THE INTERNATIONAL CONTROL OF ATOMIC ENERGY

by M. Percy Cawdron, B.Sc.

Thesis presented at the School of Political Sciences of the University of Ottawa for the obtention of the Degree of Master of Arts in Political Sciences.

Ottawa, Canada, 1948

ACKNOWLEDGMENTS

This thesis was prepared under the direction of Doctor T. Greenwood, Ph.D. Philosophy - LONDON; Ph.D. Political Sciences - OTTAWA.

The completion of the enormous amount of research necessary was made possible by the assistance and cooperation of the following:

R. A. Frigon, National Research Council Liaison Officer
Washington, D.C., U.S.A.

the staff of the Library of the National Research Council

the staff of the Library of the Economic Research Branch of the Department of Reconstruction and Supply.

To them all we wish to extend our most sincere thanks.

TABLE OF CONTENTS

International Controal of Atomic Energy

Errata Sheet

Page 1,	para. 2,	first three words:	"At time wont"	to read	"<u>As</u> time <u>went</u>"
" 12,	Item 6,	line 6:	"particularly"	" "	"<u>particular</u>"
" 41,	line 8,	second last word:	"to"	" "	"<u>by</u>"
" 45,	line 8,	seventh word:	"Carnegia"	" "	"<u>Carnegie</u>"
" 48,	line 7,	first word:	"wheras,"	" "	"<u>whereas</u>"
" 55,	Item 2,	line 3; fifth word:	"and"	" "	"<u>an</u>"
" 71,	line 7,	after the word "may"	<u>insert</u> the word		"<u>be</u>"
" 73,	third last line,	second last word:	"concered"	" "	"concerned"

(M. P. Cawdron)

INTRODUCTION

At 10:45 A.M. on August 6, 1945, President Truman of the United States of America announced that, sixteen hours previously, a United States' long-range bomber had dropped, on the Japanese city of Hiroshima, a bomb which had the blasting power of approximately 20,000 tons of TNT. The basic power of the universe had been tapped, and the release of nuclear energy gave promise of radically altering the future of the nations of the world.

A new weapon-of-war had been developed, at a cost of over $2,000,000,000: a weapon against which there could be no adequate military defence; a weapon on which no nation could long maintain a monopoly; a weapon which must be 'outlawed' if the world was to survive.

Alternatively, as a result of the release of nuclear energy for purposes of war, the prospects for a brighter and fuller peace appeared: If this new force could be controlled, civilization had been advanced considerably; if uncontrolled, civilization could be pushed backward thousands of years.

The Charter of the United Nations Organization was on the threshold of ratification. The decision for the future rested in the hands of the Governments of the nations of the world.

The International Control of Atomic Energy

Chapter I

The advance of civilization to its present level has been characterized by man's ability to understand and overcome the secrets of nature and the immediate problems of his surroundings. Each step has necessitated a change in his habits and has improved his way of living; but due to his very nature he has never been satisfied to rest on his laurels, and, therefore, has continually probed the unknown. The discoveries of fire and gunpowder, and the inventions of the wheel and aeroplane, were highlights in the insatiable quest for knowledge; but since the days of the alchemists and the great philosophers of the ancient world, one great mystery has plagued the dreams of mankind: that of changing base metals into gold or the transmutation of elements--the unlocking of the basic secret of nature.

At time went on and man's knowledge increased, the facilities for dealing with this problem improved, but the secret remained hidden. During the search, however, each scientific era contributed some important new discovery, until the secret of success appeared to be locked within some minute portion of matter, the splitting of which pointed to a source of energy beyond comprehension.

Man dreamed of Utopia, but also realized that by delving so deeply into nature he might release a force which would ultimately destroy that world which he was hoping to improve. Undismayed, however, progress in science continued and in the twentieth century, convinced

that they were on the right track, scientists started a lethal assault on the atom.

To appreciate the magnitude of this self-appointed task, we must realize that investigation of this subject necessitated thinking along new lines, and the acceptance of unproved ideas. Prior to the twentieth century it was a basic principle of science that neither matter nor energy could ever be destroyed; they could be changed from one form to another, but there was no alteration in the amount of energy or the amount of matter in the universe.

In the year 1905 however, Albert Einstein, a young patent-office clerk in Switzerland, propounded a theory of relativity, based on the idea that under certain conditions matter could be changed into energy and energy into matter, and that a very small amount of matter could produce tremendous quantities of energy. Few paid any attention at the time but this new line of reasoning has now been substantiated.

To appreciate the significance of this reasoning, let us first consider the hitherto accepted idea that matter and energy could both be changed into many forms but could not be destroyed or changed into each other. Even fire could not consume matter, as was easily shown by burning a piece of wood under laboratory conditions; the weight of the products of combustion accounted for the entire weight of the substance burned; and while the substance may have disappeared from human sight, the same quantity of matter existed but in a different form.

So, also, energy could change from one form to another. In the burning of wood, energy was released in the form of heat which could be used to convert water into steam, and the steam used to drive an engine--thereby producing mechanical energy; but the energy produced by the engine was the same energy that was released in the form of heat from the wood.

It might be advantageous at this point to consider, briefly, the distinction between energy and power, for, while these words are almost synonymous in common speech, such is not the case with the scientist. Energy is a quantity of work done, while power is a rate of doing work or of expending energy. Power is more than energy - - it is energy plus time.

Probably the most significant discovery on the road to nuclear fission was made by the French scientist, Becquerel, who noticed that photographic plates placed near materials containing uranium became fogged, and determined that the 'fogging' was produced by rays emitted from the uranium. About the same time, a young New Zealand scientist, Rutherford, began studying this phenomenon at McGill university in Montreal. He proved that the radiations were the result of radioactive substances undergoing spontaneous transformation, and that such transformations were produced as a result of an explosive disturbance within the atom. By observing radium atoms he later showed that the radiations were nuclei of helium atoms travelling at a high rate of speed.

In 1907 Rutherford moved to Manchester university and used these helium bullets to explore the structure of the atomic system. Just before he moved to Cambridge in 1918, Rutherford found that by arranging for helium bullets to enter a vessel containing nitrogen gas, still higher speed bullets of a different kind came out of the nitrogen atoms. More significant, however, he discovered that he was actually splitting up the nitrogen atoms -- and for the first time man was able to split atoms at will, but only singly. During the following years new discoveries were extended in many laboratories.

In 1939 Professor Hahn, a German chemist, found that one of the elements produced from uranium was 'barium'. Physicists concluded that uranium, on transformation, was split into two large fragments; and Frisch and Lise Meitner, in Copenhagen, not only proved this assumption but were able to show that the splitting of uranium atoms was accompanied by a very great release of energy. Einstein, Bohr, Joliot, and a host of others all contributed outstanding work, and for the first time physicists began to see the way clear to a large-scale release of nuclear or atomic energy. The world was on the brink of tapping the basic power source of the universe - - the source which has for a thousand million years provided the heat of the sun and stars.

The assault on the atom was temporarily interrupted, however, by the beginning of the second World War.

Chapter II

With the declaration of war in September 1939, nuclear research in most countries was relegated to a position of minor importance. This was particularly so in Great Britain where her scientists were required for work on problems of more immediate urgency connected with radar, magnetic mines, and other weapons of destruction or survival.

Top European scientists made their way to Britain and the United States in order to continue their freedom of research, and while little interest was displayed in the atomic field by the forces of freedom(1), the word that Germany was rounding up all available scientists and obtaining shipments of 'heavy water' from Norway, caused Allied scientists to reconsider the picture.

Efforts on the part of the Allies

Britain immediately rallied her best available scientists, and Dr. Frisch, who had recently escaped from Germany, suggested the possibility of producing a super-bomb by utilizing the tremendous energy now known to be stored within the atom: other British scientists agreed, and, while Professor Taylor of Cambridge calculated the damage

---

(1) J. D. Cockcroft: "Discovery and Development"; C.B.C. Atomic Energy Broadcasts, April-June 1947; p.4

such a bomb could cause, the general requirements were worked out. The Maud Committee was set up to look into the matter in more detail and after a year's work it appeared that, while such a bomb was feasible, a tremendous effort would be required over a period of years to make the dream a reality. Certainly a project of the estimated necessary dimensions could not be carried out in Britain which was already extended in war production and was within easy range of German bombers.

Early in the war arrangements had been made between Britain and the United States for the pooling of scientific information, and Professor Oliphant of Birmingham now visited the United States for an interchange of ideas and informal discussions concerning the new venture. He was successful in convincing the American scientists that the project was a practical one.

Late in 1941 a number of British scientists proceeded to the United States, and by the end of 1942 atomic research had progressed to the stage where it was predicted that success in the atomic race might spell early victory. Allied policy-makers, determined to avoid any chance of losing the fight for freedom, realized that the scientists must be listened to, and the project to build an atomic bomb was placed under the American War Department.

Executive responsibility was delegated to General Leslie R. Groves of the United States Army, and from the outset extraordinary secrecy and security measures were placed in effect. Key personnel

were isolated and the work was completely compartmentalized. No one was given more information than was essential for his particular job. Only a few highly-placed persons knew the entire story. To ensure super-secrecy, cooperation with Great Britain was severed and the scientists of Britain had no contact with the American project for a period of more than eighteen months. The attack on the atom became a major American effort which proceeded 'full speed ahead' under the driving personality of General Groves. Large engineering and chemical firms were called upon to assist in the undertaking; tremendous laboratories were established in Chicago, New York and California, and hundreds of scientists and technicians were employed.

Determined to leave no stone unturned it was decided to proceed with two of the many proposed methods for the separation of Uranium-235; and large-scale production plants, one using the electromagnetic method and one using the diffusion method of extraction, were built in Tennessee; and at Hanford, in the State of Washington, great production piles were erected for the production of 'plutonium'.

Later, when it became clear that the separation of uranium and the production of plutonium would be achieved, a group of theoretical physicsts was assembled, under Dr. Robt. Oppenheimer, to develop the bomb itself, and a bomb assembly plant for the utilization of the products of the Tennessee and Hanford factories was established in Los Alamos, New Mexico.

The Canadian government provided the indispensable raw material for the project, from the Eldorado mines at Great Bear Lake, and in addition, facilities for the work on one section of the project were provided by the building of a plant at Chalk River, Ontario.

In the middle of 1943 cooperation with Great Britain was restored and a team of British scientists, under Sir James Chadwick, contributed in various ways to the success of the enterprise as a whole. Work proceeded at a terrific pitch but it was not until July 1945 that the factories had delivered sufficient material to allow for a test explosion to ensure that laboratory calculations and measurements had been correct. On July 16th the first atomic bomb was detonated in the New Mexico desert, after an expenditure of approximately two billion dollars.

Efforts on the part of the Axis

With the surrender of Germany in 1945 and the entry of Allied research teams into Axis-controlled territory, scientific records indicated the extent to which Germany had progressed in the atomic fields; and scientists were amazed at the lack of progress.

S. A. Goudsmit of the United States research team has indicated that the German line of thought was as follows:

1. "An energy-producing uranium engine is more likely to succeed than a bomb.

2. "An atomic bomb is an uranium engine which gets out of control; therefore, the road towards a bomb leads via the construction of the uranium engine.

3. "An uranium engine is just as important as a bomb because it will make Germany economically self-supporting by the enormous power it may produce." (2)

As Mr. Goudsmit implies, the manufacture of a bomb of pure plutonium never entered their minds, or at least was not considered feasible and was not taken seriously. The idea of using a pile to produce plutonium, and to make a bomb out of that material, came to them only slowly--after the detailed radio descriptions of the U.S. bomb in August 1945.

The effectiveness of the curtain of secrecy imposed by the Americans on their atomic project is indicated by the statements of captured scientists that they believed they were ahead of the Allied effort along these lines.

Many explanations have been advanced for the lack of progress in Germany, but it would appear that the main reason was lack of nuclear scientists - - and, as a result, lack of vision. It further appears that when war broke out, most of the scientists still in the country were drafted, and only after consistent reverses on land and sea were they withdrawn from the armed forces and mobilized for research.

