



50219-D-40  
(VOL. 1)

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L. B. PEARSON

September 10, 1953.

MEMORANDUM FOR THE MINISTER

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Likely Effects on United States Policy of the  
Soviet Hydrogen Explosion

I believe you will be interested in the attached despatch, No. 1726, dated August 31, 1953, from our Embassy in Washington.

The despatch points out that already moderate and responsible opinion in the United States has been urging that atomic and thermo-nuclear developments in the Soviet Union should lead to action by the United States Government along the following lines:

- (a) renewed efforts to seek an international agreement for the control of atomic energy;
- (b) the release of more information on nuclear developments to the public and to the allies of the United States; and
- (c) an improved system of continental defence.

The despatch examines in some detail the situation with respect to each of these three proposed actions and concludes that the knowledge that the Soviet Union is well on the way to building a hydrogen bomb may be expected to have the following short-run effects in the United States:

- (a) It will almost certainly lead to the allocation of some additional United States resources for the defence of North America.

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- (b) It will probably hasten plans that were already under consideration for transmitting more information on nuclear developments to selected allies of the United States.
- (c) It may gradually lead to some increase in the information available to the public, if only in order to enlist greater public support for civil defence.
- (d) Finally, it will take even longer for this new development to influence in any significant way present United States thinking on the international control of atomic energy.

  
C.S.A.R.

Ext. 180A

with covering memo to SSEA

Refer

USSEA  
Min of Nat Defense

14/9/53

OTTAWA FILE  
No. 50219-D-40

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SECURITY CLASSIFICATION  
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Despatch No. 1726
Date.. August 31.. 1953.
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8 SEP 1953

FROM: THE CHARGE D'AFFAIRES A LA CANADIEN EMBASSY, WASHINGTON.

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

Reference.....

Subject: ... Likely Effects on United States Policy of the Soviet Hydrogen Explosion.

The purpose of this despatch is to explore what are likely to be some of the short-run effects on United States policy of the knowledge that the Soviet Union has carried out a hydrogen explosion. Already moderate and responsible opinion in this country has been urging that this development should lead to action by the United States Government along the following lines:

- (a) renewed efforts to seek an international agreement for the control of atomic energy;
- (b) the release of more information on nuclear developments to the public and to the allies of the United States; and
- (c) an improved system of continental defence.

These three changes in United States policy were urged, for example, by the New York Times in an editorial of the 21st of August, a copy of which is attached. From his published remarks, it would also seem that the views of Senator Wiley, (Rep.-Wis.), who is the Chairman of the Senate Foreign Relations Committee, are very similar.

2. On the same day as the Atomic Energy Commission issued its announcement that an atomic explosion had taken place in the Soviet Union involving a thermo-nuclear reaction, Senator Wiley called for action on the highest level to see whether there might be new grounds for concluding an agreement on the international control of atomic energy; and he has been joined by a number of influential editors and commentators. Nevertheless it is unlikely, in our opinion, that the United States will make any new initiative in this field in the near future. As you know, the United States has no intention of introducing any fresh disarmament proposals at the next regular session of the United Nations; and we have not been able to detect the least indication that the authorities here contemplate raising this issue through other channels. Although proof that a large scale experiment involving a thermo-nuclear reaction had been



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carried out in the Soviet Union came as a rude shock to the skepticism and complacency with which Malenkov's boast had been originally received and although it has become clear that the United States' lead in the production of the hydrogen bomb may not be so great as had been thought, it is still believed to be considerable and there is little likelihood that any steps will be taken which might deprive the United States of that military advantage. Moreover, it is still believed here that the Soviet Union could not accept a thorough-going system of international inspection and control of armaments unless they were ready to see their regime almost completely transformed; and so far no evidence has come to light which has suggested to the United States authorities that such a possibility is in any way on the cards. It must also be added in candour that for the United States to accept the kind of system of inspection and control which it sponsored in the United Nations in 1948 would mean very important readjustments for this country as well. So long as the currents of nationalism (not all of them by any means disreputable) remain as strong here as they are at present, it is unlikely that the United States would be prepared to brook such serious interference with its sovereignty as an effective system of inspection and control would involve. To that extent at least -- and apart from technical considerations -- the United States position has become far less forthright than it was in the days of Bernard Baruch.

3. Senator Wiley has also shown interest in the possibility of releasing more information about nuclear developments to the public. He has enquired about this possibility in a letter to Admiral Strauss, Chairman of the Atomic Energy Commission, but has received a rather negative reply. After agreeing that "the public generally should know everything that does not compromise military information and that concerns the nature and the threat of atomic weapons", the Chairman of the Atomic Energy Commission went on to add: "We have to determine the value of issuing the information to our own people ... in the knowledge that such information will thereupon become available to enemy interests". As you will be aware, the plea for more information has recently been powerfully reinforced by an article in the July issue of Foreign Affairs by Dr. J. Robert Oppenheimer. Dr. Oppenheimer's case essentially was that the citizens of the United States needed to know more about the kind of world we are living in before there could be fruitful discussion of many of the most important issues of public policy. To the argument that, if this were done, vital information would be made available to the enemy, he replied curtly: "My own view is that the enemy has this information". In spite of the influence which his trenchant article has had, we doubt whether much information is likely to be publicly released within the near future. It has been widely rumoured that the President is contemplating making a speech which would provide much more information than is now available about the atomic arms race, if only to enlist greater public support for civil defence. But he will almost certainly be advised, we believe, to say little of a specific character in order not to run any risk of diminishing the lead which the United States is believed to have in nuclear developments.

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4. On the other hand, it is likely that means will be found within a comparatively few months to increase the flow of information in this field to allies of the United States. We have been told by Mr. Gordon Arneson, Special Assistant to the Secretary of State on atomic energy matters, that a number of agencies of the United States Government have been giving joint consideration to draft amendments to the Atomic Energy Act, which, if all goes well, would be introduced at the next session of Congress. Although these amendments have not yet been put in final form, their effect would be

- (a) to enable the United States Chiefs of Staff to give more information under the cover of secrecy to the allies of the United States in NATO; and
- (b) to facilitate the flow of scientific information to governments able to reciprocate by supplying either information or fissionable materials.

It will be noticed that Canada might expect to benefit under both of these heads. At present the drafting of suitable amendments is being held up by the reluctance of the Atomic Energy Commission to declassify data which is restricted under the terms of the McMahon Act, unless such data is to become public. What the Chiefs of Staff, of course, have in mind is that they should be allowed to transmit to the Standing Group, for example, restricted data under a top secret marking. As one illustration, they have suggested that they should be allowed to tell their NATO partners of the size and weight of atomic weapons. The Atomic Energy Commission, on the other hand, hewing to the line which was taken by the scientists who had so much to do with drafting the McMahon Act, have been arguing that even information of this kind should not be derestricted under the terms of the Act, unless it is to be made public. However, Mr. Arneson felt sure that this controversy would fairly soon be resolved -- and in favour of the Chiefs of Staff.

5. One of the chief reasons why Dr. Oppenheimer has urged that the public be supplied with fuller information is that he would like to see more done to improve the air defences of the United States. "I do not believe," he has written, "-- though of course we cannot today be certain -- that we can take measures for the defence of our people, our lives, our institutions, our cities, which will in any real sense be a permanent solution to the problem of the atom. But that is no reason for not doing a little better than we are now doing." As so often the Alsop brothers seem to have at least as good a pipe-line as anyone else to the most secret information about what has been happening -- or not happening -- in the planning for continental defence. In their column, published on the 24th of August, a copy of which is attached, they described the work of the various committees which had been established to estimate Soviet capabilities for air attack across the Arctic, and to consider how the United States could best be defended against this threat. They also reported that the recommendations which had been brought in by these various committees for larger expenditures on continental defence had all come to very little because of budgetary considerations. From our talks with United States officials we believe the account given by the Alsops is substantially

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accurate. News of Soviet progress in developing the hydrogen bomb will certainly lead to increased pressure for a more closely meshed system of continental defence. But, as we explained in our telegram No. WA-2012 of the 28th of August, it is by no means certain how far this pressure will succeed in triumphing over those in the Administration who have been working primarily for a balanced budget and a sound dollar.

6. To sum up, then, it seems likely that the knowledge that the Soviet Union is well on the way to building a hydrogen bomb may be expected to have the following short-run effects:

- (a) It will almost certainly lead to the allocation of some additional United States resources for the defence of North America.
- (b) It will probably hasten plans that were already under consideration for transmitting more information on nuclear developments to selected allies of the United States.
- (c) It may gradually lead to some increase in the information available to the public, if only in order to enlist greater public support for civil defence.
- (d) Finally, it will take even longer for this new development to influence in any significant way present United States thinking on the international control of atomic energy.

*D. V. de Pan*

for the  
Chargé d'Affaires a.i.

EDITORIAL FROM THE NEW YORK TIMES

dated August 21, 1953.

MOSCOW'S H-BOMB

The Atomic Energy Commission has removed the doubts voiced by many when Premier Malenkov first claimed that this country's monopoly in the production of this weapon had been broken. Russia has the H-bomb. The task clearly is now to face the consequences of this harsh reality. We can no longer hide behind any comfortable illusion that we alone possess the most frightful weapon ever made.

Of primary importance now must be the attempt more than ever to solve the terrible political problems before mankind. In the light of this latest news, the most urgent of these problems is that of securing an international control which will prevent a nuclear Armageddon being unleashed upon the world. Past failure -- a failure for which Soviet obstinacy has been a major explanation -- cannot and must not prevent the effort being renewed in the light of present conditions.

At least two other important changes are required in our own policy. The latest Soviet feat makes clear that much, though not all, of the secrecy with which we have attempted to surround our work on nuclear weapons has been in vain. At present that secrecy prevents the American people from understanding the problems involved and from reaching conclusions on the steps necessary for rational solution. It has also irritated our closest allies and deprived us of the aid that their independent progress could give us, just as it has deprived them of similar aid from us. There is no excuse for keeping from our people or from our allies the basic facts which the Soviet Union must have known in order to manufacture its hydrogen bomb.

Along with this there is obviously required additional thinking about the problem of American defense against nuclear weapons. Whether there can be any satisfactory defense is questionable, but certainly more can be done than is being done.

In his State of the Union message last January Mr. Truman painted the frightening picture of what hydrogen bomb warfare would mean and concluded, "Such a war is not a possible policy for rational men." The fate of mankind now rests on the question of whether or not the leaders of humanity realize that profound truth.

.../...

ALSOP'S COLUMN IN NEW YORK HERALD TRIBUNE

dated August 24, 1953.

Taxes and H-Bombs

The government analysts are reported to be tentatively convinced that the Soviet hydrogen bomb was an interim weapon, similar to the American bomb tested at Eniwetok in 1951.

If this is correct, the purposes of the Soviet explosion were to gain preliminary data on the hydrogen fusion reaction and to test the very large atomic bomb that is needed to trigger a full-scale hydrogen bomb. The 1951 Eniwetok bomb designed for these purposes had a power of about 250 kilotons, or about 250,000 tons of TNT. The next year we tested our full-scale hydrogen bomb, with a power of three to five megatons, or 3,000,000 to 5,000,000 tons of TNT.

If the Soviets follow the same pattern, as is expected, their first full-scale hydrogen bomb should be tested in 1954. Meanwhile, there are reliable expert forecasts of an early test of a very much larger American hydrogen bomb, with a power that may run as high as ten megatons, or 10,000,000 tons of TNT.

These facts are enough to establish the reality of the American atomic lead. They sufficiently explain the statement of the chairman of the Congressional Joint Committee on Atomic Energy, Rep. W. Sterling Cole, that the American atomic program is still "pre-eminent."

Russia's Potential

The question is, unfortunately, whether "pre-eminence" matters. According to the American government's official estimates, the Kremlin is now able to cripple this country by air-atomic attack. According to the same estimates, the Kremlin will gain the ability to devastate this country -- to strike a knockout blow that will force our surrender to the enemy -- within eighteen to twenty-four months.

The recent Soviet bomb test plainly suggests that these American government estimates have erred, if at all, on the side of caution. When the Kremlin has the bombs and the air-power to destroy this country, it will be a very poor consolation to know that we have more bombs than the Kremlin. The consolation will be all the thinner, moreover, since the Kremlin is rapidly building an air defense against our bombs, while we have no air defense worthy of the name and are unlikely to buy one.

The story of how our policy makers have handled this vital problem of the changing air-atomic balance between the Soviet Union and the United States can be allowed to speak for itself.

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In brief, when Dwight D. Eisenhower entered the White House last winter, the first thing he found was a warning of grave danger, and an ambitious American air defense program to ward the danger off. Initially, the President seems to have been much impressed. But the air-defense program was going to cost a lot of money, and a good many Eisenhower advisers tend to think that taxes are more dangerous than hydrogen bombs.

### Committees Report

As a result, the National Security Council has been walking up to and backing away from this vital problem for eight long months. The vast accumulation of data left behind by the Truman administration has now been supplemented by no less than three major committee reports -- from the Kelly Committee, headed by Dr. Mervin Kelly, of Bell Telephone Laboratories; from the Edwards Committee, headed by Lieut. Gen. Idwal Edwards, and from the Bull Committee, headed by the President's war-time G-3, Maj. Gen. Harold Bull.

The Kelly Committee, composed of leading scientists and industrialists, recommended a strong air-defense program. The Edwards Committee, named to assess Soviet air-atomic capabilities, sharply underscored the extent of the danger. The Bull Committee, chosen by the Eisenhower National Security Council to get a "report from our own people," recommended an even stronger program than the Kelly Committee. Those who fear taxes more than H-bombs were still displeased.

There is a new motto, however -- "if you don't like the last committee's report, get a new committee." Consequently a fourth Committee on Air Defense has now been named, composed of industrialists and others whose most conspicuous qualification appears to be total ignorance of the problem. The most interesting thing about this new group is the presence in their midst of James B. Black, president of the Pacific Gas and Electric Co.

### "Two Last Hopes"

Last spring Mr. Black served on the "seven wise men", still another committee carefully selected by Budget Director Joseph Dodge and his allies. As desired by their sponsors, the "seven wise men" told the National Security Council that balancing the budget was far more important than the defense of the United States. The reappearance of a member of this packed jury on the new committee to consider the air-defense problem is a coincidence altogether too striking to be ignored.

It all seems to add up to the conclusion that the growing Soviet air-atomic threat is to be utterly ignored, or at best dealt with by half-measures. The whole trend is to give tax and budget problems absolute priority over the problems of national survival. It will feel a bit odd to be taking the road so brilliantly pioneered by Stanley Baldwin and Neville Chamberlain. But that seems to be the road that will be taken, unless the President himself firmly decides otherwise or the new Joint Chiefs of Staff powerfully intervene. These are the two last hopes.

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OTTAWA FILE
No. <i>50219-D-40</i>
<i>59/50</i>
SECURITY CLASSIFICATION

Letter No. *1308*

Date July 3, 1953

FROM: The Canadian Embassy, Washington, D.C., U.S.A.

TO: THE UNDER-SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*J. 24*

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Reference: Our Letter No. 1292 of June 30

Subject: Question of Possible Connection Between Weather and Atomic Explosions in the United States.

JUL 6 1953

Attached are two further reports which deny that there is any causal connection between the weather and recent atomic bomb explosions in the United States. The statement of the Chief of the Weather Bureau, which is annexed to the report of the Commerce Department, goes into a little more detail than the other reports.

*[Signature]*  
for the Embassy

Copies Referred To

No. of Enclosures  
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EXERCISES AFFAIRES

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CONGRESS  
1st Session

HOUSE OF REPRESENTATIVES

REPORT  
No. 641

## INQUIRING INTO THE EFFECT ON THE WEATHER OF CERTAIN ATOMIC-BOMB EXPLOSIONS

JUNE 23, 1953.—Ordered to be printed

Mr. SHORT, from the Committee on Armed Services, submitted the following

### ADVERSE REPORT

[To accompany H. Res. 280]

The Committee on Armed Services, to whom was referred the resolution (H. Res. 280) directing the Federal Civil Defense Administrator to furnish to the House of Representatives full and complete information about the effect on the weather of certain atomic-bomb explosions, having considered the same, report unfavorably thereon without amendment and recommend that the resolution do not pass.

FEDERAL CIVIL DEFENSE ADMINISTRATION,  
OFFICE OF THE ADMINISTRATOR,  
Washington 25, D. C., June 19, 1953.

Hon. DEWEY SHORT,  
*Chairman, Committee on Armed Services,  
House of Representatives.*

DEAR MR. CHAIRMAN: This is in reply to your letter of June 12, 1953, requesting a report on House Resolution 280, 83d Congress, the provisions of which read as follows:

*Resolved*, That the Federal Civil Defense Administrator is hereby directed to furnish to the House of Representatives at the earliest practicable date full and complete information with respect to whether there is any connection between the tornadoes which have recently occurred in the United States and the recent explosions of atomic bombs in the United States."

The Federal Civil Defense Administration has no information which originated within the agency as to the effects, if any, of the recent atomic bomb explosions upon the weather in this country. However, under date of June 18, 1953, advice was received from the Chief of the United States Weather Bureau that—

"During the past few years the Weather Bureau has been in very close touch with the Atomic Energy Commission and the military services on the possible effects of atomic bombs on weather. From extensive studies made on this subject by the Weather Bureau, no evidence has been discovered to show causal connection between the explosion of atomic bombs and general weather conditions or severe storms like tornadoes."

Substantially similar information has been received from the Atomic Energy Commission.

Advice has been received from the Bureau of the Budget that there would be no objection to the submission of this report to your committee.

Sincerely,

VAL PETERSON.

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83D CONGRESS  
*1st Session*

HOUSE OF REPRESENTATIVES

REPORT  
No. 682

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## INQUIRING INTO THE EFFECT ON THE WEATHER OF CERTAIN ATOMIC-BOMB EXPLOSIONS

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JUNE 27, 1953.—Ordered to be printed

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Mr. WOLVERTON, from the Committee on Interstate and Foreign  
Commerce, submitted the following

### ADVERSE REPORT

[To accompany H. Res. 283]

The Committee on Interstate and Foreign Commerce, to whom was referred the resolution (H. Res. 283) directing the Secretary of Commerce to furnish to the House of Representatives full and complete information about the effect on the weather of certain atomic-bomb explosions, having considered the same, report unfavorably thereon without amendment and recommend that the resolution do not pass.

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THE SECRETARY OF COMMERCE,  
*Washington 25, June 24, 1953.*

HON. CHARLES A. WOLVERTON,  
*Chairman, Committee on Interstate and Foreign Commerce,  
House of Representatives, Washington, D. C.*

DEAR MR. CHAIRMAN: This letter is in reply to your request of June 12, 1953, for the views of this Department with respect to House Resolution 283, a resolution which calls upon the Secretary of Commerce to furnish complete information with respect to whether there is any connection between tornadoes and explosions of atomic bombs.

The Department has been in very close touch with discussions on this subject during the past few years and has been engaged with the Atomic Energy Commission and the military services in some aspects of the subject. There is attached a concise statement by Mr. F. W. Reichelderfer, Chief of the Weather Bureau of the Department, on the views of that Bureau on the relationship between atomic tests and weather.

We wish to state that the extensive studies already made on this subject by this Department have resulted in no evidence that there is any causal connection between the explosions of atomic bombs and general weather conditions or severe storms, such as tornadoes.

We have been advised by the Bureau of the Budget that it would interpose no objection to our submission of this letter.

If we can be of further assistance in this matter, please call on us.

Sincerely yours,

SINCLAIR WEEKS,  
*Secretary of Commerce.*

## 2 EFFECT ON WEATHER OF CERTAIN ATOMIC-BOMB EXPLOSIONS

UNITED STATES DEPARTMENT OF COMMERCE,  
WEATHER BUREAU,  
June 22, 1953.

### STATEMENT ON WEATHER AND ATOMIC BOMBS

Although the Weather Bureau has no objection to proposed House Resolution 283, the suggestion of a relationship between atomic bombs and weather is of such significance that the executive agencies directly concerned, being mindful of the public interest, would be glad to make available the complete results of studies with or without passage of a formal resolution. The principal conclusions are summarized briefly below.

Since the program for testing atomic weapons first began, the Weather Bureau and other agencies have been vitally interested in any possible meteorological results of the explosions. Detailed meteorological studies have been made and except for very local (i. e., within a few miles) effects immediately following the explosions, no meteorological effects were observed which could be considered the results of the explosions.

The fact that a near record number of tornadoes has been reported in the spring of 1953 should not, in our opinion, be attributed to the recent tests in Nevada; the tornado frequency in 1952 was much less although atomic tests were carried out in that year too. Scarcely a year goes by without some record of heavy rain, drought, severe storm, etc., being observed somewhere in the world and the coincidence of one of these meteorological events with some of man's activities does not mean that any influence was exercised by man.

Although all the details of tornado formation are not known, meteorologists for years have recognized the characteristics which the atmosphere must have in order for tornadoes to form; and it can be said with confidence that the broad weather conditions existing over the United States the past spring were unusually favorable for tornado occurrences. For example, in May 1953, 97 tornadoes were reported, but in May 1933, a month which was quite similar to May 1953 in overall weather pattern in the United States, 91 tornadoes were reported and this occurred long before the advent of the atomic bomb. In May 1952, when atomic tests were in progress, only 36 tornadoes were reported.

By comparing the energy released in an atomic explosion with the energy involved in normal atmospheric processes and by studying the probable effects of the contaminants added to the atmosphere, we are led further to believe that no significant effects should be expected. For example, the energy released by the explosion of 1 atomic bomb of the type used at Hiroshima is approximately equal to that of the sun's rays falling on an area of 2 square miles of ground during an average day. The dust added to the atmosphere by the explosion is much less than that picked up by winds in a small dust storm over the Great Plains; furthermore, particles normally present in great number in the atmosphere, such as sea salt, are more effective as condensation and sublimation nuclei than explosion-derived particles even if the latter do carry electrical charges.

F. W. REICHELDERFER,  
Chief, Weather Bureau.

80<sup>th</sup> CONGRESS } HOUSE OF REPRESENTATIVES { REPORT  
1<sup>st</sup> Session } } No. 641

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## INQUIRING INTO THE EFFECT ON THE WEATHER OF CERTAIN ATOMIC-BOMB EXPLOSIONS

JUNE 23, 1953.—Ordered to be printed

Mr. SHORT, from the Committee on Armed Services, submitted the following

### ADVERSE REPORT

[To accompany H. Res. 280]

The Committee on Armed Services, to whom was referred the resolution (H. Res. 280) directing the Federal Civil Defense Administrator to furnish to the House of Representatives full and complete information about the effect on the weather of certain atomic-bomb explosions, having considered the same, report unfavorably thereon without amendment and recommend that the resolution do not pass.

FEDERAL CIVIL DEFENSE ADMINISTRATION,  
OFFICE OF THE ADMINISTRATOR,  
Washington 25, D. C., June 19, 1953.

Hon. DEWEY SHORT,  
*Chairman, Committee on Armed Services,  
House of Representatives.*

DEAR MR. CHAIRMAN: This is in reply to your letter of June 12, 1953, requesting a report on House Resolution 280, 83d Congress, the provisions of which read as follows:

*"Resolved, That the Federal Civil Defense Administrator is hereby directed to furnish to the House of Representatives at the earliest practicable date full and complete information with respect to whether there is any connection between the tornadoes which have recently occurred in the United States and the recent explosions of atomic bombs in the United States."*

The Federal Civil Defense Administration has no information which originated within the agency as to the effects, if any, of the recent atomic bomb explosions upon the weather in this country. However, under date of June 18, 1953, advice was received from the Chief of the United States Weather Bureau that—

*"During the past few years the Weather Bureau has been in very close touch with the Atomic Energy Commission and the military services on the possible effects of atomic bombs on weather. From extensive studies made on this subject by the Weather Bureau, no evidence has been discovered to show causal connection between the explosion of atomic bombs and general weather conditions or severe storms like tornadoes."*

Substantially similar information has been received from the Atomic Energy Commission.

Advice has been received from the Bureau of the Budget that there would be no objection to the submission of this report to your committee.

Sincerely,

VAL PETERSON.

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86<sup>th</sup> CONGRESS } HOUSE OF REPRESENTATIVES { REPORT  
Session } } No. 641

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83d CONGRESS }  
1st Session }

HOUSE OF REPRESENTATIVES {

REPORT }  
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The Federal Civil Defense Administration has no information which originated within the agency as to the effects, if any, of the recent atomic bomb explosions upon the weather in this country. However, under date of June 18, 1953, advice was received from the Chief of the United States Weather Bureau that—

*"During the past few years the Weather Bureau has been in very close touch with the Atomic Energy Commission and the military services on the possible effects of atomic bombs on weather. From extensive studies made on this subject by the Weather Bureau, no evidence has been discovered to show causal connection between the explosion of atomic bombs and general weather conditions or severe storms like tornadoes."*

Substantially similar information has been received from the Atomic Energy Commission.

Advice has been received from the Bureau of the Budget that there would be no objection to the submission of this report to your committee.

Sincerely,

VAL PETERSON.



83<sup>d</sup> CONGRESS  
1<sup>st</sup> Session

HOUSE OF REPRESENTATIVES

REPORT  
No. 641

## INQUIRING INTO THE EFFECT ON THE WEATHER OF CERTAIN ATOMIC-BOMB EXPLOSIONS

JUNE 23, 1953.—Ordered to be printed

Mr. SHORT, from the Committee on Armed Services, submitted the following

### ADVERSE REPORT

[To accompany H. Res. 280]

The Committee on Armed Services, to whom was referred the resolution (H. Res. 280) directing the Federal Civil Defense Administrator to furnish to the House of Representatives full and complete information about the effect on the weather of certain atomic-bomb explosions, having considered the same, report unfavorably thereon without amendment and recommend that the resolution do not pass.

FEDERAL CIVIL DEFENSE ADMINISTRATION,  
OFFICE OF THE ADMINISTRATOR,  
Washington 25, D. C., June 19, 1953.

HON. DEWEY SHORT,  
*Chairman, Committee on Armed Services,  
House of Representatives.*

DEAR MR. CHAIRMAN: This is in reply to your letter of June 12, 1953, requesting a report on House Resolution 280, 83d Congress, the provisions of which read as follows:

*“Resolved, That the Federal Civil Defense Administrator is hereby directed to furnish to the House of Representatives at the earliest practicable date full and complete information with respect to whether there is any connection between the tornadoes which have recently occurred in the United States and the recent explosions of atomic bombs in the United States.”*

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*“During the past few years the Weather Bureau has been in very close touch with the Atomic Energy Commission and the military services on the possible effects of atomic bombs on weather. From extensive studies made on this subject by the Weather Bureau, no evidence has been discovered to show causal connection between the explosion of atomic bombs and general weather conditions or severe storms like tornadoes.”*

Substantially similar information has been received from the Atomic Energy Commission.

Advice has been received from the Bureau of the Budget that there would be no objection to the submission of this report to your committee.

Sincerely,

VAL PETERSON.

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Ext.

*Refer with [unclear] Civil Defence Coordinator*  
*2 Solandt*  
*2 Mackenzie*  
*Controller of Nat Services*  
*Sec / Cabinet*  
*File*  
*WPA*

OTTAWA FILE
52 50
SECURITY CLASSIFICATION

D-1
1 Letter No. 1292
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FROM: The Canadian Embassy, Washington, D.C., U.S.A.

TO: THE UNDER-SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

Reference... Our Letter No. 1282 of June 29, 1953.

3 JUL 1953 Subject: Question of Possible Connection Between Weather and Atomic Explosions in the United States.

Attached are six copies of a report submitted by the Federal Civil Defence Administration, denying that there is any causal connection between the explosion of atomic bombs and atmospheric storms like tomadoes.

*[Signature]*  
for the Embassy

Copies Referred To.....

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No. of Enclosures

Six *BJW*

Post File

No.....

16



**FILE COPY**

CONGRESS } HOUSE OF REPRESENTATIVES } REPORT  
Session } } No. 641

**INQUIRING INTO THE EFFECT ON THE WEATHER OF  
CERTAIN ATOMIC-BOMB EXPLOSIONS**

JUNE 23, 1953.—Ordered to be printed

Mr. SHORT, from the Committee on Armed Services, submitted the following

**ADVERSE REPORT**

[To accompany H. Res. 280]

The Committee on Armed Services, to whom was referred the resolution (H. Res. 280) directing the Federal Civil Defense Administrator to furnish to the House of Representatives full and complete information about the effect on the weather of certain atomic-bomb explosions, having considered the same, report unfavorably thereon without amendment and recommend that the resolution do not pass.

FEDERAL CIVIL DEFENSE ADMINISTRATION,  
OFFICE OF THE ADMINISTRATOR,  
Washington 25, D. C., June 19, 1953.

HON. DEWEY SHORT,  
Chairman, Committee on Armed Services,  
House of Representatives.

DEAR MR. CHAIRMAN: This is in reply to your letter of June 12, 1953, requesting a report on House Resolution 280, 83d Congress, the provisions of which read as follows:

*Resolved*, That the Federal Civil Defense Administrator is hereby directed to furnish to the House of Representatives at the earliest practicable date full and complete information with respect to whether there is any connection between the tornadoes which have recently occurred in the United States and the recent explosions of atomic bombs in the United States."

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"During the past few years the Weather Bureau has been in very close touch with the Atomic Energy Commission and the military services on the possible effects of atomic bombs on weather. From extensive studies made on this subject by the Weather Bureau, no evidence has been discovered to show causal connection between the explosion of atomic bombs and general weather conditions or severe storms like tornadoes."

Substantially similar information has been received from the Atomic Energy Commission.

Advice has been received from the Bureau of the Budget that there would be no objection to the submission of this report to your committee.

Sincerely,

VAL PETERSON.

Ext. 182

*Done 6-1-53-DJK*  
*Refer*  
*Dr. Salant*  
*Dr. Mackenzie*  
*Controller of Nat Services, D.O.T.*  
*Sec / Cabinet*  
*File*  
*OTTAWABLE*  
*NO. 50219-D-40*

D-1 Letter No. .... 1282	
1	Date: June 29, 1953.
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52 50
SECURITY CLASSIFICATION
UNCLASSIFIED

**FROM:** The Canadian Embassy, Washington, D.C., U.S.A.

**TO:** THE UNDER-SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

**Subject:** Question of Possible Connection Between Weather and Atomic Explosions in the United States.

2 JUL 1953

There has been some speculation in the press of the United States about the possibility of a connection between the prevalence of atmospheric storms, including tornadoes, and the series of atomic tests which has recently been conducted by the USAEC in co-operation with the armed forces.

2. The armed services were called upon by resolutions introduced in the House of Representatives to report whether there is any connection between the tornadoes and the explosions of atomic weapons in the United States.

3. Each of the services has now rendered a report denying any such connection. Attached are five copies of the report submitted on behalf of the Department of the Army.

4. The report of the Department of the Air Force contained the following additional information:

"As a part of its research and investigation into the various effects of atomic explosions, the Department of the Air Force has endeavored, since 1949, to determine if there are any unusual effects of atomic-bomb bursts on the weather. The effects of all atomic tests in the United States are completely documented. In the immediate vicinity of the test site, detailed and complete visual and photographic observations indicate that there are no unusual effects, even such as local rainstorms.

In addition, the path of material which is carried high into the atmosphere by an atomic explosion and moves with the winds is carefully tracked for thousands of miles. A careful study of the weather along these paths and in the areas covered by them has not revealed any relationship between the locations and paths of atomic-explosion debris and the occurrence of intense storms or other unusual weather phenomena."

*P. J. [Signature]*  
for the Embassy

Copies Referred To.....

No. of Enclosures  
..... Five *RW*

Post File  
No.....

*10*

EXTERNAL AFFAIRS

1953-JUL 1 AM 10:35

10:03

5 11 1953

FILE COPY

83D CONGRESS  
1st Session

HOUSE OF REPRESENTATIVES

REPORT  
No. 646

## INQUIRING INTO THE EFFECT ON THE WEATHER OF CERTAIN ATOMIC-BOMB EXPLOSIONS

JUNE 23, 1953.—Ordered to be printed

Mr. SHORT, from the Committee on Armed Services, submitted the following

### ADVERSE REPORT

[To accompany H. Res. 279]

The Committee on Armed Services, to whom was referred the resolution (H. Res. 279) directing the Secretary of the Army to furnish to the House of Representatives full and complete information about the effect on the weather of certain atomic-bomb explosions, having considered the same, report unfavorably thereon without amendment and recommend that the resolution do not pass.

DEPARTMENT OF THE ARMY,  
OFFICE OF THE CHIEF OF LEGISLATIVE LIAISON,  
Washington, D. C., June 17, 1953.

Memorandum for: The General Counsel, Office of the Secretary of Defense.  
Information to: Rear Adm. Ira H. Nunn, Judge Advocate General, Department of the Navy.

Maj. Gen. Robert E. L. Eaton, Director of Legislation and Liaison, Department of the Air Force.

Subject: House Resolution 279, 83d Congress, a resolution directing the Secretary of the Army to report on the connection between tornadoes and explosions of atomic bombs in the United States.

1. Pursuant to informal discussion and request, Mr. Saymon, OSD, Major Loveless and Major Virant, OCLL, the Department of the Army submits the following comments on the subject resolution as the basis for a proposed report thereon.

2. The Department of the Army has made no effort, to date, to determine any effects of atomic explosions on continental weather. The Department of the Army is interested in the determination of the most suitable weather conditions for firing atomic weapons and of methods of detection of atmospheric storms, including tornadoes.

3. An exacting determination of any relationship between atomic explosions and weather extremes, such as recent tornadoes in the United States, would be an expensive and lengthy investigation. It is not possible to obtain a "control" condition of the weather for reference purposes, since the exact condition of the atmosphere rarely repeats itself, if ever. Therefore, any experiments to determine the specific changes in the atmosphere due to explosions or other unnatural

## 2 EFFECT ON WEATHER OF CERTAIN ATOMIC-BOMB EXPLOSIONS

phenomena can only be obtained through lengthy and difficult statistical procedures which yield information in terms of probabilities rather than proven facts. The Department of the Army has made no effort to conduct such a program.

4. A review of extreme weather conditions such as of low temperatures, storms, precipitation, cyclones, or tornadoes shows that such conditions occur frequently but without any regular recurrence or specific association with man-made activities involving the release of large amounts of energy. These weather extremes occur in many different areas of the world. Their explanation has usually been made in the light of existing weather conditions after the fact rather than an examination of prevailing phenomena before the fact. There are no established scientific facts from which to conclude that the unusual prevalence of tornadoes resulted from recent atomic energy explosions.

WILLIAM J. FLYNN,  
*Colonel, JAGC, Chief, Legislative Division*  
(For the Chief of Legislative Liaison).



INCOMING MESSAGE

*Circulate*  
*American Dir*  
*D-1(2)*  
*Files*  
*Refer*  
*Mr. Solandt*  
*Mr. Mackenzie*  
*Mr. Pickens*  
**ORIGINAL**

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

Security Classification
UNCLASSIFIED
File No. 50219-D-40
58   50

Priority	System EN CLAIR	No. WA-810	Date April 2, 1953. J22
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Departmental Circulation  
 MINISTER UNDER/SEC  
 D/UNDER/SEC  
 A/UNDER/SEC'S  
 POL/CO-ORD'N SECTION

Reference:

Subject: USEAC announcement that Bikini Atoll added to Atomic Proving Ground in Pacific.

Addressed External WA-810, repeated to Permdel New York as No. 93.

The United States Atomic Energy Commission released the following announcement today: Begins:

To accommodate the rapidly expanding program of developing and testing new and improved nuclear weapons the United States Atomic Energy Commission is enlarging the Pacific proving ground in the Marshall Islands to include Bikini as well as Eniwetok Atoll. Bikini is 180 miles to the eastward of Eniwetok. Construction of technical facilities there will begin shortly.

Use of Bikini is necessary because of the limited size of Eniwetok, where tests were conducted last November. Eniwetok will be the headquarters and main operating base for the proving ground. Bikini and Eniwetok will remain under the civil jurisdiction of the Department of interior. AEC uses the area under agreement with interior.

Bikini was last used in 1946 for testing military effects of conventional atomic bombs. At that time its inhabitants were evacuated from the Atoll. After study of suitable alternative sites and consultations with the people, they were relocated on the Island of Kili in the Southern Marshall Islands. Since the 1946 tests, the Nevada proving ground of the Atomic Energy Commission has been established and is continuing in use for frequent tests, one series of which is now underway.

The United Nations is being notified by the Department of State that Bikini Atoll and its territorial waters have been declared closed for security reasons in accordance with the provisions of the trusteeship agreement between the United States and the Security Council of the United Nations. Ends.

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Re: APR 2 1952

RECEIVED  
COMMUNICATIONS  
EXPERIMENTAL DIVISION

1953 APR 2 9M 45

COPY NO. 1 OF 14 COPIES

ORIGINAL

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES.

*Refer to Subject: Mr. Macdonald Mr. Pickens*  
*+ File WA-634*

Security Classification	
TOP SECRET	
File No.	
50219-D-40	
59	50

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

Priority	System	No.	Date
	CYPHER-AUTO	WA-634	March 13, 1953 <i>gz</i>

Departmental Circulation  
 MINISTER No 2 ✓  
 UNDER/SEC No 3 ✓  
 D/UNDER/SEC No 4 ✓  
 A/UNDER/SEC'S No 5 ✓

*D-1 Done - ma m*

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MAR 13 1953

Reference: My WA-209 and WA-210 of January 27 and WA-479 of February 24.

