

ACTION SSB

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10 1964 MAR

243
1964 MAR 10 AM 6:32

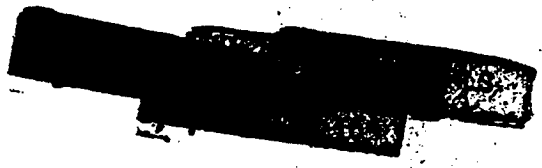
INFO SSYE

SST
SSTA-1

IC 4003

ZCZCBKA493ZCJQC542
RR RUWHBK
DE RUEAGL 157 09/2232Z
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O SSD LOS ANGELES CALIF

gp-3
see last page



~~SECRET~~ MSF 9-3-13 SECTION 1 OF 2.
FOR SSG. SUBJ: PRELIMINARY TECHNICAL DEVELOPMENT
PLAN (PTDP) FOR THE MOL PROGRAM. 1. IT IS APPARENT
THAT APPROVAL OF A PLAN FOR DEVELOPMENT OF THE MOL
PROGRAM WILL NOT BE FORTHCOMING FROM DOD UNTIL WE
PRESENT TO THE SEC OF DEFENSE A CONVINCING ACCOUNT OF
MOL PROGRAM EXPERIMENTS WHICH WILL SATISFY THE OB-
JECTIVE OF DEMONSTRATING QUALITATIVE
AND QUANTITA-
TIVELY THE MILITARY USEFULNESS OF MAN IN SPACE. THE
PRELIMINARY DEVELOPMENT PLAN OUTLINE SUBMITTED

PAGE 2 RUEAGL 157 ~~SECRET~~
TO DOD ON 7 JAN 64 DID NOT FULLY MEET THIS REQUIREMENT
THEREFORE, THERE IS A NEED TO SUBMIT A PTDP WHICH
EMPHASIZES THE APPROACH TO BE TAKEN TO MEET THE
PROGRAM OBJECTIVES. 2. ACCORDINGLY SSD IS REQUEST-
ED TO PREPARE A PTDP WHICH WI

LL SERVE THE FOLLOWING
PURPOSES: A. IT WILL SERVE AS THE SINGLY AUTHORITATIVE
REFERENCE DOCUMENT ON THE MOL PROGRAM AND, AS SUCH,
PROVIDE THE FRAMEWORK WITHIN WHICH ALL SUBSEQUENT
PROGRAM ELEMENTS AND ACTIONS CAN BE INTEGRATED BY
SUBSEQUENT PERIODICAL UPDATING. THUS IT WILL PERMIT
FOCUS WITHIN A SINGLE DOCUMENT UPON ALL ACTIVITIES
INITIATED IN SUPPORT OF THE MOL PROGRAM. B. IN ITS
INITIAL VERSION, IT WILL DESCRIBE IN DETAIL THE PRE-
PHASE I STUDIES AND EFFORTS TO BE UNDERTAKEN IN DEFIN-
ING EXPERIMENTS REQUIRED TO SUPPORT THE CONTINUING
EFFORT IN THE MOL PROGRAM. IT WILL THUS SERVE TO IN-
SURE THAT THESE EFFORTS WILL BE COORDINGTED AND, IN
AGGREGATE, CONSTITUTE A COMPLETE AND VIABLE PRE-
PHASE I EFFORT UPON WHICH THE PREPARATION OF THE MOL
PHASE I RFP S CAN BE BASED. IT WILL SERVE AS THE DOGU-

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IC 4001 - Sect II

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MENT TO OBTAIN DOD APPROVAL FOR STUDIES IN THE PRE-
PHASE I PERIOD WITHOUT COMMITTING DOD TO THE APPROVAL
OF THE ENTIRE MOL PROGRAM. C. IN ADDITION, IT WILL
CONSTITUTE AN OUTLINE AND FORMAT OF A COMPLETE TDP
FOR THE CONDUCT OF THE MOL PROGRAM. HOWEVER, THE
INITIAL DOCUMENT NEED NOT GO INTO DEPTH IN THE PROGRAM
ACTIVITIES REQUIRED AFTER THE INITIATION OF PHASE I.
THESE SHOULD BE COVERED IN GENERAL TERMS AND WHERE
INFORMATION IS NOT AVAILABLE, SIMPLY INDICATE THAT
SECTIONS ARE OMITTED AND WILL BE INCLUDED WHEN THE
INFORMATION IS AVAILABLE. THIS WILL