In addition, underground sabotage and allied bombing of

---

(2) "How Germany Lost the Race": Bulletin of the Atomic Scientists, Vol. 1, No. 7, March 15, 1946

Norwegian 'heavy water' plants cut their supply of this commodity; and allied bombing of German laboratories disrupted any concentrated effort which had been attempted. Due to their vulnerability, large-scale facilities were out of the question, and it has been estimated that the total expenditure on the atomic project was, perhaps, equivalent to some ten million dollars.(3)

---

(3) "How Germany Lost the Race": Bulletin of the Atomic Scientists, Vol. 1, No. 7, March 15, 1946

Chapter III

On April 12, 1945, approximately three months before the test explosion in the New Mexico desert, President Roosevelt, who had spared no effort to secure the earliest possible development of an atomic weapon, died suddenly at Warm Springs, Georgia. Fortunately, however, those responsible for the overall strategy and prosecution of the war had spent considerable time preparing plans for the eventful moment when the success of the project would be indicated; and on April 25th U. S. Secretary-of-War Henry L. Stimson, together with General Groves, visited the White House, to discuss atomic energy plans with the new President on whose shoulders the final responsibility for any decision would rest. While General Groves explained in detail the progress which had been made, Mr. Stimson discussed the broader aspects of the subject along the lines of the following memorandum.

1. "Within four months we shall probably have completed the most terrible weapon ever known.

2. "Although we have shared its development with the U. K., the U. S. at present controls the resources with which to construct and use it and no other nation could reach this position for some years.

3. "Nevertheless it is practically certain that we could not remain in this position indefinitely . . . it is extremely probable that in the future atomic bombs can be constructed by other nations in a much shorter time.

4. "In the future such a weapon may be constructed in secret and used suddenly with devastating power. With its aid even a very powerful unsuspecting nation might be conquered within a very few days by a very much smaller one . . .

5. "The world in its present state of moral advancement compared with its technical development would be eventually at the mercy of such a weapon. Modern civilization might be completely destroyed.

6. "To approach any world peace organization without an appreciation by the leaders of our country of the power of this new weapon would be unrealistic. No system of control heretofore considered would be adequate to control this menace. Both inside any particularly country and between the nations of the world, the control of this weapon would involve such thorough-going rights of inspection and internal controls as we have never heretofore contemplated.

7. "The question of sharing this weapon with other nations and, if so shared, upon what terms, becomes a primary question of our foreign relations. Our development of this weapon has placed a moral responsibility upon us for any disaster to civilization which it would further.

8. "On the other hand, if the problem of its proper use can be solved, we would have the opportunity to bring the world into a pattern in which peace and our civilization can be saved.

9. "As stated in General Groves' report, steps are under way looking toward the establishment of a select committee for recommending action to the executive and legislative branches of our Government." (4)

Acting on the suggestion in "9" above, Mr. Truman appointed what was known as the Interim Committee with Mr. Stimson as Chairman.

On May 7th, Germany surrendered unconditionally to General Eisenhower(5) and thus eliminated any necessity of utilizing atomic weapons against that country. Japan, however, was still in the war

---

(4) "The Decision to Use the Atomic Bomb" - H.L.Stimson: Readers Digest, March 1947, p. 12 (condensed from "The Decision to Use the Atomic Bomb": Harper's Magazine, February 1947).

(5) Canada Year Book--1947, p. 54.

and had to be dealt with.

On June 1st, when success in the production of an atomic bomb was imminent, and after considering the situation from all angles, the Committee adopted the following recommendations:

1. "The bomb should be used against Japan as soon as possible.

2. "It should be used on a dual target - - that is, a military installation or war plant surrounded by or adjacent to houses and other buildings most susceptible to damage, and

3. "It should be used without prior warning (of the nature of the bomb.)" (6)

It was therefore a completely advised President Truman who made plans for attending a meeting of the 'Big Three' in Potsdam on July 17th. We may rest assured that it was with little surprise that he received the report of the successful result of the test explosion on July 16th.

It is considered essential at this point to indicate that the above recommendations were not made maliciously or haphazardly, but only after considerable heart-searching and discussion; and the various proposals considered ranged from a technical demonstration to that of "military application best calculated to force surrender". All those on the Committee realized the destructive power of the bomb and the far-reaching significance of any decision or recommendation that they might make. Even at this point it was fully recognized that the future

---

(6) "The Decision to Use the Atomic Bomb"; Henry L. Stimson; Harper's Magazine - February 1947

outlawing of atomic weapons would be almost essential to the creation of a peaceful world - - as evidenced by 'Items 5 to 8' of Mr. Stimson's Memorandum outlined on the preceding pages.

An alternative suggestion was to provide a purely technical demonstration for the 'war lords' of Japan, but at this point there were no bombs available, and even after the test explosion in New Mexico there was no guarantee that a bomb would react to time detonation when dropped from an aeroplane. Nothing would have been worse than to have had a demonstration bomb prove to be a 'dud'. More important still was the fact that even after the Potsdam Declaration there were no bombs to spare.(7) Furthermore, in Mr. Truman's Report to the Nation on the Berlin Conference of August 9, 1945, he stated as follows:

> "I realize the tragic significance of the atomic bomb... Its production and its use were not lightly undertaken by this Government. But we knew that our enemies were on the search for it....and we knew the disaster which would come to this nation, to all peaceful nations, to all civilizations, if they had found it first"..... "Having found the bomb we used it...against those who have abandoned all pretense of obeying international laws of warfare. We have used it in order to shorten the agony of war, in order to save the lives of thousands and thousands of young Americans...." (8)

On receipt of advice of the success in the New Mexico desert, Mr. Truman and Mr. Churchill were now required to make a most important decision; regardless of the advice of the Interim Committee they had to

---

(7) "The Decision to Use the Atomic Bomb": Henry L. Stimson; Harper's Magazine, February 1947.

(8) President Truman's Report to the Nation on the Berlin Conference, August 9, 1945.

make up their own minds as to whether or not this terrible new weapon should be used now, in the event of Japan's refusal of an ultimatum for unconditional surrender. Plans had already been prepared for an invasion of the island of Kyushu on November 1st. and an invasion of Honshu in the spring of 1946 involving an estimated five million Allied men, with casualties expected to exceed a million.(9)

Furthermore, it has been indicated that the men who constructed the bomb now dedicated themselves to suppressing it, and that on the day of the explosion in New Mexico sixty-five members of the scientific staff of the University of Chicago petitioned the President of the United States to prevent the dropping of the bomb. It is further reported that five days later, two members of this group flew to Washington to appeal personally to James F. Byrnes (the President's personal representative on the Interim Committee) against the use of the bomb.(10)

After weighing the above considerations Mr. Truman and Mr. Churchill issued their Potsdam Declaration of July 26th calling upon Japan to surrender unconditionally or take the consequences of full application of our military power. On July 28th Premier Suzuki rejected the Potsdam ultimatum by announcing that it was . . . . . "unworthy of

---

(9) "The Decision to Use the Atomic Bomb": Henry L. Stimson; Harper's Magazine, February 1947.

(10) "The Bomb Secret is Out": Dr. R.M.Hutchins, Chancellor of the University of Chicago; The American Magazine, December 1947.

public notice."

With the rejection of the ultimatum, the only alternative was to proceed with 'full military power'; and for such a purpose the atomic bomb was the ideal weapon.

Five targets were selected of which four were approved, including Hiroshima and Nagasaki. Hiroshima was the headquarters of the Japanese Army defending southern Japan, while Nagasaki was a major seaport and the site of the Mitsubishi armament works.

On August 6th a B-29 flew over Hiroshima and dropped one atomic bomb. Three days later a second bomb was dropped on Nagasaki and the war was over.

Results of the Bomb

Many conflicting reports have been issued concerning the atomic bombing of the cities of Hiroshima and Nagasaki; but it appears to be generally accepted that in Hiroshima an area of four square miles was completely destroyed, with an additional three square miles seriously damaged. At Nagasaki, where the built-up area was less, two-and-a-half square miles were completely destroyed and an area of one-and-a-quarter square miles partially damaged. As regards personnel casualties, General Groves has estimated that 95,000 were killed and 140,000 injured at Hiroshima, and 42,000 killed and 40,000 injured at

Nagasaki. (11)

It is suggested that the large number of casualties at Hiroshima was the result of surprise, saturation, and unpreparedness; and that many of those who died later from injuries could have been saved by proper treatment and care, as it was reported that of 300 doctors more than 260 were unable to aid the injured, and of 2,400 nurses, orderlies and trained first-aid workers more than 1,800 were made casualties in e single instant. (12)

In regard to property damage, it was indicated in the U.S. Strategic Bombing Survey,(13) that at Hiroshima reinforced concrete buildings were rendered one-third useless up to 2,000 feet, brick multi-storey buildings were destroyed up to 5,000 feet; and one-storey brick buildings were completely destroyed up to 7,000 feet - - While at Nagasaki, of 21 reinforced concrete buildings located between a thousand and two thousand feet from the centre of the blast: 4 were destroyed, 10 would require major members rebuilt, 7 had walls and windows knocked out. (14)

Dr. H. L. Bowman, Director of the Physical Damage Division of the U.S. Strategic Bombing Survey, has estimated the effectiveness

---

(11) "The International Control of Atomic Energy - Scientific Information Transmitted to the U.N. Atomic Energy Commission; June 14, 1946 - Oct. 14, 1946; pp. 42-3. (See Appendix I).
(12) "Hearings: Senate Atomic Energy Committee, Part II; Dec. 6, 1945"; Dr. Philip Morrison, Asst. Professor of Physics, Cornell University.
(13) See Appendix II.
(14) " " "

of the bombs as equivalent to 167 '10-ton block busters' (a 10-ton 'block buster' contains about 5-tons of T. N. T.).

It is significant that all sources report that, apart from the damage caused by blast, tremendous damage was also caused by the energy released in the form of heat. John Hersey reports that the bomb ground heat at the centre of the explosion has been calculated to be approximately 6,000°C., while another source indicates that the buff-coloured sand of the New Mexico desert was fused to a green glass by the heat released from the test bomb. (15)

Alternatively, what would appear to be a most reliable source of information(16) reports as follows:

> "The steel-framed concrete anti-earthquake buildings at Hiroshima and Nagasaki survived remarkably well, even at a few hundred yards from the centre of the explosion. Even small shelters stood up against blast effect. It was also evident that quite thin clothing provided some protection against burns due to heat flash."

While we should not be too hasty in accepting the damage caused in Japan as a fair indication of the extent of damage which would be caused in a modern American city with adequate A.R.P. services, it is significant that the most serious effect was, of course, to the

---

(15) "Planning in Secret" - Prof. M.L.E. Oliphant; C.B.C. Broadcasts, April-June 1947.

(16) "Atomic Energy": Royal Institute of International Affairs--1948, p. 58 (taken from "The Effect of the Atomic Bombs at Hiroshima and Nagasaki: Report of the British Mission to Japan"; H. M. Stationery Office, London - 1946, p. 21).

people - - many of whom died from flash burns, while others withered away from the effects of radiation.

Sabotage and Espionage

In the course of recent military history it has been almost axiomatic that no country can engage in secret research or development without other countries obtaining information as to the nature of the project, and work on atomic energy during the second world war was certainly no exception. The fact that efforts were being made to produce atomic weapons was known to many countries.

While some countries concentrated on obtaining information concerning the advancement of rivals, other countries took preventive action through means of sabotage. When the Norwegians realized that Germany was obtaining 'heavy water' from the Rhukan plant, they smuggled nine local young men out of Norway to report to the British authorities. In October of 1942 four of these young Norwegians parachuted back into their home country, and were joined in February 1943 by the other five who had been specially trained in sabotage. A raid was carried out on the 'heavy water' plant and supplies to Germany were cut off for a period of nine months - - after which it was again put out of action by an American strategic bombing force.(17)

---

(17) "The Atomic Age Opens": Pocket Books of Canada Limited, Montreal, Canada - p. 150

As to German efforts to obtain information concerning the American project, an Associated Press dispatch of August 9, 1945 told a 'delayed story' of five German spies who had been sent to the United States to learn of atomic bomb development - - but who had been intercepted and persuaded to double-cross the Nazis and work as counter-espionage agents; and that as a result of American alertness no sabotage of any kind was committed in an atomic plant.(18) This does not mean, however, that all Nazi agents were intercepted or that there were no 'leaks' in security.

Perhaps most surprising of all was the information from Canada that Russia (one of the 'Big Three') had set up within this country a network of spy systems, and specifically requested "documentary materials on the atomic bomb".(19) More important still was the fact that these 'rings' were operated or directed from the Russian Embassy in Ottawa.(20) While the practice of espionage is acknowledged as necessary, it was certainly a shock to find that it was being carried on subversively by one's allies under the cloak of diplomatic immunity. This amounts to treachery.

The Royal Commission, set up to investigate these subversive activities, on June 27, 1946 reported the following facts:

1. There were several secret Russian espionage organizations at work in Canada (as in other countries) stemming from the Embassy in Ottawa.