Subject: New series of atomic tests at Nevada.

1. In accordance with established procedure, Arneson has now given us a list of the scheduled dates now fixed by the United States authorities for planning purposes. If there are any serious delays in the timing of any of these tests on account of weather or other conditions, we may expect to be notified through the same channel.

2. The list of dates is as follows:

- Test 1. March 17th. (This is an open test, as announced in AEC press release dated February 21st; see WA-479 of February 24th. All other tests are secret.)
- Test 2. March 24th.
- Test 3. March 31st.
- Test 4. April 6th.
- Test 5. April 11th.
- Test 6. April 18th.
- Test 7. April 25th.
- Test 8. May 2nd.
- Test 9. May 7th.
- Test 10. May 21st.

3. The Defence Research member of the Canadian Joint Staff has been informed.

DOWNGRADED TO SECRET  
 REDUIT A SECRET

References

Done

Date

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1953 MAR 13 PM 3:03

# INCOMING MESSAGE

# ORIGINAL

*Done 26*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

*circulate*  
*Commission*  
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*1 File*

*Rifer*  
*Solomon*  
*Rack...*  
*Pink...*  
*Civil Defense*

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

Security Classification

UNCLASSIFIED

File No.

50219-D-40

52 | 40

Priority

System: EN CLAIR

No. WA-479

Date February 24, 1953. *19*

Departmental Circulation

MINISTER /

UNDER/SEC /

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A/UNDER/SEC'S /

*Done*

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Done 24 FEB 1952

Date

Reference: My messages Nos. WA-209 and WA-210 of January 27th.

Subject: New Series of Atomic Tests at Nevada.

The following is the text of the United States Atomic Energy Commission press release dated February 21 on this new series of tests, scheduled on March 17, Text begins:

A limited number of observers from state, territorial and major city civil defense organizations and from press, radio, television and newsreels will be permitted to witness an atomic test at the Commission's Nevada proving grounds near Las Vegas, Nevada, scheduled on March 17, 1953. For the FCDA the test will include determination of the effects of the detonation on two frame dwellings and several bomb shelters.

Governors of the states and territories and mayors and other civil defense officials are being invited to attend by the Federal Civil Defense Administration, which has issued quotas to its state directors to insure representation by key states and cities.

Invitations to correspondents are being issued by AEC Chairman Gordon Dean on behalf of FCDA and the Department of Defense. The March 17 test will include troop participation.

In announcing invitation of the observers, Mr. Dean stated that the Commission had approved a request by FCDA for participation in the test program and that it should result in a better understanding of the atomic weapons development program and its civil defense impact.

FCDA informed the AEC that the test also would help stimulate the civil defense program and provide information on atomic weapons effects to the general public. The major part of the FCDA effects test program will be held at a later date but because of conditions related to the test will be classified and therefore cannot be observed.

The admission of the observers to the Nevada

Done

Date

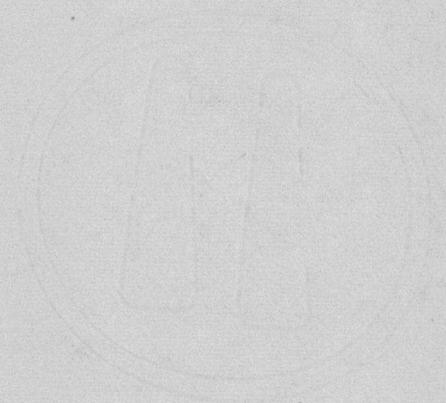
- 2 -

proving grounds will be conducted under security and safety controls similar to those established at the test on April 22, 1952, which was witnessed by observers. Only unclassified information will be made available to uncleared visitors. Text ends.

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CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1953 FEB 24 PM 2:53



Information of the Department of External Affairs  
is being furnished to you under the provisions of the  
Access to Information Act. The information is being  
furnished to you in confidence and is not to be  
disclosed to the public.

*Circulate: Mr. Weichert  
 Mr. Mackenzie (on return)  
 Mr. Burton (- -)*

ORIGINAL

*Refer: Dr. Toland  
 Dr. Mackenzie  
 Mr. Pickens  
 Mr. Clayton  
 Chairman, Chiefs of Staff  
 CAS  
 USSEA  
 Americas  
 AX(2)*

MESSAGE FORM

INCOMING

File No.		
50219-D-40		
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Security Classification
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FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

JAN 27 1953

System EN CLAIR	No. WA-210	Date: January 27, 1953
Priority	<p><u>Reference:</u> My immediately preceding teletype. <span style="float: right;">J18</span></p> <p><u>Subject:</u> New series of atomic tests at Nevada.</p> <p>The following is the text of the announcement released by the Atomic Energy Commission on January 26th:</p> <p style="text-align: center;">AEC Announces New Series of Tests to be Conducted at Nevada</p> <p>The U.S. Atomic Energy Commission will resume tests at its Nevada proving ground near Las Vegas, Nevada, next March. The Department of Defense, Federal Civil Defense Administration and other Federal Agencies will participate.</p> <p>The new series of tests is designed to advance development of new and improved nuclear devices and will provide additional weapons performance data essential to military and civil defense effects studies.</p> <p>The Department of Defense has notified the Commission that 18,000 troops of the Army, Navy, Air Force and Marines will participate in troop maneuvers and training exercises during the 1953 spring tests.</p> <p>Many secondary projects will be included to obtain research and effects information of value to other programs in Government and to the public.</p> <p>Construction of test structures for the AEC, Department of Defense and Federal Civil Defense Administration was begun last fall. Construction also includes new facilities for instrumentation work in the technical areas and additions to the permanent establishment at the proving ground. A large part of the program for the effects tests is classified.</p> <p>Operations at the Nevada proving ground are directed by Carroll L. Tyler, Manager of the AEC's</p>	
Departmental Circulation MINISTER UNDER/SEC D/UNDER/SEC A/UNDER/SEC'S	<p>Done _____</p> <p>Date _____</p>	
References	<p>Done _____</p> <p>Date _____</p>	

- 2 -

Santa Fe Operations Office, Albuquerque, New Mexico. The test organization for the 1953 spring series includes Tyler as test manager; James E. Reeves, AEC, Albuquerque, deputy manager; Dr. Alvin C. Graves, Los Alamos Scientific Laboratory, scientific test director and deputy for scientific operations; Colonel Paul T. Preuss, USAF, field command, armed forces special weapons project, Albuquerque, deputy for Military Operations; and S.R. Woodruff, Jr., AEC, Las Vegas, deputy for Support Operations. The Director for Desert Rock V, the troop maneuvers and training program, will be announced later by the Department of Defense.

Dr. John C. Clark, Los Alamos Scientific Laboratory, will be Dr. Graves' deputy scientific director, and other scientific aides include: Dr. W.E. Ogle, Los Alamos, weapons development tests; Dr. E.D. Doll, Stanford Research Institute, Palo Alto, California, weapons effects tests; and Robert L. Corsbie, AEC, Washington, D.C., civil effects tests.

Other personnel for the test organization will be drawn from the AEC and its laboratories; from the armed services and their laboratories; from industrial and research organizations and from the Federal Civil Defense administration.

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EXTERNAL AFFAIRS

1953 JAN PM 1 43

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will be Dr. Dorr, scientific research and other  
Dr. John C. Clark, for various scientific research

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Circulate: ~~Mr. Westcott~~  
 Mr. Mackay (on return)  
 Mr. ~~Arneson~~ (on return)

ORIGINAL

Refer: Dr. Solandt  
 Dr. Mackay  
 Mr. Pickens  
 Mr. Clouston

MESSAGE FORM

Chairman, Chief of Staff INCOMING

File No.		
50219-D-40		
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FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

817

JAN 27 1953

System CYPHER-AUTO	No. WA-209	Date: January 27, 1953.
Priority	<u>Reference:</u>	
Departmental Circulation	<u>Subject:</u> New series of atomic tests at Nevada.	
MINISTER - UNDER/SEC - D/UNDER/SEC - A/UNDER/SEC'S -  Done 1/1	<p>1. My immediately following teletype contains the text of an announcement released by the Atomic Energy Commission on January 26 concerning a new series of tests which are to take place at Nevada next March.</p> <p>2. You will observe that the announcement states that the tests are "designed to advance development of new and improved nuclear devices." Arneson gave us to understand that these "new devices" are not, repeat not, connected with thermo-nuclear reactions. He said that there was nothing unusual to be expected from this series of tests.</p> <p>3. He indicated that the main interest of these tests will lie in the further information which the A.E.C. hope to develop in the field of weapons effects on troops in the field and in relation to civil defence problems.</p> <p>4. Arneson also said that we will in due course receive the usual information about timing of the tests.</p> <p>-----</p>	
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EXTERNAL AFFAIRS

1953 JAN 27 PM 1:44

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TO THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA  
FROM THE CANADIAN AMBASSADOR TO THE UNITED STATES

CONFIDENTIAL

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ORIGINAL

Ext. 182 C

DUPLICATE

*Original on 50271-A-40 "V" file*

OTTAWA FILE  
No. *50219-D-40*

Letter No. *64.*

Date *January 14, 1953.*

*52 52*  
SECURITY CLASSIFICATION  
**CONFIDENTIAL.**

FROM: THE PERMANENT DELEGATION OF CANADA TO THE UNITED NATIONS, NEW YORK.

TO: THE UNDER-SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

Reference.....

Subject: *General Assembly - Disarmament - Hydrogen Bomb.*

1. I think it is now a fair guess that when item 17 on the Assembly's agenda, the Report of the Disarmament Commission, is discussed when the Assembly reconvenes, there will be a good deal of worried discussion of the hydrogen bomb. The Eniwetok tests announced on November 16, 1952, and still more President Truman's final State of the Union message of January 7 make it necessary that we prepare ourselves with some knowledge of the facts and an examination of their implications, not, of course, for use in the debate in the Assembly but for our own confidential background information.

Copies Referred To.....  
**WASHINGTON**

2. It would, for example, be most useful to have some assessment of the stage which has probably been reached by the United States Government in their experiments "contributing", to use the phrase of Atomic Energy Commission's Press Release, "to thermo-nuclear weapons research".

No. of Enclosures  
**Three.**

3. In the New York Herald Tribune for January 5, 7 and 14, the Alsops have published a series of terrifying "facts" about the hydrogen bomb or prototype exploded at Eniwetok last Fall. Are the facts as given in these ...articles, copies of which are attached, reasonably accurate? I assume that the more sober explanatory article on "The Hydrogen Bomb Story" by Dr. Rabinovitch in the Bulletin of the Atomic Scientists for December, 1952, is technically sound. Presumably, however, we have more information on the progress - if we can call it such - of U.S. research than is given in this article, and we have also some rough estimate of the probable timing of parallel Soviet research and development. If we are to think at all seriously about the political and military aspects of this enormous problem, we need much more information in order to find our bearings in the world into which we seem to be emerging, with, on the whole, a complacency which the Alsops are doing their best to shake. No doubt others will follow their example during the Assembly's debate on Disarmament. Without entertaining any illusions as to what the General Assembly can accomplish by discussing disarmament, with or without a hydrogen bomb in the background, I hope you will be able to give us some enlightenment on this subject.

Post File  
No.....

~~Mr. Williford~~  
~~Mr. Ritchie~~  
~~Mr. Macdonnell~~

Defence Liaison 1/WHBarton/prc

November 21, 1952.

*file*  
*W.H.B.*

MEMORANDUM FOR MR. MACKAY

Through Mr. ~~W~~shof.

50219-D-40  
Sub 57 Chron 19 Filed....

Recent Trials at Eniwetok

I commend to your attention the attached article by William L. Laurence of the New York Times, who, you will recall, was the official correspondent who flew with the USAF when the first atomic bombs were dropped on Japan. In the attached article he gives a good description of the problems involved in the design of a hydrogen bomb, and makes a strong case for the view that the recent tests at Eniwetok did not involve the explosion of an actual hydrogen bomb but rather that of a "test tube model".

In view of Mr. Laurence's high repute as a writer on scientific subjects, and his preferred position with respect to the Atomic Energy Commission, I think that there is every likelihood that his analysis of what occurred is correct.

*W.H.B.*

W.H. Barton.

*This corresponds to Lawrence's account  
over the radio a few nights ago*  
*R.A.H.*

24.11.7(us)

DEPARTMENT OF EXTERNAL AFFAIRS

Subject.....

A-bomb

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WINTERS GAZETTE

# Test Tube Model of H-Bomb

By WILLIAM L. LAURENCE  
(New York Times Service)

New York—Known facts make it evident that the tests at Eniwetok just completed involved (A) the explosion of the most powerful atomic (fission) bomb developed so far and (B) that these latest models of fission bombs tested also incorporated certain relatively small amounts of the two types of hydrogen that will serve as the ingredients of the full-fledged hydrogen bomb.

The tests may thus be said to have constituted the two extremes in the field of atomic weapons—the most powerful fission bomb, made of uranium 235 or plutonium, and what may be described as a laboratory scale, or rather "test bomb."

Thus while in a technical sense the test may be described as that of the first hydrogen bomb, in actuality it is still very far from such a weapon in a military sense. Such must await the completion next year of the giant nuclear reactor on the Savannah River, where one of the basic ingredients of the hydrogen bomb, the triple-weight hydrogen named tritium, will be produced in quantity.

The two types, or isotopes, of hydrogen essential for a large scale hydrogen bomb are known as deuterium, with an atomic mass of two, double that of common hydrogen, and tritium, of atomic mass three, or triple weight hydrogen. Deuterium is found in all water, in the proportion of one to 5,000, and can be concentrated relatively cheaply by electricity. Tritium, however, is a radio-active substance that decays at the rate of 50 per cent every twelve years and no longer exists in nature. Hence it will be created artificially by the transmutation of lithium (atomic mass six) by means of neutrons from split atoms of uranium 235.

The fact that the scientists in charge of the tests "expressed satisfaction with the results," makes it further evident that the tests have provided them with satisfactory answers to the two crucial questions upon which the success or failure of the hydrogen bomb will depend.

As is now generally known, the release of the explosive energy in the hydrogen bomb is achieved by a process of fusion, namely, the joining of the nuclei of the two types of heavy hydrogen at tremendously high temperature, which accounts for the technical term "thermonuclear reaction." The fusion process is the exact opposite of the one responsible for the release of the explosive energy in the uranium 235 (U-235) or plutonium bomb, which comes about as the result of the fission (splitting) of the nuclei of these two heavy elements into the nuclei of two lighter atoms.

The two questions are in actuality one. They concern temperature and time. To bring about the fusion of the nuclei of deuterium (deuterons) or of tritium (tritons), or of a mixture of the two, requires temperatures measured in many millions of degrees, temperatures possible on earth only by the explosion of a uranium or plutonium bomb.

The higher the temperature the faster the time, measured in fractions of a millionth of a second, in which the nuclei of the hydrogen atoms react (fuse) to produce the explosion. The temperature, in turn, depends on the power of uranium

or plutonium bomb; the greater the explosive force, the higher the temperature.

Since the fusion, or thermonuclear, reaction must take place before the fission bomb (used as the trigger) flies apart, it is obvious that two conditions are required before a successful explosion (fusion) of the hydrogen nuclei can take place. Not only does it require a temperature of about 100,000,000 degrees centigrade, the temperature must be maintained for at least 1.2 millionths of a second (1.2 microseconds) to get the thermonuclear (fusion) reaction started. This means that the fission bomb trigger must be kept from flying apart for at least that "time interval."

The process is analogous to the lighting of a cigaret in a high wind when one has only one match. It is not enough to light the match—one must be able to shield it against the wind long enough for the cigaret to be lighted.

It was this crucial double question for which the latest tests at Eniwetok have at last supplied the answer, and, judging by the fact that the scientists expressed satisfaction with the results, the answer was without doubt in the affirmative.

In other words, the tests have finally settled a controversy that had been going among the atomic explorers ever since the fission bomb became a reality. One group maintained that the fission bomb "match" could not be held together long enough to "light" the hydrogen "cigaret." The other maintained that such was the case only with the early models of the fission bomb, and that more powerful models could be developed, together with means for holding it together long enough to start the fusion reaction going.

It is this second school of thought, led by Prof. Edward Teller of the University of Chicago against much opposition, that has at last won the argument. It was largely the influence of the opposition school, which had also objected against the development of the hydrogen bomb on non scientific grounds, that was responsible for the stoppage of all work on the hydrogen bomb during 1945-1950, until President Truman ordered the Atomic Energy Commission to start work on it in January, 1950. His order came shortly after it was learned that Russia had exploded its first atomic bomb, several years ahead of expectation, mainly as a result of treason on the part of the German born British physicist, Emil Klaus Fuchs.

The nominal atomic bomb used over Japan and at Bikini explodes with a force equal to 20,000 tons of TNT. Its temperature at the centre at the instant of the explosion was about 50,000,000 degrees centigrade. It flew apart in 1.1 millionths of a second.

At a temperature of 50,000,000 degrees C. deuterium in its gaseous state would require 128 millionth of a second to ignite. In its liquid form it would require 200 millionths of a second, still much too slow.

On the other hand, a mixture of deuterium and tritium ignites much faster than either deuterium or tritium when used separately. At a temperature of 150,000,000 degrees centigrade such a mixture of deuterons and

tritons (known as the D-T reaction) would require no more than 1.2 millionths of a second to be ignited.

To generate a temperature of 150 to 200 million degrees would require a fission bomb at least six times the explosive power of the models that destroyed Hiroshima and Nagasaki, or a bomb exploding with a force of 120,000 tons of TNT. This means, therefore, that we have developed fission bombs in the range of 120,000 to 150,000 tons of TNT, developing a temperature high enough to start the fast D-T reaction going. The D-T mixture, in turn, would provide the "extra kindling" to explode the much cheaper and much more abundant deuterium (in liquid form).

A few ounces of tritium would be sufficient to start the fusion reaction in a much larger quantity of liquid deuterium. One ton of deuterium would yield an explosive force of 1,000 wartime atomic bombs.



EXTERNAL AFFAIRS  
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task force regulations or the law.

"Making public further information as to the nature and results of these tests might injure the interests of the United States. We will make no further announcements."

  
The Ambassador.

FILE COPY

Announcement released by the Atomic Energy Commission  
on November 16 on the series of atomic tests on  
Eniwetok Atoll.

"Joint Task Force 132, operating for the Department of Defense and the United States Atomic Energy Commission, has concluded the third series of weapons development tests at Eniwetok atoll in the Marshall Islands.

"Like the Greenhouse series of 1951, it was designed to further the development of various types of weapons. In furtherance of the President's announcement of January 31, 1950, the test program included experiments contributing to thermonuclear weapons research.

"Scientific executives for the tests have expressed satisfaction with the results. The leaders and members of the military and civilian components of the task force have accomplished a remarkable feat of precision in planning and operations and have the commendation of the Department of Defense and the Atomic Energy Commission.

"In the presence of threats to the peace of the world and in the absence of effective and enforceable arrangements for the control of armaments, the United States Government must continue its studies looking toward the development of these vast energies for the defense of the free world.

"At the same time, this Government is pushing with wide and growing success its studies directed toward utilizing these energies for the productive purposes of mankind."

The reference, in the first paragraph of the statement to President Truman's announcement of January 31, 1950, was to a directive ordering the commission to get busy on thermonuclear weapons research, or the "so-called hydrogen or super-bomb"

File  
WMBSoviet-D-W  
9/10/52

# THE INSIDE STORY OF OUR FIRST HYDROGEN BOMB

By STEWART ALSOP and DR. RALPH LAPP

Revised 10/52

What is an H-bomb made of? How much does it cost? Why did we not even try to make one between 1945 and 1950? Above all, what happens when it goes off? Here, from experts, are the answers.

**O**NE day soon, observers on the Pacific atoll of Eniwetok will witness the greatest explosion the eye of man has ever seen. They will see the huge fireball and the great pink cloud of the world's first hydrogen bomb.

This event may have occurred before these words are printed. Or it may be delayed for some weeks or months. Some of President Harry S. Truman's advisers believe that the responsibility of exploding a weapon of such awful power should be assumed only by the man who will be President for the next four years. Others urge a breathing space before this irrevocable step is taken, a period of grace in which to consider all its possible consequences.

At any rate, the Eniwetok test of the world's first hydrogen bomb awaits only the word from the present occupant of the White House or his successor. Here two points should be noted. First, the Eniwetok hydrogen bomb will be the forebear of a whole new family of nuclear weapons. And although it will have more than ten times the power of the bombs that destroyed Hiroshima and Nagasaki, it will be puny and rudimentary compared with its descendants. Second, the Eniwetok explosion will mark the beginning of a race between the United States and the Soviet Union for superiority in this tremendous weapon. And the United States has very little head start in this race—far less than in the case of the atomic bomb. So great an authority as Dr. Hans A. Bethe, the pioneer in the thermonuclear, or hydrogen, field, has even said that the Soviet Union may explode the hydrogen bomb before this country. The intelligence experts are slightly more optimistic. They believe that we are still a little ahead of the Russians in this race, but their best guess is that the Soviet hydrogen bomb will be exploded next year, and at the latest in 1954.

There are several reasons why this life-and-death race is so close. The traitors, like Dr. Klaus Fuchs and Dr. Bruno Pontecorvo, have done their bit for the Kremlin. So have such brilliant Soviet scientists as Dr. Peter Kapitza and Dr. A. F. Joffé, and such captive foreigners as the Nobel Prize-winning German, Dr. Gustav Hertz. But there is a much more important reason why our head start is so short.

As we shall see, the atomic bomb is the first step toward the hydrogen bomb. Once an atomic bomb has been made, a hydrogen bomb becomes possible. The United States tested its first atomic bomb on the sands of New Mexico, on July 16, 1945. Four and a half years later, on January 31, 1950, President Truman announced: "I have directed the Atomic Energy Commission to continue its work on all forms of nuclear weapons, including the so-called hydrogen bomb or superbomb." The President's use of the word "continue" was not precisely accurate. Between July, 1945, and January, 1950,

there was *no serious or concerted American effort to make the hydrogen bomb.*

This four-and-a-half-year lag is the basic reason why the gap between the American and Russian efforts is likely to be so short. For the intelligence experts have no doubt at all that Soviet secret police chief Lavrenti Beria, who is in charge of the Soviet nuclear program, ordered all-out work on a Soviet hydrogen bomb as soon as the first Soviet atomic bomb was exploded in September, 1949. In other words, the Soviets may actually have started work on the hydrogen bomb before we did.

Here the ambitious politician should be warned that there is no use starting a traitor hunt in the Atomic Energy Commission or elsewhere. The causes of the lag were subtle and complex, and they have nothing whatsoever to do with treachery. Instead, they relate directly to the very special nature of the hydrogen bomb as a weapon.

Way back in 1944, a few scientists at the isolated Los Alamos laboratory in New Mexico were assigned to a project with the appropriate code name SUPER. These men skirmished rather briefly with the theory of making a hydrogen bomb. They quickly concluded that the atomic bomb had to come first. So work on the hydrogen bomb stopped. And it did not start up again even after our first atomic bombs were exploded.

This was in part because of a national psychological reaction to Hiroshima and Nagasaki. The atomic bomb seemed big enough, in all conscience, and our national preoccupation with atomic bombs led our weapons experts to develop a sort of blind spot to other types of weapons. As long as we—and we alone—had a growing stock pile of atomic bombs, there seemed no very pressing reasons for making a tremendous effort to construct more lethal weapons.

Then, in September, 1949, the intelligence specialists picked up on their secret detection devices incontrovertible proof that the Soviets had exploded an atomic bomb. Instantly, a kind of collective shiver ran through the closed community of nuclear physicists and weapons experts. It was not only that our atomic monopoly had been broken. It had been broken too soon—years before the experts had predicted. Almost immediately an intense, secret, inner struggle broke out behind the demure façade of the Atomic Energy Commission's heavily guarded headquarters in Washington.

With the American atomic monopoly broken, the great Hungarian-born physicist Dr. Edward Teller advocated an immediate, full-steam-ahead attempt to make a hydrogen bomb. Distinguished scientists, like Dr. Harold C. Urey, also a Nobel Prize winner, supported this view of Teller, although Urey did not take a very active part in the ensuing controversy. At the same time other scientists of equal or greater

stature disagreed with Teller. Among these were the very able Dr. Robert Bacher, then the scientific member of the Atomic Energy Commission, and Dr. J. Robert Oppenheimer, one of the two or three greatest physicists in the world. Oppenheimer, more than any other man, is the father of the atomic bomb, and he is accorded almost prayerful respect by the whole tribe of physicists.

This below-the-surface controversy between the scientists quickly spread to the civilian makers of policy, to the military, and even to Congress. AEC Chairman David Lilienthal shared the doubts of Bacher and Oppenheimer. The Air Force generals strongly supported Teller. In secret meetings in Pentagon committee rooms, behind closed doors at the State Department and the White House, this great issue was fought over by a handful of men, in the autumn of 1949, while the American people knew nothing of what was going on.

Then Colorado's solemn, horse-faced Sen. Edwin C. Johnson, in a now-famous blabbermouth television broadcast, let a couple of huge cats out of the bag. As a member of the Joint Congressional Atomic Energy Committee, Johnson had heard something of what was going on. In the midst of a tirade against the "loose-tongued washerwomen," as Johnson called the scientists, he let the first cat out of the bag. "Here's a thing that is top secret," he said. "Our scientists . . . have been trying to make what is known as a superbomb. They want one that has a thousand times the effect of the Hiroshima and Nagasaki bombs."

That tore it. Little by little, the secret struggle over the hydrogen bomb was uncovered, by reporters like the alert Alfred Friendly, of the Washington Post, and a couple of syndicated columnists, until it became public property. Day by day the pressure mounted until, on the last day of January, 1950, President Truman announced his decision to go ahead with the hydrogen bomb.

What really needs explaining about this story is the fact that men of such great stature as Oppenheimer, Bacher and Lilienthal had the most serious doubts about the wisdom of Truman's decision. They had these doubts although they knew that the effort to make an American hydrogen bomb had already been long delayed, and although they knew that the Soviet Union's success with the uranium bomb made a Soviet hydrogen bomb possible and perhaps inevitable.

The present writers feel strongly that President Truman belatedly made the only possible choice when he gave the green light to the hydrogen-bomb effort. Yet there were logical reasons for opposing this decision. To understand these reasons, it is also necessary to understand what the hydrogen bomb is, how it is made, and what it will do. This is not really very difficult. (Continued on Page 150)



Ike visits his birthplace, in Denison, Texas. Many political experts believe Texas will go Republican this year for the first time since 1928.

WIDE WORLD



In Louisiana, Democrats have joined Republicans in a pro-Ike drive. This pretty New Orleans Ike fan wears a campaign button with the slogan in French.

GEORGE BURNS

# Can Ike Crack the Solid South?

By HAROLD H. MARTIN

Thousands of Southern Democrats have abandoned their party to work for Ike. Does this mean the GOP will really win electoral votes there? A Post editor reports on the restless Democrats in Texas, Louisiana and Florida.

**I**N a sun-baked cow town in West Texas not long ago a reporter making a political survey asked a local citizen how he thought the race for President was going. The citizen, a tall dusty man wearing sharp-toed, high-heeled boots and a big white hat, pondered the question at some length.

"The way I see it," he said finally, "they are stirring on the bed ground. They are beginnin' to snort and bawl. The lightnin' is playin' on their horns and at the first close flash or the first loud thunder, they are liable to stampede."

In the weeks that have followed this picturesque appraisal of the nervous temper of the Texas electorate, the political lightnings have flashed luridly across the Texas skies and political oratory has rolled like thunder from the Panhandle to the Gulf. The reaction has been largely as the cowman predicted. The vast herd of Democrats which has been grazing peacefully in the green pastures of the New Deal and the Fair Deal and drinking thirstily at the bureaucratic water holes for twenty years has begun to stir restlessly. A great mooring and bellowing of discon-

tent rises from one end of the range to the other, and for the first time in more than two decades such old Democratic trail bosses as Speaker Sam Rayburn and Sen. Lyndon Johnson have had to climb on their circling horses and lope around the herd, singing soothing ballads.

Whether or not, beneath the dust and the angry bawling, a real political stampede is under way, no nonpartisan observer is prepared to say. In fact, it is almost impossible to find a nonpartisan observer in Texas today. One fact, though, is admitted by both Republicans and Democrats, and by those Democrats who would like to be Republicans if they weren't afraid of what grandpa's ghost would say: It will be a tight fight for Texas.

There is, beyond question, more likelihood that Texas will go Republican this year than at any time since 1928, when the voters were stampeded by the apparition of the Pope of Rome moving into the White House—a phony, but nonetheless terrifying, threat that beat Al Smith and gave Texas to Herbert Hoover.

There is no supercharged emotional issue in this campaign that can approach in intensity the reli-

gious issue of the 1928 campaign, when both reason and the Democratic tradition crumbled before the hot-eyed onslaught of anti-Catholic bigotry. The Republicans do, though, go into Texas this year holding a fistful of high cards they have never been lucky enough to draw before. Never before in history, for example, have they offered a presidential candidate who was, personally, so warmly adulated by the rank and file of Texans as is General Eisenhower. The Texan is by nature a bellicose man with a predilection for gunplay, whether on a personal or global scale, and he looks upon a skilled practitioner of the arts of war as being one of the higher forms of human life. His admiration for Eisenhower as a soldier, therefore, has been somewhat akin to the regard which he has always felt for old Sam Houston or the heroes of the Alamo. Even the general's revelation that he had always been a Republican at heart and would seek the Republican nomination did not alienate his more fervent admirers.

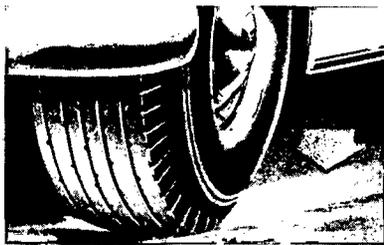
"Ike's turning out to be a Republican did shake me up some," one brass-collar Democrat admitted. "It caused me to do some caucusin' with my con-

# DON'T FRET

## when roads are wet



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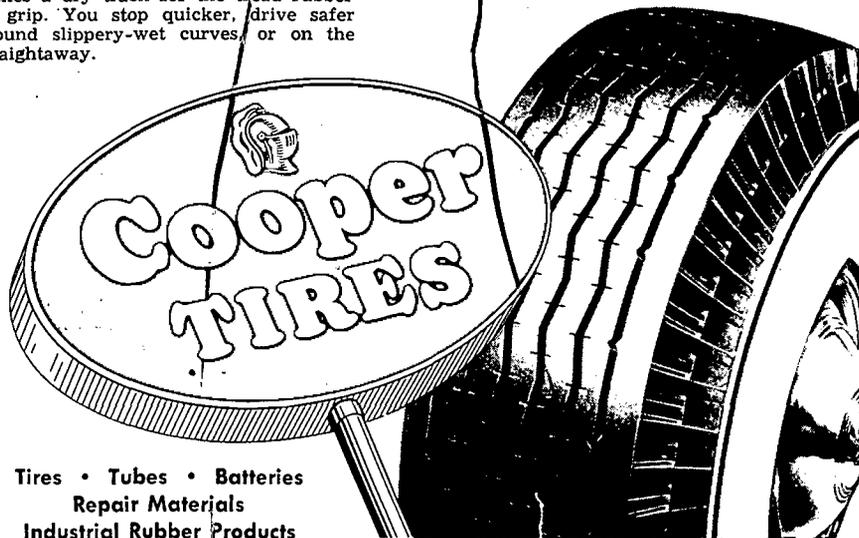


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## THE INSIDE STORY OF OUR FIRST H-BOMB

(Continued from Page 29)

Describing the Hiroshima and Nagasaki bombs in 1945, President Truman said, "The force from which the sun draws its powers has been loosed against those who brought war to the Far East." As so often since, the President got his facts a bit twisted. The Hiroshima-Nagasaki bombs drew their power from uranium. The sun does not. The sun gets its power from hydrogen. The sun is, in fact, a sort of enormous, very slow hydrogen bomb.

The hydrogen in the sun's core is subjected to unimaginable temperatures and pressures. The hydrogen is thus transformed into another element: helium. This process in turn generates immense energy, which is the ultimate source of the heat you feel on your cheek when the sun comes out on a summer day—the heat which keeps us all alive.

The hydrogen bomb is a man-made device for repeating the same process. This is done by wrapping, as it were, an atomic bomb around a hydrogen core, and then exploding the bomb, thus reproducing here on earth the heat and pressure in the center of the sun.

But the "Model T" atomic bomb which knocked out Nagasaki and Hiroshima does not supply the necessary degree of heat and pressure. The required heat and pressure are created only at the moment of explosion, during a millionth of a second. And the hydrogen must be transformed into helium during this tiny moment.

The hydrogen in the sun is ordinary hydrogen—like the stuff that keeps a child's toy balloon in the air. The sun takes not a millionth of a second, but three million years to transform this stuff into helium and thus release energy. To release the same energy in a man-made bomb, what is needed is some very special stuff, which will react virtually instantaneously. Unfortunately for the world, this very special stuff can be made, in the form of a mixture of "heavy hydrogen" and "extra heavy hydrogen."

Heavy hydrogen, called deuterium, can be made by the ton without too much trouble. But deuterium is too sluggish—it might be compared to a damp log which will not ignite easily unless first dried out by kindling fire. The drying-out process must be performed by extra heavy hydrogen, called tritium. To make even a pound of tritium is enormously expensive. It has to be made in huge atomic installations, like the \$1.4 billion Savannah River plant—the most expensive plant in the world—now being built.

Tritium and deuterium mixed together provide a lethal combination which explodes 100,000,000,000,000,000,000 times faster than ordinary, or toy-balloon, hydrogen. This is what makes the hydrogen bomb possible.

So much for how a hydrogen bomb is made. Now for what the hydrogen bomb can do. The accepted measure of power of atomic weapons is the "kiloton." A kiloton equals 1000 tons of high explosive. The Hiroshima-Nagasaki bombs equaled twenty kilotons—enough high explosive to make a pile about the size of the Washington monument. Since the Hiroshima and Nagasaki bombings, atomic bombs have grown. But there is a limit, probably around 150 kilotons, to the power that can be built into the atomic bomb.

Here is where the hydrogen bomb takes over. The smallest hydrogen

bombs have more power than the largest atomic bombs. These "small" hydrogen bombs are compromises. They derive most of their explosive power from uranium rather than from hydrogen.

As the heavy-hydrogen mixture is added to the bomb, this hybrid category is left behind, and is replaced by the true hydrogen bomb, which derives most of its power from heavy hydrogen, rather than from the uranium in the trigger bomb. A 1000-kiloton bomb—or one-megaton bomb, as the specialists call it—is a true hydrogen bomb. This one-megaton bomb—which will certainly be constructed in the fairly near future—will be fifty times as powerful as the bombs which knocked out Hiroshima and Nagasaki.

Actually, however, the one-megaton bomb will not destroy fifty times the area destroyed by the Hiroshima-Nagasaki models. This faintly consoling fact is true essentially because a very big bomb "overdestroys at the center." The bigger the bomb, the more energy it wastes blasting and burning what is already blasted and burned. It is no use destroying something that is destroyed already. In this sense, the very big hydrogen bomb is an inefficient weapon.

Yet it will certainly not seem inefficient to anyone within its lethal range. The following table shows approximately what a one-megaton bomb will do, in comparison with the Model T uranium bomb, the improved uranium bomb, and the hybrid hydrogen bomb. "Blast" is defined as sufficient blast pressure to destroy a brick building; "heat" as that capable of searing a person's skin; and "radiation" is measured in terms of the range of the man-killing gamma rays—it is worth noting that this range is comparatively very short:

	URANIUM BOMBS		HYDROGEN BOMBS	
	Model T 1945	Improved 1950	Hybrid 1952	Improved 1953
Blast-damage area	7 sq. mi.	25 sq. mi.	45 sq. mi.	100 sq. mi.
Heat-flash area	10 sq. mi.	35 sq. mi.	75 sq. mi.	150 sq. mi.
Radioactive rays	2 sq. mi.	3.5 sq. mi.	4.5 sq. mi.	7 sq. mi.

