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REDUCTION OF THE MILITARY BUDGETS OF STATES PERMANENT MEMBERS
OF THE SECURITY COUNCIL BY 10 PER CENT AND UTILIZATION OF
PART OF THE FUNDS THUS SAVED TO PROVIDE ASSISTANCE TO
DEVELOPING COUNTRIES

Report of the Secretary-General

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INTRODUCTORY NOTE

1. The General Assembly, at its 2194th plenary meeting on 7 December 1973, adopted resolution 3093 B (XXVIII) under the item entitled "Reduction of the military budgets of States permanent members of the Security Council by 10 per cent and utilization of part of the funds thus saved to provide assistance to developing countries", the operative paragraphs of which read as follows:

The General Assembly,

...

"1. Requests the Secretary-General to prepare, with the assistance of qualified consultant experts appointed by him, a report on the reduction of the military budgets of the States permanent members of the Security Council, which should also cover other States with a major economic and military potential, and on the utilization of a part of the funds thus saved to provide international assistance to developing countries;

"2. Calls upon all Governments to extend their full co-operation to the Secretary-General to ensure that the study is carried out in the most effective way;

"3. Invites the Secretary-General to transmit the report to the General Assembly in time to permit its consideration at the twenty-ninth session."

2. In pursuance of the resolution, after consultations with the regional groups, consultant experts from 11 countries were appointed, who, in the period between April and September, held three sessions in Geneva. The list of experts is contained in the letter of transmittal of the report.

3. The Secretary-General hereby submits the unanimous report of the experts for the consideration of the General Assembly. The members of the Group acted in their personal capacities and their observations and recommendations in the report are their own responsibility.

4. In this connexion, the Secretary-General wishes to draw attention to some aspects of a general nature regarding the preparation of reports in the disarmament field, such as the one submitted in accordance with General Assembly resolution 3093 B (XXVIII). This and similar reports deal with highly complex questions. For that reason, the General Assembly often seeks the expertise of qualified specialists and consultants in the preparation of such reports. In these cases, the Secretary-General has offered all possible assistance in order to recruit the expert counsel called for and to provide the necessary services to help the experts in their work.

5. At the same time, however, the Secretary-General must point out that in many instances he is not in a position to pass judgement on all aspects of the work accomplished by experts. This situation should therefore be taken into account by the General Assembly when considering these reports and also when the Assembly in the future formulates requests for expert assistance.

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LETTER OF TRANSMITTAL

13 September 1974

Sir,

I have the honour to submit herewith the report of the Group of Consultant Experts on the Reduction of Military Budgets, appointed by you, which was requested by the General Assembly in paragraph 1 of its resolution 3093 B (XXVIII) of 7 December 1973.

The Consultant Experts appointed in accordance with the General Assembly resolution were the following:

Colonel F. A. Aisida
Defence and Armed Forces Attaché
Nigerian Embassy in Washington D.C.

Mr. A. S. Becker
Senior Staff Member, Department of Economics,
RAND Corporation
Santa Monica (California, United States of America)

Mr. A. P. Bukin
Head of Section, Finance Research Institute
Ministry of Finance of the Union of Soviet Socialist Republics
Moscow, (Union of Soviet Socialist Republics)

Mr. J. A. Encinas
Chairman, Department of Economics
University of Lima (Peru)

Mr. J. Erickson
Department of Politics, University of Edinburgh
(United Kingdom of Great Britain and Northern Ireland)

Mr. M. Filipovich
Head of Disarmament Group, Department for International Organizations
Federal Secretariat for Foreign Affairs
Belgrade, (Yugoslavia)

Mr. Plácido García Reynoso
Former Professor of Economics, Universidad Nacional Autónoma de México
Mexico City (Mexico)

His Excellency Mr. Kurt Waldheim
Secretary-General of the United Nations
New York

/...

Mr. L. Matejka
Deputy Director, Research Institute for Planning and Management
of National Economy
Senior Economic Adviser of the State Planning Commission
Prague (Czechoslovakia)

Mr. A. S. Mehta
Ambassador of India in Austria

Mr. B. C. Ysander
Institute of Economics
University of Stockholm
Stockholm (Sweden)

Mr. A. Zelleke
Deputy Commissioner for Planning, Planning Commission Office
Addis Ababa (Ethiopia)

The report was prepared between April and September 1974, during which period the Group held three sessions, from 15 to 25 April, from 5 to 16 August and from 9 to 13 September 1974, at Geneva.

Colonel F. A. Aisida of Nigeria was unable to participate in the second session, while Mr. J. Erickson of the United Kingdom could only attend the second session. Mr. A. Zelleke was unable to participate in the third session.

The Group of Consultant Experts on the Reduction of Military Budgets wishes to acknowledge with appreciation the assistance it received from members of the Disarmament Affairs Division, Department of Political and Security Council Affairs, of the Centre for Development Planning, Projections and Policies, Department of Economic and Social Affairs, of the United Nations Secretariat in New York and from members of the United Nations Conference on Trade and Development at Geneva, as well as the contribution of Mr. F. T. Blackaby, Deputy Director of the National Institute of Economic and Social Research (London), who served in his personal capacity as consultant to the Secretariat.

I have been requested by the Group of Consultant Experts, as its Chairman, to submit its report to you on its behalf.

Respectfully yours,

(Signed) P. K. BANERJEE
Chairman
Group of Consultant Experts

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I. INTRODUCTION

1. The history of proposals to freeze or reduce military budgets goes back a long way. As far back as 1899, at The Hague Peace Conference, the Soviet Union proposed ceilings on army and navy expenditures with the aim of preventing an arms race. In the years between the First and Second World Wars, there was a great deal of discussion, for example at the Preparatory Commission of the Conference on Disarmament, about budgetary control and standardized military budgets. Since the Second World War, at various times and in various forums, a large number of countries have made formal proposals for military budget reductions. This has been a special concern of the United Nations General Assembly.

2. None of these formal proposals has as yet resulted in action; the conditions for success were not there. We would stress two such conditions. First, there has to be a sufficient degree of trust between nations; this was clearly lacking in the 1930s. Secondly, there has to be a sufficient supply of information to maintain the participants' confidence that any agreements are being observed. In both these respects the conditions now are, in our view, more propitious than they were. We have had over a fairly long period a process of increasing détente among the major Powers. Furthermore, the means available to nations for collecting and evaluating information have also become more sophisticated year by year.

3. The origin of this particular study is to be found in an initiative of the Union of Soviet Socialist Republics specifically linking disarmament and development. On 25 September 1973, the Union of Soviet Socialist Republics proposed to the General Assembly, at its twenty-eighth session, that it should include in its agenda, as an important and urgent question, an item entitled "Reduction of the military budgets of States permanent members of the Security Council by 10 per cent and utilization of part of the funds thus saved to provide assistance to developing countries" and it included in the proposal a draft resolution. ^{1/} In the course of the debate certain differences of opinion emerged concerning the Soviet proposal. In order to preserve the impetus provided by this proposal, the representative of Mexico proposed a second resolution of a procedural nature. The General Assembly, at its 2194th plenary meeting, on 7 December 1973, adopted simultaneously resolutions 3093 A and B (XXVIII) initiated by the USSR and Mexico respectively and bearing the same title as the item.

4. By resolution 3093 A (XXVIII), the General Assembly recommended that all States permanent members of the Security Council should reduce their military budgets by 10 per cent from the 1973 level during the next financial year; appealed to those States to allot 10 per cent of the funds so released for the provision of assistance to developing countries; expressed the desire that other States, particularly those with a major economic and military potential, should act similarly; and established the Special Committee on the Distribution of the Funds Released as a Result of the Reduction of Military Budgets to distribute the funds released, for the provision of assistance to developing countries.

5. By resolution 3093 B (XXVIII), the General Assembly, "conscious that the United Nations has been unable to study this important question with the required depth and

^{1/} Official Records of the General Assembly, Twenty-eighth Session, Annexes, agenda item 102, document A/9191.

careⁱⁱ requested the Secretary-General to prepare, with the assistance of qualified consultant experts appointed by him, a report on the reduction of the military budgets of the permanent members of the Security Council, which should cover also other States with a major economic and military potential, and on the utilization of a part of the funds thus saved to provide international assistance to developing countries; called upon all Governments to extend their full co-operation to the Secretary-General to ensure that the study was carried out in the most effective way; and invited the Secretary-General to transmit the report to the General Assembly for its consideration at the twenty-ninth session.

6. Pursuant to this resolution, the Secretary-General appointed the Group of Experts listed on page 6 of this report. We have considered the mandate for our work as that set forth in resolution 3093 B (XXVIII); at the same time we have taken into special consideration the specific recommendations made in resolution 3093 A (XXVIII) and have also taken into account the discussions of the General Assembly at its twenty-eighth session.

7. Accordingly we have proceeded in the following way. In the chapter which follows, we consider the basic figures concerning the levels of military expenditure and of development aid, and briefly describe recent trends. In chapter III, we turn to the subject of the reduction in military budgets. We consider the objectives of such reductions and note briefly the advantages which could be gained, if military budgets could be reduced, for the flow of aid, for the economies of the donor countries, and for international security. Then we examine the specific proposal made by the Union of Soviet Socialist Republics and the other options that are open. In chapter IV, we consider the meaning and measurement of military budgets and, in chapter V, we look at the consequences for disarmament and security of some of the alternatives. Finally, in chapter VI, we consider how best a portion of the funds released by a reduction of military budgets could be transferred to aid the economic development of developing countries.

8. We have tried to keep the report within the ambit of our professional knowledge. We have also attempted to keep the report concise and specific; detailed studies of some of the subjects covered are annexed to the report (see part II). Annex I gives further background to the statistical section of the report on military expenditure and development aid. Annex II elaborates in more detail on some of the technical problems connected with agreements on reductions in military expenditure. Annex III gives more background to the problems of the use of resources for aid.

9. Throughout, we have tried to avoid any repetition of material covered by previous reports of this kind in the field of disarmament or development. 2/

2/ Economic and Social Consequences of Disarmament (United Nations publication, Sales No.: 62.IX.1); Economic and Social Consequences of the Arms Race and of Military Expenditures (United Nations publication, Sales No.: E.72.IX.16); Disarmament and Development: Report of the Group of Experts on the Economic and Social Consequences of Disarmament (United Nations publication, Sales No.: E.73.IX.1).

II. MILITARY EXPENDITURE AND DEVELOPMENT AID 3/ 4/

10. This chapter concerns military expenditure and development aid and we set out, at the beginning, a limited set of basic data about both these totals. We are concerned to comment in particular on the course of military expenditure since the last report of the Secretary-General, Economic and Social Consequences of the Arms Race and of Military Expenditures (see foot-note 2), which discussed this subject.

11. The only figures of total world military expenditure that are available are unofficial estimates, and we have followed the practice of previous reports in using the figures collected by the United States Arms Control and Disarmament Agency (ACDA) and the Stockholm International Peace Research Institute (SIPRI). In the previous reports, the estimate given for the year 1970, at 1970 prices, was around \$200 thousand million. 5/ From 1970 to 1973, there has been a further small rise in real terms; one source shows this as a 5 per cent rise in volume, the other as a 1 per cent rise. In addition, however, there has been a very substantial rise in prices, particularly in the market economies. As a consequence, the latest available estimate of world military expenditure, for 1973, is \$205-\$235 thousand million at constant (1970) prices, and it is \$240-\$275 thousand million at current (1973) prices. This figure is larger than the combined estimated product of the developing countries of South Asia, the Far East and Africa combined, and much larger than that of Latin America.

12. The basic pattern of world military expenditure in the post-war period is shown (in constant prices) in figure I. It is dominated by the expenditure of the major military powers; and it has tended to rise strongly in periods of crisis and war, as at the time of the Korean War or the Viet-Nam War. It has then levelled off for a number of years, but without falling much. There appears to be something of a ratchet effect; once a new and higher level of military expenditure has been established it tends to be maintained. We have taken as the long-term trend the average rise from 1961 to 1973. This shows a volume rise of 3 per cent a year. At

3/ In the time allotted to us, it has not been possible to make any deep critical study of the various estimates of world military expenditure or of those for international aid. We are fully aware of the difficulties of making estimates of this kind; paragraphs 35-41 (chap. IV) are relevant here. The general propositions which we make in this chapter do not depend for their veracity on the precise accuracy of the estimates we give.

4/ This chapter is concerned with military expenditure, rather than military budgets, since there are no aggregate figures for world military budgets. The distinction between military budgets and military expenditure and its significance is discussed in annex II, paragraphs 4-30.

5/ In Economic and Social Consequences of the Arms Race and of Military Expenditures ..., the estimate was \$203 thousand million. In Disarmament and Development ..., it was \$208 thousand million. Since then, one of the sources - United States, Arms Control and Disarmament Agency - has raised its 1970 estimate (at 1970 prices) to \$219 thousand million. The Stockholm International Peace Research Institute estimate for that year remains at \$206 thousand million.

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present day prices, this is equivalent to an annual addition of the order of \$7-\$8 thousand million to the world total.

13. The NATO and Warsaw Pact countries in the early 1960s accounted for some 90 per cent of the total; now the figure is nearer 80 per cent. The developing countries, whose share of the total of world military expenditure was 5-1/2 per cent in the early 1960s, now account for about 11 per cent.

14. The dynamics behind this long-term rising trend in world military expenditure are complex: there is not a simple, single "world arms race", but, rather, different forces are at work in different areas. Among the major military Powers, for example, the form it takes is primarily technological. The share of the major military budgets devoted to research and development (R and D) reached 10-15 per cent in the early 1950s, and has stayed at that level since. World spending on military research and development is now of the order of \$20 thousand million annually, and it occupies the time of some 400,000 scientists and engineers around the world. 6/ The results of their work can be seen in the immense elaboration and complexity of weapon systems. To take just one example: the projected cost of a fighter aircraft in 1975 is about 130 times that of the fighters used at the end of the Second World War. 7/

15. This technological arms race in the developed world has continued in spite of a marked relaxation in tension in recent years. Among these countries there has been a growing trend to mutual understanding between States and peoples, and towards the further expansion of international trade and economic, scientific, technological and cultural co-operation.

16. The forces behind the intense development and exploitation of technology for military purposes cannot then simply be explained as an "action/reaction" process in a world of increasing tension. One explanation is that modern weapons have now a very long gestation period or lead-time. It may take 10 years from the initial design to the final deployment of a new fighter. Consequently, military authorities tend to focus their attention, not on what the other side has already produced, but on possible future developments. Then again, technical and industrial teams are built up to design and develop types of military equipment; these teams are regarded as national assets which, once established, should not be allowed to disintegrate. So, when one project is completed, another project is found for them. There are also economic and bureaucratic forces at work. Firms who derive a major portion of their sales from the manufacture of armaments are obviously concerned to maintain the size of their total sales. In much the same

6/ SIPRI Yearbook of World Armaments and Disarmament, 1974 (Stockholm, Almquist and Wicksell, 1974), p. 141; and Stockholm International Peace Research Institute, Resources Devoted to Military Research and Development: An International Comparison (Stockholm, Almquist and Wicksell, 1972).

7/ This is a comparison between the cost, as estimated in 1974, of the United States F-15 fighter aircraft with the cost at the end of the Second World War of the P-47 fighter (SIPRI Yearbook of World Armaments and Disarmament, 1974 ..., p. 138). Over this period, the wholesale price for machinery and equipment in the United States only trebled.

way, bureaucracies are concerned to maintain their position. In many countries it is to be expected that a military establishment will attempt to preserve its relative share in the government programmes as a whole.

17. In the developing countries, where the rise in military spending in recent years has been relatively rapid, the forces are of a rather different kind. Some new States are building up their armed forces from a low base. In other cases, there are active conflicts. Countries in the developing world are, in general, dependent on the industrialized nations for the more advanced and complex weapons; and they are acquiring them, by gift or purchase, to an increasing extent. Some countries within this group are beginning to establish their own military production facilities.

18. There are thus strong world-wide forces behind the long-term upward trend in world budgetary expenditures for military purposes. The same, unfortunately, cannot be said for aid to developing countries. There is a marked contrast, both in the size and in the trend of these two budgetary items. In total, the developed countries' appropriations for military purposes are some 20 times their appropriations for development aid. There are many reasons why the level of resources devoted to development assistance is so low; the high level of resources devoted to military expenditure may be one explanation.

19. Perhaps the best way to present the contrast is by setting out the share of national product devoted to these two purposes by the developed countries of the world. Comparing the present day with the early 1960s, the share of output which these countries devote to military purposes has fallen a little (see table 1 below in this chapter). Unfortunately, the share going to aid - apart from being so much smaller - has also fallen, even more rapidly.

Estimates of the share of gross national product devoted
(a) to military expenditure (b) to official development
assistance, by the developed countries

	Percentage of GNP			
	1962-1964	1965-1967	1968-1970	1971-1973
(a) To military purposes:				
United States Arms Control and Disarmament Agency (ACDA) estimate	8.7	7.9	7.7	6.6
Stockholm International Peace Research Institute (SIPRI) estimate	7.8	7.2	7.2	5.9
(b) To official development assistance	0.40	0.35	0.29	0.26

Source: (a) To military purposes: SIPRI Yearbook of World Armaments and Disarmament, 1974 (see foot-note 6 above); United States, Arms Control and Disarmament Agency, World Military Expenditure and Arms Trade, 1973 (Washington, D.C., US Government Printing Office, September 1974) (forthcoming);

(b) To official development assistance: Organisation for Economic Co-operation and Development, Development Co-operation, 1973 Review (November 1973); and United Nations Conference on Trade and Development (UNCTAD) estimates.

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III. THE REDUCTION OF MILITARY BUDGETS

A. The objectives: the economic and social consequences of military budget reductions

20. The objectives of a reduction in military budgets are clear. The first is that, as a measure of arms control and disarmament, it should be a step along the road to a more peaceful world. The second objective is to release resources for economic and social welfare; and these released resources should be used both for the benefit of the State making the reduction and, through international assistance, for the benefit of developing countries - a view which the Group emphatically endorses.

21. Few people would deny that international security could be maintained with far lower general levels of world military expenditure than at the present; equally, few would deny that, as a general rule, if the major Powers were to reduce their arsenals and force levels substantially, this would decrease the likelihood of military conflict between them. ^{8/} We do not argue that the levels of military force are the only factor determining peaceful relations between States; but they are a major factor.

22. If military budgets were reduced, this would help to improve the general international climate. The arms limitation agreements so far reached are evidence of this. ^{9/} They have been important, not only in their own right, but also because they have helped to strengthen international confidence. Reductions of military budgets, as a further measure of partial disarmament, would lead to greater mutual understanding between States and peoples. Each step taken towards disarmament may help to make the next step easier.

^{8/} This is not to say that all reductions of military expenditure of all kinds will increase national security; the problems of reallocations of expenditure which might lead to the opposite result are discussed in paragraphs 48-50 below.

^{9/} The Treaty banning nuclear weapons tests in the atmosphere, in outer space and under water (United Nations, Treaty Series, vol. 480 (1963), No. 6964); the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (General Assembly resolution 2222 (XXI), annex); the Treaty for the Prohibition of Nuclear Weapons in Latin America (Official Records of the General Assembly, Twenty-second Session, Annexes, agenda item 91, document A/C.1/946); the Treaty on the Non-Proliferation of Nuclear Weapons (General Assembly resolution 2373 (XXII), annex); the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof (General Assembly resolution 2660 (XXV), annex); the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (General Assembly resolution 2826 (XXVI), annex); the Soviet-American agreements on the limitation of strategic arms, 1972 (United States, Department of State Bulletin, 26 June 1972) and 1974 (New Times (Moscow), 3 July 1974); the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests (A/9698); and others.

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23. The economic benefits which could be derived from military budget reductions are equally indisputable. The burden which military expenditure imposes on the economy was the subject of another report, and we do not propose to go over the same ground again. ^{10/} However, we would like to single out from that report one point whose saliency has increased in the last three years. During these years, there has been a marked increase in world-wide concern about the longer-term adequacy of the world's natural resources; there is a greater recognition that some resources are indeed finite, and less easy assurance that adequate substitutes will be developed and produced in time. There is less easy assurance, for example, about solutions to the world food problem - a problem which is not for the future, but is here now. We are not suggesting that there is any generally agreed view about the quantification of the long-term adequacy of resources, but simply that many more serious-minded people are concerned about the matter than was the case three years ago. To take one example: it is widely argued that by the end of this century, formidable new civil technological advances will be needed if the world is to provide a tolerable standard of living for its inhabitants; in this light, the employment of nearly half a million scientists and technologists on developing weapons of war seems even more of a waste than it did before.

24. The alternative potential uses of the resources freed from military expenditure are myriad. Certainly there would be transition problems - and the larger the scale of reduction, the larger these problems would be. We also recognize that some countries may feel less confident than they did a decade ago of their ability to manage their economies precisely as they wish. None the less, we are still prepared generally to endorse the conclusions of the report on the economics of disarmament ^{11/} that the problems of transition can be met.

25. Developing countries reducing military budgets would understandably employ a substantial part of the resources released for their own use - by raising investment or public or private consumption. There is indeed a danger in the present world climate of opinion that countries would pre-empt the whole of the released resources for their own use. If this were to happen, the consequence would be that the relative gap in the standard of living between the developed and developing world would widen even further. Hence the importance of the provision in the resolution which provides our mandate - that a portion of the funds and resources saved should be devoted to international assistance to developing countries.

26. The problems and possibilities of this transfer of resources were thoroughly examined in 1972. ^{12/} We can perhaps usefully add an illustration quantification appropriate to our own report. If the major military Powers were to channel approximately 1 per cent of the resources currently devoted to military expenditure to development aid, the addition to the flow of aid would probably be of the order of \$2 thousand million, at 1973 prices. This would increase that flow by no less than 20 per cent.

^{10/} Economic and Social Consequences of the Arms Race and of Military Expenditures (see foot-note 2 above).

^{11/} Economic and Social Consequences of Disarmament (see foot-note 2 above).

^{12/} Disarmament and Development (see foot-note 2 above).

B. Reduction of military budgets in accordance with
General Assembly resolution 3093 A (XXVIII)

27. It is against this background - recognizing the waste of resources in the current levels of world military expenditure and the urgent need for resources for development aid - that we turn to the examination of the specific proposal contained in resolution 3093 A (XXVIII). The terms of this resolution have already been set out in paragraph 4 above.

