N A T O C O N F I D E N T I A L

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MEMORANDUM

To: Political Committee at Senior Level

From: Acting Chairman of the Political Committee

DOSSIER ON CO-OPERATION IN PURE SCIENCE

The Political Committee, at its meeting on 11th April, 1972, agreed to transmit to the Senior Political Committee the attached draft Agenda and guidelines papers on Co-operation in Pure Science.

2. It should be noted that it was not possible for all delegations to receive full instructions in time for the preparation of this report, and therefore it must be considered ad referendum to governments.

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N A T O C O N F I D E N T I A L

CO-OPERATION IN PURE SCIENCE

I. AGENDA PAPER

A. Rationale for Inclusion on Agenda

1. Taken together, the countries participating in a CSCE account for a very substantial part of the important work being done in pure science. However, the effectiveness of this work in many fields - including those requiring extensive and expensive installation or where necessary elements of work transcend national boundaries - is reduced as a result of artificial barriers to association among scientists and the sharing of scientific information, as well as inadequate national resources.

2. These conditions result in a wasteful duplication of effort and inhibit co-operative endeavors at the frontiers of scientific knowledge. Scientific inquiry, after all, flourishes best in an atmosphere of free interchange among scientists and research institutions throughout the world.

B. Specific Measures Recommended

3. The parties to a Conference on Security and Co-operation in Europe should pursue further measures to:

(a) Facilitate and encourage direct contacts among scientists of all countries, through measures such as the convening of scientific and technological meetings and the attendance of scientists from other countries at such meetings, visits to the universities and research institutions of their respective countries for purposes of consultation and conducting research, and a freer flow of scientific literature among countries.

(b) Define opportunities and identify institutions which might be more effectively utilized for scientific co-operation, encourage mutually beneficial bilateral co-operative efforts and, where the need exists or where existing resources are inadequate, consider together possible solutions.

(c) Identify potential new areas of co-operation entailing both substantive contributions from and mutual benefit for all participants.

II. GUIDELINES PAPER

A. General Discussion of Agenda Item

1. General. Both the Allies and the Warsaw Pact countries have identified scientific and technological co-operation for possible discussion at a CSCE. The Warsaw Pact states want

access to Western science and technology for the purpose of refining and intensifying their industrial development for both military and civilian purposes. In the CSCE context they can be expected to seek to bring pressure on Western governments to be more forthcoming in this field, but thus far do not appear to intend to negotiate specific agreements.

2. Scientific and technological exchanges which do not directly affect national security are also a desirable area for Western initiatives, because of our interest both in gaining access to the scientific elites in the Soviet Union, and in lessening Eastern European dependence on the USSR. Additionally, new Soviet and Eastern European markets might be opened to Western products.

3. Pure Science. There is value in distinguishing in talks with the Soviets and Eastern Europeans between co-operation in (A) pure science and (B) applied science and technology. Pure science, aimed at the increase of human knowledge, is in general less sensitive and less encumbered by proprietary protections of industry and government and by political/national security considerations. The limitations on expanded co-operation in this field are thus found primarily in the restrictions placed by the Soviets and, to a lesser extent, by the Eastern Europeans on freedom of movement of scientists and free exchange of unclassified scientific literature.

4. The Soviets view scientific co-operation primarily as a way to gain better access to Western technology. Accordingly their position at a CSCE can be expected to stress that Western strategic trade controls are impeding scientific co-operation and should be eliminated. They can also be expected to view Western proposals for unrestricted contacts between scientists and a freer flow of scientific information with great suspicion.

5. Enhanced East-West co-operation in pure science would provide greater access to a very important sector within Soviet and Eastern European societies. From the writings of Sakharov and Medvedev we are aware of resentments among the Soviet scientific elite at bureaucratic restrictions which cut them off from their Western counterparts. The rôle of the Czechoslovak Academy of Sciences in the "Prague spring" liberalisations of 1968 demonstrated that scientists in Eastern Europe also are anxious for greater freedom in their relations with the outside world.

6. By dealing separately with co-operation in pure science, the Allies will be able both to blunt to some extent Soviet efforts to gain access to protected information and to highlight problems of freer movement in terms, such as the increase of human knowledge and the welfare of mankind, which are less easily rejected.

