPONSIBILITIES

C. FABRICATION

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
1	Laboratory Vehicle	▲	I	I	I					
2	Lab Veh Communication and Telemetry System	▲	I	I	I					
3	MOL Communications and Data Processing	▲								
4	Laboratory Vehicle Control Consoles	▲	I		I					
5	Flight Crew Accommodations--Laboratory Veh	▲			I					
6	Orbiting Vehicle Power Supply	▲	I							
7	Gemini B	I	▲	I	I				I	
8	Flt Crew Transfer Equipment	I	▲		I					
9	Gemini B Attachments	I	▲							
10	Flight Crew Accommodations--Gemini B		▲		I					
11	Pressure Suit and Other Flight Crew Personal Equipment	I	I	I	▲					
12	Titan III Modifications	I	I	▲						
13	Laboratory Vehicle AGE	▲	I	I	I					
14	Gemini B AGE	I	▲	I	I					
15	Orbiting Vehicle Special Tools and Test Equipment (AGE)	▲	I	I	I					
16	Flight Crew Equipment AGE	I	I	I	▲					

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MOL PROGRAM
ROLES AND RESPONSIBILITIES

C. FABRICATION (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
17	Titan III AGE Modifications	I	I	▲						
18	Mission Control Consoles	I		I				▲		
19	Telemetry and Tracking Station Equipment							▲		
20	Laboratory Vehicle Procedures Trainer	▲			I					
21	Gemini B Procedures Trainer		▲		I					
22	Mission Simulator	▲	I		I			I		
23	Subsystem Trainers--Lab Veh	▲								
24	Part Task Trainers--Lab Veh	▲			I					
25	Subsystem Trainers--Gemini B		▲							
26	Part Task Trainers--Gemini B		▲		I					

MOL PROGRAM
ROLES AND RESPONSIBILITIES

D. TEST AND INTEGRATION

No.	ACTIVITIES	CONTRACTORS OR AGENCIES										
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC	Experiment Payload (Contractor)	Experiment Integration (Contractor)
1	Conduct Laboratory Vehicle Development, Qualification and Acceptance Tests	▲										
2	Conduct Gemini B Development, Qualification and Acceptance Tests		▲									
3	Integrate Orbiting Vehicle Development Model	▲	SI		SI							
4	Integrate Orbiting Vehicle	▲	SRI		SRI							
5	Conduct Orbiting Vehicle Environmental Tests	▲	S		S							
6	Assure Orbiting Vehicle Compatibility with System	▲	S	S				S				
7	Conduct Orbiting Vehicle Development System Test and Factory Acceptance Tests	▲	SR		SR							
8	Conduct Titan III Assembly and Acceptance Tests			▲								
9	Assemble Orbiting Vehicle with Launch Vehicle	SRI		▲			S					
10	Integrate Flight Vehicle AGE	▲	SRI	SRI	SRI		S	S				
11	Integrate Orbiting Vehicle AGE with ILC Facility	SRI	SI	▲	SI		S					
12	Integrate Mission Simulator	▲	SI		SI							
13	Integrate Mission Simulator with SCF	▲	S	S	S			SRI				
14	Integrate Flt Operations Sys	R	R			S		▲	R			
15	Gather Baseline Data on Flight Crew Performance	SR	SR		SR			S		▲		
16	Integrate and Test Lab Veh Computer Subsystem Hardware and Software	▲						RI				SI

MOL PROGRAM
ROLES AND RESPONSIBILITIES

D. TEST AND INTEGRATION

No.	ACTIVITIES	CONTRACTORS OR AGENCIES										
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC	Experiment Payload (Contractor)	Experiment Integration (Contractor)
17	Integrate and Test Overall MOL Communications and Data Processing System	▲						RSI				SRI

MOL PROGRAM
ROLES AND RESPONSIBILITIES

E. TEST OPERATIONS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
1	Prepare Flight Test Plan	▲	S	S	S	S	S	S	S	
2	Prepare Range Safety Plan		S	S		▲	S			
3	Prepare Program Support Requirements Document	▲	S	S	S	S	S	S	S	
4	Prepare Data Acquisition Plan	SR	SR	S	SR	SR		▲	S	
5	Prepare Recovery Requirements Document	S	▲	S	S				S	
6	Prepare Recovery Plan	S	S	S	S	S		S	▲	
7	Prepare Gemini B Checkout Procedures	S	▲	S	S		S	S		
8	Prepare Orbiting Vehicle Checkout Procedures	▲	SR		SR	S	S	S		
9	Prepare Ascent Guidance Equations		SR	▲		R				
10	Prepare Re-entry Guidance Equations		▲	SR		R		R	R	
11	Prepare Pre-launch and Ascent Abort Procedures		▲	SR	S	SR	S	SR	SR	
12	Integrate Orbital Abort Procedures	▲	SR		S			SR	SR	
13	Prepare Countdown Procedures	▲	SR	SR	SR	S	S	S	S	
14	Integrate Flt Crew Orbital Procedures	▲	S		S			S		
15	Prepare Laboratory Vehicle Orbital Procedures	▲	S		S			S		
16	Prepare Laboratory Vehicle On-Orbit Checkout Procedures	▲	S		S			S		

MOL PROGRAM
ROLES AND RESPONSIBILITIES

E. TEST OPERATIONS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
17	Prepare Gemini B On-Orbit Checkout Procedures	S	▲		S			S		
18	Prepare Crew De-orbit and Re-entry Procedures	S	▲					S	S	
19	Direct and Coordinate Flight Crew Training	SR	SR	SR	SR	SR	SR	SR	SR	▲
20	Operate Launch Facility	SR	SR	SR	SR	S	▲			
21	Assemble Launch Vehicle on the Launch Pad			▲			S			
22	Check Out Orbiting Vehicle at Launch Site	▲	SR	S	SR	S	S	S		
23	Check Out of Gemini B at Launch Site		▲	S						
24	Check Out Flight Crew Equipment	S	S		▲			S		
25	Check Out Flight Crew	S	S		S			S		▲
26	Conduct Final Checkout at Launch Pad	▲	SR	SR	SR	S	S	S	S	
27	Conduct Terminal Countdown	S	S	S	S	S	▲	S	S	
28	Direct and Control Mission Operations	S	S	S	S	S	S	S	S	▲
29	Operate Mission Control	S	S	S	S	S	S	▲	S	
30	Conduct Range Safety Operations		S	S		▲		S	S	
31	Conduct Orbital Data Acquisition by Tracking and Telemetry					S		▲		
32	Monitor Flight Crew Condition	S	S		S			S		▲

TABLE E (Cont'd)

MOL PROGRAM
ROLES AND RESPONSIBILITIES

E. TEST OPERATIONS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
33	Conduct Recovery Operations		S		S	S		S	▲	
34	Format Data for Users	R	R	R	R	S		▲		
35	Operate Mission Simulator	▲	S	S	S	S	S	S	S	

MOL PROGRAM
ROLES AND RESPONSIBILITIES

F. FACILITIES

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Deputy for Civil Engineering (Agency)	SPO and GSE/TDC
1	Prepare Facility Criteria for Initial Launch Complex	SR	R	▲		R	SR	R	SR	
2	Prepare Facility Criteria for Orbiting Vehicle Assy Bldg	▲	SR	SR	R		SR		SR	
3	Prepare Facility Criteria for Operational Trng & Eval Facility	▲	R	R	R	R		SR	SR	
4	Prepare Facility Criteria for Operational Readiness Unit	R	R		SR		SR		SR	▲
5	Prepare Facility Criteria for Satellite Test Center	SR	R	R	R	R	R	▲	SR	
6	Prepare Facility Criteria for Space Sys Training Facility Addition at EAFB	R	R		R		R	R	SR	▲
7	Prepare Facility Criteria for Engineering & Operations Bldg	▲	R		R		R		SR	
8	Prepare Facility Criteria for Hazardous Handling Facility	SR	R	▲	R		R		SR	
9	Prepare Facility Criteria for Pyrotechnic Storage Facility	R	R	▲	R		SR		SR	
10	Design and Modify Initial Launch Complex			S			S		▲	
11	Design and Construct Orbiting Vehicle Assy Bldg	S					S		▲	
12	Design and Construct Operational Trng & Eval Facility	S	S				S		▲	
13	Design and Construct Operational Readiness Unit				S		S		▲	
14	Design and Modify Satellite Test Center	S						S	▲	
15	Design and Construct Space Sys Trng Fac at EAFB	S			S				▲	
16	Design and Construct Engineering & Operations Bldg	S					S		▲	

Revision Date Table F

MOL PROGRAM
ROLES AND RESPONSIBILITIES

F. FACILITIES (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Deputy for Civil Engineering (Agency)	SPO and GSE/TDC
17	Design and Modify Hazardous Handling Facility	S		S			S		▲	
18	Design and Modify Pyrotechnic Storage Facility	S		S			S		▲	

Revision Date

Table F

Sept 1965

TABLE F (Cont'd)

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DEFINITIONS
OF
TASKS
USED IN THE
ROLES AND RESPONSIBILITIES TABLES

TAB A

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A. SYSTEM ENGINEERING AND ANALYSIS.

1. Analyze Detailed System Operation.

The Laboratory Vehicle contractor will be responsible for the detailed analysis of the operation of the over-all MOL system. This analysis will be conducted on the basis of data provided by the other contractors and agencies within the program and his own analysis. In general, analysis will be based upon the inputs and outputs from the equipment provided by other associates and it will not be the responsibility of the Laboratory Vehicle contractor to analyze the internal operation of the equipment provided by others. The associates' analysis will be reviewed by the MOL/Aerospace and all system decisions will be referred to the MOL SPO/Aerospace for resolution.

2. System Engineering Integration.

The Laboratory Vehicle contractor will be responsible for integration of system engineering data provided by all program contractors and agencies. The integration function will consist of assembly of data packages which have been intermediately integrated by contractors/agencies as assigned in the System Performance/Design Requirements Specification and review of the data to assure over-all system compatibility. This system engineering task will be conducted under the direction of the MOL SPO/Aerospace and the resulting work will be periodically reviewed.

3. Prepare Mission Profile.

The Laboratory Vehicle contractor will be responsible for the preparation of a complete mission profile for each flight. This will be based upon contributions from other associates such as from the Titan III agency for the launch portion of the profile and upon the analysis of the Gemini B contractor for the de-orbit and re-entry portions of the profile, etc. The mission profile will include the specification of the time and location of each significant event in its life and a description of the conditions required for events to be initiated. Mission profiles for alternative events and emergency conditions including pre-launch and on-orbit abort will also be prepared.

4. Conduct Launch Trajectory Analysis.

The Launch Vehicle contractor under the direction of the Titan III SPO will conduct analysis of launch trajectories and prepare data showing the pertinent parameters of each portion of the launch and the occurrence of significant events. Nominal trajectories will be analyzed as well as off-nominal trajectories. Such factors as environmental conditions encountered during launch, and launch injection accuracy will be determined.

5. Analyze Launch Abort.

The Gemini B contractor will conduct a complete analysis of the conditions which would exist if an abort or scrub is required during either the terminal countdown, the launch phase, or ascent phase. Various types of malfunctions of the Launch Vehicle will be investigated and the timing of initiation of an abort signal established. For each of the different critical points in the ascent a complete abort sequence will be analyzed from receipt of the initiating signal to retrieval of the flight crew. The time period to be analyzed will start as soon as the flight crew members are placed in the Gemini B and will continue through final injection into orbit.

6. Analyze On-Orbit Abort.

The Laboratory Vehicle contractor will analyze the conditions which will exist if an abort is required during the period when the crew is on orbit and in the laboratory vehicle. The analysis will include detection of conditions requiring abort, the establishment of safe conditions for transfer of the flight crew to the Gemini B from the Laboratory Vehicle, and the timing of donning pressure suits and accomplishing the transfer operation.

7. Analyze De-orbit Operations.

The Gemini B contractor will analyze the operations of the Gemini B capsule and the flight crew necessary for separation from the orbiting vehicle through descent. The operation will include loiter time prior to retrofire,

the alignment and retrofire operation, the reentry maneuver, and parachute descent control. Both programmed and emergency conditions will be considered.

8. Analyze Recovery Operations.

The Gemini B contractor will analyze the operations for recovery of the flight crew following successful reentry into the atmosphere. The operations of the flight crew during the recovery period and the procedures to be followed will be analyzed. The requirements placed on recovery equipment by this operation will be defined. The primary responsibility for the recovery operations will rest with the Recovery Agency (DOD Manager for Manned Space Flight).

9. Analyze Orbital Communications.

The Laboratory Vehicle contractor will be responsible for the integration of the analysis of the communications requirements throughout the systems including voice communications and telemetry. Major requirements and analysis support will be provided to the Laboratory Vehicle contractor by the Flight Operations Agency (SCF).

10. Analyze On-Orbit Data Handling.

The Laboratory Vehicle contractor will conduct an analysis of the handling of data to be telemetered to the ground from the Orbiting Vehicle. This will include format and bandwidth requirements and the duty cycle required of the communications equipment. The analysis will consider as inputs the various items of data from the Gemini B, Laboratory Vehicle, flight crew, etc. The outputs will be the transmitted telemetry signals. The SCF will supply requirements and support in this area.

11. Analyze Ground Data Handling.

The Flight Operations Agency (SCF) will analyze the equipment and techniques required for receipt of data at network stations and the processing

of the data prior to delivery to the users. The data considered will be both real-time data for transmission to (or from) the SCF and data to be stored on tape at the network station for later delivery to the users.

12. Analyze Gemini B Flight Crew Tasks.

The Gemini B contractor will analyze the tasks to be performed by the flight crew while they are in the Gemini vehicle. This will include tasks to be conducted prior to launch, during launch, and following transfer prior to and during reentry. The Gemini B contractor will be responsible for flight crew tasks during any time that the flight crew is contained in equipment provided by that contractor. (Transfer is analyzed as a separate activity.)

13. Analyze Laboratory Vehicle Flight Crew Tasks.

The Laboratory Vehicle contractor will be responsible for the analysis and integration of flight crew tasks while the flight crew is in the Laboratory Vehicle. These tasks will include operation of Laboratory Vehicle and payload equipment, housekeeping tasks, and conduct of flight profile. The payload contractors/agencies will establish the requirements for their equipment operation by the flight crew.

14. Analyze Flight Crew Transfer (factors affecting Gemini B).

The analysis of flight crew transfer operations which affect the Gemini B spacecraft or its equipment will be analyzed by the Gemini B contractor. This includes transfer both to and from the Gemini B spacecraft. Both routine and emergency conditions of transfer will be considered. Sequence of events to be encountered in flight crew transfer will be analyzed as well as procedures to be followed by the flight crew. Hazardous conditions which might arise in the course of transfer will be studied and procedures established to maximize flight crew safety. (Laboratory and Gemini B checkout for readiness for occupancy are analyzed in other activities.)

15. Analyze Flight Crew Transfer (factors affecting Laboratory Vehicle).

The Laboratory Vehicle contractor will analyze those factors involved in the physical transfer of the flight crew which affect the Laboratory Vehicle. The contractor will work closely with the Gemini B contractor in the establishment of procedures compatible with both items of equipment and for maximum flight crew safety. (Laboratory and Gemini B checkout for readiness for occupancy are analyzed in other activities.)

16. Analyze Gemini B Separation.

The Gemini B contractor will analyze the equipment and procedures used for separation of the Gemini from the Laboratory Vehicle. This will include equipment for attachment of the Gemini to the Laboratory Vehicle, the equipment which affects separation, and the means for providing signals to activate and indicate separation.

17. Analyze Launch Vehicle.

The Launch Vehicle system contractor, under the direction of the Titan III SPO, will be responsible for a complete analysis of the Launch Vehicle during the period of launch and during ascent. This will include structures, dynamics, controls, checkout, countdown, guidance, etc. It will include all features of the Launch Vehicle as they affect the MOL Flight Vehicle.

18. Analyze Laboratory Vehicle.

The Laboratory Vehicle contractor will conduct a complete analysis of the operation of the Laboratory Vehicle and its subsystems. This will include analysis of structural integrity during launch and on-orbit as well as analysis of the functioning of subsystems.

19. Analyze Gemini B Spacecraft.

The Gemini B contractor will conduct a complete analysis of the operation and equipment of the Gemini B spacecraft for the MOL mission. This will include structural analysis for conditions during launch, on-orbit, and reentry, as well as analysis of the operation of the subsystems.

20. Analyze Launch Vehicle Induced Environment.

The Launch Vehicle contractor, under the direction of the Titan III SPO, will conduct a complete analysis of the environment which will be imposed upon the Orbiting Vehicle during launch. These parameters will be supplied to the other contractors/agencies as design requirements upon their equipment.

21. Analyze Laboratory Vehicle On-Orbit Checkout.

The establishment of a condition of readiness for occupancy of the Laboratory on-orbit will be analyzed by the Laboratory Vehicle contractor. This will include an itemization of the parameters to be measured and designation of instrumentation to be used for these measurements. It will include analysis of means for the transmitting of information to the flight crew in the Gemini B spacecraft and/or to the ground for analysis and re-transmission. It will include analysis of the effects of equipment failure on the checkout procedures.

22. Analyze Gemini B On-Orbit Checkout.

The Gemini B contractor will analyze the on-orbit checkout of the Gemini B spacecraft prior to transfer of the flight crew from the Laboratory Vehicle. This will include itemization of the parameters to be checked out and analysis of the instrumentation required. Both routine and emergency checkout procedures will be established.

23. Analyze Flight Vehicle Combined Systems Checkout.

The Laboratory Vehicle contractor will analyze the combined systems checkout for the Flight Vehicle prior to preparation for launch. This will include checkout of all Laboratory Vehicle systems, Gemini B systems, Launch Vehicle systems, and any payloads present. Each contractor/agency involved will provide support in analyzing the checkout requirements for his own equipment and the over-all AGE installation and hookup.

24. Analyze Laboratory Vehicle Ground Checkout.

The Laboratory Vehicle contractor will analyze the ground checkout requirements for the Laboratory Vehicle and its subsystems.

25. Analyze Gemini B Ground Checkout.

The Gemini B contractor will analyze the ground checkout requirements for the Gemini B and determine the AGE design for the checkout.

26. Analyze Flight Crew Checkout and Preparation.

The preparation and checkout procedures for the flight crew will be defined by the MOL SPO/Aerospace. Various contingencies, e.g., backup crew, launch holds, etc. will be analyzed. Resources in manpower and facilities will be identified.

27. Analyze Flight Crew Equipment and Supplies Checkout and Preparation.

Procedures for checkout of pressure suits and personal equipment, defining backup and contingency requirements will be established by the Flight Crew Equipment contractors.

28. Analyze Flight Crew Training.

Flight Crew training will include coverage of such items as operation of the Laboratory Vehicle, Gemini B, payload equipment, communications, data transmission, and escape procedures. Training requirements and

support of the use of equipment and simulators will be supplied by equipment contractors but training requirements and procedures are the responsibility of the MOL SPO/Aerospace.

29. Analyze Flight Crew Personal Equipment and Supplies.

The Flight Crew Equipment contractors will be responsible for conducting those analyses necessary to establish the requirements for the flight crew's personal equipment and supplies, e.g., pressure suit, food packaging, clothing, urine sample holders, etc.

