

July 1987

Volume 25

No. 1

Pugwash Newsletter



issued quarterly by the Council of the Pugwash Conferences on
Science and World Affairs

PUGWASH NEWSLETTER

Vol. 25 No. 1 July 1987
Editor : Martin M. Kaplan

C O N T E N T S

	<u>Page</u>
Editorial : ON MEETINGS AND AWARDS AT THIRTY	1
On the Thirtieth Anniversary of Pugwash	3
Remarks by Professor Dorothy Hodgkin in Accepting the Olympia Prize for Pugwash, Athens, Greece, 15 June 1987	5
49th Pugwash Symposium on "Common Security in Europe" Mragowo, Poland, 23-26 May 1987	
List of Participants	7
Statement of the Pugwash Executive Committee	8
Reports on the Workings Groups	14
List of Papers	21
15th Pugwash Workshop on Nuclear Forces, Geneva, Switzerland Part 1 (12 June 1987), "The ABM Treaty and the SDI" Part 2 (13-14 June 1987), "Deep Reductions and Minimum Deterrence"	
List of Participants	22
Statement of the Pugwash Executive Committee	23
List of Papers	26
Summaries of Papers by:	
Bernard T. Feld	27
Elmar Schmähling	28
Shi Xinren	32
"Statement of the Definition, Character and Composition of Student/Young Pugwash" adopted by the members of existing S/Y Pugwash groups present at the 36th Pugwash Conference, Budapest, Hungary, 1-6 September 1987	33
ISODARCO	35
IPWOS	35
Obituaries : Otto Nathan	36
Father Louis-Dominique Dubarle	36
Calendar of Future Meetings	Back cover

The photograph on the front cover shows the participants in the 49th Pugwash Symposium on "Common Security in Europe", Mragowo, Poland, 23-26 May 1987.

ON MEETINGS AND AWARDS AT THIRTY

Birthdays are often unavoidable bores, but for scientists in particular the 30th often has a special quality of full vigour combined with maturity. And so it is with Pugwash as July 1987 approaches, 30 years after its founding in 1957. The occasion was commemorated in Warsaw, Poland and in Pugwash, Nova Scotia, Canada (see elsewhere in this issue). Here we will touch on the usual (meetings) and less usual (awards) in the life of Pugwash.

Mragowo, Poland

This unpronounceable name to other than Polish tongues was the site of the 49th Pugwash Symposium which was on European Security. Mragowo is located in the north-east Mazurian lake district of Poland, and there we enjoyed the warm hospitality of the Polish Pugwash Group headed by Maciej Nalecz, Chairman of the Pugwash Council which met for two days in Warsaw prior to the symposium. The contents and results of the symposium are covered elsewhere in this issue (pp. 7-21). Poland has been host to several meetings in the past on the topic of European security (Radziejowice, December 1969; Krakow, April 1974; and Zakopane, April 1978). Our meeting in May was a venture into "common security", a subject rich in substance which may occupy many meetings in the future. The "new way of thinking", first broached in the Russell-Einstein Manifesto and now brought into prominence by General Secretary Gorbachev, was the thread followed throughout the discussion. The follow-up in this series on European Security will be held in Bochum, FRG in April 1988.

15th Workshop on Nuclear Forces Geneva, Switzerland

Of our regular series of meetings, this one is especially high in interest, level of participation and results. The agenda was divided into two parts which permitted an assessment of current developments with respect to the ABM and SDI and to deep cuts in nuclear forces and minimum deterrence. Perhaps at present there is little more we can say on the first topic, having agreed that it is essential to abide by a strict observance of the ABM Treaty in its original and clear interdiction of all aspects of SDI except for restricted research. But the deterrence concept and what constitutes "minimum deterrence", as well as the more difficult area beyond minimum deterrence to zero nuclear weapons, will occupy us for an indefinite time.

Awards

We do not often have the opportunity to blow our own horn, but the bestowal of three awards within a period of one month certainly deserves a full complement of brass fortissimo in the manner of Wagner or Berlioz. These awards were :

- the Olympia Prize of the Alexander S. Onassis Public Benefit Foundation, Athens, Greece;
- the "Antonio Feltrinelli" Prize of the Accademia Nazionale dei Lincei, Rome, Italy;
- and the Lenin Peace Prize awarded to Professor Dorothy Hodgkin in view of her work for peace and as President of Pugwash.

The Pugwash leadership was well represented in Athens for the Onassis award which was presented with due pomp and ceremony. Other recipients of this year's group of awards by the Onassis Foundation were Senator Alessandro Pertini, former President of Italy, the Archaeological Society at Athens, Most Rev. Arturo Rivera y Damas, Metropolitan Archbishop of San Salvador, and Amnesty International. Dorothy Hodgkin received the Lenin Peace Prize in a quiet ceremony in Moscow. The Alessandro Feltrinelli Prize will be presented at a ceremony in Rome, Italy in November. Space limitations do not permit reproduction of the rather lengthy award citations, but they will be included in the Proceedings of the 37th Conference in Gmunden am Traunsee, Austria.

The funds from the above awards will be allocated to the Pugwash Foundation in Geneva, Switzerland to support our future activities. The addition of these funds to the Foundation will provide a good start towards our goal of three million dollars which would afford Pugwash financial stability and security in the future. That goal is still a long way off, and we need your help in obtaining suggestions for donors. A glance at our already heavy schedule for the next two years (see back cover) will attest to the vigour of our Movement, and the road beyond will demand at least equal commitment. But adequate finances are required to underwrite these efforts, so let all of us assume individual responsibility in this connection.

M.M. Kaplan



Participants in the Commemoration of the 30th Anniversary
Pugwash, Nova Scotia, Canada, 10-12 July 1987
The Eaton Lodge is in the background

ON THE THIRTIETH ANNIVERSARY OF PUGWASH
(issued in Pugwash, Nova Scotia, Canada, 12 July 1987)

Thirty years ago in response to an appeal by Bertrand Russell and Albert Einstein, and at the invitation of the industrialist Cyrus Eaton, a group of 22 scientists met in this small fishing village of Pugwash, Nova Scotia, Canada. From that historic meeting of individuals from East and West was born the movement which later became known as the Pugwash Conferences on Science and World Affairs, dedicated to efforts for the prevention of nuclear war in particular and of armed conflict in general.

We have met these past few days to commemorate the event of 30 years ago, to assess Pugwash achievements towards these goals, and to give thought to how Pugwash can best exert its efforts in future years.

The Pugwash Conferences can take pride in having contributed in some degree to the avoidance of nuclear war to date through work on measures for arms control and disarmament, mutual restraint, and lessening of international tensions and mistrust. For instance, on:

- achievement of the Partial Test Ban Treaty (1963);
- achievement of the Biological Weapons Convention (1972);
- the strategic arms control (SALT I and SALT II) agreements (1972 and 1979);
- the Non-Proliferation Treaty (1970); and
- the Anti-Ballistic Missile Treaty (1972).

Pugwash has also concentrated efforts on:

- progressive steps towards a nuclear weapon-free Europe and nuclear

weapon-free zones in other parts of the world;

- supporting the widespread movements among scientists for the abandonment of the Strategic Defense Initiative (SDI) because of its technical unfeasibility and malign effect on arms control and disarmament;
- verification procedures in arms control agreements, for example, a chemical weapons ban.

In addition, Pugwash has advocated and is still pressing for a stop and reversal of the arms race through a nuclear weapons "freeze", a complete ban on underground testing of nuclear weapons, and deep cuts in nuclear arsenals and in conventional forces. Recognizing that economic and social problems of the poorer nations, apart from the human misery they generate, cause international instabilities that erupt in local wars which can escalate into a nuclear war, Pugwash has attempted to deal with Third World problems in the context of crisis prevention and control.

Despite all efforts by Pugwash and others, we are in a more precarious situation today than 30 years ago with respect to the danger of nuclear war because of the continued arms race which may bring about a nuclear war by accident. At the same time, mistrust and tension continue, as well as many armed conflicts in the Third World. This danger is compounded by the growth of nuclear arsenals to the absurd level of some 50,000 warheads and the failure to achieve any disarmament measures.

We, therefore, urge all our scientific colleagues and the general public to join us in redoubling efforts to achieve a peaceful and just world

dedicated to no use or threat of use of nuclear weapons under any circumstances. We urge their complete elimination, preceded by prompt, radical and deep cuts in nuclear arsenals, to reduction and restructuring of conventional forces that will be non-provocative and defensive only, to the achievement of a complete ban on chemical weapons, and to comprehensive disarmament. As stated in the Russell-Einstein Manifesto of 1955, which constitutes the credo of Pugwash, this will require "thinking in a new way". These are the challenges that all of us must take on ourselves, individually and collectively, to assure a future for humankind in peace and prosperity, forever

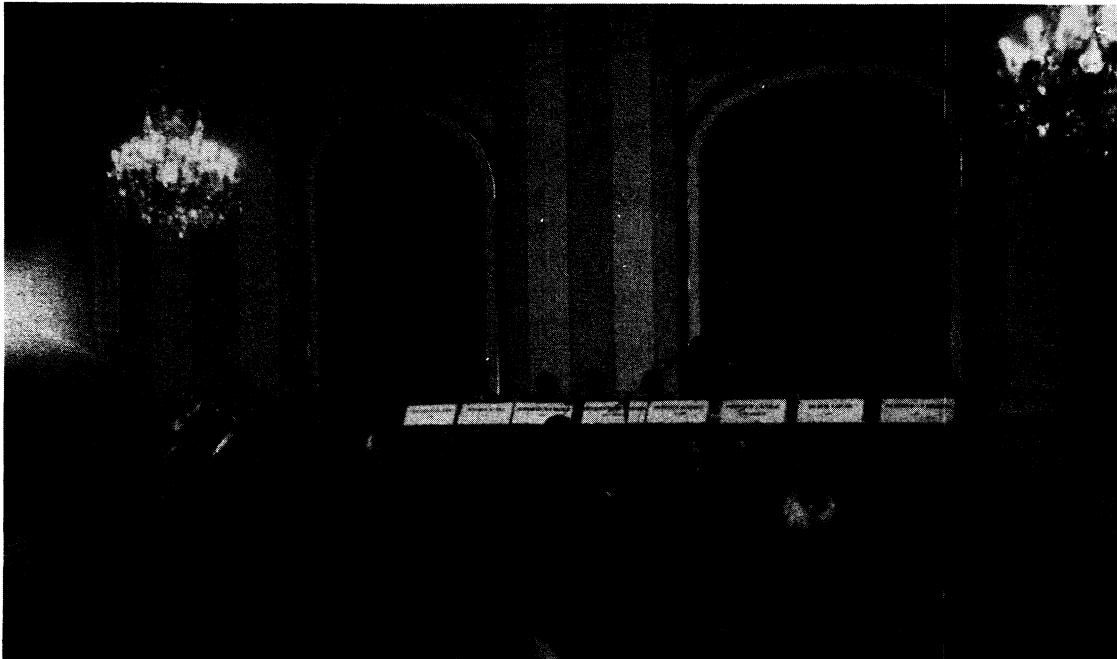
freed from the Damoclean sword of nuclear annihilation.

In the words of the Russell-Einstein Manifesto:

"There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal, as human beings to human beings: remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death."