---

(18) "The Atomic Age Opens": Pocketbooks of Canada Ltd., Montreal, p.150
(19) Report of the Royal Commission--June 27,1946, p. 89
(20) " " " " " " " p. 13

2. Only the military system (operating under the Military Attache) was exposed.

3. This 'ring' alone was feeding to Moscow "a very great deal of secret information".

4. Secret information passed on by Canadians to the Russians included:

   (a) The wiring diagram of the V.T. Fuse.

   (b) Samples of two types of uranium were delivered.

   (c) Radar information.

   (d) All Canada's anti-submarine information was compromised.

   (e) Much 'top secret' political information.(21)

5. Evidence that the Comintern was still directing a world communist movement.

6. Russian agents have been active in Canada for as long as 22 years.

7. A Federal member of Parliament, and the National Organizer of the Labour-Progressive Party of Canada were two of the main recruiting agents.

8. The Russian Ambassador had no part in the improper spy activities directed by Embassy officials.

9. Every effort was made to accustom young Canadians to the ethics of conspiracy.

10. That Fred Rose and Sam Carr (the two main recruiting agents) recruited at least fourteen agents (identified) and that seventeen members of the Embassy staff were engaged in these espionage activities.

---

(21) "Ottawa Citizen" (newspaper) - July 16, 1946.

Some indication of the effectiveness of the operations of this military spy ring in Canada may be obtained from the fact that in August 1945 the Russian Military Attache to Canada (by whom the 'ring' was directed) was awarded the 'Order of the Red Banner' and the 'Order of the Red Star' for his "good organization work". The Chief of the Russian General Intelligence congratulated the Military Attache on these awards, and added: "I wish you further success in your honourable work".(22)

---

(22) Report of the Royal Commission - June 27, 1946, p. 95

Chapter IV

The previous chapters indicate that, when the production of an atomic bomb was imminent, the earliest official thinking accepted the facts that the United States held only a temporary monopoly on the means of production, and that world peace depended upon international control of the substantial sources of atomic energy.

On August 8, 1945 (the third day after the bombing of Hiroshima) Mr. Truman signed for the United States the formal document which ratified the Charter of the United Nations; and by this action the United States agreed to unite with other nations "to maintain international peace and security and to ensure, by the acceptance of principles and the institution of methods, that armed force shall not be used, save in the common interest; and to employ international machinery for the promotion of the economic and social advancement of all peoples." (23)

On August 9th, in Mr. Truman's Report to the Nation on the Berlin Conference, he stated as follows:

> "The atomic bomb is too dangerous to be loose in a lawless world. That is why Great Britain and the United States, who have the secret of its production, do not intend to reveal the secret until means have been found to control the bomb, so as to protect ourselves and the rest of the world from the danger of total destruction....."

---

(23) Preamble to the United Nations Charter.

> ".....We must constitute ourselves trustees of this new force....to prevent its misuse.... It is an awful responsibility which has come to us".....

In the months following President Truman's speech of Aug. 9th, in which he declared a 'protective trusteeship' over the methods of large-scale atomic fission, realization of the action necessary to establish international control developed slowly. Here was a discovery more revolutionary than gunpowder, and due to its highly technical nature and unprecedentèd destructive power it appeared that past conceptions of national sovereignty would require to be altered, in order to bring this weapon under control.

In his speech of October 3rd, 1945, Mr. Truman stated that:

> "....in international relations, as in domestic affairs, release of atomic energy constitutes a new force too revolutionary to consider in the framework of old ideas. We can no longer rely on the slow progress of 'time' to develop a program of control among nations....The hope of civilization lies in international arrangements, looking, if possible, to the renunciation of the use and development of the atomic bomb, and directing and encouraging the use of atomic energy and all future scientific information for peaceful and humanitarian ends. The difficulties of working out such arrangements are great. The alternative to overcoming these difficulties, however, may be a desperate armament race which might well end in disaster...
>
> "I, therefore, propose to initiate discussions, first with the associates of this discovery, Great Britain and Canada, and then with other nations....in an effort to work out arrangements covering the terms under which international collaboration and exchange of scientific information might safely proceed."

Accordingly, invitations were issued to Prime Minister Atlee of Great

Britain and Prime Minister Mackenzie King of Canada to visit Washington at an early date for a 'Three Nation Conference' on the problems of atomic energy.

In the meantime, on October 27th, 1945, President Truman in his Navy Day address took the opportunity to state the fundamentals of the 'foreign policy' of the United States as follows:

1. "We seek no territorial expansion or selfish advantage. We have no plans for aggression against any other State, large or small. We have no objective which need clash with the peaceful aims of any other nation.

2. "We believe in the eventual return of sovereign rights and self-government to all peoples who have been deprived of them by force.

3. "We shall approve no territorial changes in any friendly part of the world unless they accord with the freely expressed wishes of the people concerned.

4. "We believe that all peoples who are prepared for self-government should be permitted to choose their own form of government by their own freely expressed choice, without interference from any foreign source. That is true in Europe, in Asia, in Africa, as well as in the Western Hemisphere.

5. "By the combined and cooperative action of our war allies, we shall help the defeated enemy states establish peaceful democratic governments of their own free choice. And we shall try to attain a world in which Nazism, Fascism, and military aggression cannot exist.

6. "We shall refuse to recognize any government imposed upon any nation by the force of any foreign power. In some cases it may be impossible to prevent forceful imposition of such a government. But the United States will not recognize any such government.

7. "We believe that all nations should have the freedom of the seas and equal rights to the navigation of boundary rivers and waterways and of rivers and waterways which pass through more than one country.

8. "We believe that all states which are accepted in the society of nations should have access on equal terms to the trade and the raw materials of the world.

9. "We believe that the sovereign states of the Western Hemisphere, without interference from outside the Western Hemisphere, must work together as good neighbours in the solution of their common problems.

10. "We believe that full economic collaboration between all nations, great and small, is essential to the improvement of living conditions all over the world, and to the establishment of freedom from fear and freedom from want.

11. "We shall continue to strive to promote freedom of expression and freedom of religion throughout the peace-loving areas of the world.

12. "We are convinced that the preservation of peace between nations requires a United Nations Organization composed of all the peace-loving nations of the world who are willing jointly to use force if necessary to insure peace."

Prime Ministers Atlee and King arrived in Washington on November 10th, 1945, and accordingly met with Mr. Truman to consider the possibility of international action:

(a) "to prevent the use of atomic energy for destructive purposes,

(b) to promote the use of recent and future advances in scientific knowledge, particularly in the utilization of atomic energy, for peaceful and humanitarian ends."(24)

---

(24) The Three-Nation Agreed Declaration, Washington, D.C. Nov.15 '45

In the Three-Nation Agreed Declaration on atomic energy, issued from Washington on November 15th, 1945, it was recommended:

> "that at the earliest practicable date a (atomic energy) Commission should be set up, under the United Nations Organization, to prepare recommendations for submission to the Organization.
>
> "The Commission should be instructed to proceed with the utmost dispatch and should be authorized to submit recommendations from time to time dealing with separate phases of its work.
>
> "In particular the Commission should make specific proposals:
>
> (a) "For extending between all nations the exchange of basic scientific information for peaceful ends,
>
> (b) "For control of atomic energy to the extent necessary to ensure its use only for peaceful purposes,
>
> (c) "For the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction,
>
> (d) "For effective safeguards by way of inspection and other means to protect complying states against the hazards of violations and evasions." (25)

The hope was also expressed that

> "every nation will realize more urgently than before the overwhelming need to maintain the rule-of-law among nations and banish the scourge of war from the earth."

It was also stated in the 'Declaration' that the question of the disclosure of detailed information concerning the industrial application of atomic energy had been considered, but that the military exploitation

---

(25) The Three-Nation Agreed Declaration, Washington D.C., Nov.15 '45

depended in a large part upon the same methods and processes as those required for industrial use. As a result, therefore, it was decided that the dissemination of the specialized information regarding the release of atomic energy should not be undertaken before effective, reciprocal, and enforcible safeguards acceptable to all nations, had been devised.

On December 16, 1945, the Foreign Ministers of the Soviet Union, the United Kingdom, and the United States, met in Moscow in accordance with the decision of the Yalta and Berlin conferences, and the proposals contained in the Three-Nation Agreed Declaration were introduced. While the discussions at this Meeting were on an informal and exploratory basis, a proposal was drafted for the establishing of a United Nations Commission on Atomic Energy. It was recommended that membership of the Commission consist of a representative from each of the States on the Security Council, plus Canada when that state was not a member of the Security Council; and the three governments represented at the Moscow Meeting invited France, China and Canada to join with them in submitting the proposal to the Assembly of the United Nations.

On January 10, 1946, the first formal Session of the General Assembly of the UNO was held in London; and one of the items listed on the agenda was the Resolution drafted at Moscow. On January 24th the Resolution authorizing the Commission on Atomic Energy was approved by the General Assembly with no dissenting vote.

Even before the appointment of the UNO Atomic Energy Commission, it had been abundantly clear that any satisfactory plan for control must be not only capable of preventing disaster from the use of atomic energy as a destructive weapon, but also effective in promoting its use for beneficial development. As a result, immense amounts of work and discussion had been devoted to the subject by the leading statesmen, international jurists, and scientific experts of many countries.

Following up the statement of Secretary Byrnes, at a Meeting of the General Assembly on January 24, 1946, at which he cautioned that the solution for control was the common responsibility of all nations, the United States took the lead in accepting its share of responsibility.

Official U. S. Plan

After due consideration of the Acheson-Lilienthal Report, the outlines of a workable plan of international control were produced; and on June 14, 1946 at the First Meeting of the United Nations Atomic Energy Commission, New York City, the United States Government, through Mr. Bernard M. Baruch, proposed to the U.N.A.E. Commission:

> "The creation of an International Atomic Development Authority, to which should be entrusted all phases of the development and use of atomic energy, starting with the raw material and including:
>
> 1. "Managerial control or ownership of all atomic energy activities potentially dangerous to world security.

2. "Power to control, inspect, and license all other atomic activities.

3. "The duty of fostering the beneficial uses of atomic energy.

4. "Research and development responsibilities of an affirmative character intended to put the Authority in the forefront of atomic knowledge and thus enable it to comprehend, and therefore to detect, misuse of atomic energy. To be effective, the Authority must itself be the world's leader in the field of atomic knowledge and development and thus supplement its legal authority with the great power inherent in possessing leadership in knowledge."

This was the basic proposal, and in order to put it into effect the United States indicated that it was prepared, under certain conditions (as indicated in the Three-Nations Agreed Declaration) to make the following contribution toward "the end we seek":

"When an adequate system for control of atomic energy, including the renunciation of the bomb as a weapon, has been agreed upon and put into effective operation and condign punishments set up for violations of the Rules of Control, which are to be stigmatized as international crimes, we propose that:

1. "manufacture of atomic bombs shall stop;

2. "existing bombs shall be disposed of pursuant to the terms of the Treaty; and

3. "the Authority shall be in possession of full information as to the 'know how' for the production of atomic energy."

In order to leave no stone unturned the United States Representative went even further and submitted for consideration the following fundamental features of a plan which might transmit the basic proposals into effective action:

1. "General: The Authority should set up a thorough plan for control of the field of atomic energy, through various forms of ownership, dominion, licenses, operation, inspection, research and management by competent personnel.

2. "Raw Materials: The Authority should have as one of its earliest purposes to obtain and maintain complete and accurate information on world supplies of uranium and thorium and to bring them under its dominion. The precise pattern of control for various types of deposits of such materials will have to depend upon the geological, mining, refining and economic facts involved in different situations.

   "The Authority should conduct continuous surveys so that it will have the most complete knowledge of the world geology of uranium and thorium.

3. "Primary Production Plants: The Authority should exercise complete managerial control of the production of fissionable materials. This means that it should control and operate all plants producing fissionable materials in dangerous quantities and must own and control the product of these plants.

4. "Atomic Explosives: The Authority should be given sole and exclusive right to conduct research in the field of atomic explosives.

5. "Strategic Distribution of Activities and Materials: The activities entrusted exclusively to the Authority because they are intrinsically dangerous to security should be distributed throughout the world. Similarly, stockpiles of raw materials and fissionable materials should not be centralized.

6. "Non-Dangerous Activities: A function of the Authority should be promotion of the peacetime benefits of atomic energy.

7. "Definition of Dangerous and Non-Dangerous Activities: Although a reasonable dividing-line can be drawn between dangerous and non-dangerous activities, it is not hard-and-fast. Provision should, therefore, be made to assure constant re-examination of the questions and to permit revision of the dividing-line as changing conditions and new discoveries may require.