30. Analyze Medical Monitoring and Operations.

Analyses necessary to establish the requirements for flight crew physiological and psychological measurements, and for medical monitoring and medical operations in terms of information, number, and types of medical personnel, procedures, training and equipments will be conducted by the MOL SPO/Aerospace.

31. System Engineering Intermediate Integration Tasks.
to
44. The tasks of intermediate integration of system engineering data are assigned by functional area blocks as defined in the top level functional flow diagram in the MOL System Performance/Design Requirements Specification. Each contractor/agency with intermediate integration responsibility will first expand the assigned block to lower level flow diagrams in conjunction with the other affected contributing contractors and agencies. Each contributing contractor/agency will then develop system engineering data for his equipment. The intermediate integrator will collect the data from contributing associates, review it for consistency and integrate the data in the assigned area. The intermediate integrated data package will then be delivered to the system integration contractor (Laboratory Vehicle contractor) for overall integration. Formal reviews of system engineering data will be conducted by MOL SPO/Aerospace at critical points in the analysis and contractor progress in system definition and design will be monitored continually.

45. Post-Flight Analysis of Countdown and Ascent Data.

The Laboratory Vehicle contractor will be responsible for the analysis of data concerned in total countdown and flight vehicle ascent operations.

46. Post-Flight Analysis of Gemini B Data.

The Gemini B contractor will be responsible for analysis of data concerning operations of the Gemini B capsule throughout the duration of a mission.

47. Post-Flight Analysis of Laboratory Vehicle Data.

The Laboratory Vehicle contractor will be responsible for the analysis of data concerning the operation of the Laboratory Vehicle throughout the duration of the mission.

48. Post-Flight Analysis of Flight Crew Performance.

The analysis of performance of the flight crew in the course of a mission is the responsibility of the MOL SPO/Aerospace. Each contractor/agency will analyze the detailed performance of the flight crew in the operation of his equipment and provide data to the SPO for incorporation into an over-all evaluation of flight crew effectiveness.

49. Post-Flight Analysis of Re-entry Data.

The Gemini B contractor will be primarily responsible for the post-flight analysis of re-entry data.

50. Post-Flight Analysis of Mission Control Data.

The Flight Operations Agency (SCF) will analyze the data concerning the mission control performed in the course of a flight. The Laboratory Vehicle, Gemini B, and other contractors/agencies will provide support in this analysis.

51. Post-Flight Analysis of Crew Transfer Data.

The Gemini B contractor will be primarily responsible for the analysis of crew transfer data. This analysis will require the close cooperation and support of the Laboratory Vehicle contractor.

52. Post-Flight Analysis of Bioastronautics Data.

The data concerning measurements of the biomedical functions and the general human performance of the flight crew will be evaluated by the MOL SPO/Aerospace. Support for these analyses will be provided by the Laboratory Vehicle, Gemini B, Flight Crew Equipment contractors, etc.

53. Post-Flight Analysis of Flight Crew Equipment Data.

The Flight Crew Equipment contractors will analyze the data concerning the performance of pressure suit and crew personal equipment.

54. Analyze Launch Facilities, AGE Installation, and Launch Operations.

The Laboratory Vehicle contractor will be responsible for the analysis and planning of the total operations of the MOL Launch Facility, as well as the installation of Flight Vehicle AGE and the conduct of launch operations.

55. Analyze Launch Vehicle and Orbiting Vehicle Separation.

Analysis of separation mechanics and dynamics of the spent booster final stage will be performed by the Launch Vehicle contractor under the direction of the Titan III SPO. This will include determination of timing and events of the separation sequence and establishment of limiting tip-off rates and separation velocities.

56. Analyze Checkout, Countdown, Launch and Ascent.

The Laboratory Vehicle contractor has responsibility for analysis of over-all checkout and countdown procedures, the launch sequence and ascent. This analysis will be integrated from requirements for checkout, countdown, launch and ascent of individual flight items provided by supplying contractors/agencies.

57. Analyze Flight Vehicle Combined System Test.

The requirements for combined system testing of the over-all flight vehicle on the launch pad will be analyzed by the Laboratory Vehicle contractor. This analysis will include integration of the requirements of the individual flight items provided by supplying contractors/agencies.

58. Analyze Bioastronautics Instrumentation and Procedures.

The Laboratory Vehicle contractor has responsibility for the analysis of an integration of the equipment and procedures to be used to monitor the physiological and psychological condition of the flight crew. The requirements for such measurements and monitoring will be provided by the MOL SPO/Aerospace.

59. Analyze Flight Vehicle.

The Launch Vehicle contractor will conduct a complete analysis of the Flight Vehicle during launch and ascent. This will include structures, dynamics, controls, guidance, etc.

60. Post-Flight Analysis of Launch Vehicle Data.

The Launch Vehicle contractor will be responsible for the analysis of data concerning the operation of the Launch Vehicle throughout the countdown and ascent phase.

B. ENGINEERING DESIGN.

1. Laboratory Vehicle.

The Laboratory Vehicle contractor will be responsible for the design and operation of the Laboratory Vehicle including integration of its subsystems and structure.

2. Laboratory Vehicle Communication and Telemetry System.

The Laboratory Vehicle contractor will be responsible for the design of all communication and telemetry system equipment for the Laboratory Vehicle. This will include equipment for telemetry of payload data.

3. Mission Information System.

MOL Communications and Data Processing is accomplished by three systems: the Communications System, the Data Management System, and the Instrumentation and Display System. The Communication System consists of the transmitters, receivers, and antennas associated with prime and backup data and voice transmission. The Data Management System consists of four subsystems: The Command, Data Acquisition, Data Computation and Timing Subsystems. The Command Subsystem consists of the decoder, teleprinter, and controller. The Data Acquisition Subsystem performs the telemetry, signal conditioning, and recording functions. The Data Computation Subsystem includes the airborne data computers and their peripheral equipment, LV and MM data adapter units, computer LV and MM simulators, and LV, MM, and overlap software. The Timing Subsystem includes a time and sync generator and a clock to provide an accurate time source. The Instrumentation and Display System provides the monitor and alarm function and any special sensors and signal conditioning equipment needed for the operating displays. The Laboratory Vehicle contractor is responsible for the design of all the equipment listed above except that labeled Mission Module (MM). The Experiment Integration contractor is responsible for the MM data adapter units, the computer MM simulator and the MM software.

4. Laboratory Vehicle Control Consoles.

The engineering design responsibility for control consoles for Laboratory Vehicle equipment will be the responsibility of the Laboratory Vehicle contractor. Other Orbiting Vehicle equipment contractors/agencies will support these engineering designs and provide interface data to the LV contractor. (See Mission Payload Addendum for Experiment Consoles.)

5. Laboratory Vehicle Power System.

The Laboratory Vehicle contractor will design the Laboratory Vehicle power system to meet all Orbiting Vehicle ascent and on-orbit power requirements including that of Gemini B.

6. Laboratory Vehicle Attachment to Launch Vehicle.

The Laboratory Vehicle contractor will design the attachment and separation fittings between the Laboratory Vehicle and the Launch Vehicle.

7. Gemini B.

8. Flight Crew Transfer Equipment.

The Gemini B contractor will design the internal tunnel to be used in the transfer of the crew from the Gemini B to the Laboratory Vehicle.

9. Gemini B Attachments.

The equipment used for the attachment of the Gemini B spacecraft to the Laboratory Vehicle will be the design responsibility of the Gemini B contractor, together with the devices used for separation of the Gemini B.

10. Pressure Suit and Other Flight Crew Personal Equipment.

The engineering design and development of the pressure suit and other flight crew personal equipment will be the responsibility of the Flight Crew and Equipment contractors.

11. Integrate Orbiting Vehicle Design.

The Laboratory Vehicle contractor will be responsible for the integration of the Orbiting Vehicle design including all equipment forming a portion of the Orbiting Vehicle. The contractor will obtain design information from the contractors/agencies supplying equipment and assure that the overall operation of the Orbiting Vehicle is compatible with the functioning of the other system segments.

12. Titan III Modifications.

The Titan III SPO will be responsible for the design changes required on the Titan III and for the integration of all equipment forming a portion of either the Launch Vehicle or its AGE.

13. Flight Vehicle Structural Integrity.

The Titan III agency has responsibility for determination of the overall structural design integrity of the Flight Vehicle based on structural analyses including contributions from the Laboratory Vehicle and Gemini B contractors. These analyses will be based on loads and trajectory assumptions defined by the Titan III agency and accepted by the other contractors/ agencies.

14. Engineering Design Integration.

The Laboratory Vehicle contractor is responsible for integration of the engineering design of the overall system. This task includes review of performance characteristics (but not the detailed design) of contributed equipment, and verification of interface compatibility between associates.

15. Laboratory Vehicle AGE.

16. Gemini B AGE.

17. Flight Crew Equipment AGE.

18. Orbiting Vehicle Special Tools and Test Equipment (AGE).

The Laboratory Vehicle contractor will design and develop any special tools or test equipment required for assembly, handling, or testing of the complete Orbiting Vehicle. The equipment may be for use at the contractor's facility, for use in transit during shipping, or for use at the launch site.

19. Integrate Orbiting Vehicle AGE Design.

The Laboratory Vehicle contractor will review and integrate the design characteristics of the AGE for all equipment forming a part of the Orbiting Vehicle and assure that the overall AGE provided for the Orbiting Vehicle will function properly as a unit and support all Orbiting Vehicle checkout functions.

20. Titan III AGE Modifications.

21. Recovery Force Retrieval Equipment.

The retrieval equipment used by the recovery force for flight crew and for Gemini B spacecraft retrieval from the water impact location will be designed by the Recovery Agency (DOD Manager) to interface specifications negotiated with the Gemini B contractor.

22. Mission Control Consoles.

All mission control consoles in the Satellite Test Center will be the design responsibility of the Flight Operations Agency (SCF) regardless of which on-orbit equipment they monitor or control. The various associates will establish requirements for the mission control consoles and provide support in their design.

23. Telemetry and Tracking Station Equipment.

24. Mission Simulator.

The Laboratory Vehicle contractor will integrate the design of the procedures trainers which are parts of the Mission Simulator and provide equipment for its operation. Operation and maintenance of the Mission Simulators and integration with the Satellite Control Facility will also be a Laboratory Vehicle contractor responsibility.

25. Laboratory Vehicle Procedures Trainer.

The design of the procedures trainer which forms the Laboratory Vehicle part of the Mission Simulator will be provided by the Laboratory Vehicle contractor.

26. Gemini B Procedures Trainer.

The design of the procedures trainer which forms the Gemini B part of the Mission Simulator will be provided by the Gemini B contractor and will have provisions for integration into the Mission Simulator.

27. Sub-System Trainers - Laboratory Vehicle.

Training aids, as warranted, will be developed by the Laboratory Vehicle contractor for use in the study or demonstration of structure, function, or operation of subsystems of the Laboratory Vehicle.

28. Part Task Trainers - Laboratory Vehicle.

Training devices, as required, shall be developed by the Laboratory Vehicle contractor for use in intensive practice of a selected function or functions of the Laboratory Vehicle operation, where a specific critical skill or skills are required.

29. Sub-System Trainers - Gemini B.

Training aids, as warranted, will be developed by the Gemini B contractor for use in the study or demonstration of structure, function or operation of subsystems of the Gemini B.

30. Part Task Trainers - Gemini B.

Training devices, as required, shall be developed by the Gemini B contractor for use in intensive practice of a selected function or functions of the Gemini B operation, where a specific critical skill or skills are required.

31. Bioastronautical Instrumentation.

Bioastronautical instrumentation, as needed to meet the requirements directed by the MOL SPO/Aerospace for physiological or psychological measurements on the flight crew members, shall be designed, developed, and integrated into the Orbiting Vehicle by the Laboratory Vehicle contractor.

C. FABRICATION.

1. Laboratory Vehicle
2. Laboratory Vehicle Communication and Telemetry System
3. MOL Communications and Data Processing
4. Laboratory Vehicle Control Consoles
5. Flight Crew Accommodations - Laboratory Vehicle
6. Orbiting Vehicle Power Supply
7. Gemini B
8. Flight Crew Transfer Equipment
9. Gemini B Attachments
10. Flight Crew Accommodations - Gemini B
11. Pressure Suit and Other Flight Crew Personal Equipment
12. Titan III Modifications
13. Laboratory Vehicle AGE
14. Gemini B AGE
15. Orbiting Vehicle Special Tools and Test Equipment (AGE)
16. Flight Crew Equipment AGE
17. Titan III AGE Modifications
18. Mission Control Consoles
19. Telemetry and Tracking Station Equipment

20. Laboratory Vehicle Procedures Trainer

21. Gemini B Procedures Trainer

22. Mission Simulator

23. Sub-System Trainers - Laboratory Vehicle

24. Part Task Trainers - Laboratory Vehicle

25. Sub-System Trainers - Gemini B

26. Part Task Trainers - Gemini B

D. TEST AND INTEGRATION.

1. Conduct Laboratory Vehicle Development, Qualification and Acceptance Tests.

Development tests will be conducted on components, subsystems and the complete Laboratory Vehicle. Tests will include environmental simulation, orbit duration, structural, electromagnetic interference and equipment performance tests. Tests will be conducted principally at the contractor's facility.

2. Conduct Gemini B Development, Qualification and Acceptance Tests.

Development tests will be conducted on the Gemini B as required to test and qualify modifications from the NASA Gemini. Acceptance tests will be conducted at the contractor's facility prior to shipment to the Laboratory Vehicle contractor.

3. Integrate Orbiting Vehicle Development Model.

The Orbiting Vehicle development model will be assembled by the Laboratory Vehicle contractor at his facility from equipment provided by contributing associates. System tests will be performed on the development model.

4. Integrate Orbiting Vehicle.

The Laboratory Vehicle contractor will integrate the parts of the Orbiting Vehicle and conduct system tests to assure compatible system operation. Tests will include developmental tests of the assembled Orbiting Vehicle at the Laboratory Vehicle contractor's plant and acceptance and inspection tests of the Orbiting Vehicle at the launch site. The contractor will also be responsible for compatibility tests at the launch pad after the Orbiting Vehicle is assembled on the Launch Vehicle.

5. Conduct Orbiting Vehicle Environmental Tests.

Those portions of the Orbiting Vehicle which have an interface which might be affected by environmental exposure shall be subjected to

such environmental simulation tests at the Laboratory Vehicle contractor's plant.

6. Assure Orbiting Vehicle Compatibility with System.

The Laboratory Vehicle contractor will be responsible for tests to determine that the communications equipment aboard the Orbiting Vehicle is compatible with the communications and control equipment on the ground. This includes both voice communications and telemetry. This task will include assurance that the data format of telemetry signals is compatible with the ground receiving and data processing equipment. These tests will be performed in close coordination with the Flight Operations Agency (SCF).

7. Conduct Orbiting Vehicle Development System Test and Factory Acceptance Tests.

Laboratory Vehicle contractor will be responsible for system testing of the Orbiting Vehicle and for factory acceptance test of the Orbiting Vehicle. The other contractors contributing equipment to this vehicle will contribute test procedures and test personnel to the operation. Each contractor will remain responsible for the proper functioning to specification values of equipment supplied as part of his responsibility.

8. Conduct Titan III Assembly and Acceptance Tests.

The assembly of the Titan III vehicle and acceptance tests of the hardware will be conducted under the direction of the Titan III SPO.

9. Assemble Orbiting Vehicle with Launch Vehicle.

This responsibility includes the physical handling of the Orbiting Vehicle and its attachment to the Launch Vehicle and its AGE. This function is part of the ground system operations responsibility of the Titan III agency.

10. Integrate Flight Vehicle AGE.

The Laboratory Vehicle contractor has the responsibility for integration of the complete AGE design for the MOL system.

The responsibility will include review of the AGE designs for the various portions of the Flight Vehicle and assure that the AGE is compatible with the MOL launch facility and with the Launch Vehicle AGE.

11. Integrate Orbiting Vehicle AGE with Launch Facility.

It is the responsibility of the Titan III SPO ground systems contractor to install Orbiting Vehicle AGE in the ILC facility and to assure the proper attachment and operation of the AGE. The internal operation of other contractors' AGE and the checkout functions of flight equipment will be the responsibility of the supplying associate.

12. Integrate Mission Simulator.

The equipment which comprises the Mission Simulator will be integrated by the Laboratory Vehicle contractor working with the associates supplying portions of the simulator.

13. Integrate Mission Simulator with SCF.

The Mission Simulator will be operated in conjunction with the Satellite Control Facility. It will be integrated with the SCF by the Laboratory Vehicle contractor.

14. Integrate Flight Operations System.

The mission control system, tracking network stations and communications links between them will be integrated and acceptance tested by the Flight Operation Agency (SCF).

15. Gather Baseline Data on Flight Crew Performance.

The MOL SPO/Aerospace will be responsible for testing to determine flight crew performance in operating Orbiting Vehicle equipment on the ground in order to form a performance baseline for comparison with flight crew performance in orbit.

E. TEST OPERATIONS.

1. Prepare Flight Test Plan.

The Flight Test Plan covering ascent, orbital and reentry retrieval operations will be prepared by the Laboratory Vehicle contractor, incorporating contributions from other associate contractors and participating government agencies under the overall guidance and direction of the MOL SPO/ Aerospace.

2. Prepare Range Safety Plan - (NRD).

3. Prepare Program Support Requirements Document.

The Laboratory Vehicle contractor will be responsible for the preparation, assembly, and integration of the Program Support Requirements Document with contributions from the other contractors/agencies which will be assembled and integrated by the Laboratory Vehicle contractor.

4. Prepare Data Acquisition Plan.

The Flight Operations Agency will prepare a plan for acquisition of data from tracking and communications stations, and for processing the data, and transmission to the Satellite Control Facility. The plan will reflect the requirements for data acquisition of all contractors or agencies with ascent or orbital requirements.

5. Prepare Recovery Requirements Document.

The Gemini B contractor will prepare a document defining the requirements for spacecraft and flight crew recovery.

6. Prepare Recovery Plan.

The Recovery Agency will prepare a plan to meet the requirements defined in the Recovery Requirements Document.

7. Prepare Gemini B Checkout Procedures.

The procedures to be followed for checkout prior to launch of the Gemini B spacecraft will be prepared by the Gemini B contractor. They will be prepared to be carried out by the Gemini B contractor personnel under the direction of the Laboratory Vehicle contractor.

8. Prepare Orbiting Vehicle Checkout Procedures.

9. Prepare Ascent Guidance Equations.

The Titan III agency will be responsible for preparation of ascent guidance equations for both the Launch Vehicle guidance system and the Gemini B back up guidance system. Mechanization of the guidance equations in the computers will be the responsibility of the computer manufacturers.

10. Prepare Re-entry Guidance Equations.

11. Prepare Pre-Launch and Ascent Abort Procedures.

The Gemini B contractor will prepare the procedures to be followed by the flight crew in the event of an abort during the pre-launch or ascent phases. These will include consideration of aborts arising directly from the operation of the malfunction detection system, those which are detected by the flight crew and initiated by them, and those detected on the ground and communicated to the flight crew.

12. Integrate Orbital Abort Procedures.

The Laboratory Vehicle contractor will prepare procedures for orbital abort when the flight crew is in the Laboratory Vehicle. This will include integration of contributions from the Gemini B contractor, the Flight Crew Equipment contractors, the Flight Operations Agency, and the Recovery Agency.

