

The American Assembly
Columbia University



The Canadian Institute
of International Affairs

A World of Nuclear Powers?

The Institute for
Strategic Studies



Carnegie Endowment
for International Peace

**Report of the International Assembly on Nuclear Weapons
June 23-26, 1966 • Toronto, Canada**

P R E F A C E

On June 23, 1966, a group of persons prominent in various professions and occupations in 25 nations gathered at the Guild Inn, Scarborough, in Toronto, Ontario, Canada, for the International Assembly on Nuclear Weapons. The Assembly was sponsored by the Canadian Institute of International Affairs, The Institute for Strategic Studies, Carnegie Endowment for International Peace, and The American Assembly of Columbia University. President A. D. P. Heeney of the Canadian Institute was Chairman of the Assembly.

For three days the participants discussed problems of nuclear proliferation, and in a plenary session on the fourth day reviewed the statement of findings which follows on these pages. Additional copies may be had from The American Assembly.

Under the editorial supervision of Alastair Buchan, a major new volume was prepared as background for the International Assembly and for subsequent meetings on this subject in many nations, as well as for general readership. It contains the following chapters:

Introduction, by Alastair Buchan, Director, Institute for Strategic Studies

Chapter 1. *The Capabilities of the Non-nuclear Powers*, by Leonard Beaton, Institute for Strategic Studies, London

Chapter 2. *Four National Debates*

A. "The Objective of Germany," by Theo Sommer, Foreign Editor, *Die Zeit*, Hamburg, Germany

B. "The Indian Dilemma," by Sisir Gupta, Research Secretary, Indian Council of World Affairs

C. "The Swedish Experience," by Karl Birnbaum, Director, Institute of International Affairs, Stockholm, Sweden

D. "The Problem for Japan," by Kei Wakaizumi, Professor of International Relations, Kyoto Sangyo University, Japan

Chapter 3. *Nuclear Proliferation and World Politics*, by Stanley Hoffmann, Professor of Government, Harvard University

Chapter 4. *Alternatives to Proliferation: Inhibition by Agreement*, by Lord Chalfont, Minister of State for Disarmament, London

Chapter 5. *Inhibition through Policy: the Role of the Non-nuclear Powers*, by Urs Schwarz, former Foreign Editor, *Neue-Zürcher Zeitung*, Zürich, Switzerland

The views contained in the Final Report of the International Assembly are those of the participants in their private capacities and not necessarily of the sponsoring institutions.

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FINAL REPORT

The participants in the *International Assembly on Nuclear Weapons* reviewed the following report in plenary session at the close of their discussions. The report reflects conclusions generally acceptable to the participants. However, no one signed it and it should not be assumed that every participant necessarily subscribed to every statement.

1. Twenty-one years ago it became apparent that nuclear fission could be used both as a new form of civil energy and as a new form of explosive of infinitely greater power than any weapon that man had hitherto devised. Two countries, the United States and the Soviet Union, have developed very large stocks of nuclear weapons and have thereby permanently altered the structure of international relations. Two other countries, Britain and France, have developed nuclear weapons, and the People's Republic of China has, in the last two years, shown by her test explosions that she has mastered the essential technology.

At the same time a number of other countries have developed, or are acquiring for peaceful purposes, nuclear reactors and related technologies, which may offer them the choice of becoming military nuclear powers, if they should decide to exercise that option. We have been examining the pressing problem of whether the number of military nuclear powers in the world will continue to increase, what the effects of such an increase will be upon the prospects of peace and a stable world order, and what agreed measures will eliminate or minimize such an increase.

2. In the view of the Assembly there is a serious possibility that a number of countries which are making extensive use of nuclear technology for peaceful purposes may embark on a weapons program. There are three basic reasons that may prompt them to this course: anxiety for their own security and the wish to introduce a stronger element of deterrence into their systems of national defense; a desire to share in the position of prestige and influence which possession of nuclear weapons is thought to confer upon the existing military nuclear powers; and a drive for greater autonomy. The strength of these motives naturally varies in different countries, and individual members of the Assembly attached differing weights to them. But it was significant that the question of security now appears to play a large part in the considerations of the civil nuclear powers.