PROVIDE FOR THE
ORDERLY UPDATING OF THE ENTIRE PACKAGE. 3. PROPOSED
STUDIES AND OVERALL APPROACH IN PRE-PHASE I SHOULD BE
DIRECTED TOWARD THE DEFINITION AND SYNTHESIS OF EXPER-
IMENTS WHICH MEET THE APPROVED CRITERIA, I. E., THEY
WILL ESTABLISH QUALITATIVE AND QUANTITATIVE MEASURE-
MENTS OF MAN'S USEFULNESS IN SPACE IN PERFORMING MILI-
TARY TASKS. THE PROPOSED EXPERIMENTS SHOULD HAVE
CONSIDERED THE ENTIRE SPECTRUM OF POSSIBLE MILITARY
APPLICATIONS. IN THIS REGARD, THEY SHOULD BE FOCUSED

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UPON THE ROLE OF MAN RATHER THAN UPON THE ROLE

E OF
SPECIFIC EQUIPMENT. 4. WHILE EXPERIMENTS WHICH WOULD
ASSESS MAN'S ROLE IN RECONNAISSANCE MAY BE CONSIDERED,
IT IS EMPHASIZED THAT THE DEVELOPMENT OF A MANNED
RECONNAISSANCE SYSTEM IS NOT AN APPROVED OBJECTIVE
FOR THE MOL PROGRAM. EXPERIMENTS RELATED TO RECON-
NAISSANCE WILL ATTEMPT TO DETERMINE MAN'S CAPABILITIES,
WITH APPROPRIATE AIDS TO POINT AN INSTRUMENT WITH
ACCURACY BETTER THAN ONE HALF MILE, TO ADJUST FOR
IMATE MOTION TO BETTER THAN 0.2 PERCENT, AND TO FOCUS
PRECISELY (IF THIS IS NECESSARY). A. ALL MOL DEVELOP-
MENT PLANS AND BRIEFINGS IN RELATION TO RECONNAISSANCE
OBJECTIVES WILL BE CONFINED TO THESE PARTICULAR OB-
JECTIVES AND EVERY STEP WILL BE TAKEN TO AVOID SPON-
SORING OR ENCOURAGING ANY EFFORTS TO PROPOSE ACTUAL
RECONNAISSANCE CAPABILITY OR TO DESCRIBE THE ESTIMATED
STATE OF THE ART IN SATELLITE RECONNAISSANCE. ALL
AFSC IN-HOUSE AND CONTRACTOR WORK, INCLUDING DISCUS-
SIONS WITH CONTRACTORS, WILL BE CONFINED TO THESE
OBJECTIVES. B. PHOTOGRAPHY OF RECONNAISSANCE QUALITY

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PAGE 5 RU AGL 157 ~~SECRET~~

WILL NOT BE USED TO RECORD OR VERIFY PERFORMANCE. IMC AND FOCUS EXPERIMENTS WILL BE PERFORMED USING A TELESCOPIC SYSTEM. POINTING ACCURACY CAN BE RECORDED WITH A SIMPLE COLLIMATED CAMERA OF RESOLUTION EASILY AVAILABLE FROM UNCLASSIFIED EQUIPMENT. IMC PERFORMANCE CAN BE RECORDED BY PHOTOGRAPHING STARS OR BY USE OF LONG EXPOSURES OR IN OTHER REASONABLY UNSOPHISTICATED WAYS. FOCUS EXPERIMENTS, IF NECESSARY, CAN BE CONDUCTED AT SUCH MAGNIFICATION THAT RECONNAISSANCE CONDITIONS ARE SIMULATED WITHOUT BEING DUPLICATED.