13. Prepare Countdown Procedures.

Procedures for the terminal countdown will be prepared by the Laboratory Vehicle Contractor. Requirements established by the Titan III and other involved associate contractors/agencies will be integrated into these procedures.

14. Integrate Flight Crew Orbital Procedures.

The Laboratory Vehicle contractor will act as an integrating agent for establishment of the flight crew orbital procedures. This will include contributions from all contractors and agencies involved in the operations of the Orbiting Vehicle. It will also include the contributions and directions received from the MOL SPO/Aerospace.

15. Prepare Laboratory Vehicle Orbital Procedures.

The Laboratory Vehicle contractor will prepare procedures to be followed in the operation of the Laboratory Vehicle while on orbit. This will include both normal and emergency procedures.

16. Prepare Laboratory Vehicle On-Orbit Checkout Procedures.

The Laboratory Vehicle contractor will prepare the procedures required for checkout of the Laboratory from the Gemini B capsule prior to flight crew transfer. This may include operations within the Gemini B capsule and receipt by telemetry of ground checkout.

17. Prepare Gemini B On-Orbit Checkout Procedures.

The Gemini B contractor will prepare procedures for checkout of the Gemini B capsule from the Laboratory Vehicle prior to flight crew transfer. This may include both operations within the Laboratory Vehicle and receipt by telemetry of ground checkout of the Gemini B.

18. Prepare Flight Crew De-Orbit and Re-entry Procedures.

The Gemini B contractor will prepare flight crew procedures for orientation of the spacecraft, the de-orbit retrorocket firing, and reentry following mission termination. These procedures will include both normal conditions and emergency conditions.

19. Direct and Coordinate Flight Crew Training.

The MOL SPO will control, direct, and coordinate all aspects of crew selection, acquisition, logistics, and training. MOL flight crew training will be over an extended period, involving support by many agencies and contractors, and closely coordinated with the program schedule; therefore, the flight crew will become an integral part of the SPO and control of supporting training agencies will necessarily reside in the SPO.

20. Operate Launch Facility.

For MOL operation, the MOL launch facility will be operated under the direction of the Launch Operations Agency (ATW).

21. Assemble and Checkout Launch Vehicle on the Launch Pad.

The Titan III agency will be responsible for assembly and checkout of the Launch Vehicle on the launch pad.

22. Checkout Orbiting Vehicle at Launch Site.

The Laboratory Vehicle contractor will be responsible for overall checkout of the Orbiting Vehicle. The detailed checkout of certain of the Orbiting Vehicle subsystems will be conducted by personnel of the contractor manufacturing the subsystem.

23. Checkout of Gemini B at Launch Site.

The Gemini B contractor will be responsible for the detailed checkout of the Gemini B spacecraft under the direction of the Laboratory Vehicle contractor at the launch site.

24. Checkout Flight Crew Equipment.

The checkout of the pressure suit and other personal crew equipment will be the responsibility of the Flight Crew Equipment contractors.

25. Checkout Flight Crew.

The medical-psychological checkout and evaluation of the selected flight crew during checkout and launch operations will be the responsibility of the MOL SPO.

26. Conduct Final Flight Vehicle Checkout at Launch Pad.

The final checkout of the assembled Flight Vehicle will be conducted under the supervision of the Launch Operations Agency (ATW) assisted by the Laboratory Vehicle contractor at the launch pad. Each associate contractor/agency will furnish personnel and equipment for checkout of his equipment during the final check.

27. Conduct Terminal Countdown - Launch Operations Agency (ATW).

28. Direct and Control Mission Operations.

Operational control of the missions will be the responsibility of a test conductor within the MOL SPO. All contractors and agencies participating in the operations will support the mission control operation.

29. Operate Mission Control.

The operation and manning of mission control consoles and instrumentation will be the responsibility of the Flight Operations Agency (SCF). Each contractor or agency participating in the operations will furnish appropriate personnel to support this activity.

30. Conduct Range Safety Operations.

Monitoring of ascent trajectories, tracking and computation of IIPs and range safety decisions will be the responsibility of the Test Support agency.

31. Conduct Orbital Data Acquisition by Tracking and Telemetry - (SCF).

32. Monitor Flight Crew Condition.

The medical-psychological condition of the flight crew will be monitored by a medical team representing the MOL SPO during the entire mission. Support will be given for this task by the Laboratory Vehicle, Gemini B, and Flight Crew Equipment contractors.

33. Conduct Recovery Operations.

34. Format Data for Users.

The Flight Operations Agency will be responsible for formatting data received by telemetry from the Orbiting Vehicle and providing the data to the using agency or contractor in their required format.

35. Operate Mission Simulator.

The Mission Simulator will be operated by the Laboratory Vehicle contractor under MOL SPO direction: to train flight crew members; to exercise the Satellite Test Center; and to develop operating procedures.

F. FACILITIES.

1. Prepare Facility Criteria for Initial Launch Complex.

2. Prepare Facility Criteria for Orbiting Vehicle Assembly Building.

3. Prepare Facility Criteria for Operational Training and Evaluation Facility.

4. Prepare Facility Criteria for Operational Readiness Unit.

5. Prepare Facility Criteria for Satellite Test Center.

6. Prepare Facility Criteria for Space Systems Training Facility Addition at EAFB.

7. Prepare Facility Criteria for Engineering and Operations Building.

8. Prepare Facility Criteria for Hazardous Handling Facility.

9. Prepare Facility Criteria for Pyrotechnic Storage Facility.

10. Design and construct Initial Launch Complex.

11. Design and modify Orbiting Vehicle Assembly Building.

12. Design and construct Operational Training and Evaluation Building.

13. Design and construct Operational Readiness Unit.

14. Design and modify Satellite Test Center.

15. Design and construct Space Systems Training Facility addition at EAFB.

16. Design and construct Engineering and Operations Building.

17. Design and modify Hazardous Handling Facility.

18. Design and modify Pyrotechnic Storage Facility.

4. Analyze Mission Module - The mission module contractor will conduct a complete analysis of the operation of those portions of the mission module and mission payload for which he is responsible to include

4.1 Analyze Optical System - The Optical System Contractor will conduct a complete analysis of the operation of those portions of the optical sensor for which he is responsible to include

SYSTEMS ENGINEERING - Part A

14.1 GE supported by EKC shall analyze the simulation requirements to perform the reconnaissance mission. GE and EKC shall develop a simulation program divided into three phases; engineering development, mission optimization, reconnaissance crew training. GE shall have primary responsibility for this simulation program. EKC shall furnish equipment and support consistent with their role as mission payload contractor. See letter dtd 8 Mar 66, "Roles and Responsibilities for MOL/DORIAN Mission Payload Consoles", for more detailed responsibilities.

17.1 Prepare Preliminary Reconnaissance Mission Profile - GE with the support of EKC and in consideration of the optical sensor requirements will study, analyze, and prepare preliminary mission profiles for the reconnaissance portion of the MOL mission.

21. Analyze Mission Module Ground Checkout - GE will analyze ground checkout requirements of the Mission Module for their areas of checkout and test responsible in support of the test flow as defined in TWX [redacted] 0191 dtd 19 Feb 66.

21.1 Analyze Optical System Ground Checkout - EKC will analyze gound checkout requirements of the Mission Payload for their areas of checkout and test responsible in support of the test flow as defined in TWX [redacted] 0191 dtd 19 Feb 66.

36. Analyze Mission Module On-Orbit Checkout - GE will analyze the on-orbit checkout requirements for those equipments of the mission payload system segment for which they are responsible.

36.1 Analyze Optical System On-Orbit Checkout - EK will analyze the on-orbit checkout requirements of those equipments of the mission payload system segment for which they are responsible.

38.1 Analyze Flight Crew Optical Tasks - EKC will analyze those tasks required of the flight crew to checkout, operate and maintain the optical system.

39.1 Analyze On-Orbit Mission Payload Communications and Data Return - GE will analyze data return systems to include data capsule and film readout system with associated transmission link and encryption equipments.

39.2 Analyze On-Orbit Mission Payload Data Processing - EKC will analyze on-board film processing system.

40.1 Analyze Ground Data Processing - GE will analyse ground data processing requirements of the film readout link.

41.1 Analyze Mission Module Software - GE will analyze MPSS software requirements in accordance with letter dated 9 Dec 65, "MOL System Data Processing".

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SPECIAL HANDLING

SECRET

48.1 Analyze Recovery Operations - GE will analyze the requirements for recovery of data capsules.

SPECIAL HANDLING

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53. Post Flight Analysis of the Mission Module Data - GE will be responsible for the analysis of data concerning the operation throughout the duration of the mission of the equipments of the Mission Payload System Segment for which they are responsible.

53.1 Post Flight Analysis of the Optical System Data - EKC will be responsible for the analysis of data concerning the operation throughout the duration of the mission of the equipments of the Optical System Data for which they are responsible.

ENGINEERING

3. Mission Module Consoles and Displays - The console and display roles and responsibilities are established in [redacted] letter "Roles and Responsibilities for MOL Mission Payload Consoles and Displays" dated 8 March 66.

4.1 Communications and Data Return - GE will be responsible for the engineering design of the mission data return systems to include the film scanner, film viewer and the incorporation of data return capsules.

4.2 Data Processing - EKC will be responsible for the design of on-board film processing equipment.

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10. Mission Module Structure - GE shall be responsible for the design of the mission module structure in accordance with [redacted] TWX 0191 dtd 19 Feb 66. A more detailed set of responsibilities will be published shortly.

11. Mission Module - The mission module equipments shall be designed in accordance with the roles and responsibilities of [redacted] TWX 0191 dtd 19 Feb 66.

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22.1 Mission Module AGE - GE and EKC shall each be responsible for the design of AGE required for their respective equipments.

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33.1 Procedures Trainers - GE and EKC shall each be responsible for the procedures trainers support of their respective equipments.

33.2 Mission Development Simulator - GE shall be responsible for the design of the mission development simulator with support from EKC.

34.1 Part Task Trainers - GE and EKC shall each be responsible for the part task trainers support of their respective equipments.

34.2 Subsystem Trainers - GE and EKC shall each be responsible for the subsystem trainers support of their respective equipments.

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~~SECRET~~ SPECIAL HANDLING

8 March 1966

Subject: Roles and Responsibilities for MOL/DORIAN Mission Payload Consoles

To: Eastman Kodak Company
(Attn: F.C.E. Oder)

Douglas Aircraft Company
(Attn: R. L. Johnson)

General Electric Company
(Attn: E. A. Miller)

1. The attached directive delineates associate contractor roles and responsibilities for the MOL Mission Payload Consoles and Displays. This directive is consistent with the Government Plan for Program Management for MOL and with your Statement of Work for the Contract Definition Phase.

2. Your Engineering Definition Phase (EDP) proposals shall be consistent with this directive. This directive is considered within the requirements of your present contracts, and should have no effect on the established schedules.

3. Douglas and General Electric are to furnish a "black" and "white" proposal for their EDP roles and responsibilities. The requirements contained in the attached directive shall be separated into "black" and "white" proposals by Douglas and General Electric in accordance with the guidelines now being discussed and developed with you.

JOHN L. MARTIN, JR.
Brig General, USAF
Director, Special Projects, OSAF

RUSSELL A. BERG
Brig General, USAF
Deputy Director for MOL

1 Atch
Roles & Responsibilities
for MOL Mission Payload
Consoles & Displays

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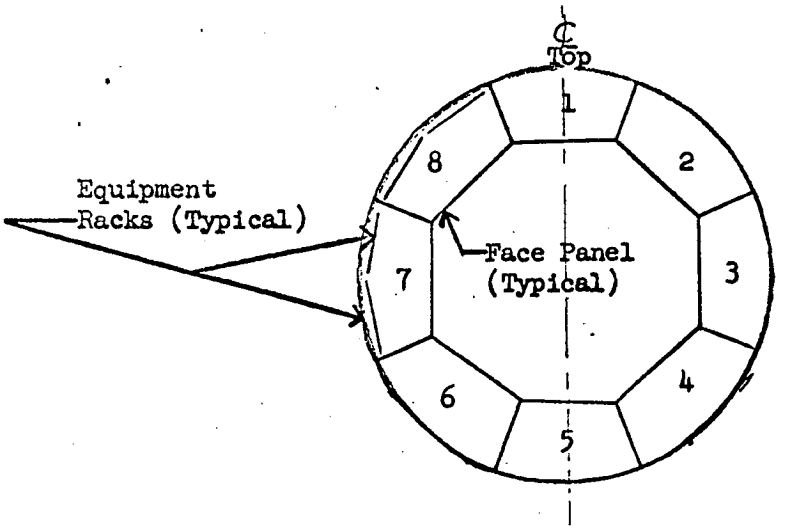
APR - 8 1966

~~SECRET~~ SPECIAL HANDLING

ROLES AND RESPONSIBILITIES FOR MOL MISSION PAYLOAD
CONSOLES AND DISPLAYS

1. The purpose of this directive is to delineate roles and responsibilities for the mission payload equipments and consoles located in the MOL laboratory.

2. The general laboratory arrangement for consoles and displays will be approximately as shown below:



Laboratory Cross Section
Looking AFT

Operating controls, displays, and related "black box" equipments will be mounted in or upon "bays" as shown.

3. To ensure that all display panels will have uniform appearance, arrangement philosophy, etc., DAC will be custodian of interface and specifications for console display and control equipment standards, shape, decor, lighting, color, safety, wiring runs, EMC, etc. GE will participate in the generation of these specifications. After approval by all affected contractors and the MOL/SPO, specifications will apply to all laboratory mounted displays.

4. Crew station integration of mission and vehicle operation functions will be accomplished by appropriate arrangement of mission and vehicle control panel modules. To facilitate development and coordination, a full laboratory arrangement mockup will be maintained at DAC. The GE engineering development simulator shall include suitable mockups of vehicle operating controls and displays, and interior arrangement required to support GE design and development of mission console arrangements and payload equipments. These areas shall be maintained identical to the DAC laboratory mockup.

Encl 1
P-1885-0
4A

5. Subject to normal make-or-buy procedures and approvals, equipment will be furnished by GE, EK, and DAC as outlined below:

Equipment or Loc.	GE to furnish & GE receiving inspection at DAC	EK Furnish		DAC Furnish
		GE	EK Receiving at DAC	
R/V (To be determined when R/V selected)				
R/V Tube	Ejection Mech., Supports, Operating Controls			Barrel & Air Lock including Seals & Hatches & Structural Attachment
Acquisition Telescopes & Links to Displays	X			Design Approval of LAB Pressure Seals
Main Optics Link to Eyepieces			X	Design Approval of LAB Pressure Seals
Mission Payload Control Wiring	X	Rqmts and/ or cabling for optical sensor components		Design Approval of LAB Pressure Seals
Bay 1		(Camera for Systems Test Return to EK)	Cameras Loopers Film Reels Film Transport	Face Panels * ⊛
Bays 2 & 8	Face Panels * ⊛ o Equipment Racks Cold Plates	(Rqmts for Instruments & Controls)		Delivery Fixtures Power Connectors Cold Plate Connectors
Bay 3 or equivalent volume	Readout Face Panel *, Equipment Racks, Cold Plate	Processor Face Panel*, Equipment Racks		
Bays 4,5,6,7				X

5. (continued)

Equipment or Loc.	GE to furnish & GE receiving inspection at DAC	EK Furnish GE	EK Furnish EK Receiving at DAC	DAC Furnish
Crew Restraints	(GE Concurrence)			X
Mission Spares & Storage	(GE Rqmts)	(EK Rqmt)		X

Notes: * Includes all controls, switches, and displays.
⊛ May include modules furnished by another contractor.
X Indicates contractor furnishes entire item.
o Cue material will be furnished GFP at VAFB.

6. Installation and checkout of equipment will be as follows:

a. GE will receive and inspect GE-furnished modules and components at DAC.

b. EK will receive, inspect and install cameras, film transports and EK-furnished optical elements in the laboratory. This will be reviewed when detail design of EK equipment is available.

c. DAC will install all other modules and components supplied by GE and EK. Installation will be monitored by GE, and where appropriate EK, in accordance with procedures furnished by GE and EK.

d. Functional checkout of installed systems will be accomplished by GE (or EK) with DAC monitoring.

e. GE will perform integrated mission payload tests supported by EK and monitored by DAC.

f. Overall mission/vehicles system test will be conducted by DAC and monitored by GE and EK.

7. Removals and replacements for equipment modification, maintenance, or repair will be as follows:

a. EK will remove and replace equipments outlined in 6.b.

b. DAC will remove and replace all other equipments in modules designed by the delivering contractors. After assembly of the aft bulkhead to the laboratory, modules must be removed through a 32-inch diameter access hatch.

c. All operations will be monitored by affected contractors.

~~SECRET~~ SPECIAL HANDLING

8 March 1966

Subject: Roles and Responsibilities for MOL/DORIAN Mission Payload Consoles

To: Eastman Kodak Company
(Attn: F.C.E. Oder)

Douglas Aircraft Company
(Attn: R. L. Johnson)

General Electric Company
(Attn: E. A. Miller)

1. The attached directive delineates associate contractor roles and responsibilities for the MOL Mission Payload Consoles and Displays. This directive is consistent with the Government Plan for Program Management for MOL and with your Statement of Work for the Contract Definition Phase.

2. Your Engineering Definition Phase (EDP) proposals shall be consistent with this directive. This directive is considered within the requirements of your present contracts, and should have no effect on the established schedules.

3. Douglas and General Electric are to furnish a "black" and "white" proposal for their EDP roles and responsibilities. The requirements contained in the attached directive shall be separated into "black" and "white" proposals by Douglas and General Electric in accordance with the guidelines now being discussed and developed with you.

JOHN L. MARTIN, JR.
Brig General, USAF
Director, Special Projects, OSAF

RUSSELL A. BERG
Brig General, USAF
Deputy Director for MOL

1 Atch
Roles & Responsibilities
for MOL Mission Payload
Consoles & Displays

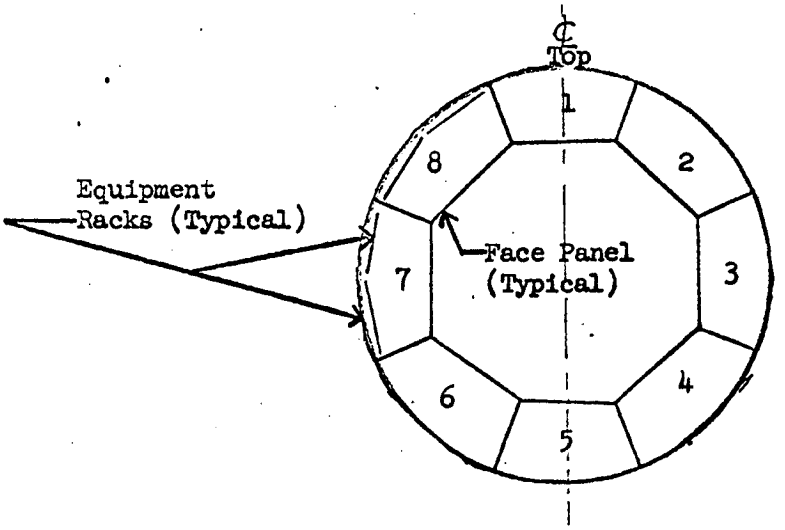
1-1885-0
cy 46

~~SECRET~~ SPECIAL HANDLING APR - 8 1966

ROLES AND RESPONSIBILITIES FOR MOL MISSION PAYLOAD
CONSOLES AND DISPLAYS

1. The purpose of this directive is to delineate roles and responsibilities for the mission payload equipments and consoles located in the MOL laboratory.