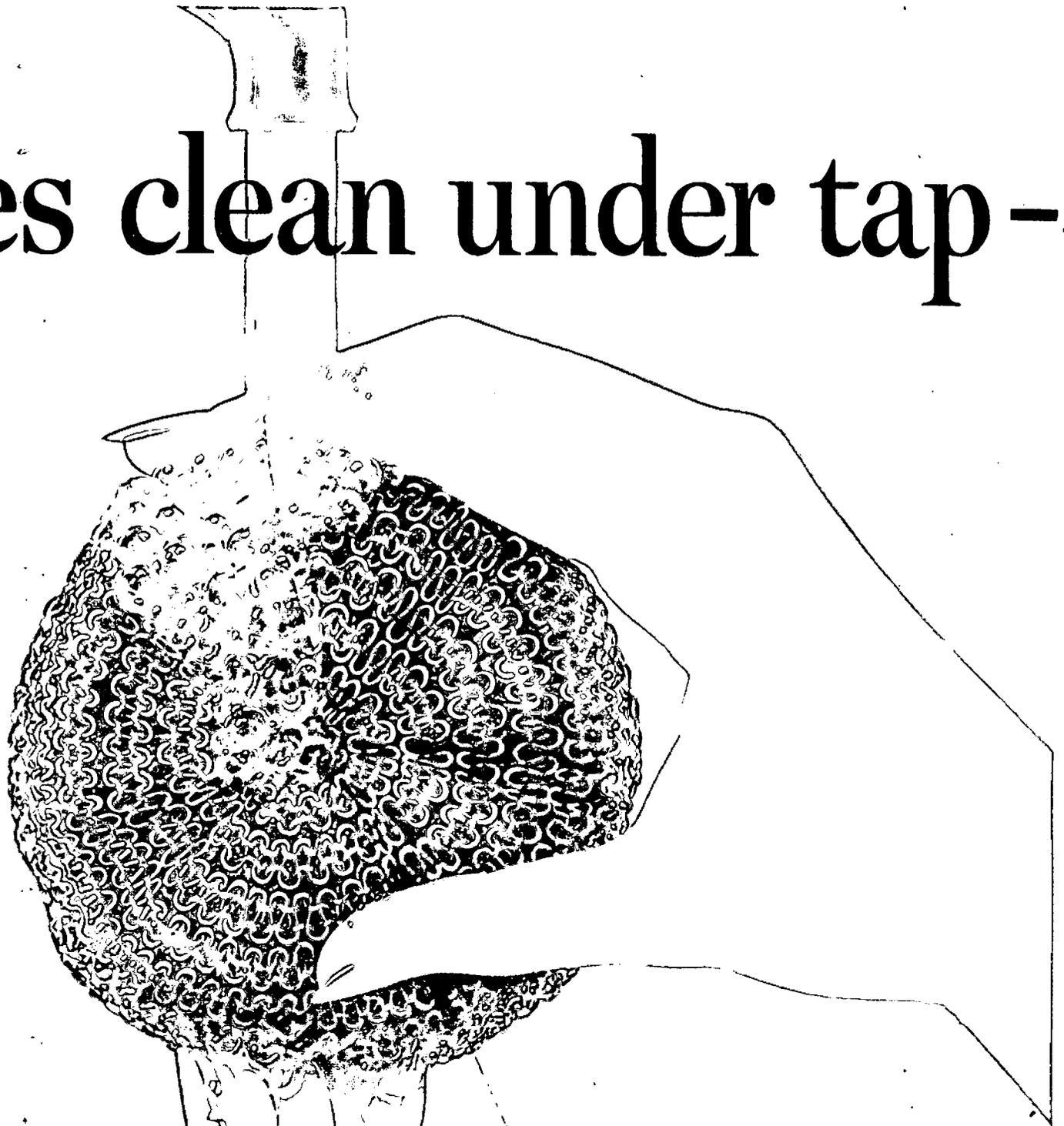
Sooner or later, there will undoubtedly be hydrogen bombs even more powerful than the one-megaton city eraser. Unlike the atomic bomb, the hydrogen bomb is an "open-ended" weapon. In theory, if you want to make it more powerful, you just shovel in more of the heavy-hydrogen mixture. Thus in theory it should be possible to construct the "superbomb" the garrulous Senator Johnson was talking about—a bomb the equivalent of a vast pile of 1000 Washington Monuments of high explosive, capable of blasting into smithereens an area of 700 square miles.

In practice, the power of the hydrogen bomb will be limited by the available supply of the scarce tritium, or very heavy hydrogen. It will also be limited by the weight and bulk which a plane or other instrument of delivery can carry to a distant target, and by the ingenuity of the bomb designed. For as more heavy-hydrogen mixture is poured into the bomb, the bigger the bomb gets. Senator Johnson's superbomb would be too big for any known air-borne vehicle to carry. Moreover, the bomb designers are going to have to be devilishly ingenious to "wrap" the atomic bomb—whose guts are about the size of a softball—around a really large mass of the heavy-hydrogen mixture.

Such are the essential facts about this great new weapon. During the

THE SATURDAY EVENING POST

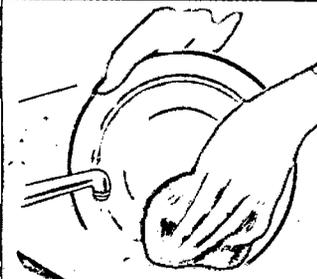
# Rinses clean under tap-



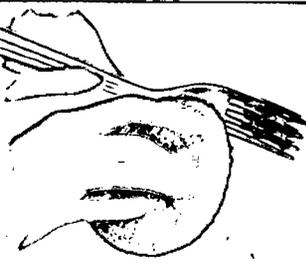
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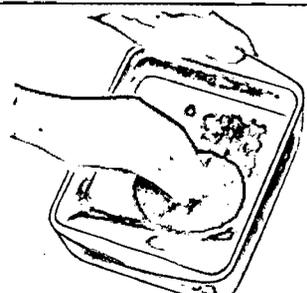
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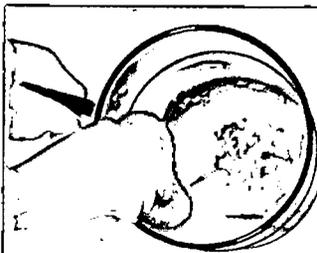
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course of the secret struggle which preceded President Truman's decision in 1950, two questions were constantly being confused. One was "Could we make the hydrogen bomb?" The other was "Should we make the hydrogen bomb?" Let us here consider these two questions entirely separately, as they should be considered.

When Truman made his decision, the first question was half answered. The scientists already knew that it was possible to produce an atomic bomb powerful enough to cause the heavy-hydrogen mixture to react. Senator Johnson let this second cat out of the bag also. "Now," said Johnson, "our scientists have created a bomb that has six times the effectiveness of the bomb dropped at Nagasaki." The senator's information was accurate. At a series of tests at Eniwetok in the spring of 1948, atomic bombs with enough power to trigger the hydrogen bomb were exploded.

But there is a difference between theory carefully calculated in the minds of brilliant men and a tremendous, city-destroying explosion. What the scientists did not really know was whether theory would stand the hard test of actual practice. Theory was put to this test at Eniwetok in the spring of 1951. The director of this Eniwetok series of experiments, Dr. Alvin C. Graves, remarked afterward that the experiments were "so novel and so complex that we would have been happy if only a few of them had worked." As a scientist, though perhaps not as a mere member of the human race, Doctor Graves had reason to be happy. He and his associates had proved, in "novel and complex" ways, that the theory of making a hydrogen bomb worked in practice.

Until then, most scientists believed that a hydrogen bomb could be made. Now they knew. Thus the answering

of the question "Could we make the hydrogen bomb?" took about five and a half years from the explosion of the first atomic bomb. One reason why it took so long was that the second question—"Should we make the hydrogen bomb?"—raised so many doubts in the minds of so many supremely intelligent men.

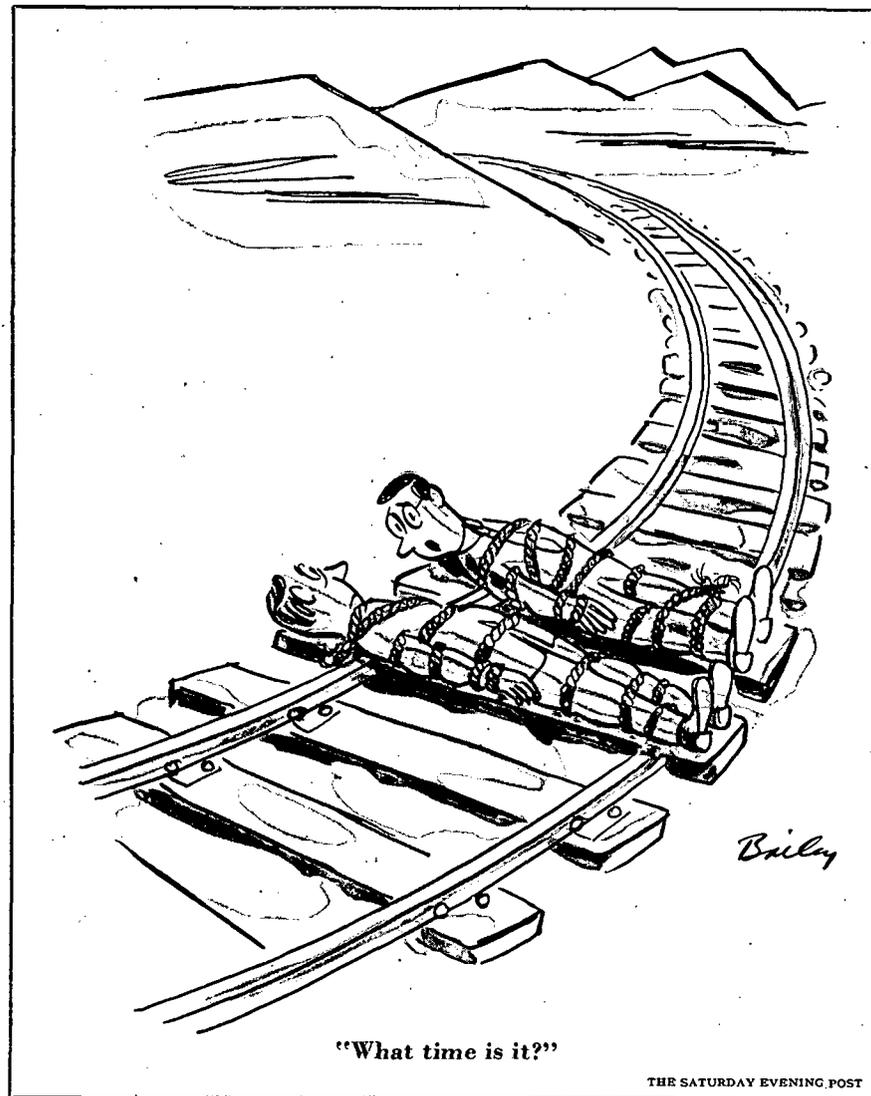
These doubts derived from the nature of the hydrogen weapon. First, for technical reasons which need not be discussed in detail here, some scientists considered the hydrogen bomb a bad investment as compared with the atomic bomb. This is not simply a matter of money, although the best guess is that each hydrogen bomb will cost about \$20,000,000. It is also a matter of plant and raw materials. The same uranium raw stuff and the same sort of plant are required to make hydrogen bombs as uranium bombs.

The scientists believed—they are not so sure now—that the net return on investment in terms of the power to destroy enemy targets would be much greater if the whole American atomic effort were devoted to making atomic rather than hydrogen bombs. Moreover, very heavy hydrogen has a peculiar special characteristic—half of it vanishes every twelve years. Thus, every twelve years half the hydrogen-bomb investment is lost, whereas this is not true of atomic bombs.

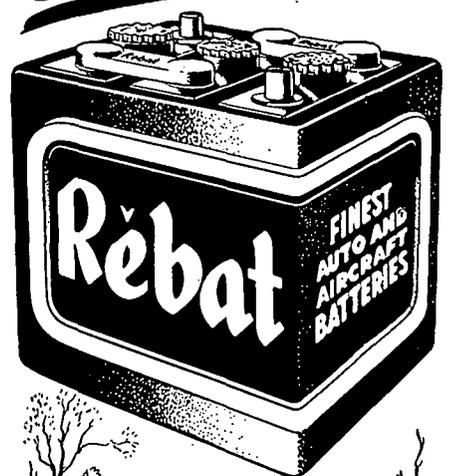
Second, some scientists also had doubts about the real strategic value to this country of a stockpile of hydrogen bombs. They knew that the Strategic Air Force would soon have at its disposal hundreds of the big improved uranium bombs developed at Eniwetok. These bombs, they argued, provided enough power to destroy any conceivable enemy targets.

They also argued that the hydrogen bomb, since it blasts an area of 100

(Continued on Page 153)



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(Continued from Page 151)

square miles and sears an area of 150 square miles, is essentially a weapon for use against very large cities. Since the big uranium bomb can take care of anything smaller, only cities with more than fifty square miles in the central section and more than a half million population are appropriate hydrogen-bomb targets. And the United States provides many more of these hydrogen-bomb target cities than the Soviet Union.

Sixteen million Russians, or one Russian out of twelve, live in such target cities, as against 50,000,000 Americans, or one American out of three. This concentration of our population in the big cities is one price we pay for our marvelously complex industrial civilization. This country, in short, is making a weapon which can best be used against this country. And for precisely this reason the hydrogen bomb gives the Soviets an opportunity to overtake this country, in the race for superiority in nuclear weapons, much more rapidly than would otherwise have been possible. It is easy to see why Doctor Bacher, after resigning from the AEC, remarked sadly, "Quantities of hydrogen bombs will not contribute very much to the security of the United States."

Finally, there were also moral and emotional reasons for doubting the wisdom of President Truman's decision. Scientists, after all, are also human beings. They do not like the idea of going down in history as merchants of death on a colossal scale. As Doctor Oppenheimer said, "The decision to try to make or not to make the hydrogen bomb . . . touches the very basis of our morality." Men like Oppenheimer and Bacher foresaw the day when both Russia and the United States would have the power to kill tens of millions of people at a stroke;

and they saw no way out of the terrible moral dilemma thus created.

These are strong arguments, but the arguments which swayed Truman to his decision are stronger. Scientists concerned with atomic weapons tend to disregard the problem of getting the weapon to the target. No pilot can guarantee pinpoint accuracy under conditions of intercontinental bombing, no matter how brave he is or how good his equipment.

Furthermore, planes are in a sense more important than bombs. As of today, for example, this country's power of retaliation is limited far more by a shortage of the incredibly complicated, enormously expensive intercontinental bombers than by any shortage of nuclear weapons. Thus it is absolutely essential that the fewest possible number of planes are risked to accomplish a given mission.

Assume that there is a vital enemy target which must be destroyed at all costs—an atomic plant, for example, or a strategic air base, or a supremely important industrial center. A near miss—say three miles off target—with even the most powerful atomic bomb, will leave the target more or less intact. A near miss with a hydrogen bomb—even five or six miles off target—will do the job which must be done. This difference in killing range could be decisive in war.

Some experts, like Doctor Teller, also believe that hydrogen bombs may be decisive weapons on the field of battle, in certain special tactical situations. But there is a simpler and more cogent reason why this country had to make the hydrogen bomb. Even before the controversy over Truman's decision began, our scientists were fairly sure that the answer to the question "Could we make the hydrogen bomb?" was "yes." When the Russians exploded their first atomic



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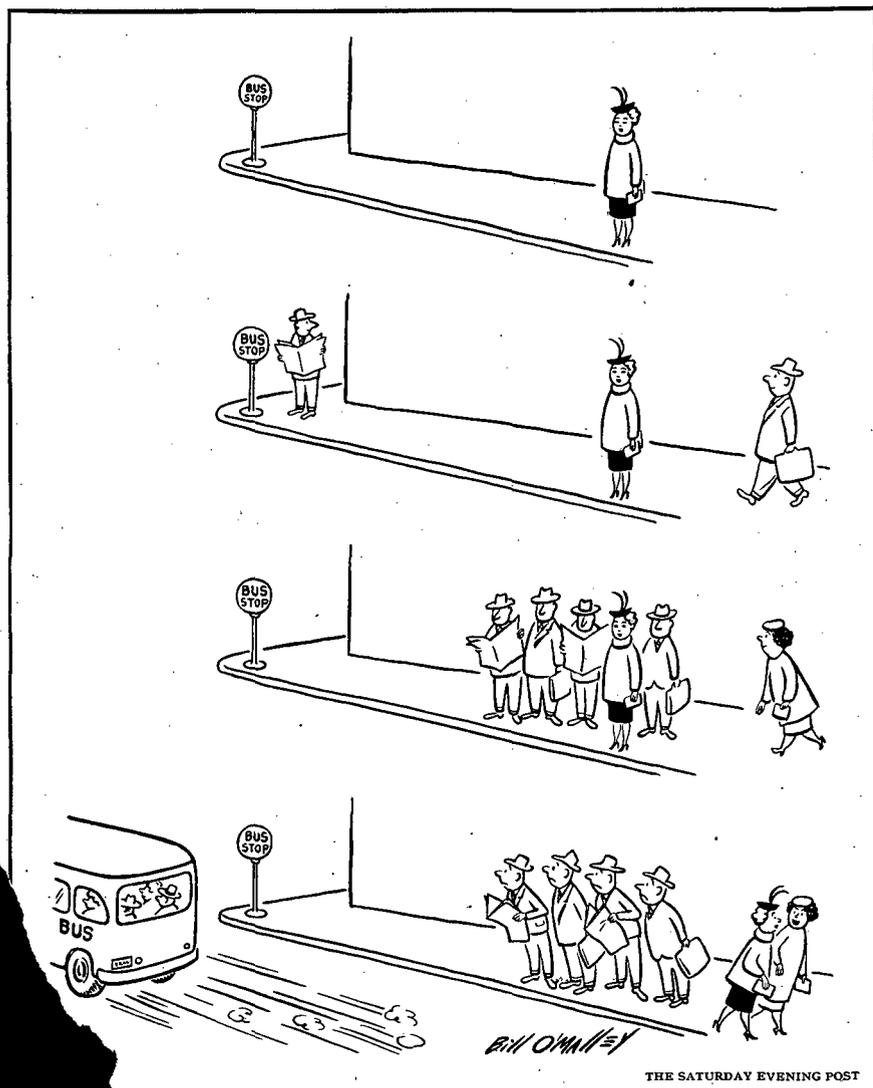


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*C. J. J.*



bomb, the answer became "yes" for the Russians too. And the Russians certainly had no hesitation about answering the second question "Should the hydrogen bomb be made?"

It is not difficult to imagine the impact on our allies—and on this country, too, for that matter—if the Russians tested the world's first true hydrogen bomb. For all sorts of reasons, strategic, political, psychological, the United States simply could not permit this to happen.

No one knows precisely, of course, just when the Soviets will test their first hydrogen bomb. The two-year maximum fixed by the intelligence experts is no more than a rather poorly informed guess. The guess is based principally on our own rate of progress since President Truman gave the hydrogen bomb the green light, on the assumption that the Soviets started working all-out on the hydrogen bomb immediately after they tested their first atomic bomb, and on the technical competence reflected in the speed with which the Soviets perfected their first atomic bomb.

On two points, however, we do not need to guess—we know. We know that the Soviets have not yet tested an atomic bomb of the power necessary to force the hydrogen reaction; and until they do so they cannot make a hydrogen bomb. We know also that when they do test their first hydrogen bomb we shall recognize it for what it is. How we will recognize it is secret. The fact that we will recognize it is not secret. Dr. Hans A. Bethe is the authority for the statement that the explosion of a hydrogen bomb by the Soviets cannot be hidden from the rest of the world.

When the detection instruments pick up this explosion and identify it as the explosion of a true hydrogen bomb, this country and the world will be entering a new era. Before he died, Sen. Brien McMahon, chairman of the Joint Congressional Atomic Energy Committee, described this era as one in which a sudden attack might "incinerate fifty million Americans, not in the space of an evening, but in the space of a few minutes." Senator McMahon may have been exaggerating. He was leaving out of account the effectiveness of our air and other defenses.

Yet if McMahon was exaggerating, he is certainly to be excused; where the hydrogen bomb is concerned, it is difficult to be calm and dispassionate. Indeed, one recalls the prediction of the sensational but oddly prophetic French novelist, Jules Verne: "The end of the world will be when some enormous boiler shall explode and blow up the globe. And they (the Americans) are great boiler-makers." Is the hydrogen bomb the "enormous boiler," and will it blow up the world? Will the scientists, digging deeper and more imprudently into the locked-up secrets of nature, find ways to end life on earth, so that this small planet returns to the empty lifelessness from which it came?

H. G. Wells thought so. This English novelist was also a remarkably successful prophet of the future, and when he heard about Hiroshima and Nagasaki shortly before he died, he wrote sadly: "The end of everything we call life is close at hand and cannot be evaded." The scientists, for what consolation it may provide, do not believe that it will ever be possible to blow up the earth or to kill all the people on it all at once. The blast and heat flash of even the largest hydrogen bombs will be measured in a few miles, and will thus be essentially local in their effects.

Yet the scientists admit that H. G. Wells might just possibly be right all the same. Here we come to a subject which is so gruesome as to seem unreal, and one hesitates to write about it. Yet the known facts are as follows:

When a hydrogen bomb is detonated, it sends out vast numbers of neutrons. These neutron particles strike the atoms of nitrogen in the air and convert them into a gas containing a radioactive substance called Carbon-14. This stuff would impregnate the atmosphere of the earth. It would be in the air we breathe, the water we drink, the food we eat.

This radioactive Carbon-14, entering the body, bombards the tiny cells

tinguished and able men who most seriously doubted Truman's decision to go ahead with the hydrogen bomb.

They were thinking, perhaps, not only of these times in which we live but of the future. For the radioactive effect of Carbon-14 lasts for thousands of years. If one war's quota of hydrogen bombs did not add enough Carbon-14 to the atmosphere to cause universal sterility, the next war's quota might, thus terribly fulfilling the Biblical threat to "visit the iniquity of the fathers upon the children unto the third and fourth generation."

The fact is that even the most brilliant scientists do not really know how many hydrogen bombs, and how power-

wrote, "be found to possess a secret power to destroy a whole block of buildings—nay, to concentrate the force of a thousand tons of cordite and blast a township at a stroke?"

Since his foresight was horribly confirmed over Nagasaki and Hiroshima, Churchill has often boldly attacked the subject which other politicians increasingly fear to mention. In a debate in Parliament on December 14, 1950, Churchill bluntly called the doctrine that a democracy can never strike first "a silly thing." This doctrine means, Churchill said, that "you must never fire until you have been shot dead." In another Commons debate, on July 7, 1950, Churchill said, "A peaceful settlement may yet be reached with the Soviet Government if a resolute effort is made on the basis, not of our present weakness, but of American atomic strength. This is the policy which gives the best chance of preventing a fearful war and of securing our survival should it break upon us."

Churchill's meaning was obvious. The atomic arms race must be brought to a halt, by the threat of force or, if necessary, by force itself, before the Soviets have the power to strike savagely and without warning at the Western alliance. It may indeed be that future historians, glancing back over the ravaged past, will conclude that the United States signed the death warrant of the West when it failed in time to force a settlement of the atomic issue with the Kremlin. But it is now two years since Churchill spoke, and meanwhile the Soviet atomic stockpile has been growing all the time. Moreover, although it may be a "silly thing" that democracies never strike first, this is the nature of our society, and it cannot now be changed.

Theoretically, there is another way, of course—the closing of Pandora's box by mutual consent. Many scientists have been coming to the conclusion that Pandora's box can never really be closed at all by such halfway measures as have been proposed heretofore. The only way to close the box, they believe, is to destroy all bombs, all installations and all uranium raw stuff above ground; and to institute an absolute prohibition, hedged about by unbreakable safeguards, against the mining of any more uranium raw material. In other words, everything that has come out of Pandora's box must be stuffed back in, and the lid slammed shut and locked.

As this is written Doctor Oppenheimer, Dr. Vannevar Bush and other men of stature are, at the State Department's invitation, having a last hard look at this problem of atomic control by mutual consent. But they are not hopeful, and in the present world situation they have little reason to be.

There is, perhaps, a third way, other than an intercontinental nuclear war which would destroy civilization as we have known it. Here again, Winston Churchill spoke first when, in 1950, he described what he called a "peace of mutual terror." As Churchill pointed out, "There never was a time when the deterrents against war were so strong.... The penalties have grown to an extent undreamed of."

For the two sides of the world are, or soon will be, like two men with pistols loaded, cocked and pointed at each other's heads. The triggers are connected, as it were, by an invisible wire. When one pistol fires, the other instantly fires, and both men die. In this situation, it begins to seem almost conceivable—for who can predict the future?—that neither gun will



by which life is transmitted so mysteriously from one generation to another. Enough Carbon-14 in the living body could cause universal sterility or, worse, the reproduction of a generation of abnormal mutations, or monsters. Thus all human and other higher forms of animal life might be brought to an end, leaving the planet to the hardier insects and lower forms of life which are relatively immune to radiation.

Here the key word is "enough." On this point, the scientists differ widely. All agree that one hydrogen bomb, or ten, or fifty, would not create enough radioactive Carbon-14 to be dangerous. Some scientists just do not believe that it is possible thus to endanger human life, and many dismiss this danger as "very remote." But it is at least true that some experts have estimated the minimum number of large hydrogen bombs required to achieve this sterilizing effect in the low hundreds. And there is little doubt that this threat of universal sterilization was in the minds of some of the dis-

ful, might have this result. The scientists, in fact, do not really know what may yet be found in the Pandora's box so imprudently opened when the first atomic bomb was made. But they suspect uneasily that, after the hydrogen bomb, more is yet to come.

"I am frank to say," wrote Sen. Arthur Vandenberg shortly before he died, in a letter to his pastor, "that I do not yet know what the answer is to the awful problem we have brought upon ourselves. I sometimes wonder whether the wit of man is competent to deal with this murderous discovery."

Many first-class minds have wondered the same thing, and they have not found the answer. Among the wonderers has been Winston Churchill—that extraordinary old man who sometimes seems to be the last Western leader capable of understanding the real nature of the situation which confronts Western civilization. As far back as 1925, the prescient Churchill saw what might be in store. "Might not a bomb no bigger than an orange," he

# INCOMING MESSAGE

# ORIGINAL

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FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*Refer*  
*Dr. Solandt*  
*Dr. Harkness*  
*Mr. Pickens*  
*Mr. Clayton*  
*Chief of Staff*  
*CAS*

Security Classification
SECRET
File No.
50219-D-40
52
50

25 OCT 1952

Priority <b>IMPORTANT</b>	System CYPHER-AUTO	No. WA-2541	Date October 24, 1952.
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Departmental Circulation

MINISTER UNDER/SEC D/UNDER/SEC A/UNDER/SEC'S

Done \_\_\_\_\_

Date \_\_\_\_\_

Reference: WA-2214. 9-10

Subject: New Series of Tests at Eniwetok.

We were given some additional information today by Arneson of the State Department concerning the new series of atomic tests to be held at the Eniwetok proving grounds by Joint Task Force 132, which was announced in the USAEC press release quoted in my message under reference. Arneson said that the best detonations will take place in the early part of November, depending on weather conditions. As on previous occasions, the exact time and necessary meteorological information will be communicated through the channel of the Defence Research Board member of the Canadian Joint Staff Mission in Washington.

2. The only additional information that Arneson was able to give us officially, was that the tests will consist of two detonations.

3. Although he was unable, as usual, under the restrictions of the McMahon Act to give any information about the nature of the weapons to be tested, Arneson did not deny that certain inferences could be drawn from the article written by Steward Alsop and Dr. Ralph Lapp, "the inside story of our first hydrogen bomb", which appeared in the October 25th edition of the Saturday Evening Post.

4. Arneson said that all United States officials were under the strictest injunction from the President not to discuss any information regarding the hydrogen bomb with unauthorized persons, under the terms of the McMahon Act. However, he was able to give a little background information concerning the release of this story. Apparently Alsop and Lapp submitted their article to officials of the USAEC about a month ago. These officials apparently cleared it in a routine manner for security, applying only the technical criteria of the Atomic Energy Act, i.e. insuring that no "restricted data" was included. Apparently some items were censored in the article for this reason. These officials, however, apparently did not see fit to consult the State Department or any other authority

References

Done \_\_\_\_\_

Date \_\_\_\_\_

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on the general desirability of publishing such an article on the hydrogen bomb at this time.

5. The State Department learnt of the impending publication only four days before this edition of the Saturday Evening Post was put on sale i.e. on the 16th of October. Arneson gave us to understand that the President was consulted and although consideration was given to suppressing the article it was already too late. Arneson would not say anything about the contents of the article except that there were some inaccuracies. It was also feared that opponents of the administration might make political capital out of the allegations that there had been avoidable delays in developing the weapon because of controversies between officials administering the programme. The President apparently is prepared to reply to criticisms of this kind that may be made in the political campaign, but will avoid making any statements which might prejudice security.

6. This is all that Arneson could say about the article. He added that particularly strict security precautions were being applied to the tests, and it was expected that no statement would be issued until after the tests had been completed.

7. The British Embassy official dealing with atomic energy matters is inclined to agree with the inference drawn from the Alsop-Lapp article that the weapon to be tested at Eniwetok may be a hydrogen bomb.

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Ext. 180A

*Circulate*  
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2193

*Refer - with despatch*  
Dr. Mackenzie  
Dr. Solandt  
Mr. Rickerson  
Mr. Claxton  
Gen. Foulkes  
Gen. Simonds  
CMS

OTTAWA FILE  
No. 50219-D-40

77 50  
SECURITY CLASSIFICATION  
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Despatch No. .... 2193

Date.....October 16, 1952.....

FROM: THE CANADIAN AMBASSADOR, WASHINGTON, D. C.

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*J.A.*

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Reference: Our despatch No. 1116 of May 10, 1952.....

Subject: U.S. Atomic Energy Programme. -- Speech by Secretary of the Army Pace at Public Demonstration of the AT-280 Gun.

21 OCT 1952

1. On October 15th, Secretary of the Army Pace attended the first public demonstration at the Aberdeen Proving Ground of the new gun capable of firing an atomic projectile, known as the "280mm all-purpose gun". Some days before this first public showing, Mr. Claxton, the Minister of National Defence, had been given a private demonstration of this gun, during his visit to Washington.

2. As you will see, Mr. Pace emphasized that "the Army believes strongly in the concept and doctrine underlying the application of atomic energy to the battlefield. We have, therefore, exerted strong efforts to insure that a proper share of our national stockpile of fissionable materials is fabricated and earmarked for such use". He added the caution, however, that this weapon should not be regarded as "final or ---of itself, compelling. With the completion of this Army atomic weapon, there is more need than ever for a continuing and objective reappraisal of the concepts, doctrines, and techniques of ground warfare".

3. Seven copies of Mr. Pace's speech are attached.

*M. Murray*

Copies Referred To.....

No. of Enclosures  
*7*

Post File  
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REMARKS BY  
SECRETARY OF THE ARMY FRANK PACE, JR.  
AT PUBLIC DEMONSTRATION OF THE AT-280 GUN  
ABERDEEN PROVING GROUND  
WEDNESDAY, OCTOBER 15, 1952 -- 10:00 AM (EST)

This morning you will observe a demonstration of the maneuverability and the fire power of three of our newest and most formidable tanks.

Following this demonstration, you will witness one of the most significant events in recent years - the unveiling of a new all-purpose gun capable of firing an atomic projectile with precision accuracy in all kinds of weather.

This artillery piece opens up new vistas in the capabilities of our Army to discharge its primary responsibilities in the field of land combat. It provides our ground commanders with fire support of great range, flexibility, and volume, which can be delivered with extreme accuracy and reliability at any time of the day or night regardless of zero ceilings, storm, hail, or other conditions. In my view, this atomic weapon can prove to be one of the vital factors in helping to force decisive results on the battlefield.

Many of you present on this occasion have played leading roles in the production of the 280mm gun, which we will display this morning. You have every right to take great personal pride in the success of the cooperative enterprise which has added this mighty weapon to our arsenal.

Sometimes we are inclined to overlook the fact that the great potential strength of America is comprised of many elements, each individually incapable of sustaining this Nation in its hour of peril. Moral force is a vital element of strength, but it can accomplish little in today's world without military power. Military power, in turn, is dependent upon research, production, training, and enlightened leadership. Only by welding together all the separate elements of strength can we in fact achieve strength.

\* \* \* \*

The Army - science - industry team which brought the 280mm gun into being exemplifies the close coordination and association of interest which must be the rule in all fields of our defense effort if we are to create and maintain a strength sufficient to preserve the integrity of our country. The tremendously complex nature of modern warfare makes any other course tragically inadequate.

In 1944, we took the initial steps leading to the development of a heavy artillery piece which would be a marked improvement over the types we were then using in combat. The desired military characteristics of the new gun were determined after a feasibility study of the project had been conducted by Army experts in collaboration with civilian scientists and engineers of the Franklin Institute of Philadelphia. Designs were drawn and manufacture of a pilot model was begun in 1948.

The Army believes strongly in the concept and doctrine underlying the application of atomic energy to the battlefield. We have, therefore, exerted strong efforts to insure that a proper share of our national stockpile of fissionable materials is fabricated and earmarked for such use.

By 1949, it had been determined that it would be practicable to produce atomic projectiles which could be fired from a large caliber artillery weapon. Accordingly, the gun which you will see this morning was redesignated in certain respects to accommodate such a projectile. By 1951, the first unit was complete and ready for testing.

Besides Franklin Institute, which did the primary layout and engineering work, five prime contractors had major parts in producing this first atomic artillery piece -- the Dravo Corporation of Pittsburgh, R. Hoe & Company of New York, Kenworth Motor Truck Corporation of Seattle, Baldwin-Lima-Hamilton Corporation of Eddystone, Pennsylvania, and the Treadwell Construction Company of Midland, Pennsylvania.

Six Army Ordnance installations were also directly concerned in the development and production of the 280mm gun and its associated equipment -- Watertown Arsenal in Massachusetts, Watervliet Arsenal in New York, Frankford Arsenal in Pennsylvania, Detroit Arsenal in Michigan, Picatinny Arsenal in New Jersey, and Aberdeen Proving Ground here in Maryland. The Office of the Chief of Ordnance was responsible for overall direction and coordination of this great undertaking.

The agencies, and the personnel associated with this historic project, deserve the greatest credit for their part in carrying it through to a successful conclusion. To all of them, I extend my warm congratulations and sincere appreciation for a job well done.

\* \* \* \*

Let me make it perfectly clear that I do not believe that this weapon is final or that it is, in and of itself, compelling. With the completion of this Army atomic weapon, there is more need than ever for a continuing and objective reappraisal of the concepts, doctrines, and techniques of ground warfare. Realizing fully that the ultimate decisions of war relate to battle on the ground, the Army accepts the responsibility for gaining such decisions at minimum cost, primarily in human lives and secondarily in other national resources.

We will intensify our efforts to reduce the numbers of our casualties, for none of our resources is more important than American lives. Conservation and wise use of human and material resources are essential for this Nation's survival. And in this cause the Army pledges our Nation all of its skill, all of its care, and all of its loyalty.

E N D

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50219-*D-40*  
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October 16, 1952.

TOP SECRET

*see also file 50219-AB-40*

Dear Dr. Mackenzie,

I enclose an extract from a report we received from Mr. Wrong of a conversation between Mr. Ignatieff of the Embassy and Mr. R. Gordon Arneson of the State Department on the prospects of renewal of the wartime partnership between the United States, the United Kingdom, and Canada in the field of atomic energy. Since the remainder of the memorandum deals with NATO matter I am not sending the whole memorandum.

Yours sincerely,

*E. L. Mackenzie*

Dr. C.J. Mackenzie,  
President,  
Atomic Energy of Canada Ltd.,  
National Research Council,  
O t t a w a.

*for*  
Under-Secretary of State  
for External Affairs.

*18.10.11/SS*

DEPARTMENT OF EXTERNAL AFFAIRS

**MINUTE**

ON DESPATCH No. 2036 of September 19, 1952,  
from the Canadian Ambassador, Washington

SECURITY GRADING  
Unclassified  
DATE  
October 2, 1952  
INITIALS OF AUTHOR

*Insert particulars of despatch, memorandum or other attached document.*

WHB/pre

CIRCULATION

SUBJECT: Speech by the Chairman of the United States Atomic Energy Commission on "The Atom in National Defence".

USSEA

~~American~~

~~D.L. (1)~~

D.L. (2)

50219-D-40  
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In this Despatch the Canadian Ambassador in Washington draws attention to a number of interesting remarks made by Mr. Gordon Dean, the Chairman of the U.S. Atomic Energy Commission in a speech before the 75th Annual Meeting of the American Bar Association at San Francisco on September 17. The most significant point in Mr. Dean's speech was the suggestion that the United States "not in the unforeseeable future" would be faced with the question of "Do we go on turning out more and more fissionable material and more and more weapons, as we are doing now? Or do we say to ourselves, "Now we have enough; no matter how many bombs our competitor may choose to make, we have enough"?" Mr. Dean also made reference to the prospects of nuclear power and the possibility of developing it on an economical basis.

It is an interesting side light that Dr. C.J. Mackenzie in private utterances on a number of occasions recently has expressed the opinion that the United States would have to face up to these problems very shortly and that he for one felt that the prospects for the development of atomic sciences for constructive rather than destructive purposes was much nearer to hand than most people had dared to hope.

( Extra copies of this speech have been  
( ordered and will be referred with the  
( despatch to SSEA, and the Minister of  
( National Defence as soon as they are  
( received. Mr. Pickersgill has also  
( requested extra copies at the suggest-  
( ion of the Prime Minister.  
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17 OCT 1952

Ext. 1'

*Mr. [unclear]*  
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*Dr. Solandt*  
*Dr. Mackenzie*  
*Mr. Pickens*  
*+ return file to*  
*me. WRB*

OTTAWA FILE  
No. 50219-D-40

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SECURITY CLASSIFICATION  
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Despatch No. 2036

Date September 19, 1952.

FROM: THE CANADIAN AMBASSADOR, WASHINGTON, D. C.

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

Reference: My despatch No. 1997 of September 12, 1952.

Subject: U.S. Atomic Energy Programme - Speech by the Chairman of the USAEC on "The Atom in National Defense".