28. The proposal for reductions in military budgets was addressed in the first instance to the permanent members of the Security Council; it seemed reasonable that the first steps should be taken by those countries - all nuclear Powers whose military expenditure was highest. However, the resolution expressed the desire that other States - particularly those with a "major economic and military potential" - should also join in. This would have the advantage that cuts in the military budget of permanent members of the Security Council would not be offset by increases in the budgets of their allies in military blocs.

29. The proposed reduction in military budgets is a single-stage measure - a cut of 10 per cent in the published military budget for the 1973 financial year. The measure was envisaged by the sponsor as five concurrent unilateral reductions; in this way it was hoped to avoid the complex problems that would arise with a formal agreement.

30. The resolution also proposed a quantitative link between the reduction in the use of resources for military purposes and the increase in aid; that 10 per cent of the cut should be devoted to international assistance for developing countries. The specific proposals about administration and the distribution of these development funds are discussed in chapter VI (paras. 72-76 below).

31. Resolution 3093 (XXVIII) found widespread support in the General Assembly and was welcomed by a large majority of the developing countries. However, there were differences of opinion about the ease with which the resolution could be implemented. The Union of Soviet Socialist Republics (the sponsor of the resolution) has made it clear that, in its view, it is an indispensable condition that all permanent Security Council members should implement the reductions. We note that China declared its opposition to the measure, and that the United States of America, the United Kingdom of Great Britain and Northern Ireland and France abstained on the vote in the Assembly.

32. However, the idea of the general approach of military budgets reductions was a seed which fell on fertile soil. For the reasons set out in paragraphs 42-43 below, there is growing interest in an examination of the possibilities of this approach. It was for this and other reasons that the General Assembly, through its resolution 3093 B (XXVIII), requested the Secretary-General to appoint a group of experts, with the mandate already described in paragraphs 4-6 above.

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C. Military budget reductions: consideration of
alternative options

33. The Soviet proposal is one way to reduce military budgets; it concerns the totals only, for a single year, and involves a reduction by a specific percentage. Here we also consider certain other options. (At this stage we are simply setting them out, without discussing implications, problems and difficulties.) Such options could, for example, cover some particular component of the total - such as research and development (R and D). Then again the form of the limitation proposed can be a percentage, as resolution 3093 A (XXVIII) suggests; it could also be a ceiling, or the reduction might be prescribed in absolute terms. The reductions proposed can obviously be large or small, and can be for a single year or for longer periods. One of the interesting variations examined is an expenditure cut which is linked with a limitation on some component of military force; it might be linked, for example, with some limit on the number of men under arms. The mode of agreement can vary - from mutual example to formal agreement. Resolution 3093 A (XXVIII) proposes as participants permanent members of the Security Council and other States with major economic and military potential. Other groups could be considered; for example, there could be agreements among groups of States in particular regions to reduce military budgets; such agreements would also be most constructive and a number have already been proposed.

34. All these different forms have different requirements, different possible effects on security and, indeed, different consequences for the release of resources for development aid. These questions are discussed in the next two chapters.

IV. THE MEANING AND MEASUREMENT OF MILITARY EXPENDITURE

A. Scope and content of military budgets

35. A prerequisite for negotiating the reduction of military budgets in two or more countries is agreement on what is and what is not to be included in military budgets. The problem of defining the scope and content of a complex aggregate is encountered in many international comparisons - e.g., of health or education - but it is critical where a State's decision on allocations to national security and international development assistance will depend directly on the measure of comparative military budget levels. Unfortunately, there is no accepted conceptual standard of the definition and coverage of the military sector. Moreover, the great variation in the range of activities included in military budgets prevents reliable quantitative comparisons without extensive adjustment of the basic data. To name but three examples of such divergences, some countries include the payment of military pensions in their military budget and others do not. Civil defence is sometimes included and sometimes excluded: indeed, in some countries private citizens are required to incur expenditure under this heading. In some countries, the cost of the development of atomic weapons has been borne by agencies other than the Ministry of Defence. (For a detailed exposition, see annex II, paras. 4-21.) Therefore, in the hope of providing a more precise yardstick with which military budgets can be compared, the following analysis focuses on States' expenditure for military purposes - in brief, military expenditure irrespective of either classification in State financial accounts or method of financing, within or without the government budget. The Group notes that there seems to be general agreement that military expenditure customarily includes outlays on the following: pay and allowances of military personnel; pay of civilian personnel; operations and maintenance; procurement of weapon systems; military research and development; military construction; military aspects of atomic energy and space; and stockpiles of military equipment and materials. There are also other expenditures which, under certain circumstances, could be treated as military expenditure - for example, outlays on civil defence, para-military forces and military aid. In annex II, military expenditure is defined by an attempt to rigorously delimit the military sector with respect to both resource use and services provided.

36. For most agreements to reduce military expenditure, it may be necessary not only to delimit the totals but also to define component categories. Military expenditure may be classified by type of "input" (military wage costs, operations and maintenance, procurement of weapons, etc.) and also by functions (for example, strategic forces, general purpose forces, communications, command, etc.). As a concrete expression of these attempts at definition and delimitation, annex II (paras. 46-50) suggests some possible forms of a standardized military budget. These forms may be new, but the idea itself is not. In the interwar years, a standardized accounting system was developed under the auspices of the League of Nations, and a large number of countries did in fact submit their military budgets to the League of Nations in standardized form (see annex II, para. 46).

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B. Valuation of resources in the military sector

37. Negotiators attempting to agree on equivalent reductions in military budgets will be concerned to ensure, as far as possible, that these cuts do represent equivalent reductions in military power. It cannot be automatically assumed that this will be so. First of all, the military power of a country does not, of course, depend on the military expenditure of just one year; it depends on the total stock of military "capital" (weapons, bases, accumulated technical knowledge, and so on). Military expenditure in any particular year just maintains and adds to the pre-existing stock. So negotiators will have to have confidence, first in the reliability of the estimates and, then, in the acceptability of the initial levels of military capital.

38. Another reason why it would be difficult to forecast the effect on military power of a given cut is the difficulty of developing a set of relative prices for military goods and services which reflects their comparative usefulness in producing military power as perceived by national decision-makers. This problem is exacerbated by the rapidity of technological change which makes it even more difficult to define the unit of military output. Even where the authorities are using military resources efficiently, there can only be a rough correspondence between changes in military expenditure and changes in military power.

39. Alternatively, expenditure in the military sector may be valued in terms of resource cost and the appropriate criterion of valuation would be "opportunity cost" - in this case the value of civil goods and services that could be obtained if resources were shifted from the military to the civil sector. This valuation concept is particularly relevant for measurements of the "burden of defence" and of the resources that might be released through a disarmament agreement. However, while prices in fact always diverge from opportunity costs within the civil sector in all economies - to an extent that in turn varies widely between countries - the gap between opportunity costs and prices used in military budgeting in many countries is even wider. The net effect of the divergence may well be an underestimate of opportunity cost in the military sector, to the extent that military authorities may be able to command resources at low or even zero cost. However, there also exist prominent examples of overvaluation of resources used in the military sector.

40. Especially for agreements extending beyond a single year, there is the problem that rates of price increase differ considerably from country to country - particularly in recent years. Allowance would have to be made for differential price change to avoid inequitable effects on an agreement to reduce military expenditures. The construction of price indices to "deflate" military expenditure encounters not only the standard "index-number problems" ^{13/} but also the difficulties of defining the output whose price change is to be measured. Rapid technological change makes the problem of separating price and quality changes more formidable for military than for civil goods. For example, it is difficult to disentangle that part of the sharply increased cost of a fighter aircraft which is

^{13/} The "index-number" problem refers to the awkward situation that the measurement of the average price change between two periods produces two possible answers depending on whether one uses quantities of the first or second period as weights in developing an aggregate average. Both solutions are equally valid.

due to pure price change from that part which reflects an increase in performance. When opportunity cost is the appropriate criterion, this difficulty is eased by using price indices from pertinent civil sectors.

41. The comparisons of military expenditure among countries are analogous to comparisons within one country over time. For international comparisons, special rates for translating the military expenditure of different countries into a common currency - corresponding conceptually to the price indices used within one country - should be calculated and multiple answers are again unavoidable. 14/

14/ For example, in comparing the output of two countries, A and B, the procedure is to value all the items in each country first at A's prices - giving figures which, say show A's total as 5 per cent higher than that of B. Then the whole operation should be done again, valuing each item at B's prices, to derive figures which might show A's total as 5 per cent lower than that of B. The procedure becomes very complicated for a number of countries, and it will be necessary to draw up multilateral agreements in such a way as to avoid the necessity for extensive international value comparisons.

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V. REDUCTION OF MILITARY EXPENDITURE AS A
DISARMAMENT MEASURE

A. Some special features of agreements to
reduce military expenditure

42. The interest in the reduction of military expenditure as a disarmament measure is connected with certain characteristic differences between such reductions and agreements limiting specific forces in physical units. Because they are couched in terms of money, agreements to reduce military expenditure can cover the whole spectrum of military activities, including such activities as research and development. As indicated in chapter II above, rapid technological change is one of the main factors behind the rise of military expenditure in the developed countries. Research and development is at the same time one of the most difficult of military activities to control in physical terms alone.

43. Agreements to reduce total military expenditure allow very considerable latitude to reallocate expenditure within the constrained total, thus putting fewer restrictions on the internal decision-making of the participant States. The flexibility of measurement in money terms also allows a broad spectrum of restrictions to be added to limitation of total military expenditure if that should prove desirable. The possible effects, negative as well as positive, of such reallocations and of the possible additional restrictions are examined in paragraphs 46-50 below.

44. Among the problems that often in the past have hindered the conclusion of formal agreements to reduce military expenditure has been the problem of verification, since such an agreement deals with economic aggregates rather than observable physical entities. Some of the major issues are summarized in section C below, but it is of interest here that over the past half century there has been a very considerable change in the amount and quality of economic information available in many countries. To the extent that this change has taken place among States which might be participant to such an agreement, this factor may have helped to increase contemporary interest in the use of expenditure-reduction agreements.

45. In this general overview of the requirements for successful agreements to reduce military expenditure, we do not separately examine every type of agreement and set out what we consider the requirements for that particular agreement would be. Therefore the following material is intended to introduce the reader to the kinds of considerations which would have to be examined in setting up agreements to reduce military expenditure.

B. The effects of military expenditure reductions
on international security

46. We turn to the question of the effect of cuts in military expenditure on security - a matter which negotiators would obviously have very much in mind. This

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will clearly vary with different types of reduction. Here we consider three: first, an agreement to cut military expenditure in total only; secondly, such an agreement together with a subsidiary agreement to limit some particular expenditure component, such as outlays on strategic forces; and thirdly, a reduction of total military expenditure together with some limitations in physical terms - say, on the number of men under arms.

47. If the limitation were on the total of military expenditure alone, countries, in distributing the cuts among different categories of expenditure, would presumably try to maximize their security position and would assume that other signatories to the agreement would do the same. They might favour strategic forces rather than general purpose forces, for example; or they might, as it were, favour the future as against the present, by avoiding any cuts in research and development expenditures or any contraction of military production facilities.

48. Reallocations of expenditure under constrained totals might be stabilizing or destabilizing. An example of the former: a country might reduce spending on strategic forces and increase it on communications and intelligence which enabled it to discriminate between a potential enemy's offensive preparations and his routine operations. An example of the latter would be an effort to save on command and control, which might reduce permissible reaction time and thus increase the probability of hasty response to suspicious developments.

49. A country's ability to reallocate expenditure in a destabilizing way could be limited - but certainly not wholly prevented - if to the general cut in expenditure there were added some other limitations, as in the second or third example in paragraph 46 above - for example, an additional limitation on spending on strategic forces. However, there is a clear dilemma: the more extensive the limitations, the less likely any disruption in the military balance - but the more onerous the limitations would be.

50. An increase in the flow of information might be a substitute for these additional limitations. If countries knew how others were reallocating their expenditure and were free to react themselves, the changes on the various sides would probably cancel out.

C. Verification of a formal agreement to reduce military expenditure

51. The fourth and final question to be considered in this chapter is that of verification. Verification of an agreement is simply a procedure for obtaining and evaluating information about changes in a participating State's military expenditure. After an agreement to reduce military budgets, it would be natural for the participant States - since the agreement will have restricted their ability to react - to want more information than before, in order to be confident that the agreement was not being broken.

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52. In the first paragraph of this report, in commenting on past attempts at "military budget" approaches to disarmament, we pointed out that the success of any disarmament proposal depends, amongst other things, on the degree of trust between the parties and a sufficiency of timely information so that if any State breaks the provisions of the agreement, this can be observed. This may or may not require an exchange of information. If there were complete and absolute trust among States - so that each State were convinced that under no circumstances whatever, now or in the future, would other States attack it - then little if any information would be needed to support an agreement. Conversely, if two States totally and completely distrust one another, then even an enormous amount of information might not be sufficient for any agreement to be reached. Because information requirements vary with the degree of trust among States, it would obviously be wrong to attempt to lay down, as some eternal law, that certain types of agreement must, under all circumstances, need certain types of information.

53. For verifying an agreement to reduce military expenditure, it would be mainly economic and financial data which would be needed; some have already been described - such as the data necessary to compare budgets prepared on different accounting systems, and appropriate domestic price indices (see paras. 38-39 above). In addition, material would be needed to enable a check to be kept on a number of financial and physical flows in the economic system (annex II, paras. 128-133).

54. Effective verification seriously conflicts with a country's desire to keep the nature of its military preparations secret. Satellite inspections would certainly help in verifying the physical counterparts of particular types of expenditure; but only two States have such satellites. Further, there are many categories of military expenditure - research and development, for example - which cannot be observed in this way.

55. We can envisage a kind of information-disclosure ladder. Among the lower rungs in the phase of confidence building, military accounts might be published in expanded form with explanatory material. Successive rungs could be reached with increasing amounts and different types of economic and financial information, possibly up to and including the auditing of unit records through sample inspection.

56. The various technical issues involved in an agreement to reduce military expenditures are sufficiently complex to suggest that it might be reasonable to make a step-by-step approach. The stringency of agreements could be gradually tightened as confidence grew and information exchange increased.

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VI. THE USE OF RELEASED RESOURCES FOR INTERNATIONAL DEVELOPMENT ASSISTANCE

A. Scope and background

57. The purpose of this chapter is to discuss the main points which concern the flow of aid resulting from the reduction in military budgets. This necessarily means that some of the comments we make will have some relevance to aid problems in general; but it is, of course, not part of our mandate to cover the whole question of international assistance to developing countries.

58. For purposes of our report, we do not need to establish a link between disarmament and development; our mandate does this for us. None the less, we note the wider background: the General Assembly has declared this decade to be both the Disarmament Decade (resolution 2602 E (XXIV) of 16 December 1969) and the Second United Nations Development Decade (resolution 2626 (XXV) of 24 October 1970); and the Strategy of the Second United Nations Development Decade is to aim for a 6 per cent rate of growth for the developing countries. For the majority of developing countries, the achievement of this objective will call both for the full mobilization of domestic resources and for the enlisting of substantially increased foreign aid, and it will need the efficient use of both of these for social and economic development.

59. In this report, we are concerned with transfers of resources from Government military budgets; clearly, therefore, these transfers would be used to supplement official development assistance. Consequently, in this chapter we concentrate on the data for this total - official development assistance - rather than on data on flows from private sources. The mid-Decade target for this official flow of aid - a target which not all donor countries have accepted - has been set at a minimum net amount of 0.7 per cent of the gross national product at market prices of economically advanced countries. ^{15/} In the table in chapter II above, we have shown estimates for this flow of aid; these estimates are for all donor countries. We have noted that the share of national product devoted to aid has been moving away from the target, instead of towards it - falling from around 0.4 per cent of national product in the early 1960s to 0.26 per cent in the early 1970s, so that it is now much less than half what would be required to meet the target figure. We have to recognize that there is a certain disillusion with development aid, on the part of both donor and recipient countries.

B. The transfer of resources to aid

60. The proposals which we are discussing here could be a very important move towards arresting and reversing this downward movement in the share of aid in

^{15/} International Development Strategy: Action Programme of the General Assembly for the Second United Nations Development Decade (United Nations publication, Sales No.: E.71.II.A.2), para. (43).

national product. One possible option - in which, as indicated earlier, the main military Powers transfer 1 per cent of their military budgets to aid - would produce a figure of the order of \$2 thousand million, which would be a 20 per cent addition to the world's official aid flow.

61. Different options for military budget cuts would, of course, release different amounts and categories of resources - for example, one option might specifically release research and development resources. There would in all cases be problems of conversion. We have commented already on the general problem (para. 24); and the specific problems of the conversion of resources to development purposes were extensively discussed in the experts' report on disarmament and development. 16/

62. For reasons indicated in paragraph 68, it is clearly important that the new flow discussed here should be a net addition to aid and that donor countries which give some undertaking to transfer military resources to aid should not reduce their other aid programmes. 17/

63. It is generally agreed that aid is very much less effective if it is sporadic than if it is continuous - though, of course, recipient countries recognize that even short-term aid is better than none at all. However, because it responds to short-term needs, sporadic aid is not suitable for the implementation of long-term or even medium-term plans. Most development projects - such as dams, or road or railway construction - take a long time to complete. Therefore it is those reductions in military expenditure giving rise to a continuing flow of aid which best serve the interests of developing countries.

64. It is generally true that the very rapid rate of inflation at the moment is tending so to erode the sums set aside for official development assistance that there is very little rise in real terms. It is important, therefore, to ensure that the addition to aid under any of the proposals we have considered here is a real addition. The proposals in General Assembly resolution 3093 A (XXVIII) clearly recommend a reduction in the real quantity of resources devoted to military purposes, and should also therefore imply real additions to the flow of aid. The aid commitment for the future which might be made as a consequence of these proposals should be drawn up with provisions for appropriate adjustments to compensate for the rise in prices in donor countries. This would be a radical change in present practice.

16/ Disarmament and Development (see foot-note 2 above).

17/ In the present state of statistics about flows of aid, it might be quite difficult to discover whether an offsetting reduction had taken place. This, therefore, would be an argument to add to those which already exist for improving aid statistics. To take an example, it is difficult to establish exactly what proportion of aid is now tied.

C. The nature and characteristics of the additional aid flows

65. In the past, the general arrangements under which aid has been given have been far from ideal; there is considerable room for improvement. It would be essential therefore that so far as possible, this additional flow of aid could avoid the pitfalls of the past; and in the following paragraphs we propose some ways in which this could be done.

66. First of all, in the past, aid has on occasions been used for the objectives of the donor country - political, military, or commercial - and as a consequence it has often not been deployed in the most effective way for the economic welfare of the recipient countries. We consider it, therefore, most important that donor countries should not be in a position to impose conditions on this flow of aid. This is not to say that the aid should be absolutely without conditions: certainly there should be conditions and criteria, some of which we suggest later. But they should be reached by international agreement, not imposed unilaterally by individual donor countries.

67. Secondly, there should be a high and growing concessionary element in this new flow of aid - that is, a high proportion of it should consist of grants or loans at low interest rates and easy repayment terms. The concessionary content of aid has not been rising; it is estimated to have remained practically the same for donor countries in the market economies, between 1969 and 1972.^{18/} We particularly stress the need for a high concessionary element because of the alarming debt problem of developing countries. A high concessionary element means that aid flows will be effectively "net", and will not have substantial delayed effects in reverse flows of interest and debt repayments.

68. The cost of servicing external debt in developing countries has been growing fast. The reverse flow of interest and capital repayments has been offsetting an increasing proportion of the gross inflow of public and private financial resources. If we take the figures for 81 developing countries, debt service was equal to 40 per cent of the gross inflow from developed countries in 1965; by 1971 the figure was 52 per cent.^{19/} It has been calculated that if flows of aid continue along present lines, by 1981 65 per cent of the gross inflow will be offset by debt servicing (see annex III, table 2). The rising cost of debt means that net transfers - that is, the gross inflow minus capital amortization and interest payments - has been going up very slowly. Indeed, in real terms, net transfers to these 81 countries hardly rose at all from 1965 to 1971.

69. We turn now to certain other considerations and discuss some of the characteristics of the international aid flow.

^{18/} The concept of concessionality is a difficult and complex one. The point is discussed in annex III, paragraphs 10-17.

^{19/} The figures cover inflows from countries which are members of the Development Assistance Committee. If they were extended to cover all donor countries, the conclusion would probably be reinforced.

70. We do not know the exact proportion of official development assistance which is tied (that is, tied to purchases from the donor country). We know, however, that 80 per cent of official development assistance in Development Assistance Committee (DAC) countries is bilateral (see annex I, table 3) - although this percentage has fallen a little in recent years - and there are reasons to assume that virtually all of this bilateral aid is tied. Tied aid has all the potential inefficiencies of bilateral trade, and it makes it easier for the donor country to impose political or military conditions. It would be desirable for the new flow of aid which we envisage to be untied as far as possible - or at least to be granted in the framework of a policy designed to untie it gradually and completely.

71. Further, this new aid should be used to reinforce the trend towards channelling aid through multilateral institutions. The General Assembly, in resolution 3093 A (XXVIII), recognized the principle of multilateralism, in suggesting a special committee for the distribution of the funds which would be released if the military budget reductions were implemented. Again, it would be desirable that contributions be made as far as possible in convertible currencies. Some countries would find it more difficult than others to ensure that the whole of a substantial increase in aid was untied, or made in convertible currencies. This results from, amongst other things, the balance of payments structure, the relative size and competitiveness of national export industries, the long-term agreements for mutual co-operation between developed and developing countries, and the existing patterns and agreements in world trade.

D. Criteria

72. The General Assembly, in resolution 3093 A (XXVIII), also laid down that the distribution of the development funds envisaged under that resolution should be carried out with due regard to the following three principles: an equitable basis; with consideration being taken of the most urgent needs and requirements of the recipient countries, without discrimination of any kind.

73. The sponsor of the resolution (the Union of Soviet Socialist Republics) suggested that such assistance should in the first instance be rendered to those countries of Asia, Africa and Latin America which have suffered most from drought, floods, crop failure and other recent national disasters.

74. It was at about the time that this resolution was passed that the situation of those developing countries which possess no substantial mineral resources began to worsen considerably with the rise in commodity prices - particularly that of oil. This problem was discussed at the sixth special session of the General Assembly; in paragraph 2 of section X of resolution 3202 (S-VI) of 1 May 1974, the General Assembly requested the Secretary-General to "launch an emergency operation to provide timely relief to the most seriously affected developing countries". If resources from reductions in military budgets were to be forthcoming in time, they could usefully supplement the funds which have been made available for this purpose.

