

~~SECRET~~
HEADQUARTERS
AIR MATERIEL COMMAND

5 November 1946

Manhattan District

SUBJECT: Pilotless Aircraft Guided Missile

TO: Commanding General
Manhattan Project

THRU: Commanding General
Army Air Forces
Washington 25, D. C.

Attn: AC/AS-4 & AC/AS-1, Air Provost Marshal

1. Engineering Division, Air Materiel Command has been directed to design and procure the subject aircraft for use as an air to surface atomic bomb having a minimum free flight range of 300 miles at a minimum speed of 300 miles per hour. The problem has been approached with the idea of mounting the completely assembled unit, less tail fins, in the missile, thus automatically providing armor for the components and allowing segregated assembly.

2. It is requested that the following information relative to the bomb be transmitted to Manhattan Project Coordination Officer, Engineering Division so that he may have it available for the use of properly authorized personnel connected with the subject project. This information is required for proper design study of the weapon.

a. Outline drawing in reproducible form of the bomb without tail fins, showing location of pull-out plugs, safety plugs and center of gravity, and giving the weight.

b. Permissible ambient temperature limits for one hour; for 12 hours; for unlimited period.

c. Statement of feasibility of providing heaters and insulation within the unit to widen the ambient temperature limits to -85°F through -160°F for the above periods, and external electrical power required for this purpose.

d. Allowable frequencies, amplitudes and modes of vibration to which assembled ellipsoids may be subjected for one

*Forwarded to a-4, Res & Engrs. Div
12/20/46 for info. -1-*

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hour; for 12 hours; for an unlimited period. This analysis should include the armed condition as well as the stowed condition.

e. For the purpose of deciding whether such changes can be considered, estimate of magnitude of problems established by enclosing unit in (1) metal shell (2) metal shell with plastic windows at certain points determined by Manhattan Project (3) partial metal shell, leaving portions designated by Manhattan Project protruding.

f. Effect of precipitation static on unit; feasibility and necessity of providing a discharger.

g. Effect of lightning and corona on unit and feasibility and necessity of shielding.

h. Effect of seeker and television equipment operating in close proximity to unit before and after arming, and nature of design limitations which would be imposed on such equipment.

i. Magnitude of problems introduced by increasing time interval between release and detonation to approximately one hour and feasibility of solution.

j. External power requirements for period between release and detonation in addition to heaters, if such a period extends for approximately one hour.

3. In addition to the above, your general comments relative to the subject project are requested.

FOR THE COMMANDING GENERAL:

/s/ J. R. Sutherland

J. R. SUTHERLAND
Colonel, Air Corps
Engineering Division Coordinating
Officer for the Manhattan Project

cc:

AC/AS-4
AC/AS-1