John Brenciaglia (Canada)
Anne Eaton (USA)
Bernard Feld (USA)
Dorothy Hodgkin (UK)
Martin Kaplan (Switzerland)
Patricia Lindop (UK)

Maciej Nalecz (Poland)
Mark Oliphant (Australia)
Peter Ross (Canada)
Joseph Rotblat (UK)
Betty Royon (USA)
Raymond Szabo (USA)



Commemoration of the 30th Anniversary
in the Royal Castle, Warsaw, 21st May 1987
The members of the Executive Committee are at the Presidium table

REMARKS BY PROFESSOR DOROTHY HODGKIN
IN ACCEPTING THE OLYMPIA PRIZE FOR PUGWASH
ATHENS, GREECE, 15 JUNE 1987

It is a great happiness and a great honour for me personally to stand here in Athens to receive on behalf of the Pugwash Conferences on Science and World Affairs the Olympia Prize for contributions to the preservation of man and his environment.

Our conferences arose as a result of the development of hydrogen bombs in the early 1950's and the realisation of the enormous danger they posed to mankind and all life on earth if ever they were used in war. The Russell-Einstein Manifesto called for a meeting of scientists to discuss the danger of the use of weapons of mass destruction and to urge the governments of the world to find peaceful means for the settlement of disputes between them.

Today it is particularly good to remember that among those offering to assist with a scientists' meeting was Onassis himself; he cared also about the existence of nuclear weapons. It was a historical accident that Bertrand Russell received Cyrus Eaton's letter first with its invitation to his home in Pugwash. The meeting summoned included twenty-two scientists from ten countries, Australia, Austria, Canada, China, France, Japan, Poland, the United Kingdom, the U.S.A. and the U.S.S.R.. In their first committee meeting they discussed the hazards not only of nuclear bombs but also of peaceful uses of atomic power which can, as you know, be very serious locally in nuclear accidents. Working together the scientists easily became close friends and with succeeding years their numbers grew. I was interested to see that a Greek scientist, Dr. S. Vatistas, first attended a Pugwash meeting at the 10th Conference in 1962, the first one I attended myself.

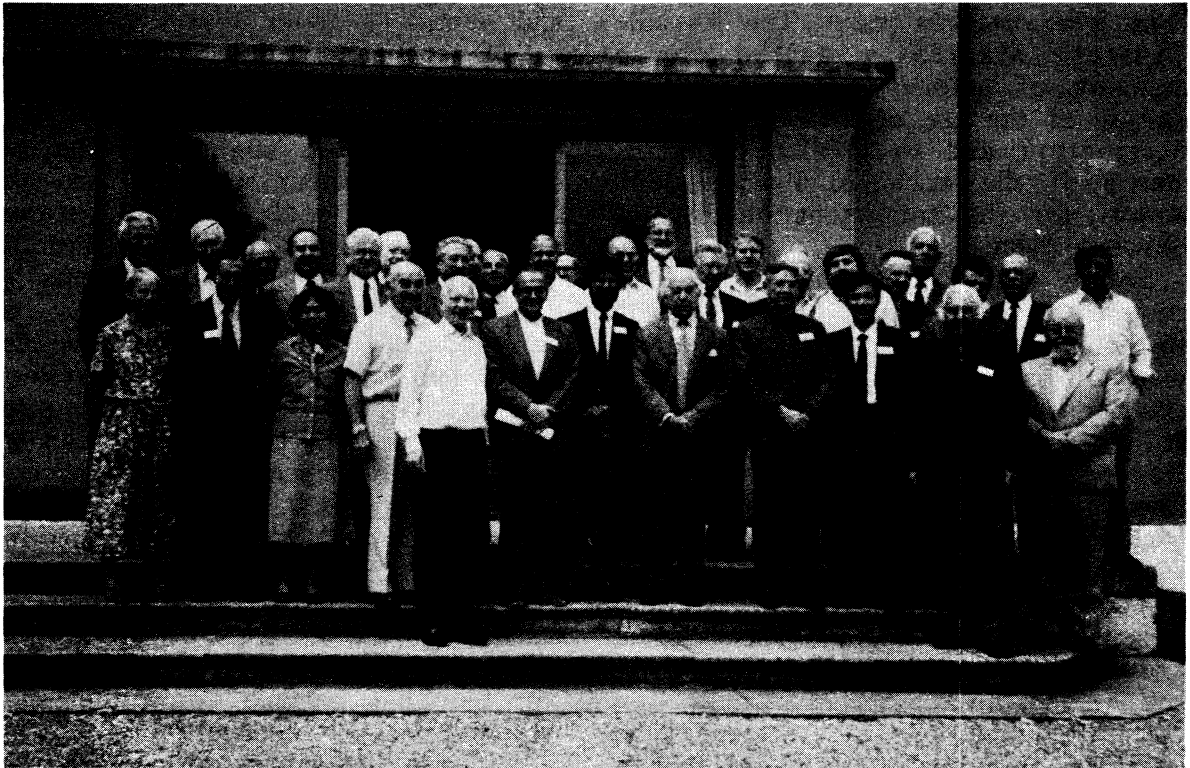
Today about 2,200 scientists from 85 countries have come to Pugwash meetings. With growing numbers of participants the number of problems that we consider also grows. This year we have already had one new workshop on "Foreign Debts and International Stability" in Peru, as well as our more usual disarmament workshops on "Chemical Weapons", "European Security" and "Nuclear Forces". We cannot ignore the problems of poverty and want.

Still our major effort is to achieve peace itself and so an end to nuclear weapons. We see two processes which have to develop together: the reduction of nuclear weapons, and the development of real friendship between people working together and so between nations. Peace seems to happen sometimes quite suddenly, as between the Scandinavian countries over 100 years ago, or between England, France and Germany after the last war. In neither case can we imagine these countries using nuclear weapons against each other. In Plovdiv, Bulgaria we held a meeting four years ago to discuss how to create a nuclear-free zone in the Balkans at the instance of Greece and Bulgaria. After hundreds of years of war they had become aware that they were friends, not enemies.

With the happenings of the last two years we have become much more hopeful about the future. Much more serious disarmament negotiations are now taking place in Geneva in response to Secretary-General Gorbachov's proposals for complete nuclear disarmament. The first possible stages of the process were the subject of two very serious scientific forums in Moscow called by an International Initiative Committee, of

which our first and present secretaries, Professor Joseph Rotblat and Dr. Martin Kaplan were members. Dr. Verganelakis from Greece, Professor Nalecz and I were there at the meeting to hear of progress on the accurate monitoring of underground tests of nuclear explosions arranged by the cooperation of American and Russian scientists. But still it is slow work, getting our conclusions accepted all round and

halting for ever the testing and making of new nuclear weapons. This could by itself release large funds for scientific research and action to better ends. Athens is still beautiful in parts and at a distance, but we need to cure pollution, stop the smoking chimneys of Eleusis, preserve with the aid of archaeologists the shattered monuments of the past, and make it a beautiful city to live in in the future. There is the whole world to care for.



Participants in the 15th Pugwash Workshop on Nuclear Forces
Geneva, Switzerland, 12-14 June 1987

49th PUGWASH SYMPOSIUM ON "COMMON SECURITY IN EUROPE"

23-26 May 1987, Mragowo, Poland

List of Participants

- Professor Egon Bahr, Member of the Presidium of the Social Democratic Party of the Bundestag, Bonn, FRG
- Professor Nansen Behar, Institute for Contemporary Social Studies, Sofia, Bulgaria
- Academician Dénes Berényi, Institute of Nuclear Research of the Hungarian Academy of Sciences, Debrecen, Hungary
- Professor Anders Boserup, Centre of Peace and Conflict Research, University of Copenhagen, Copenhagen, Denmark
- Dr. Andrzej Burzynski, Polish Chamber of Foreign Trade, Warsaw, Poland
- Professor Francesco Calogero, Physics Department, University of Rome, Rome, Italy
- Dr. Paolo Cotta-Ramusino, Department of Physics, University of Milan, Milan, Italy
- Professor Marian Dobrosielski, former Deputy Minister of Foreign Affairs, University of Warsaw, Warsaw, Poland
- Professor Horst Ehmke, Member of the Bundestag, Bonn, FRG
- Professor Bernard T. Feld, Professor of Physics, Massachusetts Institute of Technology, Cambridge, MA, USA
- Dr. Horst Fischer, Department of International Law, Ruhr University, Bochum, FRG
- Mr. Shalheveth Freier, Physics Department, Weizmann Institute of Science, Rehovot, Israel
- Professor Ryszard Frelek, Academy of Social Sciences, Warsaw, Poland
- Professor Klaus Gottstein, Forschungsstelle Gottstein in der Max-Planck-Gesellschaft, Munich, FRG
- Professor Dorothy Hodgkin, Nobel laureate in chemistry, President of Pugwash Conferences, Oxford, UK
- Professor John P. Holdren, Professor of Energy and Resources, University of California, Berkeley, CA, USA
- Professor Knut Ipsen, Rector of the Ruhr University and Department of International Law, Bochum, FRG
- Dr. Martin M. Kaplan, Secretary-General, Pugwash Conferences, Geneva, Switzerland
- Professor Chavdar Kiuranov, Institute of Sociology, University of Sofia, Sofia, Bulgaria
- Dr. Jean Klein, Institut Français des Relations Internationales, Paris, France
- Mr. Edy Korthals Altes, former Ambassador, Lochem, The Netherlands
- Mr. Pierre Lemaitre, Center for Peace and Conflict Research, Copenhagen, Denmark
- Professor Patricia J. Lindop, Professor of Radiobiology, University of London, London, UK
- Dr. Sverre Lodgaard, Director, International Peace Research Institute, Oslo, Norway
- Academician Ignacy Malecki, Polish Academy of Sciences, Warsaw, Poland
- Professor Herbert Marcovitch, Institut Pasteur, Paris, France
- Dr. Valeri Mazing, Institute of USA and Canadian Studies, Moscow, USSR
- Professor Jorma K. Miettinen, Department of Radiochemistry, University of Helsinki, Helsinki, Finland
- Colonel Zdzislaw Modrzewski, General Staff of the Polish Armed Forces, Warsaw, Poland
- Academician Maciej Nalecz, Director, Institute of Biocybernetics and Biomedical Engineering, Polish Academy

of Sciences, Warsaw, Poland
Professor Tibor Palánkai, Head of the
Department of International Eco-
nomics, Budapest, Hungary
Ms. Peri Pamir, Pugwash Conferences,
Geneva, Switzerland
Dr. Ioan Pascu, Academy of Social
and Political Studies, Bucharest,
Romania
Dr. Stanislav Patejdl, Centre of Peace
and Disarmament Research of the
Czechoslovak Academy of Sciences,
Prague, Czechoslovakia
Professor George W. Rathjens, Massa-
chusetts Institute of Technology,
Cambridge, MA, USA
Academician Oleg Reutov, Head of
the Department of Organic
Chemistry, Moscow University,
Moscow, USSR
Professor Rita Rogers, University of
California at Los Angeles, CA, USA
Professor Joseph Rotblat, Emeritus
Professor of Physics, London Uni-
versity, London, UK
Dr. Adam-Daniel Rotfeld, Head of the
European Security Department,
Polish Institute of International
Affairs, Warsaw, Poland

Dr. Jean-Pierre Stroot, Institut Inter-
universitair des Sciences Nucléaires,
Brussels, Belgium
Dr. Bogumil Sujka, Deputy Director of
the International Department of the
Polish Unified Workers Party,
Warsaw, Poland
Professor Janusz Symonides, Polish
Institute of International Affairs,
Warsaw University, Warsaw, Poland
Dr. Fred Tanner, Institut Universitaire
de Hautes Etudes Internationales,
Geneva, Switzerland
Professor Bhalchandra H. Udgaonkar,
Tata Institute of Fundamental
Research, Bombay, India
Professor Radovan Vukadinovic,
Faculty of Political Science, Uni-
versity of Zagreb, Yugoslavia
Professor Maurice H.F. Wilkins, Nobel
laureate in physiology or medicine,
Kings College, London, UK
Professor Miguel S. Wionczek, El
Colegio de Mexico, Mexico City,
Mexico
Dr. Bernhard Zepter, Deputy Head of
the FRG Delegation to the Multi-
lateral Trade Negotiations, Geneva,
Switzerland

STATEMENT OF THE PUGWASH EXECUTIVE COMMITTEE

The Pugwash Conferences on Science and World Affairs, which for 30 years have been bringing together prominent scientists and public figures from around the world for private discussions on reducing the peril of nuclear war, convened the 49th Pugwash Symposium in Mragowo from May 23 to May 26, 1987. The 48 participants came from Poland, the Soviet Union, the United States, and 19 other countries in Europe and elsewhere. Following the meeting, participants were hosted at a dinner in Warsaw by Mr.