22 SEP 1952

In a speech before the 75th Annual Meeting of the American Bar Association at San Francisco, on September 17, Mr. Gordon Dean, the Chairman of the United States Atomic Energy Commission, made some interesting statements on the objectives of the current expansion of the U.S. atomic energy programme, and indicated that the United States has limited objectives insofar as the use of fissionable material for the production of atomic weapons is concerned.

2. Several times in his speech, Mr. Dean stressed that the primary objective of the current expansion is to deter war by holding and, if possible, increasing the atomic leadership of the United States over the Soviet Union. It was, however, the first time, to my knowledge, that a senior official of the United States Government spoke definitely of a foreseeable end to the current atomic armaments race. Mr. Dean, as you will see on page 5, said that "somewhere along the line there is a point where the law of diminishing returns begins to operate". He suggested that a point would be reached, and "not in the unforeseeable future", when the United States would be faced with the question "Do we go on turning out more and more fissionable material and more and more weapons, as we are doing now? Or do we say to ourselves, "Now we have enough; no matter how many bombs our competitor may choose to make, we have enough".?"

3. It is interesting that Mr. Dean answered his own question by saying "If we someday have enough weapons on hand to destroy completely an enemy's power to make war, does it achieve any more deterrence, or does it enhance our chances of victory in the event of war, to have enough to defeat him and his armies 20 times over? I think not." Mr. Dean suggests that at that point the United States could turn to concentrating on peaceful uses of fissionable material while continuing efforts to improve the design and manufacture of means for the delivery of atomic weapons, of training men to use them, and in the perfection of protective devices.

Copies Referred To.....

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Post File  
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4. He warned against deriving the impression from his words that the United States was "on the verge of acquiring all of the atomic weapons we could use in the event of an all-out war. We are obviously not in that position, for if we were, we would certainly not be undertaking the new, very large expansion program that is now getting underway."

5. Turning to the theme which is reported in my despatch under reference, which was discussed by Commissioner Zuckert before the American Chemical Society of Chicago - i.e. the prospects of the use of atomic energy for the production of power, Mr. Dean noted two factors which account for the increased optimism about the possibility of developing atomic power on an economical basis. These were:

- (a) the interest of private industry in atomic energy and particularly the production of power; and
- (b) technological progress in the U.S. reactor programme which has caused scientists to revise downward their earlier estimates of the cost of building a nuclear reactor to produce power.

6. The most interesting passages in this speech, of which four copies are attached, occur on pages 5 to 6 and 9 to 11.

*1/17/68*

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Washington 25, D.C.

Tel. ST. 8000  
Brs. 307, 308

FOR RELEASE AT 2:45 P.M. PACI-  
FIC DAYLIGHT TIME (5:45 P.M.  
EASTERN DAYLIGHT TIME) WEDNES-  
DAY, SEPTEMBER 17, 1952

Remarks by Gordon Dean, Chairman,  
United States Atomic Energy Commission,  
Before the 75th Annual Meeting of the American Bar Association,  
San Francisco, California,  
Wednesday, September 17, 1952.

THE ATOM IN NATIONAL DEFENSE

It was a very wise Roman military writer by the name of Flavius Vegetius who stated as long ago as the fourth century that "he who would desire peace should be prepared for war."

It has taken the United States of America a good many decades and two vicious and devastating world wars to learn this basic lesson. But it now appears to be well learned -- as witness the 85 percent of the federal budget that is related in one way or another to the national defense.

If we could sum up in one brief phrase the primary concept behind the current defense program of the United States, I believe it would read, "peace through preparedness."

This is a worthy goal, and it holds out the hope -- to our own people and to our friends abroad -- that sufficient military strength may be mobilized to stay the hand of a potential aggressor before he strikes the irrevocable blow.

This assumes, of course, that our antagonist, no matter how ruthless he may be, is prudent enough to avoid bringing upon his head the devastation that the irrevocable blow would unleash.

In the case of the Soviet Union, I like to think that there is some basis for this hopeful assumption, for the risks the Russians have taken to date have been well calculated. To me this tends to suggest, I hope not too wishfully, that the prudence of the Soviet leaders is sufficient to temper their

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ruthlessness when their own personal survival is at stake. This, as I see it, is the world's principal hope for peace -- at least until the time when we may succeed in our constant quest for a real, permanent peace, including the effective international control of atomic energy.

Another objective of our defense program -- after the preservation of peace -- is quite naturally and obviously to achieve victory in the terrible event that another world war is imposed upon us.

There are those who say that it would be hard to distinguish the victor in the event of such a war, and the awful truth is that there is much in what they say. But for those who have enjoyed the right to freedom and personal dignity, as we have, it is hard to imagine anything that would be worse than the loss of these rights.

As I am sure you are well aware, the military products of the national atomic energy program play a very large and important part in the defense effort of the United States. For a number of years they were about all that stood between us and the formidable Soviet military machine. More recently, some of the other sources of our military strength have been bolstered. Our Army has been enlarged, the size of our Navy and Air Force has been increased, our ties with friendly nations have been strengthened, and new and improved tanks, aircraft, guns and naval vessels have begun to join operational units.

But if anyone concludes that this progress in other defense areas has resulted in any diminution of the importance of the atom in military affairs, he is very badly mistaken.

The atom is still the principal instrument by which we may destroy -- or at the very least severely reduce -- the ability of an aggressor to make war. And, in addition to this now-traditional role, recent technological advancements have begun to find a key place for the atom in the arsenal of the men whose duty it is -- if the need arises -- to go out to do battle with other men, on the land, on the sea, and in the air.

As a result of this development, the Atomic Energy Commission last spring asked for a special appropriation of

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nearly three billion dollars to increase our capacity to make fissionable material, and therefore our capacity to make weapons. This was over and above the other funds we had already been granted to operate our program as it exists today.

Because it says many of the things I should like to tell this audience, and because it provides some feeling for the considerations that motivate those of us who serve on the Commission, I ask your permission to quote from the statement which I made to the Congress at that time. I quote:

"We are well aware of the fact that this is no ordinary request for funds.

"We know that it involves a very large sum of money -- the largest single sum ever requested for the national atomic energy program.

"We know, too, that it involves a very large construction effort that will inevitably make heavy demands upon many critical skills and materials that are in short supply.

"And we know that it comes at a time when other defense expenditures are extremely high. . .

"And yet we have concluded that this request must be made. As a matter of fact, we strongly believe -- on the basis of all the information we have had -- that we would be grossly derelict in the discharge of our responsibility if we failed to make it, and if we failed to make it at this time. . .

"The setting in which this request is made stems from recent revolutionary developments in the field of atomic weapons technology. Through these developments, the whole concept of how atomic weapons can be utilized in warfare has been radically revised.

"No longer are they looked upon only as devices to be used in an 'Hiroshima-type' way against cities and industrial areas. It is now possible to have a complete 'family' of atomic weapons, for use not only by

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strategic bombers, but also by ground-support aircraft, armies and navies.

"The Department of Defense is very much aware of this change in concept, and atomic weapons are being incorporated into the operational plans of all three of the armed services.

"This, quite naturally, has greatly increased the demand for atomic weapons -- to an entirely different order of magnitude than it was a few years ago.

"It is the purpose of this expansion to meet this new demand, and to meet it as soon as possible.

"We could, of course, meet this demand eventually with the facilities we now have on hand or building. But we would meet it much later. This new expansion is designed to reach the minimum military stockpile requirement at least four, and possibly five, years earlier than would otherwise be the case -- four years in which I think we can be sure the Soviet Union will not be idle."

That is the end of the quotation, and it is the burden of the argument upon which we rested our case for funds.

After a dramatic, non-partisan debate which delayed the adjournment of Congress for several days over the Fourth of July weekend, the expansion program was authorized and we were granted the nearly three billion dollars we needed to get it started.

I am glad to report to you that this program is already underway and that it is going forward on schedule. It includes, among other things, major additions to our existing plants at Hanford and Oak Ridge and to our plants now building at Paducah and in South Carolina. It also includes an entirely new billion-dollar plant to be erected near Portsmouth, Ohio.

But one may well ask, "Why the rush? Why all these new plants and great expenditures just to pick up four years in time?"

The answer is that as of today neither we nor the Soviet

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Union has all of the bombs that could be used in the event of an all-out war. If our primary objective is to deter war -- and that is our primary objective -- we must therefore hold on to and if possible increase our atomic leadership over the Soviet Union during this critical period.

Up until 1949 our objective of deterrence was served by the fact that we had a monopoly in the field of atomic weapons. Since 1949 our objective has been served by the fact that we are well ahead of our only hostile competitor.

But I think it is quite obvious that the current atomic arms race cannot go on forever. Somewhere along the line there is a point where the law of diminishing returns begins to operate. And somewhere, not too far beyond this point, there is another point where we will have acquired all of the weapons we would possibly need to destroy, not only the industrial ability of an aggressor to make war, but also his forces in the field.

When this point is reached, and it is not in the unforeseeable future, the question arises: "What do we do then?" Do we go on turning out more and more fissionable material and more and more weapons, as we are doing now? Or do we say to ourselves, "Now we have enough; no matter how many bombs our competitor may choose to make, we have enough."

I think we should do the latter. If we someday have enough weapons on hand to destroy completely an enemy's power to make war, does it achieve any more deterrence, or does it enhance our chances of victory in the event of war, to have enough to defeat him and his armies 20 times over? I think not. I think our objective of deterrence, as well as our allied objective of achieving victory, will be served as much as it will ever be served when we have on hand sufficient atomic weapons to defeat an enemy just once -- and this regardless of the number he may have.

When this point is reached the competition will no longer be simply one of making weapons and weapons material. It will become, instead, mainly one of designing, developing, manufacturing and training men to use new and effective means for delivering weapons and for preventing their delivery

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against us and our armed forces. What I am talking about here is a competition in the design and development of such items as guided missiles, artillery, supersonic aircraft, electronic devices, radar networks and the like. This, of course, is mainly the province of Mr. Pace and his colleagues in the other military services, and I am sure that they are doing their utmost to advance as rapidly as possible along these technological fronts.

I hope that no-one will receive the impression from these remarks that, as of today, we occupy a position of weakness in the field of atomic weapons. Actually, we occupy a position of great strength -- not only on an absolute basis, but also vis-a-vis our principal international competitor.

Conversely, I hope that no-one will receive the impression that we are on the verge of acquiring all of the atomic weapons we could use in the event of an all-out war. We are obviously not in that position, for if we were, we would certainly not be undertaking the new, very large expansion program that is now getting underway.

It is the purpose of this expansion program to help us to reach our goal of maximum atomic strength -- and to reach it as soon as possible. In this effort, time is clearly of the essence. Thus, if we lose time in pushing it forward, we will be defeating the whole purpose for which it exists.

This means that in the years immediately ahead of us we must lose no time in designing and building these new facilities. We must lose no time through errors in judgment or by letting other objectives of our program stand in the way. We must lose no time through materials shortages, or difficulties in recruitment. And we must lose no time through work stoppages.

We are approaching this expansion program with a strong sense of urgency. Our objective is to get the job done, and to get it done well and fast. In our drive to accomplish this I would like to say quite frankly that we need and greatly desire your understanding support.

There is an old adage which says, "haste makes waste."

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We hope to disprove that old adage, but I think any reasonable person will admit that when one makes haste, one is more likely to make mistakes -- not necessarily big mistakes, but mistakes just the same.

We hope not to make any mistakes at all, but if we do, this is one place where we could use your understanding support. If you hear of a mistake we have made, I hope you will examine it closely enough to determine whether it is a big or a little mistake -- and if it is a little one, I hope you will do us the service of looking at it in the perspective of the great stakes for which we are playing.

As for big mistakes, about all I can say is that we shall do all within our capacity to keep from making any at all.

Much of what I have said up until now in these remarks has been focussed on a future point in time when we can stop our urgent drive to make more and more and more atomic weapons, and sit back, look at our stockpile, and say, "Now we have enough."

If we can assume that such a point exists, and I am willing to be numbered among those who say it does, some rather interesting and provocative questions are raised. Not the least of these is the question: "What will happen to the atomic energy program of this country?" Will the plants and laboratories be closed down and moss be allowed to collect on the billion dollar machinery? Or is there some other use for these facilities and the people who have been trained to use them? Cannot most, or at least some, of them be utilized for some constructive purpose?

These are important questions, and they have ramifications which radiate backward into the present. For example, they produce, among other things, the hard, persistent and important current query: "What should we be doing now to get ready for the day when we can go out of the bomb business?"

The significance of this question is even further increased by other situations which could conceivably produce an urgent need for an answer. For example, as someone has said, "Suppose peace were to break out tomorrow." This may not be a likely possibility, unfortunately, but it is a possibility nevertheless, and it must be considered.

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The obvious answer to nearly all of these questions is to make a determined effort now to develop the peaceful uses of atomic energy, of which there are potentially very many. This is the obvious answer to the questions about the future, and it is also an obviously important and desirable effort to be making anyway, for it is the peaceful promise of atomic energy that has captured the hope and the imagination of the peoples of the world -- not its awesome power to destroy.

Some may think that mention of these peaceful things is out of order in a discussion of the atom and its place in national defense. I cannot agree. The grand objective of our national defense program, in which the atom plays such an important role, is to safeguard the national security and the security of our allies without war, while the quest for permanent peace goes on. This implies not only a strengthening of our military power in order to deter aggression; it also implies a strengthening of our economy so that our political system will not collapse through economic weakness and lie an easy prey to the predatory forces of Communism.

I should like, if I may, to return for a moment to our old Roman friend Vegetius, and venture to suggest that his wise comment on preparedness might be more appropriately tailored to the twentieth century if it were to read, "he who would desire peace should be prepared for both war and peace." And, we might add, he should be prepared for "cold war" as well.

I think it behooves us, therefore, to look rather closely at this thing we have that is called atomic energy, to see just what it might have to offer to improve the health and welfare of both ourselves and our friends and allies in the free world. And I think we should do this, not just because it is the decent and humanitarian thing to do -- although this is a very good reason; and not just to find future employment for our atomic energy program; but also because there is every indication that somewhere in the atomic energy package there are things that can give the economy of the free world some of the strength and resiliency it will need to withstand the strains and stresses of a prolonged cold war.

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This, we might say, is national defense in its very broadest sense, but it is still national defense, and, to my way of thinking, it is one of the most important parts of the national defense.

Let us look, then, for a moment, into this atomic energy package to see just what there is in it for peace. Such a look today, I believe, would reveal a brighter picture than it would have revealed as recently as a year or even six months ago, particularly in the matter of power. While the bombs and the new plants have been building, and the explosions have been going off in Nevada, there has been progress in the quieter corners of the atomic energy program -- progress that has breathed the fresh air of new optimism into the hope for real, economical atomic power.

There have been a number of factors which have contributed to this upswing in optimism, and among them I would list these two principal ones:

First, the interest of private industry in atomic energy and particularly the production of power. As many of you doubtless know, we recently had four groups of utility and chemical companies into our program to study the feasibility of economical power production from atomic energy. These groups were greatly interested in the fact that nuclear reactors, in theory, can be built to produce both plutonium and power. Since the government has a demand for plutonium for atomic bombs, and since private industry has a demand for power for commercial use, the simultaneous production of both has an obvious appeal, especially from the standpoint of costs. These four groups of companies were in our program, with our cooperation, for more than six months, and recently they submitted their reports. Not one was pessimistic.

Secondly, as another reason for the current optimism, I would list the technological progress within our program which has recently caused a number of scientists to revise substantially downward their earlier estimates of the cost of building a nuclear reactor to produce power. It has been known all along that a reactor could be built to produce power -- as a matter of fact, one of the reactors at our testing station in Idaho actually produced power last winter. But the trouble has been with the cost, which would

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have been many times higher than the cost of even the most expensive power from other sources.

But most recent experience has shown that there is real hope that these costs can be substantially reduced. This experience has come from the reactors we have recently completed or are now working on. The reactor we are now building to power a submarine is one example of the kind of places where we are picking up knowledge and experience upon which reasonably valid predictions of future costs can be made. There are other examples among the research and developmental reactors we are building.

To illustrate what I mean, let me discuss just one specific example. Recently we completed construction on, and placed into operation, a new reactor which is now working successfully. When this reactor was first thought of, it was believed that it would take \$50,000,000 to build it. The actual final construction cost was not \$50,000,000, but \$20,000,000, and now I am told by some of our scientists that they feel they could take the lessons learned on that reactor and build a somewhat smaller but essentially similar machine, without the costly research features of the original one, for as little as \$5,000,000 and possibly even less.

When you get down into this range, the cost of the power such a machine would produce begins to become interesting -- not because it would compete generally with power from coal, oil, gas and falling water, but rather because it looks like it might begin to become competitive in a few isolated locations where normal power costs are extremely high.

I hope my references to this specific example will not be misunderstood. I am not talking here about the kind of a reactor that would be suitable for a big central power station, feeding kilowatts by the millions into a utility network. That is what the industrial study groups are pursuing. What I am talking about here is a relatively small machine that would produce kilowatts numbered in the thousands, but sufficient to perform a useful purpose in undeveloped or underdeveloped areas which are remote from normal sources of power, and which are now either priced out of the power market or can afford only a marginal supply at best.

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In any event, this is an interesting and challenging possibility, and it is a possibility which the Commission is now very seriously looking into.

There are many other examples of the advance that is being made along the road of peaceful atomic energy development. If you have difficulty in accepting this statement, I suggest that you talk to the Wisconsin farmer whose corn yields have been increased because agricultural research with radioisotopes has told him the best time and place to use his fertilizer each year; or to the California oil company that developed a new engine lubricant with the aid of radioisotope research; or to the New York patient whose hyperthyroidism was cured through the administration of radioisotopes.

The horizon of atomic energy is steadily widening, and I am among those who believe that over that horizon there are uses that man has not yet even dreamed of. How many people, for example, when electricity was discovered, could visualize a modern television set? And how many, when crude oil was first found in the earth, could visualize the modern jet airplane? Atomic energy gives every indication of bearing the same rich fruit if we will only devote the time and effort it takes to encourage and stimulate its growth.

In many ways we are today at a crossroads in the peaceful development of atomic energy, and it is encouraging to realize that we have arrived at this point in spite of the heavy weapons load we carry. I say we are at a crossroads because of the many lines of development which are reaching crucial points almost simultaneously -- such as the interest of the military in mobile reactors to power submarines, ships and aircraft; the interest of industry in the production of central station power concurrently with plutonium; the interest of the scientists in the development of small nuclear power plants; and the intensification of the interest of industry, agriculture, medicine and science in the utilization of radioisotopes.

There is before the Commission the question of deciding how much attention we can and should devote to these developments in the midst of the current expansion program and the current atomic arms race. I hold the view that they merit

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a good deal of attention. I think our atomic enterprise and our country is big enough to accommodate both an atomic energy program for defense and an atomic energy program for peace. And I think we should have both because -- if for no other reason -- we need the strength and body that atomic energy can lend to the economy and well-being of the free world in its perhaps very long and hard competition with Communism.

I think it is fair to say that in general my colleagues on the Atomic Energy Commission share these views.

So we are going to push forward in this field of peaceful uses. We have of course the choice of letting them ride along or pushing them. We are going to push them. And in doing so we are inevitably going to push into an area where a whole range of questions of basic public policy must be faced up to and resolved.

Most of these questions revolve around the central fact that today atomic energy in this country is a 100-percent government monopoly, and it is a monopoly because that is the law of the land. But if the peaceful uses of atomic energy are to be brought to full flower, and find a permanent and secure home in our economy, is it not true that the government must relinquish at least part of its monopoly? We think it is. But, if so, how much of the monopoly can and should be relinquished? And how can this withdrawal be done neatly and smoothly without disrupting the weapons side of the program and without making room for abuses and inequities? And as it does withdraw, what rights can and should the government leave behind to protect the overall public interest?

These are important, basic questions of public policy and they will ultimately have to be answered by the Congress, perhaps by the Congress that will be seated next year.

But the things that we do now, and the thinking that we do now, are vital preliminaries to ultimate action. And since they are public questions, I strongly believe that the public should be thinking seriously about them, for it would be unfortunate indeed if the final judgments were made without the benefit of an enlightened public opinion.

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These are some of the things that are occupying our minds today on the Atomic Energy Commission. We wear many hats. A good deal of the time we are occupied by the pressing problems of the moment -- the production line, the construction program and the weapons tests. But in the time we have left we must try to be philosophers, economists, and even fortune tellers.

In these many contrasting but related efforts we need your help -- not only as informed and understanding citizens, but also as potential recruits for service. No enterprise can be any better than the people who run it, and too often today the government finds that the most vocal grandstand quarterback resists violently the invitation to come down on the field to play -- even when the game is being played for such a vital prize as that of freedom.

I began these remarks with a quotation from a wise Roman military writer of the fourth century. I should like to conclude them with a quotation from a wise military leader of the twentieth century, General Omar Bradley. I quote:

"Americans guide their Government, and their destiny, through their elected and appointed leaders. Fortunately, there is no dearth of strong leadership in the United States. But many of the great fullbacks and linesmen of American enterprise are still on the bench rather than in the game. . .

"Unless. . . more strong men drop their briefcases full of contracts to take up the reins of government, we will lose by default in the struggle we are engaged in today. If industrial and labor leaders will step forward and help run our Government in the American way, there will never be a danger of our Government running America in the wrong way."

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# ORIGINAL

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Security Classification
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*Dr. Selant*  
*Dr. Mackenzie*  
*Dr. Pickens*  
*card Dejeu*  
*file WMB*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

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10 SEP 1952

System EN CLAIR	No. WA-2214	Date: September 10, 1952
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Departmental Circulation
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MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S

Reference:

Subject: New series of tests at Eniwetok.

Following is the text of the announcement of a new series of atomic weapons tests to be held at the Eniwetok proving grounds, released by the Department of Defense and the U.S. Atomic Energy Commission yesterday:

Text begins:

The Department of Defense and the Atomic Energy Commission today announced Joint Task Force 132 will conduct tests in the autumn months of this year looking toward the development of atomic weapons. The tests will be held at the Commission's Pacific Proving Grounds on Eniwetok Atoll of the Marshall Islands in the Pacific. They will be conducted under full security provisions of the Atomic Energy Act. Only official observers of the United States Government and members of the task force will be present at the tests. The organization of Joint Task Force 132 under the command of Maj. Gen. Percy W. Clarkson was announced February 18, 1952. Text ends.

Done
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Date
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 Mr. Robertson #2  
 Dr. Mackenzie #7 } done  
 Dr. Solmatt #8 } mar 19/52  
*clw*  
*DHWK*

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Security Classification
TOP SECRET

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*g.27*

19 MAR 1952

System CYPHER-AUTO	No. WA-753	Date: March 19, 1952.
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Priority IMMEDIATE
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Departmental Circulation
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Reference:  
Subject: Further Series of United States Atomic Tests at Nevada

MINISTER  
 UNDR/SEC  
 D/UNDR/SEC  
 A/UNDR SEC'S.

1. We have been informed through Gordon Arneson of the State Department that a new series of eight test detonations of atomic weapons will take place at the Nevada testing range on the following dates: April 1, April 15, April 22, April 29, May 6, May 13, May 20, May 27. Possibly a ninth test detonation will take place on June 4 depending on the results of the preceding eight.

2. Arrangements will be made as on previous occasions for direct liaison on technical arrangements through the Defence Research Board member of the Canadian Joint Staff in Washington. I assume you will inform the Defence Research Board in Ottawa.

Done \_\_\_\_\_  
 Date \_\_\_\_\_

References
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[Note for file: I gave ~~this information~~ <sup>these dates</sup> 19/3/52 to Mr. Morgan of D.R.B. by telephone. *DHWK*.]

Done \_\_\_\_\_  
 Date \_\_\_\_\_  
 20M-50-P-794

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1952 MAR 19 PM 12:09

ORIGINAL

*Refer*

MESSAGE FORM

INCOMING

*Mr. Robertson*

*Dr. Mackenzie*

*Dr. Solandt*

*Press Officer*

*D/WK.*

File No.		
50219-D-40		
49	50	

J-25

Security Classification

UNCLASSIFIED.

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211 EB 19.2

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES.  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

System  
EN CLAIR

No. WA-489

Date: February 20, 1952.

Priority

Reference: WA-488 of February 20.

Departmental  
Circulation  
MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S.

Subject: New Series of Tests at Eniwetok.

Following is statement released on February 18 by the Department of Defense and the United States Atomic Energy Commission on the new series of tests. Text Begins:

The Department of Defense and the United States Atomic Energy Commission announced today that preparations for a new series of tests at the Commission's Eniwetok proving grounds are being carried out by Joint Task Force 132.

Full security restrictions of the Atomic Energy Act apply to preparations for and time of the test.

Joint Task Force 132, composed of personnel of the AEC, Army, Navy and Air Force, is responsible for carrying out the test operations at Eniwetok. Major General Percy W. Clarkson is the Commander of the Joint Task Force. Deputy Commanders are: Dr. Alvin C. Graves, Director of the test Division for the Los Alamos Scientific Laboratory; Deputy for Scientific Matters; Brigadier General William H. Wise, United States Air Force, Deputy for Air; and Captain James R. Pahl, United States Navy, Deputy for Navy. The Chief of Staff is Brigadier General Arthur B. Walk, United States Army, who commanded ground forces during the 1951 test operations at Eniwetok.

General Clarkson served as Deputy Commander of Joint Task Force during the 1951 Eniwetok tests. He became commander of Joint Task Force 132 in July, 1951. He is a native of San Antonio, Texas, and was graduated from Texas A and M in 1915 where he majored in electrical engineering. General Clarkson entered the Army at the outbreak of World War I. Most of his service in World War II was in Pacific where he was Commander of the 33rd Infantry Division, later Commander of the Xth Corps and also served as Deputy Chief of Staff to General MacArthur.

Done

Date

References

Done

Date

-2-

At Eniwetok, construction, maintenance and improvement of facilities are performed by Holmes and Narver, Los Angeles engineering and construction firm, under a contract with the Atomic Energy Commission. Text ends.

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CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1952 FEB 21 AM 9:22

EXT. 230

# ORIGINAL

## MESSAGE FORM INCOMING

File No.		
50219-D-40		
49	50	

Security Classification
SECRET

*Refer*  
*Mr. Robertson*  
*Dr. Mackenzie done 21/52*  
*Dr. Solandt*  
*BHWK*

J-24

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

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21 FEB 1952

System CYPHER-AUTO	No. WA-488	Date: February 20, 1952.
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Priority
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Departmental Circulation
MINISTER
UNDR/SEC
D UNDR SEC
A, UNDR SEC 5
Done
Date

Reference:

Subject: New Series of Tests at Eniwetok.

My immediately following telegram en clair contains the statement released on February 18 by the Department of Defense and the United States Atomic Energy Commission announcing a new series of tests to take place at the Eniwetok proving grounds. Arneson informed us that we will, as usual, be given times of detonation in advance.

References
Done
Date

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OLIVER  
COMMUNICATIONS  
EXTERNAL AFFAIRS

192 FEB AM 9 21



EXT. 220

NO. 1 OF 15 COPIES

DOWNGRADED TO ORIGINAL  
RESULT A SECRET

MESSAGE FORM  
INCOMING

File No.		
50219-D-40		
49	50	

Security Classification
TOP SECRET

D-1
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*Refer* D-1  
*Nov. 13/51*  
*Dr. Mackenzie #8*  
*Dr. Solandt #9*  
*HWK*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*g.23*

10 NOV 1951

System CYPHER - AUTO	No. WA-3948	Date: November 9, 1951.
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Priority

Departmental Circulation

*MINISTER #3*  
*UNDR/SEC #4*  
*D/UNDR/SEC #5*  
*A/UNDR/SEC'S #6*  
*Blair #7*  
*Dr. Robertson #2.*

Done \_\_\_\_\_  
 Date \_\_\_\_\_

Reference: My WA-3809 of October 24th.

Subject: Further series of atomic tests at Nevada.

Following for N.A. Robertson from Wrong, Begins:

I was informed today by the State Department through Gordon Arneson that two further atomic explosions are planned in the current series of tests at Nevada. The first will take place on November 15th and the second on November 29th. Detailed information will again be furnished through the office of the Defence Research Board, C.J.S., who keeps the Director of Scientific Intelligence, Defence Research Board, Ottawa, informed. This applies also to any changes in dates. Ends.

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References

Done \_\_\_\_\_  
 Date \_\_\_\_\_

20:1-50-P-794

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 NOV 10 AM 9:33

Subject: [Illegible]

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TOP SECRET

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TOP SECRET

RESTRICTED TO SECRET

EXT. 230

# ORIGINAL

MESSAGE FORM  
INCOMING

File No.		
50219-D-40		
49	50	

Security Classification
S E C R E T

*File  
DHWK.*

*Roller  
Dr. Mackenzie  
Dr. Solandt*

*& return to DHWK.*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*g. n. n*

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3 NOV 1951

System CYPHER - AUTO	No. WA-3886	Date: November 2, 1951.
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Priority

Reference: My previous messages on the current atomic tests at Nevada.

Departmental Circulation

Subject: Nevada tests.

MINISTER  
UNDR. SEC  
D. UNDR. SEC  
A. UNDR. SEC'S

Following for N.A. Robertson from Wrong,

Begins:

1. I draw your attention to the public statement issued by Major General Wm. B. Kean, Officer Commanding Third Corps, United States Army, confirming the participation of troops in the atomic test which took place on the Nevada site yesterday, November 1st.

2. General Kean's statement was as follows:

"Army combat troops and service troops, together with a large number of military observers representing the Army, Navy and Marine Corps, participated today in a nuclear detonation.

This participation involved observation of the detonation, observation of the effects on test items and equipment, and observation of psychological and physiological reaction.

There were no casualties and no injuries to any of the personnel involved as a result of the detonation. This first step toward military tactical employment of the nuclear weapon was most successful. It has every indication of producing effective results which

Done \_\_\_\_\_  
Date \_\_\_\_\_

References

N.A. Robertson  
1

Done tb  
Date Nov. 2, 1951

- 2 -

will, when evaluated, be greater than anticipated. Through this operation, an appreciable forward step has been taken toward relating military tactics to the employment of atomic weapons.

The results, when analyzed and tabulated, should have considerable effect upon Army doctrine, training and military education."

3. According to press reports, this test was observed by Secretary of the Army Pace, General Mark Clark, Chief of the Army Field Forces, and John B. Small, Chairman of the Munitions Board, in addition to representatives of the Joint Congressional Committee and the USAEC.

4. While Arneson was unable to give us information on the nature of the weapons being tested, (as this is in the field of restricted data, under the Atomic Energy Act) he observed that it could be assumed that yesterday's test was directed to the study of the effects on friendly and enemy forces of atomic weapons used in battle, and did not necessarily mean that a new tactical weapon was being tested. Commenting on General Kean's statement, he suggested that the troops which had participated had been deployed in battle positions before the detonation, and had then been removed during the explosion. Instruments had been set up to register various kinds of effects on personnel in exposed positions. He said that the troops had probably returned after the detonation for practice in radiological warfare. Ends.

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EXTERNAL AFFAIRS

MAY 3 AM 9 21

COPY NO. ... OF 14 COPIES

EXC. 230

ORIGINAL

MESSAGE FORM  
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File No.		
50219-D-40		
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Security Classification
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*Rele*  
*M. Robertson*  
*Dr. Mackenzie*  
*Dr. Schmitt*

*Mr. 271.1*  
*CN*  
*HWK*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*g. 20*

24 OCT 1951

System CYPHER-AUTO	No. WA-3809	Date: October 24, 1951.
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Priority  
IMPORTANT

Reference: My WA-3787 of October 22nd.

Subject: Further Series of Atomic Tests at Nevada.

Following for N.A. Robertson from Wright, Begins:

1. I am informed this morning that the four succeeding shots of which we have been given advance notice have been put forward one day and will now take place on the Nevada site on October 26th and 29th, November 1st and 4th, respectively.

2. As I mentioned in my message under reference, arrangements have now gone into effect between the Defence Research member of the Canadian Joint Staff and his opposite numbers in the U.S.A.F. to keep in daily touch on detection operations. In the future, information will be forwarded by the office of the Defence Research member, C.J.S., to the office of the Director of Scientific Intelligence, Defence Research Board in Ottawa, which I am told is now in a position to operate on a 24-hour basis whenever necessary. I am assuming that any information you may require can be obtained from the Defence Research Board and I shall not send any reports on detection operations unless specifically informed through the State Department. Wright, Defence Research Board member, C.J.S. will keep me informed at this end.  
Ends.

Departmental Circulation

MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR, SL. S.

Done \_\_\_\_\_  
Date \_\_\_\_\_

References

Done \_\_\_\_\_  
Date \_\_\_\_\_  
CM-50-P-794



Defence Liaison/R.A. MacKay/elb

Ottawa, October 23, 1951

CONFIDENTIAL

wa 3737  
+ 3738

MEMORANDUM FOR MR. REID

Possible Use of Atomic Weapons  
in Korea

50219-D-40		
Sub. 68	Chron.	Filed

4. There have been suggestions in Congress that the new atomic weapons should be tried out in Korea. There has also been speculation in the U.S. press, particularly following a speech by Mr. Gordon Dean of the Atomic Energy Board. The Canadian Ambassador informs us that this speech was not cleared beforehand in Washington. He refers also to a statement in a subsequent speech by Secretary Lovett, the purpose of which was to emphasize that the new military applications of atomic energy are still to be proved, and that the new weapons are not available for use in Korea.

(Documents Nos. \_\_\_\_\_)

5 and 6

Defence Liaison Division.

EXT. 230

COPY NO. 1 OF 14 COPIES.

ORIGINAL

MESSAGE FORM  
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DOWNGRADED TO SECRET  
 RESULT A SECRET

File No.		
50219-D-40		
58	50	

Security Classification
TOP SECRET

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES.

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

System CYPHER-AUTO	No. WA-3787	Date: October 22, 1951.
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Priority  
 IMPORTANT

Reference: My WA-3731 of October 16th.

Departmental  
 Circulation

Subject: Further series of atomic tests at Nevada.

Following for N.A. Robertson from Wrong, Begins:

MINISTER # 3  
 UNDR/SEC # 4  
 D/UNDR/SEC # 6  
 A/UNDR/SEC # 6

1. Because of the postponement of the first atomic explosion in the new series of tests at Nevada until this morning, the dates of the four succeeding explosions referred to in paragraph 2 of my message under reference have now been put back. Weather permitting, these shots will now take place on October 25th, October 28th, October 31st, and November 3rd respectively.

2. Arrangements have now been made by the office of the Defence Research member of the Canadian Joint Staff to keep in daily touch with the United States authorities regarding technical information connected with these tests as well as with detection operations relating to atomic explosions in Russia. Ends.

Done \_\_\_\_\_  
 Date \_\_\_\_\_

References

N.A. Robertson #7  
 8 Dr Mackenzie  
 9 Dr Solandt

Done *627*  
 Date *Oct 23/51*

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1931-11-11 11 34

# ORIGINAL

## MESSAGE FORM INCOMING

File No.		
50219-D-40		
49	50	

Security Classification
SECRET

*Refer*  
 Mr. Robertson  
 Dr. Mackenzie  
 Dr. Solandt  
 & file D.H.W.K.

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*J. 17*

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20 OCT 1951

System CYPHER - AUTO	No. WA - 3761	Date: October 19, 1951
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Priority  
IMMEDIATE

Reference: My WA-3731 of October 16th.

Subject: Further series of tests at Nevada.

Departmental  
Circulation

MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S.

Done \_\_\_\_\_  
 Date \_\_\_\_\_

Following for N.A. Robertson, Begins:

1. The State Department through Arneson has confirmed that the first test explosion of the new series of atomic weapons tests at Nevada has been postponed until tomorrow because of a failure in the firing circuit. Arneson said that, weather permitting, the test would take place on October 20th.

2. The A.E.C. at Nevada issued a statement today announcing the postponement, because of United States A.E.C. practice to notify the Civil Aeronautics Administration in order to close off surrounding area to aircraft. The statement was as follows:

"A nuclear detonation scheduled for this morning was postponed because of mechanical fault in a key electrical test circuit between the control point and the tower."

3. I assume that Solandt is being kept informed.  
 Ends.

References

N.A. Robertson  
(1)

Done F.R.  
 Date Oct. 19/51

20M-50-P-794

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 OCT 20 AM 9:17

FORWARDED

TO: THE DIRECTOR OF THE ROYAL CANADIAN MOUNTED POLICE  
FROM: THE ATTORNEY GENERAL  
SUBJECT: [Illegible]

URGENT

CLASSIFICATION

NO. 100-3237

DATE: OCTOBER 19, 1951

30 OCT 1951

TO: THE DIRECTOR OF THE ROYAL CANADIAN MOUNTED POLICE  
FROM: THE ATTORNEY GENERAL

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CONFIDENTIAL

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CONFIDENTIAL

EX. 250

Mr. R. [unclear]

ORIGINAL

MESSAGE FORM  
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File No. 50219-2-40		
68	50	

*File  
 DPK.*

Security Classification
CONFIDENTIAL

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

System CYPHER-AUTO	No. WA-3737	Date: October 17, 1951.
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Priority
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Reference:

Departmental Circulation
MINISTER UNDR/SEC D/UNDR/SEC A/UNDR/SEC'S.

Subject:

Following for Heeney from Wrong, Begins:

1. You mentioned on the telephone this morning that the frequent talk here of the development of new atomic weapons and suggestions from some members of Congress that they should be used in Korea might revive the concern which was aroused by the President's hasty references at a press conference which led to Mr. Attlee's visit last December.