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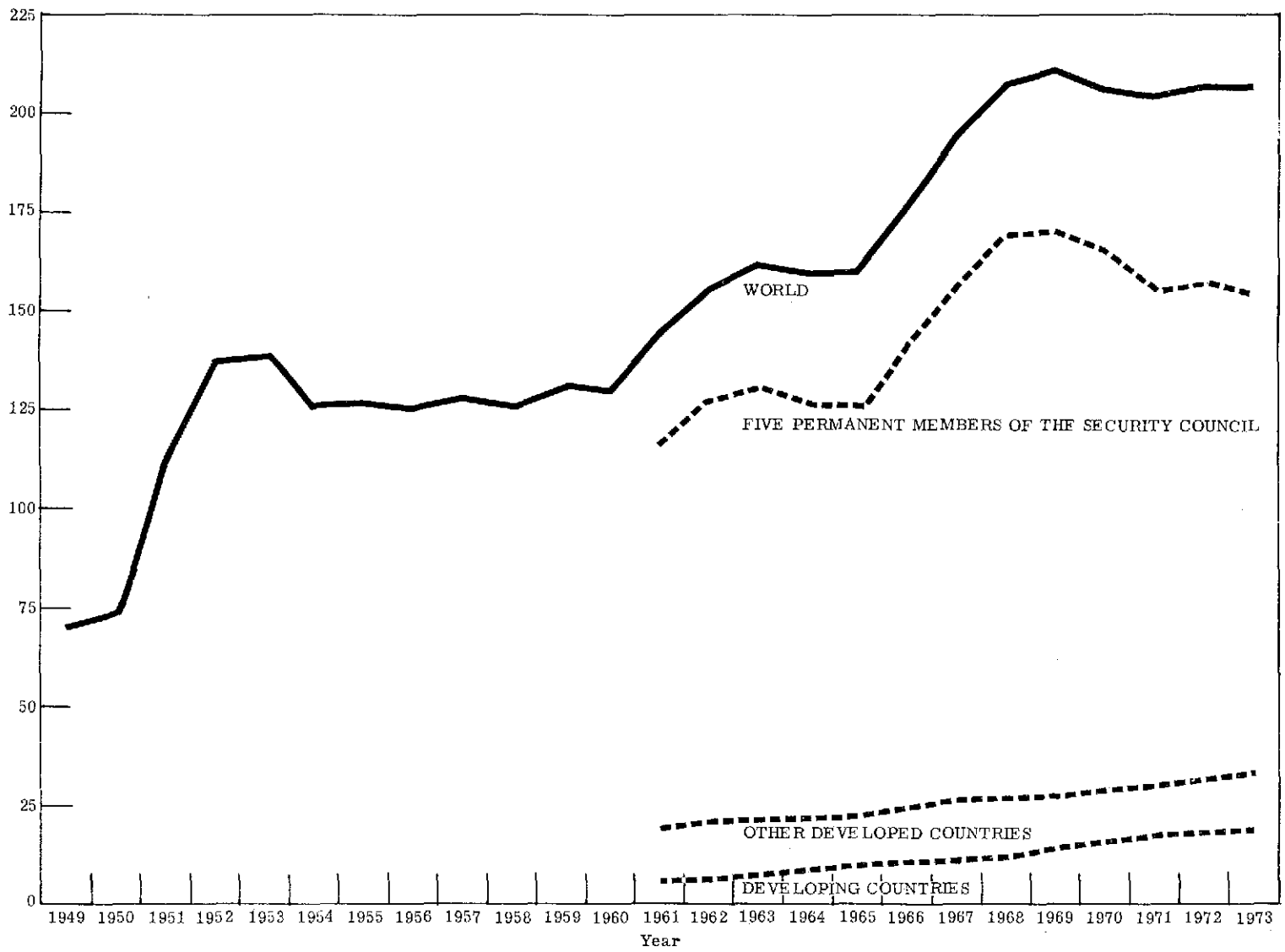
75. The problem of the criteria for aid is not an easy one. We note that three criteria have been canvassed in the literature on this subject: that aid should be given to the neediest; or to those countries which obtain the best returns; or to those countries which make the greatest national effort. In addition, from time to time regional and country analyses of aid flows have been made showing patterns for which it is difficult to find justification. All these criteria have something to be said for them; we consider that once the new flow of aid is established, the General Assembly should give guidance to the organ responsible for the distribution on the principles to be adopted. To the extent that the additional aid under discussion is distributed for development rather than for the relief of natural disasters, it will be important for recipients to make up, in so far as possible, effective programmes for the absorption of the new assistance.

76. We consider that we should add one more criterion - or condition - for this particular flow of aid. Measures should be taken to ensure, as far as possible, that this aid - coming as it does from reductions in military budgets by donor countries - should not be used by the recipient countries to increase their own military expenditure.

77. In view of the urgent needs of the developing countries, the greatest effort should be made to convert into international assistance without delay a proportion of the resources obtained from any future agreement on the reduction of military expenditure.

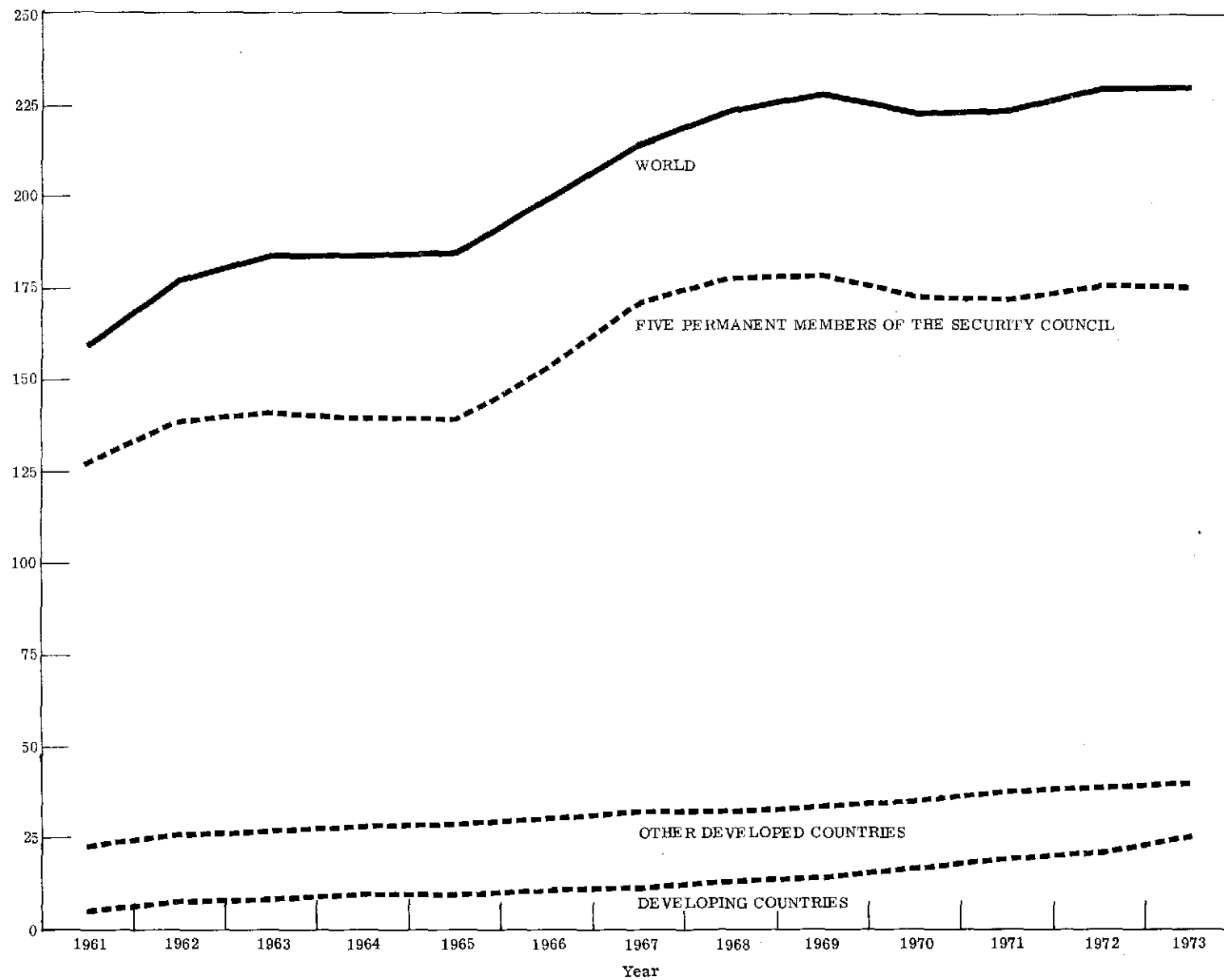
78. Disarmament and development are two of the great requirements of our time. We consider that the proposals discussed in this report mark a great opportunity for advancing on both fronts at the same time.

Figure I
Post-war trends in world military expenditure: Stockholm International Peace Research Institute (SIPRI) estimates
(Absolute figures in constant 1970 dollars)



Source: The Stockholm International Peace Research Institute.

Figure II
Post-war trends in world military expenditure: United States, Arms Control and Disarmament Agency (ACDA) estimates.
(Absolute figures in constant 1970 dollars)



Note: The figures represented here are preliminary Arms Control and Disarmament Agency figures, later to be revised.

ANNEXES

The purpose of these annexes is to provide further documentation and elaboration of the material presented in the report. Annex I sets out some basic figures for military expenditure and for flows of financial resources to developing countries. Annex II covers in much greater detail the subject of technical issues in reducing military budgets. Annex III presents supporting material for the main propositions made in chapter VI of the report on the transfer of resources from military budgets to international assistance to developing countries.

ANNEX I

Statistics of world military expenditure and development assistance

Introduction

1. Four tables are presented in this annex; the first two concern military expenditure and the second two concern development assistance. The notes which follow describe the general contents of the tables. There are supplementary tables on development assistance in annex III.

Table 1. Military budget expenditure compared with other statistics (annual averages for 1970-1972)

2. The table consists of three parts:

- A. Developed market economies;
- B. Developing market economies;
- C. Centrally planned economies.

The data in the table were taken from the Statistical Yearbook a/ and Yearbook of National Accounts Statistics b/ for the years 1972 and 1973.

For the majority of countries mentioned in the table, budgetary data refer to the expenditure of central governments. For a small number of countries they refer to budgetary expenditures of central and local governments. All budgetary figures are expressed in national units of currency at current prices.

3. As a result of the differences in the central and local budget systems and in the accounting practices of the various governments, only reasonable approximations for budget categories can be obtained. Further, international comparisons of total government expenditure and, even more so, of their component parts are rendered extremely difficult by the following circumstances:

(a) The level of total budget expenditure and of its components depends mainly on the type of State organization and also on the scope of the Government's economic and social activities. In centralized States the national Government is partly or completely responsible for matters such as education, health and other social needs, which in federal States are the responsibility of regional and local authorities.

a/ United Nations publications, Sales Nos.: E/F.73.XVII.1 and E/F.74.XVII.1 respectively.

b/ 1972 edition - United Nations publication, Sales No.: E.74.XVII.3 (vols. I, II and III); the 1973 edition is to be issued under the symbol E.75.XVII.2 (vols. I, II and III).

In one group of States, Governments own or operate educational, health and social security systems; in other States these are to a greater or lesser degree in the private sector;

(b) Budgetary systems and accounting practices vary from country to country. In practically no case is all government expenditure included in a single budget account. Frequently distinctions are made between ordinary and extraordinary, current and capital, general and special budgets, military or war expenses account, etc. In some cases certain public undertakings, public health, educational institutions, national or public social insurance funds, etc., have their own budgets. Further, the budget accounts may be shown on a gross or net basis, i.e., expenditure after deduction of certain receipts and refunds; and in some cases they may include the gross working expenses and receipts of certain or all public undertakings; in other cases only the net results are included.

4. In most countries the accounts represent cash payments. There are, however, cases where accounts represent expenditure in the form of pay orders issued, exchequer issues, liabilities incurred or commitments entered into. The disbursements shown are usually those effected in the financial year stated, but for some countries expenditures related to the financial year stated but carried out in a subsequent period are also included.

5. The information concerning military expenditure contained in this table is drawn from official public accounts of central governments. Countries differ, however, in their definitions of military expenditure and information concerning their methods of classification is commonly not available or limited. It is, therefore, impossible in many instances to determine the content of the official statistics. In addition to these problems of coverage, there are problems also of the prices used for valuing the components of military expenditure, and problems, too, of finding appropriate exchange rates if one wishes to make aggregates for a number of countries. These matters are discussed fully in annex II. For all these reasons, official statistics of military expenditure have only limited value as a basis for measuring the relative economic burden imposed by the armaments race.

6. This table includes the most readily available official statistics on military expenditure and compares these with gross domestic product, fixed capital formation, and central government expenditures on education and health. In accordance with usual statistical practice, the concept of domestic product in parts A and B is different from that in part C. In parts A and B domestic product includes goods and services produced in the sphere of both material and non-material production. In part C domestic product includes output of goods and services originating in material production only. A further difference is that domestic product in parts A and B is gross, depreciation not having been deducted from gross product, while material product in part C is net of depreciation. For more detailed commentaries on the differences in the methods of compiling the national domestic product it is necessary to refer to relevant United Nations publications and to the national statistics of the corresponding countries.

7. Data on central government expenditures on education and health shown in the table have also somewhat limited value, especially for international comparisons, owing to the fact that expenditures of regional governments and private institutions in the market economies are not covered, while in the centrally planned economies the national Governments are largely responsible for education and health, so that such expenditures tend to be much more fully covered. Even among the market economies the figures are not strictly comparable because of different definitions and varying coverage.

Table 2. Military expenditures by two major groups of countries:
alternative estimates

8. For the reasons discussed in the notes above, and also in annex II, the total figures for military expenditure either for the groups of countries or for the world as a whole can do no more than indicate rough orders of magnitude. Two institutions make estimates of this kind: the Stockholm International Peace Research Institute (SIPRI) and the Arms Control and Disarmament Agency (ACDA) of the United States Government. c/ Table 2 presents some aggregate figures given by these two bodies, in constant (1970) dollars. The difference between the two estimates for world military expenditure in 1973 - a difference of 13 per cent - reflects differences in the methodology of the two sets of estimates. However, although the levels of the estimates differ, the movements shown by the two series do roughly correspond, as figures I and II in the report above show.

Table 3. Net flow of financial resources from Development Assistance
Committee countries to developing countries, 1962-1972

9. The countries which comprise the Development Assistance Committee of the Organisation for Economic Co-operation and Development are the following: Australia, Austria, Belgium, Canada, Denmark, France, Germany (Federal Republic of), Italy, Japan, Netherlands, Norway, Portugal, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, and United States of America. Thus these figures cover aid from the developed market economies. Table 3 presents the basic data, from 1962 to 1972, on the flow of net resources to developing countries. The table separately distinguishes official development assistance. The definitions are discussed in annex III, paragraph 10. Other tables showing trends in aid in real terms, and the importance of reverse flows of capital and interest, are given in annex III.

c/ Estimates by these institutions of the military expenditure of particular States are not necessarily accepted by the governments of those States.

Table 4. Centrally planned economies: unofficial
estimates of bilateral aid commitments
to developing countries, 1962-1972

10. Table 4 presents unofficial estimates, prepared by the United Nations Secretariat, of the bilateral aid commitments of the following countries: Bulgaria, China, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania, and the Union of Soviet Socialist Republics. It should be noted that these are figures of commitments, not disbursements. Secondly, these figures are gross of capital repayments. The estimates do not include the aid granted to Cuba.

Table 1. Military budget expenditure compared with other statistics
(Annual averages, 1970-1972)

A. Developed market economies

Country	Currency unit	Military budget expenditure	Gross domestic product at current prices	Gross fixed capital formation	Military budget expenditure as a percentage of		Government expenditure as a percentage of GDP for	
					Gross domestic product	Gross fixed capital formation	Education	Health
1	2	3	4	5	6	7	8	9
Africa:								
South Africa ^{a/}	Million rand	281.7 ^{b/}	13 846 ^{c/}	3 628 ^{c/}	2.0	7.8	0.9 ^{b/}	0.4 ^{b/}
North America:								
Canada	Million Can. dollars	1 919.0	94 868 ^{c/}	20 321 ^{c/}	2.0	9.4	...	0.9 ^{d/}
United States	Thousand million dollars	78.8 ^{e/}	1 067 ^{c/}	188 ^{c/}	7.4	41.9	0.8 ^{e/}	1.4 ^{e/}
Asia:								
Israel	Million I pounds	5 483.0 ^{b/z/}	24 039 ^{b/}	7 045	22.8	77.8	3.9 ^{b/}	1.3 ^{b/}
Japan	Thousand million yen	595.7 ^{b/}	80 422	27 764	0.7	2.1	1.2 ^{b/}	...
Europe:								
Austria	Million schillings	4 338.0	419 700	121 800	1.0	3.6	3.3	0.1
Belgium	Thousand million francs	37.7	1 420	307	2.7	12.3	6.1	0.7
Denmark	Million kroner	2 845.0 ^{b/}	129 785 ^{c/}	28 819 ^{c/}	2.2	10.0	3.8 ^{b/}	2.9 ^{b/}
Finland	Million marks	712.0	48 850	13 096	1.5	5.4	4.3	1.9
France	Million francs	30 344.0	898 300 ^{c/}	232 967 ^{c/}	3.4	13.0	...	...
Germany, Federal Republic of	Million D. marks	22 610.0	758 600	199 933	3.0	11.3	...	...
Greece	Million drachmas	15 667.0	324 300	83 600	4.8	18.7	2.0 ^{b/}	1.2
Ireland	Million pounds	22.3 ^{b/}	1 905	426	1.2	5.2	4.3 ^{b/}	2.2 ^{b/}
Italy	Thousand million lire	1 419.0	63 123	12 768	2.2	11.1	4.3	1.2
Netherlands	Million guilders	4 493.0	130 331 ^{c/}	32 529 ^{c/}	3.4	13.8	7.1	0.2
Norway	Million kroner	3 088.0	88 266 ^{c/}	24 956 ^{c/}	3.5	12.4	3.5	0.6
Portugal	Million escudos	13 917.0	203 933	38 396	6.8	36.2	1.7	0.8
Spain	Thousand million pesetas	48.2	2 594	530	1.9	9.1	2.0	...
Sweden	Million kronor	6 454.0 ^{e/}	184 112 ^{c/}	39 921 ^{c/}	3.5	16.2	4.2 ^{e/}	1.2 ^{e/}
Switzerland	Million francs	2 224.0	99 163	29 960 ^{f/}	2.2	7.4	0.8	...
United Kingdom	Million pounds	2 784.0	55 598 ^{c/}	10 197 ^{c/}	5.0	27.3	5.5	4.2
Oceania:								
Australia ^{g/}	Million A dollars	1 131.0	36 471 ^{c/}	9 260 ^{c/}	3.1	12.2	0.3	1.8
New Zealand ^{h/}	Million NZ dollars	126.7	6 352	1 441	2.0	8.8	4.2	4.5

Table 1. Military budget expenditure compared with other statistics
(Annual averages, 1970-1972)

B. Developing market economies

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Country	Currency unit	Military budget expenditure	Gross domestic product at current prices	Gross fixed capital formation	Military budget expenditure as a percentage of		Government expenditure as a percentage of GDP for	
					Gross domestic product	Gross fixed capital formation	Education	Health
1	2	3	4	5	6	7	8	9
Africa:								
Central African Republic	Million CFA francs	1 351.0	57 000	8 200	2.4	16.5	2.9	1.2 ^k
Dahomey ¹ / ₁	Million CFA francs	1 100.0	56 794 ^g	...	1.9	...	2.9	2.0 ^k
Egypt ^e / ₁	Million pounds	285.0	2 935	344 ^g	9.7	82.8	5.0	2.0
Ethiopia ^{cc} / ₁	Million E dollars	88.5 ^e	4 620	556 ^g	1.9	15.9	1.9	0.8
Ghana	Million new cedis	35.8 ^e	2 529 ^e	275 ^g	1.4	13.0	3.3 ^e	1.1 ^e
Ivory Coast ¹ / ₁	Million CFA francs	4 800.0	407 000	79 167 ^e	1.2	6.1	3.1	1.5 ^e
Kenya	Million pounds	7.2 ^e	643 ^e	139 ^g	1.1	5.2	4.1 ^e	1.5 ^e
Lesotho ^h / ₁	Million rand	-	50	6	-	-	4.4	2.0
Liberia	Million US dollars	4.0	421	78	0.9	4.9	1.8	0.9
Libyan Arab Republic ¹ / ₁	Million pounds	133.0 ⁿ	1 368	276	9.7	48.2	3.9	2.5
Madagascar ¹ / ₁	Million francs	3 323.0	226 700	31 767	1.5	10.5	1.8	0.9
Malawi ¹ / ₁	Million kwachas	1.3	285	51	0.5	2.6	3.6	1.2
Mauritius	Million rupees	2.0 ^e	1 214	186	0.2	1.1	3.2 ^e	2.5 ^e
Morocco ¹ / ₁	Million dirhams	467.0	17 167	2 500 ^e	2.7	18.7	4.2	1.2
Niger ^o / ₁	Million CFA francs	893.0 ^e	96 933 ^e	7 900 ^g	0.9	11.3	1.1 ^p	0.7 ^p
Nigeria ^h / ₁	Million pounds	139.6	2 029 ^f	309 ^g	6.9	45.2	0.1	0.2
Senegal ³ / ₁	Million CFA francs	4 633.0 ^e	223 500	26 533 ^h	2.1	17.5	3.5 ^e	1.6 ^g
Sierra Leone	Million leones	2.3 ^e	356 ⁿ	53 ^h	0.6	4.3	2.4 ^e	0.9 ^e
Somalia ¹ / ₁	Million shillings	74.8	1 376	...	5.4	...	1.4	1.7
Southern Rhodesia ¹ / ₁	Million R dollars	17.9	1 098	185 ^g	1.6	9.8	3.2	1.3
Sudan ^g / ₁	Million S pounds	42.9	664 ^e	81 ^e	6.5	53.6	1.4	1.4
Swaziland ¹ / ₁	Million rand	1.6 ⁿ	85 ^e / _g	15 ^e / _g	1.9	10.5	4.0 ^h	1.9 ^h
Togo ¹ / ₁	Million CFA francs	751.4	67 657	8 393	1.1	9.0	1.6	0.8
Tunisia ¹ / ₁	Million dinars	11.1	763	157	1.5	7.1	6.7	2.0
Uganda ¹ / ₁	Million shillings	154.0 ^e	9 386 ^e	1 278 ^e	1.6	12.1	3.5 ^e	1.9 ^e
United Republic of Tanzania ^s / ₁	Million shillings	350.0 ^e	10 015 ^e	2 238 ^g	3.5	15.6	3.3 ^e	1.4 ^e
Zaire ¹ / ₁	Million zaires	20.7	1 007 ^e	194 ^g	2.1	10.7	3.4	1.4
Zambia ¹ / ₁	Million kwachas	59.9 ⁿ	1 124	277	5.3	21.6	2.9	1.4
Caribbean and Latin America:								
Argentina ¹ / ₁	Million new pesos	1 830.0	103 390 ^u	24 143	1.8	7.6	1.8	0.7 ^t
Bolivia ¹ / ₁	Million pesos	219.0	12 090	1 733	1.8	12.6	3.2	0.9
Brazil	Thousand million new cruzeiros	6.1	237	51	2.6	12.0	0.7	0.2
Chile ¹ / ₁	Million escudos	2 231.0	93 887	13 377	2.4	16.7	4.2	2.8
Colombia	Million pesos	2 643.0	156 483	30 657	1.7	8.6	2.1 ^v	1.0 ^v
Costa Rica	Million colones	...	6 980	1 704	...	...	5.3 ^v	1.9 ^v
Dominican Republic ¹ / ₁	Million pesos	31.4	1 473	251	2.1	12.5	2.4	1.2

