A-84-019
40-16

UNCLASSIFIED

R. B. Brode

N. F. Ramsey

Fuzing

1 August 1944

4 Aug
To S.P.

CLASSIFICATION CANCELLED
PER DOC REVIEW JAN. 1973

1. This memo is to amplify the discussion we had July 29 in which I suggested possible worries of barrage balloons triggering Charlie and also the desirability of using a clock to parallel the baro unit in case of the latter's failure.

2. As a means of overcoming the above worries, I suggest the following basic arrangement of clocks and other components. This is of course only a basic arrangement with amplification as in your other plans being required. Also, the term clock as used here means one or more clocks in series parallel arrangement. The basic components would be:

a. A minimum delay clock in series to prevent detonation prior to say 2000 feet below the airplane.

b. Another clock also in series set to prevent detonation and for such a time that if the release is at the expected altitude the clock is certain to go by the time the minimum altitutde for most effective detonation is reached but will probably not go until an altitude which will give considerable damage is reached.

c. In parallel with the clock of paragraph b above is a shorting bar. This bar normally shorts out clock b. However, the bombardier can shortly prior to release throw a switch labeled "Conditions Perfect; Correct Altitude". This switch would unshort the clock and make it effective in preventing prematures from barrage balloons, jamming, etc..

d. Baro switch in series to arm at say 6000 feet.

e. In parallel to the baro switch d there is a clock set so that even with expected dispersion of time of fall from desired altitude the clock can not go prior to 6000 feet. This clock will then be of use only in case of the failure of the Baro switch.

f. In series with the above there should be a Charlie to do the final triggering.

g. In parallel with all the above there should be an impact fuze

VERIFIED UNCLASSIFIED
FEB 17 1998

PUBLICLY RELEASABLE
LANL Classification Group
FEB 17 1998

FINAL DETERMINATION
UNCLASSIFIED
L. M. Redman
FEB 4, 1981

CLASSIFICATION CANCELLED
PER DOC REVIEW JAN. 1973
UNCLASSIFIED

UNCLASSIFIED

This is a copy.

1 August 1944

CLASSIFICATION CANCELLED
PER DOC REVIEW JAN. 1973

h. It might also be desirable to include another clock in parallel with all of the above and set so that it will produce a detonation probably prior to impact and certainly not prior to the time at which the Charlies should go if they do not fail. Whether such a clock is desirable will depend on future information as to the reliability of Charlie, the consistency of times of fall, etc.. This clock should be located completely separate from the rest of the fuzing equipment so that damage to the latter will not affect it.

3. The advantages of the above arrangement are:

a. If the crew forgets to throw the necessary switches, the gadget will still work even if delivery altitude is wrong.

b. If conditions are perfect, the crew can, by the throwing of a single switch, provide maximum protection against jamming, barrage balloon detonation, etc..

c. Clock e removes complete dependence on the baro switch in case of delivery with the plane at the desired altitude.

d. If the delivery altitude is correct the clock f will provide a means of detonation completely independent of possible damage to the bulk of the fuzing equipment and much more likely to succeed than the impact detonator.

N. F. Ramsey

NFR:dc

cc: Parsons
Oppenheimer

CLASSIFICATION CANCELLED
PER DOC REVIEW JAN. 1973
UNCLASSIFIED