8. "Operations of Dangerous Activities: Any plant dealing with uranium or thorium after it once reaches the potential of dangerous use must be not only subject to the most rigorous and competent inspection by the Authority, but its actual operation shall be under the management, supervision and control of the Authority.

9. "Inspection: By assigning intrinsically dangerous activities exclusively to the Authority, the difficulties of inspection are reduced. If the Authority is the only agency which may lawfully conduct dangerous activities, then visible operation by others than the Authority will constitute an unambiguous danger signal. Inspection will also occur in connection with the licensing functions of the Authority.

10. "Freedom of Access: Adequate ingress and egress for all qualified representatives of the Authority must be assured.

11. "Personnel: The personnel of the Authority should be recruited on a basis of proven competence but also so far as possible on an international basis.

12. "Progress by Stages: Once a charter for the Authority has been adopted, the Authority and the system of control for which it will be responsible will require time to become fully organized and effective. The plan of control will, therefore, have to come into effect in successive stages. These should be specifically fixed in the Charter or means should be otherwise set forth in the Charter for transitions from one stage to another, as contemplated in the Resolution of the United Nations Assembly which created this Commission.

13. "Disclosures: In the deliberations of the United Nations Commission on Atomic Energy, the United States is prepared to make available the information essential to a reasonable understanding of the proposals which it advocates. Further disclosures must be dependent, in the interests of all, upon the effective ratification of the Treaty. When the Authority is actually created, the United States will join the other nations in making available the further information essential to that organization for the performance of its functions. As the successive stages of international control are reached, the United States will be prepared to yield to the extent required by each stage, national control of activities in this field to the Authority.

14. "International Control: There will be questions about the extent of control to be allowed to national bodies, when the Authority is established. Purely national authorities for control and development of atomic energy should, to the extent necessary for the effective operation of the Authority, be subordinate to it. This is neither an endorsement nor a disapproval of the creation of national authorities. The Commission should evolve a clear demarcation of the scope of duties and responsibilities of such national authorities."

Mr. Baruch also warned that in creating an international organization adequate to control the development and use of atomic energy, States should renounce the use of atomic weapons, stigmatize violations of the Rules as international crimes, and fix condign and certain penalties for:

1. "illegal possession or use of an atomic bomb,

2. "illegal possession, or separation, of atomic materials suitable for use in an atomic bomb,

3. "seizure of any plant or other property belonging to or licensed by the Authority,

4. "willful interference with the activities of the Authority (this would include interference with ingress or egress of inspectors),

5. "creation or operation of dangerous projects in a manner contrary to, or in the absence of, a license granted by the international control body".

As a further caution Mr. Baruch pointed out that:

> "there must be no veto to protect those who violate their solemn agreement not to use or develop atomic energy for destructive purposes",

and added that:

> "before a country is ready to relinquish any winning weapons it must have more than words to reassure it. It must have a guarantee of safety, not only against offenders in the atomic area but against the illegal users of other weapons: bacteriological, biological, gas - perhaps - why not? - against war itself".

The following statements by the members of the Commission indicate the views of the various Governments represented, towards the U. S. Plan.

General McNaughton (Canada),

> "The Canadian Government welcomes this approach to the problems before the Commission, and supports the principles upon which these proposals have been based."

General McNaughton also stated at this time, that

> "the question of enforcement-action arising out of these recommendations, may, of course, involve the 'veto'. The Canadian attitude towards the veto power of the five permanent members in the Security Council is that we have never liked it. We accepted it at San Francisco because it seemed the only basis on which the great Powers could come together to set up the United Nations." (26)

Sir Alexander Cadogan (United Kingdom),

> "His Majesty's Government in the United Kingdom warmly welcomes the statement of the United States representative and is grateful to the United States Government for providing so broad and constructive a basis for the Commission's work. ....For its part, however, H.M. Government is glad to take the United States scheme as a basis for consideration, since in many of its essentials it is in accord with the lines on which it had itself been approaching the problem. It does not wish, therefore, to put forward an alternative scheme, but will apply its own ideas in the discussion of the United States scheme." (27)

Mr. Quo Tai-Chi (China),

> "It (Mr. Baruch's Statement) contains proposals of an eminently practicable and reasonable character, and furnishes a constructive basis for our task.

---

(26) Official Records of the Second Meeting of the Atomic Energy Commisaion - June 19, 1946

(27) ibid.

"I wish to express, on behalf of my Government, our appreciation of the great contribution that Mr. Baruch has already made....

"My Government is in full accord with the United States proposal that 'there must be no veto to protect those who violate their solemn agreement not to develop or use atomic energy for destructive purposes.'" (28)

Mr. Sandoval Vallarta (Mexico);

"In the name of the Mexican Delegation I wish to state first that explicit instructions have been received from my Government to approve the elimination of the veto power as far as the questions coming under the jurisdiction of the Atomic Energy Commission are concerned.....

"Further, I wish to mention that, in general, the proposals stated by Mr. Baruch in his speech of 14th June are acceptable to Mexico, although the question of managerial control will still require separate and careful consideration. (29)

U.S.S.R. Proposals (30)

Following the expressed approval of the United States Plan by the Mexican Delegate, Mr. Gromyko speaking on behalf of the Soviet Union, drew attention to the 'Terms of Reference of the Commission' stated in "The Resolution of the General Assembly of the United Nations Establishing the Commission on Atomic Energy, London, January 24, 1946" as follows:

(a) "for extending between all nations the exchange of basic scientific information for peaceful ends;

(b) "for control of atomic energy to the extent necessary to ensure its use only for peaceful purposes;

---

(28) Official Records of the Second Meeting of the Atomic Energy Commission - June 19, 1946
(29) ibid
(30) ibid

(c) "for the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction;

(d) "for effective safeguards by way of inspection and other means to protect complying states against the hazards of violations and evasions."

and objected to the continued production (by the U.S.) of weapons of mass destruction, on the basis that such action was

> "likely to intensify mistrust between States and to keep the peoples of the world in a continual anxiety and uncertainty."

He further stated that,

> "The Soviet Delegation proposes that consideration be given to the question of concluding an international convention prohibiting the production and employment of weapons based on the use of atomic energy for the purpose of mass destruction. The object of such a convention should be the prohibition of the production and employment of atomic weapons, the destruction of existing stocks of atomic weapons and the condemnation of all activities undertaken in violation of this convention.... This act should be followed by other measures aiming at the establishment of methods to ensure the strict observance of the 'terms of obligation' contained in the above-mentioned convention, the establishment of a system of control over the observance of the convention, and the taking of decisions regarding the sanctions to be applied against the unlawful use of atomic energy",

and referred to the present agreement for the prohibition of the use of gas in warfare.

After stating (briefly as above) the general attitude of the U.S.S.R. with regard to the tasks and character of the activities of the Atomic Energy Commission, Mr. Gromyko submitted for consideration by the Commission two concrete proposals, which:

"in the opinion of the Soviet Government, may constitute a basis for the adoption . . . of recommendations to the Security Council and play an important role in the strengthening of peace."

These proposals were as follows:

1. "concerning the conclusion of an international convention prohibiting the production and employment of weapons based on the use of atomic energy for the purpose of mass destruction.

2. "concerning the organization of the work of the Atomic Energy Commission."

and expanding on Proposal (1) Mr. Gromyko submitted the following eight-points as the 'text' of the first Proposal:

"Article 1. The high contracting parties solemnly declare that they are unanimously resolved to prohibit the production and employment of weapons based on the use of atomic energy, and for this purpose assume the following obligations:

(a) not to use atomic weapons in any circumstances whatsoever;

(b) to prohibit the production and storing of weapons based on the use of atomic energy;

(c) to destroy, within a period of three months from the day of the entry into force of the present convention, all stocks of atomic energy weapons whether in a finished or unfinished condition.

"Article 2. The high contracting parties declare that any violation of article 1 of the present convention is a most serious international crime against humanity.

"Article 3. The high contracting parties shall, within a period of six months from the day of the entry into force of the present convention, pass legislation providing severe penalties for violators of the statutes of the present convention.

"Article 4. The present convention shall be of indefinite duration.

"Article 5. The present convention shall be open for the adhesion of any State whether a Member or Non-Member of the United Nations.

"Article 6. The present convention shall come into force after its approval by the Security Council and after the ratification and delivery of ratification documents to the Secretary-General for safekeeping by one half of the signatory States, including all the Member States of the United Nations named in Article 23 of the Charter of the Organization.

"Article 7. After the entry into force of the present convention it shall be binding on all States whether Members or Non-Members of the United Nations.

"Article 8. The present convention, of which the Russian, Chinese, French, English and Spanish texts shall be authentic, is drawn up in one copy and shall be kept in the archives of the Secretary-General of the United Nations. The Secretary-General shall communicate certified copies to all the parties to the convention."

And in relation to his second Proposal Mr. Gromyko proposed that the following Committees should be set up:

"Committee for the exchange of scientific information

"This committee shall be set up for the purpose of carrying out the aims indicated in point (a) of Item 5 of the resolution of the General Assembly of 24 January 1946.

"The tasks of the committee shall include the elaboration of recommendations concerning practical measures for organizing the exchange of information:

(1) "concerning the contents of scientific discoveries connected with the splitting of the atomic nucleus and other discoveries connected with obtaining and using atomic energy;

(2) "concerning the technology and the organization of technological processes for obtaining and using atomic energy;

(3) "concerning the organization and methods of industrial production of atomic energy and the use of this energy;

(4) "concerning the forms, sources and locations of the raw materials necessary for obtaining atomic energy."

"Committee for the prevention of the use of atomic energy to the detriment of mankind.

"This committee shall be set up to carry out the aims set forth in points (b), (c) and (d) of Item 5 of the resolution of the General Assembly. 24th Jan. '46 (See pp.35-6)

"The task of the committee shall be to elaborate recommendations:

(1) "concerning the drafting of an international convention for outlawing weapons based on the use of atomic energy and prohibiting the production and use of such weapons and all other similar kinds of weapons capable of being used for mass destruction;

(2) "concerning the quest for and establishment of measures to prohibit the production of weapons based on the use of atomic energy and to prevent the use of atomic weapons and all other main kinds of weapons capable of being used for mass destruction;

(3) "concerning the measures, systems and organization of control over the use of atomic energy and over the observance of the terms of the above-mentioned international convention for the outlawing of atomic weapons;

(4) "concerning the elaboration of a system of sanctions to be applied against the unlawful use of atomic energy.

In concluding, Mr. Gromyko stated as follows:

> "Attempts to undermine the principles, as established by the Charter, of the activity of the Security Council, including unanimity of the members of the Security Council in deciding questions of substance, are incompatible with the interests of the United Nations, who created the international organization for the preservation of peace and security. Such attempts must be rejected."

(This is obviously a rejection of Mr. Baruch's proposal to eliminate the veto on questions concerning atomic energy.)

On June 25, 1946, at the Third Meeting of the Atomic Energy Commission, other members of the Commission indicated their view towards the United States Plan and the U.S.S.R. Proposals, as follows:

Mr. Parodi (France)

> "The French Delegation is bound to say that it considers this Plan (U.S. Plan) as the most generous and broadminded contribution which could have been placed before the Commission at the beginning of its proceedings, by the only country which is capable of manufacturing the atomic weapon and which possesses reserves of that weapon . . . France, being profoundly desirous that the atomic bomb should never be used again, supports it in principle....
>
> "....the French Delegation considers that a convention eliminating the atomic weapon should not only possess, as Mr. Gromyko has rightly emphasized, the character of a solemn engagement, but, moreover, that it essentially requires that its rigorous application be absolutely guaranteed." (31)

Mr. Lange (Poland)

> "In order to restore confidence among nations, the peoples of the world must know one thing. They must know that atomic

---

(31) Official Records of the Third Meeting of the Atomic Energy Commission, June 25, 1946.

"bombs are no longer being produced. They must know that such bombs as are available have been destroyed....

"The proposal of such measures have been laid before us by the Representative of the Soviet Union....

"In the name of the Government of Poland, I want to give my full support to the draft convention proposed (by the U.S.S.R.). It contains all the basic ideas which were brought forward, in the name of our Government, to Mr. Modzelewski at the January Meeting of the General Assembly."(32)

Mr. van Kleffens (Netherlands)

"Two plans which, fortunately seem by no means incompatible, have been placed before us....

