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Research and Development of Guided Missiles and
Space Vehicles Over the Time Period 1955 - 1975

WDTL

WDTLA

22 Oct 56
Col Dodge/at/1507

1. The following are comments and recommendations of WDTLA relative to the above subject:

a. Para 2.3.3, page 2-9: The wording of the next to the last sentence of this paragraph is not clear. Our understanding is that the feasibility study involves recovery of either the re-entry body or the test instrument canister. If this correct, a rewording is suggested.

b. Para 3.3.2, page 3-11: We do not understand this proposed combination of a pebble bed heater or solar furnace in conjunction with the shock tube. There is always a possibility of heating the gas in the driver section of the shock tube to raise the initial temperature but the mechanism for accomplishing this would in our opinion involve other techniques than those suggested and would probably be sufficiently straightforward as to eliminate the necessity for any large research program. The cost estimate of \$2,000,000 for an eight inch diameter four hundred foot shock tube may be low. For example, the present cost of the CE six inch shock tube which combines a test nozzle with the tube is currently estimated at \$1,300,000.

c. Para 3.3.3d, page 3-13: This paragraph should specify whether the tunnel contemplated is for continuous or intermittent operation. This decision has a tremendous bearing on cost. It should also specify whether the tunnel will use air as the testing fluid.

d. Para 3.3.3g, page 3-14: The assumption in the first paragraph of this section that tunnels with speeds up to Mach 10, capable of testing eight inch nozzles are standard requires reconsideration. I know of no facility in the country now in operation that is capable of meeting these requirements.

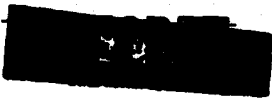
e. Para 3.3.4, page 3-15: The first sentence at the top of the page should be reworded since the EM gun is only being studied by CE not being developed. With present budgetary limitation, it is probable that the study will not be carried beyond the design and feasibility study of an 13,000' per second accelerator.

f. Para 3.11.4, page 3-41: There appears to be a word missing in the first sentence. Possibly it should read "is the large unit".

g. Para 3.13.1, page 3-46: In our opinion, future propulsive methods for space vehicle should include the study of magnetohydro dynamics. In the opinion of many people, this is a definite possibility for flight in the upper and outer atmosphere. While it provides a fairly small thrust, it may also be possible to achieve this with very low weights. It should certainly be considered for use of the satellite.

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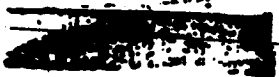


n. Items 3.7.2 and 3.7.3 of the facilities chart: It is believed that the location of these facilities is intended to be the missile development center rather than the medical development center.

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1 Incl
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Draft Cy of Research & Development
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