Jozef Czyrek, member of the Politburo and Secretary of the United Polish Workers' Party and Chairman of the Foreign Relations Committee of the Polish Parliament.

The discussions at the Symposium focused on the dangers of continuing to pursue security in the traditional way (in which countries and alliances independently seek sufficient military strength to protect their vital interests) and, more positively, on ways to supplement and eventually replace this traditional but increasingly

inappropriate international-security regime with one based on cooperative pursuit of common security. The agenda ranged from definitional and conceptual aspects of common security to practical steps for implementation, and covered non-military as well as military dimensions of the topic. Although the emphasis was on Europe, where the traditional approach to security has produced the greatest concentrations of weaponry on Earth, the necessity of developing a common-security approach in the global context was treated as well.

The participants in the Symposium took part as individuals, not as representatives of their governments or other agencies. The present statement was prepared following the meeting by the Executive Committee of the Pugwash Council, which has sole responsibility for its contents. It should not be interpreted as a consensus of the Symposium participants, among whom a wide range of views was represented.

* * * * *

Dangers of the Present Situation

It was widely believed - although it cannot be proved - that the absence of war in Europe since 1945 is due in large part to the existence of nuclear weapons. This hypothesis holds that leaders of the European countries and of the United States and the Soviet Union have exercised great caution in avoiding direct confrontation in Europe because they recognize that any armed conflict in that area would probably lead to the use of nuclear weapons, not only there but worldwide. With the perception that the great benefit of peace in Europe is attributable to nuclear deterrence of conflict, there is an essential ingredient in the acceptance - by the

public and political leaders alike - of nuclear-weapons deployments and doctrines that make nuclear war extremely likely if war in Europe breaks out at all.

Even if it is true that fear of nuclear war has helped the peace in Europe, however, the dangers and shortcomings of relying too heavily on nuclear deterrence for this purpose are distressingly large and growing larger. This is not to say that we have a prescription at this time for escaping from nuclear deterrence altogether. As long as nuclear weapons exist, so will an appalling vulnerability to their destructive effects, and with it a degree of deterrence against their use and against other conflicts that could lead to their use. But nuclear deterrence poses inherent dangers of failure, instability, and distraction from other approaches to security, and all these dangers are magnified when the nuclear-deterrence concept is overextended and overstressed, as we believe has occurred.

In the first place, nuclear deterrence tends to lead not to a static balance but to a dynamic arms race: a combination of technological change, worst-case assessment, and the irresistible temptation to seek damage-limiting or war-fighting capabilities "for use if deterrence fails". This guarantees that there is never an answer to the question, "How much is enough?". The resulting nuclear arms competition has been fantastically wasteful of economic and technological resources, and it has tended to produce characteristics in the nuclear forces on both sides that increase the danger of nuclear wars resulting from pre-emptive pressures, misjudgments, or malfunctions during a crisis. (These dangers have been elaborated, for example, in the report of the Pugwash Executive Committee on the 14th Pugwash Workshop on Nuclear Forces, held in Geneva in December 1986.) In the name of reducing a

danger that was already very small - that of a premeditated attack by a rational adversary - attempts to "strengthen" deterrence actually have been increasing intolerably the much greater danger of inadvertent nuclear war.

Taking the explicit position that nuclear deterrence is the preferred way to prevent conventional conflict in Europe has the further liability that it sets an unacceptable example for other parts of the world. How can the proliferation of nuclear weapons to additional countries be stopped as long as major industrial powers continue to insist that these weapons provide the key to preventing war? Will a world of twenty or thirty nuclear-weapon powers be safer or less safe than today's world?

With respect to its effects on conventional military forces, the emphasis on the nuclear dimension of deterrence has brought few benefits to go with its considerable costs. It has not prevented costly and dangerous build-ups of conventional weaponry on both sides, but it has contributed to an unfortunate lack of attention to ways that strictly conventional deterrence of conflict could be enhanced by restructuring conventional forces and the doctrines concerning their use as has been advocated by Pugwash for several years.

The attempt to make nuclear deterrence bear the main burdens of security policy has had other political and psychological effects as well. It has demoralized the public, who are asked to swallow the paradox that their safety requires living under the constant threat of nuclear annihilation. It has led to a continuing process of caricature and even vilification of each side by the other, since without such dehumanization of one's adversaries the accumulation of weapons of mass destruction for possible use against them can hardly be made publicly acceptable. And it has in-

cluded a set of nuclear-weapon deployments and counter-deployments so certain to be interpreted as aggressive in intent that, far from being mere symptoms of an underlying hostile relationship, they have become significant contributors to that hostility.

Perhaps most importantly, the preoccupation with nuclear deterrence as the centre-piece of security policy - and with deterrence based on offensive military capability more generally - has distracted the public, political leaders, and professional analysts from serious consideration of broader and potentially far more satisfactory approaches to attaining national and international security. These largely neglected approaches include those that fall under the heading of common security, to which we now turn.

The Meaning of Common Security

The concept of common security embraces all those kinds of steps that improve the security of both sides - in contrast to steps aiming to increase the security of one side while reducing that of the other. Measures under common security may be undertaken in the non-military as well as the military sphere, and they may be carried out as independent initiatives, or as elements of negotiated treaties, or in connection with less formal bilateral or multilateral agreements. The central idea in all cases is that one side cannot be secure if its adversary is insecure.

The common-security approach is motivated by recognition of the shortcomings of the fundamentally confrontational approach that has been favoured by most nations throughout most of history - shortcomings that have always existed and have often led to wars, but that have become wholly intolerable in the nuclear age. In the common-security perspective,

the possibility of nuclear war is regarded as the common enemy of all, against which no less than the cooperative efforts of all will suffice. Since any major conflict in a nuclear-armed world may become a nuclear war, however, and since even non-nuclear weapons have reached levels of destructive power that place whole societies at risk, the common goal necessarily becomes the prevention of all major conflict.

Pursuit of this goal with any prospect of success implies, in turn, not only that the military means of conflict must be brought under control but also that the potential causes of international conflict must be controlled. These include prejudice born of historical rivalries and affronts, competition for land and other scarce resources, and frustration arising from poverty, pollution, disease, and other forms of oppression of human rights. Efforts towards ameliorating these problems through cooperative efforts in science, technology, and education are doubly useful: not only do these efforts offer the best hope of solving the massive problems looming or already existent with respect to agriculture, energy, water, public health, economic development, and global environmental quality: but also, through the process of cooperation itself, these efforts break down prejudices and resentments in ways that make it much less thinkable to resort to armed conflict over the problems that remain unsolved.

In our Symposium and in many other recent forums, there have emerged a wide variety of specific proposals for moving in the common-security direction - not with the idea that nuclear deterrence can be eliminated in the very near future, but with the aim of supplementing it, reducing its scope, and thereby reducing its dangers. In what follows we summarize some of the most promising of these proposals in both the military

and non-military arenas.

Military Measures

It is appropriate to begin by terminating the particular trends in military deployments, and by abandoning the particular weapon systems that most contribute to the confrontational and destabilizing character of today's military postures.

- The most troublesome nuclear systems include those with high capability for pre-emptive attack on the nuclear forces of the other side, those so vulnerable to attack as to foster "use them or lose them" pressures, and those whose dual capability or easy concealability complicate the adversary's judgments about the threat and thereby foster worst-case assessment.
- In this connection, the double-zero option for intermediate-range nuclear missiles in Europe is highly desirable and should be agreed upon. The removal of shorter-range nuclear missiles from Europe should be made a part of this package.
- As a means of reducing the dangers associated with nuclear artillery and other short-range nuclear systems not covered by agreements on missiles, the Palme Commission's proposal for a nuclear-weapon-free corridor on both sides of the NATO/WTO boundary in central Europe should be given renewed consideration. (We note, as we have before, that even unilateral withdrawal of these weapons is fully feasible, since their removal would benefit the security of the side removing them at least as much as that of the other side.)

Pursuit of the dream of a comprehensive population defence against

ballistic missiles may be the last gasp of the illusion that safety in the nuclear age is more readily available through independent action than through cooperation. This particular pursuit is unusually dangerous, however, because of its capacity to provoke a highly expensive and dangerous new phase of the arms race in space and on Earth, because the characteristics of space-based and "pop-up" anti-missile systems will promote complete automation of nuclear-war decision making and hence intolerably increase the chance of nuclear war by accident, and because the false hope of a technological shield is distracting the public and its leaders from more realistic approaches to security. The solution to this problem, as we have said repeatedly before, is mutual recommitment to strict observance of the original interpretation of the Anti-Ballistic-Missile (ABM) Treaty, augmented by a ban on testing of anti-satellite (ASAT) weapons.

The concept of restructuring conventional-force postures and doctrines on both sides in ways that enhance defensive capabilities while reducing offensive ones has been developed and elaborated mainly through a series of specialist workshops convened by Pugwash over the past several years. It is now receiving serious attention by military staffs and senior policy makers on both sides. This concept has great potential for reducing the confrontational and destabilizing aspects of the conventional force balance in Europe, an aim highly desirable in its own right as well to diminish NATO's perception that it must rely on nuclear weapons to offset deficiencies in its conventional defences. Further progress with this idea will require more discussions in which top military planners from both sides share their ideas about specific modifications in postures and about the interactions of doctrines and per-

ceptions on the two sides.

Progress towards reduction of insecurities related to conventional force postures should also be sought in the full implementation as well as augmentation of the procedures for notification and observation of military manoeuvres agreed as part of the Conference on Confidence and Security Building Measures and Disarmament in Europe (CDE) in Stockholm last year. We note with satisfaction that three sets of WTO manoeuvres in Eastern Europe have been carried out in the presence of invited NATO observers since the beginning of 1987, one of them before the notification and presence of NATO observers was formally required by the agreement.

Chemical weapons remain an unnecessary and unacceptable threat to common security. They would have little military effectiveness in a major conflict in Europe but could cause huge civilian casualties; their continued manufacture and stockpiling feed perceptions of malign intent and promote worst-case assessments; and the failure of the major powers to relinquish them is encouraging their spread and use in other parts of the world. Based on progress in the Conference on Disarmament in Geneva (and assisted in some measure, we believe, by the long-running Pugwash series of specialist workshops on this topic), a comprehensive agreement on chemical weapons is within reach. It should be concluded, signed, and ratified as quickly as possible.

Non-Military Measures

Scientific and technological cooperation between countries in the North Atlantic and Warsaw Treaty Organizations is well established in many fields. Much more could and should be done, however, on the topics of energy, environment, agriculture, public health, information sciences,

and space research, among others. Such cooperative efforts have sometimes suffered from lack of comprehensive rationale which the common-security framework, including recognition that the scale of the problems virtually requires international cooperation if adequate efforts are to be mounted, may be able to provide.