3. At the same time it was clear from our discussions that the countries that are already nuclear powers in the sense

of operating large power and research nuclear reactor programs would, at present, take the decision to become military nuclear powers with considerable reluctance. Informed opinion in all these countries (which are here described as *civil nuclear powers*) is aware of some of the serious political, social, and economic consequences involved in becoming a military nuclear power. The development of ancillary plants to manufacture nuclear warheads from plutonium accumulated in their reactors would be only a small part of the economic cost. Even a small nuclear force requires accurate and increasingly expensive delivery means (many of whose components such as aero engines and missile guidance systems can, at present, be designed only by the most advanced powers) radar and warning systems, protected missile silos, and elaborate command and control systems; all of these systems absorb large amounts of valuable scientific and technical manpower.

Two points in particular were stressed: *first*, that much of the technology involved in developing a system of nuclear deterrence is of limited value for civil purposes or for advancing the nation's economic strength; and *second*, that once the decision to acquire a nuclear military force has been taken, a country embarks upon a rising scale of risks and costs.

It was, however, agreed that it is hard to generalize. Countries feeling the need to deter a local adversary by developing only a small nuclear stockpile and a simple delivery system might not feel the strength of these arguments to the same extent as a country whose objective was to deter one of the major powers. Moreover, there is always a danger that some crisis or national disaster might lead to a demand for nuclear weapons in which these arguments would be brushed aside. Finally, the fact must be faced that as national wealth and technological resources increase, the number of countries able to face the economic, social and scientific costs of becoming a military nuclear power will also increase, even without any form of direct assistance from other countries.

But it was proposed and widely agreed, that the military nuclear powers should make a positive effort to acquaint the civil nuclear powers with a better estimate of the costs — economic, scientific and strategic — of becoming a military nuclear power, even if this involves somewhat relaxing the secrecy that surrounds their planning. Accurate information about the initial and continuing costs of nuclear weapons programs is at present fragmentary, and there is much to be said for publishing an objective international report on the subject.

4. There was a wide measure of agreement on two likely effects of proliferation. *First*, the period, anything up to ten years, during which a country is developing its own military nuclear capability, might be one of extreme danger for it and for others. *Second*, in certain troubled areas — such as Europe, the Middle East and Asia — the acquisition of nuclear weapons by opposing powers might indefinitely postpone the prospects of political settlements. In addition, many participants felt that the acquisition of nuclear weapons by one or more countries might accelerate a chain reaction in which many of the civil nuclear powers would feel compelled to acquire them. Since, however, the Assembly included participants from such a wide range of countries, it was natural that opinions should differ on the probable effect of the development of nuclear weapons by additional countries. Some members of the Assembly argued that in Asia such a development would correct a dangerous imbalance that might occur if the People's Republic of China is the only Asian military nuclear power. However, it was agreed that an increase in the number of military nuclear powers in Europe would improve neither the security of the area nor that of any individual country. If nuclear weapons spread to one nation or to many, the risks of nuclear war will increase and world security will decrease.

5. The Assembly then turned its attention to the complex question of preventing the further spread of nuclear weapons. It is clear that there are steps which the existing military nuclear powers could take to make it less likely that the civil nuclear powers will develop military programs. The restriction of some types of information is one of these, but it should be remembered that the basic principles of the design of nuclear weapons and rocket propulsion are now in the public domain. But competence in many technologies is required to construct plutonium separation plants, and strict controls on export of their components does make it materially harder for a civil nuclear power to produce warheads. The gyros, servo-mechanisms and solid fuel technology associated with dependable and accurate missile systems are in the same category. But it is clear that a restrictive policy alone on the part of the existing nuclear missile powers will not provide a permanent solution. Some participants believed that such restrictions might well engender the kind of friction which will encourage civil nuclear powers to force their way into the nuclear weapons club.

6. The best general solution to the problem of proliferation is a non-proliferation treaty, which would be signed by all the existing military nuclear powers, and under which all other powers would undertake not to manufacture or acquire nuclear weapons. This would require the creation of strength-

ened international controls and additional agreements. Even a treaty signed only by the Soviet Union, the United States and Britain plus the existing civil nuclear powers, would have a profound effect upon the immediate prospects of proliferation.

