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May 13, 1946

FINAL DETERMINATION
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L. M. Redman
OCT 27, 1980

Major General L. R. Groves
P. O. Box 2610
Washington 25, D. C.

Att'n: Col. R. G. Butler

Dear General Groves:

I wish to clarify the position of this project with respect to the preparation of bombing tables for both the Fat Man and for any subsequent shapes we may develop. As you are aware, during 1945 this project conducted roughly twenty ballistic drops for the purpose of determining sufficient ballistic data to obtain a ballistic coefficient for the Fat Man. This ballistic coefficient was then used to compute bombing tables appropriate to the contemplated missions over Japan.

It is my opinion that these data were obtained under as satisfactory conditions as possible in view of the frantic design changes which were occurring in the early part of 1945, and that the tables were accurately computed and entirely adequate for the purpose for which they were designed. It was, of course, realized that the greatest ballistic precision was not required for an atomic weapon under the circumstances of the contemplated use against widespread targets. Additions to these tables have recently been prepared in order to make them appropriate to the Bikini drop.

We have recently received an approved request that the Aberdeen Proving Ground receive the basic data from which Fat Man bomb tables were prepared for the purpose of recomputing the tables in "standard" form. We are glad to comply with this request, and we are sending Dr. Maurice Shapiro, who was in charge of our ballistic group, to Aberdeen with this information.

It is my opinion that if subsequent ballistic drops for the Fat Man are thought desirable by Aberdeen that these drops should be conducted by Aberdeen with their personnel and under their responsibility. This project will, of course, upon approved request, furnish the appropriate number of proper mock-up shapes and assist in the coordination of the loading problem.

Such a policy is part of a more general policy which I would like to see instituted. I believe it desirable henceforth

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to confine the ballistic activities of this project in connection with new designs to such studies as will determine that the proposed revised shape has satisfactory ballistic properties. In the determination of such shapes, we will continue to make use of our various consultant facilities just as we have already benefited by experiments carried out at our request in the Aberdeen wind tunnel.

When, however, it becomes necessary to carry out ballistic drops in order to obtain the information necessary to compute bombing tables, I believe that this can be most advantageously done by an existing military institution possessing the necessary equipment, staff, and experience. Presumably such an institution would be the Aberdeen Proving Ground. At such a time, the Washington Office would be informed of our belief that ballistic drops were desirable and subsequent arrangements could then be made through normal channels. This project would cooperate in supplying, or arranging for the supply, of an adequate number of proper mock-ups and in coordinating the loading arrangements.

No specific action on this proposal is at present necessary since it is not contemplated that the revised shape will be ready for ballistic test within six months. Should, however, Aberdeen recommend additional Fat Man drops, a sooner decision may be necessary.

Yours truly,

N. E. Bradbury
Director

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