Table 1. Military budget expenditure compared with other statistics (continued)

(Annual averages, 1970-1972)

B. Developing market economies

Country	Currency unit	Military budget expenditure	Gross domestic product at current prices	Gross fixed capital formation	Military budget expenditure as a percentage of		Government expenditure as a percentage of GDP for	
					Gross domestic product	Gross fixed capital formation	Education	Health
1	2	3	4	5	6	7	8	9
Ecuador	Million sucres	814.0	44 218	8 966	1.8	9.1	2.8	0.4
El Salvador	Million colones	29.0	2 718	365	1.1	7.9	2.8	1.3 _{w/}
Guatemala	Million quetzales	23.0	2 018	263	1.1	8.7	2.7 _{w/}	...
Guyana	Million G dollars	18.6	564	116 _{f/}	3.3	16.1	4.3	2.1
Haiti	Million gourdes	36.8	2 705	207	1.4	17.8	0.6	0.7
Honduras	Million lempiras	21.2 _{b/}	1 516	261	1.4	8.1	3.2 _{b/}	1.2 _{b/}
Jamaica	Million J dollars	4.9 _{b/}	1 166	283	0.4	1.7	5.1 _{b/}	2.1 _{b/}
Mexico	Million pesos	3 145.0	461 533 _{c/}	87 400 _{c/}	0.7	3.6	...	...
Nicaragua 1/	Million cordobas	80.7	5 855	908	1.4	8.9	2.3	0.9
Panama	Million balboas	22.4	1 167	313	1.9	7.2	4.1	3.6
Paraguay	Million guaranies	1 573.0	85 185	11 984	1.8	13.1	1.7	0.6
Peru	Million soles	9 826.0	262 867	34 167	3.7	28.8	3.8	1.1
Trinidad and Tobago	Million T.T. dollars	35.4	1 806 _{m/}	...	2.0	...	4.2	2.2
Uruguay 1/	Million pesos	14.9	621 300	61 133	-	-	-	...
Venezuela	Million bolivares	1 098.0	55 826 _{c/}	13 250 _{c/}	2.0	8.3	3.4	2.5
Asia:								
Burma _{p/}	Million kyats	590.0 _{p/}	10 490	1 133	5.6	52.1	2.5	1.0
Cyprus	Million C pounds	3.4	257	60	1.3	5.7	2.3 _{x/}	1.0 _{x/}
India h/d/	Million rupees	11 111.0	364 033	55 167	3.1	20.1	1.9 _{x/}	0.7 _{x/}
Indonesia	Thousand million rupiah	127.8 _{l/}	3 891	609 _{f/}	3.3	21.0	...	...
Iran _{v/}	Thousand million rials	94.5 _{v/}	1 100	220	8.6	42.9	2.3 _{v/}	0.7 _{v/}
Iraq 1/	Million I dinars	132.2 _{v/}	1 328	179	10.0	73.9	4.2 _{v/}	0.9 _{aa/}
Jordan _{n/1/}	Million dinars	40.7	224	33	18.1	121.9	2.9	1.2 _{aa/}
Kuwait _{n/1/}	Million dinars	26.0	1 163	160	2.2	16.3	3.0	1.5
Laos	Million kip	9 199.9	...	...	...	...	...	...
Lebanon _{1/}	Million pounds	137.8	4 568	867	3.0	15.9	2.5	0.5
Malaysia _{g/1/}	Million M. dollars	560.7	12 362 _{u/}	2 686	4.5	20.9	5.3	1.8
Pakistan _{g/1/}	Million rupees	3 225.4	50 180 _{ad/}	6 913 _{ad/}	6.4	46.7	0.1 _{ee/}	...
Philippines	Million pesos	534.1 _{e/}	50 401	8 993	1.1	5.9	2.5 _{e/}	0.6 _{e/ff/}
Republic of Korea	Thousand million won	136.8	3 202	720	4.3	19.0	3.1	0.2
Republic of Viet-Nam	Thousand million piastres	162.8	954	80	17.1	204.3	...	...
Sri Lanka 1/	Million rupees	116.8 _{p/}	12 664	2 330	0.9	5.0	3.9 _{p/}	2.1 _{p/}
Syrian Arab Republic	Million pounds	655.6	7 523	1 253	8.7	52.3	3.9	0.7 _{p/}
Thailand	Million baht	5 010.0 _{g/}	147 147	33 107	3.4	15.1	3.2 _{g/}	0.5 _{g/}
Turkey 1/	Million lira	5 439.0 _{gg/}	151 900 _{c/}	26 800 _{c/}	3.6	20.3	2.9 _{gg/}	0.8 _{gg/}
Yemen	Million rials	78.4 _{e/}	2 833 _{m/}	...	2.8	...	0.3 _{e/}	0.2 _{e/}
Oceania:								
Fiji	Million F. dollars	0.5	218 _{c/}	46 _{c/}	0.2	1.1	3.0	1.9

Table 1. Military budget expenditure compared with other statistics (continued)
(Annual averages, 1970-1972)

C. Centrally planned economies

Country	Currency unit	Military budget expenditure	Net material product	Net fixed capital formation	Military budget expenditure as a percentage of		Government expenditure as a percentage of NMP for	
					Net material product	Net fixed capital formation	Education	Health
1	2	3	4	5	6	7	8	9
Bulgaria	Million leva	996.7	10 727	1 700	9.3	58.5	5.2	3.1
Czechoslovakia	Million korunas	15 967	326 100	54 233	4.9	29.4	...	... ^{aa} /
Hungary	Million forints	9 723	295 367	59 867	3.3	16.2	3.7	3.2 ^{aa} /
Romania	Million lei	7 400	...	...	3.5 ¹ /	...	...	...
Poland	Million zlotys	37 633	850 433	186 600	4.4	20.2	5.6	4.1
Union of Soviet Socialist Republics	Million roubles	17 900	302 700 ^{hh} /	53 433 ^{bb} /	5.9	33.5	8.7	3.2 ^{aa} /
Yugoslavia	Million new dinars	9 509	202 367	63 500	4.7	15.0	1.0	1.4 ^{aa} /

Sources and references: (i) United Nations, Yearbook of National Accounts Statistics; (ii) United Nations, Statistical Yearbook; (iii) United States, Agency for International Development, Economic Data Book; (iv) Economic Commission for Africa, Summaries of Economic Data; (v) Economic Commission for Asia and the Far East (now known as the Economic and Social Commission for Asia and the Pacific), Economic Survey of Asia and the Far East; (vi) Economic Commission for Latin America, Economic Survey of Latin America.

... Not available.

- Nil or negligible.

a/ Including Namibia.

b/ Years ending 31 March.

c/ Data relate to the present system of national accounts.

d/ Comprising of transfers to provinces only.

e/ Years ending 30 June.

f/ Gross capital formation.

g/ Years beginning 1 July.

h/ Years beginning 1 April.

i/ Data relate to 1970 only.

j/ Data relate to 1968-1970 average.

k/ Data relate to 1969-1970 average.

l/ Data relate to 1969-1971 average.

m/ Gross domestic product at factor cost.

n/ Including general public services.

o/ Data relate to 1967-1969 average.

p/ Years ending 30 September.

q/ Data relate to 1966-1968 average.

r/ For 1968 and 1969, the Governments of Eastern States are excluded.

s/ Data refer to former Tanganyika only.

t/ Data relate to 1969 only.

u/ Gross national product in market prices.

v/ Data relate to 1971 only.

w/ Health expenditure and pension payments are included in education expenditure.

x/ Originating from State Governments only.

y/ Years beginning 21 March.

z/ Including estimates of expenditures for defence in other line items.

aa/ Including social welfare.

bb/ Gross fixed capital formation.

cc/ Years ending 7 July.

dd/ Excluding data for Bangladesh.

ee/ Health expenditure is included in education.

ff/ Including labour and social welfare.

gg/ Years ending 28 February.

hh/ Gross material product.

Table 2. Military expenditures by two major groups
of countries: alternative estimates

(Thousand million United States dollars at constant (1970) prices

	World		Developed countries		Developing countries		World military expenditure as a percentage of world GNP <u>a/</u>	
	SIPRI	ACDA	SIPRI	ACDA	SIPRI	ACDA	SIPRI	ACDA
1961	142.5	161.4	136.4	152.5	6.1	8.9	<u>6.7</u>	<u>7.6</u>
1962	155.7	176.4	148.9	166.6	6.8	9.8	<u>7.0</u>	<u>7.9</u>
1963	161.7	183.0	153.9	172.3	7.8	10.7	<u>6.9</u>	<u>7.8</u>
1964	159.4	183.0	150.9	171.2	8.5	11.8	<u>6.4</u>	<u>7.3</u>
1965	159.4	183.1	149.6	170.4	9.8	12.7	<u>6.0</u>	<u>6.9</u>
1966	175.6	197.6	165.5	184.9	10.1	12.7	<u>6.2</u>	<u>7.0</u>
1967	194.8	214.3	183.3	200.3	11.5	14.0	<u>6.6</u>	<u>7.3</u>
1968	207.3	223.8	194.7	208.2	12.6	15.6	<u>6.8</u>	<u>7.3</u>
1969	210.5	226.8	196.3	210.1	14.2	16.7	<u>6.5</u>	<u>7.0</u>
1970	205.9	223.0	190.2	204.6	15.7	18.4	<u>6.1</u>	<u>6.6</u>
1971	203.7	223.5	186.6	203.2	17.1	20.3	<u>5.7</u>	<u>6.3</u>
1972	207.4	232.3	189.7	210.3	17.7	22.0	<u>5.4</u>	<u>6.1</u>
1973	207.4	234.6	187.5	209.5	19.9	25.1	<u>5.0</u>	<u>5.6</u>

Source: SIPRI Yearbook of World Armaments and Disarmament, 1974 ...;
US, ACDA, World Military Expenditure and Arms Trade, 1973 (Washington, D.C.
US Government Printing Office, September 1974) (forthcoming).

a/ Computed from values at current dollar prices.

/...

Table 3. Net flow of financial resources from Development Assistance Committee countries to developing countries, 1962-1972

(Million United States dollars)

Net disbursements	1962	1963	1964	1965	1966	1967	1968	1969	1970 a/	1971 a/	1972 a/
I. Official development assistance	5 438	5 772	5 952	5 895	5 984	6 536	6 309	6 621	6 832	7 759	8 654
1. Bilateral grants and grant-like flows	4 020	3 940	3 806	3 714	3 701	3 578	3 344	3 251	3 323	3 634	4 360
Of which:											
Technical assistance	747	871	954	1 063	1 233	1 314	1 467	1 528	1 532	1 655	1 839
2. Bilateral loans at concessional terms	907	1 465	1 740	1 833	1 947	2 222	2 282	2 320	2 384	2 786	2 395
3. Contributions to multilateral institutions	511	367	405	348	336	736	683	1 050	1 124	1 339	1 898
II. Other official flows	546	243	-36	304	447	518	738	571	1 152	1 271	1 541
1. Bilateral	531	246	-28	299	394	499	748	586	879	1 004	1 169
2. Multilateral	15	-3	-7	5	53	19	-10	-15	273	267	372
III. Private flows	2 453	2 557	3 729	4 121	3 959	4 381	6 462	6 586	6 949	8 215	8 430
1. Direct investment	1 495	1 603	1 572	2 468	2 179	2 105	3 151	2 919	3 563	3 877	4 306
2. Bilateral portfolio	147	327	837	655	480	800	948	1 201	726	757	2 030
3. Multilateral portfolio b/	239	-33	461	247	175	469	767	419	474	771	667
4. Export credits c/	572	660	859	751	1 124	1 007	1 596	2 047	2 185	2 810	1 427
IV. Grants by private voluntary agencies	..	..	..	..	..	..	..	..	858	913	1 028
Total net flow	8 437	8 572	9 645	10 320	10 390	11 435	13 509	13 778	15 791	18 158	19 653

Source: Organisation for Economic Co-operation and Development, Development Co-operation, 1973 Review (Paris, November 1973), p. 42.

a/ Including grants by private voluntary agencies.

b/ These funds of private origin are mingled with those under I.3 and II.2 and other funds from non-Development Assistance Committee sources, in programmes governed by criteria similar to those applied in bilateral official development assistance programmes.

c/ Measured by some countries as change in outstanding amounts guaranteed, by others as change in outstanding amounts due on disbursed credits. Interest is included in the sums recorded as outstanding, so that the net flow tends to be over-stated if gross new guarantees are rising and vice versa.

Table 4. Centrally planned economies: unofficial estimates of bilateral aid commitments to developing countries, 1962-1972 a/

(Millions of United States dollars in current prices at current official exchange rates)

Year	Annual commitments
1962	314
1963	342
1964	1 241
1965	663
1966	1 298
1967	821
1968	758
1969	776
1970	1 258
1971	1 625
1972	1 711
1973	1 783

Source: Centre for Development Planning, Projections and Policies, Department of Economic and Social Affairs, United Nations Secretariat.

a/ Developing countries do not include Cuba.

ANNEX II

Technical issues in reducing military budgets

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I. INTRODUCTION

1. The most important reason advanced for reducing military budgets is to decrease international tensions and thereby to enhance the national security of States. National security is perceived by different States in different ways, but most Governments consider a number of other factors in addition to military forces -- international economic and political developments, for example, or domestic stability and social cohesion. Changes in these non-military factors may offset changes in military force levels. Thus, national security and peaceful relations between States are not a function solely of the levels of military preparedness or of the fear of war. Nevertheless, it is widely assumed -- and with considerable justification -- that sustained reduction of the military arsenals and force levels of major Powers would decrease the likelihood of military conflict between them. Or, if conflict should be uncontainable, such reductions could help diminish the destructiveness of contemporary warfare. Therefore, the major intermediate objective of an international agreement to reduce military outlays is to increase the national security of participants by decreasing the level of military power that one State can bring to bear on another.

2. States may also wish to reduce the burden that military expenditure imposes on their economies and societies. Developed States may believe that only by reducing that burden will they be enabled to devote more of their resources to aiding developing countries. Hence, an agreement to reduce military budgets may also aim at curtailing the volume of military outlays that represents a net drain on the civilian sector.

3. This annex provides an overview of the major technical issues -- economic, military, or political -- that must be dealt with if these proximate and ultimate objectives are to be achieved. The list of topics and the detail of the discussion are not intended to be exhaustive. The aim instead is to provide a general introduction to the subject, and others might wish to raise additional issues as worthy of consideration. In any case, negotiations towards specific inter-State agreements would require detailed follow-on study of the issues that, because of space and time limitations, can only be dealt with summarily in this annex.

II. THE MEASUREMENT OF MILITARY EXPENDITURE

A. The scope and content of military budgets

1. The meaning of military budgets: varieties of usage

4. General Assembly resolutions 3093 A and B (XXVIII) both speak of reducing "military budgets". The meaning of "military budgets" may appear to be self-evident, but the scope and content of these outlays differ widely between States. Outlays treated as military by some States may be excluded by others from the corresponding

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budget categories. Some central budgets use only a single category for military expenditures; others have several that bear a close relation to military expenditure. The coverage and structure of military budgets varies with the economic organization and the system of public finance in different States. Moreover, the amount and nature of information made public is affected by differing conventions of pricing and classification, in addition to variations in legislation on the preservation of official secrets. A prerequisite for any meaningful proposal to reduce military budgets is an accepted definition of the aggregate to be reduced - how it can be delimited, structured, and measured - and a common understanding of the principles of classification of military expenditure in various national budgets.

5. It would be impossible here to provide a catalogue of the military budgets of even the world's major military Powers, but the following abbreviated discussion illustrates some of the problems that are encountered. Table 1 provides a side-by-side comparison of three classifications of military outlays by what may be called "inputs", to distinguish them from more output-oriented expenditure concepts that are introduced later. The first listing is by the Stockholm International Peace Research Institute (SIPRI), in a report entitled The Meaning and Measurement of Military Expenditure (August 1973, p. 7). The report notes that military expenditure "as a general rule" is considered to consist of items 1-6 of the SIPRI list, but that items 7-11 "in many or most cases ... are also regarded as military expenditures".

6. Appropriations of the United States Department of Defense, shown in list II of table 1, encompass all the items in the SIPRI list except number 10 (paramilitary forces a/) and number 11 (military aspects of atomic energy and space). Whereas military space applications are funded from the Department of Defense's budget, civilian and military expenditures of the United States Atomic Energy Commission, an independent agency, are separately financed and are grouped with those of the Department of Defense under the broader federal-budget aggregate of "national defence". The latter category also includes miscellaneous "defense-related

a/ The Department of Defense furnishes partial support to national guard elements of the States as well as to the Civil Air Patrol, but the latter is not armed. Militia and police are financed by State Governments. Perhaps the closest to a paramilitary force in the United States federal organization is the Coast Guard, which is operated and financed in peace-time by the Department of the Treasury.

Table 1. Three classifications of military expenditures by input

I. SIPRI	II. United States Department of Defense	III. NATO
1. Pay and allowances of military personnel	1. Pay and allowances of military personnel	1. Outlays of military personnel
2. Pay of civilian personnel	(	8. Civilian pay and allowances
3. Operations and maintenance	(3. Operations and maintenance	6. Other equipment, supplies and operations (part)
4. Procurement	4. Procurement	(2. Procurement of major equipment
5. Research and development	5. Research, development, testing and evaluation	(3. Procurement of missiles
6. Construction	6. Construction	6. Other equipment, supplies and operations (part)
7. Pensions to retired military personnel	2. Pensions to retired military personnel	(4. NATO-common infrastructure
8. Military aid	9. Military assistance	(5. (National) construction
9. Civil defence	8. Civil defence	7. Pensions to retired military personnel
10. Paramilitary forces		
11. Military aspects of atomic energy, space, etc.		
	7. Family housing	9. Other expenditures

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activities" of various governmental departments. b/ Operations and maintenance (O and M), it should be noted, include civilian pay. c/

7. The definition of the "defence contribution" of member countries employed by NATO incorporates all of the SIPRI listing except item 9. In turn, this corresponds to the Department of Defense list, excluding item 8, plus atomic energy activities. The NATO listing is peculiar in that research and development (R and D) is part of item 6 (other equipment, supplies and operation), while procurement and construction are each accorded two categories. The final residual, item 9, on the NATO list also covers outlays of national conscription systems as well as some insurance and indemnity payments to ex-military personnel. Both of these sets of outlays are not part of the United States Department of Defense total.

8. Other Governments use broader or narrower definitions in their budgetary practice. The Federal Republic of Germany distinguishes between operating and capital expenditure. The former is composed largely of the SIPRI-list items 1-3, 7 and 8 (NATO contributions), whereas SIPRI items 4-6 make up the bulk of capital expenditure in the German system. d/ The United Kingdom distributes outlays of the Defence Budget among expenditure on personnel (including retirement pay and pensions as well as compensation of civilian employees), expenditure on equipment (further subdivided by major systems group -- i.e., sea, land, air, guided weapons and electronic systems, and other), and other expenditure (which includes both construction and operating outlays).

b/ The treatment of military assistance in the United States budget is complex with some funds formally appropriated to the President, although administered by the Department of Defense and identified under "national defense", over and above the specific Department of Defense allocation. Civilian space research and technology are budgeted to and administered by an independent government agency.

c/ "The appropriations under this title finance the day-to-day costs, except military personnel costs, of operating and maintaining the Armed Forces, including the reserve components, and related support activities of the Department of Defense. These funds include amounts for pay of civilians, contract services for equipment and facilities, fuel, supplies, and repair parts for weapons and equipment." The Budget of the United States Government, Fiscal Year 1975, appendix, p. 274.

d/ A similar functional breakdown is employed by the International Institute of Strategic Studies (London) in estimates published in its annual survey, The Military Balance.

9. The relations between stockpiling, procurement, and support of military industry constitute a troublesome problem of classification. Stockpiles of such military goods as parts, petroleum products and fuels, or ammunition are usually incorporated with procurement (or O and M) for current use or inventory. This is the case in both the Department of Defense and NATO classifications, while the authors of the SIPRI report seem to exclude stockpiling from their 11 categories. Many countries also accumulate stockpiles of "strategic materials" - e.g., raw and semi-processed materials viewed as critical in military production. Such procurement outlays may or may not be included in the "defence" budget; they are excluded from both the United States, Department of Defense and the NATO classifications.

10. Support of military industry, whether for current operating or investment purposes, by grant or loan, tends to be classified partly according to the ownership structure of the industry. In the United States, military procurement draws primarily on private industry and compensates the latter's outlay through product price. However, various forms of assistance to private industry may be extended through funds budgeted to the Department of Defense. Government investment in tools for specific weapon systems or in government-owned and operated production facilities will also appear as line items under procurement or construction. Among the equipment types in NATO category 2, procurement of major equipment, there is also production equipment. Thus, the border line between investment in production facilities and current value of produced equipment may be difficult to distinguish.

11. It should also be noted that military department budgets often finance exclusively civilian activities. A well-known example is the construction work carried out by the United States Corps of Engineers and financed through a segregated Department of Defense appropriation. Hydrographic services or naval observatories may be administered by the armed forces, but the services performed are largely civilian in orientation. Many military establishments, especially in developing countries, perform important educational functions that have a direct value to the civilian economy. Not all of the military budget is necessarily a "burden" on the economy, and where the purpose of reducing budgets is in fact to ease the "burden of defence", the definition will have to be narrowed to exclude activities that contribute to civilian welfare.