Expanded economic cooperation between the countries of the EEC and the CMEA could be another important part of a common-security framework. Economic interactions and economic understanding would be facilitated by development of common standards for economic analysis and statistical reporting. Efforts in this direction are underway in a number of forums.

More comprehensive assessment is needed of the interactions of North-South and East-West issues, including especially the possibilities for joint East-West efforts in assisting the South with its compelling problems of economic development, agriculture, public health, and so on. Just as the concept of common security reveals that the security of the West depends on that of the East and vice-versa, so also does it require that the security of the South be assured if there is to be security for the North.

The process of improving East-West understanding and reducing mistrust and misperceptions in moving towards a common-security perspective will require easing the difficulties of travel and improving access to information between and within countries. This implies easing of visa requirements and procedures, free circulation of journalists and publications, free access to broadcasts, direct exchange of television and radio programmes, and other measures.

Even the most difficult and contentious topics must be open for sustained discussion if the common-security approach is to reach its full potential. These topics include human rights, immigration, perceptions about

the implications of national ideologies, and the potential for cooperative efforts to stem international terrorism. Common security does not require that all differences between countries on such topics be resolved, but it requires that they be aired and understood.

* * * * *

Under the "new way of thinking" being promoted in the Soviet Union and other countries in Eastern Europe - and given the cooperation from the West that should be forthcoming in response - the kinds of progress described here, which would have seemed hopelessly Utopian only a few years ago, now seem entirely feasible. Meeting in Poland, we have been particularly impressed by the main ingredients of the programme for decreased armaments and increased confidence announced by General Jaruzelski earlier this month, in which many of the ideas that have been promoted by Pugwash on these topics found expression.

Those ideas include the progressive denuclearization of Europe, reductions in offense-capable conventional forces, the reorientation of military doctrines favouring defensive rather than offensive thinking, and the development of confidence- and security-building measures of a political as well as a military character. The Jaruzelski plan is not a fully worked out and detailed programme, but seems rather to be an open invitation to the countries of East and West to sit down and work out the needed details together. The appearance now of this initiative towards a common-security approach is most welcome.

Based on all the evidence available to us, we believe the world stands at a turning point of enormous potential significance in international relations. The newly available opportunities to

move away from confrontation and instability towards a cooperative approach to security and improving the human condition seem extraordinary. That many of the initiatives that have opened these possibilities have emerged rather suddenly from the East, however, has surprised and confused many in the West, who wonder whether such far-reaching offers and proposals can be genuine. To these sceptics we say that the only

way to find out what is really possible is to accept the invitations before us and to begin to try to work out the details. There is a risk of disappointment and failure, but it should be weighed against the much larger risks of continuing with the status quo, and against the potential of an approach to common security that could alleviate the most compelling problems of the nuclear age.

REPORTS ON WORKING GROUPS

Editor's Note :

The following reports were prepared by the rapporteurs of the two working groups, in consultation with their conveners; the names are given at the end of each report.

WORKING GROUP 1

"MILITARY ASPECTS OF COMMON SECURITY"

Threat Perceptions

There are two main conceptions of how another war may come about. One holds that the main threat to European security is that nations may stumble into a war they do not want. Political and military circumstances may produce a series of incremental moves towards the brink of war. The other is the fear of pre-meditated attack - a concern that some states or groups of states are deliberately building up their forces in order to prevail at a moment of opportunity. The Working Group focused on the risks of inadvertent escalation of war, which was held to be the main threat to European security.

Deterrence

Several participants observed that

nuclear deterrence has instilled a measure of cautiousness on both sides of the East-West divide. Not only have the major powers shown restraint on the European scene, but after 1945, they have also avoided involvement with their own forces in any conflict threatening confrontation. While causality is hard to demonstrate at the macro level of history, in this particular respect, the proposition that nuclear deterrence has helped to prevent war between East and West in the period after World War II cannot easily be dismissed.

However, by enhancing enmities and creating fear nuclear deterrence influences domestic politics and international relations in ways which can only increase the danger of war. It nurtures perceptions of inhuman, aggressive adversaries worthy of total extinction as far as nuclear prepara-

tions are concerned, and inhibits proper understanding of the variation and complexity of the concerns and interests on the other side. It encourages and legitimizes military confrontation rather than political cooperation. Ever since the nuclear age began, arms build-up has been the twin brother of deterrence. At times, the overriding significance attached to military policies has threatened to reduce the management of East-West relations to "nuclear accountancy".

Deterrence tries to combine the prevention of war with the preparation for it, in a way resembling the old prescription si vis pacem, para bellum (if you want peace, prepare for war). However, there is considerable historical evidence to disprove this proposition. Statistical data on the history of crises and wars strongly suggest that a crisis is more likely to lead to war if it has been preceded by an arms race. This finding is highly relevant for the understanding of current security problems while the arms race goes on. The military incentives for pre-emption in crisis are growing. The capabilities of modern weapons raise a number of stability problems over and beyond those of the pre-nuclear times. Deployed in reference to the risk of premeditated attack, they have created a much greater danger of inadvertent escalation to war.

On balance, therefore, most members of the Working Group saw deterrence as something worse than a set of policies that has worked in the past and that may not work in the future. They argued that deterrence is something which itself makes the world more dangerous, and which a policy of common security must try to transcend as a matter of top priority.

From Deterrence to Common Security

Neither common security nor deter-

rence provide any precise guide to the formulation of security policies. There was agreement, however, that policies of common security must strive to overcome the negative effects that deterrence has on international relations, by beginning to subvert fear and hatred. They must be so designed as to reduce the role of military factors in international affairs - of nuclear weapons in particular - and to direct more attention to political management and resolution of conflicts. Deterrence must yield to cooperative endeavours to solve common problems.

Confidence-building measures of the kind agreed in Stockholm are steps in this direction. However, substantial reduction of the role of military factors pre-supposes real arms reductions.

In the nuclear field, it was suggested that the first step in transcending deterrence must be to retreat from the preparations for nuclear war-fighting. Today, the major powers proclaim that a nuclear war must never be fought, because it cannot be won; however, they still act as if the only valid form of deterrence is one which conveys to the other side that if it commits aggression it will be militarily defeated. Unlike mutual assured destruction, which requires a finite number of weapons, this traditional form of deterrence, applied to nuclear weapons, means a limitless race. Some participants emphasized that in Europe the retreat from nuclear war-fighting postures should begin with the abolishment of the doctrine of extended deterrence.

In the field of conventional forces, it was argued that initial efforts to transcend deterrence should concentrate on the reduction of capabilities for offensives while keeping capabilities for defence. Transformation towards unambiguously defensive postures is the key to military stability, and may facilitate disarmament. The

painstaking analysis of the requirements of defensive defence undertaken by the Pugwash Study Group on Conventional Forces was noted with appreciation; it has contributed much to a growing interest in defensive defence, both in the East and in the West.

Traditionally, discussions of military stability have focused on the notion of the balance of power, implying that balance amounts to stability. The balance-of-power way of thinking connects, furthermore, with unilateral policies of strength, contrary to the idea of common security. Nowhere is this way of thinking more deeply ingrained than in the military alliances. It was suggested, therefore, that it can hardly be effectively curbed from within the alliances, but that it can better be curtailed by curtailing the alliances themselves.

Although outside its purview, the Working Group emphasized that transcending deterrence is not only a matter of cutting back on armaments, but also a question of expanded cooperation in civilian sectors in a multi-pronged effort to substitute common security for deterrence.

Disarmament

In discussing nuclear weapons the Working Group proceeded from three basic assumptions: (1) that any armed conflict in Europe may involve nuclear weapons; (2) that if nuclear weapons are used, there is an unacceptable risk of escalation; and (3) that a nuclear war is not winnable. The imperative of nuclear disarmament was reiterated, and the prospects for an early agreement on the elimination of medium range systems welcomed.

Some participants noted that to begin a process of nuclear disarmament by eliminating systems of medium range is not very logical, but the main point is to get started. The Working

Group gave strong support for the proposal to eliminate all nuclear systems with ranges between 500 and 5500 km from Europe, and expressed the hope that the major powers would agree to do so before the end of the year.

As for nuclear weapons of shorter range, it was argued that they should be considered together with conventional force re-arrangements, since battlefield nuclear weapons and conventional forces are closely integrated. It was noted that the NATO position on this matter appears inconsistent: while at the Vienna CSCE deliberations NATO asks for exclusive treatment of conventional forces, in Geneva the United States and other NATO countries claim that further reduction of nuclear weapons presupposes conventional re-arrangements (to eliminate the advantages that the WTO is said to have in this field).

Attention was drawn to the Jaruzelski plan, which is a comprehensive programme for enhanced security focussing on the central European area and containing many ideas advocated by Pugwash: disengagement of nuclear weapons; disengagement and reduction of conventional weapons, beginning with those systems particularly suited for surprise attack; evolution of military doctrines so that they can be mutually recognized as strictly defensive; and continuous improvement of confidence- and security-building measures. The plan calls for an East-West dialogue on military doctrines; this is another idea supported by Pugwash.

Confidence- and Security-Building Measures

A presentation was made of the Stockholm Document on Confidence- and Security-Building Measures (CSBMs). To date, the new CSBMs have been applied in accordance with

the letter and spirit of the agreement.

There is considerable scope for further improvement of the measures agreed in Stockholm. The Working Group considered some proposals to this effect. For instance, some participants emphasized that in case of war, decisive strikes could come from the air; hence, the significance of including independent air activities in the system of CSBMs. Others made the case for additional constraints, both on military activities and on force deployments. The Conference on Disarmament in Europe (CDE) might be charged with the task of elaborating guidelines for constraints in the border areas between NATO and WTO which the states in northern, central and southern Europe - and other involved powers - might follow up by adopting concrete measures reflecting the characteristics of each sub-region. This could provide for fruitful interaction between regional and sub-regional confidence- and security-building efforts.

The participants felt that the ongoing consultations in Vienna about the forum for future conventional arms reduction talks should be accompanied by a reassessment of the substantive approaches to military security in central Europe. It is high time to leave the numerical balance of power exercise conducted at the MBFR aside, concentrating instead on the elimination of options for surprise attack. Some participants stressed the desirability of linking the new forum for conventional force reductions to the

CSCE.

Chemical Weapons

In a major war in Europe, chemical weapons would be of little military value, but could cause huge civilian casualties. Their continued production by the big powers encourages proliferation and use of them in other parts of the world. The Working Group reviewed the progress that has been made towards a global ban on development, production and stockpiling of chemical weapons as well as the sub-regional approach pursued by the West German Social Democratic Party (SDP) and the Communist Parties of the German Democratic Republic and Czechoslovakia. It was noted that pursuant to the policies of the present government the Federal Republic of Germany may get rid of existing chemical weapon stockpiles in the beginning of the 1990s, and that it may be able to avoid deployment of new binary weapons should the USA decide to produce them.

The Working Group welcomed the activities of the Pugwash Study Group on Chemical Warfare which are focused on verification of compliance with a treaty, especially verification of non-production. Information was given of the inspectorate used by the International Atomic Energy Agency (IAEA) with respect to the Non-Proliferation Treaty (NPT). This experience will be valuable for the analogous problem in a chemical weapons treaty.

Sverre Lodgaard and Radovan Vukadinovic,
Conveners

Jean Klein and Fred Tanner,
Rapporteurs

WORKING GROUP 2

"NON-MILITARY ASPECTS OF COMMON SECURITY IN EUROPE"

The Working Group started its work with an introductory note about the basic elements included in the idea of common security. The most important of these elements is the need to get rid of the wide-spread militarization of political thinking. The past has led to an insane interaction of this thinking with military technology, the nuclear weapon being regarded as an absolute weapon. This produced in political thinking the "absolute enemy" in spite of the early discussions on deterrence according to which the only purpose of nuclear weapons was to prevent their use. Common security is to replace this extreme confrontation by mutual responsibility for security; security cannot be only individual, national or alliance security, it must at the same time be the security of the perceived enemy and others.

