

24 August 1946

(SPECIAL DISTRIBUTION)

JOINT CHIEFS OF STAFF

DECISION AMENDING J.C.S. 1552/74

TEST "C" OPERATION "CROSSROADS"

Note by the Secretaries

1. On 23 August 1946 the Joint Chiefs of Staff approved the recommendations in J.C.S. 1552/74 subject to the amendment of Appendix "A" and Annexes "A" and "B" thereto.

2. Revised pages 207, 208, 209, and 210 incorporating the amendments are attached.

A. J. McFARLAND,

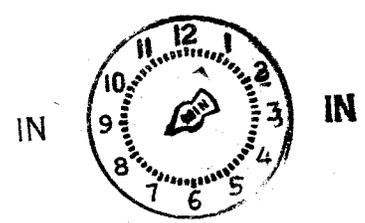
C. J. MOORE,

Joint Secretariat.

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APPENDIX "A"

D R A F T

MEMORANDUM FOR THE SECRETARY OF WAR AND  
THE SECRETARY OF THE NAVY

1. The Joint Chiefs of Staff consider that the conduct of Test "C", to determine the effects on naval vessels of atomic explosives detonated at a great depth below the water surface, is not now advisable.

2. It appears that the necessary utilization of technical personnel of the Los Alamos Laboratory in Tests "A" and "B" has already delayed the research and development progress of the Manhattan Project. A new military unit to handle the important assembly function is being organized but will require a year's training before it will achieve satisfactory proficiency. The conduct of Test "C" would necessitate a further absence of these scientists from their research activities and would seriously interfere with the research progress which should, instead, be accelerated in the interest of our national defense.

3. In addition, the President has recently directed economy measures be taken, the effect of which tightens significantly available funds and personnel.

4. The Joint Chiefs of Staff Evaluation Board for the Atomic Bomb Tests reports that "Observations during the two tests have established the general types and range of effectiveness of air and shallow underwater atomic-bomb bursts on naval vessels, army materiel including a wide variety of Quartermaster stores, and personnel. From these observations and from instrumental data it will now be possible to outline such changes, not only in military and naval design but also in strategy and tactics, as

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future events may indicate." The Joint Chiefs of Staff concur in this opinion and consider that the major objectives of the atomic bomb tests have been achieved from the information and data obtained in Tests "A" and "B". The additional data expected from Test "C", while important, do not, in their opinion, warrant the effort and expense of conducting the test in view of the considerations outlined above.

5. The Joint Chiefs of Staff feel that the considerations outlined above are overriding, particularly in light of the present world situation, and accordingly recommend that the plans and preparations for the conduct of Test "C" be indefinitely postponed.

6. It is requested that the President be informed of the foregoing recommendation and that he be requested to issue a suitable press release on the matter. A proposed memorandum to the President and a suggested press release are attached.\*

\* Annexes "A" and "B" to this Appendix.

ANNEX "A" TO APPENDIX "A"

D R A F T

MEMORANDUM FOR THE PRESIDENT FROM THE  
SECRETARY OF WAR AND THE SECRETARY OF THE NAVY

The Joint Chiefs of Staff have informed us that they consider it advisable to cancel all plans and preparations for Atomic Bomb Test "C", which they had considered holding early in 1947 to determine the effect on naval vessels of atomic explosives detonated at a great depth below the surface of the water.

It appears that the research and development progress of the Manhattan Project has been considerably retarded by the utilization of technical personnel of the Los Alamos Laboratory in Tests "A" and "B". No other similarly qualified personnel will be available in less than a year. The conduct of Test "C" would therefore require a further absence of these scientists from their research activities and would seriously interfere with the research program which should, instead, be accelerated in the interest of our national security.

The Joint Chiefs of Staff consider that the major objectives of the atomic bomb tests have been attained through the information and data from Tests "A" and "B", and that the additional information expected from Test "C" does not warrant the expenditure in money, manpower, and effort involved, in the light of your recent economy directives and the present world situation.

Accordingly, if you approve, it is requested that you release the decision to postpone indefinitely preparations for Test "C". A suggested release is attached.\*

\* Annex "B" to Appendix "A"

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ANNEX "B" TO APPENDIX "A"

D R A F T

SUGGESTED PRESS RELEASE

In view of the successful completion of the first two atomic bomb tests of operation CROSSROADS and the information derived therefrom, the Joint Chiefs of Staff have concluded that the third explosion Test "C" should not be conducted in the near future. The information obtained from Tests "A" and "B" together with the knowledge derived from the original experimental test in New Mexico and from study of the results of the explosions in Hiroshima and Nagasaki, will enable our scientific and military experts to make a proper evaluation of the effects of this weapon.

The additional information of value expected to result from Test "C" is such that the Joint Chiefs of Staff do not feel that completion of this test in the near future is justified.

The Joint Chiefs of Staff are extremely gratified by the conduct and results of the atomic bomb tests and consider the entire operation an unqualified success.

The invaluable assistance of the civilian scientific personnel and the inter-Service cooperation toward a common end were major factors in achieving this success.