".....we do not propose, on our part, to submit a plan of our own. We believe that the American and Russian plan provide us with the necessary starting point, and we do not want to risk the creation of confusion by presenting a different plan." (33)

Col. Khalifa (Egypt)

"We of the Egyptian Delegation think that the American Plan provides an excellent basis for discussion and agree in principle with what it prescribes....

"....we.....endorse with all power the American proposal... concerning this 'veto' question." (34)

Dr. H. V. Evatt (Australia) Chairman of the Atomic Energy Commission:

"Before closing this general discussion, I wish to state the views of Australia and conclude with a practical proposal for a working committee of this Commission....

".....the Australian Government is in general agreement with

---

(32) Official Records of the Third Meeting of the Atomic Energy Commission, June 25, 1946
(33) ibid
(34) ibid

"the proposal of Mr. Baruch....

"... To sum up, the Australian Government favours a general international convention which will:

1. "vest in an international authority control of all rights in raw materials, processes, plants and the products of plants for the exploitation of all forms of atomic energy, leaving however as much freedom as possible to national and private research and other activity where this is not dangerous to international security.

2. "establish a system of effective control and inspection along the lines indicated by Mr. Baruch.

3. "provide that, when the controls and safeguards have been effectively organized, the manufacture of atomic weapons and the stockpiling of material for military purposes cease and that existing stocks of bombs be dismantled.

4. "provide that all information of importance for the peaceful use of atomic energy shall be made available to all nations through exchange of personnel and through the free and open publication, notwithstanding that some such information may be of some slight military significance.

5. "accelerate all development for converting atomic energy to peaceful purposes.

6. "provide that there shall be a just and equitable sequence for the implementation of all the provisions of the convention, including those I have referred to, and on acceptance by each of the parties to the convention, of all its obligations and sanctions." (35)

---

(35) Official Records of the Third Meeting of the Atomic Energy Commission, June 25, 1946

On July 1st, 1946 Mr. Evatt (Australia) summed up the statements and discussions of the members of the Atomic Energy commission as follows:

> "Examination of the statements made by the members of the Atomic Energy Commission suggests that most nations are agreed in principle that,
>
> (a) "there should be established some form of international atomic energy authority;
>
> (b) "all nations should accept such restrictions of their national rights in the field of atomic energy as may be necessary to ensure that atomic weapons are eliminated and the peaceful uses of atomic energy are developed and made available." (36)

From a further study of the statements by the members of the Atomic Energy Commission it will be found that approval in principle of the United States Plan was voiced by Canada, the United Kingdom, Brazil, China, Mexico, France, Australia and Egypt; while China, Canada, Egypt and Mexico also gave specific approval of the United States suggestion concerning the 'veto'. The U.S.S.R. on the other hand made no direct reference to the United States Plan and implied that it was against the relaxing of the 'veto'. The Netherlands' representative did not state a choice between the United States Plan and the Soviet Proposals. The representative for Poland endorsed the Soviet proposals.

So far we have considered the official plan put forward by the United States and the proposals of the U.S.S.R., together with the

---

(36) Tentative Proposals by Chairman of Atomic Energy Commission - Herbert V. Evatt; July 1, 1946.

suggestions of Mr. Evatt on behalf of Australia; and while a short survey such as this cannot completely outline all the various plans, both official and unofficial, it is considered that some space should be allotted to a few of the more important 'unofficial' plans.

The Carnegie Plan (37)

The main suggestions of the Carnegie Draft Convention for the Utilization and Control of Atomic Energy, published in June 1946, were as follows:

(a) "An international atomic energy commission should be appointed by the Security Council and the General Assembly.

(b) "Decisions in the Commission should be reached by a majority vote.

(c) "The Commission should enjoy full privileges and immunities, and should not only have extensive powers of control and inspection, but also should promote the development of atomic energy for peaceful purposes.

(d) "While the Commission could own and operate its own plants, national atomic energy commissions should be set up by the signatory States.

(e) "National commissions would maintain the right of all aspects of production of atomic energy within their territories, but would be answerable to the international commission.

(f) "The international commission to have full powers of inspection in all the signatory States at all stages.

---

(37) International Conciliation - Sept. 1946 - No. 423 - p.408

(g) "The Security Council could authorize any State to manufacture, or hold stocks of, atomic weapons and fissionable materials.

(h) "If any infringement of the Convention was suspected, an immediate investigation would be carried out and the Security Council would decide what measure should be taken.

It will be noticed that the Carnegia Plan does not raise the question of the 'veto' - nor does it provide for the ownership of all sources of uranium or thorium by the international commission.

Yale Study Group (38)

In the Proposals of the Yale Study Group emphasis was laid on the fact that no suitable system of control could be achieved by any means which allowed a continuance of the American advantage in the field of atomic energy. Furthermore, after consideration of the present balance-of-power, it was concluded that any limitation on national sovereignty could be taken as a 'short term policy' only. (ultimate international control might take years to achieve).

They proposed automatic and obligatory action against any nation using an atomic weapon except as authorized by the Security Council. It was further proposed that there should be drastic limitation, with inspection, of atomic armaments. The suggestion of a limitation of atomic weapons was put forward with the view that with such weapons in existence in many countries, an aggressor would be deterred from

---

(38) "Atomic Energy"; Royal Institute of International Affairs--1948

initiating an atomic war by the inevitability of retaliation.

Chicago University Plan (39)

The Chicago University Plan provided for the immediate destruction or dis-assembly of all existing atomic weapons and the handing over of all fissionable material to an administrative commission. It further demanded the complete prohibition, for the time being, of all mining, refining or manufacture of fissionable materials. It further demanded the closing down of existing installations until a system of licensing and control was established. The future manufacture, possession or use of atomic weapons was prohibited, except as authorized by the Security Council for reprisal against a State that violated the Convention.

It further provided for the establishment of 3 commissions:

1. The Atomic Energy Commission (a continuation of the present Commission)
2. An Administrative Commission (to own or operate all Mines and Installations concerned with the production of fissionable materials)
3. An Inspection Commission (to have full powers of survey and inspection in all stages)

It further provided that a violator of the provisions of the Convention should not only be punishable by his own State, but could,

---

(39) International Conciliation - Sept.1946 - No. 423 - p. 397

if deemed necessary, be indicted before a United Nations Criminal Court, similar to that proposed at Geneva in 1937.

Of the many 'plans' presented it is obvious that the two most important were the official United States Plan and the Proposals of the Soviet representative; and at first glance it might appear that the alternative proposals of these two countries are in total disagreement. Such is not the case, however, as there is a considerable area of agreement. Both countries indicate that atomic weapons should be outlawed. Both agree that an international organization should be set up to control atomic power. Both agree that this body should have the right of inspection. There is agreement also on the fact that there must be a definite means of punishing violators. Neither the United States Plan nor the Soviet Proposals calls for the creation of a World State or even a World Government, and in the final analysis both countries envisage control by means of a Treaty.

What, then, are the main points of disagreement?

1. While both countries insist that the atomic bomb be outlawed, the U. S. Plan states that such action should be taken only after all other issues are decided; whereas the U.S.S.R. demands that this action be taken immediately, before other issues are considered.

2. The U. S. Plan proposes,

> "that the atomic Authority should set up a thorough plan for control of the field of atomic energy through various forms of ownership, dominion, licenses, operations, inspection, research and management by competent personnel" (refer to 2nd page of Official U.S.Plan).

whereas the U.S.S.R. insists that the powers of the Authority should be so specifically defined as to allow no possibility of this body dictating peactime use of atomic energy to each country and thereby interfering with the industry and economic life of such nations.

3. The U. S. insists on the elimination of the 'veto' in respect to questions of atomic energy, particularly matters of violation placed before the Security Council; while Russia insists on the maintenance of this privilege accorded to the permanent members of the Security Council.

From the above-mentioned points of disagreement it would appear that the Soviet proposals would tend to provide a 'negative' function in outlawing the use of atomic weapons; whereas the American proposals are 'positive'. The American Plan includes all the advantages of the Russian proposals and, in addition, provides the added security of more complete control.

What, then, are the reasons for disagreement on these three main points?

As regards the stage at which the bomb should be outlawed, the Russians indicate that international control cannot be seriously considered while one country continues to produce atomic weapons.

The United States, on the other hand, maintains that it cannot be expected to give up this weapon until a definite plan of control has been ratified by all member States.

As regards powers accorded to the Authority, Mr. Gromyko has indicated that unlimited control would mean unlimited interference into the economic life of nations using atomic energy for non-military purposes, and therefore the 'rights and duties' of the control Authority should be strictly regulated.(40) Mr. Gromyko goes further and suggests that if complete power were accorded to the atomic control organ, that that organ could decree how an entire atomic railroad system was to be run or whether it would run at all; or, in the last analysis, if a factory should use electricity produced by an atomic energy power-plant, the control organ could not only demand change of ownership of the factory, but decide who was to buy the factory's products.(41)

To sum up, Mr. Gromyko states:

---

(40) "Russian Plan to Control the Atomic Bomb"; Magazine Digest, June 1947.
(41) ibid.

> "I deem it necessary to emphasize that the granting of too broad rights and powers of such kind to the atomic control organ is incompatible with the sovereignty of any State; therefore, such proposals are unacceptable and must be rejected as unsound." (42)

In support of the American proposal for ownership and control by the Authority, of property within the territory of any State, there are established precedents such as the international control and ownership of the property of the League of Nations in Switzerland. Again, the provisions in the United Nations Charter which deal with legal capacity, privileges and immunities, are an indication of an increasing trend toward international ownership and control of properties necessary for the performance of international functions.

While it is more difficult to find precedents for the international management and operation of activities, it is common knowledge that, in times of crisis, communications, shipping, trading and relief (normally national activities) have been subjected to international control.

It has also been pointed out that by granting of a monopoly to the Authority, inspection would be facilitated; the mere fact that a State engaged in or permitted the mining, production or possession of fissionable materials would be illegal: The motive need not be considered -- the operation would be an unambiguous danger signal.(43)

---

(42) "Russian Plan to Control the Atomic Bomb"; Magazine Digest, Jun.'47
(43) Article (9) of the American Plan. (pg. 32 of thesis)

As regards the abolition of the 'veto' Mr. Gromyko states:

> "that in carrying out their day-to-day activities the control organ should have the right, in appropriate cases, to make decisions by majority vote. However, the simple majority vote cannot be allowed to rule actions of the atomic control organ in all cases. Otherwise, those commanding the majority could use the organization as a means of interfering in the internal right of another country. There must be some protection against one-sided decisions. For we are quite aware that the Soviet peoples cannot always count on the benevolent attitude of this majority...
>
> "Therefore, the Soviet Union cannot allow the fate of its national economy to be handed over without a safeguard. This safeguard is the so-called 'power of veto.'" (44)

While there is no doubt that Mr. Gromyko is sincere in his objections to the elimination of the 'veto', it would appear obvious that the maintenance of the 'veto' would eliminate the possibility of sanctions being applied against any of the 'Big Five' if such country was proved to have violated the control Treaty.

---

(44) "Russian Plan to Control the Atomic Bomb"; Magazine Digest, June 1947

Analysis of the Soviet View

In considering the points of disagreement, as stated by the representative of the U.S.S.R., to the official United States Plan for atomic control, it would appear that at this point some thought should be given to an attempt to understand the reasons for these objections.

There is no doubt that the Soviet leaders understand the significance of the atomic bomb; we must therefore assume that they fully realize the benefits which would accrue to Russia from its control. We must also assume that their continued opposition to any Plan which proposes more than the mere outlawing of atomic weapons, is based on reasonable grounds.

What, then, are these grounds?

Russia's attitude may be based on the assumption that the United States will not start an aggressive atomic war; or, and this appears to be more reasonable, her attitude may be explained by the desire to maintain the 'iron curtain' and insulate her political-economic system, and her people, from the eyes and influence of Western Democracy. Again, it may be a combination of both.

On the other hand, the Soviets must realize that the atomic bomb is more of a threat to the United States with its large centres of mass production, than it is to Russia which has already started to disperse her industries.

Alternatively, Russia may feel that the 'know how' for production of atomic energy, offered in the U.S. Plan, does not provide sufficient inducement for Russia's giving up part of her sovereign rights. After all, the 'know-how for production of atomic energy' is only one step on the road to the atomic bomb -- a step which Russia might very well achieve without U.S. assistance. What, then, has she to gain by relinquishing her sovereign rights? Regardless of the information which the United States hands over to the atomic energy Authority, no mention has been made of the 'bomb secret' which the United States would retain.