The further elaborations of the group were divided into three areas concerning:

- description and scope of common security;
- functional approaches in different fields of international relations;
- practical implementation, especially in today's Europe.

I. Definition and Scope of Common Security

Starting with the presumption that common security demands a comprehensive approach defining not only the security of one country or an alliance, but including also the security of the potential adversary, the group discussed the main differences between it and other security concepts. Some participants felt that common security is theoretically incompatible with the concept of deter-

rence, admitting, however, that both approaches to security will coexist for some time. Some others felt that a concept of non-provocative defence might replace the present deterrence concept step by step. Collective security in the traditional sense as codified in the UN Charter was regarded to be short of the all-encompassing framework of common security, but it could find its adequate place within this framework.

There was some controversy as to whether common security would lead to a comprehensive new international order or whether it would be a mere concept for dynamic politics. Leaving this prognosis undecided the Working Group agreed on the following basic points :

1. Common security is a comprehensive approach to political thinking which is based on profoundly changed conditions in international relations. It is something like a Copernican turning point in political thinking.
2. Common security means global security, but, taking into account its universal character, it may serve well as a new approach to regional security, also on the European level.

Thus, common security was regarded not as a rather static situation but a long-lasting dynamic process in all phases, determined, however, by the said comprehensive approach to political thinking.

II. Functional Approaches in Different Fields of International Relations

There was a general assumption that international relations will lead to

growing interdependence on all levels of international interest. International relations, therefore, will -and must- develop from a more or less passive coexistence to an active cooperation in many fields, such as political policy, economy, ecology and especially environmental protection, science, technology, culture, information systems (mass media), human rights, this enumeration not being exhaustive. A broad and intensive cooperation on such a broad scale will not abolish the possibility of conflict. It may, on the contrary, create new unexpected conflicts as the example of the European Community proves. But the interdependence of such a wide-spread cooperation will reach a point of no return, namely of no return to a primarily militarily-oriented concept for preserving peace. Even peaceful cooperation will not necessarily exclude economic conflicts and other controversies but it may reduce the dangers and consequences of such activities. Peaceful cooperation has, moreover, to follow the narrow path between growing international interdependence and the sovereignty of states. Cooperation - not only on governmental, but also on numerous non-governmental levels - might lead to an analysis of the respective national interests. However, common security is intimately connected, and really based on, common interests.

International cooperation has already reached a significant level. What is lacking, however, is the comprehensive principle underlying this cooperation. Common security could become this principle, based on good neighbourliness. This principle might help to overcome many obstacles which in practice present difficulties in developing cooperation.

III. Practical Implementation of Common Security, Especially in Europe

On the background of these findings

the following measures, among others, were proposed:

1. A European Council for Confidence-Building Measures should be founded as a permanent international institution with the function of strengthening security and peace in this region on a partnership basis. Bilateral statements such as the Joint Declaration on Security and Cooperation in Europe Based on Mutual Confidence-Building Measures of the Social Democratic Party of Germany (SPD) and the United Polish Workers' Party (PZPR) may prepare the ground for similar multilateral activities.
2. Comprehensive study of security- and instability-generating political issues should be encouraged in East and West. The results should be dealt with by appropriate governmental and non-governmental forums.
3. A Pugwash Workshop on common security including the impact of the North-South relations should be organized. The results should be submitted to the governments concerned. Political decision-makers should be invited to take part in this Workshop.
4. In order to reduce the widespread danger of misperceptions, Pugwash should recommend a free flow of information for the purpose of avoiding incorrect images of the future security partners. This means free circulation of journalists and newspapers, free access to broadcast emissions, free direct exchange of TV and broadcast programmes, etc. Bureaucratic barriers i.e. obtaining visas, should be lowered.
5. Common security demands uniting for suppression of international terrorism.
6. One of the most urgent fields of cooperation is environmental protection. In this field a free exchange

of know-how and all other information must be reached. Besides, international safety standards in science and industry should be agreed and enforced.

7. European cooperation in science, technology, humanities and culture should be broadened and intensified on the non-governmental and governmental level, as well as on the level of appropriate international organizations. A free exchange of scholars and students must be made possible, including the necessary funding. Joint research and educational programmes should be encouraged and carried out.

8. Economic cooperation between EEC and CMEA-countries should be developed, including common standards for economic analysis and statistics, leading to economic security.

9. Political, economic and cultural cooperation would create more favourable conditions for the implementation of human rights. International cooperation in the implementation of the political, social and personal rights of people should be extended.

10. It was agreed that small countries have a special role in common security. Since their interaction with neighbouring countries is great, they have special opportunities to help in developing international collaboration. Because they are small they have less capacity for independence than larger countries; and, being less self-centred, they are often better able than larger countries to understand

the viewpoints and ideologies of other countries. On the other hand, small countries can be specially exposed to influence from large countries and superpowers, but such interaction also provides opportunities for small countries to influence the policies of superpowers. Small countries should have opportunity for self-determination within the system of common security.

11. Official ideologies should be formulated in such a way that the perceptions of them by other countries does not create fears of aggressive intentions. Smaller countries with information about several types of ideology and ways of thinking should use their potential for bridge-building.

12. Common security requires that we accept and respect our differences, but to do this we need to achieve mutual understanding. To achieve this we will need to engage in vigorous dialogue and patient enquiry in many difficult areas, e.g. human rights and threat perceptions. The growth of new thinking in the Soviet Union encourages us to believe that we may be successful in the work that is required.

13. A further Pugwash Workshop was proposed to consider seriously the problem of common values in Europe, e.g. life in peace and security, survival of the family, the individual human being as the primary value on earth, scientific truth, nationality, individual liberty, social justice, work for human benefit, etc. etc.

Knut Ipsen and Jorma Miettinen,
Conveners

Maurice Wilkins,
Rapporteur

WORKING PAPERS

- Egon Bahr (FRG), Some background remarks.
- Nansen Behar (Bulgaria), Small socialist countries, global crisis and economic security.
- D. Berényi (Hungary), Scientific connections in the service of approaching human beings to each other.
- Francesco Calogero (Italy), Military aspects of "common security" in Europe: Obstacles.
- Marian Dobrosielski (Poland), On "common security".
- Horst Fischer (FRG), A code of transnational behaviour and common security in Europe.
- Ryszard Frelek (Poland), What can smaller and medium-size countries do for the implementation of "common security" in Europe?
- Klaus Gottstein (FRG), The discussion of long-range goals of societies as a basis for common security.
- Knut Ipsen (FRG), Common security, regional (European) collective security and international law.
- Edy Korthals Altes (The Netherlands), On common security.
- Pierre Lemaitre (Denmark), An aspect of mutual security.
- I. Malecki (Poland), European cooperation in science as the factor of "common security".
- Herbert Marcovich (France), On common security in biology.
- Zdzislaw Modrzewski (Poland), Military aspects of European security.
- Peri Pamir (Turkey), The path to common security.
- Stanislav Patejdl (Czechoslovakia), The role of Czechoslovakia and actual problems of European security.
- Rita R. Rogers (USA), Human aspects of "common security" in Europe: The acceptance of "otherness" and "change".
- Adam-Daniel Rotfeld (Poland), New confidence-building measures and Poland's security.
- Bogumil Sujka (Poland), Political ways and means for the solution of existing international crises and conflicts.
- Janusz Symonides (Poland), The relation between global and regional "common security".
- Fred Tanner (Switzerland), Confidence and common security: Some military aspects.
- Maurice Wilkins (UK), For common security our differences may be as valuable as what we have in common.

Editor's Note :

It is hoped to publish a selection of the above papers in a monograph, perhaps in combination with commissioned papers being prepared for a follow-up meeting on "European security" to be held in Bochum, FRG, 21-24 April 1988. In the meantime readers interested in obtaining copies of the above papers should address their request directly to the authors.

15th PUGWASH WORKSHOP ON NUCLEAR FORCES

Geneva, Switzerland, 12-14 June 1987

Part 1 (12 June 1987), "THE ABM TREATY AND THE SDI"

Part 2 (13-14 June 1987), "DEEP REDUCTIONS AND MINIMUM DETERRENCE"

LIST OF PARTICIPANTS

- General Sir Hugh Beach, Council for Arms Control, Kings College, London, United Kingdom
- Marshal of the RAF Sir Michael Beetham, GEC Avionics Ltd., Rochester, Kent, United Kingdom
- Prof. Francesco Calogero, Physics Department, University of Rome, Italy
- Colonel-General N.F. Chervov, General Staff of the Armed Forces of the USSR, Moscow, USSR
- Dr. Julie Dahlitz, Senior Researcher, United Nations Institute for Disarmament Research (UNIDIR), Geneva, Switzerland
- Prof. Marian Dobrosielski, former Deputy Minister of Foreign Affairs, University of Warsaw, Poland
- Academician Nicolai T. Fedorenko, former Deputy Foreign Minister and former Permanent Representative of the USSR to the United Nations, Moscow, USSR
- Prof. Bernard T. Feld, Professor of Physics, M.I.T., Cambridge, MA, USA
- Prof. Jacques Freymond, Center for Applied Studies in International Negotiations and European Cultural Center, Geneva, Switzerland
- General Charles Georges Fricaud-Chagnaud, former President of the Fondation pour les Etudes de Défense Nationale and Chargé de Mission, Ecole Militaire, Paris, France
- Prof. Richard L. Garwin, IBM Research Division and Columbia University, Yorktown Heights, NY, USA
- Academician V.I. Goldansky, Institute of Chemical Physics, USSR Academy of Sciences, Moscow, USSR
- Prof. Klaus Gottstein, Forschungsstelle Gottstein in der Max-Planck-Gesellschaft, Munich, FRG
- Prof. Anatoly Gromyko, Director, Africa Institute, USSR Academy of Sciences, Moscow, USSR
- Prof. John P. Holdren, Professor of Energy and Resources, University of California, Berkeley, CA, USA
- Dr. Martin M. Kaplan, Secretary-General, Pugwash Conferences, Geneva, Switzerland
- Lt.General Glenn Kent (retired), The Rand Corporation, Washington, DC, USA
- Dr. Jean Klein, Institut Français des Relations Internationales, Paris, France
- Colonel (ret.) Dr. Wilhelm Mark, Federal Military Department, Bern, Switzerland
- Academician M.A. Markov, Academy of Sciences of the USSR, Moscow, USSR
- Mr. Robert S. McNamara, former Secretary of Defense, retired President of the World Bank, Washington, DC, USA
- Mr. René Pasche, Federal Department of Foreign Affairs, Bern, Switzerland
- Prof. Alessandro Pascolini, Department of Physics, Padova University, Padova, Italy
- Mr. Liu Pei, Beijing Institute for International Strategic Studies, Beijing, People's Republic of China
- Prof. George Rathjens, Massachusetts Institute of Technology, Cambridge,

MA, USA
Prof. Joseph Rotblat, Emeritus
Professor of Physics, London,
University, London, United Kingdom
Prof. Jack Ruina, Massachusetts
Institute of Technology, Cambridge,
MA, USA
Dr. Miloslav Ruzek, Institute of Inter-
national Relations, Prague,
Czechoslovakia.
Rear Admiral Elmar Schmähling,
Director of Federal Armed Forces
Study Institute, Bergisch-Gladbach,
FRG
Prof. Hylke Tromp, University of
Groningen, Polemological Institute,
Groningen, The Netherlands
Prof. Vladimir G. Trukhanovsky, Editor

in Chief of "Problems of History",
Moscow, USSR
Dr. Matti Vuorio, Chief of Research
Division, Ministry of Defense,
Helsinki, Finland
Mrs. Wang Zhiyun, Delegation of the
People's Republic of China to the
Conference on Disarmament, Geneva,
Switzerland
Mr. Shi Xinren, Deputy Secretary,
Beijing Institute for International
Strategic Studies, Beijing, People's
Republic of China
Lord Zuckerman, former Chief
Scientific Advisor to the British
Government, London, United
Kingdom

STATEMENT OF THE PUGWASH EXECUTIVE COMMITTEE

The 15th Pugwash Workshop on Nuclear Forces was held in Geneva, Switzerland, on 12-14 June 1987. Participants in the Workshop comprised 35 scientists and public and military figures from 13 countries (see attached list). This meeting continued a series that began in January 1980 with an initial focus on European and intermediate-range nuclear forces; the focus recently has been on nuclear arms control more generally, including the links between offensive and defensive weapons, between intercontinental and shorter-range systems, and between nuclear and conventional forces.