2. The general laboratory arrangement for consoles and displays will be approximately as shown below:



Laboratory Cross Section
Looking AFT

Operating controls, displays, and related "black box" equipments will be mounted in or upon "bays" as shown.

3. To ensure that all display panels will have uniform appearance, arrangement philosophy, etc., DAC will be custodian of interface and specifications for console display and control equipment standards, shape, decor, lighting, color, safety, wiring runs, EMC, etc. GE will participate in the generation of these specifications. After approval by all affected contractors and the MOL/SPO, specifications will apply to all laboratory mounted displays.

4. Crew station integration of mission and vehicle operation functions will be accomplished by appropriate arrangement of mission and vehicle control panel modules. To facilitate development and coordination, a full laboratory arrangement mockup will be maintained at DAC. The GE engineering development simulator shall include suitable mockups of vehicle operating controls and displays, and interior arrangement required to support GE design and development of mission console arrangements and payload equipments. These areas shall be maintained identical to the DAC laboratory mockup.

5. Subject to normal make-or-buy procedures and approvals, equipment will be furnished by GE, EK, and DAC as outlined below:

Equipment or Loc.	GE to furnish & GE receiving inspection at DAC	EK Furnish		DAC Furnish
		GE	EK Receiving at DAC	
R/V (To be determined when R/V selected)				
R/V Tube	Ejection Mech., Supports, Operating Controls			Barrel & Air Lock including Seals & Hatches & Structural Attachment
Acquisition Telescopes & Links to Displays	X			Design Approval of LAB Pressure Seals
Main Optics Link to Eyepieces			X	Design Approval of LAB Pressure Seals
Mission Payload Control Wiring	X	Rqmts and/ or cabling for optical sensor components		Design Approval of LAB Pressure Seals
Bay 1		(Camera for Systems Test Return to EK)	Cameras Loopers Film Reels Film Transport	Face Panels * ⊛
Bays 2 & 8	Face Panels * ⊛ o Equipment Racks Cold Plates	(Rqmts for Instruments & Controls)		Delivery Fixtures Power Connectors Cold Plate Connectors
Bay 3 or equivalent volume	Readout Face Panel *, Equipment Racks, Cold Plate	Processor Face Panel*, Equipment Racks		
Bays 4,5,6,7				X

5. (continued)

Equipment or Loc.	GE to furnish & GE receiving inspection at DAC	EK Furnish GE	EK Furnish EK Receiving at DAC	DAC Furnish
Crew Restraints	(GE Concurrence)			X
Mission Spares & Storage	(GE Rqmts)	(EK Rqmt)		X

Notes: * Includes all controls, switches, and displays.
⊛ May include modules furnished by another contractor.
X Indicates contractor furnishes entire item.
o Cue material will be furnished GFP at VAFB.

6. Installation and checkout of equipment will be as follows:

a. GE will receive and inspect GE-furnished modules and components at DAC.

b. EK will receive, inspect and install cameras, film transports and EK-furnished optical elements in the laboratory. This will be reviewed when detail design of EK equipment is available.

c. DAC will install all other modules and components supplied by GE and EK. Installation will be monitored by GE, and where appropriate EK, in accordance with procedures furnished by GE and EK.

d. Functional checkout of installed systems will be accomplished by GE (or EK) with DAC monitoring.

e. GE will perform integrated mission payload tests supported by EK and monitored by DAC.

f. Overall mission/vehicles system test will be conducted by DAC and monitored by GE and EK.

7. Removals and replacements for equipment modification, maintenance, or repair will be as follows:

a. EK will remove and replace equipments outlined in 6.b.

b. DAC will remove and replace all other equipments in modules designed by the delivering contractors. After assembly of the aft bulkhead to the laboratory, modules must be removed through a 32-inch diameter access hatch.

c. All operations will be monitored by affected contractors.

~~SECRET~~

Strong

SPECIAL HANDLING

To: Eastman Kodak Company
Attn: J. Sewell

19 MAY 1966

General Electric Company
Attn: E. A. Miller

Douglas Aircraft Company
Attn: R. L. Johnson

Subject: Roles and Responsibilities for MOL Mission Payload System Data Return Capsules (Manned-Automatic Configuration Only)

References:
a) "Roles and Responsibilities for MOL/Dorian Mission Payload Consoles." To: F. Oder/R. Johnson/ E. Miller From: Brig. Generals J. L. Martin, Jr./ R. A. Berg; 8 March 1966

b) Reference to 9 and 10 May letters from Gen. Berg. "Amendment to Request for Proposal" to GE and DAC.

The attached copy of roles and responsibilities for MOL Mission Payload System Data Return Capsule hardware/functions is forwarded for your information and use in preparing your June 6 revised Phase II Proposal (Reference b).

Brig. Gen. John L. Martin, Jr.
Director of Special Projects

Brig. Gen. Russell A. Berg
Deputy Director, MOL

Attachment: Roles and Responsibilities for MOL Mission Payload System Data Return Capsules (Cassettes)

P-21241
Cy #4

~~SECRET~~

SPECIAL HANDLING

MAY 24 1966

~~SECRET~~

ROLES AND RESPONSIBILITIES FOR MOL

MISSION PAYLOAD SYSTEM DATA RETURN CAPSULES(CASSETTES)

(MANNED-AUTOMATIC CONFIGURATION ONLY)

Reference: "Roles and Responsibilities for MOL/Dorian Mission Payload Consoles." To: F. Oder/R. Johnson/E. Miller From: Brig. Generals J. L. Martin, Jr./R. A. Berg; 8 March 1966

1. The purpose of this letter is to delineate certain roles and responsibilities for the MOL Mission Payload System Data Return Capsules (DRC) hardware/functions for which responsibility has not been established to date.

   Additional roles and responsibilities applicable to installation of the DRC's in the Laboratory Module are covered in the reference (e.g. electrical harnesses and power distribution, system test and support).

2. The DRC baseline and breakdown is as follows:

   a. Four (4) DRC's with flotation capability will be utilized to return 240 pounds of film and cues* in the Gemini B after mission completion. Three (3) of the DRC's (primary DRC's) will be takeup cassettes with a capability of 60 pounds each of unprocessed primary record. The fourth DRC (secondary DRC) will store canisters containing 60 pounds of secondary and terrain record and cues. The primary DRC's shall be interchangeable with respect to installation in the Laboratory Module and Gemini B.

   b. No DRC's will be on board the Gemini B during launch. The empty primary DRC's and the secondary DRC (containing loaded secondary film canisters) will be stored in the Laboratory Module during launch. Transfer of DRC's on orbit from the Laboratory Module to the Gemini B shall be via the present crew transfer methods. The DRC's will be set up by the crew on orbit for photographic operations after completion of primary record loading of the Mark V Data Re-entry Vehicle(s). One intermediate return to the Gemini B during the 30 day mission shall be permitted for the partial return of loaded DRC's. This shall be performed within current Laboratory Module/Gemini B capabilities (crew transfer, ECS, etc.).

P-31341 Art 1 4/4

* The cues may be carried by the crew in a belt around their waist during launch and re-entry if deemed necessary, because of security considerations, e.g. abort conditions.

~~CONTROL~~ SPECIAL HANDLING

3. The following hardware/software items are delineated:

a. Data Return Capsules (Cassettes)

Eastman Kodak Company (EK) will be responsible for: (a) design and fabrication of the DRC's and film canisters, and (b) the design and fabrication of the AGE and DRC training simulators. EK (with GE cover) also will monitor DRC simulator installation in the Gemini B during fit checks.

General Electric Company (GE) as Mission Payload System Integrating Contractor, will be responsible for integration of the DRC's with the mission payload and Gemini B. GE also will be responsible for the generation of interface drawings and specifications. Additional GE responsibility will include furnishing EK with Gemini B and Laboratory Module environmental criteria.

b. DRC Laboratory Module Storage and Camera Assembly

Douglas Aircraft Company (DAC) as Laboratory Module Contractor, will provide the space and support structure for storage of the DRC's during powered flight and on-orbit. DAC also will be responsible for furnishing GE the Laboratory Module environmental criteria.

EK will design and furnish the DRC support brackets required for assembly to the camera.

c. DRC Gemini B Storage and Return

McDonnell Aircraft Company (MAC), as Gemini B Contractor will be responsible for, and provide the space and support structure for Gemini B storage of the DRC's on-orbit (see paragraph 2. b) through re-entry and recovery; including necessary Gemini B modifications required to install the DRC's. MAC also will be responsible for furnishing GE the Gemini B environmental criteria.

4. Factory-To-Pad-Flow

The principal features of the factory-to-pad flow affecting the DRC integration and test functions are as follows:

a. DRC's

The DRC's are shipped to DAC for installation in the Laboratory Module. Capability shall exist to fit check the DRC flight articles in the Gemini B at the launch complex.

b. DRC Canisters

The DRC canisters (including film) are shipped to DAC from EK for installation in the secondary DRC and storage in the Laboratory Module.

c. DRC AGE

DRC mechanical AGE (as required) are shipped to MAC (through GE) and VAFB/WTR from EK for Gemini B and Laboratory Module DRC handling and installation. Mechanical and electrical AGE are shipped to DAC from EK for Laboratory Module DRC, handling, installation, and system test support.

d. DRC Volume/Shape/Mass Simulators

DRC Volume/Shape/Mass attachment simulators are shipped to MAC (through GE) and DAC from EK for crew training; and Gemini B and Laboratory Module installation, fit, alignment and weight and balance checks.

SPECIAL HANDLING

DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045

SECRET

REPLY TO
ATTN OF: SAFSI-4

19 APR 1966

SUBJECT: Tabular Listing of Current Pages & Master Record of Changes to the Government Plan, SSMD-77

TO:

1. Attached please find a Tabular Listing of Current Pages of the Government Plan (MOL) SSMD-77 and a copy of the Master Record of Changes.

2. Addressees are requested to review their copies of the Government Plan and advise Program Control (SAFSL-4B, Maj Winston) of any discrepancies.

for Maj USAF

MARCEL LIND, Col, USAF
Chief, Program Control Division
MOL Systems Program Office

2 Atch
1. Tabular Listing of Current Pages to Gov't Plan
2. Master Record of Changes

P-00706
Cy #1

SECRET

SPECIAL HANDLING

JUL 12 1966

TABULAR LISTING OF CURRENT PAGES
OF
GOVERNMENT PLAN SSMD-77

PAGE	IDENTIFICATION DATE (IF ANY)
i(ii)	None
iii/iv	
1-i/ii	
1-1	
1-2	
1-3/4	[illegible] 1966
2-i	[illegible] ge No. 5
2-ii	" "
2-1/2	" "
2-3/4	Sep[illegible] 1965
2-5/6	"
2-7/8	Mar 1966 C[illegible] No. 5
2-9/10	" " " "
2-11/12	" " " "
2-13/14	" " " "
2-15/16	Sept 1965
2-17/18	None
2-19/20	"
2-21/22	"
2-23/24	"
2-25/26	"
2-27/28	"
2-29/30	"
2-31/32	"
2-33/34	"
3-i/ii	Sept 1965
3-1/2	" "
Fig 3-1	11 Feb 1966
3-5/6	Sept 1965
4-i/ii	" "
4-1	" "
4-2	" "
4-3	" "
4-5/6	" "
4-7/8	" "
4-9/10	" "
TAB A - A-i/ii	66 Change No. 5
" " - A-1 Thru A-76	" " " "
TAB A ADDENDUM - A-1	Sept 1965
" " " - A-2	" "
" " " - A-3	14 Jan 1966
" " " - A-4	" " "
" " " - A-5	" " "
" " " - A-6	" " "

P-22706 Att 1 9

SECRET

ATTACHMENT 1

ATTACHMENT 2

MASTER RECORD OF [redacted]

CHANGE NO.	DATE OF CHANGE	PARA NO.	DESCRIPTION OF CHANGE	DATE ENTERED
0			Authorized 11 Feb 66, subj: "Integrated Testing of MOL Lab Module & Mission Module Factory to Launch Sequence".	6/2/67 mlm
1			Provided guidelines for Spec Change Notice 1 to MOL Sys Performance/Design Requirements, General Specification.	
2			Described & Established general concepts for Total MOL AGE, computer programs, procedures & personnel which comprise the Lab Module (LM) & Mission Payload (MP) checkout & launch AGE.	
3			Provided a Master MOL Flt Schedule & a Prog Management Network-Ph I as page inserts to Government Plan. It also directed certain pen & ink changes be made.	
4			Letter dtd 2 Mar 66, directing a series of pen & ink changes to TAB A, Table F, No. 4,6, & 15.	6/2/67
5			A set of page inserts dtd Mar 66 labeled Change No. 5 to Gov't Plan. Deals mainly with Roles & Responsibilities.	6/2/67
			CHANGES NO. 0 THRU 5 PREVIOUSLY SENT TO ADDRESSEES.	

SECRET

P-22706 Attch 4!

RETAIN

DELEATED PAGES OF "GOVERNMENT PLAN FOR PROGRAM MANAGEMENT FOR THE MANNED ORBITING LABORATORY SYSTEM (MOL) PROGRAM"

AUGUST 1965

(P-22709 copy 001)

SPECIAL

Strong

18 APR 1966

SUBJECT: Tab A, Roles and Responsibilities for the MOL Program

TO: R. L. Johnson
E. A. Miller
J. Sewell
S. Strong

The attached pages are for inclusion in Tab A, Roles and Responsibilities for the MOL Program, Change No. 5 dtd March 1966, of the "white" MOL document, "Government Plan for Program Management". When these pages are inserted accordingly, Tab A will become "Secret-Special Handling" in its entirety. The same classification will apply if Tab A is inserted into the Government Plan.

Byron F. Knolle, Jr.
BYRON F. KNOLLE, JR.

1 Atch
16 pgs, "black"
input for Tab A.

Pages Inserted 6/2/67

P-19979
cy#1

SPECIAL

APR 1966

SECRET

S. Strong

DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY, SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045

SPECIAL HANDLING

11 FEB 1966

REPLY TO ATTN OF: SAF-SLA

SUBJECT: Official Release of Program Redirection

TO:

To help reduce the confusion that normally accompanies program redirection, I have established that all initial release of major program redirections in schedules, quantities, roles and responsibilities or systems requirements be in the form of a revision to the MOL Government Plan for Program Management. The information furnished at that time by numbered contracting officer letters is for your compliance in the preparation of your proposals for the Engineering Development Phase. The MOL System Specification remains the technical systems requirements, and revisions to the specification will follow the release of the Government Plan information as soon as the systems requirement baseline change can be coordinated. The Specification Change Notice will also be furnished by numbered contracting officer letters. Contractor letter number one is attached to this letter.

RUSSELL A BERG
Brig Gen, USAF
Deputy Director, MOL

1 Atch
Contractor Ltr #1

[redacted]

[redacted]

his material contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sections 793 and 794. The transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

SPECIAL HANDLING

SECRET

JUL 12 1966

SPECIAL HANDLING
~~SECRET~~

CHANGES TO THE

GOVERNMENT PLAN FOR PROGRAM MANAGEMENT

Make the following pen & ink changes:

1. Page 4-7/8 Asst Dep Dir MOL
Col P. J. Heran

2. Page 4-9/10 same as above; also add E. MILLER in block denoted PROG MANAGER G.E.

3. TAB A - Addendum, Page A-3 dated 14 Jan 1966: Row 104 - Change ©I to read SI and Row 105 - Change Integrate Expmt Equipment to read Integrate Expmt AGE.

Changes made 6/2/67

P-22704
Att #4
4 3

SPECIAL HANDLING
~~SECRET~~

ATTACHMENT 3

~~SECRET~~

J. Strong

DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY, SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045

SPECIAL HANDLING

REPLY TO
ATTN OF: SAFSL-4

25 FEB 1966

SUBJECT: Recent Changes to the Government Plan for Program Management

TO: SAFSL-6

1. Attached are copies of Contracting Officer Letters (Attachment 1) which direct amendments and corrections be made to the Government Plan for Program Management.

2. Suggest your copies of the referenced document be similarly updated.

Vincent S Cahill Jr.
Maj USAF
for MARCEL LIND
Colonel, USAF
Chief, Program Control Division-MOL

1 Atch
Ltr, Subj: Contracting Officer Letter w/3 Atch - (1) Fig 1-1 (S); (2) Fig 3-1 (S); (3) Pen & Ink Changes (U)

[redacted]

This material contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sections 793 and 794. The transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

[redacted]

P-8704 cy #3

M-63
Cy 003

SPECIAL HANDLING
~~SECRET~~

SSMD-77

JUL 12 1966

SECRET

DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY, SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045

REPLY TO
ATTN OF: SAFSL-4

SPECIAL HANDLING

25 FEB 1966

SUBJECT: Contracting Officer Letter No. Two to MAC
" " " " Three to DAC
" " " " Five to GE

TO:

1. The attached revisions to the Government Plan for Program Management, SSMD-77, dated August 1965 are directed.

2. These revisions are considered within scope, within the level of effort specified in the contract and have no effect on the delivery schedule.