2. Since speaking to you I have learned that Mr. Dean's speech at Los Angeles to which you referred was not discussed with others in Washington before its delivery and caused considerable concern here. Mr. Lovett spoke on October 15th to the American Legion Convention, and part of what he said was designed to counter speculation based on Mr. Dean's speech and other statements.

3. I am repeating in my following en clair message two paragraphs from Mr. Lovett's speech, the purpose of which is to emphasize that at the present stage of development the new military applications of atomic energy have still to be proved. You will note that he includes a direct reference to their lack of availability for Korea. Ends.

one
date

Reference
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Date
18.10.31/51

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COMMUNICATIONS  
EXTERNAL AFFAIRS

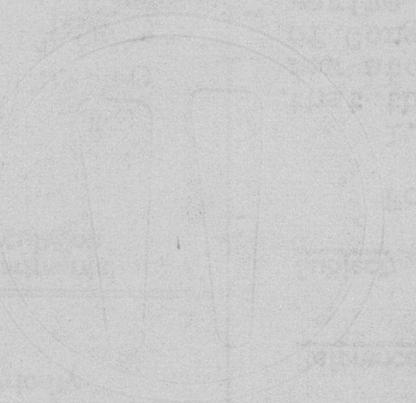
1951 OCT 20 AM

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FROM: [Illegible]  
SUBJECT: [Illegible]

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EXT. 230

ORIGINAL

~~W. Mackay~~  
~~H. Kirkland~~

*File Done*

MESSAGE FORM  
INCOMING

File No.		
50219-D-40		
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Security Classification
UNCLASSIFIED

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

System EN CLAIR	No. WA-3738	Date: October 16, 1951.
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Priority

Departmental Circulation

MINISTER  
UNDR/SEC  
D/UNDR SEC  
A/UNDR/SEC'S.

Done \_\_\_\_\_

Date \_\_\_\_\_

References

Done \_\_\_\_\_

Date \_\_\_\_\_

Reference: My immediately preceding message.

Subject:

Following for Heaney from Wrong, Begins:

The following are two paragraphs from Secretary Lovett's speech of October 15th, the full text of which will follow by bag:

1. "The plain fact is that, until new weapons and new military applications of atomic energy have proved their reliability and are available for field use, our national safety in the face of attack will have to depend upon improved orthodox weapons in ample quantity and with sufficient trained and equipped ground, naval and air forces to use them effectively."

2. "Many future weapons may be dramatically different from our present armaments. Meanwhile, however, we must rely upon proved, tested, and available models to win today's battles with the men presently trained to use them. Although General Ridgway and the men in Korea are defeating masses of manpower with fast and accurate firepower, the Eighth Army cannot win one battle, or hold one mile of front today, with a weapon that is still to be tried at Frenchman's Flat in Nevada." Ends.

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18.10.4'55)

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EXTERNAL AFFAIRS

1951 OCT 13 AM 9:21

EXT. 230

NO. 6 OF 14 COPIES ORIGINAL

MESSAGE FORM

INCOMING

File No.		
50219-D-40		
49	50	

Security Classification
TOP SECRET

*Refer done Oct 17/51*  
*Dr. Mackey*  
*Dr. Solant*  
*(Please bring reference slips to me before transmission) JAWK.*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*I gave Dr. Solant a censored version by telephone. 17/10/51. JAWK*

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17 OCT 1951

System CYPHER - AUTO	No. WA-3731	Date: October 16, 1951.
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Priority IMPORTANT	Reference: My WA-3668 of October 11th. <i>N.S. (1009)</i>
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Departmental Circulation

- N.A. Robertson #2*
- #3*
- #4*
- #5*
- #6*
- Somm. #14*

Subject: Further series of test at Nevada.

Following for N.A. Robertson from Wrong,

Begins:

1. I was informed by the State Department today that the first of the new series of tests of atomic weapons at the Nevada testing site has been postponed 48 hours. The first explosion, therefore, will now take place on October 19th and not, repeat not, as previously advised on October 17th.

Date

2. We were also given the dates for four succeeding explosions in this series of tests: October

References

*W. Mackey #7*

*Dr. Solant #8*

23rd, October 26th, October 29th, and November 1st.

3. Arneson, who gave us this information, indicated that there would be further explosions, the dates of which have not yet been determined. The series of tests, however, would continue through November until the beginning of December. He was unable to say anything about the nature of the weapons to be tested.

Ends.

Date

DM-50-P-794

CLEARED  
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EXTERNAL AFFAIRS

1993 OCT 17 AM 9:11

50219-D-46  
Sub. Chron. Filed

TOP SECRET

Ottawa, October 13, 1951

DECLASSIFIED TO *File*  
REBUT A SECRET *HWK*

MEMORANDUM FOR THE MINISTER

The Possible Use of Tactical Atomic Weapons in Korea

....  
....  
In paragraphs 7 - 9 inclusive of the attached despatch No. 3056 of October 6, Mr. Wrong comments on a recent speech by Mr. Gordon Dean, Chairman of the U.S. A.S.C. (copy attached). Mr. Dean's speech goes into considerable detail concerning the development of tactical atomic weapons, and makes clear his view that the point has now been reached where consideration should be given to their use in specific military situations.

....  
....  
Mr. Wrong refers specifically to the section of Mr. Dean's speech on pages 6 - 9 of the mimeographed advance copy, in which I have marked particular passages; you might notice in particular the passage marked on page 8. It is of considerable interest, however, that in the report of Mr. Dean's speech appearing in the New York Times on October 8 (clipping attached) there are given no direct quotations certain passages which do not appear in the advance text. These passages go into greater detail on the question of what tactical atomic weapons are or soon will be available and for what purposes they might be used.

....  
....  
The speech has been interpreted by the press (see for example the New York Times clippings of October 6 and 7 attached) as a deliberate preparation by the U.S. Government for a presentation to the public of a proposal to use atomic weapons in Korea. It is significant that Mr. Dean's speech was broadcast in full by the Voice of America in forty-five languages. This interpretation is supported by the hint which we picked up from a member of Mr. DeLo's staff during the Ottawa NATO meeting that the Pentagon at least has prepared preliminary plans for some such operation.

I shall keep this subject in mind as one of the things which you might wish to discuss with Mr. Wrong

- 8 -

next week. It occurs to me that it is a subject on which Wrong might well be asked to have a talk with Adeson, perhaps in the special consultations.

In the meantime, do you think it worth-while to ask Wrong if he can get any information on this subject before coming to Ottawa next week?

(SGD.) A. D. P. HEENEY

A.D.P.H.

.....  
P.S. While the above was being typed, we came upon the attached clipping of October 11 from the New York Times reporting on a meeting of three senior members of the Atomic Energy Commission with Mr. Lovett. There is a clear suggestion that the purpose of the meeting was to discuss the tactical use of atomic weapons in Korea.

EXT. 230

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MESSAGE FORM  
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File No.		
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*Refer*  
*Dr. Mackenzie #7 Done*  
*Dr. Solandt #4 Oct 12*  
*HWK*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES.  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*g. 12*

11 OCT 1951

System: CYPHER-AUTO

No. WA-3668

Date: October 11, 1951.

Priority

Departmental Circulation

*W. Robertson #2*  
*3*  
*4*  
*5*  
*6*  
*Sumner #14*

Reference:

**DOWNGRADED TO SECRET**  
**REDUIT A SECRET**

Subject: Atomic weapon tests.

Following for N.A. Robertson from Wrong, Begins:

I was informed by the State Department yesterday that the first of the new series of tests of atomic weapons at the Nevada testing site referred to in my WA-3262 of August 30th, 1951, will commence October 17th, 1951. Information regarding further explosions in this series will be given later. Ends.

Done

Date

References

Done

Date

0713

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COMMUNICATIONS  
EXTENSION SERVICES

1991 OCT 12 PM 3 13

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# ORIGINAL

## MESSAGE FORM

File No.		
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Security Classification
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*Refer*  
 Mr. Robertson  
 Dr. Mackenzie  
 Dr. Solanitt  
 & file D/WK

**INCOMING**  
 31

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

*g.8*

31 AUG 1951

System <b>EN CLAIR</b>	No. WA-3263	Date: August 30, 1951.
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Priority

Departmental Circulation

Reference: My WA-3262 of today.

Subject: Text of Release by Atomic Energy Commission.

Following is the text of the release made by the United States Atomic Energy Commission on August 28th. Text Begins:

The Atomic Energy Commission will resume test operations in the near future at its Nevada test site near Las Vegas. All experimental work at the site will be under the security restrictions of the Atomic Energy Act.

Permanent construction has progressed sufficiently at the Nevada site to permit its early use for test operations, according to Carroll L. Tyler, Manager of the Commission's Santa Fe operations office, which has responsibility for the Nevada activities.

"The Atomic Energy Commission has authorized a program of experimental detonations of both ordinary high explosives and nuclear explosives to begin in the near future," Mr. Tyler said. "The blast wave experiments which were announced recently and which involve detonations of small amounts of high explosives are a part of the continuing Nevada activities.

"Because of the nature of the forthcoming program, it will not be possible to permit more than a limited number of official observers within the test area. The Commission, however, has advised me that it hopes to be able to make arrangements at a subsequent test operation to permit its being viewed from a vantage point within the area by representatives of the press, radio and other media, and of civil defense agencies.

"The site will be used periodically. Individual experiments and series of tests will be conducted as required. All tests will be under controlled

*Mr Robertson*

Done

Date

References

Done

Date

-2-

conditions. As was demonstrated during the test program in Nevada earlier this year, there will be adequate safety provision. Notices will be posted to warn against all unauthorized entry to the area.

"Off-site radiation above normal levels which resulted from the previous Nevada tests was far below the levels which could be harmful to humans, animals or crops. Similar radiation levels which are slightly above normal may be anticipated following some experiments. This will occur not only in Nevada but also in other sections of the country. All necessary precautions, including radiological surveys and patrolling of the surrounding territory, will be undertaken to insure that safe conditions are maintained".

The program will be carried out by a special test organization of the Santa Fe operations office. Dr. Alvin C. Graves of the Los Alamos scientific laboratory is Test Director, with a staff made up of personnel of the Commission's Los Alamos and Sandia laboratories, and representatives of other Commission contractors, the Department of Defense, and other government agencies, including the Federal Civil Defense Administration and the United States Public Health Service. Ralph P. Johnson is Field Manager for AEC at Las Vegas, directing administrative and supply services, with offices at 300 Fremont Street. Text Ends.

# ORIGINAL

## MESSAGE FORM

INCOMING

File No.		
50219-D-40		
49	50	

Security Classification
SECRET

*Refer*  
 Mr. Robertson said  
 Dr. Mackenzie  
 Dr. Solandt  
 D.H.W.K.

*g-1*

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FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

31 AUG 1951

System CYPHER-AUTO	No. WA-3262	Date: August 30, 1951.
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Priority

Departmental Circulation

MINISTER  
 UNDR/SEC  
 D/UNDR. SEC  
 A/UNDR. SEC'S.  
*M. Robertson*

Done \_\_\_\_\_  
 Date \_\_\_\_\_

Reference:

Subject: Further USAEC Tests at Nevada.

My immediately following teletype en clair contains the text of a release made by the United States Atomic Energy Commission on the 28 of August about the resumption of test operations at the Nevada test site. The release was made from the U.S.A.E.C. office at Los Vegas. Neither the British Embassy nor ourselves was informed in advance that this release was to be made. The State Department explained that the decision to release this information at this time was due to the fact that the United States authorities did not wish to have the information about the test released or leak out at the time of the conference on the Japanese Peace Treaty at San Francisco because of possible political implications. In effect the time of the test operations has not yet been set and the tests are not expected to begin for another ten days or two weeks. The British Embassy and ourselves will be informed as soon as the time has been determined as previously.

References

Done \_\_\_\_\_

Date \_\_\_\_\_

CLEAR  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 AUG 21 AM 9 09

*Mr. K. ...  
File - "At. En. in the ..."*

50219-D-40

A31

DAY LEAD SUB

WASHINGTON, AUG. 22-(AP)-THE UNITED STATES NAVY HAS LET A CONTRACT FOR THE FIRST ATOMIC-POWERED SUBMARINE--A CRAFT DESCRIBED BY A CONGRESSIONAL AUTHORITY AS HAVING "IMMENSE MILITARY IMPLICATIONS."

ANNOUNCING YESTERDAY THE AWARD OF A CONTRACT TO THE ELECTRIC BOAT COMPANY OF GROTON, CONN., THE NAVY GAVE NO DETAILS. NOR WOULD OFFICIALS ELABORATE ON THE ANNOUNCEMENT.

BUT SEMI-OFFICIAL SOURCES HAVE SAID AN ATOMIC-POWERED SUBMARINE WOULD HAVE A VAST UNDERWATER RANGE, AND SPECULATION AS TO ITS POSSIBLE SPEED HAS RANGED AS HIGH AS 50 TO 60 KNOTS--MORE THAN TWICE THAT OF CONVENTIONAL UNDERSEA CRAFT.

THE CRAFT TO BE CONSTRUCTED AT GROTON, IT IS BELIEVED, WILL BE A 2,500-TON VESSEL, SOMEWHAT LARGER THAN THE NAVY'S PRESENT FLEET SUBMARINES.

BEITHER THE NAVY NOR THE ATOMIC ENERGY COMMISSION IS LIKELY TO GIVE ANY HINTS ABOUT ITS PERFORMANCE--ASSUMING IT IS SUCCESSFUL--UNTIL IT HAS MET ITS REAL TEST ON AND UNDER THE SEAS.

BUT CHAIRMAN BRIEN MCMAHON (DEM.-CONN.) OF THE SENATE-HOUSE OF REPRESENTATIVES ATOMIC ENERGY COMMITTEE HAS SAID THE PROJECT HAS "IMMENSE MILITARY IMPLICATIONS."

AND VICE ADMIRAL CHARLES A. LOCKWOOD, RETIRED OFFICER WHO COMMANDED U.S. SUB FORCES IN THE PACIFIC IN THE SECOND WORLD WAR, HAS PREDICATED IT WOULD "OUTRUN, OUTFIGHT AND OUTMANOEUVRE THE MOST ADVANCED SNORKEL TYPES THAT RUSSIA IS BUILDING BEHIND THE IRON CURTAIN OR IS LIKELY TO BUILD."

IN AN ARTICLE IN THE SATURDAY EVENING POST SEVERAL MONTHS AGO, LOCKWOOD CALLED THE PROSPECTIVE CRAFT "THE ANSWER TO THE RUSSIAN SNORKEL" SUB--A CRAFT FITTED WITH A DEVICE WHICH PERMITS IT TO CRUISE UNDERWATER FOR LONG PERIODS. THE U.S. ALSO HAS SNORKEL-EQUIPPED SUBS.

LOCKWOOD SAID ENGINEERS HAD ESTIMATED ATOMIC SUBMARINES COULD CRUISE AT 25 TO 30 KNOTS, BUT SENATOR WARREN MAGNUSON (DEM.-WASH.) RECENTLY SAID NAVY MEN HAD TOLD HIM 50 TO 60 KNOTS ON THE SURFACE WOULD NOT BE "OUT OF THE ORDINARY." THE MOST MODERN SUBS IN USE TODAY CAN DO UNDERWATER SPEEDS OF ABOUT 20 KNOTS.

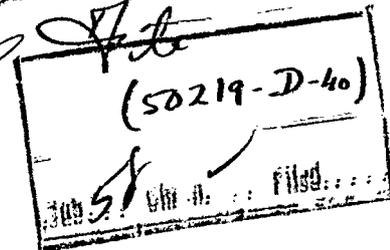
MR733A

*Mr. Lockwood*

Defence Liaison (1) / DHWKirkwood / dtg  
Ottawa, June 6, 1951.

RESTRICTED

MEMORANDUM FOR MR. ROBERTSON  
(MR. HEENAN / TO SEE)



Eniwetok "Experiments Contributing  
to Thermonuclear Weapons Research"

. . .

Attached for your information is an article by William L. Laurence, Science Editor of the New York Times, speculating on recent developments in the programme for development of a hydrogen bomb.

2. While giving no new information, this article surveys in concise form many of the factors influencing the possible development of such a weapon. It appears to be a reasonable and responsible job of semi-technical speculation, although we have not available sufficient information to attempt an informed criticism.

A handwritten signature in dark ink, appearing to be "R.A.M." or similar.

Defence Liaison (1)

12.6.2(P2)  
6.6.37(us)

*Mr. Kirkwood*

DEPARTMENT OF EXTERNAL AFFAIRS

Subject *A. Bomb*

N. Y. TIMES

Date *MAY 26 1951* Publication

# DESIGN STAGE SEEN ON HYDROGEN BOMB

## Eniwetok Tests Called a Step in Setting Relationship to the Fission Weapon

By WILLIAM L. LAURENCE

The joint announcement by the Atomic Energy Commission and the Department of Defense that the latest test program on atomic weapons at Eniwetok "included experiments contributing to thermonuclear weapons research" definitely does not mean that an actual hydrogen bomb of any size has been exploded.

What it does mean is that the scientists working on the design of the hydrogen bomb have incorporated the two types of heavy hydrogen, deuterium and tritium, into an atomic bomb to determine by actual experiment whether the tremendously high temperatures generated by the explosion of the uranium or plutonium fission bomb are great enough to cause the detonation of the hydrogen fusion bomb.

In other words, they carried out the first actual tests to check on the theory, until now based largely on small-scale laboratory experiments, that the atomic-fission bomb could be used as the "trigger" to explode the potentially much more powerful hydrogen fusion bomb.

The term "thermonuclear weapons" is the technical one used by scientists for the hydrogen bomb, the successful explosion of which requires the fusion of two light nuclei into the nucleus of a heavier atom.

### The Implications at Eniwetok

The fusion experiments at Eniwetok may be likened to the historic test on Dec. 2, 1942, at the squash court on Stagg Field at the University of Chicago, when the first-known nuclear chain reaction on earth became a reality. That date, which marks the lighting of the first atomic fire on our globe, has been officially recognized as the birthday of the atomic age.

Since that epoch-making event revealed to the scientists that the atomic bomb was a definite possibility, it may be described as the first actual test of the atomic bomb. From this point of view, the tests at Eniwetok on the basic principles of the hydrogen fusion reaction may be looked upon in the future as the first actual test, on a very small scale, of the hydrogen bomb.

The term "experiments," in the plural, points strongly to the likelihood that not only one but several preliminary hydrogen-bomb tests have been made.

Indeed, the explosion of several atomic weapons is a golden opportunity to gain first-hand practical knowledge on how to design the most efficient type of hydrogen bomb, and it is unthinkable that those charged with designing a successful fusion bomb would not take every advantage of such an opportunity.

### Smaller-Scale Experiment Used

Unlike the testing of an atomic bomb, which requires the construction of a full-fledged model, the testing of a hydrogen bomb can be done on a much smaller scale. Hence it may be stated with practical certainty that the first hydrogen bomb tests at Eniwetok did not involve the explosion of full-scale model hydrogen bomb or bombs.

This is the reason why: To explode an atomic bomb, known as the fission bomb, in which the nuclei of atoms of uranium 235 or plutonium release nuclear energy by splitting, it is necessary to have a minimum amount of material, known as the "critical mass," below which it cannot explode. The minimum amount that must be exploded can, under proper conditions, release an explosive energy equal to at least 20,000 tons of TNT. That was the force of the so-called "nominal atomic bomb" used over Japan.

On the other hand, the hydrogen bomb, which releases its explosive force by the fusion of the nuclei of the heavy types of hydrogen, is not limited by any critical mass. It can be made as small or as large as its designer wants it to be. Hence to carry out tests on the hydrogen bomb, relatively small amounts of the heavy hydrogen would serve the purpose.

To detonate a hydrogen bomb two basic principles are involved.

The first requirement is an enormously high temperature of many millions of degrees—temperatures realizable under terrestrial conditions only in the explosion of an atomic bomb. The second basic requirement is to maintain the high temperature for a time interval long enough for the hydrogen reaction to take place. This time interval is measured in terms of millionths of a second.

Since the temperatures necessary for the fusion of nuclei of hydrogen atoms, estimated at more than 100,000,000 degrees Centigrade, can be attained on earth only by the explosion of an atomic bomb, it becomes obvious that the only possible way to explode a hydrogen bomb is to use an atomic fission bomb as the "trigger."

It is known that the atomic bomb generates temperatures of the right order of magnitude. However, it is not sufficient to generate a high temperature. The second basic requirement for success is to maintain that temperature for a time interval long enough to start the fusion reaction. One may compare this to a person attempting to light a cigaret in a high wind, who must keep his match lighted long enough for his cigaret to ignite.

### Basic Problem in a Nutshell

Here is where the basic difficulty comes in.

The atomic bomb explodes in a little more than a millionth of a second from the time the fission reaction gets going. Hence, while the temperature may be high enough to start the fusion reaction, it may not last the proper length of time. What is involved here is a matter of a fraction of a millionth of a second. One-tenth of a millionth of a second may make the difference between success and failure.

While the fusion of ordinary hy-

drogen, of atomic mass one, is responsible for the enormous energy yielded by the sun and other stars of the same family, its utilization under terrestrial conditions is impossible.

Hence the only types of hydrogen that can be used on earth are the heavy types of hydrogen, deuterium, or hydrogen of atomic mass two, and tritium—hydrogen of atomic mass three. Deuterium can be concentrated from any water. However, tritium does not exist in nature and must be made in atomic furnaces by bombarding the light element, lithium, with neutrons released in the splitting of Uranium 235 atoms.

To make one kilogram of tritium would require the splitting of about eighty kilograms of Uranium 235, which makes it very costly in terms of atomic bomb materials. However, small amounts of tritium may go a long way toward the production of a hydrogen bomb of 1,000 times the power of the Japanese model atomic bomb.

Tritium is necessary because of the time element involved.

It is known from small scale laboratory experiments that the fusion of deuterium would require a time interval much too long for the fast vanishing atomic bomb temperature. The fastest reaction time of all takes place when a mixture of deuterium and tritium is used, a combination known among nuclear physicists as the D-T reaction. This also yields the greatest amounts of energy.

### What the Experiments Involved

With this background, it becomes clear what the "experiments contributing to thermonuclear research" consisted of. First of all, they consisted of tests in which certain quantities of deuterium and tritium were incorporated into the new models of atomic bombs tested at Eniwetok. These models, much more powerful and efficient than the original atomic bombs, no doubt generate much higher temperatures. Since they are more efficient, it also means that the bomb assembly is kept from flying apart for a much longer period, so that the temperature lasts over a longer time fraction.

In other words, the tests of the newest models of atomic weapons also included the highly important tests as to whether the fission bomb could be used as a "trigger" for the hydrogen fusion bomb.

While the official announcement states that "a program of atomic weapons tests has been successfully carried out," it does not necessarily mean that the experiments on the hydrogen bomb produced positive results. Namely, that an actual fusion reaction has already taken place.

In scientific language, even experiments yielding negative results may be described as "successful," since such results indicate the steps to be avoided and point the way to the right course.

However, whatever the outcome of these preliminary tests, it can be stated with certainty that they have provided highly important new knowledge about thermonuclear (hydrogen fusion) reactions not available until now, and not yet available to Russia. This knowledge should go a long way toward perfecting a hydrogen bomb of a power as high as 1,000 times that of the nominal 20,000-ton of TNT bomb.

Date *May 26 1951* Publication

### Eniwetok Tests

## U.S. Still Hasn't Got H-Bomb, Congressional Expert Admits

### Experiments Recently Carried Out At Pacific Ocean Proving Grounds

By Joseph L. Myler

WASHINGTON, May 26—(U.P.)—We still don't have the H-bomb. "As a matter of fact," a Congressional atomic authority said today, "we still don't know whether we ever will have the H-bomb."

An announcement by the Atomic Energy Commission and Defence Department yesterday said recently completed tests at Eniwetok "included experiments contributing to thermonuclear weapons (H-bombs) research."

But the announcement didn't say or hint that any H-bomb explosions had been set off.

"None has been," the congressman said.

Other official sources confirmed that "experiments contributing to thermonuclear weapons research" didn't mean a hydrogen-bomb explosion.

#### Contributed to Data

One expert said the Eniwetok experiments "didn't even prove whether we could or couldn't build an H-bomb." As the announcement said, they "just contributed to our research data," he explained.

These sources would not say just what H-bomb research was carried out at the Pacific Ocean proving ground. It is known however, that atomic scientists are seeking all the knowledge they can get about means of making an H-bomb go off against the day when an effort may be made to build one.

It takes heat in millions of degrees. Atomic bombs made of plutonium or uranium-235 produce that sort of heat.

But the big problem is how to sustain it long enough and focus it on the material to be heated and maintain it long enough to do the job. Stars can do it, at their high pressure centres, but can man?

The principal H-bomb explosive—theory says—is tritium, which is triple-weight hydrogen. Heat up the nuclei of a couple of tritium atoms (tritons) enough and they will fuse together with release of more than 17,000,000 electron volts of energy.

That energy release in principle would heat up a couple of neighbor nuclei, and before you could say "1.2 millionths of a second" you'd have a tremendous explosion.

#### Exists Only Momentarily

But the 10,000,000-degree (Centigrade) temperature at the centre of an ordinary A-bomb, while sufficient, exists only momentarily at that peak, and in only a tiny volume of space.

How to put the tritium where the heat is at the right moment? Maybe you liquify a batch of it and surround it with A-bomb cores. Maybe you do it some other way.

In any case, you have to do it to have an H-bomb. It could be that the researchers at Eniwetok were experimenting with A-bomb heat effects and tritium packing arrangements.

Whether they tried to mix up a little tritium with the insides of an A-bomb is a matter for speculation. If they did, perhaps their instruments gave them a clue as to whether any tritons got together.

"But," the congressman said, "they definitely did not set off any H-bomb—big, little, or middle-sized."

*Mr. Mackay  
DHWK*

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At. En. in U.S.  
DHWK*

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*This could be a "leak"  
or it could be a  
crude bit of fishing.  
DHWK*

EXT. 230

ORIGINAL

MESSAGE FORM  
 INCOMING

File No.		
50219-D-40		
41	50	

Security Classification
UNCLASSIFIED

*Refer*  
 Mr. Robertson  
 Dr. Mackenzie  
 Dr. Colaninno  
 USS EA.  
*[Signature]*

*Done*  
 May 26/51  
 T.K.

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

System EN CLAIR	No. WA-2240	Date: May 25, 1951.
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Priority

Departmental Circulation

MINISTER

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D/UNDR/SEC

A/UNDR/SEC'S.

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Date 26 MAY 1951

Reference:

Subject: Atomic tests at Eniwetok

1. The United States Atomic Energy Commission and the United States Department of Defence made the following joint announcement today on the tests concluded at Eniwetok:

"The Atomic Energy Commission and the Department of Defence today notified President Truman that a program of atomic weapons tests has been successfully carried out by Joint Task Force 3 at the Commission's proving ground at Eniwetok Atoll.

Lieutenant General Elwood R. Quesada, USAF, commands JTF-3, composed of personnel from the AEC, Army, Navy, Air Force and from educational and industrial organizations. Dr. Alvin C. Graves of the Los Alamos Scientific Laboratory is Scientific Deputy Commander of JTF-3.

As previously announced, test activities at Eniwetok are under security restrictions including those of the Atomic Energy Act. Information obtained from Research on nuclear detonations, the major purpose of the tests, is secret. In furtherance of

References

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Date \_\_\_\_\_

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the President's announcement of January 31st, 1950, the test program included experiments contributing to thermonuclear weapons research.

Information on several projects in fields of biology, medicine and radiology will be declassified and provided to appropriate agencies of the government when results have been analyzed and evaluated. The program also included comprehensive measurement of blast and thermal effects on structures, aircraft and various other items. Much of this data will be declassified for use by both the Department of Defence and the Federal Civil Defence Agency. The data obtained include additional information of primary military value in the field of weapons effects.

General Quesada and Dr. Graves will return to Washington in a few weeks to report to the Department of Defence and AEC. The Commission will continue to use the Eniwetok proving ground and the area will remain closed to unauthorized persons."

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EXTERNAL AFFAIRS

1951 MAY 7 AM 9:53

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*Mr. MacKay to see a file*

*At. En. in US*

*File Hawk*

(ADVANCE FOR RELEASE AT NOON EDT TODAY MAY 25)  
(ADVANCE)...WASHINGTON--FIRST ADD LEAD ATOMIC XX BOMB.

THE A.E.C.'S ANNOUNCEMENT SAID "IN FURTHERANCE OF THE PRESIDENTS ANNOUNCEMENT OF JAN. 31, 1950, THE TEST PROGRAM INCLUDED EXPERIMENTS CONTRIBUTING TO THERMONUCLEAR WEAPONS RESEARCH."

(THE TERM "THERMONUCLEAR" REFERS TO REACTIONS INVOLVING THE RELEASE OF ATOMIC ENERGY THROUGH THE FUSION OF HYDROGEN ATOMS).

ON JAN. 31 PRESIDENT TRUMAN GAVE THE GO-HEAD FOR DEVELOPMENT OF THE SUPER H-BOMB SO THAT THE UNITED STATES MAY DEFEND ITSELF "AGAINST ANY POSSIBLE AGGRESSOR."

TODAYS A.E.C. ANNOUNCEMENT INDICATED THAT THE TESTS AT THE SUPER-SECRET PACIFIC PROVING GROUND WERE AIMED ALSO AT PROVIDING NEW INFORMATION FOR USE IN CIVIL DEFENCE AGAINST ATOMIC ATTACK.

THE COMMISSION SAID THE PROGRAM "ALSO INCLUDED COMPREHENSIVE MEASUREMENT OF BLAST AND THERMAL EFFECTS ON STRUCTURES, AIRCRAFT AND VARIOUS OTHER ITEMS."

THE REFERENCE TO THERMONUCLEAR WEAPONS RESEARCH WAS THE FIRST MADE BY THE COMMISSION IN CONNECTION WITH AN ACTUAL TESTING PROGRAM.

BUT THERE WAS NOTHING IN THE A.E.C.'S ANNOUNCEMENT TO INDICATE WHETHER OR NOT AN ACTUAL H-BOMB OF ANY APPRECIABLE SIZE HAD BEEN EXPLODED.

HEAT OF MANY MILLIONS OF DEGREES WOULD BE REQUIRED TO DETONATE A HYDROGEN BOMB. WHILE ATOMIC BOMBS EXPLODED SO FAR HAVE GENERATED TREMENDOUS HEAT, THERE HAS BEEN SOME QUESTION ABOUT WHETHER THE OLDER TYPE OF NUCLEAR FISSION COULD PRODUCE SUFFICIENT HEAT TO "TRIGGER" THE HYDROGEN BOMB.

THUS THE ANNOUNCEMENT INDICATES THE TESTS INCLUDED EXPERIMENTS WHICH MAY HAVE AN IMPORTANT BEARING ON THE QUESTION OF WHETHER A HYDROGEN BOMB CAN ACTUALLY BE SET OFF.

THERE WAS SPECULATION THAT AT LEAST A SMALL AMOUNT OF HYDROGEN MATERIAL MIGHT HAVE BEEN WRAPPED AROUND AN ORTHODOX A-BOMB IN ORDER TO TEST THE FEASIBILITY OF AN H-BOMB DETONATION.

THE TESTS XX PICKING UP SECOND PARA AS BEFORE.  
(END ADVANCE FOR RELEASE AT NOON EDT TODAY MAY 25)

*Mr. MacKay*

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(ADVANCE FOR RELEASE AT NOON EDT TODAY MAY 24)

(ADVANCE)...WASHINGTON--FIRST ADD ATOMIC XX GROUNDS.

THE TESTS WERE ANNOUNCED JOINTLY BY THE ATOMIC ENERGY COMMISSION AND DEFENCE DEPARTMENT.

THEY INCLUDED THE BLAST AND HEAT EFFECTS ON "STRUCTURES, AIRCRAFT AND VARIOUS OTHER ITEMS" AS WELL AS MEASUREMENT OF RADIATION FROM THE WEAPONS.

THE ANNOUNCEMENT SAID:

"THE ATOMIC ENERGY COMMISSION AND THE DEPARTMENT OF DEFENCE TODAY NOTIFIED PRESIDENT TRUMAN THAT A PROGRAM OF ATOMIC WEAPONS TESTS HAS BEEN SUCCESSFULLY CARRIED OUT BY JOINT TASK FORCE 3 AT THE COMMISSIONS PROVING GROUND AT ENIWETOK ATOLL.

"LIEUTENANT GENERAL ELWOOD R. QUESADA, U.S.A.F., COMMANDS JTF-3, COMPOSED OF PERSONNEL FROM THE A.E.C., ARMY, NAVY, AIR FORCE AND FROM EDUCATIONAL AND INDUSTRIAL ORGANIZATIONS. DR. ALVIN C. GRAVES OF THE LOS ALAMOS SCIENTIFIC LABORATORY IS SCIENTIFIC DEPUTY COMMANDER OF JTF-3.

"AS PREVIOUSLY ANNOUNCED, TEST ACTIVITIES AT ENIWETOK ARE UNDER SECURITY RESTRICTIONS INCLUDING THOSE OF THE ATOMIC ENERGY ACT. INFORMATION OBTAINED FROM RESEARCH ON NUCLEAR DETONATIONS, THE MAJOR PURPOSE OF THE TESTS, IS SECRET. IN FURTHERANCE OF THE PRESIDENTS ANNOUNCEMENT OF JANUARY 31, 1950, THE TEST PROGRAM INCLUDED EXPERIMENTS CONTRIBUTING TO THERMONUCLEAR WEAPONS RESEARCH.

"INFORMATION ON SEVERAL PROJECTS IN FIELDS OF BIOLOGY, MEDICINE AND RADIOLOGY WILL BE DECLASSIFIED AND PROVIDED TO APPROPRIATE AGENCIES OF THE GOVERNMENT WHEN RESULTS HAVE BEEN ANALYZED AND EVALUATED. THE PROGRAM ALSO INCLUDED COMPREHENSIVE MEASUREMENT OF BLASTS AND THERMAL EFFECTS ON STRUCTURES, AIRCRAFT AND VARIOUS OTHER ITEMS. MUCH OF THIS DATA WILL BE DECLASSIFIED FOR USE BY BOTH THE DEPARTMENT OF DEFENCE AND THE FEDERAL CIVIL DEFENCE AGENCY. THE DATA OBTAINED INCLUDE ADDITIONAL INFORMATION OF PRIMARY MILITARY VALUE IN THE FIELD OF WEAPONS EFFECTS.

A97 XX EFFECTS.

"GENERAL QUESADA AND DR. GRAVES WILL RETURN TO WASHINGTON IN A FEW WEEKS TO REPORT TO THE DEPARTMENT OF DEFENCE AND A.E.C. THE COMMISSION WILL CONTINUE TO USE THE ENIWETOK PROVING GROUND AND THE AREA WILL REMAIN CLOSED TO UNAUTHORIZED PEERSONS."

(END ADVANCE FOR RELEASE AT NOON EDT TODAY MAY 25 (CORRECT))

X1045A

000125

*Mr. Kirkwood*

50219-D-40

*Mrs. R. Wood*

*File  
Hank.*

A41

CHICAGO, MAY 23-(AP)-AN ATOMIC SCIENTIST CONTENDED TODAY THAT AMERICAN POLITICAL AND MILITARY LEADERS UNKNOWINGLY MAY HAVE GIVEN RUSSIA AS MUCH ATOMIC STRENGTH A BIGGER BOOST THAN DID THE SPYES WHO GAVE OUT A-BOMB SECRETS.

DR. EUGENE RABINOWITCH, EDITOR OF THE BULLETIN OF THE ATOMIC SCIENTISTS, SAID SPYING MAY HAVE ADVANCED THE SOVIET ATOMIC WEAPONS PROGRAM BY AT LEAST 18 MONTHS. THAT WAS THE ESTIMATE GIVEN BY A CONGRESSIONAL JOINT COMMITTEE ON ATOMIC ENERGY.

BUT THE BIGGEST FACTOR IN THE A-BOMB RACE, HE SAID, MIGHT WELL BE WHETHER URANIUM SUPPLIES AVAILABLE TO RUSSIA ARE EQUAL TO THOSE AVAILABLE TO THE UNITED STATES AND CANADA. HE ADDED:

"FROM THIS POINT OF VIEW, THE MOST FATEFUL STEP WHICH HAS PERMITTED THE SOVIET UNION TO ACHIEVE ITS PRESENT ATOMIC STRENGTH WAS NOT THE BETRAYAL OF OUR SECRETS. . . BUT THE DECISION OF AMERICAN POLITICAL AND MILITARY LEADERS IN 1945 TO GIVE TO THE SOVIET UNION CONTROL OVER THE PARTS OF CZECHOSLOVAKIA AND GERMANY IN WHICH IMPORTANT URANIUM ORE DEPOSITS WERE KNOWN TO EXIST."

RABINOWITCH SAID THE BOTTLENECKS THE UNITED STATES FACED IN TURNING OUT A-BOMBS WERE NOT IN SOLVING TECHNICAL PROBLEMS OR ESTABLISHING BASIC FACTS BUT IN ACTUAL CONSTRUCTION OF LARGE PRODUCTION PLANTS.

"THERE IS NO REASON TO ASSUME THAT THE SAME WAS NOT TRUE OF THE SOVIET PROGRESS AS WELL," HE SAID IN AN ARTICLE IN THE BULLETIN.