12. Fiscal practice differs among States not only with respect to the definition and classification of military outlays but also in regard to the accounting of budget outlays generally. An international agreement to reduce military budgets must take into account distinctions between such expenditure concepts as spending authority (right to enter into obligations for current or future-period payment), obligations incurred (accruing liabilities, contractual obligations, and other commitments), and outlays (disbursement of cash, issuance of cheques, or execution of other bank transfers). Other differences may be encountered, including the use of varying fiscal year accounting periods.

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2. Defining the military sector

13. In view of the great variation among States in the scope and content of their military budgets, it would be advisable to use a more precise term for the central concept of this study. Hereafter, it is considered that the object to be reduced is a participant State's expenditure for military purposes - for brevity, military expenditure - in any given year. The first step in defining the scope and content of military expenditure is to delimit the military from the civilian sector of the economy. This requires the establishment of two kinds of borderlines of the military sector. The first provides a cutoff for the range of substitutes to be included in the sector; the second limits the number of links in the chain of production to be incorporated in the sector. These are taken up in order.

14. Partitioning an economy into sectors involves the attempt to group together similar activities or outputs. Thus, we might try to lump together all activities connected with "national security". It is simple enough to define the core of military activity, but since national security encompasses aspects of all relations with the outside world, and these in turn depend on the whole interrelated complex of national economic activities, it seems difficult to establish objective criteria for excluding any economic activity from this definition of the military sector.

15. We might begin instead by agreeing that the military sector is that group of activities whose object is the provision, assembly, maintenance and deployment of current and future force potential intended for application mainly against external forces. This would embrace such traditional elements of military expenditure as procurement of armaments, maintenance and operation of armed forces and their installations, construction of military facilities, and the development of new weapons systems.

16. However, as in other sectors of the economy, a more or less suitable substitute can be found for many military activities and it is necessary to decide where to draw the boundary line. In general, one would wish to include the near substitutes and exclude the more remote ones, but this principle requires more concrete expression. A simple example of the problems involved is whether militia and police forces should be included in the military sector as substitutes at the margin for the army, navy and air force. Most States are agreed that the police and militia do not belong in the military sector; on the other hand, border guards are often viewed as a category of paramilitary forces that should be included, depending on their level of armament.

17. A more complex illustration of the problem of substitution is that of civil defence. Passive or civil air defence, defined as the construction of bomb shelters and the organization of population-evacuation procedures, is a substitute for active air defence of urban areas - that is, for armed forces whose mission is to destroy incoming hostile aircraft or missiles. All States consider active air defence a military activity. Many States include outlays on civil defence in

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their military budgets; others do not. But if civil defence is included in the agreed definition of military expenditure, should the former be restricted to State outlays on civil defence? Suppose that bomb shelters are constructed by the private sector under legal restrictions on building and factory specifications and the cost passed along to households. Are these private outlays to be excluded?

18. Still another example is the stockpiling of "strategic" commodities other than armaments -- e.g., food, petroleum products, or industrial raw materials. Here the substitution is for future direct or indirect military purchases (either domestically or abroad under possibly unfavourable conditions). In some countries, this may represent an attempt to avoid the necessity of subsidizing an unprofitable domestic industry. In any case, it might be wiser to exclude stockpiles of goods that do not substitute for direct military purchases, to obviate the need for determining the defence-motivated portion of national inventories and stocks.

19. A final example is that of reserve or "mothballed" armaments production facilities, which represent in effect a stockpiling of future production capacity. It seems clear that the costs of such stockpiling are a legitimate charge on current military sector product.

20. The borderline between the military sector and its civilian substitutes will sometimes have to be drawn arbitrarily, but it should be possible to pinpoint the more important cases. The decision on where to set the boundary lines of military expenditure must be taken with due account of the problem of verifying compliance with an agreement, discussed more fully in chapter III, section C of this annex, for it is possible that a limitation may be more or less easily circumvented by shifting activities that are constrained to an unconstrained substitute sector.

21. The second kind of delimitation of the military sector concerns the scope of production links to be incorporated. Final military goods -- tanks, planes, guns and ammunition -- should clearly be part of the sector, but what of the activities of earlier stages of the process of producing these goods? In setting the boundary lines, it is desirable to avoid both double counting of resource costs in computing the value of output of the sector and a definition that makes the size of military expenditure sensitive to changes in industrial organization. Thus, it would seem best to aim for boundaries that limit the sector to planning, assembling, training and deploying of military forces.

3. The structure of military expenditure

22. Once the military sector is defined in scope, the next step is to determine some significant dimensions by which it can be structured. Consider the military sector as a production mechanism which receives inputs from and dispatches outputs to the external economy. On the output side, two structure-forming dimensions are of interest, time and function.

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23. It seems useful to divide annual output of the military sector between, on the one hand, force potential currently applicable, and, on the other hand, contributions to force potential that become operational in the near future - say, the next three-five years of medium-range defence planning - or in the distant future - i.e., the period of long-term defence planning. The last two output categories correspond to two kinds of military investment activities going on in the current period. Much of current military procurement, for instance, becomes effective in terms of force potential only over the medium-range, while a good deal of current R and D activities is aimed at building force potential that becomes operational only in more distant years.

24. The second important kind of output structure is concerned with a division of output by military function. This can be done in many different ways, but there are some traditional distinctions in military thinking that may provide common ground for structuring military functions on the most aggregated level. For example, it is customary to distinguish between strategic and tactical aims, and most weapon-systems are primarily designed or employed for one or the other of these purposes. Other recurring notions in discussing military forces are distinctions between front-line units and units with various support functions, and differences between weapon systems in respect to mobility and territorial range of employment.

25. In recent years, the concept of military "programmes" has received considerable attention. An example of a programme breakdown of military expenditure is that currently employed in United States military budgeting: e/

1. Strategic forces (offensive and defensive aircraft and missile forces);
2. General purpose forces (land, tactical air, naval);
3. Intelligence and communications;
4. Airlift and sealift;
5. National Guard and Reserve Forces;
6. Research and development;
7. Central supply and maintenance;
8. Training, medical, and other general personnel activity;
9. Administration;
10. Military assistance.

e/ United States defence planning distinguishes a "mission" breakdown, in addition to the "programme" structure, which identifies strategic forces, general purpose forces (including mobility forces), auxiliary forces (intelligence and security, communication, R and D, military assistance, and geophysical activities), and mission support and central support forces (which provide various operating, training, command, and logistics functions).

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26. Ideally, support activities, as well as command and administration should be allocated to the basic programme categories, but the conceptual and practical problems involved in fully realizing this objective appear to be intractable.

27. Agreement on the use of some common broad category does not, however, necessarily imply that different national authorities will include the same kinds of activities or weapon-systems in the category, even supposing that they use the name of the category in the same sense. What weapons can and will be used for strategic purposes may depend on, inter alia, political aims, military doctrine, or distance to enemy territory.

28. Turning to the input side, it is necessary first to distinguish between stock and flow, or capital and current inputs. We may view the production of force potential as taking place on the basis of "current" inputs of final military goods and services (men, ammunition, petroleum products, food, spare parts, etc.) but also of military capital.

29. In a purely abstract sense, our definition of the military sector and its boundaries would require the inclusion of all capital whose services are directly used in the category of "defence capital". However, since this definition in turn depends on the meaning of direct use, the approach does not provide practicable rules for the delimitation of defence capital. Such rules would be partly a matter of practical convenience and partly depend on the valuation criterion adopted. f/

30. A second input-side distinction is between primary factors - soldiers and civilian employees, land, and imported goods and services - and intermediate goods and services, distributed by producing sectors. g/ This amounts to a classification of inputs by origin, which can be developed in more or less detail as circumstances permit.

B. Military power, military expenditure, and the valuation of resources

31. If Governments agree to reduce military expenditure in order to increase their national security, can they be confident that reduction of military expenditure in each participant State will accomplish this objective? Some of the problems that must be solved in order to assure an affirmative answer to the question are dealt with in chapter III of this annex. However, the question posed raises the issue of the kind of military output that is obtained from military expenditure and the degree to which output and outlay are coextensive. This issue is logically prior to any consideration of force posture implications and verification requirements.

f/ For valuation under the opportunity cost criterion, see paragraph 38 below.

g/ For the services of military capital, synthetic sectors could be designated.

32. We have previously employed the concept of force potential. It seems useful to distinguish that output concept from another, called military security. The latter refers to the usefulness of military outlays in the final analysis - i.e., the attainment of (some degree of) security from external threat. Since improvement of security or diminution of the burden of maintaining a given level of security may be thought of as the basic objective of an agreement to reduce military budgets, this concept of military output is central to the concerns of the present study. However, the concept has equally important disadvantages. It is dependent on an objective evaluation of the external threat, not just in the present but to the limit of the planning horizon, and of the degree to which the threat over time can be successfully countered with one's own military forces. Since a threat cannot be evaluated except in terms of particular conflict scenarios and the net interaction depends on assessment of such intangibles as morale and the perception by each side of the other's determination to use military force, military security as an output concept is impossible to measure and apply concretely. Military expenditure cannot be easily interpreted in a military security sense, and the effect of a change in military expenditure on military security is a matter of judgement.

33. The alternative of force potential seems preferable because its measure may be limited to require "only" a consideration of additions to one's own capacity to apply military force and be largely independent of the size of the opponent's forces or of the nature of the political-military context in which conflict takes place. h/ It is for this reason that force potential was used exclusively as the underlying output concept in section 1. However, as the inverted commas in the first sentence of this paragraph are intended to suggest, this concept is not easy to quantify either.

34. A measure of the (force potential) output of the military sector implies the construction of an index of the different elements of military output, weighted by some set of prices. There must then be a definable relation between relative prices of military goods and services and the rates at which components of the military product mix can be substituted for each other in "producing" force potential. This requirement generates a number of different problems:

(1) The output of the sector includes contributions to future years' output. In a perfectly functioning market, the value of investment is derived from

h/ Of course, the presumed independence of scenarios and opposing forces cannot be strictly true in defining force potential. Therefore, force potential of particular weapons systems or of military units is usually defined on the basis of explicit or implicit assumptions about the operational environment. The transition from the concept of military security to the measurement of force potential means, therefore, that some selected "standard" context is used as a substitute for the various possible conflict scenarios that explicitly or implicitly underlie the threat perceptions of any Government. In this way, the uncertainty factor of defence planning, and the special measurement problems created by uncertainty, is removed or ignored.

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perspective valuations of future output. But how is one to assess, in concept or practice, the value of future military output under conditions of great uncertainty?

(2) How do we compare among themselves and over time weapons systems and force units embodying different varieties and levels of military technology?

(3) What is the appropriate set of output prices? In the absence of an international "hire-market" for military forces, there is nothing like competitive prices for military capabilities, although there may be internal pricing of intermediate services within the military sector. The absence of markets deprives us not only of prices of this year's military output but also of prices for the output of all future years within the planning horizon. Without future prices, we cannot value defence capital and its current services, which means that we cannot measure total military resource use or estimate how force potential will change with a change in current inputs into the military sector.

35. If defence ministers had precise knowledge of the relative contributions of different forces and inputs to force potential, or even a consistent preference-ordering among them; if the ministers sought to maximize this military "output" in drawing up their budget proposals and long-term plans; and if military contractors or producers minimized costs of maximized profits; then relative prices of military goods and services would tend to reflect their comparative contribution to force potential.

36. Of course, this ideal is not realizable. "Military science" is unable to attach precise force-potential weights to all components of the military mix. Defence ministers rarely compose consistent preference-orderings of military inputs and forces. Defence budgets and plans are usually the product of political and bureaucratic compromise, reflecting various non-military constraints. Military contracts frequently provide irrational financial incentives. Thus, the connexion between output and outlay is attenuated.

37. However, it would be incorrect to assert that there is no correspondence between changes in a State's military expenditure and the change in its military output. The process by which individual States determine their levels of military expenditure is a composite of economic, military and political factors, but it does include explicit evaluations of military strength and the requirements for an effective military posture. No country is prepared to accept external limitations on its military budget unless assured that its adversaries are doing likewise, which testifies to a belief, however mistaken in reality, that the level of its total military expenditure is intimately related to military needs. Nevertheless, the historical reluctance of States to enter into international military expenditure limitation agreements is attributable in part to their fear that expenditure relations obscure real military power comparisons. In turn, this apprehension is related to the difficulties of drawing international comparisons of military expenditure (which is discussed in the next section), but it also reflects an awareness of the realities of defence planning and budgeting. For these reasons, too, those entering into an international agreement are likely to want information

on the structure of the total military expenditure of their treaty partners in order to obtain a higher confidence estimate of comparative levels of military power.

38. Military outlays may also be viewed as an aggregate of resource costs. Such a view in effect defines a third aggregate value concept for the military sector, military resource potential. If valuation derived from outputs is difficult because of the problems of obtaining or imputing appropriate prices to military outputs, it is necessary to seek an alternative source of valuation. That alternative is the civil sector of the economy, and the resources used in the military sector must then be valued at their "opportunity cost" - at the value of the best possible civilian opportunity foregone because of allocation to military use.

39. This concept, therefore, focuses on the potential for use of military resources in the civilian sector. Such valuation would be particularly appropriate to an agreement that looked to military expenditure reductions as a means of reducing the "burden of defence", for the "burden of defence" is in fact the net productive opportunities sacrificed by diversion of resources to military uses. i/

40. Since the referent of opportunity costs is in the civilian sector, some military outlays can be viewed as already corresponding to opportunity costs, while other categories of outlays would require revaluation. Purchases directly from the civilian sector, to the extent that relative prices correspond to relative real

i/ Opportunity costing has received several different interpretations in the literature on military expenditure. Especially noteworthy are three conceptions - labelled the marginal change, the total change, and the military market - that differ in the over-all extent of the organizational change envisioned. This in turn makes for sharply different resource valuations.

The first interpretation involves a marginal shift of resources, and this is the one favoured here. The second interpretation suggests the radical "thought experiment" of total disarmament with all military resources reallocated to civil uses. So drastic a change would certainly transform the whole economic structure. Consequently, the opportunity cost of various types of final goods and services would be much different than they would be when only marginal changes were contemplated. Parts of the reasoning and calculations about the economic consequences of disarmament in the United Nations experts' report, Disarmament and Development (see foot-note 1 of the report above), may be cited as an example of opportunity cost estimations of this kind.

The third interpretation is also based on a radical hypothesis, that of a national defence organized and operated on a competitive market basis. In a slightly modified version, the competitive principle is thought at least to apply to all intermediate activities, including the administration of various kinds of defence capital. The question then posed concerns the opportunity cost (equals competitive price) for all kinds of final goods and services.

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costs there, could be valued at actual purchase prices. In other cases, valuation would have to be adjusted or imputed (see the discussion of conscription below).

41. The opportunity cost principle provides guidance not only on what to cost and what not to cost ^{j/} but also on when to cost. Military activities during a fiscal period should be debited with the cost of the use of a certain input for that length of time when they effectively bar the use of the input for alternative purposes and to the extent that they thereby diminish the total discounted value of the input for civilian uses. This means that the important thing in dating of cost accounting entries is not necessarily the time when the resources are actually used in military activities, but when they are reserved for military use. It follows that military procurement may incur considerable costs long before any actual contracts have been signed, if the order is anticipated by the producers and motivates investments especially for that purpose. On the other hand, it might well happen that no real military costs have been realized in military procurement, even though a main part of the payment has already been disbursed in cash: if, for instance, the procured item is a civilian stock commodity that has not as yet been delivered and definitively removed from civilian uses.

42. The actual application of these principles will be a difficult task for a variety of reasons. One of the major sets of difficulties is international differences in cost-price systems. The degree to which the prices of military goods and services in fact mirror opportunity costs will vary with the nation concerned, but it is clear that the connexion is far from perfect in all real economies. It may be necessary, in obtaining a measure of the resource cost of military expenditure, to adjust actual outlays for differences from opportunity cost or even to impute opportunity cost prices for resources obtained by the military without charge.

43. One area in which expenditures often diverge sharply from real costs is military manpower. Under conscription systems, military pay levels are usually considerably below the rates for comparable labour in the civilian sector, thus

^{j/} The opportunity cost of some assets and transactions is zero. This is true by definition of all fixed assets taken over from the previous period, used directly in the military sector, but which have no alternative civil use. (In the military market concept of opportunity-costing, however, the opportunity forgone can be civilian, thus establishing the basis for a positive opportunity cost of defence capital.) All transactions that are purely distributive in nature and which therefore do not affect the total supply of goods and services cannot have positive opportunity cost. This remains true whether the distribution is intergenerational, as in the case of paying national debts arising from earlier wars, or intragenerational, as in the case of veterans' payments or military pensions. Another example of transactions that should be left out of account is distributional transfers of capital assets - for example, the buying up of new land areas by military authorities.

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understating the real cost to the economy of the military use of employable labour and hence the "burden of defence". This difficulty also complicates international comparisons where one side uses a voluntary enlistment system and the other obtains manpower by conscription.

44. National variations in the relationship of prices to production costs arise from differences in historical development, but also from differences in economic and social philosophy and policy. In the centrally planned economies, as the term indicates, the main instrument for determining the relation between production and distribution, between production costs and prices, is central state planning and administration. This circumstance determines certain differences that are to be found in the mechanism of price formation and resource allocation in centrally planned, as contrasted with market or mixed economies.

45. By the theoretical norms for a market economy, relative prices should be proportional to marginal costs (which incorporate interest and rent as returns to particular scarce resources), so that they may in fact be proportional to the real marginal rates of transformation of resources in the economy. No real market economy adheres fully to these requirements, and the shortfall from the theoretical standard is often large. In centrally planned economies the theoretical ideal is "value", defined in Marxist terms, and departures from that ideal in varying degree are acknowledged. However, it is not sufficient to note that both centrally planned and market-oriented economies exhibit divergence from their own valuation standards. It must also be understood that the adjustments required in the available time series to bring closer correspondence to theoretical desiderata will be substantially different, depending on which standard is adopted as the appropriate valuation criterion. The difficulty cannot be side-stepped, if burden-of-defence comparisons are to be made, because some standard against which actual prices are to be measured is required, and the two identified here are the most widely acknowledged and used.

C. A standard accounting model for military expenditure

1. The general model

46. The idea of a standardized and internationally accepted reference budget for military expenditure is not new. It was considered, developed, and recommended by several of the committees of the League of Nations working on military expenditure limitations. k/ A model budget recommended in the draft convention of

k/ See especially the following two League documents published in Geneva: Commission préparatoire de la Conférence du désarmement, Rapport du Comité des experts en questions budgétaires, No. C.182.M.69. 1931.IX, 1931; and Publicité des dépenses de défense nationale, Projet de Convention. No. Conf.D/CG 160(1), 1934. The draft convention contained in the latter document was published in English, 87 pages, in the series of League of Nations publication, IX Disarmament, 1935.IX.3. It was also tested against available data and budgetary practices in a number of Member States who reported their military expenditure in accordance with the principles set out in the draft convention. The results of this empirical analysis motivated in the following year certain proposed amendments to the draft convention.

1934 served as the framework in which a number of Member countries - including Ethiopia, Mexico and Peru - reported their military expenditure to the League. The conceptual and data development of national accounting in the past four decades should make it possible to overcome many of the difficulties experienced by the League in establishing an acceptable military expenditure accounting system.

47. It should be stressed that the object of drawing up such a standard accounting model here is to try to provide a basis for international discussion of the problems of formulating operational definitions of the meaning and measurement of military expenditure. There is no intention to pre-judge the amount and nature of information participants in an agreement should exchange. That depends on the particular context and group of participants and must be left to their joint decision.

48. The analysis of sections A and B can now be used as the starting point for the construction of an accounting model for military expenditure. A summary table for such an accounting system is shown in table 2, where the two output structures and the two input structures, discussed earlier in section A.3, have been meshed to provide a kind of summary input-output table for the military sector. 1/ In the absence of output prices, the values in the table are supposed to represent opportunity costs throughout. m/ Land use could be disaggregated by land-zoning and region while employment could be accounted for in terms of age and educational characteristics, as well as divided between military and civilian personnel. Moreover, these kinds of disaggregated data would, in the ideal case, be necessary as a basis for the opportunity-cost calculation.

1/ The accounting model developed here, as well as the tables reporting Swedish military appropriations which follow, relate to a single year. Sections C and D of chapter III below discuss two sets of issues for which historical data would be highly useful: to assess the security implications of possible reallocations of military expenditure under constrained totals or to verify compliance with agreement to reduce military expenditure. To the extent possible, then, historical series of military expenditure in the framework of the standardized model would be of considerable value to the partners to a military expenditure-reduction agreement.

m/ If it were possible to frame a set of output prices, it would be possible and necessary to introduce into table 2 of this annex allowance for the use of military capital.

Table 2. Example of a standard summary table of military expenditure accounting

Resource input		Force output	Current forces							Forces in the near future							Forces in the distant future							Total programme cost by input																								
			Programme groups							Programme groups							Programme groups																															
			1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7																									
Intermediate goods and services, by producing sector		1	Example of possible programme groups: 1. Strategic attack 2. Air defence against strategic attack 3. Tactical forces (land, air, naval) 4. Territorial (non-mobile) forces 5. Airlift and sealift 6. Intelligence and communication 7. Civil defence																																													
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		Total resource cost by programme																																												Total military expenditure		

49. However, for many countries, the model of table 2 is an unreachable goal, because of lack of data on the national economy in general and the military sector in particular. To become practicable or operational, the accounting system may have to be modified in several major ways, as for example, in table 3. This modified model would seem sufficiently modest in data requirements to be used as a starting point for further international discussions. The output structure of table 2 has been modified in two ways in table 3. The time-dimension has been deleted and the functional division no longer aims at classifying all costs by programmes, but, instead, adjusts to organizational structure common to the military sector in most countries.

50. Accounting procedures must, to a certain extent, always adjust to existing organizational structure. Of course, it is possible to use a different budgeting model for planning purposes than the one used later in taking organizational decisions. Attempts at such a parallel use of different accounting models have been made in many countries in connexion with the introduction of different varieties of planning, programming and budgeting systems (PPBS). However, there are limits to the use of such dual accounting procedures. The need to link the two decision systems by internal pricing and complex decision rules will usually lead to conceptual difficulties and communication problems and will put a severe strain on the capacities of the political and military authorities concerned. A more reasonable assumption reflected in the suggested modified accounting table is that organizational structure and accounting can be expected to adjust only very slowly to new concepts in military planning.