If atomic weapons are outlawed there would be no point in handing over the techniques of bomb manufacture to other countries, and the United States would therefore still remain 'one jump ahead' of all other nations; and what is more significant, other nations could not obtain this information by research as such research would constitute a violation of the terms of the U. S. Plan.

If the above assumptions are correct, it would appear that the aim of the Soviet is to force a compromise or have no control whatsoever; counting on the fact that by 'stalling for time' any compromise or absence of control will probably be to her benefit.

Compromise

Now that we have examined the official Plan and the counter-proposals, let us examine more carefully one of the 'unofficial' plans in order to determine whether or not a suitable compromise might be achieved.

It would appear that the Carnegie Plan, which is less embracing than the official U.S. Plan but more adequate than the Soviet proposals, might overcome the present difficulties. It is closely integrated to the United Nations Charter and contains a similarity to the Soviet proposals, in that it proposes national ownership of mines and certain operations; prohibits the production, possession and use of atomic weapons and of plants exclusively suited to the production of weapons; and retains the 'veto'. The retention of the 'veto', however, is to some extent nullified by an obligation upon all parties to the Treaty to retaliate immediately against any State which makes unauthorized use of atomic weapons. (Self Defense: Article 51 of the United Nations Charter).

As this Plan (Carnegie) was prepared by a legal sub-committee in consultation with other legal, political and scientific experts it might indicate that an acceptable compromise could be devised.

The Soviet 'Plan' for Atomic Energy Control

In the preceding pages I have taken caution to indicate that on June 19th, 1946, in reply to Mr. Baruch's presentation of the U. S. Plan, Mr. Gromyko's speech consisted merely of proposals for a convention outlawing atomic weapons, with a vague indication of a control enforcement system to be evolved at some later date. These proposals, however, could not be definitely labelled as a 'plan'.

On June 11th, 1947, however, apparently cognizant of the growing antipathy towards the Russians' seemingly obstructionist attitude, Mr. Gromyko, on behalf of the U.S.S.R., presented the following basic principles for a control plan. He warned, however, that this Plan was "in addition to, and in development of its (Russia's) proposal on the conclusion of an international convention on the prohibition of atomic and other major weapons of mass destruction, submitted..... on June 19th, 1946."

Basic Soviet Principles for Control Plan (45)

1. "For insuring the use of atomic energy only for peaceful purposes in accordance with the international convention on the prohibition of atomic and other major weapons of mass destruction, and also with the purpose of preventing violations of the convention on the prohibition of atomic weapons and for the protection of complying States against the hazards of violations and evasions, there shall be established strict international control simultaneously over all facilities engaged in mining of atomic raw materials and in production of atomic materials and atomic energy.

2. "For carrying out measures of control of atomic energy facilities, there shall be established within the framework of the Security Council an international commission for atomic energy control to be called the International Control Commission.

3. "The International Control Commission shall have its own inspectorial apparatus.

4. "Terms and organizational principles of international control of atomic energy, and also compositions, rights and obligations of the International Control Commission, as well

(45) Second Report of the U.N.A.E.C., September 11, 1947

"as provisions on the basis of which it shall carry out its activities, shall be determined by a special international convention on atomic energy control, which is to be concluded in accordance with the convention on the prohibition of atomic weapons.

5. "With the purpose of insuring the effectiveness of international control of atomic energy, the convention on the control of atomic energy shall be based on the following fundamental provisions:

(a) "The International Control Commission shall be composed of the representatives of States members of the Atomic Energy Commission established by the General Assembly decision of January 24, 1946, and may create such subsidiary organs which it finds necessary for the fulfillment of its functions.

(b) "The International Control Commission shall establish its own rules of procedure.

(c) "The personnel of the International Control Commission shall be selected on an international basis.

(d) "The International Control Commission shall periodically carry out inspection of facilities for mining of atomic raw materials, and for the production of atomic materials and atomic energy.

6. "While carrying out inspection of atomic energy facilities, the International Control Commission shall undertake the following actions:

(a) "Investigates the activities of facilities for mining atomic raw materials, for the production of atomic materials and atomic energy, as well as verifies their accounting.

(b) "Checks existing stocks of atomic raw materials, atomic materials and unfinished products.

(c) "Studies production operations to the extent necessary for the control of the use of atomic materials and atomic energy.

(d) "Observes the fulfillment of the rules of technical exploitation of the facilities prescribed by the convention on control, as well as works out and prescribes the rules of technological control of such facilities.

(e) "Collects and analyses data on the mining of atomic raw materials and on the production of atomic materials and atomic energy.

(f) "Carries on special investigations in cases where suspicion of violations of the convention on the prohibition of atomic weapons arises.

(g) "Makes recommendations to governments on the questions relating to production, stockpiling and use of atomic materials and atomic energy.

(h) "Makes recommendations to the Security Council on measures for prevention and suppression in respect to violators of the conventions on the prohibition of atomic weapons and on the control of atomic energy.

7. "For the fulfillment of the tasks of control and inspection entrusted to the International Control Commission, the latter shall have the right of:

(a) "Access to any facilities for mining, production and stockpiling of atomic raw materials and atomic materials, as well as to the facilities for the exploitation of atomic energy.

(b) "Acquaintance with the production operations of the atomic energy facilities, to the extent necessary for the control of use of atomic materials and atomic energy.

(c) "The carrying out of weighing, measurements and various analyses of atomic raw materials, atomic materials and unfinished products.

(d) "Requesting from the Government of any nation, and checking of, various data and reports on the activities of atomic energy facilities.

(e) "Requesting of various explanations on the questions relating to the activities of atomic energy facilities.

(f) "Making recommendations and presentations to governments on the matters of the production and use of atomic energy.

(g) "Submitting recommendations for the consideration of the Security Council on measures in regard to violators of the conventions on the prohibition of atomic weapons and on the control of atomic energy.

8. "In accordance with the tasks of international control of atomic energy, scientific research activities in the field of atomic energy shall be based on the following provisions:

(a) "Scientific research activities in the field of atomic energy must comply with the necessity of carrying out the convention on the prohibition of atomic weapons and with the necessity of preventing its use for military purposes.

(b) "Signatory states to the convention on the prohibition of atomic weapons must have a right to carry on unrestricted scientific research activities in the field of atomic energy, directed toward discovery of methods of its use for peaceful purposes.

(c) "In the interests of an effective fulfillment of its control and inspectorial functions, the International Control Commission must have a possibility of carrying out scientific research activities in the field of the discovery of methods of the use of atomic energy for

"peaceful purposes. The carrying out of such activities will enable the commission to keep itself informed on the latest achievements in this field and to have its own skilled international personnel, which is required by the commission for the practical carrying out of the measures of control and inspection.

(d) "In conducting scientific research in the field of atomic energy, one of the most important tasks of the International Control Commission should be to insure a wide exchange of information among nations in this field and to render necessary assistance, through advice, to the countries' parties to the convention which may request such assistance.

(e) "The International Control Commission must have at its disposal material facilities, including research laboratories and experimental installations necessary for the proper organisation of the research activities to be conducted by it.

"In conclusion, I wish to express the hope that these proposals would be considered by our commission with due attention and that they will help us in reaching an agreement on the question of the establishing of international control of atomic energy."

It will be noticed that almost a year had elapsed between the submission of the first set of U.S.S.R. proposals and the submission of the 'Plan'; and while the two may be considered very similar, it would appear that some hope for eventual agreement may be discerned in the newly submitted plan. The U. S. S. R. has now unambiguously proposed that inspection should be carried out by international personnel. It has further agreed that the Control Authority should be permitted to operate its own research laboratories in order to keep abreast of development and, therefore, be able to

adjust inspection methods.

There is little reason for optimism, however, due to the length of time and the amount of discussion required to obtain agreement on these two points. As Mr. Baruch so ably pointed out:

> "It took the Soviet Union six months to say the 'B' of inspection after the 'A' of international control. It took another six months to add the 'C' of international inspectorate and the 'D' of cooperative international research. How long will it take the U.S.S.R. to spell out the whole alphabet of an effective international control mechanism?" (46)

One month after presentation of the U.S.S.R. Plan, the representative of the United Kingdom requested clarification of a number of points concerning the Soviet proposals(47); and on September 3rd Mr. Gromyko replied to the United Kingdom and stated briefly that the Soviet Government continued to insist on the outlawing of atomic weapons as an initial show of good faith. He further stated that the "recommendations" referred to in paragraph $6_{(g)}$ should not have compulsory force. Continuing, Mr. Gromyko made it abundantly clear that in the opinion of the U.S.S.R. supervision, management, and licensing did not necessarily follow from the tasks of the establishing of strict and effective international control of atomic energy. In conclusion, he insisted on the maintenance of the veto.(48)

---

(46) Soviet Plan for Atomic Energy Control: Bulletin of Atomic Scientists; August 1947 (editorial)
(47) Second Report of the U.N.A.E.C. to the Security Council, September 11, 1947
(48) ibid

In view of these clarifications it would appear that in reality very little had been accomplished by the submission of the U.S.S.R. 'Plan'.

Any Plan which is not completely backed by effective control is far from being adequate, and this must be realized by all members of the United Nations including Russia.

Interests at Stake in the Formation of the Alternative Plans

R u s s i a

It is difficult to understand why Russia places so much significance on the destruction of existing bombs and the outlawing of new atomic weapons, while on the other hand she objects to 'licensing and control' and suggests that all nations be permitted freedom of research on their own behalf in the field of atomic fuels - - when atomic fuels are identical with atomic explosives. The United States' 'know how' of the building of the bomb cannot be destroyed, and such a policy as suggested by the U.S.S.R. would not reduce the ability of the U.S.A. to launch an atomic attack, without significant delay, whenever they so desired.

Was the new Plan, then, merely a 'delaying action'? or are we to believe that it took the policy-makers of Moscow a year to understand the dangers of atomic energy and present an elementary plan for control? If this Plan was only intended to drag out the negotiations as long as

possible, was it designed to increase Russia's bargaining power at such time as she herself should have an atomic weapon - - or was it because she does not want international control?

The Soviet attitude might be explained by the fact that they realize the necessity for control but are loathe to accept the necessary means as proposed by the United States, due to the fact that it would mean surrendering a portion of their sovereign rights.

Probably no one outside of the U.S.S.R. knows which of the above assumptions is correct. Certainly the Soviet plans so far presented are most unrealistic.

However, as long as Russia is prepared to 'talk' there is little chance of her fighting; the danger will come when she is no longer prepared to talk - - and the concessions made by the Russian Plan of June 11th, 1947 may indicate that she is slowly advancing on the road to understanding. The danger, however, lies in the fact that this slow advancement may not keep pace with other world events. For Russia's part, the very possession of atomic armaments by the only power capable of opposing her has undoubtedly created a feeling of mistrust - - and this, combined with differences in the economic field and the obvious manipulation of 'power politics' may be a source of concern. However, the precarious position of the political and economic structure throughout the world makes the establishing of atomic control all the more imperative.

It would appear that one of the causes contributing to the continued disagreement in the United Nations Atomic Energy Commission may be found in the formation of the Commission, the membership of which, it will be recalled, is restricted to members of the Security Council plus Canada. During the 3-year existence of the Commission the representation on the Council has been as follows:

1946: Russia, United States, United Kingdom, France, China, Australia, Brazil, Poland, Netherlands, Mexico, Egypt.

1947: Russia, United States, United Kingdom, France, China, Australia, Brazil, Poland, Belgium Colombia, Syria.

1948: Russia, United States, United Kingdom, France, China, Belgium, Colombia, Syria, Argentine, Ukraine, Canada.

In other words, in the years 1946 and 1947 the Atomic Energy Commission membership has resulted in a political line-up of 10 Democratic states against 2 Communist states; whereas the 1948 line-up is 9 Democratic states against 2 Communist.

With the representation in the Security Council consistently against her from a political standpoint, how then can we expect Russia to agree, in Commission discussions, to a relaxation of the veto in the Security Council for purposes of atomic energy control? We might expect the same hesitancy from the United States, or any other country, if conditions were reversed.

True, the political representation on the Security Council may be accurate when based on the percentage of Communist-controlled states throughout the world; but is it an accurate representation of world power?

Furthermore, Russia is loathe to admit that a capitalist plan is the answer - - while both the United States and Russia are afraid to trust the other's motives.

Again, the United States used the bombs on Japan, which may be another cause for Russia's lack of feeling of security in the event of a Democratic-Communistic war; but on the other hand, Russia has certainly given ample grounds for mistrust by the Democracies, particularly in the 4-power government in Germany and in taking over eastern-European countries.