D734A

*Adm. Kirkwood*

000126

A56

ATOMIC

BY ELTON C. FAY

WASHINGTON, MAY 23-(AP)-HINTS OF STILL ANOTHER AND EVEN BIGGER ATOMIC EXPLOSION AT THE MID-PACIFIC NUCLEAR WEAPONS PROVING GROUNDS WERE CURRENT TODAY.

A STATEMENT BY REPRESENTATIVE HENRY M. JACKSON (DEM. WASH.) MORE THAN 10 DAYS AGO SUGGESTED THAT A SERIES OF TESTS AT ENIWETOK IN THE MARSHALL ISLANDS HAD BEEN ENDED. BUT THERE WERE FRESH INDICATIONS TODAY THAT ANOTHER EXPLOSION REMAINED ON THE SCHEDULE AFTER JACKSONS RETURN FROM THE PROVING GROUNDS.

FOR ONE THING, THE ATOMIC ENERGY COMMISSION SO FAR HAS NOT ISSUED ITS CUSTOMARY BRIEF ANNOUNCEMENT ON THE CONCLUSION OF A SERIES OF TESTS. THE COMMISSION WAS STILL STANDING ON ITS ANNOUNCEMENT OF MORE THAN A WEEK AGO THAT "WE ARE ENGAGED IN A TEST PROGRAM" AT ENIWETOK.

THERE SEEMED REASON TO BELIEVE THAT THE FINAL SHOT OF THE CURRENT ENIWETOK EXPERIMENTS, WHENEVER MADE, WAS EXPECTED TO BE THE MOST POWERFUL SET OFF. NUCLEAR WEAPONS EXPERTS HAVE BEEN AIMING AT AN EXPLOSION ABOUT 10 TIMES THE MAGNITUDE OF THE ORIGINAL "MODEL T" BOMBS USED AT HIROSHIMA AND NAGASAKI IN THE SECOND WORLD WAR.

THIS HAS LED TO SPECULATION THAT THERE HAS BEEN DEVELOPED A NEW TYPE OF BOMB CORE AND OF THE SYSTEM OF "LENSES" WHICH SURROUND IT AND CONTAIN THE NUCLEAR REACTION UNTIL A HIGH ORDER OF EXPLOSIVE FORCE IS BUILT UP. IN THIS WAY, THE EFFICIENCY OF THE BOMB COULD BE STEPPED UP WITHOUT A SUBSTANTIAL CHANGE IN SHAPE OR WEIGHT.

THE NEXT ATOMIC TEST SERIES IS LOOKED FOR, PERHAPS EARLY NEXT FALL, IN THE ALEUTIAN ISLANDS. THERE THE WEAPONEERS HOPE TO FIND WHAT HAPPENS WHEN AN ATOMIC BLAST IS SET OFF UNDERGROUND.

D839A

*Mr. Eisenhower*

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

SECRET

CYPHER - AUTO

WASHINGTON, May 17, 1951.

WA - 2091

MINISTER  
UNDR/SEC  
D/UNDR SEC  
A/UNDR, SEC'S

*Refer*  
*Mr. Robertson*  
*Dr. Mackenzie*  
*Dr. Solandt*  
*file*

50219-D-4D  
3 2 5

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Secret. Following for N.A. Robertson, Begins:  
Our WA-1858 of May 3rd, atomic tests at Eniwetok.  
The fourth and last detonation has been set for  
May 24th. Ends.

18 MAY 1951

CANADIAN AMBASSADOR

*I have notified Morgan of D.R.B. by telephone  
(i.e. I read the last sentence of the message, without  
giving any explanation). This had been requested because  
Solandt sat on an earlier message. D.H.K.*

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS  
1951 MAY 13 AM 9:39

ORIGINAL

50219-D-40  
150

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

9-5

File

Copy # 2 Mr. Robertson

Refer  
Mr. Robertson  
Dr. Mackenzie  
Dr. Solandt

SECRET

CYPHER - AUTO

WA-1858

DMK

WASHINGTON, May 3, 1951.

Done  
May 5/51  
T.K.

Secret. Following for N.A. Robertson from Wrong,

Begins:

My WA-1375 of April 9th, atomic tests at Eniwetok.

The third detonation has been set for May 9th.

It is not certain whether there will be a fourth. Ends.

D-1
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CANADIAN AMBASSADOR 4/5/51

In the absence of Mr. Morgan, who had asked to be informed by telephone, I spoke to Mr. Aiken of the Defence Research Board. I said that I was calling about a matter which I could not explain on the telephone, with which Mr. Morgan was familiar, and that it concerned information from Washington as to future dates. We had already had advance notice of two dates, & I had now received notice of a third - May 9. It is not certain whether there will be a fourth! Mr. Aiken appeared to understand.

DMK.

MAY 1951

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 MAY 4 AM 9:27

*The Ministry*  
*I. Stewart*

Defence Liaison (1)/ J. George / DG

May 1, 1951.

*May 3* *Dr*

SECRET

50219-D-60  
41 | ✓

MEMORANDUM FOR: ~~MR. HEENEY~~  
~~MR. N.A. ROBERTSON~~  
~~MR. RITCHIE~~  
~~MR. GLAZEBROOK~~  
~~MR. WERSHOF~~  
~~MR. NEWMAN~~  
~~MR. LEGER~~  
~~MR. KIRKWOOD~~  
~~MR. MACKAY on return~~

Publicity for U.S. Strategic Air Command

You will be interested in the attached letter from George Ignatieff sending us a copy of an article entitled "A Mission with the Atomic Bomb" by Jim Berryman which is to appear in LOOK magazine for May 8th. As Mr. Ignatieff explains, the SAC are going to extraordinary lengths to publicize their own importance by authorizing a cartoonist to come on a "dry run" and write a story which gives a pretty detailed idea of how the Strategic Air Command plans to operate if the need arises. The article was not authorized by the U.S. Atomic Energy Commission.

*Should not be  
initiated see this*

*M. Wershof*  
Defence Liaison (1)

*4.5.4 (p.c.)  
3-5-33 (SS) R.  
1.5.41 (JS)*



SECRET & PERSONAL

Washington, April 28, 1951.

Dear Jim:

I draw your attention to an article in the issue of Look Magazine for May 8 by Jim Berryman, entitled "A Mission with the Atomic Bomb". As Look Magazine will only come on the stands in Canada next week, I hasten to send you this personal note in the bag.

Berryman, who is cartoonist for the Washington Star, was apparently authorized, by Lt. General Curtis LeMay, Chief of the Strategic Air Command of the U.S.A.F., to go on a simulated A-Bomb mission equipped with sketching pad, pencils and crayons. The idea apparently was to get some publicity for the Strategic Air Command in relation to the Atomic Bomb without the use of photography, which might have led to a serious breach of security.

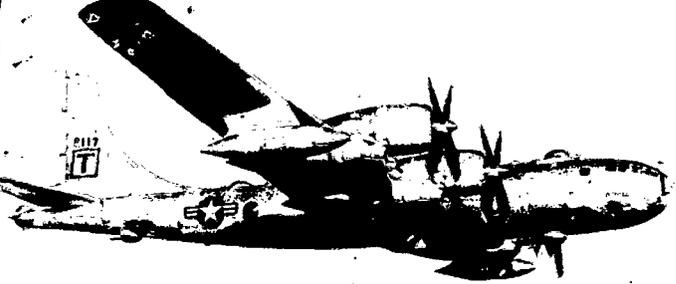
This article, however, has produced some dismay in the U.S. Atomic Energy Commission. In a private conversation with Mr. Matthews, Mr. Thomas E. Murray, one of the Commissioners, observed that the Commission had been completely unaware of the trip arranged for the author by General LeMay and disapproved of the idea of permitting someone to take such a trip which would provide an opportunity for "intelligent speculation". He further observed that this was another example of the struggle of the armed services to obtain public support which would assist them in obtaining increased appropriations. In this case, the Air Force apparently had wanted to show to the public the important role which the Strategic Air Command plays in the security of the nation. This view is confirmed by the special statement for Look Magazine prepared by General LeMay which has been inserted as a sort of preface to Berryman's article.

Yours sincerely,

G. Ignatieff.

James George, Esquire,  
Defence Liaison Division,  
Department of External Affairs,  
Ottawa, Canada.

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The four-engine B-50 is the workhorse of our atomic fleet.

## A MISSION WITH THE

# ATOMIC BOMB

## WHAT IT LOOKS LIKE AND HOW IT IS DELIVERED

By JIM BERRYMAN Cartoonist for Washington Star

Statement for LOOK by Lt. Gen. Curtis Le May,  
Chief of the Strategic Air Command  
of the United States Air Force:

The primary objective of the military forces of the free world is peace. Air Force Secretary Thomas K. Finletter has defined the mission of air power in this connection as being one of the most important means for preventing war and establishing a world of peace.

The role of Strategic Air in this is one which is very clear and seriously held by us in the Air Force Strategic Air Command. We feel that by having our strategic bombers in the highest possible state of readiness, we are serving as a most potent force to deter any aggressor. We also are serving as a force which can help win the victory should war come in spite of the most earnest efforts of the leaders of the free world.

The officers and air men of the Strategic Air Command understand the terrific responsibility which is theirs. The ability to deliver atomic weapons gives us a power which is enormous, but we are firmly dedicated to using that power toward the preservation of the peace and security of the free world as we know it.

THEY said it was a "dry" A-bomb run. But it seemed "live" enough to me in the pressurized B-50's fore quarters at 30,000 feet altitude. For only a bulkhead door separated the navigator and me from the atomic bomb's cradle in the 66 degree below zero temperature of the bomb bay.

Man's most destructive weapon lies rigidly fixed in its launching position. As the attack unfolds, the navigator occasionally glances at the grotesque bulk of what he calls "The Thing" through a circular glass peephole in the bulkhead. This is probably unnecessary, for the bomb is immovable until it is released automatically by the magic of electronics. This ghastly weapon is pre-set when the B-50 rises from the earth on its fateful mission.

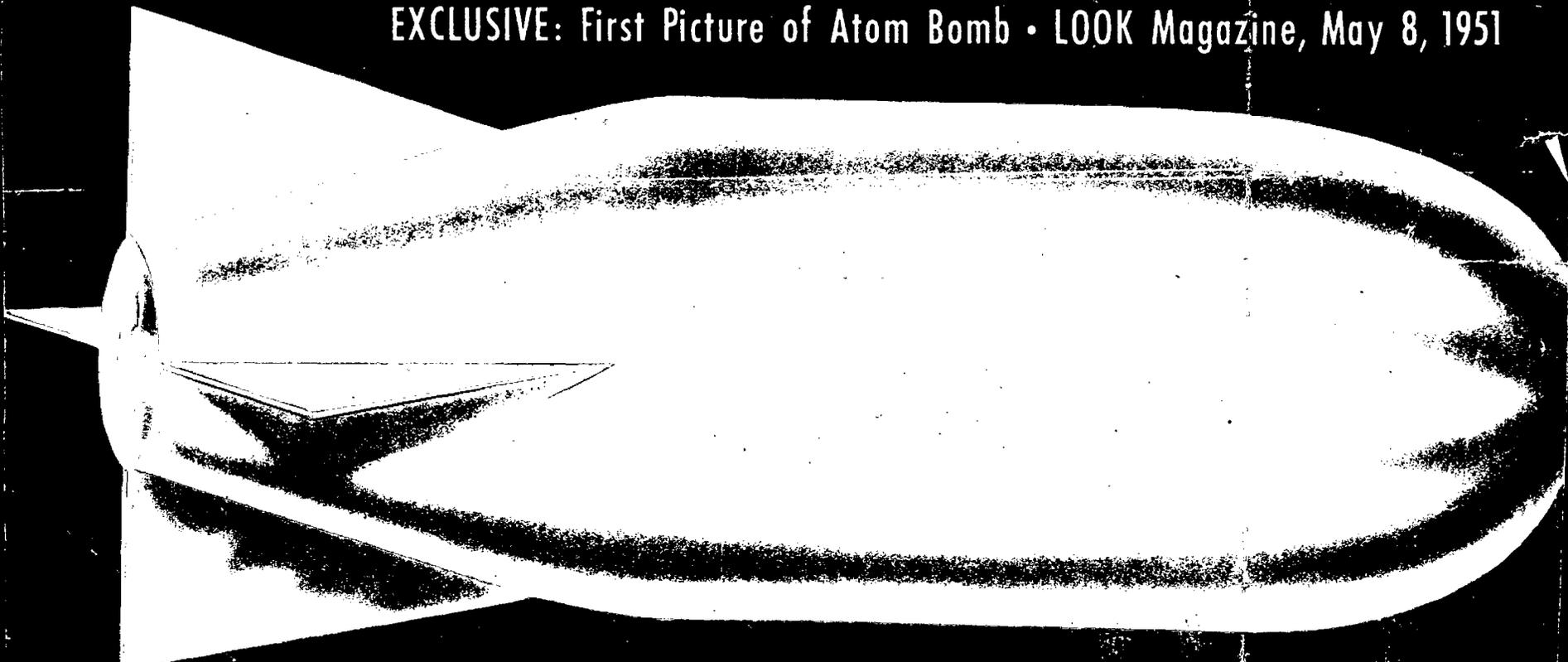
I think I am one of the few civilians, and surely the only cartoonist-illustrator, to have flown on a simulated A-bomb mission. The security-conscious crew of the B-50 looked at me with goggle-eyed wonder when Lt. Col. Harry E. Stengele, wing commander of the 96th Bombardment Squadron, announced to them that I was authorized to go on their mission, sketching pad, pencils, crayons and all. This was at Hunter Air Force Base, Savannah, Ga.

I was there because Maj. Gen. Roscoe C. Wilson, Deputy Chief of Staff on operations for atomic energy—and once a cartoonist at West Point—thought a cartoonist-illustrator could tell a big part of the A-bomb story without giving away any vital technical information to our enemies.

Produced by Richard Wilson, Chief of the LOOK Washington Bureau.

This is a drawing of an atomic bomb, modified for certain security reasons.

EXCLUSIVE: First Picture of Atom Bomb • LOOK Magazine, May 8, 1951



# Look Reports

Pulitzer prize winning cartoonist Jim Berryman of the Washington Star congratulates Crew Chief Orville T. White (left) at the conclusion of their A-bomb mission.



## "The Bomb, I believe, is approximately 20 feet long and 9 or 10 feet in diameter."

He said, "I believe it is high time some of the ridiculous stories circulated about the A-bomb be killed and buried once and for all. I've even heard that hundreds of thousands of American people fearfully believe that an enemy agent could board a Hoboken ferry totting the bomb in a zipper bag, and blow Manhattan clear over into Brooklyn."

An enemy agent about the size of the legendary Paul Bunyan, strong man of the north woods, would find it a strain to carry the A-bomb fitting into the B-50 (No. 8117) on which I flew as supercargo. I don't say there aren't smaller bombs. But this type, which is the standard '51 model, is a whopper.

It is towed out by tractor to the waiting, fueled B-50, all 10,000 pounds of it shrouded under canvas like a bulbous corpse. The big 99-foot-long bomber has been lifted by its nose by a crane and rests back almost on its tail at an 18- or 20-degree angle. Ground crews surround "The Thing" like ants and shove it on its easy-riding dolly under the belly of the bomber, just below the gaping bomb-bay doors.

The shrouds come off as the bomber is slowly lowered over its cargo by the crane which has held up its nose. A hydraulic lift draws the bomb up into its launching position in a supporting nest of four triangular braces.

Big set screws are turned down by hand until the bomb is rigid in its carriage. Then the bomb-bay doors snap shut with force enough to cut a man in two.

And there on the airfield's concrete apron, her wings spanning 141 feet, lies this ominous silver-gray lady, pregnant and ready to deliver. The process of getting her ready has taken several hours.

While the specifications of the bomb are classified, it is possible to describe it in general terms. I do not, in fact, know the exact specifications.

The bomb, I believe, is approximately 20-foot long and 9 or 10 feet in diameter. It is about the bulk of an average-sized living room. Inside the bomb bay there wouldn't even be room for a coffee table after the bomb is in position, latched in by a catch at the top.

Unlike conventional bombs, this weapon is bulbous, not tear-dropped. It is not the familiar long cylinder of the high-explosive bomb of World War II. Those bombs exploded on contact. But this behemoth contains an elaborate mechanism to cause the atomic explosion, and to set it off at the altitude desired.

It is like a huge steel pylon, or a huge hot-water tank with a rounded nose. The butt of the bomb tapers, but comes to an end in a flat

disc surrounded by the fins. That flat butt of the bomb is important.

To this is secured a cylinder no bigger than your grandmother's umbrella stand; in fact, it is about the same size. It is a tube which holds the secret of how the atom bomb works. I did not see it. I do not know how it works. Nor do I know of what substance the outer shell of the atomic bomb is made or what it contains inside. I do know that the completely assembled bomb is an ugly thing, like nothing else on earth. The men call it "The Thing," or "The Panic," the "Ostrich Egg," or just "The Bomb." They stand in awe of it just as I did. They can drop it with astonishing accuracy, but not one of the crew failed to mention that he hoped this would never be necessary. But if it IS necessary, these men are ready.

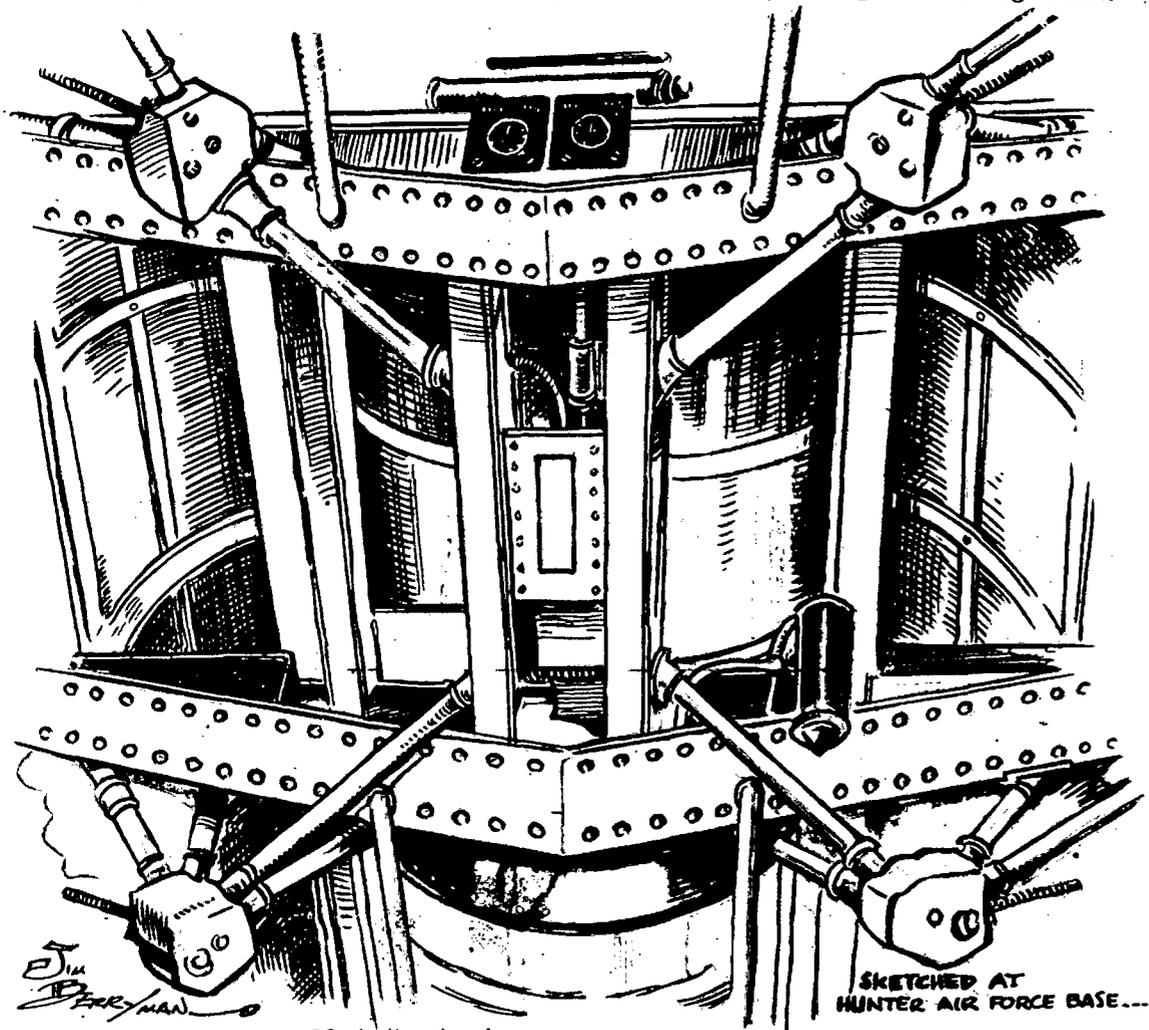
A drenching rain slapped our faces as we left the briefing room of the 96th Bombardment Squadron to board the 8117. Our only light was the glare of the ship's landing lights on the wet concrete. I tugged at my 'chute harness and was acutely aware that I was carrying almost 160 pounds of unaccustomed equipment. This included the flying suit, fleece boots, parachute, Mae West life preserver, my own private inflatable dinghy in case we came down in the water, oxygen helmet, individual emergency rations, fresh water in a plastic container, sunburn lotion, signal flare and antishark oil.

Above the storm, a crewman said: "Boy, what a beautiful night. Those damned fighters never will find us now." That was my first news that fighters would be out after us as we winged toward Target X. The jets never got up. They were locked in by weather, that wonderful, awful weather.

Target X is a city. I cannot say what city. It is one of a number of cities closely approximating the characteristics of a Russian city or cities earmarked for attack if the U. S. Strategic Air Command ever has to make its great strike. The crew of the No. 8117 knows now where it will go if R-day ever comes. And it hopes the weather will be just as bad (or good) as it was on the trial run to Target X. I then began to realize why it is that the crew of a B-50 respects fighter opposition but is not afraid of it. The B-50, workhorse of the Strategic Air Command, and heavily armed, can bomb at 30,000 feet, traveling at 350 miles per hour in all kinds of weather.

Each B-50, equipped with atomic bomb, is

An upward look into the B-50's bomb bay reveals the heavy carriage for the huge bomb.



©Cowles Magazines, Inc.

a bomber force in itself, by World War II standards. It packs the punch of a 500-plane raid. Under typical conditions, the B-50 travels alone to its target. No fighters, probably no accompanying bombers—a single, lonely package of destruction.

I had hoped, at first, that Gen. Curtis Le May, head of our Strategic Air Force, would put me on a B-36, the B-50's big sister. But when I saw the whole picture, I felt I was privileged to see a major element of the working force of the strategic air strike, the B-50.

There are hundreds of these SAC workhorses. I believe there are hundreds of bombs. There are also a few hundred of the "select" type of crew with which I flew, and several more hundreds only a little less skillful.

Inside the 8117 as we clambered on, it was like a superelectronic workshop; a maze of dials and instruments beyond imagining. Every man of the 10-man crew had a steady, excruciatingly detailed task. But as skilled as each man is for his particular task, these "select crews" are so versatile and well-trained that for every job aboard there are at least two men capable of handling it.

We headed for Target X and it was all business. These atomic-bomber men are not flap-happy, trigger-happy kids. They are in their late twenties and early thirties, most of them family men, and they are deadly serious. There is little of the double talk and kidding over the plane's intercom, as among the bombers of the last war. That "Thing" in the rear compartment has a sobering influence.

Target X was roughly 1300 miles from the take-off. Later, I looked on the maps and found that there are many bases available to the U. S. Air Force less than 1300 miles from vital points in, let's say, Russia.

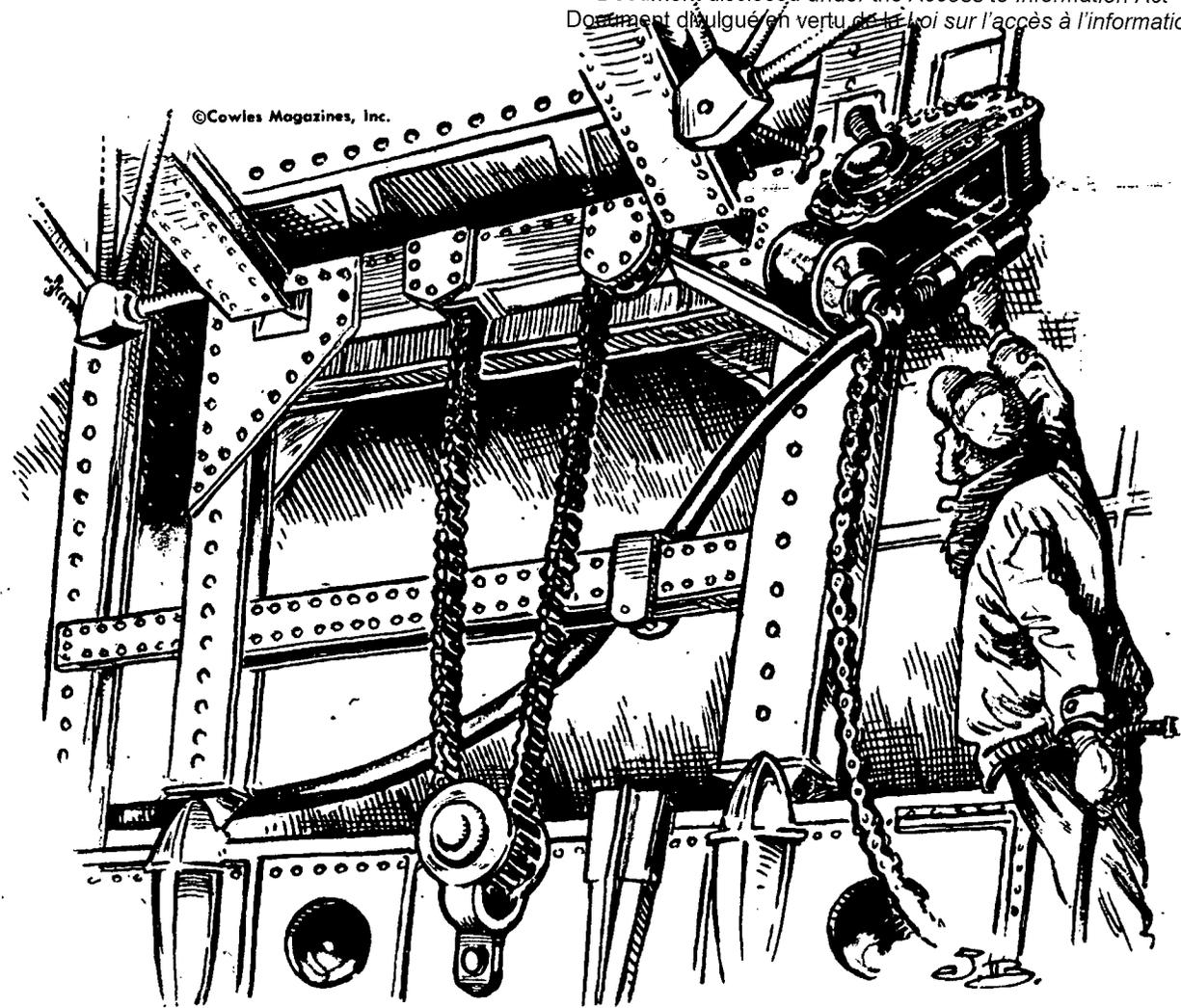
It was, they said, a routine flight. To me, it was a magic journey through a nether world of gray-green haze interspersed with violent

storms. Broad bands of lightning flashed in the haze, leaving vacuums through which we traveled our course, but the turbulence outside didn't bother this rugged ship. It was built not only to deliver fury. It could take it.

Tension increased as we approached Target X. Our cargo could have been dropped manually by visual bombing techniques by

the bombardier-navigator in the nose of the ship. But this was a full-dress radar automatic operation.

As the target was approached, control of the great B-50 passed out of the hands of its pilots into the hands of our radar navigator. He was Maj. George Sharpe of Moran, Tex., 33-year-old father of a three-year-old son and



Skyscraper construction supports a hydraulic hoist which draws the bomb into the bomb bay.

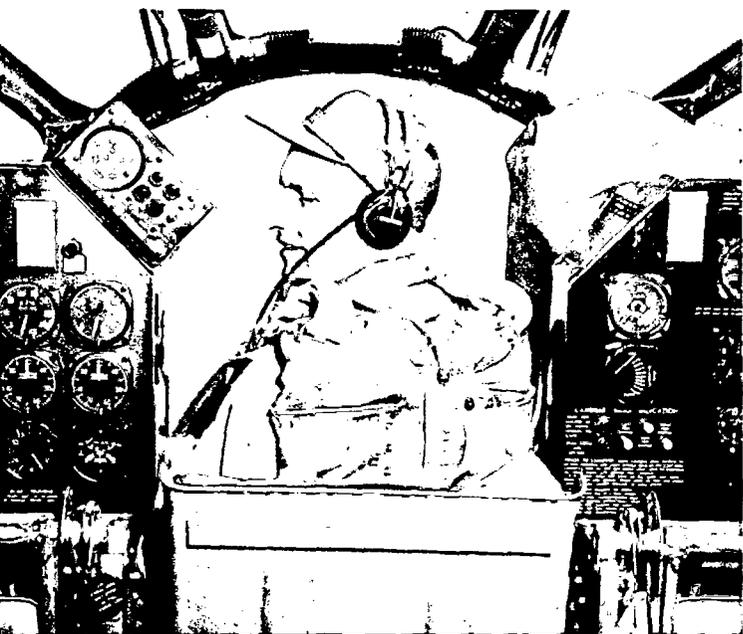
A driving rain slapped the faces of the B-50's crew as it prepared for the take-off on the A-bomb mission. It was an "ideal" flying night.



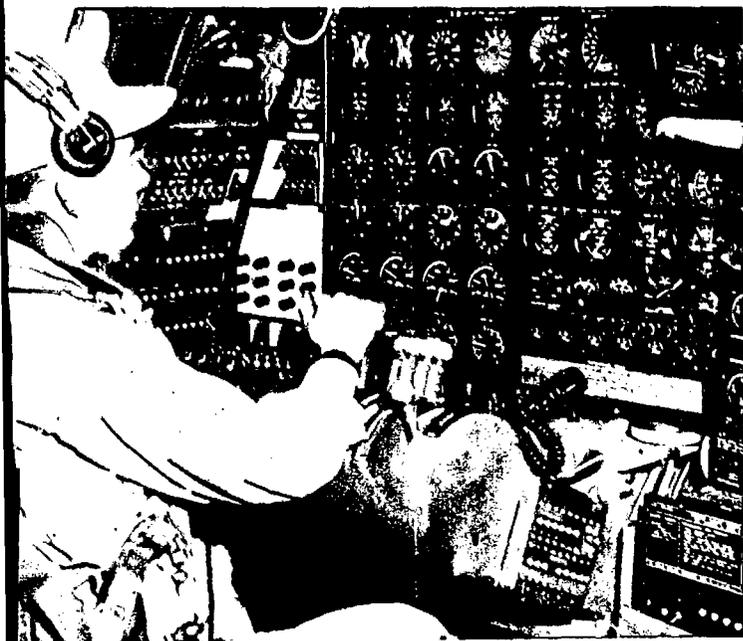
©Cowles Magazines, Inc.

Jim Berryman  
HUNTER  
BAS 000136

## Atom Bomb explodes 40 seconds after release



Capt. Milton Timothy, bombardier-navigator, rides in the B-50's nose, is ready to bomb by visual methods or to participate in radar aiming and release.



A maze of dials and gauges confronts Flight Engineer L. Merle Bare who maintains exact speed and altitude during the B 50's bomb run.



©Cowles Magazines, Inc.

A red-leather cap distinguishes Maj. Leslie McKee as commander of the B-50's "select" crew. All 10 crew members are privileged to wear this red badge of skill.



©Cowles Magazines, Inc.

Lt. Col. Harry E. Stengele, as wing commander, boards his planes without notice to check the performance of his atomic bomb crews and ships.



SKETCHED IN FLIGHT

©Cowles Magazines, Inc.

T/Sgt. 6 Frank Mull concentrates on his starboard waist gun. With Jim Simpson, on the port side, he was ready to knock down enemy fighters by electronic firing.

a six-year-old daughter.

Major Sharpe is jokingly known among the crew as a "bad boy" because he has to sit in a corner. Directly before his eyes is the radar scope. On his right hand in the little corner is a fantastic panel of dials and meters. The same on his left hand.

The radar scope is Major Sharpe's eyes. He sees on it the pattern of the terrain over which 8117 is traveling. Its center is round, like a pie, and two lines mark out a wedge of the pie. Radio beams bounce against metallic objects, any metallic objects on the ground, and reflect back through night and storm to make the pattern on the radar scope. Major Sharpe knows how to "read" it as if it were a crystal-clear photograph. The wedge is important. When the two lines, closing like a pair of shears, come together, the A-bomb plunges out of the bomber's belly and heads for the target through the darkness of night or the gloom of the overcast.

As Target X spread its points of light on the radar scope, Navigator-Bombardier Capt. Milton Timothy, 32, announced into the intercom: "Approaching I. P." This meant that the plane was approaching the initial point from which the bomb run would be made.

"Aircraft on gyro," said Maj. Leslie R. McKee, 31-year-old atomic commander of the 8117. "Radar bombardier in control." Major Sharpe now had control of the plane. He had become "Mr. Atomic." His job was to make adjustments in the automatic gyro-pilot control which would bring together the closing scissors blades on the radar scope and put the plane on its target. He was checked, over the intercom, by Capt. Timothy in the nose of the plane. And as Major Sharpe became "Mr. Atomic," the flight engineer, Lt. Merle Bare—already busy at his controls—now became a human rheostat. Under his skilled hands, the ship had to maintain the exact speed and altitude to coincide with Major Sharpe's electronic and radar calculations.

Major McKee and Lt. Col. Stengele, in the pilots' seats, sat and waited, all the while checking and rechecking the instrument panels before them—the true air speed, functioning of the engines, wind velocity, etc.

The story of these hushed four minutes was being told on a time gauge before the eyes of Radar Navigator Sharpe, and on the radar scope, as the two lines came together. The time gauge ticked off its last second and the lines came together at the same instant.

That was the instant of the A-bomb's release. Something over 40 seconds later, it would have exploded over its target at the exact height for which it was set.

In this case, 8117's lethal cargo was not dropped. If it had been, the plane, rid of its five-ton burden, would have lurched forward and up. It would have been four to five miles away when the atomic blast came.

Radar impulses showed that this test run of the A-bomb discharge technique had scored a direct hit. The crew was satisfied, because a "select crew" doesn't stay select long if it makes many misses, or if fighter-interceptors

Tail Gunner Arthur J. Rapini, T/Sgt. 6, Geneva, N. Y., and owner of a bar and grill, sits in his own pressurized compartment in the B-50's tail.

Look Reports  
continues on page 133

# HOW THE A-BOMB IS DROPPED

find the plane and score too many vital theoretical hits.

"How accurate are these bomb drops?" I asked. "Well," said one of the officers, "suppose you were the manager of a big strategic warehouse in the Urals. Suppose you had a ground-to-plane short wave. You might hear the buzzer, and it would be us on your wave length. And we would say, 'Here's that A-bomb you ordered, Mr. Voronovsky. You want it on the front step or in the back yard?'"

I couldn't help thinking of what would have happened in that city below. There might have been 20,000 or 30,000 dead, and as many, or more, injured. The area of devastation might have been a mile in diameter. Nor could I forget that there are hundreds of these bombs and planes and crews; that they are on the alert all the time at many airfields here and abroad.

No doubt many of the Strategic Air Command bases in this country, from which our A-bombers may take off, are well known to potential enemies. But there are many more fields and strips unknown to them. SAC has fields, crews, planes and highly classified patterns of attack to stage a violent retaliation against a reckless aggressor.

After we wheeled away from the target, we headed for our refueling point. I remembered the old days of "endurance" flights with the rubber hose dangling and often missing

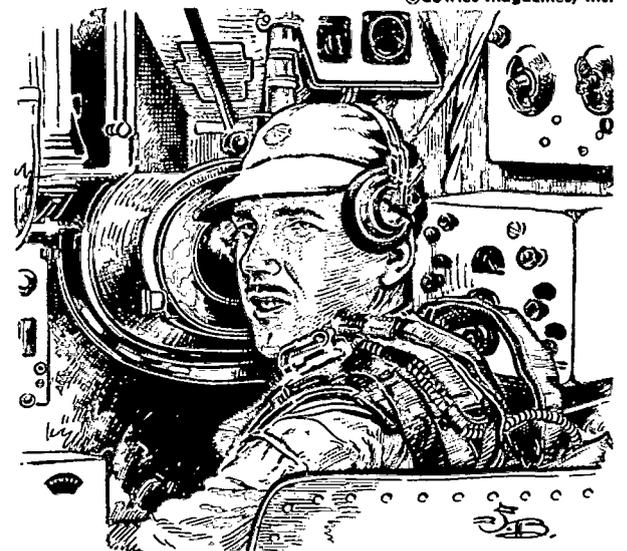
between the refueling and the refueled plane. I wasn't prepared for the huge air tanker which appeared over us. The connecting link between the planes was actually fired from a boom "gun" into our plane's opened refueling hatch. The connection between the tanker and us was firm, workmanlike, and we took on thousands of gallons of gasoline in such a routine fashion that it seemed like pulling up to a gas station in the sky.