51. On the input side, a compromise of table 2's structure results in the introduction of a crude time dimension, through the classification of inputs into operating, procurement-construction, and R and D costs, respectively. An adjustment has also been made to fit the headings to conventional military accounting practices. Considerable disaggregation, for example, of employment and land use is still essential for the opportunity cost-calculations, but the fineness of the grid may be a matter of judgement. An unfortunate but unavoidable consequence of these modifications is that the use of primary factors will to a certain extent be distributed over the main categories in the table. However, the main employment and land-use costs could be expected to be registered separately within "operating costs".

Table 3. Example of a modified summary table of military expenditure accounting

Resource input	Force output	Programme groups								Total cost programme by input
		1	2	3	4	5	6	7	8	
Operating costs	Employment	.	.	.	.	.	.	.	.	
	Purchases of ammunition, petroleum products and other materials for current use	.	.	.	.	.	.	.	.	
	Material charges for maintenance of military equipment and facilities	.	.	.	.	.	.	.	.	
	Real estate rents, including maintenance of buildings	.	.	.	.	.	.	.	.	
Procurement and construction		.	.	.	.	.	.	.	.	
		.	.	.	.	.	.	.	.	
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		.	.	.	.	.	.	.	.	
Research and development	Basic research	.	.	.	.	.	.	.	.	
	General applied research	.	.	.	.	.	.	.	.	
	Development	.	.	.	.	.	.	.	.	
	Testing and evaluation	.	.	.	.	.	.	.	.	
Total resource cost by programme										Total military expenditure

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2. A case study: the Swedish military budget

52. As a concrete example of the kind of structured information conveyed by the suggested types of military accounting models, we have chosen to present some summary tables from the Swedish military budget in a form which is at least approximately adjusted to the suggested models. By choosing figures for a fiscal period some years back, one could, after considerable re-estimating and adjustment, transform the historical Swedish data into a detailed format close to the models just described. Since the purpose here is not merely to provide an empirical example of the meaning of the structures in the accounting models, but also to acquaint the reader with the kind of data available in current official budget documents, we have chosen instead to base the presentation mainly on the officially published budget appropriations for the fiscal year 1974/75 and have restricted the "remodelling" to a certain selection and reshuffling of the given aggregates.

53. This choice implies that the suggested valuation procedures cannot be applied systematically in computing the fiscal year 1974/75 tables. As regards opportunity cost, the most obvious deficiency will be the estimate of conscript wage-cost, although the order of underestimation here has tended to decrease rapidly over the last decade and will moreover always change with varying employment and educational opportunities. The divergence should probably be of less importance in connexion with, for instance, procurement, construction, and real estate rents. On the other hand, using appropriation figures is probably the closest one can come, on the basis of official documents, to an estimate of the distribution of cost over time. n/ Unfortunately, Swedish appropriation accounting still retains a certain mixture of expected-payments concepts with other cost concepts.

54. The kind of structures used in the model of table 2 can be approximately exemplified from the Swedish aggregated data, although not integrated or meshed together in the way that model suggested.

55. The two output structures in the model, time and function, are both represented in table 4. As should be already apparent from the headings in the table, the correlation between the standard-model division in terms of time of force maturing and the actual divisions of costs, presented in the stub of the table, is a very crude one indeed. One obvious deficiency of special importance to the kind of conscript defence organization Sweden has is that the formation and training of new conscript combat units is counted entirely as a charge to present defence in the short run.

n/ To be true this assumes that you are dealing with sufficiently long time - series of expenditure data. For an isolated annual estimate, data on authorizations for procurement and construction would have to be added, since the credit arrangements in weapon-acquisition vary greatly between countries - as well as over time.

56. The kind of missions, exemplified on an aggregated level by the groups in table 4, are in the Swedish defence organization used for long-term and medium-term planning, while annual appropriations are still channelled and classified in terms of the existing organizational structure (cf. the so-called agency groups in tables 6-7). The need for this kind of "double accounting" is intimately connected with the special characteristics of a conscript defence organization like the Swedish. With that kind of defence it becomes convenient or even necessary to make a sharp distinction - in planning as well as in actual command structure - between the "combat organization" and the "peace-time production organization" of defence. The combat organization deals with the efficient employment of mobilized or otherwise combat-ready forces for different missions. The peace-time production organization is instead structured with the aim of ensuring during peace-time conditions efficient production of weapon-systems and combat units. The two kinds of organization always co-exist although the combat organization obviously will - during peaceful conditions - to a certain extent be a potential or "moth-ball" organization.

57. In all kinds of output structures in use there occur similarly named groups - general support and command respectively - that may require special explanation since they are connected with the organizational development of Swedish defence. As part of a trend in post-war years towards a more unified command structure, several functions of a common nature for the different services - mainly training, procurement, intelligence and research functions - have to a large extent been organizationally integrated into those central agencies and schools that make up the main part of the group "general support". o/ At the same time the role and relative importance cost-wise of the central and regional staffs, common for the services, and of the defence resources - base and maintenance units, intelligence and communication units and airlift units - directly used by these staffs in combat conditions, which together make up the mission "common combat command", has increased considerably. This is a rather different output group however, than the group "peace-time command administration", which is used later in the agency breakdown in tables 6 and 7 and includes all central and regional staffs within the actual "peace-time production organization".

58. For obvious reasons, the input structures in the standard model of table 2 cannot be estimated in detail from aggregate budget figures before decisions have been taken by the military authorities on the detailed input mixtures to be used. An estimate of the expected distribution by broad major categories is presented in table 5. The reader should be reminded that "conscript wages" is here taken to include only the sum of cash benefits actually paid out to conscript personnel.

59. An aggregate presentation of the total Swedish military budget, which roughly corresponds to the modified accounting model of table 3, is presented in table 6. The figures in this table have been taken directly and without any adjustment from

o/ Although defined within different frames of reference - combat organization and peace-time production organization, respectively - the group "general support" is essentially the same when it occurs in the mission breakdown as when it appears as an agency group, as can be seen from the figures in tables 4 and 6.

Table 4. Summary table of Swedish defence budget, fiscal year 1974/75, by mission and time horizon of input

(Millions of Swedish kronor, price-level February 1973)

Force output by mission Resource input by time horizon	Mission								Total mission cost by time horizon of inputs
	Strategic forces (distance fighting units)	Air defence	Tactical land forces (field units)	Tactical naval forces (surface attack)	Territorial forces (local units)	Common combat command	General support (common agencies schools and auxiliary functions)	Civil defence	
<u>Current forces</u>									
Maintaining present defence in the short run	325	591	783	284	362	439	501	77	3 362
<u>Forces in the near future</u>									
Adding new equipment and renewing old	709	361	1 255	248	338	309	43	59	3 322
<u>Forces in the distant future</u>									
Research and development	102	340	51	14	4	32	130	1	674
Total resource cost by mission	1 136	1 292	2 089	546	704	780	674	137	7 358

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the official Swedish appropriation document. The output structure is here organization-adjusted as in the modified model presented earlier in table 3, since the grouping in the table is in terms of responsible agencies or authorities in the peace-time production organization. The breakdown of resource input by aggregate cost category in the table is also very similar to the one suggested in the modified model.

Table 5. Summary table of Swedish military defence budget
(excluding civil defence) for fiscal year 1974/75
by origin of resources

(Millions of Swedish kronor, price-level February 1973)

Primary production factors				Intermediate goods and services <u>b/</u>	Total resources
Wages		Real estate rents including maintenance and buildings	Imports <u>a/</u>		
Employed personnel	Conscripts				
2 294	387	396	210	3 928	7 227 <u>c/</u>

a/ Direct imports only and excluding licensing fees. Preliminary estimates.

b/ Computed as a residual, total less sum of primary factors.

c/ The difference between the grand total of table 5 and those of tables 4 and 6 reflects the exclusion of civil defence in table 5.

60. To approximate the modified model of table 3 somewhat more closely in regard to input structures and selection principles, it is, however, necessary to disaggregate and reclassify the budget data. The result is presented in table 7. Two cost items in the military appropriations list, acquisition of land and construction of buildings, have been excluded from table 7 in conformance with the earlier stated principles for delimiting the military sector and of opportunity-cost pricing. The remaining disaggregated input categories have been reclassified to fit better into the main input categories suggested in the model. The main discrepancy remaining between the distributions in table 7 and the ones suggested in the model of table 3 occurs in the breakdown of operating costs. It proves difficult from the Swedish budget data to attain the complete separation of costs for employment, current materials and maintenance, respectively, suggested in the models since Swedish military budgeting has concentrated instead on distributing local operating costs between different tasks or types of activity for the local military establishments.

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Table 6. Summary table of Swedish defence budget, fiscal year 1974/75,
by agency and cost category of input

(Millions of Swedish kronor, price-level February 1973)

Force output by agency Resource input by cost category	A g e n c y						Total agency Cost by output
	Army	Navy	Air Force	Peace-time command administration (central and regional staffs including Department of Defence)	General support (common agencies, schools and auxiliary functions)	Civil defence	
Operation and maintenance	1 824	593	1 011	298	544	77	4 347
Procurement and central maintenance of materiel	599	327	985	22	38	29	2 000
Procurement and maintenance of buildings and fortifications	146	86	93	32	16	29	402
Research and development	50	30	399	-	129	1	609
Total resource cost by output	2 619	1 036	2 488	352	726	136	7 357

Table 7. Summary table of Swedish military defence budget
(excluding civil defence), fiscal year 1974/75,
by agency and disaggregated cost category of input

(Millions of Swedish kronor, price-level February 1973)

Resource input by disaggregated cost category	A g e n c y					Total agency cost by input
	Army	Navy	Air Force	Peace-time command administration (central and regional staffs including Department of Defence)	General support (common agencies, schools and auxiliary functions)	
OPERATING COSTS						
<u>Wages, provision and other local material costs etc.</u>						
Common activities	498	219	188	237	469	1 611
Preparation for mobilization and operations	83 83	45 45	623 623	37 37	22 22	810 810
Training of permanently employed personnel	176 176	58 58	96 96	1 1	33 33	364 364
Basic training of conscripts	734	230	41	-	-	1 005
Training of combat units	231	25	8	-	-	264
<u>Central materiel maintenance a/</u>	84	48	23	-	6	161
<u>Maintenance of fortifications</u>	-	4	2	5	2	13
<u>Real estate, rents, including maintenance of buildings</u>	196	60	93	23	24	396
PROCUREMENT AND CONSTRUCTION						
Central procurement of materiel	670	303	1 046	22	29	2 070
Construction of fortifications	3	48	31	21	9	112
RESEARCH AND DEVELOPMENT						
System-connected R and D	62	33	491	-	3	589
General applied R and D	-	-	-	-	128	128
Planned total resource cost by output <u>b/ c/</u>	2 731	1 076	2 642	346	725	7 523
Appropriations <u>c/</u>	2 523	1 007	2 441	348	722	7 047

(Foot-notes on following page)

(Foot-notes to table 7)

a/ The accounting division here between central and local materiel maintenance does not only depend on the type of maintenance involved but reflects also to a large extent the various organizational arrangements for maintenance within the different services. The dividing line between maintenance and procurement of materiel is moreover not always clear or self-evident since maintenance can sometimes involve major modification of existing weapon-systems.

b/ Excluding land and building investment.

c/ As can be seen from the table, the disaggregation and reclassification gives rise to certain special difficulties when it comes to summing up the totals of resource cost or appropriations. It is standard practice in Swedish military budgeting to include an allowance for "reserve projects" in planning disaggregated groups of activities. However, such reserves are not counted in the total appropriations requested by the military authorities or in the actual appropriations approved by Parliament. (For a specific fiscal year, the total sum in the military appropriation proposals submitted is usually more or less automatically granted by Parliament, since military budget limits are politically decided for periods of several years.) The defence forces will be expected to set up their programmes so as to live within the appropriation control totals, and ex-post total resource costs will coincide with amounts appropriated.

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D. Intertemporal and international comparisons of military expenditures

1. Deflation for price change

61. If a State that signs an agreement to limit or reduce military expenditure reports an increase in military expenditure in a subsequent year, is it guilty of breaching the agreement? There may not be a violation, if the increase results from autonomous change in the military price level. Thus, it is necessary to distinguish between "real" and "nominal" or "money" changes in military expenditure - i.e., to "deflate" the series expressed in prices of each year. The usual procedure is to revalue physical quantities at prices of a single year, thereby eliminating the distorting effects of pure price changes.

62. Deflation of military expenditure is beset by a number of conceptual and empirical problems that arise from the special characteristics of military outlays. The principal difficulty is to define the physical good or service to which a constant price is to be attached. The concept of output is relatively straightforward in dealing with agricultural or industrial production, but, as indicated, the output meaning to be attached to military expenditure is somewhat contrived. The physical characteristics of a square metre of cotton cloth may be specified with sufficient precision so that value changes in cloth production between two dates may be separated into price and quantity change components. It does not appear possible to do the same for many elements of "force potential". In this sense, military expenditure presents a difficulty similar to that involved in deflating services generally.

63. Because the output of the military sector is an awkward concept, military expenditure is traditionally viewed as series of input values or of resources consumed. But this does not solve the problem of inflation. Instead, the need arises to separate changes in the physical quantum of inputs from changes in the quality or productivity of the inputs. Such a distinction would be particularly important for an agreement to limit or reduce military expenditure as an arms control measure. Implementing the distinction requires either (a) the calculation of price relatives in which unit prices are adjusted for qualitative changes or (b) division of the current-price military expenditure series by an index of productivity change. The second alternative is clearly impossible for military expenditure as a whole; productivity deflators would have to be developed for components of the total. In some cases, it might be easier to work directly with the price relatives of the component involved. In all cases, however, the required adjustment will be difficult to formulate because of the basic problem of defining the outputs of military inputs. This is particularly troublesome for R and D.

64. In practice, few countries have developed military price indexes that use actual prices of military inputs as their basis. Those countries that deflate their military expenditure at all generally use surrogate indexes of various kinds, such as the civilian wholesale price index most closely related to particular types of military goods. Use of such surrogates implies the assumption that quality or

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productivity change as well as price change in military goods paralleled that of civilian goods. Assessing the validity of that assumption would require a considerable amount of information on prices and quantity weights.

65. The difficulty disappears when opportunity cost is used as the valuation criterion for military expenditure. In this case the object is no longer that of defining price change for military outputs, with the consequent necessity of defining equivalent units of military output over time and of constructing special price indexes for military goods and services. Opportunity-cost pricing allows us to return to the still difficult but more familiar and workable task of measuring price change for civilian goods and services.

66. Returning to the deflation of military output, if comparisons are required over long time intervals, the deflation of military expenditure may be complicated by changes in product mix, especially in regard to R and D and hardware procurement. Military technology is changing rapidly in the developed industrial countries and the longer the interval of comparison, the more likely there are to be significant differences between the procurement mixes of the initial and terminal points of the interval. Weapons featured at the beginning of the period may have been dropped from production; new equipment may come into the inventory that is substantially different from even the closest counterparts available at the initial point of comparison. Special techniques of price measurement may be necessary in such cases, such as comparing the initial and terminal year mixes by linkage through shorter subperiods, and the results will have to be interpreted in the light of the special assumptions involved.

67. Even if the commodities of both initial and terminal year baskets were the same, the quantities of the various items would undoubtedly have changed, as would have been true of their relative prices as well, apart from inflation. In consequence, the measure of aggregate change in military expenditure will have at least two answers, one obtained with price weights drawn from the initial year, the other with price weights of the terminal year. For example, suppose that military expenditure in country A consists of outlays only on tanks and missiles, with prices per unit, quantities procured, and value of procurement arbitrarily set as follows:

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	Period 1			Period 2		
	Price (thousands per unit)	Procurement		Price (thousands per unit)	Procurement	
		Quantity (thousand units)	Value (millions)		Quantity (thousand units)	Value (millions)
Tanks	100	2	200	150	2	300
Missiles	1 000	0.1	100	3 000	5	15 000
			300			15 300

68. In this arbitrary but not unrealistic example, it is assumed that apart from any technological improvements the price of tanks rose 50 per cent but that the price of missiles tripled. No change is assumed to have taken place in the number of tanks procured, but the output of missiles has expanded rapidly. As a result, the average price level may be shown to have doubled if period 1 quantities are used as weights but to have almost tripled if the weights are drawn from the second period. p/

69. Other examples may be fashioned to illustrate different aspects of the deflation problem, but the one shown here is intended to illustrate the result of extensive structural change (in price and quantity relatives). The longer the interval covered in the time series, the more likely structural change is to be significant and the larger the gap between the two results is likely to be. This feature of time series measurements, dubbed "the index-number problem", is an inescapable awkwardness of economic analysis and carries with it the implication that changes in value aggregates such as total industrial output or military

p/ The change in the average price level is calculated twice - once with quantities of the first period as weights and then with quantities of the second period as weights:

$$\frac{(150 \text{ th}) (2 \text{ th}) + (3000 \text{ th}) (0.1 \text{ th})}{(100 \text{ th}) (2 \text{ th}) + (1000 \text{ th}) (0.1 \text{ th})} = 2.0$$

$$\frac{(150 \text{ th}) (2 \text{ th}) + (3000 \text{ th}) (5 \text{ th})}{(100 \text{ th}) (2 \text{ th}) + (1000 \text{ th}) (5 \text{ th})} = 2.9$$

Actually price indexes are usually calculated with value weights, but these ratios are equivalent to the indexes as computed above:

$$\frac{\frac{(150 \text{ th})}{(100 \text{ th})} (200 \text{ mill}) + \frac{(3000 \text{ th})}{(1000 \text{ th})} (100 \text{ mill})}{200 \text{ mill} + 100 \text{ mill}} = 2.0$$

$$\frac{\frac{(150 \text{ th})}{(100 \text{ th})} (300 \text{ mill}) + \frac{(3000 \text{ th})}{(1000 \text{ th})} (15,000 \text{ mill})}{300 \text{ mill} + 15,000 \text{ mill}} = 2.9$$

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expenditure must be interpreted in relation to a particular product mix, depending on the set of price weights chosen. q/ If opportunity-cost prices are used, the same problem occurs but now in terms of the structure of the civil sector.

70. No satisfactory general solution to the problem of deflating military expenditure has been devised. In some cases, a price index developed for another sector may be applied to military expenditure - for example, an index of producers' goods prices may be used to deflate military hardware procurement. Special ad hoc military price indexes may be developed, but they usually embody a considerable element of arbitrariness. The deflation of R and D presents particular difficulties. Nevertheless, deflation cannot be ignored, for the failure to provide for inflationary effects may prevent the conclusion of an agreement or cause one to break down after ratification. Differential rates of inflation will leave participant States with different levels and rates of real expenditure, relative to each other and possibly to the treaty specifications, thus creating the threat of unequal benefits and gains from treaty limitations.

2. International comparisons of military expenditure

71. The index-number problem of intertemporal measurement has an almost exact analogue in international comparisons. r/ Even under the ideal condition that relative military prices reflected the comparative utilities of military goods and services to their users, a comparison of the military expenditure (interpreted as force potential) of two countries at one point in time would have two answers. Valuation of the two defence packages in country X's prices would yield a measure of comparative power viewed from X's side of the confrontation. But country Y's perceptions of the relative military contribution of resources could be expected to differ from those of X, and if Y prices reflected the subjective ranking by Y's leaders, a comparison of military expenditure in X and Y at Y prices would yield a different (and equally valid) index of comparative military standing than the comparison at X prices. If prices in both countries were assumed to reflect only costs rather than military utilities, there would still be two different measures of comparative total military expenditure, depending on whether the prices of X or Y were used as measuring rods.

q/ See Richard Moorsteen, "On measuring production potential and relative efficiency", Quarterly Journal of Economics, August 1961.

r/ We have previously discussed price indexes for one country. The analogue internationally would be international average price ratios. Here we are concerned with international volume comparisons, for which the national analogue would be quantity indexes. In every case the index uses values as weights and yields two different answers for each binary comparison.

72. If the difference in structure between the two countries were large, the gap between the two measures of total would likely be wide. Suppose the military services were made up entirely of volunteers in X and largely of conscripts in Y, and that in both countries military expenditure consisted entirely of outlays on men and missiles. Then military manpower could be expected to be cheaper in terms of missiles in X than in Y. Comparisons of military expenditure between X and Y would then give different answers depending on whether X or Y prices were used in the calculation. In an extreme case one of the measures might show $X > Y$ while the other showed $X < Y$. If relative quantities in the two countries were the same, the problem would not arise: s/

s/ For example, with the following assumed numbers for X and Y military expenditure components:

	Country X			Country Y		
	Price (thousands per unit)	Quantity (million units)	Value of military expenditure (thousand millions)	Price (thousands per unit)	Quantity (million units)	Value of military expenditure (thousand millions)
Men	6	2	12	1	3	3
Missiles	1000	0.01	10	800	0.005	4
			22			7

With country X prices as weights, the total military expenditure on Y is slightly greater than that of X; if the price weights are those of Y, the latter's military expenditure is only 70 per cent as large as that of X.

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73. As is the case with intertemporal change in a single country, the measures of international differences must be interpreted as relevant to particular product mixes, in this case that of either country X or country Y. Valuation of Y's military programmes or inputs at X's prices provides an indication of what it would cost X to reproduce the Y defence package under X's production and cost decisions. A Y-priced-weighted comparison would provide the other side of the coin - what it would cost Y to duplicate X's military apparatus.

74. International comparisons may be effective not only by direct valuation of the goods and services of each country at one or another set of prices but also, and often more easily, through conversion of values by means of average price ratios - in effect, intercountry price indexes. The properties and problems of international comparisons are the same whichever of the two methods is chosen.

75. In developing international comparisons, the analyst may be tempted to utilize official or market exchange rates to convert values in X currency to those of Y or vice versa. However, this short cut must be avoided. Exchange rates of market economies at best reflect comparative capital movements and average price levels of commodities and services entering international trade and cannot be expected to be applicable to the range of activities that have little or no connexion with international trade. This is, of course, particularly true of military expenditures. In any case, it is desirable to have valuations that do not also reflect a broad range of unrelated activities, as is true of the exchange rate. For all these reasons, the international comparisons of military expenditures must be framed in terms of purchasing power parities - i.e., rates of translation from one currency to another that represent weighted averages in terms of X or Y internal prices for military goods and services. ^{t/} These prices may have to be adjusted on the basis of considerations such as those raised in section B of this chapter.