5. IT MAY BE ASSUMED THAT ADDITIONAL EXPERIMENTS WILL BE UNDERTAKEN LATE IN THE PROGRAM. DETAILS OF THESE PROPOSED EXPERIMENTS WILL BE PROVIDED AT A LATER DATE BY SEPARATE CORRESPONDENCE. NO CONSIDERATION NEED BE GIVEN TO THESE ADDITIONAL EXPERIMENTS IN THE 1 APRIL SUBMISSION OF YOUR PTDP. 6. THE FOLLOWING ADDITIONAL GROUND RULES APPLY: A. THE PTDP SHOULD BE FORWARDED TO HIS HQ (ATTN MSF-1) AS SOON AS POSSIBLE, BUT NO LATER THAN 1 APRIL 1964 AND ACCOMPANIED BY AN APPROPRIATE BRIEFING. B. ALL RFP'S AND WORK STATE-
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ACTION SSBV

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1964 MAR 10 AM 6:32

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RR RUWHBK
DE RUEAGL 158 09/2232Z
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TO SSD LOS ANGELES CALIF
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~~SECRET~~ MSF 9-3-13 FINAL SECTION OF 2.
MENTS OF ALL CONTRACTS RELATED TO MOL EXPERIMENTS
WILL BE SUBMITTED TO THIS HQ PRIOR TO DISCUSSION WITH
CONTRACTORS. C. MAXIMUM UTILIZATION WILL BE MADE
OF EXISTING STUDIES CONDUCTED BOTH WITHIN THE AIR
FORCE AND BY OTHER AGENCIES IN ORDER TO MINIMIZE THE
TIME REQUIRED FOR PROGRAM APPROVAL. D. MAXIMUM USE
WILL BE PROPOSED OF GROUND TESTS, SIMULATION, AIRCRAFT
TESTS, AND USE OF EXISTING SPACE PROGRAMS FOR TESTING.

PAGE 2 RUEAGL 158 ~~SECRET~~
EXPERIMENTS PROGRAMMED FOR THE MOL SHOULD BE THOSE
WHICH CANNOT BE ACHIEVED IN ANY OTHER WAY OR IN WHICH
THE ACTUAL EXPERIMENT IN MOL CONSTITUTES PROOF TESTS
OF EXPERIMENTS PRIMARILY CONDUCTED IN OTHER AREAS.
7. THIS MESSAGE IS CLASSIFIED SECRET BECAUSE IT CONTAINS
SPACE PLANNING INFORMATION VITAL TO NATIONAL DEFENSE.
GP-3.
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INTERVALS; NOT AUTOMATICALLY
DECLASSIFIED. DOD DIR 5200.10

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IVA 112...
17 March 1964

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MANNED ORBITAL LABORATORY TECHNICAL PANEL

FIRST PRELIMINARY REPORT

28-3

Section I

Introduction

The Secretary of Defense has recently announced a manned space project which has been designated the Manned Orbital Laboratory (MOL). The Air Force is to manage this project. The MOL program is to have a twofold purpose; basically it is intended to assess man's utility and ability to perform a military mission in space; secondarily, it will include those military experiments which can make best use of the MOL vehicle and which at the same time can be accommodated. Since the National Aeronautics and Space Administration may also enter into the program, other than military experiments may be carried. The MOL program presents an excellent opportunity for the Navy to investigate and establish man's usefulness in space in the performance of naval missions. The investigations of the MOL program are intended to test or check only those components or parts of a military system which require the presence of man in space to determine the potential usefulness of the complete military system which could follow.

At present the MOL program stands in need of justification within the Department of Defense in order to obtain the necessary approvals for the preparation of a complete technical development plan as a first step in getting the program under way.

In order to prepare the Navy's plan for MOL experiments, by reference (a) the Bureau of Naval Weapons established a MOL Technical Panel composed of members from each bureau, the Office of Naval Research, the Institute of Naval Studies, and such other naval field activities or laboratories as were interested in or capable of making a contribution. The Naval Research Laboratory was requested to act as host activity and to designate the Panel chairman. The function of the Panel was to generate in detail a series of space experiment proposals suitable for flights on the MOL. A summary report recommending an array of experiments and supported by preliminary cost estimates, development schedules, experiment plans, and recommended sponsors for each experiment (a Navy laboratory or a contractor) was to be submitted to the Bureau of Naval Weapons for approval and ensuing action to assign specific follow-on responsibility and for funding support.

