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WDTR

**SUBJECT:** Request for Study of Optimum Method for Acquisition and Tracking of the WS 117L Orbital Vehicle

**TO:** Ramo-Wooldridge Corporation  
Attn: Dr. James C. Fletcher

1. It is requested that Ramo-Wooldridge perform an immediate short study to determine the optimum technique for acquisition and tracking of an orbital vehicle. This study should assume an orbital altitude of 300 miles, and that radar "skin-tracking" will not be used.

2. It is desired that the various systems, i.e., radar interferometer, etc., would be compared with respect to the following general specifications:

- a. Estimated cost.
- b. Ground and support facility requirements.
- c. Vehicle weight and power requirements.
- d. Growth capability, i.e., ability to handle increasing number of vehicle passes.
- e. Settling time, i.e., a measure of the tracking system accuracy vs the number of vehicle passes.
- f. System complexity and/or reliability.
- g. Susceptibility to jamming.
- h. Lead time for obtaining recommended system.
- i. Any other comparison deemed pertinent.

DOWNGRADED AT 12 YEAR  
INTERVALS: NOT AUTOMATICALLY  
DECLASSIFIED. DOD DIR 5200.10

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3. It is desired that the results of this study be transmitted to WDTR by 25 October 1956. The system comparisons should be furnished in tabular form with the assumptions and recommendations presented in letter form in sufficient quantity (5 copies) to WDTR. Not more than 2 man-months shall be devoted for this study.

SIGNED

FREDERIC C. E. OBER  
Lt. Colonel, USAF  
Assistant for WS 117L  
Technical Operations

*How all this  
to be accomplished  
without interference  
with 107A + 2/15*

*10 working days  
2 man mos = 60  
i.e. 6 men  
Don't eat in time  
!!*

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