76. International comparisons are further complicated if they must encompass more than two countries. It follows from the previous discussion that the correct procedure is to frame a series of double binary comparisons (i.e., A and B, B and C, A and C, etc. and, in each case, in both currencies). The compromise solution of translation of all the participants' military expenditures into one currency suffers from the same drawback as that inherent in a single-currency valuation for any pair of countries; in addition, comparisons among participants other than with the one whose prices serve as a common set of weights will be formally impossible. To avoid erection of a major obstacle to agreement on reducing military expenditures, it will be necessary to frame an agreement that obviates the necessity of extensive international value comparisons. Characteristics of various types of agreements are discussed in the next section.

^{t/} Again, changing over to opportunity-cost pricing somewhat simplifies the international deflation problem as it does the analogous national problem.

III. MILITARY EXPENDITURE REDUCTIONS AND INTERNATIONAL SECURITY

A. Military expenditure reductions as an arms control measure

77. As suggested in the Introduction to this annex, the causal interrelations between the development of military expenditure in different countries and international security, as perceived by these countries, are complex. Moreover, they vary between regions and countries and change over time. Changes in military expenditure can seldom be fully explained in terms of changes in the national security situation of the countries concerned, and international security certainly depends on other factors besides the level and distribution of arms and military expenditure.

78. It does not lie within our mandate to attempt to unravel developments in national and international politics. Our task is restricted to making a normative study of the prerequisites and the more immediate effects of an agreement to reduce military expenditure from the point of view of arms control and national security. "Normative" here merely implies that we assume the partners to an agreement to be rational decision-makers, acting with the primary aim to safeguard national security in the existing international situation.

79. The interest that attaches to expenditure-reduction agreements is occasioned chiefly by two factors: first, by allowing reallocation within agreed limits, such agreements allow for flexibility of manoeuvre by the authorities of participant States. Second, because they are couched in money terms, agreements to reduce military expenditure can cover the whole spectrum of military activities, including such difficult-to-observe elements as R and D.

80. In the following sections, we discuss some of the problems that would have to be dealt with in connexion with various kinds of military expenditure agreements in terms of the effect on military force posture and international security, as well as with respect to the task of ensuring confidence in the equitable implementation of an agreement. Obviously, the effects of military expenditure agreements in different countries, on, for instance, internal resource allocation and force dispositions will vary with size, kind, and origin of the national armed forces, the degree of political alignment, the perceived external threat, and the flexibility of military planning and organization. When forced to simplify, due to limited space and time, we have chosen to discuss the problems as they would confront one of the major military Powers.

B. Types of military expenditure limitations

81. Reduction of military expenditure is the focus of this report, but it may be useful to provide an analysis of greater generality by distinguishing between types of limitation on military expenditure, of which reduction is the major special

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case. u/ A military expenditure limitation can take various forms and be carried out in different ways. The brief taxonomy set out here is not intended to be complete, and other aspects might be singled out in a different context. In the present report, it seems useful to distinguish eight characteristics of military expenditure limitation: object, form, size of reduction, linkage to force limitations, duration, time-profile, mode and participants.

82. Object of limitation. The object to be limited may be total military expenditure, a component, or both; the rate of growth of total military expenditure or its components; or even military expenditure as a proportion of some national value aggregate like GNP, national income or net material product.

83. Where the object of limitation is the ratio of military expenditure to a national value aggregate, a State experiencing slow economic growth will obviously suffer a more stringent absolute limitation over the interval of agreement than will a State whose growth is rapid. The rationale of a limitation on the military expenditure share of national output depends on the assumption of an important link between this parameter and national security, but this seems dubious: surely, security is related more closely to the absolute level and structure of military expenditure.

84. If limitation of the rate of growth of military expenditure presupposes a common starting point - i.e., equality of military expenditure by the participants in the base period - it will be the same as a stepwise limitation of military expenditure in absolute terms over time. If the base levels are unequal, equal percentage changes will mean unequal absolute increments.

85. Limitations may be set on components in a variety of outlay classifications: functional inputs (e.g. personnel or procurement), missions or programmes (strategic, general purpose), forces (air, naval), theatres (European, Pacific), or particular weapon systems (ICBMs, tanks, submarines). The scope and content of outlays may be defined in accordance with individual national practice or in standardized terms by mutual agreement, with significantly different implications for verification procedures and information requirements. v/

86. Form of limitation. The limitation may take the form of a ceiling at an agreed level (of total military expenditure, a component of total military expenditure, total military expenditure ÷ GNP, etc.), reduction by a given absolute value, or reduction by a stated percentage.

u/ By definition, military expenditure limitation, which is here taken to mean an effective constraint on military expenditure, in fact always implies reduction relative to some actual or projected level or trend of military expenditure and a potential release of resources in the same relative sense. Reductions from the current level of military expenditure, which is probably what is usually meant by "reductions", will consequently be one kind of military expenditure limitation.

v/ On the valuation basis, see paragraph 89 below.

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87. In each case, the reference level in terms of which the limitation is defined must also be specified. The reference level may be that of a single year or an average of several to take account of differences in national expenditure cycles that reflect different mixes of capital and operating outlays. If significant asymmetries in military strength are perceived by participants before agreement, the reference level of the limitation may be differentiated by participant.

88. Unless reductions are of limited duration (see para. 92, "Duration of the limitation," below) or are continuous (i.e. moving towards a zero level of the object of limitation), reductions are necessarily followed by ceilings for the life of the agreement.

89. An absolute-value reduction would require agreement on the basis of valuation - i.e. conversion rates to a common currency basis. The value reductions could be stated in national currencies, but again there would have to be prior agreement on equitable conversion rates. The problems of developing such rates were discussed in the previous section.

90. Size of reduction. While this is a continuous variable, whether expressed in absolute values or in percentage terms, it is likely that interest will be concentrated on reductions of moderate size. However, there may be important distinctions within moderate-size reductions. The impact of a reduction by or equivalent to 5 per cent of total military expenditure may be significantly different from one of 10 per cent.

91. Linkage to force-limitations. Military expenditure limitations can be linked to limitations of particular forces in physical terms (e.g., the number of military personnel or number of bomber aircraft). At one extreme of the range of possibilities in this dimension is zero linkage, where the military expenditure limitation is instituted as an independent measure. At the other extreme, the military expenditure limitation could be the monetary reflection of an agreement negotiated primarily in terms of physical force units.

92. Duration of the limitation. The limitation may be, at one extreme, for a single year only, with participants free to determine their budgets at will thereafter, or, at the other extreme, "permanent" (more realistically, for an indefinite term). In between, one may envision agreements to limit for a trial period, subject to review, or for a longer period but still with a fixed date of expiration. For any period longer than a year, the military expenditure limitation will have to take account of intervening price changes occurring in participant States, along the lines discussed in a previous section. Even for a one-year agreement, some account may have to be taken of price change occurring between the conclusion of the agreement and the end of the year to which the military expenditure limitation applies.

93. Time-profile of the limitation. The limitation may be brought into force within a single year or may be phased, so that its operation takes place in defined stages over a period of years. Thus, agreements may be single-stage

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(including one-time reductions followed by ceilings -- see above) or multi-stage. The larger the cuts in military expenditure proposed, the more likely it is that they will have to be phased, and the military expenditure limitation will also be of long duration.

94. Mode of agreement. We may distinguish three cases: "mutual example", where a unilateral act of limitation is undertaken by one side in the hope or expectation that an opponent will follow suit; response to a United Nations invocation, where the terms of the limitation are set out in a United Nations resolution, with which the parties comply; bilateral or multilateral formal agreement. These are not mutually exclusive, of course: for example, a reduction by mutual example or by formal treaty may occur in response to a United Nations action.

95. Participants in the agreement. Among the possible participant groups are the United States and the Union of Soviet Socialist Republics, the nuclear Powers, the permanent members of the United Nations Security Council, "States with a significant military and economic potential," NATO and Warsaw Pact, members of a particular region, etc. The category is open-ended, but the coverage of the agreement in terms of participants is not a negligible variable. Failure to obtain the adherence of some protagonists in a particular regional conflict may make the others reluctant to join or maintain a limitation agreement. To the extent that acceptance of limitations by one State is an inducement for another to join the agreement, failure to include both at the same time will reduce the likelihood of the latter's eventual inclusion in the agreement. It will be assumed hereafter that all the members of a particular set of States who perceive their national security to be mutually interrelated will subscribe to the military expenditure limitation agreement covering that set.

C. The effect of military expenditure limitation on
force posture and security

96. These eight dimensions may be combined in numerous ways, but some can be ruled out immediately. Thus, a multi-stage, single-year limitation is a contradiction in terms; military expenditure limitations that are purely the reflection of force limitations are incompatible with limitations of the military expenditure share of national output, with a ceiling, or with a percentage form of reduction. Some combinations are more or less doubtful: e.g., a ceiling at the existing level makes little sense for a single-year agreement: linkages with physical force limitations or military expenditure limitations that involve multi-staging may be too complex to be arranged by "mutual example" or even through United Nations resolution: "mutual example" limitations are unlikely to be capable of indefinite extension and probably could not successfully carry through large reductions in military expenditure.

97. Even after these deletions, a large number of combinations remain, but we may single out a few significant "packages". One of these is composed of a ceiling on, or reduction of, total military expenditure with zero linkage to force limitations. Discussion of the force posture and security effects of this package also considers

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the significance of other dimensions of military expenditure limitation where appropriate. Thereafter, alterations of the package are introduced, to include limitation of a military expenditure component and linkage to force limitations.

1. Limitation of total military expenditure with zero linkage

98. The fundamental advantage and the equally basic defect of military expenditure limitation as an arms control measure is the "freedom to mix", to reallocate within the limit. w/ Such latitude is characteristic of the limitation of any complex aggregate - i.e., one that is composed of heterogeneous elements. A limitation can be absolutely restrictive only when applied to a homogeneous component. Thus, "freedom to mix" is true of ceilings on military personnel or strategic missiles, too. However, the greatest freedom of manoeuvre occurs with respect to expenditure, because money is the only common measurement for all sub-aggregates.

99. Flexibility for reallocation within given constraints is undoubtedly one of the main attractions of military expenditure limitation as an approach to arms control; it permits relatively unconstrained response to changing conditions, both internal and external. However, the effect of reallocation on security of the nations concerned may be positive or negative, hence the extent to which international tension is reduced by military expenditure limitation cannot be determined a priori. On the positive side, ambitious military Powers could find their ability to pursue risky or aggressive policies hampered by spending constraints. For other States, military expenditure limitation might ease the danger of war by diminishing the risk of disruption and destabilization of the international situation induced by sharp increases in military expenditure by adversaries or other Powers. However, even Governments of goodwill might be induced to reallocate in favour of forces that were cheaper but which also contributed to a destabilizing posture.

100. It is important to emphasize that the issue dealt with here is not evasion or contravention of an agreement. The parties may be assumed to enter the agreement in good faith. However, each participant will be concerned to maximize his security position within the confines of the limitation and will assume that his treaty partners are similarly motivated. The question then is, what posture changes will take place in response to the military expenditure limitation and how will these affect the security of the participants?

w/ The changes in mix discussed in this section do not include reallocations to unconstrained sectors - for example, shifting military activities to civilian organizations or financing part of military expenditure from the unconstrained part of the government budget. These activities constitute circumventions of an agreement, which must be prevented by precise definition of military expenditure and by appropriate means of verification. The latter are taken up in the following section.

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101. To assess the effect of reallocations more concretely, it is necessary to consider the forms they might take. Outlays may be reallocated among resources, inputs, programmes or missions, but it may be helpful to distinguish reallocations among current forces from those between current and future forces. Of course, there is a fine line dividing "current" from "future", but for present purposes, current reallocations may be defined as those accomplished within a 1-3 year planning interval - i.e., less than the gestation period of major construction projects or the development cycle of high-expense and medium-expense new systems, but sufficient for alterations in the procurement of major existing systems.

(a) Reallocations among current forces.

102. Any changes in the mix of resources and inputs can affect military efficiency, reminding us once more that military expenditure constitutes an imperfect proxy for military output. It is often argued that enforced budget stringency would result in improved performance in a number of military establishments. x/ Whether this would be the rule or the exception in response to agreed international limitations is not self-evident, nor is it possible to predict the effect of efficiency increases on the security of participants, especially since the amount of "organizational slack" and the ability to draw in that slack can be expected to vary considerably between countries.

103. Examples of both stabilizing and destabilizing actions, apart from increases in efficiency, may be cited. Lowering readiness status of forces (reflected in a cut in O and M outlays) in favour of retaining at least the same number of men in the armed forces, or increase in the relative weight of outlays on communication and intelligence at the expense of strategic attack forces, may be on balance a positive contribution to relations between antagonists suspicious of each other's intentions. But, budget stringencies might induce the military authorities of other States to save on information gathering or command and control, thereby degrading the armed forces' capability to discriminate the enemy's offensive preparations from general system "noise". As this would reduce permissible reaction time, the move would tend to increase the probability of precipitate action. Decision-makers in another country might choose partial demobilization and use the savings to raise the military

x/ Presumably, the benefits would turn negative at some large level of military expenditure reduction, but the shape of the curve until that point is a matter of speculation.

Changes in the military mix would occur even if the pre-existing military resource allocation were efficient. If military budgets were optimized, a reduction that had not been previously intended for other reasons would automatically require restructuring. The pre-existing optimum, attained as a result of having equalized incremental returns from military resources with their incremental costs, would now be disturbed, because the structure of returns or benefits would have been altered. In fact, reallocation between forces may be less likely if inefficiencies were present before agreement and if the limitations generate a successful effort to overcome the inefficiencies.

capital/labour ratio through procurement or construction. Elsewhere, the choice might be to trim that ratio in favour of higher readiness status. A tighter budget could mean diminution in assistance to allies and friends or a general reduction in capability to play an international peace-keeping role. Whether such changes would be regarded as beneficial depends on the observer's point of view.

104. Most of the examples given above reflect the reaction of a participant State to the stimulus of a military expenditure limitation, but largely in obedience to internal requirements and cost factors. States may also react in response to the behaviour of their antagonists, and the "value" of the outcome in this case seems no more predictable. Suppose two antagonists, seeking to maximize their military capabilities under an outlay constraint, both decide to strengthen their strategic attack forces. The degree of reallocation required will depend on the possibilities for increasing efficiency in each State. The effect on the balance of power and on the level of tensions between them will be the result of the real change in relative force potential, the effect of the change in force-mix on military doctrine in each country, and, perhaps above all, each side's perception of the nature and significance of the shifts taking place in the adversary country.

105. Another factor is the manner in which the build-up takes place. If budgets were already lean before the limitation, or if efficiency cannot be raised for other reasons, the new constraint (especially if it involves a large reduction) may require an austere approach to the build-up of strategic forces, one that might save by sacrificing survivability of forces or ease of command and control. Such changes would tend to be destabilizing, for the post-agreement strategic forces would be more vulnerable and less controllable, therefore more likely to be used for a first-strike attack and less likely to be held in check during a confrontation crisis. A military expenditure limitation agreement in the mid-1960s between the United States and the Union of Soviet Socialist Republics that resulted in a decision to curtail hardening of land-based ICBMs, compensated for by the procurement of additional "soft" missiles, would surely have raised fears of an incipient first-strike posture.

106. Would reallocation from strategic to general purpose forces be less destabilizing? Conceivably, greater expenditure on these forces could correct a previous imbalance that threatened the stability of mutual deterrence. But excluding such a contingency, the answer would depend in part on whether the shift was viewed by either of the protagonists as limiting the probable damage to the home society resulting from military conflict between them, and therefore whether it would loosen the restraints within either State against confrontation tactics. If the adversaries possessed nuclear weapons and war was feared largely because of the scale of casualties and damage to be expected from their use, y/ restriction of nuclear forces to a significant degree might diminish the compunction either side

y/ And if nuclear deterrence were previously viewed as effective also over the whole range of potential (but relevant) local conflicts.

might feel about vigorously pressing its claim against the other. Of course, neither side would be interested in weakening its strategic attack capability if it feared the encroachments of third or fourth parties.

(b) Reallocations between current and future forces.

107. Future strength is affected by changes in inventories, production facilities, R and D, or military construction.

108. A special case of reallocation between current and future forces is the drawing down of stocks, which in effect represents a loan from the future to bolster the constrained present. The value of easing the constraint imposed by an expenditure limitation in this manner depends on the size of the reduction, the imminence of the agreement's expiration date, and the cost of stepping up procurement rates at that point in order to replenish deleted inventories. Thus, the incentives to draw down stocks should be greater under a short-duration agreement and should become progressively weaker the longer the time-frame of agreement. z/

109. Reallocation in favour of investment in production facilities might be considered under a somewhat longer but still fairly short-term agreement, in order to make up for cumulative procurement sacrifices after the expiration of the agreement.

110. The most significant case under this heading may be that of reallocations in favour of military R and D. Having entered into the agreement because the present balance of forces seemed secure, participating Governments might be concerned to protect themselves from future surprise by maintaining or possibly increasing their previous spending levels on R and D, at the expense of an element of the current forces. aa/ Such an effort by one or another side might trigger a spiralling R and D race, although damped by the over-all military expenditure limitation. Alterations of the military expenditure "mix" may be comforting in the present, to the extent that they weaken forces in being, but destabilizing in the future, if they lead to an imbalance of the antagonists' forces later.

z/ The actual treatment of stocks, like any other reallocation between current and future forces, will depend on the relative assessment of present and future conflict risks, as well as on the anticipated required lead time for rebuilding stocks if the situation changes. If the authorities are optimistic about near-term international security prospects, they may respond by increasing stocks and spending more on "mothballing" production capacity (and thereby buy insurance against a possible need to increase procurement rapidly) at the expense of O and M outlays.

aa/ The reallocation might occur in a second or third round effect of the military expenditure limitation. For example, planners may seek more R and D funds for anti-submarine warfare because either (1) a military expenditure limitation-induced cut in land or air systems was being compensated by increased spending on naval systems or (2) antagonists were observed (or expected) to place greater emphasis on submarines than previously.

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111. Among the factors that are likely to determine the direction and nature of reallocations, whether among current forces or between current and future ones, a major role must be ascribed to perceptions and objectives: whether the participant State sees an imminent or distant threat, whether it seeks to maximize near or longer-term capabilities. In the former case, there may be a greater incentive to borrow from the future or shift resources in favour of core defensive or offensive forces. In the latter case, a likely focus of reallocation is future systems, through R and D, to minimize "technical surprise."

112. Relative (national) prices will probably also be important. Where military labour is relatively cheap, planners might be tempted to favour larger standing forces and thereby lower military capital/labour ratios. If, however, labour is expensive relative to military capital, demobilization, or a decrease in conscript numbers or length of service, may be preferred to a cut in readiness status or procurement. Sacrificing manpower to maintain procurement may turn out to be more significant for a number of first and second-rank military Powers, as manpower costs are continually rising and a major present-day development in conventional weaponry is relatively cheap precision-guided munitions. This trend may substantially affect the military planner's view of personnel-favouring reallocations.

113. Finally, the duration of the agreement is also relevant. The longer the agreement period, the more likely are future capabilities to be stressed over current ones.

114. This discussion of the effects of reallocation under military expenditure limitation does not pretend to exhaust the range of possibilities. The analysis has highlighted the possible destabilizing effects of military expenditure limitation but not because of a belief in the greater probability of such effects. If it is correct that there are multiple possibilities of reallocation and that there is, a priori, no necessary relation between changes in aggregate military expenditure and in relative military power of the participant States, it will be necessary to take careful account of this problem if an equitable and durable military expenditure limitation agreement is to be reached.

2. Military expenditure limitations with component limitations or linkage to force limitations

115. If limitations on total military expenditure alone provide opportunities for destabilizing reallocations, can these be neutralized by adding limitations on components of total outlays or by linkage of limitations on total military expenditure to physical force limitations? Which kinds of forces or components of military expenditure should be constrained? In a number of cases, the strategic attack programme might be a natural candidate for an attempt at limitation of both expenditures and forces. bb/ In others, interest may focus on portions of the

bb/ For the United States and the Union of Soviet Socialist Republics, the Strategic Arms Limitation agreements already signed and currently under negotiation constitute a significant constraint on reallocations of outlays under any proposed military expenditure limitation.

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general purpose forces (e.g., the navy) or on the forces located in a particular theatre (mutual force reductions in Central Europe). It may be argued that for a short duration military expenditure limitation, it is the current forces or resources that should be limited in conjunction with total military expenditure, while it would be advisable to constrain future force growth (i.e., R and D) under agreements that run for longer periods. In view of the exacerbation of tensions in some regions, which are linked to the rapid introduction of advanced military technology by the major Powers, it might be useful to consider limitations on the scale of external military assistance.

116. Given the problems that may be caused by reallocation under constrained military expenditure totals, it may be asked whether limitations on total military expenditure should not be dropped from consideration and attention focused directly on outlay components or, indeed, on physical forces. There are many who believe that effective arms control is possible only through force limitations, who would view military expenditure limitation as appropriate only if the limitation were expressed as the monetary reflection of a force limitation. Pure force limitations without linkage to military expenditure limitation are arms control measures only, and therefore cannot satisfy any of the other objectives of military expenditure limitation. Linking the two kinds of limitations would permit a focus on pressing arms control questions, along with a concern with the other purposes for which a military expenditure limitation might be drawn up. Where the pressing arms control issue concerns an activity that cannot be measured in simple physical units (e.g., R and D), limitation of the corresponding military expenditure component in addition to total military expenditure might seem useful. This would also be true where fear of destabilizing reallocations under a constrained military expenditure total are foreseen.

117. However, physical-force or military expenditure-component limitations have serious disadvantages of their own. Limitation of one military expenditure component does not rule out a redirection of outlay to other components. If it were deemed necessary to prevent the reallocation, additional components would have to be constrained in a process that could entail specification of much or most of the military budget. Thus, limitations on a number of military expenditure components or on total military expenditure plus one or more components would represent an important restriction of the scope of national force planning, and would probably thereby reduce the acceptability of these arms control measures to the relevant Governments. cc/

118. Force limitations are not easily instituted either. National military establishments differ not only in the size of their forces in any particular category, but also in the missions the forces are intended to fulfil. Determination of equivalent base levels and reductions is therefore a matter of judgement engendering much controversy. The problem is further complicated by the proliferation of new weapon systems, which enhances the possibilities of redirecting resources within a

cc/ Even military expenditure limitations with restrictions on a large number of components, however, may be less restrictive than many arms control schemes in terms of physical forces or weapon systems.