The first meeting of the MOL Technical Panel took place on 27-28 February 1964 at the Naval Research Laboratory under the chairmanship of Dr. W. C. Hall of the NRL. Minutes of this meeting have

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been provided to all participants (reference [b]). Those in attendance at this meeting as members of the MOL Technical Panel are listed in reference (b).

While further meetings of the MOL Technical Panel will be needed to complete the assignment of the Panel, the urgent time schedule now being followed in the development of the MOL program makes it advisable to submit a preliminary report at the present time. This preliminary report will discuss in some detail the concept for experiments bearing upon the Navy missions and provide all information that is available at the present time. It will also list briefly some of the more important work yet remaining to be done. The text of the report has not been circulated to Panel members for concurrence, again owing to lack of time, and hence represents the opinions and work of only a small number of the whole Panel. For this report, therefore, the Chairman alone must accept responsibility.

The guidelines provided by the Navy for the MOL Technical Panel were simply the following: that ocean surveillance, anti-submarine warfare, and command and control missions were to be given primary emphasis.

There were several approaches which could be followed by the Technical Panel in performing its mission. It could proceed logically to develop a series of experiments based upon concepts of the Navy mission to provide global coverage of the oceans; thus the Navy is required to maintain global surveillance over surface shipping. Similarly it needs surveillance over the globe for submarine activity. For both purposes it needs all-weather orbital sensors capable of detecting the presence of and classifying ocean going ships and submarines. In each case the same barrier to progress is reached, namely, the inability of the present state of the art to provide sensors in spacecraft capable of obtaining the necessary information for full performance of the mission.

A second approach being followed by the Space Systems Division of the United States Air Force is to study thoroughly all suggested experiments which can be performed in the following general areas: (1) reconnaissance and surveillance; (2) other missions - including satellite survivability; satellite logistics, maintenance, and repair; and finally satellite orbital command posts; (3) bio-astronautics; and (4) general tests or general science.

The approach chosen by the MOL Technical Panel is a variation of the second approach. Thus the MOL Panel chose to consider those military missions which are now possible considering the state of the


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art, and of interest to the Navy. Each possible experiment needs to be reviewed critically to determine whether it involves man in an essential manner; it needs to be reviewed to determine whether it is of unique Navy interest; it needs to be reviewed to determine whether it is being done now by unmanned satellites. Table 1 presents a number of astronautic missions possible in the time period of 1968-1970 and of interest to the Navy. Opposite each of the astronautic missions there listed may be found an appropriate comment.

Table 1

Astronautic Missions of Naval Interest

Ocean Surveillance	The SAMOS Program of the AF has been active since 1961.
Command and Control	The STARLIGHT Report recommended space-oriented command ships.
General Science	NASA has OSO, OGO, OAO, and Explorer programs under way.
Communications	TELSTAR, RELAY, SYNCOM, LOFTI, COMSAT Programs, etc., are now under way.
Electronic Countermeasures	Of general interest to all Services.
ELINT	
	The AF has the MIDAS Program. The related program is SAINT.
Meteorology	Present major programs are TIROS, NIMBUS, and the Operational Weather Satellite.
Navigation	TRANSIT and the ADVANCED TRANSIT programs are under way.
Bio-astronautics	NASA has a series of six bio-satellites planned.

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Orbital Defense	The DYNASOAR Program has been cancelled for reasons of economy.
Naval Ocean Data Satellites	NASA has a program for data collection satellites under preliminary study.
Precision Delivery Satellites	No Navy mission is now foreseen.
Logistics, Maintenance, and Repair of Satellites	--
Geodesy	The ANNA Program exists to fill this requirement.
Anti-submarine Warfare	The state of the art is not sufficiently far advanced.

* * *

The MOL Technical Panel received in all 89 experiment proposals, or topic ideas, for Navy astronautic systems. The Panel assumed that astronautics was to be regarded purely as a technology which could be used to improve the capability of the Navy to operate globally and maintain control of the seas. With this assumption, it arrived at the grouping given in Appendix B for these 89 experiments, and shown by Figure 1. It will be seen that the two groups receiving the greatest attention from the MOL Technical Panel members are those of Ocean Surveillance and General Science.

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