3. Attachments 1 and 2 are page inserts. The other listed changes should be made by pen and ink.

CONTRACTING OFFICER
LETTER NO. _____

*813 - MAC
904 - DAC
905 - GE
944 - David Clark

CONTRACTING OFFICER
* Signed by Applicable
Contracting Officer

3 Atch
1. Fig 1-1 Master MOL Flt Schedule (S)
2. Fig 3-1 MOL Prog Mgt Network-Definition Phase (S)
3. Pen & Ink Changes (U)

Corrections made 6/2/67 [signature]

[redacted]

[redacted]

P-22704
Att #1
93

This material contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sections 793 and 794. The transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

SPECIAL HANDLING

SECRET

SSMD-77

MASTER MOL FLIGHT SCHEDULE

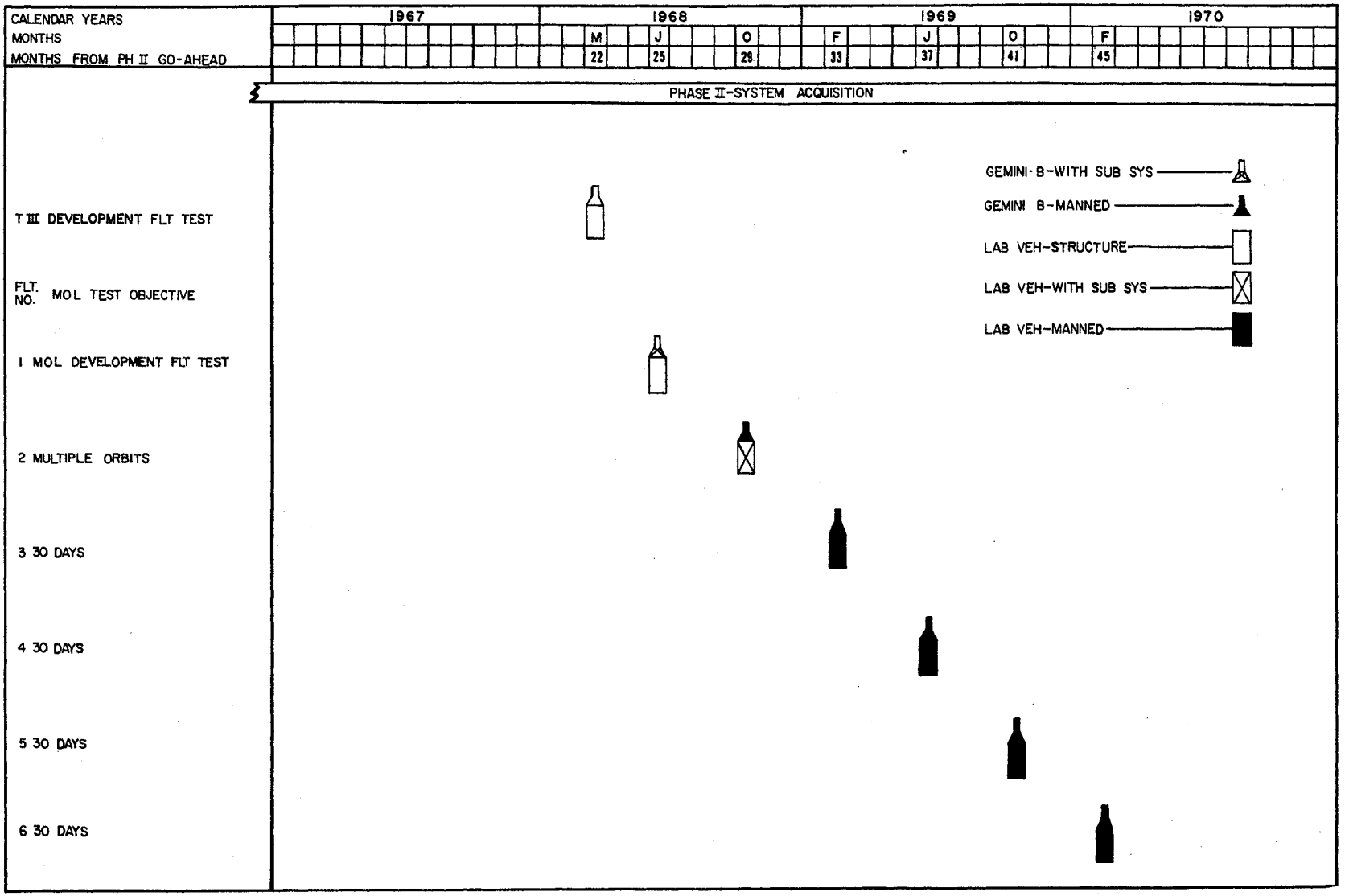


Figure 1-1. Master MOL Flight Schedule

P-22704
Attach (3)
Ltr -2/11/66
Replaces this page

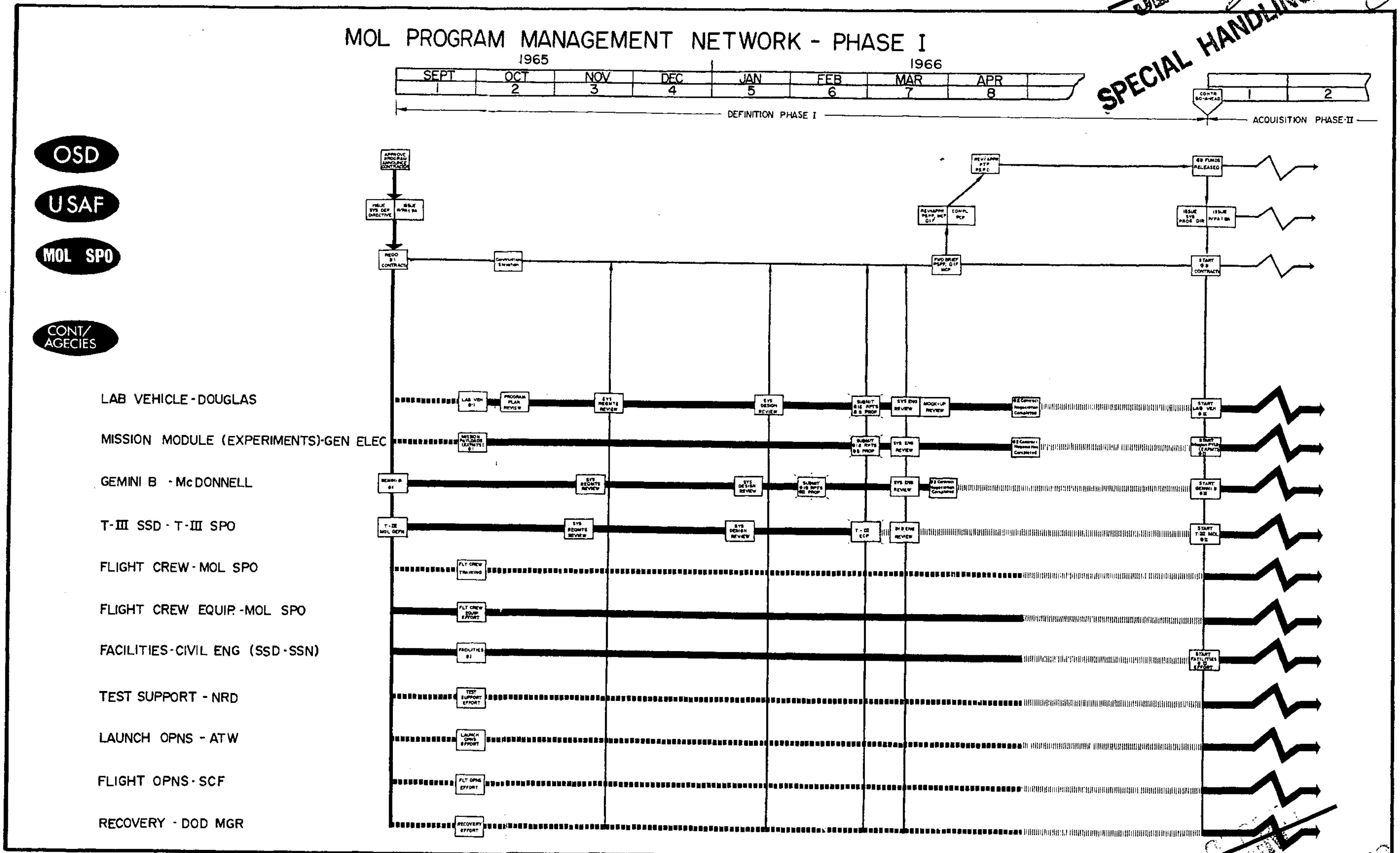


Figure 3-1. MOL Program Management Network - Definition Phase

Sept 1965

MOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING AND ANALYSIS (Cont'd)

CONTRACTORS OR AGENCIES

No.	ACTIVITIES	Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
17	Analyze Launch Vehicle	SR	SR	▲			S			
18	Analyze Laboratory Vehicle	▲	SR	SR	SR					
19	Analyze Gemini B Spacecraft	SR	▲	SR	SR					
20	Analyze Launch Vehicle Induced Environment	S	S	▲	S					
21	Analyze Laboratory Vehicle On-Orbit Checkout	▲	S		SR			S		
22	Analyze Gemini B On-Orbit Checkout	S	▲		SR			S		
23	Analyze Flight Vehicle Combined Systems Checkout	▲	S	S	S		S	S		
24	Analyze Laboratory Vehicle Ground Checkout	▲		S	S		S			
25	Analyze Gemini B Ground Checkout		▲	S	S		S			
26	Analyze Flight Crew Checkout and Preparation	SR	SR		SR					▲
27	Analyze Flt Crew Equipment and Supplies Checkout & Preparation	SR	SR		▲					
28	Analyze Flt Crew Training	SR	SR	SR	SR	S		SR	SR	▲
29	Analyze Flt Crew Personal Equipment and Supplies	SR	SR		▲		S		SR	
30	Analyze Medical Monitoring and Operations	SR	SR		SR			SR	SR	▲
31	System Engineering Intermediate Integration of "Test, Accept and Deliv. MOL Sys."	▲	SR	SR	SR					
32	System Engineering Intermediate Integration of "Conduct Checkout, Pre-launch Operations & Launch"	▲	SR	SR	SR		S		S	

MOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING AND ANALYSIS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
33	System Engineering Intermediate Integration of "Perform Boost Injection and Separation"	▲	S	S	S	S		S	S	
34	System Engineering Intermediate Integration of "Perform Insertion & Transfer of Flt Crew into Lab"	SR	▲		S	S		S	S	
35	System Engineering Intermediate Integration of "Perform On-Orbit Objectives"	▲	S		S			S		
36	Sys Eng Intermediate Integration of "Perform Transfer of Flt Crew, Separation, Loiter & De-Orbit"	S	▲		S			S	S	
37	System Engineering Intermediate Integration of "Retrieval Operations"		▲		S			S	S	
38	System Engineering Intermediate Integration of "Evaluate MOL Sys."	▲	S	S	S	S	S	S	S	
39	Sys Eng Intermediate Integration of "Pre-Launch or Ascent Abort Operations"	S	▲	S	S	S	S	S	S	
40	Deleted									
41	System Engineering Intermediate Integration of "Define Rqmts for Flt Crew Trng & Preparation"	▲	S	S	S	S	S	S	S	
42	System Engineering Intermediate Integration of "Maintain System"	▲	S	S	S		S			
43	System Engineering Intermediate Integration of "Perform Mission Control"	▲	S	S	S	S	S	SR	S	
44	System Engineering Intermediate Integration of "Perform Simulations"	▲	S	S	S	S	S	S	S	
45	Post-Flight Analysis of Countdown and Ascent Data	▲	S	S	S	S	S	S	S	
46	Post-Flight Analysis of Gemini B Data	S	▲		S			S	S	
47	Post-Flight Analysis of Laboratory Veh Data	▲	S		S			S		
48	Post-Flight Analysis of Flight Crew Performance	S	S		S			S		▲

MOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING AND ANALYSIS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD) Manager	SPO and GSE/TDC
49	Post-Flight Analysis of Re-entry Data		▲		S			S	S	
50	Post-Flight Analysis of Mission Control Data	S	S		S	S		▲		
51	Post-Flight Analysis of Flt Crew Transfer Data	S	▲		S			S		
52	Post-Flight Analysis of Flt Bioastronautics Data	S	S		S			S		▲
53	Post-Flight Analysis of Flt Crew Equipment Data	S	S		▲			S	S	
54	Analyze Launch Facilities, AGE Installation and Launch Operations	▲	SR	SR	S		S		S	
55	Analyze Launch Vehicle and Orbiting Vehicle Separation	S	S	▲				S		
56	Analyze Checkout, Countdown, Launch and Ascent	▲	S	SR	S	S	S	S	S	
57	Analyze Flight Vehicle Combined System Test	▲	SR	SR	SR		S	S		
58	Analyze Bioastronautics Instrumentation & Procedures	▲	S		SR			S	R	
59	Analyze Flight Vehicle	S	S	▲	S	S	S	S		
60	Post Flt Analysis of Launch Vehicle Data	S		▲		S	S	S		

SECRET

SPECIAL HANDLING

MOL PROGRAM
ROLES AND RESPONSIBILITIES

B. ENGINEERING DESIGN

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
1	Laboratory Vehicle	▲	SRI	SRI	SRI		R	R		
2	Laboratory Veh Communication and Telemetry System	▲	SI		RI	R	R	R		
3	Mission Information System	▲			SRI			S		
4	Laboratory Vehicle Control Consoles	▲	SRI		SRI			R		
5	Laboratory Vehicle Power System	▲	SRI		SRI					
6	Laboratory Vehicle Attachment to Launch Vehicle	▲		SRI						
7	Gemini B	SRI	▲	SRI	SRI		R	R	R	
8	Flt Crew Transfer Equipment	SRI	▲		SRI					
9	Gemini B Attachments	SRI	▲							
10	Pressure Suit and Other Flight Crew Personal Equipment	SRI	SRI		▲		R		R	
11	Integrate Orbiting Vehicle Design	▲	SI	SI	SI		R	R		
12	Titan III Modifications	SRI	SRI	▲			S			
13	Flight Vehicle Structural Integrity	SRI	SRI	▲						
14	Engineering Design Integration	▲	SRI	SRI	SRI	SR	SR	SR	SRI	
15	Laboratory Vehicle AGE	▲		SRI	SRI		R	R		
16	Gemini B AGE	SRI	▲	SRI	SRI		R	R	R	

MOL PROGRAM
ROLES AND RESPONSIBILITIES

B. ENGINEERING DESIGN (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
17	Flight Crew Equipment AGE	SI	SI	SI	▲		S			
18	Orbiting Vehicle Special Tools and Test Equipment (AGE)	▲	SR	R	R					
19	Integrate Orbiting Vehicle AGE Design	▲	SRI	SRI	SRI		R			
20	Titan III AGE Modifications	R	R	▲			S			
21	Recovery Force Retrieval Equipment		SRI		SRI	S			▲	
22	Mission Control Center Consoles	SR	SR	SRI		SR	S	▲		
23	Telemetry and Tracking Station Equipment	R	R	R	R			▲		
24	Mission Simulator	▲	SRI	SR	SRI	S	S	SI	S	
25	Laboratory Vehicle Procedures Trainer	▲			SRI			S		
26	Gemini B Procedures Trainer		▲	SR	SRI			S		
27	Subsystem Trainers--Lab Veh	▲								
28	Part Task Trainers--Lab Veh	▲			SR					
29	Subsystem Trainers -- Gemini B		▲							
30	Part Task Trainers--Gemini B		▲		SR					
31	Bioastronautics Instrumentation	▲	R		SR			R	R	

MAN PROGRAM
ROLES AND RESPONSIBILITIES

C. FABRICATION

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
1	Laboratory Vehicle	▲	I	I	I					
2	Lab Veh Communication and Telemetry System	▲	I	I	I					
3	Mission Information System	▲								
4	Laboratory Vehicle Control Consoles	▲	I		I					
5	Flight Crew Accommodations--Laboratory Veh	▲			I					
6	Orbiting Vehicle Power Supply	▲	I							
7	Gemini B	I	▲	I	I				I	
8	Flt Crew Transfer Equipment	I	▲		I					
9	Gemini B Attachments	I	▲							
10	Flight Crew Accommodations--Gemini B		▲		I					
11	Pressure Suit and Other Flight Crew Personal Equipment	I	I	I	▲					
12	Titan III Modifications	I	I	▲						
13	Laboratory Vehicle AGE	▲	I	I	I					
14	Gemini B AGE	I	▲	I	I					
15	Orbiting Vehicle Special Tools and Test Equipment (AGE)	▲	I	I	I					
16	Flight Crew Equipment AGE	I	I	I	▲					

MOL PROGRAM
ROLES AND RESPONSIBILITIES

C. FABRICATION (Cont'd)

No.	ACTIVITIES	CONTRACTORS/AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
17	Titan III AGE Modifications	I	I	▲						
18	Mission Control Consoles	I		I				▲		
19	Telemetry and Tracking Station Equipment							▲		
20	Laboratory Vehicle Procedures Trainer	▲			I					
21	Gemini B Procedures Trainer		▲		I					
22	Mission Simulator	▲	I		I			I		
23	Subsystem Trainers--Lab Veh	▲								
24	Part Task Trainers--Lab Veh	▲			I					
25	Subsystem Trainers--Gemini B		▲							
26	Part Task Trainers--Gemini B		▲		I					

SPECIAL HANDLING

MOL PROGRAM
ROLES AND RESPONSIBILITIES

D. TEST AND INTEGRATION

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DoD Manager)	SPO and GSE/TDC
1	Conduct Laboratory Vehicle Development, Qualification and Acceptance Tests	▲								
2	Conduct Gemini B Development, Qualification and Acceptance Tests		▲							
3	Integrate Orbiting Vehicle Development Model	▲	SI		SI					
4	Integrate Orbiting Vehicle	▲	SRI		SRI					
5	Conduct Orbiting Vehicle Environmental Tests	▲	S		S					
6	Assure Orbiting Vehicle Compatibility with System	▲	S	S				S		
7	Conduct Orbiting Vehicle Development System Test and Factory Acceptance Tests	▲	SR		SR					
8	Conduct Titan III Assembly and Acceptance Tests			▲						
9	Assemble Orbiting Vehicle with Launch Vehicle	SRI		▲			S			
10	Integrate Flight Vehicle AGE	▲	SRI	SRI	SRI		S	S		
11	Integrate Orbiting Vehicle AGE with ILC Facility	SRI	SI	▲	SI		S			
12	Integrate Mission Simulator	▲	SI		SI					
13	Integrate Mission Simulator with SCF	▲	S	S	S			SRI		
14	Integrate Flt Operations Sys	R	R			S		▲	R	
15	Gather Baseline Data on Flight Crew Performance	SR	SR		SR			S		▲

56. Analyze Checkout, Countdown, Launch and Ascent.

The Laboratory Vehicle contractor has responsibility for analysis of over-all checkout and countdown procedures, the launch sequence and ascent. This analysis will be integrated from requirements for checkout, countdown, launch and ascent of individual flight items provided by supplying contractors/agencies.

57. Analyze Flight Vehicle Combined System Test.

The requirements for combined system testing of the over-all flight vehicle on the launch pad will be analyzed by the Laboratory Vehicle contractor. This analysis will include integration of the requirements of the individual flight items provided by supplying contractors/agencies.

58. Analyze Bioastronautics Instrumentation and Procedures.

The Laboratory Vehicle contractor has responsibility for the analysis of an integration of the equipment and procedures to be used to monitor the physiological and psychological condition of the flight crew. The requirements for such measurements and monitoring will be provided by the MOL SPO/Aerospace.

59. Analyze Flight Vehicle.

The Launch Vehicle contractor will conduct a complete analysis of the Flight Vehicle during launch and ascent. This will include structures, dynamics, controls, guidance, etc.

60. Post-Flight Analysis of Launch Vehicle Data.

The Launch Vehicle contractor will be responsible for the analysis of data concerning the operation of the Launch Vehicle throughout the countdown and ascent phase.

B. ENGINEERING DESIGN.

1. Laboratory Vehicle.

The Laboratory Vehicle contractor will be responsible for the design and operation of the Laboratory Vehicle including integration of its subsystems and structure.

2. Laboratory Vehicle Communication and Telemetry System.

The Laboratory Vehicle contractor will be responsible for the design of all communication and telemetry system equipment for the Laboratory Vehicle. This will include equipment for telemetry of payload data.

3. Mission Information System.

Equipment for the processing of data obtained from equipment carried by the Orbiting Vehicle will be the design responsibility of the Laboratory Vehicle contractor. The Laboratory Vehicle contractor will also be responsible for the design of telemetry equipment to transmit data to the ground, and equipment for any on-board processing which will be conducted.

4. Laboratory Vehicle Control Consoles.

The engineering design responsibility for control consoles for Laboratory Vehicle equipment will be the responsibility of the Laboratory Vehicle contractor. Other Orbiting Vehicle equipment contractors/agencies will support these engineering designs and provide interface data to the L.V. contractor. (See Mission Payload Addendum for Experiment Consoles.)

5. Laboratory Vehicle Power System.

The Laboratory Vehicle contractor will design the Laboratory Vehicle power system to meet all Orbiting Vehicle ascent and on-orbit power requirements including that of Gemini B.