7. However, it is also important that expansion of co-operation be sought on the basis of mutual benefit at a rate the Soviets and Eastern Europeans can sustain. Areas in which the Soviets have much to offer could be highlighted, for example; the basic research aspects of: meteorology; arctic research; oceanography; high-energy physics; plasma physics, including magneto-hydrodynamics (MHD) and nuclear fusion; space; and medical research.

8. /Further, it is recognised that the East is not likely to regard co-operation in pure science as a high priority item at a CSCE. It remains to be seen whether concessions in this area are likely to be of any value as trade-offs in other areas. Somewhat greater progress might be made with some of the Eastern European countries than with the Soviet Union./

9. Finally, the increasing costs of scientific research make co-operation attractive simply as a matter of efficiency.

B. Analysis of Each Measure

10. Encouragement and facilitation of direct contacts between scientists of all countries and a freer flow of scientific literature.

(a) The Problem. Soviet controls over travel by scientific personnel to Western countries are very tight. For security reasons, the Soviets have in the past been very selective in permitting lengthy stays abroad by individual Soviet scientists. Much scientific information is subjected to very close scrutiny before items can be sent out of the country, with the result that in some areas little current information is sent. At the same time, the Soviets maintain very strict controls over the movements and contacts of Western scientists who visit the USSR. Recent expulsions of Western scientists who have come in contact with dissident Soviet scientists illustrate the extent of the controls.

Practices of the Eastern European countries vary substantially, with the more liberal trend apparent in Poland, Hungary, and Rumania, while Czechoslovakia, Bulgaria and East Germany tend more towards the Soviet pattern.

(b) The Proposal. Depending on the atmosphere in preliminary multilateral talks, key allied desiderata might usefully be set out in a suggested statement of principles of scientific and technological co-operation. Such a statement might deal, inter alia with the reductions of restrictions on travel, access to host nation scientists, convening of scientific and technological

meetings and the encouragement of increased attendance of scientists from other countries at such meetings, co-operative projects, and easing of restrictions on import and export of scientific literature. It should both benefit us in concrete ways if accepted by the Soviets and Eastern Europeans and be helpful in the realm of public opinion if rejected by them. An illustrative text is contained in the background paper "Illustrative Declaration on Principles of Scientific and Technological Co-operation".

(c) Advantages/Disadvantages

Advantages to the West:

(i) We would gain greater access to a most important group of Soviets and Eastern Europeans and increase their exposure to life in the West.

(ii) We would establish a basis on which the scientific capabilities of East and West might be joined in the future for projects of common interest.

(iii) Western access to scientific advances in the East would be increased.

Disadvantages to the West:

(i) The Soviets in particular might regard this as a provocation.

(ii) Expansion of scientific contacts would require a review of the Western approach to export of the scientific data and equipment which are controlled for security reasons.

(d) Recommendation. Despite the prospect of continued Soviet resistance and the wide differences in practice among the Eastern European countries, the West should press in the context of a CSCE for freer contacts between all scientists and freer flow of scientific information.

(e) Talking Points.

(i) By its very nature, pure science is an area removed from the current political/military confrontation in Europe and it would be appropriate to free it from politically-inspired controls. East-West co-operation in pure science, which will promote the well-being of people everywhere, can serve as an example for co-operation in other fields.

(ii) To be effective, co-operation in pure science requires direct, unhindered, long-term contacts between the scientists involved. Achievement of this type of

relationship is currently very difficult, and in some instances, impossible, as a result of restrictions imposed by most Warsaw Pact countries.

(iii) Absolute freedom of contact between scientists and a completely free flow of scientific information in the public domain are long-term goals and we do not pretend that they can be achieved overnight. However, some relaxation of the controls maintained by the Warsaw Pact countries, which would have no detrimental effects on the security of these countries, is essential if East-West scientific co-operation is to move beyond its existing low level.

11. Define opportunities and identify institutions which might be more effectively utilised for scientific co-operation, encourage mutually-beneficial bilateral co-operative efforts and, where the need exists or where existing resources are inadequate, consider together possible solutions

(a) The Problem. Existing possibilities for East-West co-operation in pure science are not being used to their full potential, quite apart from the obstacles imposed by restrictions of the Warsaw Pact states. At the same time, there are projects which, as a result of their complexity and cost, cannot be realised effectively within the existing framework of bilateral and multilateral co-operation.

