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E.O. 13526, SECTION 5.3(b)(3)

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H. J. Brown  
cc. L. E. Root  
R. R. Kearton

December 4, 1959  
LMSD/557530

W. M. Hawkins 10-01 1 25081

ASSESSMENT OF PROGRAMS FOR WEEK ENDING DECEMBER 4

POLARIS

Our schedule "B" informally accepted by SP has run into serious difficulty because of guidance system production problems. We are attempting to work out a schedule with General Electric which will minimize the change to the "B" program. However, it appears unavoidable that the shipfill date for the third submarine will have to slip about six weeks. This extension happens to fall in rather neatly with a problem on the construction of the third submarine which may cause it to delay about two months.

A task force, established by PMS and Operations, is doing a fine job assisting Aerojet in their systemization and reorganization. We have five experts in Sacramento on a continuing basis.

It seems that the engineering fixes made on the Polaris 2nd stage are paying off, and we expect our flight test program to continue with minimum difficulty, at least from that cause.

SATELLITE SYSTEMS

Following BMD instruction to reduce the funding in Satellite Systems to [redacted] for F.Y. '60, we have indicated to them specific reductions in the scope of our three programs - Discoverer, Midas, Samos. We have received concurrence with our proposed reduction in the case of Discoverer, and the corresponding reductions in Midas and Samos are being negotiated with the BMD program directors. A considerable effort is being put forward by BMD to provide sufficient funds for the complete program. We have further information that sufficient funds for Discoverer's 29 flight program will be available, but no written authorization as yet. Extensive preparations for a presentation of the problem in Washington are now going along; we are assisting BMD with presentation material.

VAN NUYS PROGRAMS

LOCAT. Mr. Isaacs requested submittal of a firm proposal for our "Target in Space" program. After his briefing by the Redstone personnel, he stated that no other contractor had offered to provide target service in less than a year so our basic proposal still was attractive, and in general other contractors have submitted firm fixed price for vehicles and a cost plus or reimbursable arrangement for conduct of the flight operations. The more detailed price exercise on LOCAT is continuing. Commitments from vendors indicate that the target prices for equipment may be underrun substantially. Financial Operations has inputs from supporting organizations.

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X-7 FOLLOW-ON. Don Walter confirms that Marquardt has taken a positive position with Boeing and with the Air Force personnel, specifically Col. John Coulter, that seven additional BOMARC flights are required. He confirms that Boeing supports this, and that Boeing's position is that the X-7 has been, and is, a basic tool in their program and that it is inappropriate at this time to eliminate it, that Boeing apparently is not as specific in their demand for flights as Marquardt, but that they are firm in their request for the X-7 capability to be continued.

Original Signed by  
S. W. BURRIS

W. M. Hawkins  
Assistant General Manager

WMK:mm

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cc: L. E. Root  
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WEEKLY ASSESSMENT REPORT - WEEK ENDING JULY 22

POLARIS

The highlight of the week was the double SDAP firing from the George Washington submarine, a very conspicuous success and a verification of the entire Polaris system. We still have a few things left to do on the program. The entire SDAP operation was delayed one day as a result of a "no go" signal from the DATICO equipment, which now appears to have been rejecting a quite satisfactory bird. The first of the two shots left the water at a surprisingly high angle, variously estimated at 35° to 45°, which is too close to the upper design limit. But these do not detract from the overwhelming success of Wednesday's exercise.

We are still holding our dates on the first and second shipfill, and also on the pipeline missiles for the tender, in spite of the effects of the recent strike. Aerojet delivery of motors for this program is good; our weakest point is the delivery of GE guidance equipment. We should now be receiving ten of these per month, but we have only received two so far this month. Apparently limitations in checkout are the major problems. We are maintaining our AIP schedules by funneling all guidance equipment into shipfill missiles, so that our follow-on program (A2X) will be short on guided flights; there are no guidance packages for the first seven. In addition, the A2X program has suffered from the effects of the strike, and appears at present to be slipping by about four weeks.

We have presented a complete report to Washington on the influence of the strike on the Polaris program. SP apparently takes a more pessimistic view than we do, raising the question of the possible degradation of quality which may have resulted from the unusual conditions during the strike. They are presenting a report to CNO on these lines, and are also asking us for estimates on the additional costs incurred as a result of the strike action.

News from both rocket motor subcontractors developing A2 motors is encouraging. AGC has had a successful full-duration firing of the A2 first stage with

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hydraulics and jetevators operating. ABL has made the rotating nozzle work with extremely low operating torques, well below the capacity of our present control package.

### SATELLITE SYSTEMS

Discoverer XIII is on schedule for 27 July, after much difficulty with the diagnostic payload because of joint LMSD-GE participation. The horizon scanner modification to eliminate the trouble found on Discoverer XII has been rechecked on Discoverer XIII at Vandenberg, with complete success; we will incorporate this check on all future vehicles.

We are having considerable difficulty in holding the February launch date for the next Midas flight, but we realize the critical nature of this date. Informal news from BMD is that the interim Thor flights on the Midas program are to be accomplished by adding two more vehicles to the Discoverer program, which will carry the infrared sensing equipment. We are also told that BMD regards the new 75-1 Thor pad at Vandenberg as completely approved. We have not, however, had any formal communication instructing us to proceed on either of these items as yet.

BMD is again having trouble in Washington on the Samos program, and has been instructed to revise the development plan once again. The major modification is to eliminate the Subsystem I activity and the interim Quick-Fix activity at Omaha, the intent apparently being to do any necessary processing of development results in the STC. The new E6 recovery program may be treated as wide open for competition, unless we achieve recovery on Discoverer in the near future. There has been much discussion of this in SAE, and schemes such as Atlas or Titan without a satellite stage, merely stabilized by spinning, have been put forward as alternatives to the more straightforward method.

We have at last received a go-ahead on the E3 advanced readout payload (Electrostatic storage) and are arranging a  subcontract with RCA. There is still a lack of unanimity in BMD on the advisability of this step. A few days ago we received a stop-order from Major Conway, who has consistently opposed the advanced payload.

As the NASA-Agena space program develops, we are running into minor difficulties with both of the NASA laboratories furnishing the payloads. The lunar probe, furnished by JPL, is now 30% overweight, and is higher than our ultimate maximum. JPL has suggested eliminating the 30% conservatism factor which we have used throughout the Air Force program, but we regard this as a considerable risk. We have called the problem to the attention of BMD and NASA by letter, and JPL has now appointed a weight commissar to

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attempt to bring the lunar probe back to normal.

In the NASA Nimbus Program we also have a problem in that the Goddard Lab is now over thirty days late in supplying engineering information, and we have warned them that the launch schedule is in jeopardy.

We have now been authorized to go ahead with A&E work on modification of the Santa Cruz Polaris test stand for the Agena program.

### NUCLEAR PROGRAMS IN RESEARCH ORGANIZATION

We have informal notification that NASA has selected us for the RIFT study program, to work out the technique for flight tests of the first nuclear rocket. Our proposal included help from Celac and Rocketdyne. We regard this as an important first step into the space nuclear propulsion business.

### CHIEF SCIENTIST

During the week Dr. Whitmore visited the Rand Corporation with W. W. Kellogg, and Mr. Kybal visited Boston and Washington. Reports on both of these trips are attached. Mr. Smelt stayed home and examined some anomalous drag data from the Discoverer program, which may have some bearing on our difficulties up to the present. He also gave an address to the International Union of Theoretical and Applied Mechanics, meeting at Stanford on general structural problems associated with fatigue and creep.

W. M. HAWKINS

Attach.

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