C. FABRICATION.

1. Laboratory Vehicle
2. Laboratory Vehicle Communication and Telemetry System
3. Mission Information System
4. Laboratory Vehicle Control Consoles
5. Flight Crew Accommodations - Laboratory Vehicle
6. Orbiting Vehicle Power Supply
7. Gemini B
8. Flight Crew Transfer Equipment
9. Gemini B Attachments
10. Flight Crew Accommodations - Gemini B
11. Pressure Suit and Other Flight Crew Personal Equipment
12. Titan III Modifications
13. Laboratory Vehicle AGE
14. Gemini B AGE
15. Orbiting Vehicle Special Tools and Test Equipment (AGE)
16. Flight Crew Equipment AGE
17. Titan III AGE Modifications
18. Mission Control Consoles
19. Telemetry and Tracking Station Equipment

20. Laboratory Vehicle Procedures Trainer

21. Gemini B Procedures Trainer

22. Mission Simulator

23. Sub-System Trainers - Laboratory Vehicle

24. Part Task Trainers - Laboratory Vehicle

25. Sub-System Trainers - Gemini B

26. Part Task Trainers - Gemini B

SPECIAL HANDLING

MOL PROGRAM
ROLES AND RESPONSIBILITIES

B. ENGINEERING DESIGN

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Expmt Equipment	I							▲	SI
102	Integrate Expmt Equipment	SRI							SR	▲
103	Integrate Expmts Displays & Consoles	SRI							SRI	▲
104	Expmts AGE	OI					S		SR	▲
105	Integrate Expmt Equipment	S					S		SR	▲
106	Prepare Expmts Software Programs for MIS	SR						S	SR	▲
107	Expmts Sub-System Trainers								▲	S
108	Expmts Part Task Trainers	S							▲	S
109	Expmts Procedures Trainers	SRI						SI		▲
110	Mission Module Structure	▲		SRI						SRI
111	Integrate Vehicle & Expmt Displays, & Consoles	▲							SRI	SRI

MOL PROGRAM
ROLES AND RESPONSIBILITIES

C. FABRICATION

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Experiment Equipment	I							▲	I
102	Experiment Equipment AGE	I		I					I	▲
103	Experiment Displays & Consoles	I							I	▲
104	Experiment Subsystem Trainers								▲	
105	Experiment Part Task Trainers								▲	I
106	Experiment Procedures Trainers	I						I	I	▲
107	Experiment Special Tes Equipment	I		I					▲	I
108	Install Experiment Consoles & Displays in Laboratory Vehicle	▲		I					I	I
109	Install Experiment Equipment into Mission Module	I		I					I	▲

MOL PROGRAM
ROLES AND RESPONSIBILITIES

D. TEST & INTEGRATION

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Conduct Experiment Development Qualification & Acceptance Test								▲	S
102	Integrate Experiment Equipment into Mission Module								SR	▲
103	Integrate Experiment Consoles and Displays into Laboratory Vehicle	▲								SRI
104	Integrate & Test Experiment AGE	S							SR	▲
105	Conduct Integrated Environmental Test of Mission Module & Expmt Equip	R							SR	▲
106	Integrate & Test Experiment & Orbiting Vehicle AGE	▲								SR
107	Integrate & Test Mission Module & Expmt Equip with Orbiting Vehicle	▲								SR

MOL PROGRAM
ROLES AND RESPONSIBILITIES

E. TEST OPERATIONS

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Prepare Experiments Test Plan	S						SR	R	▲
102	Prepare Experiment Data Acquisition Plan	S						S	R	▲
103	Prepare Experiments Ground Checkout Procedures	R					S		R	▲
104	Prepare Experiments On-Orbit Checkout Procedures	SR				S		SR	R	▲
105	Checkout Experiments At Launch Site	SR					S	R	S	▲
106	Prepare Experiments Operations Procedures Plan	S			S			S	SR	▲

SPECIAL HANDLING

DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY, SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045

J Strong

~~SECRET~~

REPLY TO ATTN OF: SAFSL-4

2 MAY 1966

SUBJECT: Change No. 6 to the Government Plan for Program Management

TO:

1. Described below is a list of Pen and Ink changes to the Government Plan (SSMD-77) dated August 1965.

(a) Pg A-2, para F. Facilities - Delete "and EAFB".

(b) Pg A-25/26 Table F:

Line Item # 2 - Change to read: "Prepare Facility Criteria for Orbiting Vehicle Support Building".

Line Item # 3 - Delete entire Line Item.

Line Item # 8 - Change to read: "Design Orbiting Vehicle Support Building".

Line Item # 9 - Delete entire Line Item.

(c) Pg A-74,-75, para F. Facilities

Para 2 - Change to read: "Prepare Facility Criteria for Orbiting Vehicle Support Building".

Para 3 - Delete.

Para 8 - Change to read: "Design Orbiting Vehicle Support Building".

Para 9 - Delete.

(d) In Fig 2-7, pg 2-15/16 and in the text, replace the term, Initial Launch Capability (ILC) by "MOL Launch Complex (MLC)".

(e) In Fig 2-1, pg 2-3/4 and in the text, replace the term, Crew Equipment Segment by "Pressure Suit Assembly Segment".

P-22705 cy #1

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(f) Pg A-24, Table E Test Operations (cont'd) - Change line 34 symbols to indicate primary responsibility rests with the Laboratory Vehicle Contractor and Support Responsibility with Titan III (Agency).

(g) Pg 2-i and 2-ii - Add "March 1966, Change No. 5" to bottom margin.

(h) To Tabular Listing of Current Pages; Add page 4-4, Change Tabular Listing to indicate; Tab A Addendum, page A-6 is dated Sept 1965.

2. All holders of the Government Plan for Program Management (SSMD-77) are requested to assure that the changes listed above are entered into the document and in the Master Record of Changes which should be permanently affixed to the inside cover.

MARCEL LEND, Col, USAF
Chief, Program Control Division
MOL Systems Program Office

Strong

SPECIAL HANDLING

REPLY TO ATTN OF: SAFSL-

7 MAY 1966

SUBJECT: Change Seven (7) to the "Government Plan for Program Management", SSMD-77"

TO:

(S-/SAR) The MOL Master Flight Schedule on page 1-3/4 dated .. Feb 66 of the "Government Plan for Program Management for the Manned Orbiting Laboratory System" SSMD-77 is changed to the following:

MOL [illegible]	15 Apr 69	(GBQ)
MOL [illegible]	15 Jul 69	(LVD)
MOL Flight 3	15 Dec 69	(Manned-Automatic)
MOL Flight 4	15 Apr 70	(Manned-Automatic)
MOL Flight 5	15 Jul 70	(Manned-Automatic)
MOL Flight 6	15 Oct 70	(Automatic)
MOL Flight 7	15 [illegible] 71	(Automatic)

MOL Flight One objectives are the qualification of the Gemini B spacecraft and T-IIIM launch vehicle (GBQ). MOL Flight Two objectives is for the demonstration of the T-IIIM launch vehicle development (LVD). MOL Flight Three and subsequent flights are full mission flights.

2. Change paragraph 1b of Change #1 to the Government Plan to read "(S-3) Five (5) sets of Orbiting Vehicle hardware will be built and delivered. The Gemini B contractor will provide four (4) Gemini B's (MOL Flight One included) and one (1) boilerplate Gemini B for MOL Flight Two (LVD). The Laboratory contractor will provide two (2) additional laboratory vehicle structures for MOL Flight One (GBQ) and MOL Flight Two (LVD). The T-III SPO will provide seven (7) boosters.

a. Change paragraph [illegible] to read: (S-3) MOL Flight Three through MOL Flight Five [illegible] capable of the Manned-Automatic mode."

[redacted]

[redacted]

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[redacted]

[redacted] SPECIAL HANDLING

b. Change paragraph 1d to read: "(S-3/SAR) It is planned to develop and build two (2) kits which will enable conversion from the Manned-Automatic configuration to a complete automatic configuration."

c. Change paragraph 1e to read: "MOL Flight Six and Seven will be flown in the automatic mode."

Marcel S Cahill Jr.
for Maj USAF
MARCEL LIND, Colonel, USAF
Chief, Program Control Division
MOL Systems Program Office

[redacted]

[redacted]

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[redacted]

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DEPARTMENT OF THE AIR FORCE
MANNED ORBITING LABORATORY, SYSTEMS PROGRAM OFFICE (OSAF)
AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045

Strong

SPECIAL HANDLING

REPLY TO
ATTN OF: SAFSL-4

3 JUN 1966

SUBJECT: Change No. 8 to the Government Plan for Program Management, SSMD-77

TO:

1. Attached are page inserts for Change No. 8 and others as specified below. The superseded pages are to be removed and destroyed. Also remove and destroy TAB A Addendum in its entirety and include page 4-4 in the Tabular Listing of Current Pages.

2. Change No. 8 consists of page inserts 2-5/6, A-24, A-30, A-50, A-51, A-60, A-61, A-69 and 4-7/8.

3. Other page inserts which replace previous pen and ink changes are 2-3/4, A-25/26, A-74, and A-75 for Change No. 6 and 1-3/4 for Change No. 7. On page insert 1-3/4, change the date for Flight No. 2 to read 1 July 1969.

4. Change No. 8 is effective upon receipt. Page inserts for Changes No. 6 and 7 do not adjust their effective dates.

MARCEL LIND, Col, USAF
Chief, Program Control Division
MOL Systems Program Office

1 Atch
Change No. 8 to the
Gov't Plan (S/SAR)

[redacted]

[redacted]

This material contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sections 793 and 794. The transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

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JUL 12 1966

MOL PROGRAM
ROLES AND RESPONSIBILITIES

E. TEST OPERATIONS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES									
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Pressure Suit Assembly (Contractor)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DOD Manager)	SPO and GSE/TDC	Experiment Integration (Contractor)
17	Prepare Mission Module On-Orbit Checkout Procedures	SR						S			▲
18	Prepare Lab Mod Orbital Procedures	▲	SR		S			S			SR
19	Prepare Mission Module Operations Procedures	SR			S			S			▲
20	Integrate Flt Crew Orbital Procedures	▲	SR		S			S			SR
21	Prepare Re-Entry Guidance Equations		▲	SR		R		R			
22	Prepare Crew De-Orbit & Re-Entry Procedures	S	▲					S			S
23	Integrate Orbital Abort Procedures	▲	SR		S			SR	S		SR
24	Direct & Coordinate Flt Crew Training	SR	SR	SR	SR	SR	SR	SR	S	▲	SR
25	Operate Mission Simulator	SR	SR	S	S	S	S	S		▲	SR
26	Operate MOL Launch Facility			SR		S	▲				
27	Assemble T-III on the Launch Pad			▲			S				
28	Checkout of Gemini B at Launch Site		▲	S							
29	Checkout Lab Mod at Launch Site	▲	SR	S	SR	S	S	S			SR
30	Checkout Mission Module at Launch Site	S		S				S			▲
31	Checkout Pressure Suit Assembly	S	S		▲			S			S
32	Checkout Flt Crew	S	S	S	S			S		▲	S

TABLE E (Cont'd)

MOL PROGRAM
ROLES AND RESPONSIBILITIES

E. TEST OPERATIONS (Cont'd)

No.	ACTIVITIES	CONTRACTORS OR AGENCIES									
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Pressure Suit Assembly (Contractor)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Recovery (Agency) (DOD Manager)	SPO and GSE/TDC	Experiment Integration (Contractor)
33	Checkout T-III			▲			S	S			
34	Conduct Flight Vehicle Final Checkout at Launch Pad	▲	SR	SR	SR	S	S	S			SR
35	Conduct Countdown	S	S	S	S		▲	S			S
36	Conduct Range Safety Operations		S	S		▲		S	S		
37	Operate Mission Control	S	S	S	S	S	S	▲	S		S
38	Monitor Flt Crew Condition	S	S		S			▲		S	S
39	Direct & Control Mission Operations	S	S	S	S	S	S	S	S	▲	S
40	Conduct Gemini B Recovery Operations		S		S	S		S	▲		S
41	Format Data for Users	R	R	R	R	S		▲		R	SR

TABLE E (Cont'd)

MOL PROGRAM
ROLES AND RESPONSIBILITIES

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Pressure Suit Assembly (Contractor)	Test Support (Agency) (NRD)	Launch Operations (Agency) (ATW)	Flight Operations (Agency) (SCF)	Deputy for Civil Engr. (Agency)	SPO and GSE/TDC	Experiment Integration (Contractor)
1	Prepare Facility Criteria for Initial Launch Complex	SR	R	▲		R	SR	R	SR		SR
2	Prepare Facility Criteria for OV Support Bldg.	▲	SR	SR	R		SR		SR		SR
3	Deleted										
4	Prepare Fac Criteria for Operational Trng & Eval Fac	▲	R	R	R	R		SR	SR		SR
5	Prepare Facility Criteria for Operational Readiness Unit	▲	R		SR		SR		SR		SR
6	Prepare Facility Criteria for Engr & Operations Bldg	▲	R		R		R		SR		R
7	Design Initial Launch Complex	S	S	S	S	S	S		▲		S
8	Design Orbiting Veh. Support Building	S					S		▲		S
9	Delete										
10	Design Operational Training & Eval Facility	S	S				S		▲		S
11	Design Operational Readiness Unit	S			S		S		▲		
12	Design Engineering and Operations Building	S					S		▲		S

A. SYSTEM ENGINEERING AND ANALYSIS.

1. Establish Flight Test Objectives.

The SPO and GSE/TD Contractor will establish Flight Test objectives including flight schedules and capabilities to be demonstrated, including relative priorities for each flight. Performance requirements, criteria and overall analysis methods will be provided. All Associate Contractors and Agencies will provide inputs and support this effort.

2. Analyze Gemini B Spacecraft.

The Gemini B Contractor will conduct a complete analysis of the operation and equipment of the Gemini B spacecraft of the MOL mission. This will include structural analysis for conditions during launch, on-orbit, and re-entry, as well as analysis of the operation of the subsystems.

3. Analyze Laboratory Module.

The Laboratory Vehicle Contractor will conduct a complete analysis of the operation of the Laboratory Module and its subsystems. This will include analysis of structural integrity during launch and on-orbit as well as analysis of the functioning of subsystems and analysis of Mission Module requirements.

4. Analyze Mission Module.

The Experiment Integration Contractor shall conduct a complete analysis of the operation of the Mission Module and its subsystems.

The Mission Module is defined an that module separating the laboratory module and the T-IIIM. The mission module will consist of the external structure, experiment payloads, and control equipments.

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Pg #23

Some of this control equipment will be physically located in the laboratory module but shall not be considered part of it. The Experiment Integration Contractor shall be responsible for this mission module and the experiment integration.

5. Analyze Laboratory Vehicle.

The Laboratory Vehicle Contractor will conduct a complete analysis of the operation of the Laboratory Vehicle and its subsystems. This will include analysis of structural integrity during launch and on-orbit as well as analysis of the functioning of subsystems.

6. Analyze Orbiting Vehicle.

The Laboratory Vehicle Contractor will conduct a complete analysis of the operation of the Orbiting Vehicle and its subsystems. This will include analysis of structural integrity during launch and on-orbit as well as analysis of the functioning of subsystems and analysis of Titan III requirements.

7. Analyze Launch Vehicle.

The Launch Vehicle Contractor, under the direction of the Titan III SPO, will be responsible for a complete analysis of the Launch Vehicle during the period of launch and during ascent. This will include structures, dynamics, controls, checkout, countdown, guidance, etc. It will include all features of the Launch Vehicle as they affect the MOL Flight Vehicle.

8. Analyze Flight Vehicle.

The Launch Vehicle Contractor will conduct analysis of the flight vehicle during launch and ascent. This will include structural loads, vehicle dynamics, controls and guidance. Detailed analysis of the orbiting vehicle subsystems will be accomplished by the orbiting Vehicle Contractors.

8. Gemini B.

The Gemini B Contractor will be responsible for the design and operation of the Gemini B spacecraft including integration of it's subsystem and structure.

9. Laboratory Module.

The Laboratory Vehicle Contractor will be responsible for the design and operation of the Laboratory Module including integration of its subsystems, structure and Mission Module.

10. Mission Module Structure.

The Experiment Integration Contractor will be responsible for the dynamic design of the mission module structure.

11. Mission Module.

The Experiment Integration Contractor will be responsible for the design of the mission module equipments.

12. Laboratory Vehicle Integration.

The Laboratory Vehicle Contractor will be responsible for the integration of the Laboratory Vehicle design including all equipment forming a portion of the Laboratory Vehicle. The contractor will obtain design information from the contractors/agencies supplying equipment and assure that the overall operation of the Laboratory Vehicle is compatible with the functioning of the other system segments.

13. Orbiting Vehicle Integration.

The Laboratory Vehicle Contractor will be responsible for the integration of the Orbiting Vehicle design including all equipment forming a portion of the Orbiting Vehicle. The contractor will obtain design information from the contractors/agencies supplying equipment

and assure that the overall operation of the Orbiting Vehicle is compatible with the functioning of the other system segments.

14. Titan III Design.

The Titan III SPO will be responsible for the Titan III system design and the integration of all equipment forming a portion of either the launch vehicle or its AGE.

15. Gemini B Attachments.

The equipment used for the attachment of the Gemini B spacecraft to the Laboratory Vehicle will be the design responsibility of the Gemini B contractor, together with the devices used for separation of the Gemini B.

16. Orbiting Vehicle Attachment to Launch Vehicle.

The Laboratory Vehicle Contractor will determine the design of the attachment and separation fittings for the Orbiting Vehicle at the Launch Vehicle interface, based on the respective interface requirements.

17. Flight Vehicle Structural Integrity.

The Titan III agency has responsibility for determination of the overall structural design integrity of the Flight Vehicle based on structural analyses including contributions from the Laboratory Vehicle and Gemini B contractors. These analyses will be based on loads and trajectory assumptions defined by the Titan III agency and accepted by the other contractors/agencies.

18. Flight Crew Transfer Equipment.

The Gemini B Contractor will design the internal tunnel to be used in the transfer of the crew from the Gemini B to the Laboratory Vehicle.

19. System Design Integration.

The Laboratory Vehicle Contractor is responsible for integration of the engineering design of the overall system. This task includes review of performance characteristics (but not the detailed design) of contributed equipment, and verification of interface compatibility between associates.

20. Gemini B AGE.

The Gemini B Contractor will be responsible for the design of new AGE and the redesign of existing NASA AGE as necessary to support the Gemini B Program Segment.

21. Laboratory Module AGE.

The Laboratory Vehicle Contractor is responsible for the design and development of new and/or development of existing AGE to be used for the Laboratory Module and its subsystems.

22. Mission Module AGE.

Mission Module AGE will be designed by the Experiment Integration Contractor. A ground computer identical to that provided with the Laboratory Vehicle AGE shall be used. Interaction between the Mission Module AGE and Laboratory Vehicle AGE shall be through a link between identical computers (Reference MOL Systems Office TWX SSM_____).

23. Laboratory Vehicle AGE.

The Laboratory Vehicle Contractor is responsible for the design and/or integration of that AGE required for the overall system testing and checkout of the Laboratory Vehicle. The Experiment Integration Contractor is responsible for the design and development of all mission payload peculiar AGE, except for that AGE peculiar to the overall system test.