Refueling puts B-50 bombers within easy range of any possible enemy target. A B-50 now could fly 3,000 miles into enemy territory, back out, and be refueled again, if necessary. A full service of thousands of gallons takes less than fifteen minutes after contact. This operation has changed the whole nature of our strategic air attack.

General Le May and his boys carry a terrific wallop. I am convinced there are also a good many bombs tucked away in some very convenient spots.

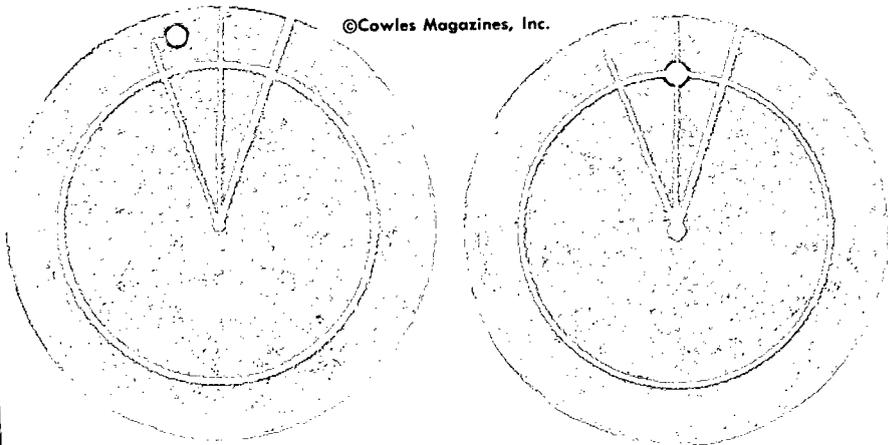
We wheeled back to the air base over water. It was a comfort to see through one break of the clouds a tiny green island below us with a wide, white shining concrete runway covering the length of it. This could be "home" some day for a crippled B-50. I do not know the name of the island, nor could I tell anyone where it is.

Of all the ingredients that go to make up our strategic A-bomb attack, the crew is un-



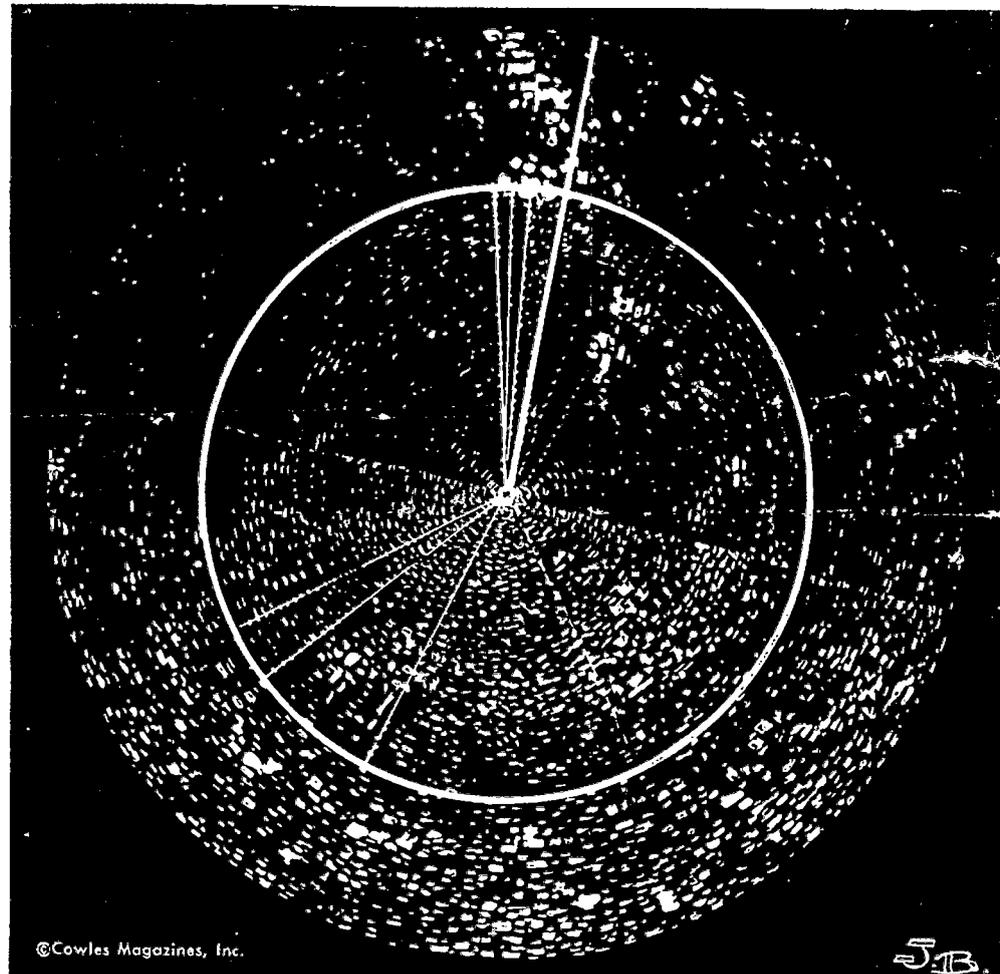
Maj. George Sharpe, as radar-navigator, is "Mr. Atomic." He takes complete control of the plane in the A-bomb run to bring the ship over target.

questionably the most important. The crew! What a bunch of guys! I'd like to tell you about the crew that made me an honorary member of the 96th Bombardment Squadron. They're wonderful and we need more like them. I mentioned before that most of the crew of the 8117 are family men. That, to me, is important. They understand the seriousness of their jobs.



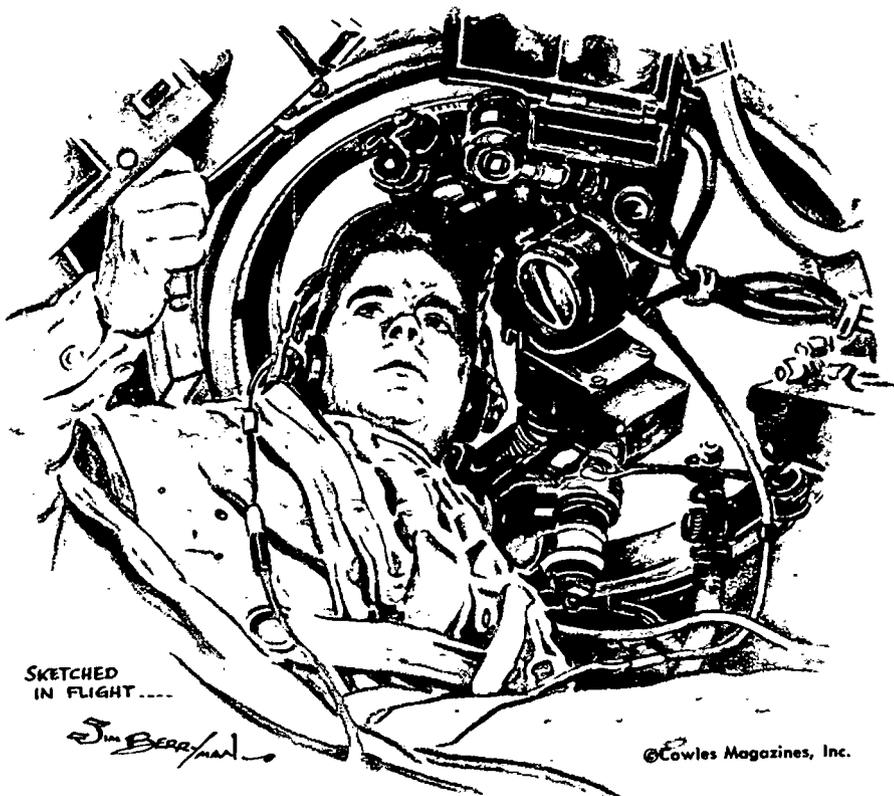
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The atomic bomber's radar scope shows how the lines close as the B-50 is guided over its target. Upper left tells the radar-bombardier that he is off-target. The white dot is not centered. He must reset the plane's course to center on the target. Upper right, the plane is back on the beam. That is the position on the instant of the bomb's release. The large circle is how the target appears to the radar-bombardier. He guides the plane over this radar "picture" of the enemy city.



©Cowles Magazines, Inc.

J.B.



SKETCHED  
IN FLIGHT.....

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Fire Control Chief Albert J. Kitchen directs from this single central position the fire of all thirteen .50 caliber machine guns.

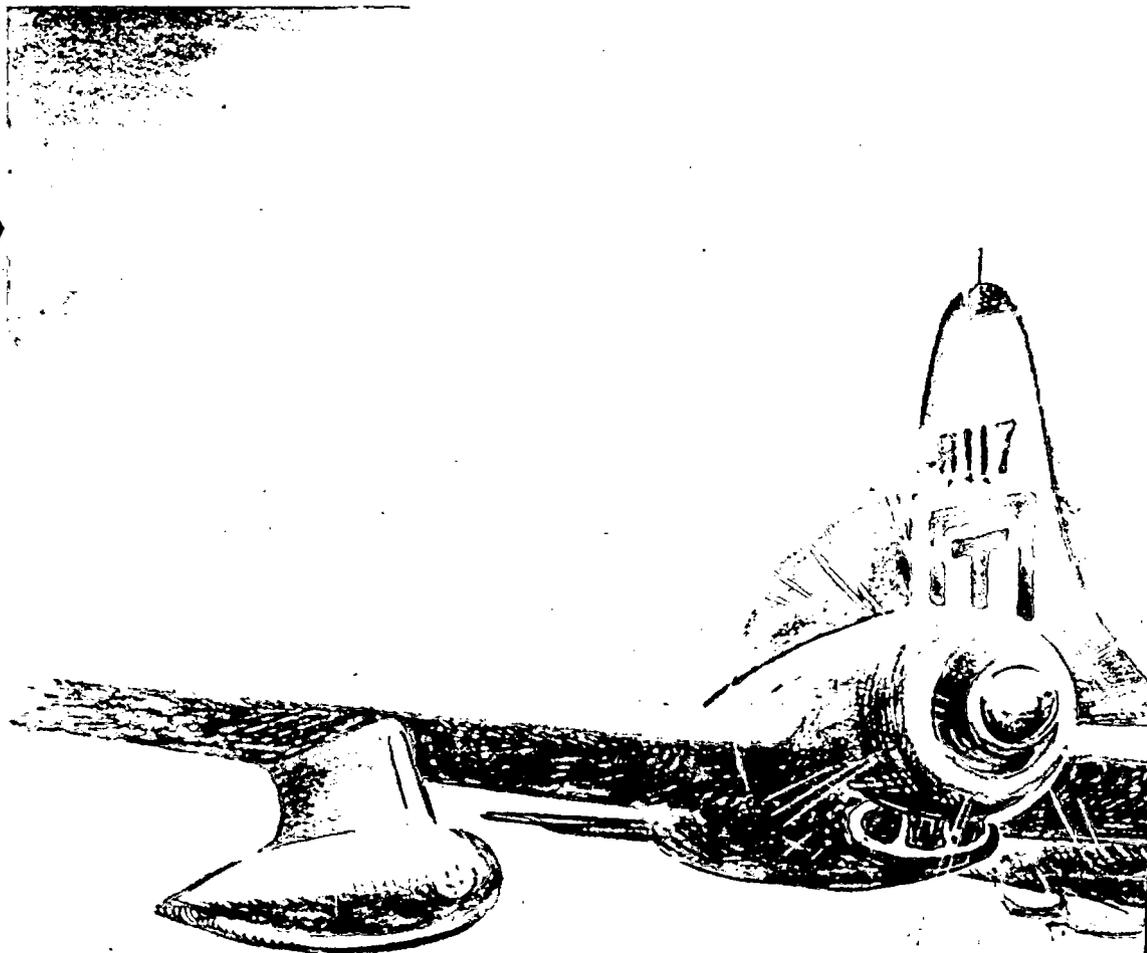


An attacking fighter is shown in sighting device of central fire control chief. A plane caught inside the white dots is counted a "dead duck."

## Look Reports

**Release of the A-bomb over the target rids the plane of its five-ton burden. The electronic-discharge mechanism has aimed it at target X, possibly a Russian city. Then the plane spurts forward and wheels for home. When the bomb explodes over the target, the big ship will be four to five miles away. This is considered a safe margin even if the plane were bombing at low altitudes. On a long mission, the bomber then would head for a refueling point to take on fresh gas in the air.**

Jim Berryman, cartoonist of the *Washington Star*, whose dramatic story of an A-bomb mission is told here in his drawings and text, follows in the footsteps of a famous father. He is the son of the late Clifford K. Berryman, loved and respected cartoonist for the *Star* for nearly half a century. The Berrymans, father and son, were not only both winners of the Pulitzer Prize, but both presidents of Washington's famed Gridiron Club of writers and cartoonists. Jim Berryman is 1951 president of the club which satirizes public officials at two large dinners each year. He has been a magazine illustrator and writer specializing in the popular presentation of technical subjects and has made drawings for the Navy as well as the Air Force.



## They don't want to drop it but they can—with precision

They don't want to have to drop the "killer." But if it becomes necessary, they know how to do it with grim and deadly precision.

There were five officers and six sergeants on "my" flight. Between them, they have 19 children.

Our atomic commander was Major McKee. He hails from California, Mo., and is the father of three daughters. Eleven years in service, he flew 140 missions over the "hump," in the Himalayas, between Burma and China in the last war.

He got out of the Air Force in 1946 and ran an insurance and real estate business in his home town until he felt he had to go back to a job where he was needed. Tall, blond, he modestly describes his duties as "more or less that of a shop foreman co-ordinating and supervising the activities of all the specialists."

The wing commander, Lt. Col. Stengele, from San Antonio, Tex., has ten years in the service with 25 missions behind him. He can, and does, board the planes in his wing, without

notice, to evaluate his crews.

Capt. Timothy, of Chicago, Ill., the bombardier-navigator, has been in the service nine years, flown 33 combat missions. He has two daughters and a son.

"Mr. Atomic," the radar navigator, Maj. Sharpe, from Moran, Tex., has no combat time. He was an instructor. He is a little, smiling fellow, almost bald. His equipment weighs more than he does.

The flight engineer, Lieutenant Bare, from Ronceverte, W. Va., has one daughter and has served 10 years in the Air Force.

One of the crew members, the central fire-control chief, Albert J. Kitchen, was an engineer-technician at the Los Alamos atomic weapons project for three years. As central fire control chief, he directs the electronic firing of thirteen .50 caliber machine guns to protect the A-bomb he had a part in building. He is also the "ship's doctor," a graduate of all the courses in first-aid techniques.

This is a "select" crew. The groundlings,

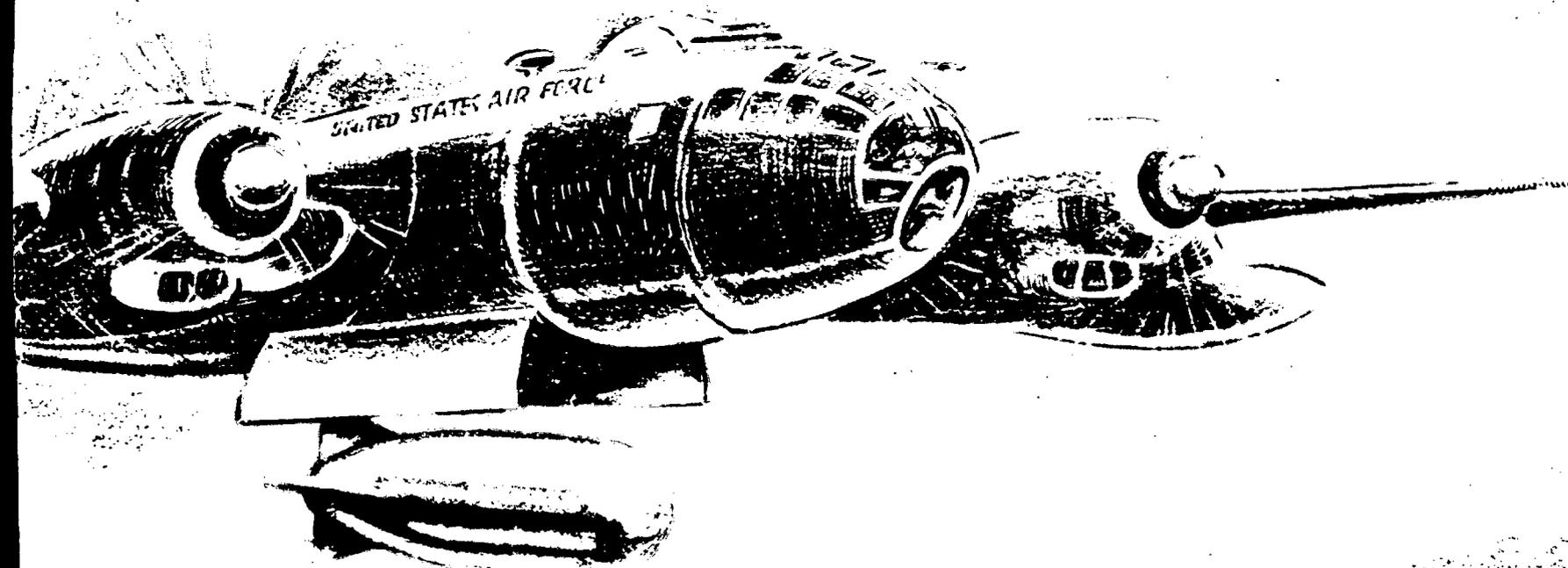
and other airmen, gaze on them with open awe and admiration. These airmen work their heads off. They are on grueling duty sometimes for 36 hours. Then they get 24 hours off and are back at it again. They move from base to base, for the Air Force has decided it will not be Pearl Harbored. There is no great concentration of atomic bombers or atomic bombs at any one spot.

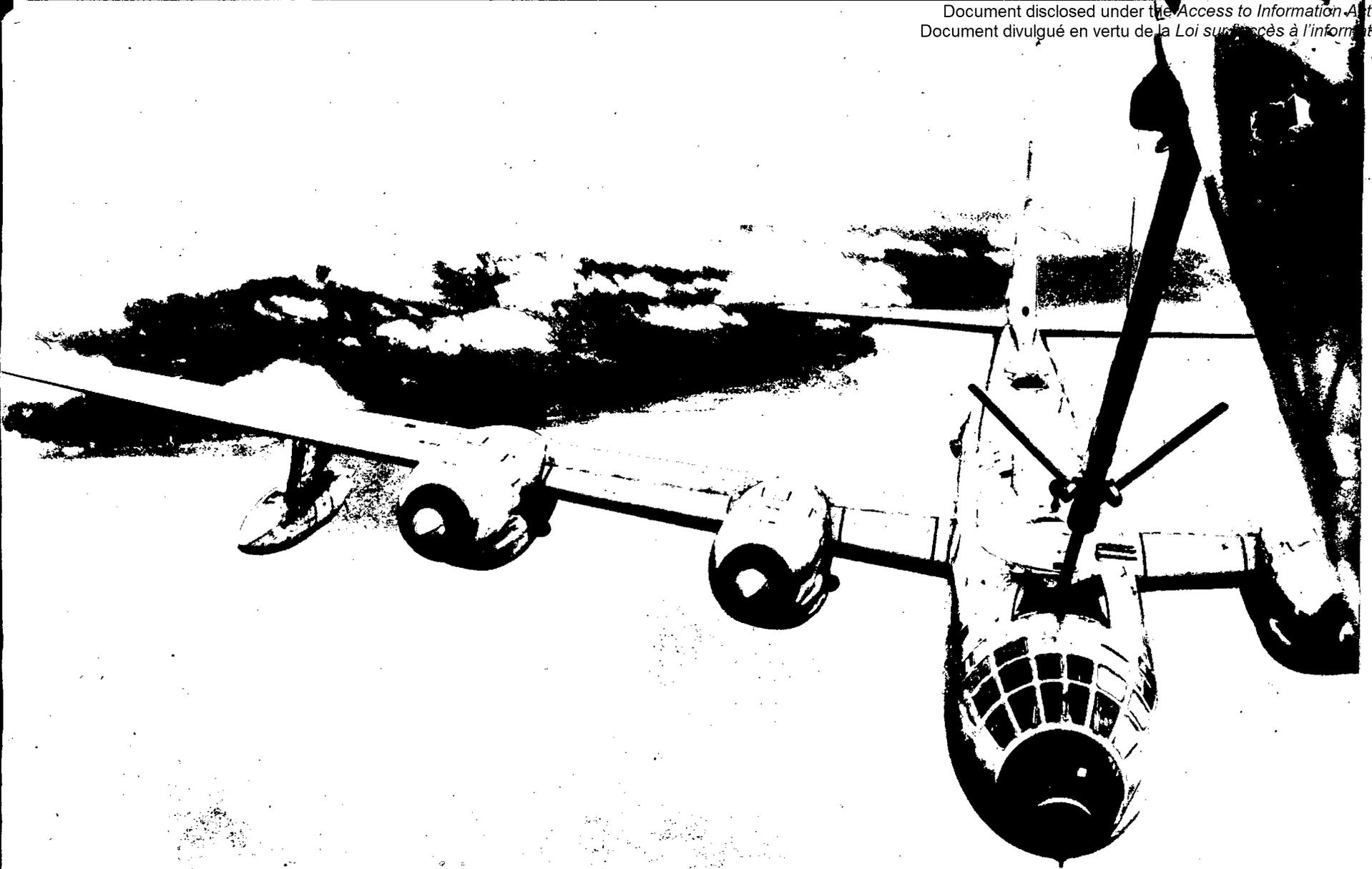
To sum up, Col. Stengele remarked that "Every member of a select crew has to be a select man. . . . The atomic bomber is no stronger than her least-trained man."

Once back on the ground, I began to think about the things I had learned. The tremendous size and weight of this particular 1951 version of the bomb had amazed me. It makes the Nagasaki-Hiroshima jobs as obsolete as the Stanley Steamer. "Just toy balloons in comparison," said one atomic bomber. We are also told there are more powerful ones to come.

Now, I don't want to get into an argument with the air experts. Maybe they think they

### First Picture of How Atom Bomb Looks Emerging from Bomb Bay of B-50 Over Target





Refueling in the air has become routine practice for the B-50. It takes on thousands of gallons of gas in a few minutes, thus doubling its normal range.

## New atomic bombers will soon surpass deadly B-50's

can prove that the B-50's can't get through. Maybe they have some theories about how the jets or guided missiles will shoot all our bombers down. But the best the Germans could put up in the last war knocked out less than 10 per cent of our bombers.

I think the B-50's can get through, and I think Americans are entitled to have a little hope and feeling of "insurance." The Air Force certainly doesn't intend to create any false illusions of security. Gen. Hoyt Vandenberg makes it clear that enemy bombers could hit our key cities. But the violence of the Air Force retaliation should make any ambitious dictator think twice before starting this new war. How could it possibly be worth while?

As for the repetition of a Pearl Harbor on our Air Force, it doesn't look likely to me. These B-50's are not only mobile, and flexible. They are dispersed, globally dispersed.

When they counterattack, it won't be a matter of "ah hour" as we have been led to believe by some public officials. It will take a little time. The attack will have to develop over a period of days. But it will be an attack of unimagined force. As things stand today, this attack can't go on indefinitely, but something is being done about that too.

While the B-50 is the workhorse of SAC she is in good fast company: the old B-29 and the big B-36. The soon-to-come all-jet B-47 will replace the 29 and 50, and a great new bomber, the B-52 will replace the 36.

As cartoonist for the Evening and Sunday

*Star* in Washington, D. C., events hit me hard. I have to try to be funny, or at least wry, over the foibles of the capital. But I must admit that on occasion I have felt like one of those discouraged, depressed citizens I sometimes draw . . . hopelessly resigned to the big blow up. Yes, and I have griped and groused over my share of taxes, like everybody else. I thought, and still think, that the money being tossed out for

vote-getting handouts, give-aways to other countries, State Department nonsense and plush Government offices has been overdone.

I've got a little different outlook now. One big branch of our armed forces looks good to me. At least, it gives me some hope. I feel as if I had been handed an unexpected insurance policy, and, for that policy at least, I'm pretty anxious to keep up my premium payments.

END

Mission accomplished, the atomic-bomber crew checks out: Left to right—Atomic Aircraft Commander, Maj. Leslie R. McKee; Lt. Col. Harry E. Stengele, 96th Squadron commander and co-pilot of this mission; Maj. George M. Sharpe, radar navigator; Capt. Milton Timothy, bombardier-navigator; Lt. L. Merle Bare, flight engineer; T/Sgt.6 John E. Monsulick, radio operator; M/Sgt. Albert J. Kitchen, central fire control chief; T/Sgt.6 James F. Simpson, left waist gunner; T/Sgt.6 Frank S. Mull, right waist gunner; T/Sgt.6 Arthur J. Rapini, tail gunner.



**CAN OUR A-BOMBERS GET THROUGH?**

From dozens of authentic sources, the next issue of LOOK will reveal Russia's ability to block our A-bomb attacks, describe the Soviet radar network and fighter-interceptor screen. 000141

ORIGINAL

50219-D-40  
STATES 41 50

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

SECRET

CYPHER - AUTO

WA-1375

WASHINGTON, April 9, 1951.

Done,  
Apr. 10/51  
T.K.

*Refer  
Dr. Mackenzie  
Dr. Selanoff.*

MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S.

Secret. Following for N.A. Robertson from

Wrong, Begins:

My WA-1073 of March 21st and my WA-1193 of March 30th. Atomic tests at Eniwetok.

I have been informed by Arneson that the second of the detonations will take place on April 18th.

Ends.

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10 APR 1951

CANADIAN AMBASSADOR

*10/4/51  
Mr. MacKay - we were told earlier that the first detonation would take place April 7, but no word of it has yet appeared. DTK*

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 APR 10 AM 9:21

50219-D-40

ORIGINAL

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S.  
*Mr. Robertson*

IMPORTANT

SECRET

CYPHER - AUTO

WA-1193

WASHINGTON, March 30, 1951.

*Done,  
mar 31/51  
T.K.*

*Refer  
Mr. Robertson  
USSEA  
~~Mr. Ritchie~~  
Dr. Mackenzie  
Dr. Inland*

Secret. Following for Robertson from Wrong, Begins:  
My WA-1073 of March 21st, new atomic tests at Eniwetok.  
I have just been informed by the State Department  
through Arneson that the first of the detonations at  
Eniwetok will take place on April 7th. Ends.

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30 MAR 1951

CANADIAN AMBASSADOR

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 MAR 10 PM 3 - 10

ATOMIC--PMS BUDGET  
BY ELTON C. FAY

WASHINGTON, MARCH 28-(AP)-THE UNITED STATES MAY BE PREPARING ITS FIFTH ATOMIC WEAPONS PROVING GROUND, THIS ONE IN A SUB-ARCTIC WASTE-LAND

LONELY SPOT ON THE ALEUTIAN ISLAND CHAIN, WHICH STRETCHES OUT 800 MILES FROM THE ALASKAN MAINLAND WESTWARD TOWARD RUSSIAS SIBERIAN EMPIRE, APPEARS A PROBABLE CHOICE.

THERE, FOR THE FIRST TIME, THE UNITED STATES COULD TEST ATOMIC BOMBS UNDER CONDITIONS OF CLIMATE AND OTHER FACTORS WHICH MIGHT BE ENCOUNTERED SHOULD A WAR REQUIRE USE OF SUCH WEAPONS AGAINST RUSSIAN CITIES.

SINCE GORDON DEAN, ATOMIC ENERGY COMMISSION CHAIRMAN, HINTED RECENTLY THAT NEW TESTS MIGHT BE MADE AT LOCATIONS NOT USED HERETOFORE, THERE HAS BEEN DEVELOPING SPECULATION THAT THE ALEUTIANS MIGHT BE ONE OF THE SITES. REASONS FOR THIS INCLUDE:

1. ATOMIC BOMB TESTS TO DATE HAVE BEEN CONDUCTED ONLY IN FAVORABLE WEATHER CONDITIONS IN AREAS UNLIKE THOSE WHICH WOULD BE LOGICAL A-BOMB TARGETS IN A WAR WITH RUSSIA.

2. THE AREA ALREADY IS OWNED BY THE GOVERNMENT AND CONTROLLED BY THE MILITARY. THERE IS NO NEED FOR A TRANSFER OF AUTHORITY OR TO ENTER AN AGREEMENT WITH ANOTHER COUNTRY, AS WOULD BE THE CASE IF ARCTIC TESTS WERE MADE IN BARREN NORTHERN CANADA.

A23 XX CANADA.

3. ANY OF THE ALEUTIAN ISLANDS IS EASILY REACHABLE BY SEA TRANSPORT WHICH PRESUMABLY WOULD BE NEEDED TO GET IN THE EXTENSIVE AND HEAVY EQUIPMENT NEEDED FOR BUILDING INSTALLATIONS TO HOUSE INSTRUMENTS AND OTHER MATERIAL.

4. BY COINCIDENCE, THE PRESENT OVER-ALL COMMANDER IN ALASKA IS THE FORMER COMMANDER FOR AIR AT THE BIKINI TESTS, LT.-GEN. WILLIAM E. KEPNER.

AS FAR AS IS KNOWN, ATOMIC BOMBS HAVE NOT BEEN EXPLODED BURIED BELOW THE GROUND. TO SIMULATE A DEEP-PENETRATION ATOMIC BOMB DROPPED FROM HIGH ALTITUDE.

THUS THERE IS THE POSSIBILITY A SUBSURFACE EXPLOSION MAY BE TRIED IN THE ALEUTIANS, AN AREA OF SOLID ROCK FORMATION.

D621A

50719-D-fo  
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ORIGINAL

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S  
*Mr. Robertson*

*Mr. Home*  
*SS EA*  
*Mr. Clayton*  
*Mr. Robertson*  
*US EA*  
*Dr. Hinkley*  
*Dr. S. Lang*  
*Chief of Staff*  
*Mr. [unclear]*

IMPORTANT

CYPHER - AUTO

WA-1073

SECRET

WASHINGTON, March 21, 1951.

*Done*  
*Mar 24/51 - Mr. [unclear]*  
*T.K.*

50219-D-40  
5/1 50

*[Handwritten signature]*

Secret. New atomic tests at Eniwetok.

1. The State Department, through Gordon Arneson, gave us some enlightenment on the announcement made today by the United States AEC about the new atomic tests at Eniwetok Atoll in the Pacific Ocean, which have been reported in the press.

2. These tests have been planned for over a year and Task Force No. 3 under the command of Lt. General Elwood R. Quesada left San Francisco some time ago on what is known as "Operation Greenhouse". Apparently it was the intention of the United States authorities not to make any public announcement about the tests until after they had been completed. However, owing to certain confusion in the public mind arising out of the recent tests at Las Vegas, and also since it was found necessary to issue a public warning about the danger area around Eniwetok Atoll, the occasion was taken yesterday to make a public reply to an inquiry received from the American Institute of Architects concerning the measurement of the effects of atomic weapons on structures and materials of various kinds. The text of the United States AEC's announcement is on page 15 of today's New York Times.

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22 MAR 1951

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3. We were told by Arneson in strict confidence that there will be a series of three or four explosions of atomic bombs at Eniwetok, starting early in April and continuing until early in May. The exact dates for the respective detonations have not yet been set, but the British and ourselves will be informed, if possible, one week in advance of each detonation.

4. Arneson also noted that whereas the experiments at Las Vegas were conducted by scientists of the AEC, the tests at the Eniwetok proving grounds will be conducted as a trial military operation.

CANADIAN AMBASSADOR

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 MAR 12 AM 10:09

ORIGINAL

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

CYPHER - AUTO

RESTRICTED

WA - B10

~~SSA  
Mr. Clayton  
Mr. Robertson  
USSEA  
Dr. Mackenzie  
Dr. Schantz  
Mr. [unclear]  
T.K. [unclear]~~

WASHINGTON, March 5, 1951.

Done,  
Mar 6/51

7-1

50219-D-40  
41-50

MINISTER  
UNDR/SEC  
D, UNDR/SEC  
A-UNDR/SEC'S.

Restricted. Statement by Vannevar Bush on the  
"atomic bomb and the defence of the free world".

1. I direct your attention to the interesting statement broadcast last night by Dr. Vannevar Bush, President of the Carnegie Institution of Washington, and former Chairman of the United States Research and Development Board, on the "atomic bomb and the defence of the free world". This statement was the first of a series sponsored by a non-partisan public group organized to support a strong defence for the United States in cooperation with other free nations called "the Committee on the Present Danger". Bush is one of the founders of the group.

2. Bush's statement has been reprinted in full in today's issue of the New York Times on page 9. The most important part of the statement, which is worth reading in full, is concerned with the role of strategic bombing and atomic weapons in relation to the defence of the western world. Bush states that "the deterrent is nearly as powerful today as it was then" (at the time of the Berlin airlift). "If Russia sent its armies rolling across the German plains tomorrow, we with our A-bombs and the planes to carry them would destroy

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Russia. We could do it without question, as matters stand today." Bush goes on to point out, however, that it is impossible to count upon atomic weapons remaining a fully effective deterrent forever as the Soviet Union builds up its defences against strategic bombing and its own atomic stockpile. It is, therefore, also essential to build up an allied army in Europe to deter Soviet aggression, and that these ground forces must be built up while the present advantage in atomic weapons still holds good. Bush also noted the potential importance of a tactical application of atomic weapons in stopping large-scale concentrations of enemy forces.

3. Bush has evidently taken the occasion of this speech to restate his attitude towards the role of strategic bombing and the use of atomic weapons in military defence against Communism to accord more closely with official military thinking on these questions. Some of his previous statements have been criticized, particularly in the Pentagon, as capable of being interpreted as under-estimating the role of strategic bombing as a deterrent against aggression.

CANADIAN AMBASSADOR

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1981 MAR 5 AM 9 25

FILE COPY

*Referred*

Defence Liaison/DHW Kirkwood/J. George/go

SECRET

February 10, 1951

*Done Feb 12  
J. Kelly  
B. White*

*(A. Robertson  
R. Keller  
(European  
UN Div)*

*Amo FE  
J-1-52  
London  
Wesley*

MEMORANDUM FOR THE UNDER-SECRETARY

*201-AD(a)*  
Sub 58. Chron. ... Filed...

Some technical and political comments  
on Nevada atomic tests.

It may be worth while to set on paper a few observations suggested by the recent atomic tests held near Las Vegas, Nevada. It should be emphasized that our speculation on the type of explosions that have taken place during these tests is not based on technical knowledge of atomic weapons nor on any restricted information concerning the tests. There have been so many wild statements reported, however, that it is easier to say what the explosions were not than what they were. No doubt Dr. Solandt will in due course have accurate information as to what has been taking place, and some indication of the U.S. Atomic Energy Commission's evaluation of the scientific and military information obtained. This memorandum simply presents a few guesses as to some of the technical and political factors involved.

I. Technical Factors.

1. Five explosions have been reported, the first four in two pairs and the fifth separately. Each of the pairs consisted of a relatively mild explosion first, followed within twenty-four hours by a much more powerful one. The fifth explosion appears to have been considerably more powerful than any of the others.

2. While there has been virtually no information released concerning the nature and purpose of the tests, one might speculate somewhat as follows. Earlier tests have been concerned with the atomic weapon as a bomb pure (if one may use the term) and simple. Technical developments have continually been increasing the destructive energy which such a bomb can release, and this trend has been reported periodically to the press. Perhaps the fifth and most powerful of the recent explosions was a test of the most up-to-date weapon of this type.

3. Of late, however, there has been a focussing of interest upon the possible use of atomic bombs as tactical weapons. The two obvious types would be artillery shells

- 2 -

and guided missiles. In either case one might expect some sacrifice of power in the interest of effective design of the weapon for tactical use. Very possibly the first four of the present explosions have been tests of weapons of this sort. The milder explosion in each pair might represent primarily a test of the weapon in its non-nuclear aspects with only minimal provision of bomb components for the testing of firing mechanisms, and the subsequent more powerful explosion a fully charged test designed to permit estimation of the weapon's tactical efficiency.

4. Press comment has been concerned with the development of a "limited atomic explosion", suitable for tactical use, with the implication that there is some advantage in having available weapons which release energy in an amount between an ordinary H.E. bomb and a full scale atomic bomb. While it is possible that there might be some military advantage in having a weapon producing less than the full destruction of an atomic bomb as hitherto understood, the use of such a weapon could not, it is believed, represent any appreciable saving in nuclear fuel. A certain critical mass of nuclear fuel is, of course, required for any nuclear explosion, large or small, and for any but the most powerful atomic bombs it is likely that but little more than this minimum is sufficient. The effectiveness of an atomic bomb is in all probability determined primarily by the method whereby the nuclear energy is released and strength of the casing to contain the explosion as long as possible, and only secondarily by the amount of fuel, provided, of course, that this exceeds the aforementioned minimum.

5. In this light, it appears that utilization of scarce nuclear fuel in weapons of less effect than atomic bombs of the type previously tested would not be sufficiently economical to justify a programme for the development of such limited tactical weapons. Hence press suggestions of a "fizzle explosion" weapon would appear to be unjustified or misinformed.