Until Russia produces atomic weapons, the United States can feel some sense of security; but what will the situation be when Russia also has bombs, and carriers, available for delivery on this continent at a moment's notice?

Russia, today, finds herself in the unhappy position where her only opponent to a quest for world power has a stock of atom bombs - - while she has none.

One thing the Russians do not lack, however, is a 'ready made' interpretation of history which not only explains the past but also predicts the future, and advises them that time is on their side. Moreover, as regards atomic weapons this interpretation is no doubt true. Why, then, should she yield a portion of her sovereign rights today, in order to obtain something which the normal course of events will bring her tomorrow?

Over a long period, Marxian ideology visualizes a communist-dominated world; and the course of events in Europe, and indeed throughout the world in the past three years, would tend to substantiate this vision of Marx. Russia has made considerable progress in establishing communist governments in the entire eastern portion of Europe.

However, with the aid of the Marshall Plan, it is not unreasonable to expect that the democratic governments of western Europe and throughout the world will increase in stability and strength, as already indicated in Italy; and under such conditions it would not be surprising to see a change in the Soviet attitude toward negotiation. But it would appear that as long as Russia can see the possibility of world domination by communist infiltration, there will be little room for whole-hearted negotiation in her foreign policy.

UNITED STATES

The United States is no doubt aware that its military strength during the past thirty years, has been in large part due to the fact that her mass-production industries could out-produce any other country in weapons-of-war. However, it must be recognized that the facilities to mass-produce atomic bombs would not necessarily give any country an advantage over its enemies in a future war, particularly if the enemies already had sufficient atom bombs to initiate a surprise attack. Moreover, it would appear that the mass-production centres which previously made the U.S.A. strong, now increase her vulnerability.

Again, atomic weapons may provide the only method by which Russia could disrupt the flow of supplies from the United States to her ground forces attacking Russia's borders. If for no other reasons, therefore, it is in the interests of the U.S.A. to attempt to eliminate nuclear ordnance from national armaments.

In view of these facts is there any reason why Russia should agree to the elimination or control of such weapons, particularly when adequate methods of control appear to include measures which conflict with her internal policy of maintaining the 'iron curtain'? -- and when methods of atomic control as suggested by the U.S.A. would provide all nations represented on the control body with an opportunity for obtaining strategic information about Russia, information to which they do not at present have access.

There would also appear to be strong grounds to believe that failure to secure effective international control of atomic energy could create a situation in which a third world war would begin with an atomic attack against the U.S.A.

Let us consider a few factors which might tend to substantiate this conclusion:

1. (a) A future aggressor power, with an objective in a region remote from the U.S.A. could not dare to launch an atomic offensive against such objective without first knocking out the U.S.A.

   (b) The U.S.A. has a stock of atomic bombs, and if she were not first knocked out it would leave her free to retaliate on the aggressor nation. As an example we need go no further back into history than World War I and World War II. In each case Germany sought to crush European countries singly, and in each case it was largely the industrial power of the U.S.A. which turned the tide against her. Would a new aggressor nation disregard this lesson of two world wars? I think not, and therefore any attempt at atomic aggression must be prefaced by a 'knockout blow' to the U.S.A.

2. As the country which first developed the atomic bomb, the U.S.A. has a very good prospect of remaining in the lead in the development of atomic weapons. It is in the lead, and has the

capacity to remain in the lead, in long-range air power. Further, while years must pass before the perfection of accurately-controlled atomic rockets, the U.S.A. has the industrial power and the 'know how" to lead in developing such rockets. Consequently the ability of the United States to determine the issue of an atomic war between other nations, would make it absolutely essential for a future aggressor to knock out the U.S.A. before proceeding against less dangerous enemies.

3. Again, the U.S.A. is highly vulnerable to atomic attack due to her high concentrations of industry and her many large cities. The more industrialised a country is and the more removed from an agricultural economy, the more it is subject to damage by atomic explosives. U.S. vulnerability is further emphasized by her long coastlines and borders, and by the fact her idea of freedom is such as to make effective police protection against atomic sabotage particularly difficult.

For the above reasons her capacity to determine the outcome of an atomic conflict, her potential superiority in atomic striking power and her vulnerability to atomic attack, the U.S. is likely to be on the receiving end of atomic bombs prior to an atomic war by a future aggressor nation.

For those who would bask in the assumption that no aggressor would dare attack the U.S. for fear of retaliation in kind--Remember Pearl Harbour.

General

As previously mentioned the U.S.A. has strong incentives for desiring and maintaining any arrangement that will eliminate atomic weapons from national armaments. On the other hand, Russia's political objective is world domination with Moscow as the seat of all decisions of policy, and the fulfillment of such a plan does not induce cooperation from countries with other political or economic objectives. (limited cooperation during the war was a matter of national survival).

Both countries far out-rank in military power any other nation and it appears obvious that these 'giants' are both keenly aware of their power and influence.

As no combination of powers is strong enough to coerce either Russia or the U.S.A., any agreement for permanent peace must be regarded merely as a voluntary arrangement and not as an enforced obligation.

It would also be a reasonable assumption that if another war is to take place, it will be between Russia and the U.S.A. As a matter of fact President Truman stated, in an address, approximately a year ago, that the U.S.A. was drifting toward war with Russia at an increasing rate of speed. He went further, and stated at that time, that the U.S. did not trust Russia and that Russia did not trust the U.S.A.(49)

---

(49) Bulletin of Atomic Scientists - April-May 1947, p. 107

Both countries are attempting to maintain their present advantages, and are making geopolitical plans and taking strategic steps to this end. Russia is attempting to push her European frontiers as far west as possible, in order to create a 'buffer' against an attack from that direction; whereas the U.S.A. is actively pursuing a policy of keeping 'friendly governments' in Greece, Turkey and other Middle-Eastern countries, in order to secure access to Russia - by way of the Black Sea - for the British and American fleets, if necessary. Further, friendly governments in the Near and Middle-Eastern countries will ensure oil for the defense of the Mediterranean.

Neither country wants war but both governments are attempting to act in such a way as to insure victory if war comes.

As long as the policies of these countries are based on considerations involving a possible future war, any problem of mutual concern is incapable of being solved in a way which would be satisfactory to both.

Obviously, the situation takes on the aspect of a vicious circle, the answer to which may lie in whether or not a permanent peace is possible without a third world war.

Alternatively, the controlling factor may be found in the answer to the question of "under what conditions would an international agreement to outlaw atomic energy be considered (or treated) as a 'scrap of paper'"?

Poisonous Gas was outlawed after World War I, but both Germany and Great Britain had stocks of new and more deadly gases available during World War II; and it is certain that if Germany could have been reasonably sure that the use of such gases (by her) would have won the war and would not have invoked retaliation in kind, she would not have hesitated to reject her Treaty signature.

While it may a great step forward to establish a tight control on the development of atomic power by a reciprocal agreement between all members of the United Nations, yet we cannot disregard the possibility that one of the major powers, after a few years may begin to place difficulties in the way of an effective control of activities conducted within its territory. It would be quite essential, therefore, that all countries be given to understand, from the start, that any difficulties which any nation may place in the way of the established controls would have to be considered equivalent to a Declaration of War. Such a 'declaration of war' would have the effect that all other nations would at once begin to manufacture atomic weapons.

Whether justifiably or not, the U.S.S.R. has indicated that it regards the world as being split into 'countries favorable to them' and 'countries favorable to the U.S.A.' How, then, can we expect their government to allow questions concerning their national sovereignty to be decided by an international body; and we would expect the U.S.A. to adopt the same view if the number of states voting consistently with the U.S.S.R. exceeded the number voting with the U.S.A.

This attitude of Russia's has been made abundantly clear by Mr. Gromyko, who states:

> "The Soviet Union is aware that there will be a majority in the control organ which may take one-sided decisions, a majority on whose benevolent attitude toward the Soviet Union it cannot always count. Therefore, the Soviet Union cannot allow that the fate of its national economy be handed over to this organ." (50)

While under these conditions it may appear futile to advocate the setting up of an international authority to control the activities of both these nations, it is still necessary to consider what steps can be taken to make the attainment of atomic control less unlikely.

---

(50) Bulletin of the Atomic Scientists, July 1947 - p. 190

Chapter V

While almost three years have elapsed since the beginning of 'the atomic age', the countries of the world are still unable to agree on a satisfactory method of controlling atomic energy. Various plans have been proposed with varying degrees of success, but atomic weapons are still a long way from being outlawed.

However, these three years have not been entirely fruitless; some measure of agreement has been reached; all countries are agreed on the following points:

1. The urgent necessity for an international control scheme.

2. When such a scheme is functioning, no atomic weapons should be in the hands of any 'national' authority.

3. The international control authority should have its own 'rules of procedure' and there should be no rights of veto in the day-to-day functioning of the Authority.

4. The international control authority should have its own inspection staffs; and these inspection staffs should be chosen on an international principle and have full inspection rights in any establishment in any country concered with obtaining atomic raw material and producing atomic materials and atomic energy.

5. The international control authority should be empowered to conduct special investigation on cases where it is suspected that illicit material is being produced.

6. The international control authority must have the positive function of operating research establishments staffed by its own qualified international personnel.

What, then, are the points of disagreement?

1. Russia insists that not only shall no atomic weapons be in the hands of any national authority when the approved Plan is functioning, but that all such weapons should be immediately destroyed before the international authority is set up -- as a show of good faith. The United States is opposed to such a premature destruction of her bombs.

2. The United States insists that international inspection staffs should have full inspection rights in any establishment in any country -- to make sure that clandestine activities are not being carried on in 'non-declared' plants. Russia agrees only to international inspection of establishments declared to be concerned with atomic energy.

3. The United States insists on the elimination of the 'veto power' in the Security Council, in the case of 'sanctions' as a result of violations of atomic energy control. Russia

refuses to give up her veto -- on the basis that it is her only protection against a politically-inspired majority vote.

4. The United States insists that the International Authority should have ownership and complete managerial control of the production of fissionable materials, together with the licensing of all atomic activities. Russia insists that the holding of such powers by an international authority would infringe on her national sovereignty.

It would appear, then, that there is little hope of conciliation on these four points of disagreement.

The United States is attempting to control atomic energy as tightly as possible, leaving no loopholes for evasion; the U.S.S.R. is trying to 'get by' with as little control as possible.

What, then, are the alternatives?

Limited Control

If we cannot have complete control, what would be the effect of a 'limited' control? It is recognized that atomic energy would not be available today were it not for the direct support it received as a weapon-of-war; and while there can be no criticism of the armed services of all countries for their interest in this new discovery, would their interest decline under a 'limited' plan of control?

I suggest that under a limited control plan, an undeclared 'armament race' would immediately begin; countries would produce quantities of dangerous fissionable material -- on the pretense of preparing for atomic power projects, but in reality always calculating 'the number of bombs' which could be produced in an emergency.

All countries would, obviously, seek ways to evade the Rules of any such Plan -- in the same way that individuals today attempt to evade taxation.

Such a plan could only work if all governments were not only completely trustworthy, but also were absolutely trusted by all other nations. If this were so, however, all difficulties of control would vanish.

Coercion

Lord Russell, in the British House of Lords, suggested that every effort should be made to persuade Russia to accept the majority point of view. In addition, every concession--that is not a vital concession--should be made by the United States in the hope of producing agreement. In the event of continued failure and the continued objection by Russia to any adequate plan, Lord Russell suggests that an attempt be made to organize those nations which are in favour of complete international control, into a tight alliance, and provide them all with the atomic advantages that the United States

now possess, in an attempt to coerce Russia into joining that alliance, by creating an 'unbalance of power'. (51)

This scheme would appear to be most impractical, however, due to the fact that the Soviet Union will undoubtedly come into possession of atomic bombs on her own in the not too distant future; and at that time European outposts of the 'alliance' would find themselves, in the event of an atomic war, threatened with complete annihilation; in return for which their 'allies' could retaliate -- but not prevent.

On the other hand, can a country like Russia be 'coerced' and yet retain their good faith in future actions?

Economic Inducement

During the House of Lords debate on control of atomic energy, Lord Strabolgi suggested that the present Russian attitude is caused by economic weakness as a result of the war, widespread destruction which the Germans perpetrated, severe droughts for two years -- plus the loss of 7,000,000 soldiers and civilians killed. He further suggested that this great state of weakness creates a 'fear psychology' which explains why it is so difficult to get agreement with Russia on anything -- including atomic energy.