At this 15th Nuclear Forces Workshop, the first day was devoted to discussions of the central role of the ABM Treaty in preventing an unres- trained nuclear arms race, with emphasis on steps needed to preserve the Treaty against piecemeal erosion,

radical reinterpretation, or outright abrogation. The remainder of the meeting was devoted to the possibi- lities for deep cuts in offensive nuclear forces: the benefits to be gained from such cuts, prescriptions for bringing the cuts about, and the nature of deterrence and strategic stability at lower levels of nuclear forces.

The participants in the Workshop took part as individuals, not as repre- sentatives of their governments or other agencies. The present statement was prepared following the meeting by the Executive Committee of the Pugwash Council, which has sole res- ponsibility for its contents. It should not be interpreted as a consensus of the Workshop participants, among whom a wide range of views was represented.

* * * * *

Albert Einstein wrote more than thirty years ago that "Nuclear weapons have changed everything but our way of thinking." The way of thinking that nuclear weapons made obsolete is the idea that a country can assure its own security by deploying suitable military forces. The modern reality is that security in a nuclear-armed world is attainable only through mutual restraint and cooperative action.

The Anti-Ballistic Missile Treaty of 1972 reflected recognition of this reality by U.S. and Soviet leaders of that time. They had come to understand that the unilateral actions through which each side had been increasing its offensive nuclear forces had produced nothing but growing dangers and diminishing security for both. The ABM Treaty embodied the crucial additional recognition that the arsenals of offensive nuclear missiles could be successfully limited only if anti-missile systems were strictly constrained.

The ABM Treaty has served ever since as the centre-piece of an arms-control framework that, while far from perfect, has undoubtedly kept nuclear arsenals and the nuclear danger smaller than they otherwise would have been. Other important elements in this arms-control framework have been the SALT I and SALT II agreements, the Limited Test Ban Treaty, the Outer Space Treaty, and the Non-Proliferation Treaty. Loss of the ABM Treaty would imperil the accomplishments of this entire array of agreements.

After fifteen years of observance by both sides, the ABM Treaty is threatened today by renewed interest in developing and deploying territory-wide defences against ballistic missiles. This renewed interest seems to have been motivated in part by a desire to escape from the dilemmas and dangers of nuclear deterrence, encouraged by the hope that new technology may

have changed the conditions that previously made defence against ballistic missiles an unpromising proposition.

The dissatisfaction with deterrence is understandable, but the hope that technology offers an escape from these dangers through deployment of effective defences is misplaced. Neither new technologies nor old ones offer any prospect of providing an effective defence of populations against nuclear attack by a "reactive" offence - that is, against an adversary free to modify his forces for the purpose of overwhelming or circumventing the defences.

Recognizing this, many proponents of missile defence have proposed the much more limited goal of trying to protect not people but retaliatory nuclear forces. But even this limited goal is unpromising of attainment against an unconstrained offence, and even if achieved it would offer no escape from the dilemmas of deterrence. Protecting retaliatory nuclear forces does not, after all, avoid "mutual assured destruction"; it only reinforces the assurance that, if deterrence failed, destruction would be mutual.

Both sides undoubtedly will continue to feel that prudence requires maintaining programmes of research on technologies related to ballistic-missile defence, within the constraints established by the ABM Treaty, but to expand such activity to the point of stretching or breaking the Treaty's restraints would be not only futile but extremely dangerous. Doing so would be certain to expand the nuclear arms race on Earth as well as extending it into space; and, if the pursuit of defences actually reached the stage of deployment, the likely result would be decreased crisis stability and increased chance of inadvertent nuclear war.

The current threats to the ABM Treaty include not only the possibility

of outright abrogation to pursue prohibited defences, but also radical reinterpretation that would have exactly the same effect. The so-called "broad interpretation", attempting to circumvent Article V's clear provision that the parties undertake "not to develop, test, or deploy ABM systems or components that are sea-based, air-based, space-based, or mobile land-based", distorts the meaning of the words in the Treaty and violates its spirit and intent. If the United States persists in its insistence on this radical reinterpretation, the result will be not only the demise of the ABM Treaty itself but also irreparable damage to the credibility of that country as a responsible partner in negotiation and observance of international agreements.

Although the "broad interpretation" issue is based on a phony ambiguity in the ABM Treaty, there are some genuine ambiguities in the Treaty that could erode it in piecemeal fashion unless they are resolved. These ambiguities relate mainly to early-warning/space-tracking radars, anti-tactical ballistic missile (ATBM) activities, and ABM capabilities of anti-satellite (ASAT) and anti-aircraft weapons systems. Most of these issues could and should be resolved in the Standing Consultative Commission. The problems posed by ASAT activities, however, both in their own right and as an intolerable impediment to restricting ABM capabilities, make it essential to conclude a separate treaty banning all testing and deployment of dedicated ASAT systems.

To recognize that pursuit of strategic defences offers no escape from the dangers of nuclear deterrence is not to concede either that these dangers are acceptable or that they are irreducible. The dangers of trying to base security on nuclear deterrence - nuclear postures that entail a significant chance of setting off an inadvertent nuclear war, the reinforce-

ment of underlying hostilities through increasingly threatening deployments, the creation of a pernicious example for other countries, the diversion of publics and policy makers from more constructive approaches to security - are not acceptable in the long term. They can be reduced, although not entirely eliminated, even in the short term, but only through cooperative actions, meaning both negotiated agreements and independent measures aimed at increasing mutual security.

Given strict adherence to the ABM-Treaty, which is essential as the continuing foundation of a cooperative approach to security, the extension of that approach to embrace deep reductions in offensive nuclear forces is within early reach. The leaders of the United States and the Soviet Union both declared their commitment to such reductions at their meeting in Reykjavik, and each has repeatedly reaffirmed that commitment since. The double-zero option for eliminating intermediate-range and some shorter-range nuclear-armed missiles from Europe is, we hope, about to be accepted; the actual dismantling of modern nuclear weapons that will result from that agreement will set an extremely important and promising precedent.

Proceeding promptly from that precedent into deep reductions in inter-continental nuclear forces would have several highly desirable effects. It would solidify the commitment of the two sides to a fundamental change in their approach to their relations. It would contribute to a change in political climate that would encourage cooperative approaches to a much wider variety of mutual problems. It would signify to the rest of the world the seriousness of the major powers in pursuing nuclear disarmament, with important non-proliferation benefits. And, given that the reductions proceed - as they should - by eliminating first the most troublesome weapons (those

with high capability for pre-emptive attack or with high vulnerability to it), the reductions will begin at once to reduce the dangers associated with the present nuclear postures.

We see no reason that reductions in nuclear forces could not proceed at a pace of at least ten percent per year, a figure that would lead to cuts of fifty percent in the space of seven years. With suitable attention to the matter of maintaining crisis stability at each stage, it should be possible to extend this process to much smaller levels of strategic nuclear forces (say, ten percent or less of today's figures) - and complete abolition of shorter-range nuclear weapons - without imperiling the confidence of either side that it could retaliate effectively against any nuclear attack.

Achieving such deep cuts in U.S. and Soviet nuclear forces will require that the other nuclear-weapons powers join in the reductions as the lower levels are approached, and clearly the whole process would be facilitated by parallel measures to reduce fears of conventional attack and to build confidence more generally. A most promising development with respect to conventional forces is the growing interest among military planners in restructuring conventional forces and doctrines to emphasize defensive capabilities while decreasing potentials

for surprise attack and other offensive operations. Specific statements to this effect in recent official communiqués from Warsaw Treaty Organization leaders are especially encouraging.

The phrase "minimum deterrence" is sometimes used to describe the situation that would prevail after deep reductions in nuclear forces, accompanied by abandonment of the proposition that nuclear weapons are needed to deter conventional attack. We are not enthusiastic about this term, because we prefer to think that the real "minimum" of nuclear deterrence will prove to be zero. A world from which nuclear weapons have been abolished altogether, as difficult as that may be to envision today, should remain the ultimate goal.

There can be no doubt, however, that a world in which the United States and the Soviet Union possess a thousand or fewer nuclear weapons each, with smaller numbers in the possession of the other nuclear powers, would be a great improvement over today's world of some fifty thousand nuclear bombs and warheads. Arguments and uncertainties about how to get all the way to zero should not stand in the way of moving now in what everyone should recognize as the right direction.

WORKING PAPERS

Julie Dahlitz (Australia), Issues of treaty interpretation concerning the ABM Treaty.

Bernard T. Feld (U.S.A.), Some elements of the required "radical" approach to reversing the arms race.

Elmar Schmähling (Federal Republic of Germany), The nuclear age is facing its end: why nuclear weapons

have already become impotent and obsolete; consequence, dissuasion instead of deterrence.

Shi Xinren (People's Republic of China), The SDI and the US-Soviet arms race in space.

Hylke Tromp (The Netherlands), Shouldn't we change the agenda?

BACKGROUND INFORMATION DOCUMENTS

- Desmond Ball et al., Crisis Stability and Nuclear War, A Report published under the auspices of the American Academy of Sciences and the Cornell University Peace Studies Program, January 1987, "Conclusions and Recommendations", pp. 86-88.
- Klaus Gottstein, An Impartial Look at SDI, Preliminary Report on the U.S.-German Workshop on the Political, Strategic-Operational, Economic and Psychological Aspects of the Program to Investigate Possibilities for Strategic Defense (SDI), Tutzing, FRG, December 14-17, 1986.
- Robert S. McNamara, Blundering into Disaster: Surviving the First Century of the Nuclear Age, Pantheon Books, N.Y., 1986, Extract on "minimum deterrent", pp. 122-123.
- Robert S. McNamara, "Reykjavik: Breakthrough or Blunder?", Arms Control Today, March 1987, pp. 6-8.
- Paul Nitze, Speech on 1 April 1987 "ABM Treaty Prohibits Only Deployment of SDI"
- Lord Zuckerman, "Reagan's Highest Folly", New York Review of Books, 9 April 1987.
- Lord Zuckerman, "What Price Star Wars?", New York Review of Books, 23 April 1987.
- Lord Zuckerman, "The Nuclear Opening", New York Review of Books, 7 May 1987.
- "On the Military Doctrine of the Warsaw Treaty Member-States", Supplement to Moscow News, No. 23 (3271), 1987.

Editor's Note :

Because of space limitations the following are two summaries and one paper of those listed previously. Please address requests for copies of papers directly to the authors.