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APPENDIX "C"

MEMORANDUM BY THE COMMANDING GENERAL, MANHATTAN ENGINEER DISTRICT

7 August 1946

1. The Commander, Joint Task Force One has asked the Joint Chiefs of Staff for final approval of Test "C", the deep water explosion of an atomic bomb against an array of naval vessels to be held in 1947. There are many reasons why such a test should not be conducted, the more important of which are set forth below:

a. Test "A" of operation CROSSROADS definitely established what had been generally admitted previously; viz., that any capital ship can be destroyed by an atomic bomb by means of an air burst properly placed.

b. Test "B" has already established that an atomic bomb provides the same degree of energy transfer from bomb to water as from bomb to air. After the successful completion of Test "B", Test "C" is nothing more than a test of deep water shock hydrodynamics chiefly pertaining to a ship's reaction to strong shock over a large portion of its sub-surface area.

c. Test "C", if conducted at the proposed depth and with the target ships in a normal high seas fleet disposition, should result in the sinking of not more than one major ship. While the shock damage will probably be greater in Test "C" than in Test "B", the important casualty producing radio-activity is not expected to be present in such significant

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quantities in the target fleet but will be lost under water. For this reason total personnel casualties in the target fleet would be expected to be considerably smaller as compared with Tests "A" and "B".

2. The Los Alamos Laboratory of the Manhattan Project will not have personnel for assembling the bomb who can be diverted to Test "C" in 1947 or 1948 without seriously interfering with the research and development program. A new military unit will soon be organized to handle the all-important assembly function, but this unit will need a year's training before it will reach satisfactory proficiency in the handling, assembly, and testing of atomic bombs. In the event of a national emergency, we could assemble bombs on short notice; this would necessitate drawing on former technical personnel.

3. Our laboratory at Los Alamos will not be in a position to handle the necessary instrumentation for Test "C". The research and development program at our Los Alamos Laboratory has been delayed considerably by operation CROSSROADS. This program must be accelerated and nothing short of a national emergency should be permitted to interfere with it.

4. Finally, I wish to call to the attention of the Joint Chiefs of Staff that even a single atomic bomb can be an extremely important factor in any military emergency. It is imperative that nothing interfere with our concentration of effort on the atomic weapons stockpile which constitutes such an important element in our present national defense.

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APPENDIX "D"

FROM: Commander, Joint Task Force One.

FOR ACTION: Chief of Naval Operations

160126

NCR 7916

17 August 1946

Your 141931 requests comment on recommendations of CG, Manhattan District that Test "C" be cancelled. My comment will cover three main points: first, results of Tests "A" and "B" as affecting "C"; second, military and national implications of recommendation of CG, Manhattan; third, over-all technical and political considerations.

a. Do not agree with CG, Manhattan, that point at issue in Tests "A" and "B" was whether a Nagasaki bomb can sink a capital ship. Such an oversimplified question could have been answered in the affirmative a year ago without a test. The real questions were much more complex and related to the radii at which various kinds and degrees of damage would be suffered by various types of ships in order to determine required changes in design and in spacing of ships in port and at sea. Mechanical damage in both Tests "A" and "B" was much more predictable than casualties to crews from radioactivity. In fact, the kind of radioactivity damage produced in Test "B" required additional extensive organization to be ready to decontaminate ships and harbors after a subsurface burst, meanwhile protecting the survivors and replacements against the lingering subtle hazard we now face in Bikini. The one thousand foot depth proposed to the Joint Chiefs of Staff in my 061031\* of 7 August for Test "C" will very probably inflict lethal mechanical damage over a greater radius than obtained in Test "B", and in addition a geyser of contaminated water will probably rise hundreds of feet above the surface. Whether this geyser does rise

\*On file in the Secretariat.

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and, if so, what is its contamination, its contaminating action, are questions which can be answered only by an actual test. The results of such a test, in comparison with those of Test "B", may permit interpolation to obtain a depth for the optimum combination of mechanical and radioactive damage.

b. There is a disturbing implication in the statement of CG, Manhattan, to the effect that the Los Alamos Laboratory must devote itself so completely to new and militarily unproved developments that it cannot spare key personnel to carry out a Test "C" in 1947 or 1948. In the first place, it is unsound to have a military weapon as important as the atomic bomb capable of assembly only by a handful of civilian scientists and technicians. In the second place, the best way to get this troublesome burden off the shoulders of the Los Alamos Laboratory is to have it participate fully and immediately while experienced people are still available, in the training in the United States of bomb assembly and loading crews led by fully qualified officers and enlisted technicians. The atomic bomb is complicated in design and requires officers with a new combination of knowledge, background and training, but Rear Admiral Parsons who was in charge of ordnance design of the atomic bombs at Los Alamos estimates that with immediate and full cooperation of the Los Alamos Laboratory and the Manhattan District, one of several naval officers could be trained within the next six months to take charge of field operations similar to those conducted in Albemarle and LSM 60. Current plans for Test "C" eliminate most of the considerable instrumentation load carried by the Los Alamos Laboratory in Tests "A" and "B". Another point in regard to CG, Manhattan, proposal is the following:

It is recognized that General Groves should not make major positive commitments for the future on the eve of turning

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over atomic energy development to a civilian commission. But, by the same reasoning, is it proper for him at this time to make a vital negative commitment probably binding the Commission and the nation throughout 1947 and 1948? It appears to the Commander, Joint Task Force One, that such an important negative decision which, if accepted, might relegate the assembly and delivery of the atomic bomb under combat conditions to the category of a lost art, should be made only with the knowledge and concurrence of the presently legally responsible Atomic Energy Commission and the War and Navy Departments as represented by the Military Liaison Committee after full review and personal knowledge of the facts.

c. Viewed fresh from Bikini in August, it appears that while we may already have seen the most over-all paralyzing delivery of the atomic bomb in the "B" Test, the job we set out to do is unfinished technically and in the minds of the public. If Test "C" is cancelled, it should be over the protest of the Navy. Otherwise the Navy will be essentially accused of dodging the "most decisive Test".