(b) The Proposal. A CSCE should call attention to existing possibilities for scientific co-operation and examine ways in which they can be better utilised. In the longer term, such co-operation could lead to the creation of common research teams, common research projects or even common research establishments. A discussion of the institutional question is contained in the background paper entitled "Institutional Approaches to East-West Co-operation in Science and Technology".

(c) Recommendation. Our willingness to discuss co-operative research and joint projects should be stressed as an example of our forthcoming position, which should be matched by Warsaw Pact action in lessening controls on contacts. It would be useful for the Allies to stress opportunities for substantial expansion of scientific relations through existing bilateral arrangements and multilateral organizations, including the ECE. The Allies should also underline opportunities for joint conferences, symposia and, eventually, joint research programmes (perhaps modelled on the advanced study institutes and joint research programmes of NATO) under the aegis of such multilateral organizations.

(d) Advantages/Disadvantages:

Advantages to the West. This relatively non-controversial proposal could result in a fruitful discussion of scientific co-operation and would also be useful in deflecting Eastern criticism of our policies.

Disadvantages to the West

(i) The Soviets may seize upon any Western willingness to discuss joint projects to avoid consideration of how existing institutions might be used more fully.

(ii) Involvement in joint projects would clearly be accompanied by Eastern requests to purchase advanced equipment.

(e) Talking Points:

(i) Much more can be done in East-West scientific co-operation within the existing organizational framework. Participants in a CSCE should identify ways in which more can be accomplished.

(ii) There are probably some projects whose effective implementation will require new undertakings. However, this fact should not distract attention from what can be done immediately through fuller use of existing institutions and through normal commercial arrangements.

12. Identify potential new areas of co-operation entailing both substantive contributions from and mutual benefit for all participants

(a) The Problem. In the near term, an increase in East-West scientific co-operation will depend upon whether the Allies and the Warsaw Pact countries will be able to get more out of the existing machinery. This is recognised in the proposal described under 2(b) above. Looking further ahead, it is possible that truly joint scientific research efforts can provide an impetus to greater East-West co-operation. Both in terms of scientific payoffs and political fallout, such projects are attractive.

(b) The Proposal. As a practical matter, joint East-West scientific projects will progress at a rate reflecting increased freedom of contact between scientists and freer circulation of scientific information. The Allies should take the realistic position in the CSCE context simply to seek to identify "new areas of co-operation" which could presumably be the subject of future joint undertakings. Some of these areas are contained in the illustrative list in the background paper entitled "Areas for Scientific Co-operation with the USSR and Eastern Europe".

(c) Recommendation. The Allies should be prepared to propose a number of potential areas of co-operation to the Warsaw Pact states and to consider alternative proposals. However, we should make clear that such co-operative projects are realistic possibilities only if the Warsaw Pact states are prepared to create the necessary preconditions by relaxing their restrictions on personal contacts and flows of information.

(d) Advantages/Disadvantages:

Advantages to the West: The primary advantages of this proposal is that it permits us to hold out the prospect of significant co-operative projects in the future provided the Warsaw Pact states take the necessary steps to create the proper conditions.

Disadvantages for the West: Unless the Allies carefully identify some areas of interest in Allied countries (inter alia, atomic energy, space, arctic, antarctic and perma-frost research, meteorology, including weather prediction and monitoring, MHD and fusion), the Warsaw Pact states may take advantage of our proposal and propose co-operative projects in fields where the West is clearly ahead and which might have applications in military-related areas.

(e) Talking Points

(i) Given the common problems faced by all industrialised societies, participants in a CSCE have a common interest in pooling their resources on complex, long-maturing projects.

(ii) Conditions at present are not universally favourable for such undertakings. However, if the Warsaw Pact countries demonstrate readiness to create conditions conducive to such projects, Alliance members will be prepared to make an appropriate contribution.

13. Possible signature by all parties to a CSCE of the Universal Copyright Convention or the Berne Convention. See Section II.B.7. of Dossier on Freer Movement of Ideas and Information.

III. RELEVANT DOCUMENTATION

1. "Illustrative Declaration on Principles of Scientific and Technological Co-operation" (Annex ...)

2. Background paper of 7th April "Institutional Approaches to East-West Co-operation in Science and Technology" (Annex ...)

3. Background paper of 10th April "Areas for Scientific Co-operation with the USSR and Eastern Europe" (Annex ...)