Unfortunately, negotiations in the Eighteen Nation Disarmament Committee at Geneva on a non-proliferation treaty have been unsuccessful so far, owing mainly to a dispute between the Eastern and Western powers about arrangements for nuclear weapons within NATO (the so called nuclear sharing issue).

It was the view of some members of the Assembly that when these difficulties have been resolved, the wisest course is to negotiate a simple treaty. This would leave for later negotiation measures of control, such as increased safeguards over the supply of components for civil nuclear programs, as well as the cut-off of production of fissionable material for military purposes, and the extension of a test-ban treaty to underground tests. It must, however, be noted that the problem of explosions for peaceful purposes will present a complication even for such a simple treaty. In view of the similarity between the technology involved in devices for peaceful nuclear explosions and the technology involved in some nuclear weapons, it was recognized that any underground test-ban or non-proliferation treaty which permitted the spread of nuclear devices for peaceful explosions would not be an effective one. There was awareness among the participants that any program of nuclear explosions for peaceful purposes must be safeguarded in a manner consistent with the objectives of a non-proliferation treaty.

7. However, there is evident impatience on the part of many nations with the slow progress of great-power agreement even on such a simple treaty, and also great reluctance on the part of others to sign it until some of the related measures have been put into force. Participants from certain countries proposed to embark forthwith on obtaining agreement on the extension of the test-ban treaty to underground tests and on an inspected cut-off of all fissionable material production. This would make the strengthening of the inspection machinery of the International Atomic Energy Agency more universally acceptable — to which many participants attach great importance.

The Assembly did not attempt to reach a decision on which course should now be pursued, but one position that is shared by almost all the civil nuclear powers and which was forcefully expressed at the Assembly must be taken into account in judging how nuclear proliferation is to be controlled by agreement. They showed the same anxieties as the

existing military nuclear powers about the dangers of proliferation. But these powers are reluctant to sign a non-proliferation / non-acquisition treaty unless there is some "equality of obligation" on the part of both the military and civil nuclear powers.

If the military nuclear powers ask other powers to sign a non-proliferation/non-acquisition treaty while themselves continuing to test; if they embark on a new phase of their technological competition such as Ballistic Missile Defense Systems; if they cannot agree to halt their arms race and to work more vigorously toward nuclear disarmament; if they are unwilling to contemplate a pledge of non-use of nuclear weapons against non-nuclear powers; if, in short, they seek to impose restrictions on others without accepting any for themselves, some civil nuclear powers might not be willing to adhere to such a treaty.

Moreover, each civil nuclear power has certain special security problems and political objectives on which it hopes to achieve at least some general satisfaction if it is to abjure an option which others have taken up. This problem is made harder by the fact that — in the opinion of the Assembly — few if any countries would find much reassurance in any form of guarantee by one or more of the military nuclear powers, and by the fact that the civil nuclear powers in Asia have severe doubts about the wisdom of signing a treaty imposing mutual restraints to which China is not a party. At the very least, this means that some of the civil nuclear powers would sign a non-proliferation treaty only for a limited number of years, and would make their continuing adherence conditional on the adherence of all the military nuclear powers and on evidence of effective measures of restraint and arms control on their part.

8. It was the general view that, even if a non-proliferation treaty should prove beyond our immediate grasp, responsible countries should consider a number of other important initiatives, which are not necessarily dependent on the concurrence of all the nuclear powers — military and civil alike.

The first is the negotiation of Nuclear Free Zones. The initiative of the Latin American states in themselves preparing the ground work for a non-nuclear zone was warmly endorsed by the whole Assembly. It is possible that the African states may also be able to take a parallel initiative, and that nuclear free zones might be set up in other areas of the world, including Europe, although the difficulties will be somewhat greater. Given the dangerous consequences of any nuclearization of the Middle East, a serious effort should be made to negotiate a Nuclear Free Zone for that area. Some

felt, however, that the success of any such effort is likely to depend upon a limitation of the conventional arms race in the region.