SOME ELEMENTS OF THE REQUIRED "RADICAL" APPROACH
TO REVERSING THE ARMS RACE

Bernard T. Feld (USA)

Freeze on all new deployments and testing of weapons and delivery systems and, likewise, on production of fissile materials for weapons use.

50% across-the-board cut on all such systems, followed by further cutback of 10% per year down to a "minimum deterrent".

Definition of "minimum deterrent" as consisting of about 20 submarine-based missiles on each side, with about

5 each for each of the lesser "nuclear powers" (i.e., France, United Kingdom, People's Republic of China).

Adoption of no-first-use agreement and defence-oriented conventional deployments by both sides.

Complete elimination of chemical weapons.

Complete denuclearization of Europe, from the Urals to the Atlantic, as well as of the Indian Ocean area.

Reductions in offensive conventional forces and establishment of a demilitarized corridor between the NATO and WTO countries.

Acceptance of an "open-skies" regime, i.e., an Antarctic-like Treaty for space.

Joint Soviet-US-European manned Mars landing around 2020.

Assignment of at least 30% of savings from reduced armament expenditures to Third World development programmes.

THE NUCLEAR AGE IS FACING ITS END;
WHY NUCLEAR WEAPONS HAVE ALREADY BECOME IMPOTENT AND OBSOLETE;
CONSEQUENCE: DISSUASION INSTEAD OF DETERRENCE

Elmar Schmähling (FRG)

The nuclear age is facing its end. The threat of employing nuclear weapons against an opponent massively armed with nuclear weapons is no longer credible. With the loss of the option of controllable nuclear weapon employment, deterrence has turned into "self-deterrence". Thus, NATO strategy is in a dilemma.

General Altenburg, former Chief of Staff of the FRG armed forces has stated:

"The current discussion of the security and defence policies is dominated not only in Europe but worldwide by questions asking whether nuclear weapons are appropriate or not. To us, in the Federal Republic of Germany, these questions are of special importance since another war would not mean victory or defeat to us. Rather, it would directly endanger our existence."

This paper tries to substantiate the above thesis in detail by means of four fields of argumentation:

1. The military role of nuclear

weapons - the military field.

2. The political bases of nuclear deterrence - the political field.

3. The moral basis of the strategy of deterrence - the moral field.

4. Nuclear fission as a source of fear - the psychological field.

The military field of argumentation.

The "renaissance of the conventional factor" of defence, which recently has become evident in many political statements, admits only one plausible interpretation:

The NATO doctrine of deterrence, the effectiveness of which depends on making a potential opponent believe that even during conventional war nuclear weapons could be employed is passing through a crisis. Politicians and senior NATO and Warsaw Pact officers have in the meantime declared that it has become impossible to fight a nuclear war since there is no chance to win such a war. This conviction expressed in Moscow and Washington represents indeed a clear change compared with former notions. Also the

assumption that NATO could terminate an initially conventional war by means of "non-recurring" selective employment of a few nuclear warheads is meeting with growing scepticism.

The actual dilemma of the NATO strategy lies in the growing disapproval of employing nuclear weapons as a military option during a war on the one hand, and the steadfast adherence to a doctrine threatening with first use of nuclear weapons by NATO on the other hand.

In order to be able to live with this dilemma, in recent years nuclear weapons in the FRG have been assigned a new role, that of "political weapons". In September 1986, General Altenburg said before the Atlantic Treaty Association:

"Nuclear weapons are a dominant factor of deterrence. They have a clear political function. They are to prevent war by means of their deterring effect. Should deterrence fail, they are to terminate an open conflict as soon as possible while minimizing damage."

And later:

"The option of first use of nuclear weapons should be available as a political instrument ... aiming at restoring deterrence and terminating the war and not prolonging it in case conventional forces have exhausted their resources. Whoever thinks that way and hence assigns nuclear weapons the role of a better sort of artillery, has not understood their purpose and their role within our strategy."

Consistently, General Altenburg has been advocating for a very long time the opinion that a small portion of the existing potential in Europe would suffice to ensure the political function

of nuclear weapons.

In 1984, General Mack, one of the deputies of the Supreme Allied Commander in Europe, during an interview with the German magazine "Der Spiegel" answered the question, whether he could imagine a situation in which he would give his consent to the proposal of employing tactical nuclear weapons affecting the territory of the Federal Republic of Germany, as follows:

"In case the employment of nuclear weapons would have to be considered at all, one could not reckon with my consent for employing tactical nuclear weapons."

Elevating even tactical nuclear weapons, which initially were introduced into service for purely military purposes, to the noble rank of "political weapons" - a development completed in the FRG - forms a conspicuous contrast to reality. Current integration of nuclear weapon systems into all military services at the strategic, operational, and tactical levels, stockpiling of nuclear munitions, operational and tactical doctrines, and operational planning follow the unchanged tradition of the "nuclear battlefield".

In the course of sustained modernization, the tactical weapons intended to be a cost-effective substitute for lacking conventional strength have become increasingly "manageable" and employable on the battlefield from the military point of view.

On the occasion of an interview, Harold Brown, former US Secretary of Defence, recently explained how this came about. "Western military and political leaders looking on the one hand for a substitute of comprehensive nuclear retaliation, and on the other hand for increased funds for conventional weapons. And it was tactical

nuclear weapons they found. They asked the scientists of the laboratories whether they were able to render those weapons smaller, easier to fire, and tactical. The scientists set to work and in the 1950's we were able to produce this kind of weapons."

The contradiction between military and political role assignment to nuclear weapons becomes increasingly apparent in Europe. Attempts to bridge this contradiction, however, hardly appear to exist. The number of nuclear warheads stockpiled in Europe has been reduced by 1,400, but the remaining ones were improved in terms of their military effectiveness. The absolute number of US nuclear warheads has been increasing again since 1982. At an annual growth rate of about 2,000 warheads, the highest level of 32,000 of the year 1967 could be reached again at the beginning of the 1990's. (Source: Nuclear Weapons Databook).

The recognition that nuclear weapons have become senseless from the military point of view resulted in the political solution to declare them "political weapons" and to justify their future role almost exclusively as a means of deterrence. This step, however, has not been completed with all its consequences. In the final analysis the differing, even confused appearance of the function of nuclear weapons within the scope of the NATO strategy is an expression of serious doubts within the Alliance.

No employment of tactical nuclear weapons with my consent, says General Mack; General Rogers in contrast:

"... today we must take recourse to nuclear weapons under any condition."

NATO cannot afford to leave such

contradictions unsolved much longer. The German Generals still think cautiously. But they apparently are convinced that there no longer exists a reasonable military option for nuclear weapons in Europe.

The political field of argumentation.

It came as a surprise to friends and foes when, in March 1983, the President of the United States verbally withdrew from the still valid NATO strategy in making the arguments of its most ardent opponents its own.

Of course, the idea of overcoming the nuclear curse to humanity at first sight was, and still is, attractive and tempting. The actual political objective of a space-based strategic defence system, however, is connected with a number of dangerous consequences. For the first time in NATO's history the agreed strategy was discredited at a time when no means for a new strategy were in sight. The NATO partners had not been consulted.

The lone decision of the President of the United States to considerably boost military research in terms of domestic policy by means of the SDI has resulted in a deep confidence crisis within NATO. Notwithstanding the prospects of realization after a research phase of several years, the political objective of creating a defence system against ballistic missiles survives in the United States.

The European NATO partners without nuclear weapons of their own have not been relieved from their anxious worries to, possibly, having to live in the future in a zone of "minor security". In case strategic ballistic missiles really became "obsolete and impotent" one day, the house of cards of the so-called NATO triad - the compound of strategic, and tactical

nuclear weapons and of conventional forces - would collapse. The future role of nuclear weapons in Europe, however, could change drastically due to changed attitudes of European governments towards nuclear weapons. Future parliamentary majorities in the UK and the FRG might advocate a denuclearized Europe. The UK might even give up its own national nuclear force.

And yet another aspect. It is not only today's opposition parties which would like to see all nuclear weapons banned from Europe from the Atlantic to the Ural Mountains. Government disarmament conceptions are aiming at the same objective. A zero option for longer-range and even shorter-range INF in Europe could soon be agreed upon between the United States and the Soviet Union. Further proposals for a drastic cut-down of strategic systems are on the table.

The philosophy of deterrence is based on the threat to cause unacceptable damage to the opponent. When the NATO doctrine of "massive retaliation" still applied, the United States attempted to quantify the damage to be caused to the Soviet Union by means of a nuclear retaliatory strike. The available destructive capability was to allow for the destruction of approximately three fourths of the Soviet industrial assets and approximately one fourth of the population. If the capabilities were reduced to the assumed 100 invulnerable systems on both sides, it would of course no longer be possible to generate such damage.

The term deterrence has a significant psychological content. Its inherent threat of destruction is aggress-

sive and necessarily creates counter-aggressiveness on the part of the threatened party. Thus, deterrence is likely to be the psychological motor for a latent drive for superiority which is the basis of the arms race. In future, the nuclear powers should only have so many nuclear systems required for deterring any other nuclear state from employing such weapons. Such "reassurance assets" would be directed against any present and future owners of nuclear weapons.

In my view, this new objective can better be described by means of the term dissuasion (French "dissuasion") than by means of the term minimum deterrence. I therefore suggest dismissing the term deterrence, even in connection with minimum deterrence.

As the leading politicians of all nations cannot be assumed to act irrationally, defence options neutralizing any possible attack option of another state will suffice to prevent war. Therefore, all political efforts must be directed at redesigning the present highly unstable military structures into exclusively self-defence structures. In this connection it must be made clear and ensured that re-equipment is not a rearmament in disguise. The NATO states could start this effort unilaterally without loss of security. In their own political and economic interest, the Warsaw Pact states would do well to follow this example soon. Defence structures which finally do not contain any more means to occupy another country by means of force are the best pre-condition to do away with nuclear deterrence as a substitute for military inferiority in the conventional field. Thus, there will be no more rationale for deterrence.

THE SDI AND THE US-SOVIET ARMS RACE IN SPACE

Shi Xinren (People's Republic of China)

The nature of the US-Soviet arms race in space is the rivalry for seeking military superiority. Under the circumstance of acute US-Soviet confrontation, the progress of science and technology will surely open up new fields of the arms race. This applies to conventional and strategic offensive weapon systems, as well as to space weapon systems. Looking to the future, given time and technology the eventual test and deployment of space weapons could hardly be prevented, even though some kind of related temporary agreement would be reached.

The arms race in space is an unstable factor to peace. The long-existing strategic parity between the United States and the Soviet Union would be broken, and the risk of nuclear war would be increased.

Furthermore, it would jeopardize and strain the world situation, further deepening East-West antagonism and widening the existing North-South gap.

Space is a common heritage of mankind; its utilization should bring benefits to world peace and development. The extension of the US-Soviet arms race from land, sea and air into space poses a new threat to world peace, and is against the will of mankind. It is hoped that the United States and the Soviet Union will genuinely realize the dangerous consequences of the arms race in space, abandon their policy of seeking military superiority, and reach agreements reducing drastically their nuclear arsenals and banning research, testing, production, deployment and use of all forms of space weapons.



Some Participants in the 15th Pugwash Workshop on Nuclear Forces
Geneva, Switzerland, 12-14 June 1987

From left to right: Foreground - Liu Pei and Shi Xinren
Back row - Lord Zuckerman, Robert McNamara and Anatoly Gromyko

STATEMENT ON THE DEFINITION, CHARACTER AND COMPOSITION OF
STUDENT/YOUNG PUGWASH

Editor's Note :

This statement was adopted by members of existing S/Y Pugwash groups present at the Budapest Conference (1-6 September 1986) as a basic document describing the broad outlines of S/Y Pugwash. It was reviewed by the Pugwash Executive Committee at its meeting in December 1986, and by the Pugwash Council in May 1987 which noted its contents and suggested that it be published in the Pugwash Newsletter for the information of its readers. The S/Y Pugwash groups will meet again during the 37th Pugwash Conference in Gmunden am Traunsee, Austria.

