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December 19, 1957

MEMORANDUM FOR DR. KILLIAN

FROM : Dr. Kistiakowsky
Dr. Piore
Dr. York, Chairman

SUBJECT: U.S. IGY Satellite Program Prognosis and Recommendations

We have discussed the details of the Vanguard launching program at some length with John Hagen and others from NRL, and we have similarly discussed the Jupiter-C satellite program with von Braun, Froehlich and others. We have also contacted some of the members of the Stewart Committee, and some people in ONR to get their general impressions. We have jointly included the following:

1. Vanguard prognosis. We believe the presently planned Vanguard program, consisting of four more test vehicle firings followed by six satellite vehicle launching attempts has only a 50-50 chance of ultimate success. In the event of success, several successful launchings are as likely as only one.
2. Jupiter-C prognosis. We believe that each individual attempt to launch a satellite by the Jupiter-C group (ABMA and JPL) has a 50-50 chance of success. They presently plan two attempts with a third unit being readied as a back up. The first attempt is planned for late January, the second for early March, and the third not until June because of Hardtack commitments. In this connection we understand that the authorization for going ahead with plans for this third back up rocket have not yet been given. If so, we strongly urge that such authorization be given as quickly as possible.
3. Recommendation re expansion of Jupiter-C program. The ABMA/JPL group also proposes to launch three more satellites weighing from 85 to 130 pounds in the latter half of 1958 using Jupiters instead of modified Redstones as boosters, but using identical second, third and fourth stages. Although the Jupiter is a less well proven booster than the Redstone, we believe it would nevertheless be preferable, since it will be available and can orbit much larger payloads, and the satellite firings will in turn contribute to the Jupiter



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development program. In fact, the use of additional Redstones would evidently interfere with the Jupiter development program at both the production shops and the firing range.

In order to carry out this additional three shot program during the IGY, it is essential that authorization to do so be forthcoming by February 1, 1958. We recommend that such authorization be made.

4. Recommendation re additional Vanguard attempts. It has been suggested that six more satellite launching vehicles be added to the Vanguard program in order to increase the chances of eventual success. Considering firing schedules and available manpower, we doubt that such a plan would be able to contribute much to the satellite program during the IGY. We therefore do not concur in this proposal unless it can be clearly shown that indeed the extra attempts at launching can be made within the year. In any event, we regard additional effort in the Jupiter-C program along the lines in paragraph 3 above would be very much more useful and appropriate.



Herbert York

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