24. Pressure Suit Assembly AGE.

The Pressure Suit Assembly Contractor will be responsible for overall engineering design of the Pressure Suit Assembly and AGE.

25. T-III AGE.

The Launch Vehicle Contractor, under the direction of the T-III SPO is responsible for the design of the Launch Vehicle AGE.

26. Flight Vehicle AGE.

The Laboratory Vehicle Contractor has the responsibility for over-all planning and schedule integration of the complete AGE design for the MOL System. The responsibility will include review of the AGE design requirements to assure total system compatibility with the MOL launch facility.

27. Bioastronautical Instrumentation.

Bioastronautical instrumentation, as needed to meet the requirements directed by the MOL SPO/Aerospace for physiological or psychological measurements on the flight crew members, shall be designed, developed, and integrated into the Orbiting Vehicle by the Laboratory Vehicle Contractor.

28. Gemini B Procedures Simulator.

The Gemini B Contractor will be responsible for the design of the Gemini B procedures simulator. This design will be similar to the NASA Gemini Mission Simulator, only modified as required to simulate the Gemini B configuration and mission.

D. TEST AND INTEGRATION

1. Integrate and Test Laboratory Module Computer Hardware and Software.

The Laboratory Vehicle Contractor is responsible for the integration and testing of the Data Computation Subsystem Group including the Laboratory Module data adapter unit, computer system and Laboratory Module Software. This does not include those items pertinent to the Mission Module functions.

2. Integrate and Test Mission Module Computer Hardware and Software.

The Experiment Integration Contractor is responsible for the integration and testing of the Mission Module data adapter unit and Mission Module software with the computer system. An AVE computer with appropriate peripheral equipment and a Laboratory Module Simulator will be supplied for this purpose.

3. Integrate Laboratory Vehicle consoles and Displays.

The Laboratory Vehicle Contractor is responsible for the overall integration and test of the consoles and displays located in the laboratory module. The Experiment Integration Contractor will receive and inspect all payload peculiar consoles, displays and equipments at Huntington Beach and install certain special equipments. The Laboratory Vehicle Contractor will install the remainder of the payload peculiar equipments. The Experiment Integration Contractor will perform functional checkout and integrated checkout of the payload peculiar consoles, displays and equipment. The Laboratory Vehicle Contractor will conduct overall systems test.

4. Conduct Laboratory Module Development, Qualification and Acceptance Tests.

The Laboratory Vehicle Contractor will conduct development tests on components, subsystems and the complete Laboratory Module.

Tests will include environmental simulation, orbit duration, structural, electromagnetic interference and equipment performance tests. Tests will be conducted principally at the contractor's facility.

5. Conduct Gemini B Development, Qualification and Acceptance Tests.

The Gemini B Contractor will conduct development tests on the Gemini B as required to test and qualify modifications from the NASA Gemini. Acceptance tests will be conducted at the contractor's facility prior to shipment to the Laboratory Vehicle contractor.

6. Conduct Mission Module Development, Qualification and Acceptance Tests.

Development, qualification and acceptance tests will be conducted on the components, subsystems and the complete Mission Module by the Experiment Integration Contractor. These tests will be conducted at the contractors facility prior to shipment to the Laboratory Vehicle Contractor.

7. Integrate Laboratory Vehicle Development Model.

The Laboratory Vehicle development model will be fabricated and/or assembled by the Laboratory Vehicle Contractor at his facility from equipment provided by contributing associates. System integration tests will be performed on the development model.

8. Integrate Laboratory Vehicle.

The Laboratory Vehicle Contractor will integrate the parts of the Laboratory Vehicle and conduct system tests to assure compatible system operation. Tests will include developmental tests of the assembled Laboratory Vehicle at the Laboratory Vehicle at contractor's plant and acceptance and inspection tests of the Laboratory Vehicle at the launch site. The contractor will also be responsible for compatibility tests at the launch pad after the Laboratory Vehicle is assembled on the Launch Vehicle.

9. Conduct Laboratory Vehicle Environmental Tests.

Those portions of the Orbiting Vehicle which have an interface which might be affected by environmental exposure shall be subjected to such environmental simulation tests at the Laboratory Vehicle contractor's plant. Substitute tools will be provided by the respective system segment contractor as required.

10. Assure Orbiting Vehicle Compatibility with System.

The Laboratory Vehicle Contractor will be responsible for tests to determine that the communications equipment aboard the Orbiting Vehicle is compatible with the communications and control equipment on the ground. This includes both voice communications and telemetry. This task will include assurance that the data format of telemetry signals is compatible with the ground receiving and data processing equipment. These tests will be performed in close coordination with the Flight Operations Agency (SCF).

11. Conduct Laboratory Vehicle Development System Test and Factory Acceptance Tests.

The Laboratory Vehicle Contractor will be responsible for system testing of the Laboratory Vehicle and for factory acceptance test of the Laboratory Vehicle. The other contractors contributing equipment to this vehicle will contribute test procedures, personnel and support to the operation. Each contractor will remain responsible for the proper functioning values of equipment as supplied to specification values and requirements.

12. Install AGE in OV Facilities.

The Laboratory Vehicle Contractor will be responsible for the installation of all AGE in the Orbiting Vehicle facilities.

12a Install AGE in ILC Facilities.

The Launch Vehicle Contractor will be responsible for the installation of all AGE in the ILC Facilities.

13. Checkout Gemini B AGE.

The Gemini B Contractor will be responsible for checkout of all Gemini B AGE.

13a Checkout Laboratory Module AGE.

The Laboratory Vehicle Contractor will be responsible for checkout of all Lab Module AGE.

13b Checkout Mission Module AGE.

The Experiments Integration Contractor will be responsible for checkout of all MM AGE.

14. Conduct Titan III Assembly and Readiness for Orbital Vehicle Mating.

The Launch Vehicle Contractor will prepare procedures for the assembly of the Titan IIIM on the launch pad, and will assemble the Launch Vehicle and prepare for Mating of the Orbiting Vehicle, under the direction of the Launch Operations Agency (ATW). The Launch Operations Agency (ATW) will approve the readiness of the T-IIIM Orbiting Vehicle Mating.

15. Assembly of the Flight Vehicle.

The Laboratory Vehicle shall be delivered to the launch pad by the Laboratory Vehicle Contractor. The Launch Vehicle Contractor will conduct the mating of the Laboratory to the Launch Vehicle. The Gemini B shall be delivered to the launch pad by the Gemini B Contractor.

18. Prepare Lab Module Orbital Procedures.

The Laboratory Vehicle Contractor will prepare procedures to be followed in the operation of the Laboratory Module while on orbit. This will include both normal and emergency procedures.

19. Prepare Mission Module Operations Procedures.

The Experiment Integrating Contractor will prepare procedures to be followed in the experiment operations on orbit.

20. Integrate Flight Crew Orbital Procedures.

The Laboratory Vehicle Contractor will act as an integrating agent for establishment of the flight crew orbital procedures. This will include contributions from all contractors and agencies involved in the operations of the Orbiting Vehicle. It will also include the contributions and directions received from the MOL SPO/Aerospace.

21. Prepare Gemini B Re-entry Guidance Equations.

The Gemini B Contractor is required to prepare and maintain Gemini B re-entry guidance equations for each mission.

22. Prepare Crew De-Orbit and Re-entry Procedures.

The Gemini B Contractor will prepare flight crew procedures for orientation of the spacecraft, the de-orbit retrorocket firing, and re-entry following mission termination. These procedures will include both normal conditions and emergency conditions.

23. Integrate Orbital Abort Procedures.

The Laboratory Vehicle Contractor will prepare procedures for orbital abort when the flight crew is in the Laboratory Vehicle. This will include integration of contributions from the Gemini B Contractor, the Pressure Suit Assembly Contractor, the Flight Operations Agency, and the Recovery Agency.

24. Direct and Coordinate Flight Crew Training.

The MOL SPO will control, direct, and coordinate all aspects of crew selection, acquisition, logistics, and training. MOL flight crew training will be over an extended period, involving support by many agencies and contractors, and closely coordinated with the program schedule; therefore, the flight crew will become an integral part of the SPO and control of supporting training agencies will necessarily reside in the SPO.

25. Operate Mission Simulator.

The Mission Simulator will be operated by the MOL SPO with Contractor participation to train flight crew members; to exercise the Satellite Test Center; and to develop operating procedures.

26. Operate MOL Launch Facility.

For MOL operation, the MOL Launch Facility will be operated under the direction of the Launch Operations Agency (ATW).

27. Assemble T-III on the Launch Pad.

The Launch Vehicle Contractor will assemble the T-III Launch Vehicle on the launch pad and will conduct procedures and tests necessary to prepare the Launch Vehicle for integrated Flight Vehicle testing.

28. Checkout of Gemini B at Launch Site.

The Gemini B Contractor will checkout the Gemini B at the launch site, and will conduct and direct all test procedures affecting only the Gemini B, subsystems or components.

mission. Support will be given for this task by the Laboratory Vehicle, Gemini B, and Pressure Suit Assembly contractors.

39. Direct and Control Mission Operations.

The MOL SPO will direct and control all phases of Mission Control. Although certain positions or consoles will be manned by AFSCF personnel, the key authoritative positions in the Mission Control Organization will be manned by appropriate MOL SPO personnel.

40. Conduct Gemini B Recovery Operations.

The DOD Manager for Manned Space Flight will conduct Gemini B recovery operations required for pad, powered flight and on-orbit aborts and for the end of Mission in accordance with the Recovery Requirements Document and the Recovery Support Plan.

41. Format Data for Users.

The Flight Operations Agency will be responsible for the integration of all telemetered Data Formatting requirements and procedures, and for providing the data to using Agencies/Contractors in the required format.

F. FACILITIES.

1. Prepare Facility Criteria for Initial Launch Complex.

The Launch Vehicle Contractor will receive technical support requirements from participating contractors and agencies and prepare the ILC criteria.

2. Prepare Facility Criteria for Orbiting Vehicle Support Building.

The Laboratory Vehicle Contractor will receive technical support requirements from participating contractors and agencies and prepare the Laboratory Vehicle Acceptance Building Facility criteria.

3. Deleted.

4. Prepare Facility Criteria for Operational Training and Evaluation Facility.

The Laboratory Vehicle Contractor will receive simulator and biomedical related requirements from participating Contractors and Agencies and prepare the Operational Training and Evaluation Facility criteria.

5. Prepare Facility Criteria for Operational Readiness Unit.

The Laboratory Vehicle Contractor will receive medical and operational requirements from the MOL SPO and prepare the ORU Facility criteria.

6. Prepare Facility Criteria for the Engineering and Operations Building.

The Laboratory Vehicle Contractor will receive engineering support requirements from participating contractors and agencies and prepare the facility criteria for the Engineering and Operations Building.

7. Design Initial Launch Complex.

Design of the Initial Launch Capability (ILC) complex for the Titan IIIM vehicle is the responsibility of the Deputy for Civil Engineering. This includes MOL peculiar facilities in the launch complex area only.

8. Design Orbiting Vehicle Support Building.

The Deputy for Civil Engineering is responsible for design of a Lab Vehicle Acceptance Building for receipt and inspection functions of the orbiting vehicle.

9. Deleted.

10. Design Operational Training and Evaluation Facility.

Design of an Operational Training and Evaluation Facility is the responsibility of the Deputy for Civil Engineering. This includes a mission simulator area and a physiological training and evaluation area.

11. Design Operational Readiness Unit.

The Deputy for Civil Engineering is responsible for design of an Operational Readiness Unit to include quarters, messing, and physical conditioning areas.

12. Design Engineering and Operations Building.

Design of an Engineering and Operations Building is the responsibility of the Deputy for Civil Engineering. This building will provide administrative support to all MOL contractors and Air Force personnel.

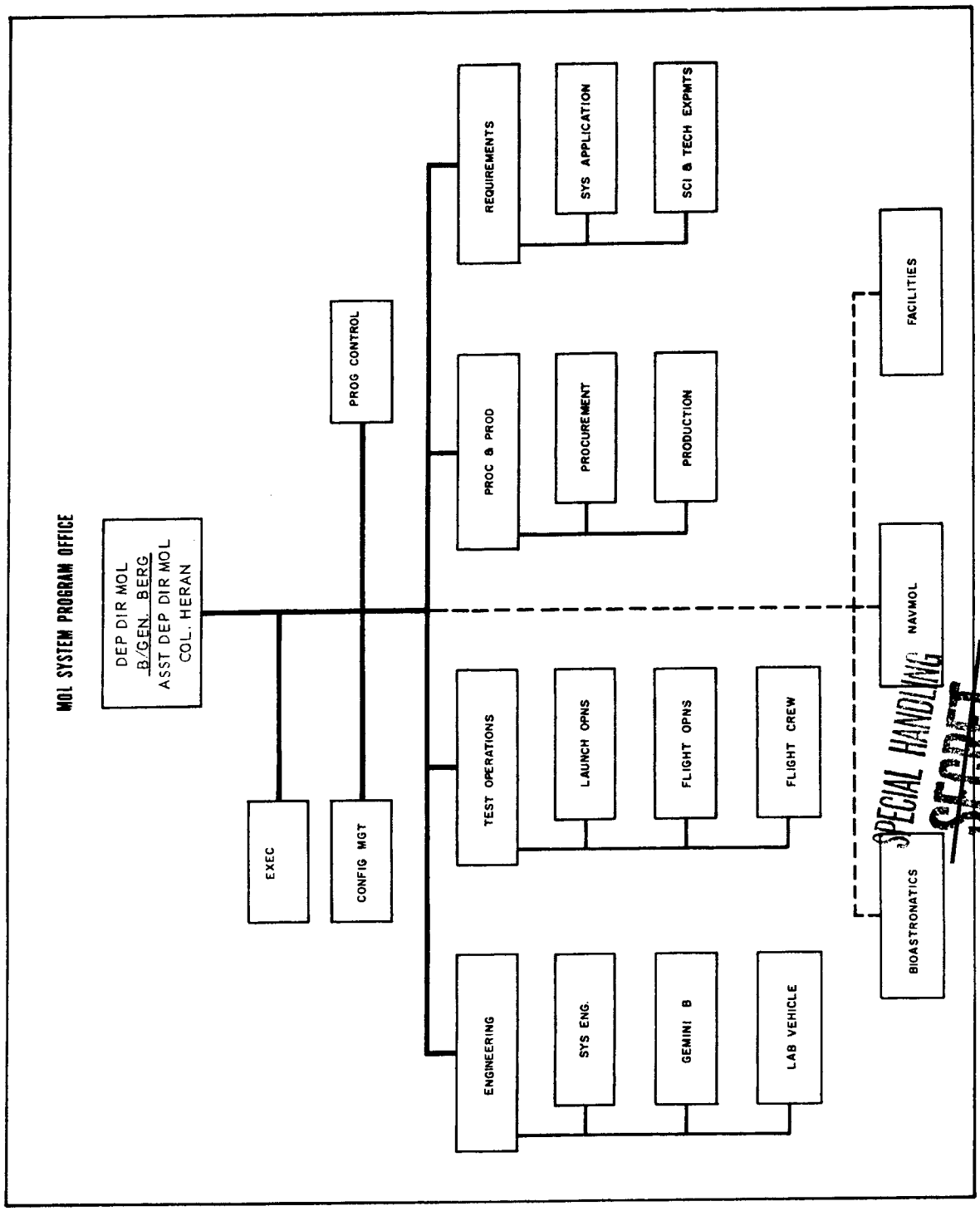

Figure 4-2. MOL System Program Office (MOL SPO)

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PROGRAM BREAKDOWN STRUCTURE

(ROLES & RESPONSIBILITY SUMMARY)

LEVEL 0 – SYSTEM PROGRAM

MANNED ORBITING LABORATORY (MOL) SYSTEM PROGRAM

LEVEL 1 – PROGRAM SEGMENTS

LABORATORY VEHICLE & MOL SYSTEM INTEGRATION	MISSION PAYLOAD (EXPERIMENTS)	GEMINI B	TITAN III	FACILITIES	FLIGHT CREW EQUIPMENT	FLIGHT CREW	TEST SUPPORT	LAUNCH OPERATIONS	FLIGHT OPERATIONS SUPPORT	RECOVERY
MDL SYS ENG INTEGRATION				A & E	PRESSURE SUIT		ANALYSIS & PLANNING	ANALYSIS & PLANNING	ANALYSIS & PLANNING	ANALYSIS & PLANNING
OV SYS ENG & INTEGRATION				CONSTRUCTION	EXTRAVEHICULAR ENVIRONMENTAL CONTROL SYS		HARDWARE	FACILITIES ACTIVATION	MISSION CONTROL HAROWARE	HARDWARE
LV SYS ENG & INTEGRATION	MISSION PAYLOAD SYS ENG & INTEGRATION	GEMINI B SYS ENG & INTEGRATION	T-III SYS ENG & INTEGRATION				PRE-TEST SUPPORT	AGE & SUPPORT EQUIP INSTALLATION & CHECKOUT	MISSION CONTROL SOFTWARE	SERVICES-TEST OPER
MISSION SIMULATOR ENG & INTEGRATION					FLIGHT CREW CLOTHING & ACCESSORIES		COUNTDOWN & LAUNCH SUPPORT	RECEIVING & INSPECTION	ASCENT & ORBIT OPERATIONS	
DV SYS HARDWARE							FLT OPERATIONS SUPPORT	CHECKOUT & PREPARATION FOR INTEGRATION	DEORBIT & REENTRY OPER	
LV SYS HAROWARE	MISSION PAYLOAD HDWR	GEM B SYS HARDWARE	T-III SYS HARDWARE					FLT VEHICLE INTEGRATION (OV/T-III)		
MISSION SIMULATOR HARDWARE								SYS INTEGRATION (FV/MC & AGE)		
SERVICES-TEST OPR	SERVICES-TEST OPR	SERVICES-TEST OPR	SERVICES-TEST OPR					COUNTDOWN & LAUNCH OPERATIONS		
MANAGEMENT & ADMIN	MANAGEMENT & ADMIN	MANAGEMENT & ADMIN	MANAGEMENT & ADMIN							

Figure 2-2. Program Breakdown Structure (Roles and Responsibility Summary)

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Sept 1965

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MOL
PROGRAM BREAKDOWN STRUCTURE
(PBS)