The term Student/Young Pugwash (S/Y Pugwash) refers to those national groups in different countries of the world which form the counterpart of national senior Pugwash groups. In addition to national groups, S/Y Pugwash also comprises individual members who have demonstrated a sustained interest in Pugwash activities, either on a personal level, or by their willingness to pursue possibilities for creating such groups in their own countries.

Stimulating the formation of new S/Y Pugwash groups is an important objective of the Pugwash Council. The Secretary-General's Office in Geneva has been charged with this task. Existing S/Y Pugwash groups also contribute to this effort, particularly through the organization of conferences which also include international participation. Thereby they act as a vehicle for introducing the younger generation into the Pugwash movement.

In terms of its composition, the S/Y body of Pugwash, which is centered mainly in academic environments, consists of undergraduates and graduates in various fields of the natural and social sciences, as well as of young professionals already engaged in work.

The exact nature of this structuring varies from country to country, but each group has a central 'coordinating' office headed by a 'Chairman', 'National Coordinator' or equivalent.

Though there are many obvious links between S/Y and senior groups, there are also a number of distinguishing features relating to their status and style of operation, which endow the former with a distinct identity of their own. The main qualifying difference is the essentially educational role which S/Y Pugwash groups perform. This derives from the essentially grassroots formation of the latter. In pursuing this role, S/Y Pugwash groups embrace the same goals that underlie the Pugwash movement, though their particular approach and audience differ. That is, their main task consists of raising consciousness among given segments of society - mainly students, young scientists and other professionals - on a broad range of issues relating to the social responsibilities of the scientific community, to the ethical dimensions of scientific progress, and to other questions pertaining to the impact of science on society. The central objective in all these activities, however, is the prevention of war, particularly nuclear war, and the achievement of greater

social justice in the world - which are the goals of the Pugwash movement. Hence, S/Y and senior Pugwash can be seen as mutually complementing the other's efforts in the universal struggle to attain a just and conflict-free world.

Guidelines for S/Y Pugwash

S/Y Pugwash groups would undertake to respect the following principles :

1. S/Y Pugwash groups are an inherent part of the international Pugwash movement. The principal element which unites them is the common allegiance to the Russell-Einstein Manifesto.
 2. S/Y Pugwash groups ascribe to the ultimate objectives of the Pugwash movement which are the prevention of armed conflict, especially nuclear, and the achievement of greater social justice in the world, particularly in the South. In the context of these objectives, S/Y Pugwash groups are mainly concerned with the aspect of the social and ethical responsibilities of scientists. Provided these principles are adhered to, each national group is free to select its own priorities.
 3. S/Y Pugwash groups are politically non-partisan; they espouse no given ideology and endorse no political formation in particular. They therefore seek to project an image of political non-involvement in such matters as an organization. Individuals are free, and even encouraged, to participate in political affairs provided they do not claim to represent Pugwash in these matters.
 4. Each national group is expected to maintain some form or level of contact with its senior national Pugwash counterpart, the exact nature of which would be up to the respective (young and senior) groups to decide. One possibility would be for the national S/Y Pugwash groups to present regular (minimum, annual) reports on their activities to representatives of their senior national groups in which they state how they have fulfilled their objectives. This arrangement would in turn bind them to the Pugwash movement.
 5. At the same time, and notwithstanding their flexibility and independence at the national level, each group is accountable to the Pugwash Council through their senior Pugwash group representatives on the Council (where these exist), and/or through the Secretary-General's Office in Geneva.
 6. Each S/Y Pugwash group is also asked to maintain regular contact with the Pugwash Executive Office in Geneva. As far as S/Y Pugwash affairs are concerned, this office is presently responsible for "keeping in contact with them on international aspects", for acting as a communication centre and in a coordinating capacity for S/Y Pugwash groups, as well as for assisting in the promotion of new groups in countries where none yet exist.
 7. Finally, to the extent to which their means permit, S/Y Pugwash groups can inform other national S/Y Pugwash groups as well as appropriate international youth organizations about the nature of their activities.
-

ISODARCO

(International School on Disarmament and Research on Conflicts)

The 12th Course of ISODARCO, organized by the Italian Pugwash Group, will be held in Venice, Italy, 18-28 July 1988. It will be focussed on two main topics:

"THE PROSPECTS FOR DISARMAMENT AND ARMS CONTROL"

"THE QUEST FOR NATURAL RESOURCES AND RELEVANT CONFLICTS"

The Course will be articulated in formal lectures delivered by the principal lecturers, seminars volunteered by the participants, round table and general open discussions.

The 1st Winter Course of ISODARCO will be held at Vanezza di Bondone (Trento), Italy, February 6-13, 1988.

For enquiries, write to:

Prof. Carlo Schaerf
Dipartimento di Fisica
I Università di Roma
Piazzale Aldo Moro, 2
I - 00185 ROMA (Italy)

* * * * *

IPWOS

The Second International Peace Week of Scientists (2nd IPWOS) takes place from November 9-15, 1987. IPWOS is a week of world-wide activities, which aims at furthering arms control and disarmament and the application of science to positive ends by promoting well-informed public discussion and enhancing cooperation between concerned scientists and non-scientists.

During the 1st IPWOS (November 1986) events on SDI, the CTBT and other topics took place in twenty-two countries. Among the many organizations which supported the 1st IPWOS through their endorsement and/or activities were the Federation of American Scientists, the Union of Concerned Scientists, the USSR Scientific Council on Peace and Disarmament Research, Scientists Against Nuclear Arms (SANA), the United Nations Children's Fund, Greenpeace, and two national affiliates of the International Physicians for the Prevention of Nuclear War. Individual supporters included Professor Dorothy Hodgkin, Bernard Feld, and Joseph Rotblat, and other members of Pugwash.

For more information please contact:

Dr. David Krieger
President
Nuclear Age Peace Foundation
1187 Coast Village Road, Suite 123
SANTA BARBARA, CA 93108, U.S.A.
tel. (805) 969-9137

OBITUARIES

PROFESSOR OTTO NATHAN (1894-1987)

Professor Nathan, an economist, served as executor and co-trustee of the estate of Albert Einstein and was perhaps Einstein's closest friend. Nathan met Einstein at Princeton University in 1933 when Nathan joined the Economics Faculty. Thereafter a close and trusted friendship developed which lasted until Einstein's death in 1955. Nathan was the senior author of "Einstein on Peace" (Schocken Books, 1960) which was a remarkable

collection of Einstein's correspondence on peace dating from World War I.

Professor Nathan was an ardent supporter of Pugwash from its very beginning, and followed closely Pugwash activities through the years. He was a modest, lovable man of the finest character and integrity. He never wavered in his stern adherence to pacifism, disarmament and the necessity to abolish all war.

MMK

* * * * *

FATHER LOUIS-DOMINIQUE DUBARLE

Father Louis-Dominique Dubarle died on Easterday, 1987. He was born on 23 September 1926, studied theology and philosophy in a convent in Belgium, and physics and chemistry at the Sorbonne in Paris.

He fought in 1939 in the infantry and was taken prisoner of war, came back in 1942, joined the underground, and was arrested by the police of Vichy, but the "maquis" freed him.

After the war, he went on with his

scientific and religious teaching, and became Dean of the Catholic Faculty of Philosophy. He joined Pugwash at an early stage, was elected vice-president of the French Pugwash group, and was very active until his stroke in 1980. He was ill since that event. He attended the 3rd, 10th and 11th Pugwash Conferences.

Father Dubarle was beloved by all who knew him.

Etienne Bauer

CALENDAR OF FUTURE PUGWASH MEETINGS

1987

- 1-6 September 37th (quinquennial) Pugwash Conference, Gmunden am Traunsee, Austria.
- 1-4 October Sixth Workshop of the Study Group on "Conventional Forces in Europe", Altamura (near Bari), Italy.

1988

- 23-24 January 13th Pugwash Workshop on Chemical Warfare: "Monitoring and Verification of Compliance with a Chemical Weapons Treaty", Geneva, Switzerland.
- 25-28 March 50th Pugwash Symposium on "Disengagement and Weapon-Free Zones in Europe", Prague, Czechoslovakia.
- 21-24 April 51st Pugwash Symposium on "Political Conditions for Peace in Europe", Bochum, Federal Republic of Germany.
- May or November (tentative) 53rd Pugwash Symposium on "Security in the Pacific", Beijing, China.
- 12-13 June 16th Workshop on Nuclear Forces: "Crisis Stability in Nuclear Forces Reduction Related to Conventional Forces", Geneva, Switzerland.
- 23-26 June 52nd Pugwash Symposium on "Naval Forces: Arms Restraints and Confidence-Building", Norway.
- September 38th Pugwash Conference, Tblisi, USSR.
- October (tentative) 7th Workshop of the Study Group on "Conventional Forces in Europe".

1989

- March (tentative) 54th Pugwash Symposium: "Non-Proliferation and the Non-Proliferation Treaty", Dublin, Ireland.
- July Second Workshop on Accidental Nuclear War: Psychological Aspects, Pugwash, Nova Scotia, Canada.
- August 39th Pugwash Conference, Cambridge, MA, USA.

Other proposed meeting tentatively scheduled:

- Pugwash Symposium: "Deterrence and Beyond", Geneva, Switzerland, 1988 or 1989.

PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS

President : Professor Dorothy Hodgkin
Secretary-General : Dr M.M. Kaplan

PUGWASH COUNCIL

Chairman	Professor M. Nalecz	(Poland)
Members	Academician A. Balevski	(Bulgaria)
	Mr E. Bauer	(France)
	Professor F. Calogero	(Italy)
	Professor B.T. Feld	(USA)
	Mr S. Freier	(Israel)
	Professor Jacques Freymond	(Switzerland)
	Dr E.E. Galal	(Egypt)
	Dr R. Garwin	(USA)
	Professor H. Glubrecht	(FRG)
	Professor L.K.H. Goma	(Zambia)
	Professor J.P. Holdren	(USA)
	Professor K. Lohs	(GDR)
	Professor Patricia Lindop	(UK)
	Academician M.A. Markov	(USSR)
	Professor M.G.K. Menon	(India)
	Professor J.K. Miettinen	(Finland)
	Academician O. Reutov	(USSR)
	Dr M. Roche	(Venezuela)
Professor J. Rotblat	(UK)	
Professor J. Ruina	(USA)	
Professor T. Toyoda	(Japan)	
Professor V.G. Trukhanovsky	(USSR)	
Professor M.S. Wionczek	(Mexico)	
Professor Zhou Peiyuan	(China)	

PUGWASH EXECUTIVE COMMITTEE

Chairman : Professor B.T. Feld
Members : Professor F. Calogero
Dr E.E. Galal
Professor Dorothy Hodgkin
Professor J.P. Holdren
Dr M.M. Kaplan
Academician M.A. Markov
Professor M. Nalecz
Professor J. Rotblat
Professor M.S. Wionczek

CENTRAL OFFICE

Flat A,
63A Great Russell Street
London WC1B 3BG
Telephone: (01) 405 6661
Telegraph: PUGWASH LONDON

EXECUTIVE OFFICE

11A Avenue de la Paix
1202 Geneva, Switzerland
Telephone: (022) 33 11 80
Telegraph: PUGWASH GENEVA
Telex: 412151 PAX CH
Telefax: (022) 33 64 44