6. The most likely explanation as to what kind of atomic weapon was being tested was implied in General Collins' interview last Monday, February 5, when he volunteered the information that atomic artillery shells are "wholly possible" and "in the not-too-distant future". He added more cautiously

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that it would be "many years" before guided missiles with atomic warheads would be available, but said that guided missiles themselves would be ready for use "inside of eighteen months". It would therefore appear that the Nevada tests consisted of four tests of a "tactical bomb" followed by one test of the most powerful type of "improved bomb" developed since Bikini.

## II. Political Factors.

1. Both the Alsops and Reston have suggested, in articles that may or may not have been "inspired", that the timing of the Nevada tests was deliberately intended to serve as a reminder to the world at large and the Russians in particular that the main strength of the United States lay at present in its atomic superiority and its superior capacity in inter-continental strategic bombing. The USSR and the People's Government of China have, during the past few months, shown a surprising readiness to take additional risks of an outright war with the United States, and the Nevada tests may be intended to draw attention to the fact that the United States in Korea has, so to speak, been fighting with its right hand tied behind its back.

2. Reston specifically links the tests with the increasing pressure being placed on Yugoslavia by the military build-up in the surrounding satellite states which has led to some apprehension that an attack on Tito might be impending. The Alsops have also mentioned the Yugoslav situation, but have written in more general terms, in an article, attached, about "Unfreezing the Asset". If "inspired", these articles imply a United States decision to give serious consideration, at least, to using the bomb in the event of a Soviet or satellite attack on Yugoslavia. If such a decision is in fact being considered by the United States Government, it would mean almost as much for Yugoslavia as inclusion in the North Atlantic Treaty. Although relaxation of export controls on strategic materials has been discussed in the North Atlantic Council Deputies, there has been no previous hint of such a strong U.S. policy in support of Tito.

3. One further indication that the Alsop and Reston articles have been inspired is that at least one member of the U.S. Joint Congressional Committee on Atomic Energy has as much as told the press that in private session the Committee had discussed the international effect of the Nevada tests.

- 4 -

4. The tests have no doubt also had a domestic political effect in bolstering U.S. confidence in their own strength, and helping to offset to some extent the Korean reverses, while building up public confidence in the progress of the U.S. Atomic Energy Commission's weapons development programme.

5. We are not suggesting that the Nevada tests were timed solely for political reasons, but only that the timing may also have been convenient for political purposes.

Defence Liaison Division.

## DEPARTMENT OF EXTERNAL AFFAIRS

Subject.....

*A - Point*

Date..... FEB 8 1951

Publication.....

MONTREAL GAZETTE

### MATTER OF FACT

By JOSEPH and STEWART ALSOP

#### Unfreezing The Asset

Washington — The second decisive event of the present grim phase of world affairs seems to be taking shape at last behind the scenes. The first, of course, was the beginning of the all-out effort to re-arm the West, stimulated by the aggression in Korea. And now, in order to deter the Kremlin from forestalling this great but time-consuming rearmament effort, consideration is being given to unfreezing the West's only existing military asset, the atomic stockpile.

Here, the immediate stimulus is the obvious preparation for an attack on Yugoslavia by the Kremlin's Hungarian, Bulgarian and Romanian satellites. Besides destroying the Yugoslav Army and giving the Kremlin a vital position there, the unopposed conquest of Yugoslavia would neutralize the Turkish Army. It would create conditions for rapid Soviet absorption of the Middle East. And it would probably cause the formation of "neutralist" governments in Italy and France.

In sum, this simple flank attack, which perhaps can be made by the satellites alone, would effectively break the Western alliance. Thus the Kremlin would gain all the fruits of a gigantic victory with none of the trouble of a major war.

The atomic stockpile must be regarded as a frozen asset today for the very simple reason that on the face of the existing situation, Yugoslavia can in fact be attacked by the surrounding satellites without precipitating a general war. "Unfreezing" the asset in turn simply means convincing the Kremlin that an attack on Yugoslavia is not as safe as it now looks—that the immediate price of this operation or any others like it will be the destruction of Russia's vital centers, and that this will still be true even if satellite forces alone are overtly employed.

In considering so grave a step, there are three other points to weigh besides Yugoslavia's immense political and strategic importance. First, there is the resemblance of the present situation to the situation pre-Korea. Last June, American disarmament, plus the established and proclaimed American policy not to intervene in Korea, actually invited aggression there. Korea was attacked because it looked perfectly safe to do so.

Today, there has been no public change in the earlier American policy decision to limit assistance to Marshal Tito to "aid short of war." London's attitude has been rendered doubtful by recent high-level expressions there. The Kremlin's temptation to take advantage of American disarmament has been

replaced by the active compulsion to strike before the West is re-armed and the whole Soviet imperialist program is thus defeated. In short, the seeming invitation to attack Yugoslavia is even stronger, if anything, than was the seeming invitation to attack Korea.

Second, there is the attitude of Yugoslavs themselves. Marshal Tito told a recent visitor that he and his colleagues had carefully reviewed the case of Czechoslovakia, and had decided that the great mistake of Benes was not to reject the Munich settlement and to resist Hitler single-handed. France and Britain, he explained, would then have been drawn into the resulting war. The parallel is exact. If the Yugoslavs resist, as they have firmly informed London and Washington they mean to do if attacked, a war there probably cannot be contained in any case.

Third, and most important of all, there is the fact that a firm, clear warning to the Kremlin would probably produce the desired result of deterring an attack. In the last six months, all the known data about our power to destroy the Soviet vital centres with atomic weapons, and about the Soviet defences, have finally been gathered together and carefully re-examined.

The conclusion has been reached that, as of today, our power is decisive. If the masters of the Kremlin did not fear this power of ours, they would now be preparing a frontal assault on Western Germany rather than a flank attack in Yugoslavia. Let them know that the certainty of reprisal is as absolute in both cases, so the argument runs, and they will quickly alter their plans.

Two problems must be solved before the needed warning can be conveyed to Moscow. It must be decided what form the warning is to take. And we must somehow be assured of the co-operation of our allies, and especially of the British, who would have to join us in the ensuing war if our warning were ignored.

It is terrible, indeed, to be discussing such problems in this cold-blooded manner. Yet it is much more terrible — it is the quickest way to betray the future — to be weak, to muddle along, to blunder toward Munich-like situations, to let war just happen because our intentions are unclear.

The bad time has now come which was foretold last year to one of these reporters by a very great Englishman, who said, "We'll just have to get through it on nerve and the atomic bomb." He added, "We'll get through it nicely, in my judgment, if our nerves do not fail."

(Copyright, 1951, New York Herald Tribune, Inc.)

DEPARTMENT OF EXTERNAL AFFAIRS

Subject A - Bomb

Date Feb 9/51 Publication

No. 7 TIMES

# Peril of Atomic Strategy

## Emphasis on Bomb as Key to Victory Is Not Coupled With Plans to Win Peace

By HANSON W. BALDWIN

The recent atomic tests in Nevada are an added evidence of the importance attached by our strategists to atomic weapons as a major part of the formula for victory in any general war we might have to fight.

This continued and emphatic insistence upon an atomic strategy as the key to victory can be both politically and militarily dangerous if it is overdone. There is no doubt that our "lead" in the atomic race does give us a military advantage that cannot be despised or ignored, and there is no doubt that our ability to retaliate quickly and heavily with an atomic bombardment against the heart of Russian industrial potential can be a deterrent to aggression.

But the atomic bomb has distinct military and political liabilities; it is not a military cure-all; it provides no absolute security; it is not a substitute or replacement for other weapons but merely a powerful addition to the armory of Mars. The atomic bomb, as Korea has shown, has but limited military or political utility in a small war, or a war in an undeveloped country, or a war "by proxy" carried out by Communist satellites against a neighbor.

Nor is the atomic bomb a certain guarantee of victory if general war should come; despite the fact that atomic weapons for tactical use against troops are now available, our atomic superiority probably could not halt the Soviet Army tomorrow if it started to roll across Western Europe, could not save Yugoslavia if she were invaded in the spring, and could not eliminate guerrilla warfare behind our lines and in our rear areas.

### Stress Solely On Victory

But the greatest weakness of a strategy for victory that is based primarily upon an atomic strategy is that it might put the major emphasis upon winning the war at the expense of winning the peace. Obviously you cannot win the peace if you lose the war, but you can lose the peace even if you win the war (as our experiences since

World War II demonstrate) by concentrating too much upon the strategy for victory and not enough upon the political aims of victory.

As our policies develop and the tensions mount in the world of 1951, there is still no evidence to indicate that Washington planners have yet blueprinted our political aims if a general war with Communist Russia and her satellites should develop. Yet it is quite clear that a strategy for victory must come after—and not before—a strategy for peace.

We must first chart the kind of world we want, and then and not until then, should we outline the strategy we should follow to win a victory if we have to fight a general war to get that kind of world. If we put the cart before the horse, and outline a strategy for victory without clearly defining the political aims of victory, the war will have been fought in vain.

### Limitations in Air Power

Lieut. Col. W. R. Kintner, United States Army, has put this very clearly in an article entitled "Political Limitations of Air Power" in the Naval Institute Proceedings for last March.

He summarizes:

"We cannot risk a military policy which might drive potential allies into neutrality or hostility.

"We cannot employ any and all kinds of weapons without regard to the post-war consequences of their employment.

"We cannot permit the public utterances of American atomic air power advocates to provide a logical excuse for totalitarian aggression \* \* \*

"Although the theme that the atomic bomb will always favor America has been oversold, no one can ignore the possibility of atomic warfare.

"The cold truth is that we must, if driven to it, be prepared today to wage an atomic war as well as wage war on pre-Hiroshima lines.

"\* \* \* Our military plans must recognize that the only sound objective a free people should have in war is to win a victory that will expand, not contract, the map of freedom."

DEPARTMENT OF EXTERNAL AFFAIRS

Subject A - Bomb

Date Feb-9/51 Publication

No. Y. TIMES

# Peril of Atomic Strategy

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By HANSON W. BALDWIN

The recent atomic tests in Nevada are an added evidence of the importance attached by our strategists to atomic weapons as a major part of the formula for victory in any general war we might have to fight.

This continued and emphatic insistence upon an atomic strategy as the key to victory can be both politically and militarily dangerous if it is overdone. There is no doubt that our "lead" in the atomic race does give us a military advantage that cannot be despised or ignored, and there is no doubt that our ability to retaliate quickly and heavily with an atomic bombardment against the heart of Russian industrial potential can be a deterrent to aggression.

But the atomic bomb has distinct military and political liabilities; it is not a military cure-all; it provides no absolute security; it is not a substitute or replacement for other weapons but merely a powerful addition to the armory of Mars. The atomic bomb, as Korea has shown, has but limited military or political utility in a small war, or a war in an undeveloped country, or a war "by proxy" carried out by Communist satellites against a neighbor.

Nor is the atomic bomb a certain guarantee of victory if general war should come; despite the fact that atomic weapons for tactical use against troops are now available, our atomic superiority probably could not halt the Soviet Army tomorrow if it started to roll across Western Europe, could not save Yugoslavia if she were invaded in the spring, and could not eliminate guerrilla warfare behind our lines and in our rear areas.

### Stress Solely On Victory

But the greatest weakness of a strategy for victory that is based primarily upon an atomic strategy is that it might put the major emphasis upon winning the war at the expense of winning the peace. Obviously you cannot win the peace if you lose the war, but you can lose the peace even if you win the war (as our experiences since

World War II demonstrate) by concentrating too much upon the strategy for victory and not enough upon the political aims of victory.

As our policies develop and the tensions mount in the world of 1951, there is still no evidence to indicate that Washington planners have yet blueprinted our political aims if a general war with Communist Russia and her satellites should develop. Yet it is quite clear that a strategy for victory must come after—and not before—a strategy for peace.

We must first chart the kind of world we want, and then and not until then, should we outline the strategy we should follow to win a victory if we have to fight a general war to get that kind of world. If we put the cart before the horse, and outline a strategy for victory without clearly defining the political aims of victory, the war will have been fought in vain.

### Limitations in Air Power

Lieut. Col. W. R. Kintner, United States Army, has put this very clearly in an article entitled "Political Limitations of Air Power" in the Naval Institute Proceedings for last March.

He summarizes:

"We cannot risk a military policy which might drive potential allies into neutrality or hostility.

"We cannot employ any and all kinds of weapons without regard to the post-war consequences of their employment.

"We cannot permit the public utterances of American atomic air power advocates to provide a logical excuse for totalitarian aggression \* \* \*

"Although the theme that the atomic bomb will always favor America has been oversold, no one can ignore the possibility of atomic warfare.

"The cold truth is that we must, if driven to it, be prepared today to wage an atomic war as well as wage war on pre-Hiroshima lines.

"\* \* \* Our military plans must recognize that the only sound objective a free people should have in war is to win a victory that will expand, not contract, the map of freedom."

Ottawa, February 9, 1951

SEEN  
L. B. PEARSON  
FEB 13 1951

CONFIDENTIAL

MEMORANDUM FOR THE MINISTER

Atomic Tests at Las Vegas

201-A D
58
SECRET

You enquired whether any "foreigners" were invited to witness the above tests and especially any Canadians.

Dr. Mackenzie and Dr. Solandt confirm that no invitations were forthcoming for Canadians, and both think it highly unlikely that any "foreigners" were asked to witness the tests, except possibly the British, who are participating to some extent in weapon development.

*Dr.*

A.D.P.H.

13-2-7-(55)  
10-2-5(55)

000160

ORIGINAL

g 2  
201-AD (d)  
2:1 50

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES

FROM: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S.

~~Pelle~~  
~~Mr. Robertson~~  
~~Dr. Mackenzie~~  
~~Dr. Solandt~~  
Gene  
Feb 8/51  
T.K.  
SECRET

~~Civitate~~  
USSEA  
Mr. Ritchie  
HWK

IMPORTANT

CYPHER - AUTO

WASHINGTON, February 6, 1951.

WA-470

Secret. Reference my WA-328 of January 27th. Atomic weapons test at Las Vegas, Nevada.

1. We were informed by the State Department through Arneson this afternoon that the fifth explosion at the testing grounds today concludes the present test period. Today's explosion, which appears to have been the largest, was witnessed by senior representatives from the United States A.E.C., including Commissioner Pike and the General Manager, Boyer, as well as Senator Knowland representing the Joint Congressional Committee.

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7 FEB 1951

CANADIAN AMBASSADOR

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 FEB 7 AM 10:01



CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1951 JAN 26 PM 3 : 34

SECRET

Ext. 140

DEPARTMENT OF EXTERNAL AFFAIRS  
OTTAWA

January 15 1951

No. D-232

Sir,

I enclose the document (x) listed below.

201-AD(12)  
J. W.

I have the honour to be,

Sir,

Your obedient servant,

The Canadian High Commissioner,  
LONDON, S.W.I.

JAMES GEORGE

for the  
Secretary of State for External Affairs.

DESCRIPTION OF DOCUMENT

SUBJECT

Copy of teletype No. WA-119 of  
January 10, from Washington.

Press Release on new United States  
testing ground for atomic weapons.

*Copy to ...*

201-AD	(S)
cc	SD

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
 TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

MINISTER  
 UNDR/SEC  
 D/UNDR/SEC  
 A/UNDR/SEC'S

IMPORTANT

SECRET

CYPHER - AUTO

WASHINGTON, January 10, 1951.

WA-119

*Refer Mr. Robertson Done P.M.B. Circulate USSEA  
 Dr. Mackenzie Jan. 12/51 Mr. Mackay  
 Dr. Solandt Mr. R. He RCAF Mr. Riddick (on return)  
 Nat Defence Secy Chief London (despatch) Mr. George  
 Press Officer Jan. 15/51*

Secret. Press release on new United States testing ground for atomic weapons.

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11 JAN 1951

1. The State Department, through Arneson, informed us this afternoon of a press release which is to be issued by the United States Atomic Energy Commission some time Thursday, 11th January, about a new testing ground to be used at Las Vegas, Nevada, in connection with the atomic weapons development programme. From the text of the press release which follows it will be noted that Las Vegas range will be used in addition to the Eniwetok proving ground in the Marshall Islands. Text begins:

"The Atomic Energy Commission has been authorized by the President to use a part of the 5000-square-mile Las Vegas (Nev.) bombing and gunnery range for experiments necessary to the atomic weapons development program.

"The use of the Las Vegas bombing and gunnery range will make available to the Los Alamos scientific laboratory a readily accessible site for periodic test work. Test activities at the new site will include experimental nuclear detonation carried out under safe controlled conditions to improve information needed in atomic bomb -- so called "a-bomb -- development.

"Full security restrictions of the Atomic Energy Act will apply to the work at the new site and during test

- 2 -

periods the AEC section of the reservation will be closed to all persons except those directly connected with the experimental programs.

"The Department of Defense, which concurred in the Commission's request to the President for approval of the use of the air force reservation, will provide assistance in the test program, including special supporting services supplied by the Air Force. Air weather service will provide extensive meteorological service in addition to that available from the United States Weather Bureau. Safety conditions are such that tests will not interfere with the Air Force training programs at the base.

"Radiological safety and security conditions incident to the type of test to be undertaken have been carefully reviewed by authorities in the fields involved. It has been found that the tests may be conducted with assurance of safety under the conditions prevailing at the bombing reservation. All necessary precautions including radiation surveys and patrolling of the surrounding territory, will be undertaken to insure that safety conditions are maintained.

"The Commission will continue to use the Eniwetok proving ground in the Marshall Islands." Text ends.

United Kingdom has also been informed through the Embassy here.

CANADIAN AMBASSADOR

ORIGINAL AND FILE COPY

50219-7D-40  
211

FROM: THE CANADIAN AMBASSADOR TO THE UNITED STATES  
TO: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, OTTAWA

MINISTER  
UNDR/SEC  
D/UNDR/SEC  
A/UNDR/SEC'S.

CYPHER - AUTO  
WA -3064

RESTRICTED

WASHINGTON, November 29, 1950.

*Refer*  
*SECRET*  
*3/24/51*  
*11/30/50*  
*T.K.*  
*Secy*  
*M. Bennett*  
*11/30/50*

Restricted. Announcement by United States A.E.C. of new production site near Savannah River, S.C.

1. Today's newspapers carry the announcement made yesterday by the United States Atomic Energy Commission of its new production plants to be designed, built and operated by the E.I. Du Pont de Nemours Company of Wilmington, Delaware, and to be located in South Carolina near the Savannah River where 250,000 acres are to be acquired for the site.

2. Newspaper comment connects this choice of a site for the new production plants of the AEC with the H-bomb project. While the AEC announcement yesterday did not make any reference to the H/bomb, the Chairman of the AEC, at his press conference, October 24th, (see despatch No. 2808 of October 24th, page 10) clearly implied that the new plant would be concerned with H/bomb work.

3. The press release defines the purpose of the additional plants as providing "materials which can be used either for weapons or for fuels potentially useful for power purposes." It is specifically stated that "the operations at the Savannah River plants will not involve the manufacture of atomic weapons". The announcement also says that "the new facilities will be of advanced design and the operation will provide the Commission with further information and understanding that will speed the progress of the national atomic energy program both for military and civilian purposes".

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30 NOV 1950

- 2 -

4. Curtis Nelson, who until recently was liaison officer between the United States A.E.C. and the Chalk River project, is to be Manager of the new plant and Robert Blair, the Deputy Manager.

Text of United States A.E.C. release follows by bag.

CANADIAN AMBASSADOR

CLEARED  
COMMUNICATIONS  
EXTERNAL AFFAIRS

1950 NOV 23 PM 4:01

*[Handwritten mark]*



# TELETYPE

From THE CANADIAN AMBASSADOR TO THE UNITED STATES  
To THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

C O N F I D E N T I A L

CYPHER - AUTO

WA-1804

EXTERNAL AFFAIRS WEEDS
File No. 501-AD(2)
Sub. 79 Chron. 29 Filed.....

WASHINGTON, July 5, 1949.

Referred to:-  
Mr. Robertson  
Dr. Mackenzie  
Mr. Jarvis  
Mr. Keeney  
6/7/49  
CW

Confidential. Investigation of United States Atomic Energy Commission. Your EX-1558 of June 18th, my WA-1717 of June 23rd.

1. AEC rebuttal of Hickenlooper charges expected within the next day or two.

2. Arneson of State Department has forwarded a request from AEC for such figures as may have been made public concerning the cost of the Chalk River pile and its ancillary installations.

3. These figures will be used for a cost analysis comparison with latest American plants, the cost of which was one of the main points of the Hickenlooper attack.

4. If you approve, Arneson would like to receive available information as soon as possible: classified and other information which you do not wish to see published should not be sent since State Department intend to use Canadian figures as a basis of comparison.

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6 JUL 1949

CANADIAN AMBASSADOR

Appendix E Bds 2<sup>nd</sup> Annual Report: 47-48 (to March 31<sup>st</sup> 48)

→ 45	2,820,106.82
→ 46	4,202,466.82
→ 47	7,982,838.74
→ 48	approx. 5,573,000.

includes plant + townsite.

COMMUNICATIONS SECTION  
EXTERNAL AFFAIRS  
1995 JUL 6 AM 8:28

[Faint, mostly illegible typed text, likely a memorandum or report]

Referred to:  
Mr. Robertson, SSEA,  
USSEA, Dr. Mackenzie,  
Dr. Solandt.  
24/6/49 CW

TELETYPE

RL  
J

From THE CANADIAN AMBASSADOR TO THE UNITED STATES

To THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

EXTERNAL AFFAIRS RECORDS
File No. 201-AD-2
Sub. 58 Chron. 58 Filed

~~TOP SECRET~~

CYPHER - AUTO

WASHINGTON,

June 23, 1949.

WA-1717

Top Secret. Investigation of United States Atomic Energy Commission. Your EX-1558 of June 18th.

1. Arneson of the State Department told Wright yesterday that the investigation would probably conclude next week although the Joint Committee might meet in executive session for a further week. Since the trend of the investigation has turned away from international aspects and has concentrated on wholly domestic issues, the State Department thinks that the Joint Committee will not ask to see the documents on international cooperation including the modus vivendi of January, 1948. If a request should be made, they will consult the British and ourselves before they produce the papers.

2. The expectation in the Atomic Energy Commission that the investigation might clear the air seems quite likely to be fulfilled. For instance, this morning the Washington Post prints a Hercock cartoon showing Hickenlooper and one of his campaign managers at a table on which newspapers are spread out with headlines such as "Ball Team Pulls Two Hickenloopers, Loses Both Games" and "Stock Market takes a Hickenlooper; Wall Street Gloomy". The manager is saying to the Senator, "It's Publicity, But Is It Good?" This expresses a view commonly held in responsible quarters.

3. I doubt, however, whether even if the Joint Committee gives the Commission a clean bill of health in its report the Administration will consider it timely to take up with the Committee for some little time the question of a more extensive exchange of information with the British and ourselves. Kennan mentioned to me the other day that he intended to urge the Secretary of State to take a

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24 JUN 1949

## TELETYPE

*From* THE CANADIAN AMBASSADOR TO THE UNITED STATES

*To* THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

- 2 -

WASHINGTON,

strong line with the Committee on the national advantages of more intimate collaboration. There are, however, so many unsolved issues between the State Department and the Congress that Mr. Acheson may decide that he will fare better if he delays his approach on this subject.

4. Wright has seen today the paper on international collaboration, and we shall forward a report on it by bag.

CANADIAN AMBASSADOR

AMERICAN  
SECTION  
INTERNAL AFFAIRS

1961 JUN 23 PM 4:45

[Faint, illegible text, possibly a letter or report]

AMERICAN SECTION OF THE NATIONAL ASSOCIATION OF AMERICAN-SOVIET FRIENDS  
1000 ...

LETTER

# MESSAGE FORM

FILE REF.	201-ADA
File No.	
Sub.	58
Chron.	58
Filed	

## OUTGOING

SECURITY CLASSIFICATION

FROM: THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

TO: THE CANADIAN AMBASSADOR, WASHINGTON,

MESSAGE TO BE SENT

EN CLAIR

CODE

CYPHER  AUTO  X

DEGREE OF PRIORITY  M

D. No. EX-1558

Date June 18, 1949

FOR COMMUNICATIONS OFFICE USE ONLY

SENT -- JUN 18 1949

ORIGINATOR

SIG.

TYPED: J. George/KI

DIV. Def. Liaison

LOCAL TEL. 5253

APPROVED BY

SIG. *AK*

IS THIS MESSAGE LIKELY TO BE PUBLISHED

YES  NO

INTERNAL DISTRIBUTION :

DONE

DATE

COPIES REFERRED TO :

Mr. Robertson  
S.S.E.A.

U.S.S.E.A.  
Dr. Mackenzie  
Dr. Solandt

Your WA-1582 and your despatch No. 1353 of June 8.

1. Investigation of United States Atomic Energy Commission. I was glad to have advance notice of C.P.C. papers which might be discussed during Congressional Committee hearings. As regards our modus vivendi, while I do not have strong views on the subject, I think it would be a pity to give the Committee the text of our agreement for exchanging information under the specified areas of cooperation. If Senator Hickenlooper can take exception to sending isotopes to Norway, he would certainly be alarmed by the extent of our cooperation, ~~even though we regard it as all too limited.~~

2. I should like to know in greater detail the AEC's views on international collaboration, and, if you agree that it would be useful, you might ask Wright to try to have a look at the paper which they showed to Cockroft and Barton. If the paper is not tabled at the hearings, this may be our only chance to see it.

SECRETARY OF STATE FOR EXTERNAL AFFAIRS.

DONE

DATE

Defence Liaison/J. George/KD

**DOWNGRADED TO SECRET**  
**REDUIT A SECRET**

TOP SECRET

June 17, 1949

*RC-4*

MEMORANDUM FOR (MR. HEENEY)

*Sent*  
*18/6/49*

Attached for your approval or revision is a reply to Mr. Wrong's telegram WA-1582 concerning our interest in the Congressional Committee's discussions of the U.S. Atomic Energy Commission's cooperation with the United Kingdom and ourselves. Mr. Robertson is not as optimistic as Mr. Wrong about the effect which the hearings in Washington will have on three power cooperation, but he took this out of the first draft of the telegram which I had shown him.

No 1353.

On the attached file you will find a despatch from Mr. Wrong commenting on the Congressional investigation. I gather from General McNaughton that the United States Delegation on the AEC in New York does not think Mr. Lilienthal is doing quite so well as would appear from Mr. Wrong's despatch and most of the press comments we have seen.

*J. George*

*18.6.8 (os)*

Referred to:  
Mr. Robertson - Copy No. 2  
S.S.E.A. " " 3  
S.S.E.A. " " 4  
r. Mackenzie " " 5

TELETYPE

Copy No. 1....

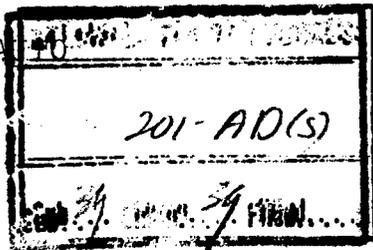
Dr From ~~Canada~~ THE CANADIAN AMBASSADOR TO THE UNITED STATES

To THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

CYPHER - A

TOP SECRET

WA-1582



WASHINGTON, June 8, 1949.

Top Secret. Investigation of United States Atomic Energy Commission.

1. The nature and extent of the release of secret information in the atomic field to Canada and the United Kingdom has been touched on during the current investigation by the Joint Congressional Committee on Atomic Energy and may receive a good deal of attention. I hope to send you by bag later this week some general observations, not of a highly classified nature, on the investigation as a whole. In this message I deal only with matters touching on the exchange of information with the other two partners in the original project.

2. Senator Hickenlooper last week asked the A.E.C. to procure a long list of papers for the information of the Committee. The list included:

- (a) The Quebec Agreement of 1943,
- (b) The Agreement and Declaration of Trust of 1944,
- (c) The Potsdam Agreement, and
- (d) The modus vivendi of January, 1948.

So far as I can find out, there is no paper corresponding to (c), and what took place at Potsdam was, I believe, confined to communicating to Stalin the intention to drop the first atomic bomb on Japan. As to (d), there would, I am sure, be no question of releasing, even for the confidential information of the Joint Committee, that part of the C.P.C. decisions which relates to the supply and allocation of uranium oxide. What the Senator had in mind was, I

## TELETYPE

*From* THE CANADIAN AMBASSADOR TO THE UNITED STATES  
*To* THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

- 2 -

WASHINGTON,

believe, the agreement for the exchange of information on listed topics.

3. The Committee suspended judgment on the question of production of these papers and some others on Hickenlooper's list. If the demand is pressed, the Atomic Energy Commission will take the line that these particular papers are in the custody of the State Department and that the request should be directed to the Secretary of State. It is hard to say as yet whether the matter will be pursued.

4. I have been in touch with the British Embassy and have seen telegrams exchanged with the Foreign Office on this matter. The Foreign Office has no strong objection to the production of papers (a), (b), and part of (d). They have asked, however, that before the papers are given to the Joint Committee, their consent should be secured. If the papers are made public, they wish to release them simultaneously in London. If they are produced in confidence, they want to be in a position to cope with leaks to the press, as these are likely to be biased. They think that further cooperation between the three countries in the atomic field might be encouraged if greater emphasis is placed here on the intimacy of wartime collaboration.

5. Cockcroft during his visit here and some officers of the British Embassy have discussed the matter with Carroll Wilson of A.E.C. and Arneson of the State Department and have put to the latter the request for prior consultation with the United Kingdom if the papers are employed in the course of the investigation. Arneson is now going into

## TELETYPE

*From* THE CANADIAN AMBASSADOR TO THE UNITED STATES  
*To* THE SECRETARY OF STATE FOR EXTERNAL AFFAIRS, CANADA

- 3 -

WASHINGTON,

this. We have not approached the State Department directly on the matter, but we shall do so if you think this is desirable. The A.E.C. is preparing a series of papers covering all the matters likely to arise at the Joint Committee's hearings, including a fairly long paper on international collaboration. This was shown briefly to Cockcroft, and Marten, one of the scientists at the British Embassy, was allowed to read it carefully and take notes. In the judgment of both of them, the paper, if produced at the hearings would do not harm and might be useful.

6. At the A.E.C. there is a good deal of confidence that the investigation will clear the atmosphere. So far certainly Hickenlooper's charge of "incredible mismanagement" has in no way been established. It is evident, however, that the contemplated tripartite talks cannot take place until the investigation is completed and for some time thereafter. Cockcroft said while here that postponement, even to the early months of 1950, would not cause any particular difficulty for the United Kingdom. In the A.E.C. it is hoped that the investigation may make a freer exchange of information with the United Kingdom and Canada easier to arrange and that it will be possible for them, once it is over, to clear with the Joint Committee a programme of more extensive co-operation to take the place of the 1948 agreement. This agreement expires on December 31st, but it might be renewed for a short period if a new agreement has not been reached by that date.

CANADIAN AMBASSADOR

COMMUNICATIONS  
SECTION  
EXTERNAL AFFAIRS

1949 JUN 8 PM 4:57

Referred to:  
Dr. Mackenzie  
Dr. Solandt

*Done  
Jan 17/49*



CONFIDENTIAL.

Circulate to:  
Mr. ~~Robertson~~  
Mr. Heeney  
Mr. Holmes  
Mr. Mackay

*+ file*

Washington, D. C.,  
June 8th, 1949.

No. 1353

EXTERNAL AFFAIRS RECORDS
File No. <u>201-AD(a)</u>
Sub. <u>5</u> Chron. <u>5</u> Filed

Sir:

I have the honour to report that a full-dress investigation of the operations of the United States Atomic Energy Commission is now under way. The investigation sprang from charges unexpectedly advanced by Senator Hickenlooper, who was Chairman of the Joint Congressional Committee on Atomic Energy during the last Congress. The Senator had been regarded as friendly to the operations of the Commission and to Mr. Lilienthal, and had indeed publicly praised Mr. Lilienthal shortly before he accused him of "incredible mismanagement".

2. The show was started when it became known that a scientific scholarship, financed from the appropriation of the A.E.C., had been awarded to an admitted Communist. The awards for the large number of scholarships provided from A.E.C. funds are made solely on grounds of scientific ability, and the awarding body is the National Research Council (here an unofficial group of eminent scientists) and not by the A.E.C. Mr. Lilienthal had first defended the system in force, involving no enquiry into the political beliefs of the applicants for scholarships, but later he took a different line and agreed that a declaration that they are not Communists should be required from those receiving awards.

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3. This rumpus was followed by a charge that a container of enriched uranium oxide had been stolen from the Argonne National Laboratory some months ago and that the A.E.C. had failed to bring the F.B.I. into the investigation at the proper time. Enquiry has now revealed that the most that can be established is that there was carelessness in the Laboratory. The uranium, enriched with U.235, has almost all been recovered from wastes and the empty container has been found by excavation among refuse.

4. Mr. Lilienthal's reply to these accusations was to demand a full public enquiry by the Joint Committee, and this began over a week ago. So far, Mr. Hickenlooper has not produced anything that could be regarded as establishing his accusation of gross inefficiency. I discussed the investigation briefly the other day with Mr. Sumner Pike, one of the original members of the A.E.C. He said that Mr. Hickenlooper probably/

The Secretary of State  
for External Affairs,  
Ottawa, Canada.

*R*

EXTERNAL AFFAIRS  
RECORDS-CLEARED

1949 JUN 10 PM 3:01

-2-

probably had some further ammunition which he would use and commented that it was obvious that the A.E.C. had made mistakes and would continue to make mistakes from time to time, since this was inevitable in an operation of such magnitude and novelty. He went on to say that Mr. Hickenlooper, when Chairman of the Joint Committee, had appointed to the Committee's staff two security officers from the Army. One of them took a very narrow view of security and was wholly engrossed in problems of physical security and clearance of employees. He thought that this officer had secured the confidence of Mr. Hickenlooper and had led him to place wholly unwarranted emphasis on details of security procedures. He added that there was a sense of frustration in the Joint Committee because of the limitations, many of them self-imposed, on the information which it secured about the atomic programme; for instance, the Committee had decided that it did not want to receive information about the supply of raw materials or about the volume of production of plutonium and U.235.

5. In addition, it is thought that there are political motives behind Mr. Hickenlooper's attack. His term as Senator from Iowa expires next year, and the Democrats are expected to nominate Mr. Loveland, present Under-Secretary of Agriculture, to contest his seat. The swing of the farm vote toward the Democrats has made his future uncertain and he is anxious to enhance his reputation before facing the electors.

6. The Secretary of Defence has denied rumours that the attacks on the Atomic Energy Commission were in part prompted by the advocates of military control of atomic power in the National Military Establishment. There are, nevertheless, a number of people, in Congress and outside, who would favour military control, and this probably has something to do with the initiation of the charges.

7. The A.E.C. itself does not appear to be unduly concerned over the whole matter and some of its officers are taking the line that the investigation should have beneficial results, as it should reveal that the charges of maladministration and of inadequate security precautions are trivial in nature and that the Commission is on the whole doing an admirable job, although severely hampered by the restrictions imposed by statute on public explanation of its achievements. The investigation is likely to continue for some time and the Commission is at present devoting so much effort to the preparation of material that its normal activity is nearly at a standstill. Mr. Lilienthal is, of course, a most experienced participant in congressional enquiries, who appreciates the value of counter-attack and the importance of as large a measure of public knowledge and support as he can secure.

8. I might mention in conclusion that there have been two changes in the personnel of the Commission. Mr. W. W. Waymack resigned in December, 1948, and Mr. Robert F. Bacher resigned a few weeks ago. The President has appointed in their place  
Mr. Henry/

-3-

Mr. Henry de Wolf Smyth, the author of the famous Smyth Report of 1945, and Mr. Gordon E. Dean, both of whom were promptly confirmed by the Senate without any opposition.

I have the honour to be,

Sir,

Your obedient servant,

A handwritten signature in cursive script, appearing to read "W. H. Murray".

201-48

File Copy

Defence Liaison/J. George/KD

6

Referred to:  
Dr. Mackenzie  
Dr. Solandt  
Mr. Crean

TOP SECRET

June 3, 1949

EXTERNAL AFFAIRS RECORDS
File No. 201-AD(2)
Sub. 29 Chron. 29 Filed

MEMORANDUM FOR MR. ROBERTSON  
MR. HEENEY

Admiral Hart's Views on Atomic Warfare

Senator (Admiral, retired)

T.C. Hart has been visiting Ankara, and recently discussed Greece and Turkey with General Odium. As reported in General Odium's despatch No. 131 of May 18 Senator Hart also told General Odium that:

"The Pentagon view was that war, if it came, could be won by long range bombing. The Pentagon was convinced that it would not be necessary to employ important air force fighter units or to employ large-scale formations. This observation led us to talk of the limitations of the atomic bomb. I pointed out that in the Bikini test, the bomb which had created enduring havoc was the one detonated under water. The first bomb, which was burst in the air, was very disappointing. In land warfare, all bombs used would have to be either air bursts or ground detonations. Neither of these could be so effective in spreading radio-active elements as the under-water bomb had proved.

"Senator Hart agreed with what I said. He added that the American Navy was not seriously disturbed by the atom bomb

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as far as its operations at sea were concerned. The atom bomb would not mean any major dislocation of its present dispersion tactics. On land, the only bomb which would be effective against forces rather than against installations would be air bursts. Senator Hart expressed himself as convinced that experience would soon show that a very large fighter air force would have to be built up and that in the next war, as in the last, formations on the ground would provide the eventual decisive force.

J. George