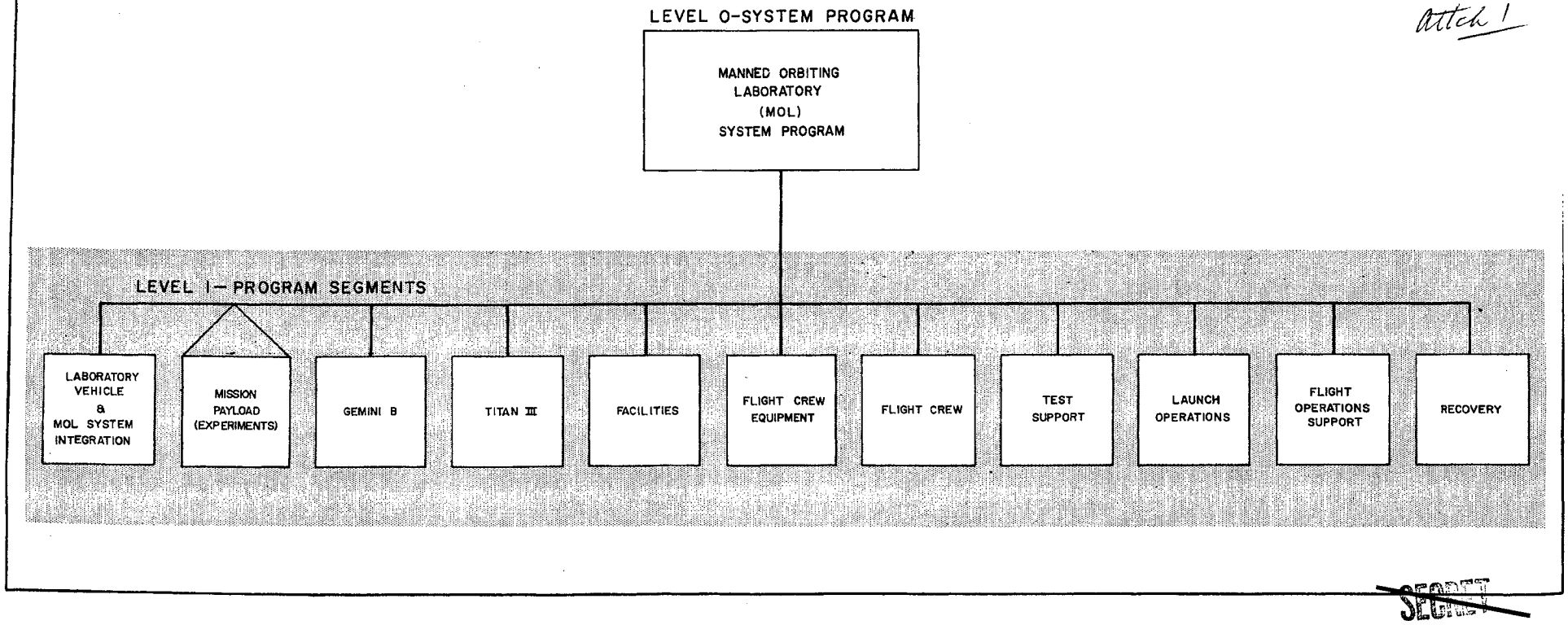

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Figure 2-1. MOL Program Breakdown Structure (PBS)

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TAB A

ADDENDUM

FOR

MISSION PAYLOADS (EXPERIMENTS)

ROLES AND RESPONSIBILITIES

Sept 1965

SSMD-77

MOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING & ANALYSIS

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES: Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Analyze Expmt Mission Objectives & Data	S			S			S	SR	▲
102	Conduct Sys Eng Analysis of Exmpts Equip Functions	S			S		S	S	▲	SR
103	Integrate Sys Eng Analysis of All Expmt Equip Functions	SR			SR		S	S	SR	▲
104	Analyze Expmt Data Handling Reqmts	S						S	▲	S
105	Integrate Experiment Data Handling Reqmts	S						S	S	▲
106	Post Flight Analysis of Expmt Data	S						S	▲	S
107	Summary of Post Flight Analysis of Expmt Data	S						S	S	▲
108	Analyze Expmt Training	S			S			S	S	▲
109	Analyze Expmt Simulation Reqmts	S			S			S	▲	S
110	Analyze Expmts Integrated Simulation Reqmts	S			S			S	SR	▲
111	Analyze Expmt Flt Crew Tasks	S			S			S	S	▲
112	Analyze Expmt Display & Console Reqmts	S			S			S	▲	S
113	Integrate Expmts Display & Console Reqmts	S			S			S	SR	▲
114	Analyze Expmt Mission Profile	S			S			S	▲	S
115	Integrate Expmt Mission Profile	S					S		S	▲
116	Analyze Expmt On-Orbit Check-Out Procedures	S			S			S	▲	S

DOL PROGRAM
ROLES AND RESPONSIBILITIES

A. SYSTEM ENGINEERING & ANALYSIS CONT'D

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTOR OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
117	Analyze Expmt Integrated On-Orbit Check-Out Procedures	S			S			S	S	▲
118	Analyze Expmts Ground Check-Out Procedures & AGE	S					S		▲	S
119	Analyze Integrated Expmts Ground Check-Out Procedures & AGE	S					S	S	SR	▲
120	Analyze Maintenance Reqmts for Expmts Displays & Consoles	S					S		S	▲
121	Analyze Impact of Exmpt Integration Into Orbiting Vehicle	▲			S				SR	SR

MOL PROGRAM
ROLES AND RESPONSIBILITIES

B. ENGINEERING DESIGN

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Expmt Equipment	I							▲	SI
102	Integrate Expmt Equipment	SRI							SR	▲
103	Integrate Expmts Displays & Consoles	SRI							SRI	▲
104	Expmts AGE	~~SI~~ ~~OI~~					S		SR	▲
105	Integrate Expmt ~~Equipment~~ AGE	S					S		SR	▲
106	Prepare Expmts Software Programs for MIS	SR						S	SR	▲
107	Expmts Sub-System Trainers								▲	S
108	Expmts Part Task Trainers	S							▲	S
109	Expmts Procedures Trainers	SRI						SI		▲
110	Mission Module Structure	▲		SRI						SRI
111	Integrate Vehicle & Expmt Displays, & Consoles	▲							SRI	SRI
112	Establish Ground to Space Command Data Interface	SRI						SRI		▲
113	Develop Ground Command Synthesis and Compatibility Software	SRI						SRI		▲

MOL PROGRAM
ROLES AND RESPONSIBILITIES

C. FABRICATION

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Experiment Equipment	I							▲	I
102	Experiment Equipment AGE	I		I					I	▲
103	Experiment Displays & Consoles	I							I	▲
104	Experiment Subsystem Trainers								▲	
105	Experiment Part Task Trainers								▲	I
106	Experiment Procedures Trainers	I						I	I	▲
107	Experiment Special Test Equipment	I		I					▲	I
108	Install Experiment Consoles & Displays in Laboratory Vehicle	▲		I					I	I
109	Install Experiment Equipment into Mission Module	I		I					I	▲
110	Mission Module Data Adapter Units and Computer Simulator	I							I	▲

MOL PROGRAM
ROLES AND RESPONSIBILITIES

D. TEST & INTEGRATION

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Conduct Experiment Development Qualification & Acceptance Test								▲	S
102	Integrate Experiment Equipment into Mission Module								SR	▲
103	Integrate Experiment Consoles and Displays into Laboratory Vehicle	▲								SRI
104	Integrate & Test Experiment AGE	S							SR	▲
105	Conduct Integrated Environmental Test of Mission Module & Expmt Equip	R							SR	▲
106	Integrate & Test Experiment & Orbiting Vehicle AGE	▲								SR
107	Integrate & Test Mission Module & Expmt Equip with Orbiting Vehicle	▲								SR
108	Integrate & Test Mission Modules Computer Subsystem Hardware & Software	SI						RIS	S	▲

MOL PROGRAM
ROLES AND RESPONSIBILITIES

E. TEST OPERATIONS

MISSION PAYLOAD (EXPERIMENTS) ADDENDUM

No.	ACTIVITIES	CONTRACTORS OR AGENCIES								
		Laboratory Vehicle (Contractor)	Gemini B (Contractor)	Titan III (Agency)	Flight Crew Equipment (Contractors)	Test Support (Agency) (NRD)	Launch Operations (Agency) (6595th ATW)	Flight Operations (Agency) (SCF)	Experiment Payload (Contractor)	Experiment Integration (Contractor)
101	Prepare Experiments Test Plan	S						SR	R	▲
102	Prepare Experiment Data Acquisition Plan	S						S	R	▲
103	Prepare Experiments Ground Checkout Procedures	R					S		R	▲
104	Prepare Experiments On-Orbit Checkout Procedures	SR				S		SR	R	▲
105	Checkout Experiments At Launch Site	SR					S	R	S	▲
106	Prepare Experiments Operations Procedures Plan	S			S			S	SR	▲

L. Strong

MESSAGEFORM

RESERVED FOR COMMUNICATION CENTER

SPECIAL HANDLING

COPY

SECURITY CLASSIFICATION [redacted]

TYPE MSG	BOOK	MULTI	SINGLE

PRECEDENCE

ACTION ROUTINE

INFO ROUTINE

DTG

FROM: SPACE SYSTEMS DIVISION, LOS ANGELES AIR FORCE STATION, LA, CALIF

TO: GENERAL ELECTRIC COMPANY, VALLEY FORGE SPACE TECHNOLOGY CENTER, KING OF PRUSSIA, PA.

INFO: DCASR, PHILADELPHIA, PENNSYLVANIA

~~SECRET~~/SAR SSM/MP-8/23212 FEB 66

SPECIAL ACCESS REQUIRED AFR 205-23 (U) CLASSIFIED SPACE PROJECT NUMBER 632A.

TO ALL HOLDERS OF THE GOVERNMENT PLAN FOR PROGRAM MANAGEMENT. THE FOLLOWING LAUNCH SCHEDULE WILL BE USED AS A PLANNING BASELINE FOR ACCOMPLISHING PRELIMINARY SCHEDULE ESTIMATES REQUESTED IN PAR. 2 OF DEPUTY DIR FCR MOL LETTER OF 28 JAN 66, SUBJECT (U) "INTEGRATED TESTING OF MOL LABORATORY MODULE AND MISSION MODULE FACTORY TO LAUNCH SEQUENCE". THE SUSPENSE DATE OF THESE PRELIMINARY ESTIMATES IS CHANGED TO 25 FEB 1966.

MOL FLIGHT ONE	OCT 68 (TIII DEV FL TEST)
MOL FLIGHT TWO	FEB 69 (GEMINI B QUAL)
MOL FLIGHT THREE	JUN 69
MOL FLIGHT FOUR	OCT 69
MOL FLIGHT FIVE	FEB 70
MOL FLIGHT SIX	JUN 70

P-80700 cy#3

SPECIAL INSTRUCTIONS

Cy to:
NRW (SSD) Col Anderson

SSO(SSD) Col Hedrick

DDMS Patrick AFB, Fla., Attn: Col Olson

6595 ATW, Attn: LtCol Harchalk Vandenberg AFB

SSMB (SSD) Col Miller

MP-4 MP-11
MP-5 MP-12
MP-6
MP-7
MP-8
MP-9
MP-10

SSM/MP-8/67

DATE	TIME
10	
MONTH	YEAR
FEB	1966
PAGE NO.	NO. OF PAGES
1	2

TYPED NAME AND TITLE: MARCEL LIND, Col, USAF
DEPUTY FOR PROGRAM CONTROL, MOL

PHONE: 30352

SIGNATURE: SIGNED/

TYPED (Printed) NAME AND TITLE: LEONARD T. ATKINS
CONTRACTING OFFICER

SPECIAL HANDLING

SECURITY CLASSIFICATION [redacted]

REGRADING INSTRUCTIONS: GP-3

DD FORM 1 NOV. 63 173 REPLACES EDITION OF 1 MAY 63 WHICH MAY BE USED.

GPO : 1964 O-734-401

JUL 12 1966

JOINT MESSAGEFORM - CONTINUATION SHEET

SECURITY CLASSIFICATION [redacted]

FROM:

HQ SSD LAAFS, LOS ANGELES, CALIF

COPY

MOL FLIGHT SEVEN OCT 70

MOL FLIGHT EIGHT FEB 71

MOL FLIGHT NINE JUN 71

REVISIONS TO THE "GOVERNMENT PLAN FOR PROGRAM MANAGEMENT" WILL BE FURNISHED AT A LATER DATE. SIGNED LEONARD T. ATKINS, CONTRACTING OFFICER. GP-3

[redacted]

SECRET [redacted]

SSM/MP-8/67

SYMBOL	PAGE NR	NR OF PAGES	SECURITY CLASSIFICATION	INITIALS
MP-8	2	2	[redacted]	

DD FORM 1 MAY 55 173-1

☆ U. S. GOVERNMENT PRINTING OFFICE: 1962—632908

JOINT MESSAGEFORM

SECURITY CLASSIFICATION

TYPE MSG: BOOK | MULTI | SINGLE

PRECEDENCE
ACTION: ROUTINE
INFO: ROUTINE

RESERVED FOR COMMUNICATION CENTER

SPECIAL HANDLING

[redacted]

DTG

FROM: SPACE SYSTEMS DIVISION, LAAFS, LOS ANGELES, CALIF 90045

TO: DOUGLAS AIRCRAFT COMPANY
HUNTINGTON BEACH, CALIFORNIA

INFO: AFPRO-DOUGLAS, HUNTINGTON BEACH, CALIF

~~SECRET~~/SAR SSM/MP-8/23211 FEB 66

"SPECIAL ACCESS REQUIRED AFR 205-23 (~~S~~) CLASSIFIED SPACE PROJECT NUMBER 632A"

TO ALL HOLDERS OF THE GOVERNMENT PLAN FOR PROGRAM MANAGEMENT. THE FOLLOWING LAUNCH SCHEDULE WILL BE USED AS A PLANNING BASELINE FOR ACCOMPLISHING PRELIMINARY SCHEDULE ESTIMATES REQUESTED IN PAR. 2 OF DEPUTY DIR FOR MOL LETTER OF 28 JAN 66, SUBJECT: (U) "INTEGRATED TESTING OF MOL LABORATORY MODULE AND MISSION MODULE FACTORY TO LAUNCH SEQUENCE". THE SUSPENSE DATE OF THESE PRELIMINARY ESTIMATES IS CHANGED TO 25 FEB 1966.

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MOL FLIGHT THREE	JUN 69
MOL FLIGHT FOUR	OCT 69
MOL FLIGHT FIVE	FEB 70
MOL FLIGHT SIX	JUN 70

SPECIAL INSTRUCTIONS
Cy to:
NRW (SSD) Col Anderson
SSO (SSD) Col Hedrick
DDMS Patrick AFB, Fla., Attn: Col Olson
6595 ATW, Attn: LtCol Harchalk Vandenberg AFB
SSMB(SSD) Col Miller
MP-4
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MP-6
MP-7
MP-8
MP-9
MP-10
MP-11
MP-12

SSM/MP-8/65

DATE: 10 | TIME:
MONTH: FEB | YEAR: 1966
PAGE NO. 1 | NO. OF PAGES 2

DRAFTER — TYPED NAME AND TITLE: MARCEL LIND, COLONEL, USAF, DEPUTY FOR PROGRAM CONTROL, MOL
PHONE: 30352

RELEASER — SIGNATURE: /SIGNED/
TYPED (or stamped) NAME AND TITLE: LEONARD T. ATKINS, CONTRACTING OFFICER

SPECIAL HANDLING

COPY

SECURITY CLASSIFICATION: ~~SECRET~~
REGRADING INSTRUCTIONS: GP-3

DD FORM 1 NOV 63 173 REPLACES EDITION OF 1 MAY 55 WHICH MAY BE USED

GPO : 1964 O-734

JOINT MESSAGEFORM - CONTINUATION SHEET

SECURITY CLASSIFICATION [redacted]

FROM:

SSD, LAAFS, LOS ANGELES, CALIF

SPECIAL HANDLING COPY

MOL FLIGHT SEVEN	OCT 70
MOL FLIGHT EIGHT	FEB 71
MOL FLIGHT NINE	JUN 71

REVISIONS TO THE "GOVERNMENT PLAN FOR PROGRAM MANAGEMENT" WILL BE FURNISHED AT A LATER DATE. SIGNED LEONARD T. ATKINS, CONTRACTING OFFICER. GP-3.

[redacted]

SSM/MP-8/65

COPY

SYMBOL	PAGE NR	NR OF PAGES	SECURITY CLASSIFICATION	INITIALS
MP-8	2	2	[redacted]	

DD FORM 1 MAY 55 173-1

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SPECIAL HANDLING

JOINT MESSAGEFORM

RESERVED FOR COMMUNICATION CENTER

COPY String

SECURITY CLASSIFICATION

SPECIAL HANDLING

[redacted]

TYPE MSG	BOOK	MULTI	SINGLE

PRECEDENCE

ACTION ROUTINE

INFO ROUTINE

DTG

FROM: HQ SSD, LAAFS, LOS ANGELES, CALIF

TO: McDONNELL AIRCRAFT CORP
P.O. BOX 516, ST. LOUIS, MISSOURI

INFO: BUWEPS REP, C/O McDONNELL AIRCRAFT CORP
P.O. BOX 516, ST LOUIS, MISSOURI

SSM/MP-8/23213 ~~SECRET~~/SAR FEB 66

SPECIAL ACCESS REQUIRED AFR 205-23 ~~(S)~~ CLASSIFIED SPACE PROJECT 632A TO ALL HOLDERS OF THE GOVERNMENT PLAN FOR PROGRAM MANAGEMENT. THE FOLLOWING LAUNCH SCHEDULE WILL BE USED AS A PLANNING BASELINE FOR ACCOMPLISHING PRELIMINARY SCHEDULE ESTIMATES REQUESTED IN PAR. 2 OF DEPUTY DIR FOR MOL LETTER OF 28 JAN 66, SUBJECT (U) "INTEGRATED TESTING OF MOL LABORATORY MODULE AND MISSION MODULE FACTORY TO LAUNCH SEQUENCE". THE SUSPENSE DATE OF THESE PRELIMINARY ESTIMATES IS CHANGED TO 25 FEB 1966.

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SPECIAL INSTRUCTIONS

Cy to:
NRW (SSD) Col Anderson

SSD(SSD) COL Hedrick

DDMS Patrick AFB, Fla., Attn: Col Olson

6595 ATW, Attn: LtCol Harchalk Vandenberg AFB

SSMB (SSD) Col Miller

MP-4
MP-5
MP-6
MP-7
MP-8
MP-9
MP-10
MP-11
MP-12

P-22703 Cy #3

SSM/MP-8/66

DATE	TIME
10	
MONTH	YEAR
FEB	1966
PAGE NO.	NO. OF PAGES

DRAFTED BY

TYPED NAME AND TITLE
MARCEL LIND
Colonel, USAF
Deputy for Program Control, MOL

PHONE
30352

RELEASED BY

SIGNATURE
/SIGNED/

TYPED (or printed) NAME AND TITLE
DAVID C. EESBRIS
CONTRACTING OFFICER

SECURITY CLASSIFICATION

SPECIAL HANDLING

ENCRYPTION INSTRUCTIONS
GP-3

DD FORM 1 NOV. 63 173

PREVIOUS EDITION OF 1 MAY 58 WHICH MAY BE USED

* GPO : 1964 O-734-401

AFTRA MESSAGEFORM - CONTINUATION SHEET | SECURITY CLASSIFICATION [redacted]

FROM:
HQ SSD, LAAFS, LOS ANGELES, CALIF

MOL FLIGHT SEVEN OCT 70

MOL FLIGHT EIGHT FEB 71

MOL FLIGHT NINE JUN 71

REVISIONS TO THE "GOVERNMENT PLAN FOR PROGRAM MANAGEMENT" WILL BE FURNISHED AT A LATER DATE. SIGNED DAVID C. DESENIS, CONTRACTING OFFICER. GP-3.

SSM/MP-8/66

[redacted]

SPECIAL HANDLING

SYMBOL	PAGE NR	NR OF PAGES	SECURITY CLASSIFICATION	INITIALS
MP-8	2	2	[redacted]	

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