To overcome this 'fear' and to obtain Russia's good faith and

---

(51) Bulletin of the Atomic Scientists - July 1947, p. 185

at the same time provide a large market for the industrial surplus of the United States, Lord Strabolgi suggests a large Loan to Russia for reconstruction purposes, to enable her to import power plants, railway equipment, agricultural machinery and other materials which she so desperately needs -- in the hope that such a gesture would have the effect of changing the Russian mentality and sweeten the international relations between the two leading members of the UNO. Such a plan, he explained, would be cheaper than another industrial depression or a third 'world war'. (52)

This suggestion was also made by Mr. Szilard and Mr. Lerner in the April-May '47 issue of the Bulletin of Atomic Scientists, and in different forms by Mr. Wallace and Mr. Stassen who have advocated

> "a large-scale peacetime Lease-Lend for the reconstruction of Soviet economy and improvement in the standard of life of the Soviet peoples". (53)

This suggestion is no doubt laudable, but is it reasonable to spend billions to strengthen the economy of a potential enemy, to rebuild cities which it may be necessary to level again by atomic bombs? Again, if this highly moral plan was interpreted by Russia as a sign of Democratic weakness and decadence, what then?

On the other hand, if the Russian attitude is caused by

---

(52) Bulletin of Atomic Scientists - July 1947 - p. 186
(53) ibid - pa. 170

a 'fear' psychology, may it not be that after a period of freedom from attack we should expect a natural decline in the fear 'complex', without resorting to building up an economy whose politically-acknowledged intention is the overthrow of capitalism?

Preventive War

Some irresponsible people go even further and suggest a preventive war; but it is difficult to understand what would be achieved by such a course. Neither the U.S.A. nor the U.S.S.R. is in a position to fight a full-scale war; so, for the sake of argument, let us assume that victory could be achieved quickly by the dropping of a number of atom bombs on the large industrial centres of Russia, thereby forcing the Russians to surrender. What is the next step? Russia is a very large country.

F I N A L E --

The problem of how to prevent the use of atomic energy for destructive purposes has been discussed from many angles, while our hopes have alternated from some degree of optimism for the success of an adequate plan, through varying degrees of pessimism, almost to the conclusion that nothing can be done. Nevertheless it remains of vital importance to continue to work for international control, even though success will be delayed longer than at first appeared necessary.

Possibly in seeking an agreed solution, the United States' idea that a completely watertight system of security can be worked out, should be avoided -- perfectionism is just as difficult in this field as in any other field of international relations -- there must be a certain amount of 'give and take'.

So far the United States has been adamant, presumably convinced that by offering to give up the questionable 'bomb secret' she has gone more than half way. Such an attitude may have been very laudable in the beginning, but time is running out -- Russia has already made some concessions; what will happen when other countries obtain the 'secret' without U.S. magnanimity? Certainly the bargaining power of the U.S. will be greatly reduced.

The real battle is between the 'Political Giants' but all nations must work incessantly to allay suspicions, improve relations, and induce agreement as soon as possible. With 'Peace' as our ultimate aim it seems reasonable that all should realize the immediate necessity of such action, and make the sacrifices necessary to achieve this end.

Success will not easily be achieved. In order to control the 'giant' which science released at Hiroshima, the United Nations must demonstrate the wisdom of Solomon, and muster in the field of international relations as much ingenuity, skill and organizing

ability as was required to split the atom and produce the bomb. In this direction lies 'freedom from fear' -- the alternative is for all nations to 'keep their powder dry'.

"TIME" magazine for March 29, 1948 sums up the situation as follows:

> "Ten years from now a divided, stunned, and defeated United States may be trying to adjust itself to a Communist-ruled world.
>
> "Ten years from now a weary, mangled, and victorious United States may be trying to salvage what it can from the radioactive wreckage of the world.
>
> "Ten years from now a busy, peaceful United States may be helping to push forward the frontiers of freedom everywhere in the world.
>
> "The problem for Americans is how to make the second alternative more likely than the first; and the third more likely than the second. Almost certainly, in these ten years, some Americans will die fighting -- perhaps a few score, possibly millions. Almost certainly, billions of dollars will pour out. There will be no safe course - only choices between dangerous courses.
>
> "That is the shape of the next ten years -- a shape which every decent man wishes were different. It will not be changed by wishing."

The same might be said for the Democratic world.

APPENDIX I

Effectiveness of Atomic Bomb

Authority:	Maj. Gen. L. R. Groves [2]	Father Siemes [6]	Maj Gen T F. Farrell [8]	Col. S. Warren [4]	U.S. Strategic Bombing Survey [3]
Casualties:					
Hiroshima		Hiroshima			
Dead and missing	95,000	100,000 (70,000 official)			
Injured	140,000	130,000 (43,500 severely)			
Nagasaki				Nagasaki dead	
Dead and missing	42,000			40,000 (official) plus	
Injured	40,000			20-30,000 add'l	
Damage.	Hiroshima Nagasaki	Hiroshima	Nagasaki		Hiroshima
Radius of total destruction	2 miles 2-4,000 ft. (steel and concrete buildings)	All houses damaged up to 6 kilometers from center, windows broken 15 kilometers away (1 km.=0 6 mile).	Complete 2,000 ft , concrete 6-10" walls 3,500 ft., churches 18" brick walls Part Destruction 5,000 ft , 9" brick walls		Destruction one-story brick buildings, completely, 7,700 ft brick multi-story, 5,700 ft. reinforced concrete, ½ useless, 2,000 ft.
of half destruction	3 miles 2 miles				Nagasaki 21 reinforced concrete buildings between 1,000-2,000 ft from zero 4 destroyed, 10 would require major members rebuilt, 7 had walls and windows knocked out.
of roof destruction	5 miles 3 miles		Roof Destruction 10,000 ft , heavy		
of glass destruction	12 miles		Window Destruction 12,000 ft.		
Fire damage:	Burning Areas 3 miles x 6,000 ft.				
Radiation damage.	Negligible			5-7% of total casualties	
Additional evidence	Hiroshima About 20 masonry and steel structures left standing in city, but with interiors gutted in all windows out Nagasaki Up to 2,000 ft 9" concrete walls destroyed up to 4,000 ft brick smoke stacks with 8 walls displaced, cracked and overturned	Hiroshima Out of 600 students of Protestant girls school working in city, 30 40 returned 20 out of 40 Korean soldiers working in Hiroshima returned to barracks "Thousands of the wounded who died later could doubtless have been rescued had they received proper treatment and care "	Hiroshima Total damage 4 sq miles, substantial damage 3 5 sq miles, total 7 sq miles Nagasaki Total damage 2 4 sq miles, substantial 1 2 sq miles, total 3 6 sq miles	"All the records, all the facilities, and all the organizations of both towns were wiped out, literally, in one instant "	"If one produced the same amount of bombing in two comparable cities, in one by incendiary bombing, in the other by atomic bombing there would be 15 2 times as many people injured in the second as in the first There would be 18 6 times as many killed " "The stronger weapon is relatively just as effective against strong structures as it is against weak structures "

[2] Hearings Senate Atomic Energy Committee Part 1, Nov 28 1945, page 32 ff
[3] *Ibid* Part 5 Feb 15 1946 page 514 ff
[4] *Ibid* Part 5 Feb 15 1946 page 508 ff
[6] *Saturday Review of Literature* Vol 29 May 11 1946 page 24 ff (reprinted)
[8] Hearings Senate Atomic Energy Committee Part 2, Dec 5, 1945 page 195

BIBLIOGRAPHY

Articles

1. BAXTER, J. P. 3rd — "Scientists Against Time"; (Little, Brown and Company, Boston)

2. BRIGGS, Herbert W. — "World Government and the Control of Atomic Energy"; The Annals of the American Academy of Political and Social Science; Vol. 249, Jan. 1947

3. BRODIE, Bernard — "The Atomic Dilemma"; The Annals of the American Academy of Political and Social Science; Vol. 249, Jan. 1947

4. COCKCROFT, J. D. — "Discovery and Development"; CBC Atomic Energy Broadcasts, April-June 1947

5. COMPTON, Arthur H. — "The Atomic Crisade and its Social Implications"; The Annals of the American Academy of Political and Social Science; Vol.249, Jan. 1947

6. DANIELS, C. and SQUIRES, Arthur M. — "The International Control of Safe Atomic Energy"; Bulletin of Atomic Scientists; April-May 1947

7. DOUGLAS, Paul F. — "One World or None"; Atomic Information; Vol. 1, No. 2, March 25, 1946

8. GOUDSMIT, S. A. — "How Germany Lost the Race"; Bulletin of Atomic Scientists, March 15, 1946

9. HUTCHINS, Dr. P. M. — "The Bomb Secret is Out"; American Magazine, Dec. 1947

10. KALIJARVI, T. V. — "Modern World Politics" (Preamble to United Nations Charter)

11. KISS, Peter — "United Nations Atomic Energy News"; Bulletin of Atomic Scientists, Aug. Sep. Nov. 1947

12. LORD RUSSELL — "House of Lords Debate on the Control of Atomic Energy"; Bulletin of Atomic Scientists, July 1947

13. McNAUGHTON, Gen. A.G.L. — "National and International Control of Atomic Energy"; Official Statements and Speeches, Information Division, Department of External Affairs, Ottawa

14. MORRISON, Dr. Phillip — "Hearings: Senate Atomic Energy Committee" -- Part II, Dec. 6, 1945

Articles--(cont'd)

15. MOTT, N. F. "International Control: The Choice Before This Country"; Bulletin of Atomic Scientists, Nov. 1947

16. OLIPHANT, Prof. L.M.E. "Planning in Secret"; CBC Atomic Energy Broadcasts, April-June 1947

17. SCHURR, Sam. H. "Economic Aspects of Atomic Energy as a Source of Power"; Bulletin of Atomic Scientists, April-May 1947

18. STIMSON, H. L. "The Decision to Use the Atomic Bomb"; Harper's Magazine, Feb. 19, 1947

19. OTTAWA CITIZEN (newspaper) July 16, 1946

Editorials

1. "British Foreign Policy and the Bomb"; Bulletin of Atomic Scientists, May 15, 1946

2. "The Soviet Plan for Atomic Energy Control"; Bulletin of Atomic Scientists Aug. 1947

3. "If the U.N.A.E.C. Fails"; Bulletin of Atomic Scientists, July 1947

4. "Two Years After Hiroshima"; " " " " Sep. 1947

5. "Britain and the Atomic Bomb"; " " " " Nov. 1947

Books and Pamphlets

1. "Report of the Royal Commission"; Canada, June 1946

2. "International Control of Atomic Energy"; U. S. State Department Pub'n 2661

3. "International Conciliation"; No. 423, Sep. 1946

4. "International Control of Atomic Energy"; U. S. State Department Publication 2775, Dec. 15, 1946

5. "First Report of the U.N. Atomic Energy Commission to the Security Council"; U.S. State Department Publication 2737; Dec. 31, 1946

6. "Russian Plan to Control the Atomic Bomb"; Magazine Digest, June 1947

7. "Second Report of the U.N. Atomic Energy Commission to the Security Council"; U.S. State Department Publication 2932; Sep. 11, 1947

8. "Canada Year Book--1947"

9. "The Atomic Age Opens"; Pocketbooks of Canada Limited

Books and Pamphlets--(cont'd)

10. "A Report on the International Control of Atomic Energy"; U.S. State Department Publication No. 2498

11. "International Control of Atomic Energy: Growth of a Policy"; U.S. State Department Publication No. 2702

12. "Atomic Energy: Its International Implications"; Royal Institute of International Affairs--1948

13. "TIME" Magazine, March 29, 1948

14. "Hiroshima"; John Hersey

15. "Official Records of the Second Meeting of the United Nations Atomic Energy Commission"--Jan. 19, 1946 (reprinted in U.S. State Department Publication No. 2702

16. "Official Records of the Third Meeting of the United Nations Atomic Energy Commission"--June 25, 1946 (reprinted in U.S. State Department Publication No. 2702

17. "Toward Effective International Atomic Energy Control"; U.S. State Department Publication No. 2713.

Speeches and Declarations

1. TRUMAN, President H.L. "Statement, August 6, 1945"

2. TRUMAN, " " "Report to the Nation on the Berlin Conference"; Washington, D.C., August 9, 1945

3. TRUMAN, " " "Message from the President to Congress"; Oct. 3, 1945

4. TRUMAN, " " "Navy Day Address"; Oct. 25, 1945

5. "Three-Nations Agreed Declaration"; Washington, D.C., Nov. 15, 1945

Note: Copies of official speeches by President Truman may be obtained from the U.S. State Department.