Second, there is the possibility of extending the safeguards and inspection functions of the International Atomic Energy Agency to all countries, independent of the conclusion of a non-proliferation agreement. This proposal commanded active support by participants from a variety of nuclear powers, civil and military. The proposal already referred to for a general cut-off in the production of fissionable material is another important independent measure.

Finally, there is the possibility of preventing proliferation by an underground test-ban which would reinforce the Moscow partial test-ban treaty of 1963. This also need not await the conclusion of a non-proliferation treaty. High importance was attached to further negotiations on this subject. A constructive discussion took place on the means by which some of the problems which it presents could be solved. It was suggested that there should be an agreement by the military nuclear powers to forego all underground testing for a limited trial period, with a system of verification of seismologically ambiguous events by challenge or invitation; it was hoped that such an experimental suspension of underground tests would provide the necessary assurances that could lead to a treaty banning underground tests. Another suggestion was for a "threshold treaty" banning all tests above a certain seismic magnitude. It was represented that either approach would be greatly assisted by the creation of the proposed "nuclear detection club," in which nations would cooperate in the collection and exchange of seismological data.

9. The knowledge of the danger involved in the spread of nuclear weapons to more and more countries should stimulate serious consideration of the means whereby we create a firm and just structure of international security. Preventing the spread of nuclear weapons is a problem to which the international community must now address itself. It can probably be accomplished before far-reaching measures of disarmament and general detente have been achieved, particularly if the suggestions contained in Sections 6, 7 and 8 of this document are actively pursued. But, whatever limited treaties and agreements the civil and the military nuclear powers may conclude, proliferation will remain a physical possibility as long as the diffusion of technology continues. In the long run, it can only be permanently prevented by a serious commitment on the part of all nations to the principles of the United Nations Charter.

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THE CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE was founded by Andrew Carnegie in 1910 with a gift of \$10 million, "to hasten the abolition of international war." Since its founding, the Endowment has worked to further the cause of peace by means of directed research, educational activities, and publications in cooperation with universities and private organizations here and abroad. The Endowment's work is conducted both from its own headquarters building on United Nations Plaza in New York City and from its European center in Geneva.

THE INSTITUTE FOR STRATEGIC STUDIES was founded in 1958 in London. It is a private, international center for the continuous study and discussion of the problems of international security, national defense and arms control in the nuclear-missile age. The aim of the Institute is to raise on an international scale the level of public understanding and debate on these problems. The Institute is a non-profit making body. It is non-party; it is independent of governments; the composition of both its Council and its staff is international, and it is not the advocate of any particular school of thought. The Institute pursues its aim by various kinds of activities: by private discussions, by sponsoring international conferences, by initiating studies and analyses, and by providing a center of reference and information. The Institute publishes a monthly journal, *Survival*, between 6-10 monographs a year (*Adelphi Papers*), the annual *Military Balance* and the booklength "studies in international security."

THE AMERICAN ASSEMBLY was established by Dwight D. Eisenhower at Columbia University in 1950. It holds non-partisan meetings and publishes authoritative books to illuminate issues of United States policy.

An affiliate of Columbia, with offices in the Graduate School of Business, the Assembly is a national, educational institution incorporated under the State of New York.

The Assembly seeks to provide information, stimulate discussion, and evoke independent conclusions in matters of vital public interest.

At least two national programs are initiated each year. Authorities are retained to write background papers presenting essential data and defining the main issues in each subject.

About 60 men and women representing a broad range of experience, competence, and American leadership meet for several days to discuss the Assembly topic and consider alternatives for policy.

All Assemblies follow the same procedure. The background papers are sent to participants in advance of the Assembly. The Assembly meets in small groups for four or five lengthy periods. All groups use the same agenda. At the close of these informal sessions participants adopt in plenary session a final report of findings and recommendations.

Regional, state, and local Assemblies are held following the national session at Arden House. Assemblies have also been held in England, Switzerland, Malaysia, Canada, the Caribbean, South America, and the Philippines. Over eighty institutions have co-sponsored one or more Assemblies.

The background papers for each Assembly program are published in cloth and paperbound editions for use by individuals, libraries, businesses, public agencies, non-governmental organizations, educational institutions, discussion and service groups. In this way deliberations of Assembly sessions are continued and extended.