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particular programme. To control the growth of the whole programme then requires constraints on a large number of complex system elements. This argument also suggests the difficulty of translating a force limitation into a financial saving of definite magnitude. Even without reallocations, the link between force limitations and military expenditure-component limitation is not automatic, inasmuch as the cost of a programme package is composed of much more than the costs of its major systems.

119. In the final analysis, the choice between force limitations and military expenditure limitation, independently or linked, must recognize the partial trade-off between information about the structure of military forces and outlays on one hand, and actual limitation of a military expenditure component or physical force on the other. There is a clearly defined dilemma: the more encompassing the limitation, the less likely any disruptions of the military balance, but the more onerous and therefore (probably) the less acceptable the limitation. However, if the participants in a military expenditure limitation were both free to react to, and fully informed on reallocations by their agreement partners, the budgetary changes would tend in many cases to cancel each other out. The action of one side would be quickly perceived and countered by antagonists. In such a situation, information on the structure of military forces and military expenditure of each member of the group might be a partial or full substitute for an actual limitation on one or more military expenditure components or physical forces.

120. The benefits of information exchange to the parties may be unequally distributed if there was previously an asymmetry in the availability of credible information. The post-agreement exchange may affect the relative power position of the participants, or at least this may be the fear of the more secretive States, if the new situation permits some participants to make effective posture changes that would not have been undertaken on the basis of previous information. Limitations on the others' forces or outlays may serve to compensate the more secretive partners for this imbalance and may induce greater interest in the information exchange. Thus, there may be some combination of limitation and information exchange that will provide a feasible solution to the dilemmas outlined.

D. Verification of military expenditure limitation agreements

121. Limitation of military expenditure affects a State's most fundamental interests, national survival, and the most serious obligation of its government, to assure national survival. It is self-evident that States consenting to enter into a military expenditure limitation agreement will wish to be confident that the agreed limitations are being implemented by all participants to an equivalent degree. Therefore, the provisions for verification of compliance with the terms of the military expenditure limitation may be the most important part of the agreement, at least with respect to preventing its breakdown and the defection of participants.

122. Inadequate verification of compliance with military expenditure limitation agreements provides opportunity for covert and undetected changes in the military

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balance among antagonists, which might lead the offending States to exploit their advantage to the detriment of the security of others. Of course, a Government that wishes to alter the military balance in a covert build-up need not wait for a military expenditure limitation agreement to do so. However, the agreement limits the freedom of participants to react overtly and therefore may attach a political cost to a Government's attempt to counter an antagonist's covert build-up, particularly if the evasion is imperfectly detected or only suspected. In short, Governments will be reluctant to have their hands tied under an agreement unless they are reasonably sure that the machinery of verification will provide timely and incontestable evidence of violations. Under these circumstances, counter measures could be executed in time and at minimum political cost.

123. Verification is a procedure for obtaining and evaluating information about changes in a particular activity - in this case, military. Hence, verification may be viewed as an extension of the process of assessing the military power of friends and antagonists that every Government performs continually in fulfilment of its national security obligations. Few Governments are satisfied with the state of their information on the actual or potential threat posed by their antagonists. Since uncertainty must be compensated for by increased capability, incomplete information is a factor tending to push up military budget levels. dd/ In the absence of external limitations, the existing military expenditure levels presumably reflect a compromise between the need for a flexible posture in the face of uncertainty on one hand, and resource and other domestic constraints on the other, predicated on the ability to revise expenditure plans in the light of new information. Because a military expenditure limitation would restrict that ability to respond, it imposes the necessity for more complete and accurate information than before the limitation, if the sides are to have confidence that participation in the agreement will not damage their security. Moreover, the information required for verification of a military expenditure limitation is largely economic and financial, as contrasted with the estimates of physical forces on which States usually depend for assessment of the external threat. ee/

124. To be able to verify changes in military expenditure, it is necessary to specify base levels with confidence. Therefore, the verification process must include a requirement for the definition and comparability of military expenditure accounts, for price indexes, and possibly for international purchasing power parities.

dd/ In some cases, improvement of information could also result in an increase of military expenditure, if the information disclosed a hitherto unknown asymmetry of force levels.

ee/ The fact that economic and financial information is required introduces a problem of timeliness of verification. The kind of records that are of interest for verification of military expenditure limitations may take a long time to assemble and process but the essential idea of verification is quick detection of significant changes in military expenditure. The problem of timeliness may be especially acute for short-duration military expenditure limitations.

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as discussed in chapter II of this annex. However, while such information contributes to verification, it is not sufficient in itself. Assurance of compliance with a military expenditure limitation requires supporting data on financial and physical flows compiled at intermediate or even primary levels, a requirement that follows from the potential opportunities for evasion.

125. The possibilities of evasion of military expenditure limitations may be classified under two general headings, those that involve manipulations within the constrained sector and those that are obtained by shifting military expenditure to a sector unconstrained by the agreement. Circumvention by manipulation within the constrained sector essentially involves artificial reduction of the prices at which military transactions are recorded. This may be accomplished by introduction of various mechanisms, including budget subsidies or bank loans, below-cost requisitioning (of which a switch to conscription from voluntary recruiting is a special, though probably more detectable, case), or even tampering with deflators of military expenditure, if provision for compensating cost increases is included in the agreement. Evasions of the second category might see shifts of part of military expenditure (either in actual activities or in terms of financial aid) to non-participant allies, allocation of some military charges to non-military agencies and organizations, concealment of military production under civilian labels, reallocation of resources to industry branches that can be fairly quickly converted to military production, and so forth.

126. Given these possibilities of circumvention, it is clear that requirements for verification mechanisms will differ with the type of military expenditure limitation agreement. At one extreme, an indefinite-duration, multiphase treaty to effect substantial reductions in military expenditure will have to be accompanied by provision for verification of completion of each stage, so that participants can move confidently to the next one. At the other extreme, military expenditure limitation by "mutual example" requires only that the participants take public action to limit or reduce their military budgets, since the primary interest of the sides is likely to be in improving the atmosphere, rather than in significant disarmament. ff/ An intermediate case is a military expenditure limitation that is the monetary reflection of a force limitation. The latter is intended as the primary arms control measure, while the military expenditure limitation serves as the monetary expression of the resource savings engendered, a portion of which is to be channelled for some agreed purpose like development assistance. Apart from the question of compliance with the force limitation, verification of compliance with the military expenditure limitation is necessary in order to ensure equal release of savings by all participants.

ff/ However, if the initial step were then to be backed up by voluntary intergovernmental exchange of information on military expenditure, proceeding beyond that publicly available, the prerequisites for assurance of compliance with more stringent arms control measures might thereby be established.

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127. Verification that is capable of detecting evasion may not only prevent it, but also weaken the motivation to attempt it. A Government's decision to comply with military expenditure limitation constraints depends on its appreciation of the balance of rewards and risks. The rewards of a demonstration of compliance are enhanced security and improved inter-State relations, gained by inducing opponents to follow suit. Actual compliance adds the benefit of resource savings. The payoff from circumvention depends in large part on concealment of the violation and may be lost by public exposure. If other participants then respond in kind, exposure may, by triggering further "arms racing", result in worsening of the initial violator's security relative to the position he would have enjoyed had he complied with the treaty limitations. Evasion, therefore, involves risks, and one way for the evader to ensure against those risks would be to maintain or reinforce internal secrecy controls. Thus, effective verification prevents erosion by making it unprofitable as well as difficult.

128. Governments that are anxious to see their antagonists' compliance verified are not necessarily prepared to open their own books to unlimited outside scrutiny. Herein lies the fundamental dilemma of verification; requirements for effective verification dictate access to an extensive array of information on force levels and expenditures, and this conflicts with the interests of a participant State in protecting the security of its military establishment. Verification of a military expenditure limitation calls for the techniques of financial or physical auditing to establish compliance or circumvention. Traditional concepts of military security involve more or less systematic effort to screen activity from outside view. Since each participant is both subject to verification and a verifier of others (whether directly or through an agency created for that purpose), there is some mutuality of gain and imposition. But if there was previously a significant asymmetry in the volume of the information released by the Governments concerned, the verification requirements will benefit some more than others.

129. One possible way of curtailing the intrusiveness of verification is by the use of an indirect approach. The required financial data could be obtained indirectly through information on the physical counterparts of the particular expenditures. Presumably, the physical force data may be obtained with accepted "national means of verification". Not all States possess the appropriate "national means" required for verification of a substantial military expenditure reduction agreement, but perhaps some provision could be made for a joint or internationally sponsored service. However, the difficulty with indirect verification is that the observables tend to be large forces, facilities, and weapon deployments. Because components of military expenditure differ in the degree to which they embrace the larger elements, they will differ in observability of their physical counterparts. It is difficult to obtain direct information on small forces (or small changes in forces), arms and material production, qualitative improvements in weapons, stockpiles, and especially R and D. The indirect method therefore requires the estimation of a number of links - prices of equipment, wages of personnel, operating outlay coefficients - in order to translate from particular forces to expenditure categories, and introduces room for considerable estimating error. To avoid multiplication of sources of error, it would be useful to obtain supplementary economic information. But this brings us back to the problem of intrusiveness, which the indirect method was intended to avoid.

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130. The volume of information required to verify total military expenditure directly is considerably larger than that needed for indirect verification of components. But the degree of intrusiveness may be greater with respect to components than for total military expenditure. Security sensitivities in regard to the supplementary data required to establish links between physical forces and military expenditure ought to be reduced if the information on physical forces is available or were made known. Where the distribution of expenditures by major category is not regarded as classified information, data that provide a picture of the general economic structure and the connexions between military and civilian sector flows may be a significant aid in verifying total military expenditure without excessive intrusion into component force details. This information may be provided by such instruments as national income accounts, gg/ input-output tables, hh/ or flow-of-funds accounts, supplemented by manpower balances for cross checking.

131. The scale of intrusion required by verification will depend in part on the extent of information flow prior to the agreement. We may conceive of an information-disclosure ladder whose lowest rung is a phase of confidence-building. Because of pre-existing high security controls, a breakthrough to mutual confidence is required. Publication of military accounts in somewhat disaggregated form accompanied by explanatory material would be an important form of information-release for this purpose. At a higher level on the ladder, provision of price indexes and price-cost information for the estimation of purchasing power parities would facilitate international comparisons. Historical time-series would be important in establishing baselines against which changes under limitation could be measured. On a still higher rung, a major increase in verification capability may be attained by submission of national accounts, input-output tables, R and D financing and support accounts, and the like. At the uppermost rungs, information is made available from intermediate and primary national production and distribution units and opportunity is afforded for non-nationals to audit unit records by on-site inspection, possibly on a spot or sampling basis. The intrusion on military activity increases as the ladder is ascended, of course, but even at the top, specially sensitive military areas and projects may be safeguarded from external scrutiny.

gg/ It will be necessary to adjust for differences in the methodology of computing national income and product in market and in centrally-planned economies. The main difference is that in the latter group of countries, the national income and product exclude the sphere of non-material production. This results in significant differences in the treatment of military expenditures in the accounts of the two groups of countries. For further discussion of the methodology of national account construction, see A System of National Accounts, Studies in Methods, Series F, No. 2, Rev. 3 (United Nations publication, Sales No.: E.69.XVII.3).

hh/ Input-output tables may be compiled in value or physical terms. Both types would be useful in so far as they provide cross-checks on each other. However, this advantage would be reduced if the value table uses the plant or establishment as the unit of account, while the physical table is based on a commodity classification.

132. We may similarly postulate a range of possible mechanisms of verification, from data exchanges between Governments that need not necessarily be made public, to disclosures to an international agency, possibly governed by the same rule, and provision for on-site inspection. The more (relevant) data furnished, the more supplementary access granted, the more likely are participants to have confidence that circumventions can be detected.

133. It is obviously not possible to specify the appropriate mechanism of verification here. The degree of assurance provided and the relative acceptability to different Governments will vary with the circumstances. Other mechanisms not discussed here may be available. The choice will require expert study by the particular set of participants and in the specific context of the agreement they will be exploring. In view of the complexity of the verification problems, and also of the issues raised in previous sections, States may find it useful and prudent to explore phased agreements in which the stringency of the limitation increases in tandem with growth in confidence and the exchange of information. Information is the heart of the arms control problem and if confidence between treaty partners grows, verification may gradually be transformed from an irritating constraint into a mutually-desired means of conveying messages on intentions and capabilities.

ANNEX III

International assistance to developing countries resulting from
the reduction of military budgets

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Introduction

1. The widening gap between the developed and developing countries is one of the central issues of our time. It is a long-term structural economic and social problem which has been becoming more intractable over time; it has in particular been exacerbated by developments in the world economy in the last few years. For most of the developing countries, the economic situation is now even more serious than before. The dislocation in the world's international monetary system and the sharp rises in commodity prices and, recently, in the price of oil have been major setbacks to their prospects for development. While, in recent years, the needs of the developing countries have been becoming more acute, there has, unfortunately, been growing disenchantment with aid both in donor and recipient countries.

2. The General Assembly has recognized this situation. At its sixth special session, in section X, paragraph 2 of resolution 3202 (S-VI) of 1 May 1974, it requested the Secretary-General "to launch an emergency operation to provide timely relief to the most seriously affected developing countries ... with the aim of maintaining unimpaired essential imports for the duration of the coming 12 months and to invite the industrialized countries and other potential contributors to announce their contributions for emergency assistance ...". Thus a Special Fund has now been launched.

3. It is against this background that this annex considers the new resources which might be available for international assistance as a result of any future agreement to reduce military budgets. It considers some of the quantitative and qualitative characteristics of the present flow of international assistance; how far existing flows are conditional and bilateral in nature and what the desiderata are for this new potential flow of aid; and the criteria and machinery which might be adopted for its distribution.

4. If the objectives contained in General Assembly resolution 3093 A (XXVIII) can in any way be attained, this could mark a turning-point in the history of international assistance and could transform what is at present a very sombre prospect.

The volume and transfer of resources

5. World military expenditure, in current dollars, is now put at a figure of \$240-275 thousand million. This figure is larger than the combined estimated product of the developing countries of South Asia, the Far East and Africa combined, and far exceeds that of Latin America. Thus even if only a very small proportion of the resources used for military expenditure could be transferred to supplement the existing flow of aid, this would, in aid terms, be a very considerable sum. If the major military Powers were to channel to development assistance approximately 1 per cent of the resources currently devoted to military expenditure, the addition to the flow of aid would probably be of the order of \$2 thousand million at 1973 prices, or 20 per cent of the existing flow of official development assistance.

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6. The different kinds of reduction in military budgets would clearly result in different possibilities for augmenting the flow of aid. One of the most important differences is between a short-term and long-term agreement. Clearly, from the point of view of aid, a long-term agreement is much to be preferred. Economic development is essentially a long-term process. This view has recently been endorsed by the Chairman of the Development Assistance Committee (subsequently referred to in this annex as DAC):

"It is important for several reasons that recipients have at least a general idea of the size and nature of aid they can expect from their main donors over several years in the future ... An unduly short time-horizon for the planning of development can lead to wrong decisions in the allocation of resources and inadequate approaches to long-term problems ... Deep-seated structural problems, such as those faced in agriculture and rural development, in education and vocational training, for example, can only be solved through patient and systematic approaches with long-term planning horizons." a/

7. Furthermore the aid envisaged under these proposals should be additional. Obviously the whole aim of the proposal would be defeated if any other flow of aid were reduced at the same time as this flow of aid was being added.

8. It is also essential that the addition to the flow of aid should be in real terms. The proposal clearly recommends a reduction in the real quantity of resources devoted to military purposes and should also therefore envisage a real addition to the flow of aid. The aid commitments for the future which might be made as a consequence of these proposals should be drawn up with provisions for appropriate adjustments to compensate for the rise in prices in donor countries. This would be a radical change in present practice.

9. There will be some difficulties in the process of conversion at both ends - both in the donor and in the recipient countries. It is important that the conversion should be speedy, and that it should be carried out in such a way as to provide effective assistance of value to the development requirements of the developing countries. The conversion needs to be carefully planned and channelled, making allowance where necessary and possible for the absorptive capacity of the developing countries.

Official development assistance

10. The flow of aid which we envisage here would clearly add to the total of official development assistance (ODA), since it would presumably be a transfer from one budget category to another. Perhaps the best known definition of official

a/ Organisation for Economic Co-operation and Development, Development Co-operation, 1973 Review (Paris, November 1973), p. 56.

development assistance is that of the Development Assistance Committee b/ which defines it as:

"... those flows to developing countries and multilateral institutions provided by official agencies, including state and local governments, or by their executive agencies, each transaction of which meets the following tests:

"(a) It is administered with the promotion of the economic development and welfare of developing countries as its main objective, and

"(b) It is concessional in character and contains a grant element of at least 25 per cent."

11. The first of these tests has been, in current practice, essentially a matter of judgement of the donor country. It is true that the programme of each donor country is subject to the scrutiny of other donor countries (though not of recipient countries) in the annual DAC process of review; and there is also a list of specific transactions which may not be included in the total of official development assistance. For example, no military transactions, whether in the form of grants or loans, can be included.

12. The second test is specific enough. The grant element in grants is, of course, 100 per cent. The grant element in loans is measured as the difference between the face value of the loan and the discounted present value of the stream of repayments, both of capital and interest. The difference is then expressed as a percentage of the face value: this percentage is the 'grant element'. The DAC practice is to apply a uniform rate of discount of 10 per cent to all countries; and this figure of 10 per cent has not been changed in recent years.

13. In addition to the 'grant element' criterion for each individual transaction, the DAC has established another norm, that members "should use their best efforts to reach and maintain an average grant element in their ODA commitments of at least 84 per cent".

14. Thus the grant element in aid can be increased in a large number of different ways. It can be increased by raising the proportion of grants in official

b/ The main source of statistical information on aid flows is the Development Assistance Committee of the Organisation for Economic Co-operation and Development. The figures it publishes, however, only cover aid provided by the developed market economies. The aggregate statistical information about aid flows from the centrally planned economies is more limited: the information available from international sources is summed up in table 4 in annex I. As a consequence, many of the propositions which follow are documented by figures which cover the Development Assistance Committee countries only. It can be expected, however, that most of the conclusions apply generally.

development assistance; or by lengthening the average maturity of loans; or by increasing the grace period; or by reducing the rate of interest. There have been changes in all these parameters in the official development assistance of DAC countries. Between 1965 and 1972 grants, as a percentage of official development assistance, increased from 68.7 to 72.3 per cent. The weighted average maturity of official development assistance loans increased slightly, from 28 to 29 years. The weighted average of the grace period increased from six to seven years. Finally, the weighted average of rates of interest on official development assistance loans declined from 3.0 to 2.8 per cent.

15. The net results of these various changes was that the "grant element" in DAC loans reached its target minimum of around 84 per cent in 1969. However, since then it has not risen further.

16. In this connexion it is perhaps appropriate to note that UNCTAD, at its third session, invited the developed countries to consider proposals which would raise the grant element further. In resolution 60 (III) c/ it invited "the developed countries to take into consideration the views of the developing countries as well as some developed countries that (a) on average, interest rates on official development loans should not exceed 2 per cent per annum; (b) maturity periods of such loans should be at least 25 to 40 years and grace periods should be not less than 7 to 10 years; d/ (c) the proportion of grants in total assistance of each developed country should be progressively increased, and countries contributing less than the 1970 DAC average of 63 per cent of their total assistance in the form of grants should reach that level not later than 1975". If these recommendations were accepted, this would imply a grant element for DAC countries of the order of 86 to 89 per cent.

17. Any additional official development assistance resulting from the proposals considered in this report should in our view be in the form of grants rather than loans, or in the form of loans with a high concessionary element. This would raise the grant element in the total. This conclusion should also be considered against the background of the figures on the rising cost of servicing past debt, discussed in the following paragraphs.

The burden of external debt

18. It is important that any new flow of aid should, as far as possible, be in the form of grants, because the burden on developing countries of debt repayment is already heavy. Taking the figures for 81 developing countries, the total outstanding debt burden is no less than \$88 thousand million. The figures in table 1 below illustrate how this has been a growing problem in the past; and the

c/ See Proceedings of the United Nations Conference on Trade and Development, Third Session, vol. I, Report and Annexes (United Nations publication, Sales No.: E.73.II.D.4), annex I.A.

d/ This follows the recommendations of the International Bank for Reconstruction and Development, Partners in Development: Report of the Commission on International Development (New York, Praeger, 1969), p. 164.

further figures in table 2 below show how debt repayment could become an even more formidable problem in the future.

19. This debt has been incurred, among other things, because developing countries need to make heavy investments in the economic and social infrastructure of their countries and because they have had to confront a diminishing share for their exports in world trade.

20. The figures in tables 1 and 2 below are on a slightly different basis from those presented in annex I. They are for 81 developing countries; and they show the difference made by flows of aid, first by the repayments of capital and, secondly, by interest payments. The figures cover both official and private flows. From 1965 to 1971 gross disbursements rose by 57 per cent - an annual rate of increase (compound) of 8 per cent. However, when amortization is subtracted (the column "net flow"), the rise is reduced to 42 per cent (6 per cent a year). And when a further subtraction is made for interest payments (the column "net transfers"), the rise becomes only 25 per cent (under 4 per cent a year). As the next section makes clear, after allowance for price increases, there was hardly any rise in the net transfer of real resources at all.

21. Another way of stating the same proposition is that from 1965 to 1971 debt-service payments rose from 40.3 to 52.3 per cent of gross disbursements.

22. The UNCTAD secretariat has carried these figures forward to 1981 (table 2 below). This projection assumes that the various components of gross disbursements continue to move at rates comparable to those experienced in the period 1968-1971. On this assumption, by 1981 debt-service payments would offset 65 per cent of gross disbursements. The rising trend in the cost of debt service is such that if in any year now gross disbursements were to fail to rise, net transfers would fall sharply; thus, if in 1971 gross disbursements had been no higher than in 1970, net transfers would have fallen 14 per cent, in money terms, and substantially more in real terms.

23. It is for these reasons that it is essential, in administering any additions to the aid flow, that developing countries should not be burdened with further increases in debt. In other words, the additional flow of aid should be net.

The effect of inflation

24. The current inflationary trend complicates the international aid effort and confuses the corresponding statistical information. As a consequence, the time series of statistics on development aid do not currently reflect the trend in the real volume of development assistance. Most aggregate statistics of aid tend to be quoted in current dollars. This is doubly misleading, not only because of the rapid

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Table 1. Eighty-one developing countries: external resource flows
and service payments on external public debt

(Millions of dollars)

	Total disbursements received	Debt service			Net <u>b</u> / flow	Net <u>c</u> / transfer	Debt service: Percentage of disbursements
		Amortization	Interest	Total			
	(1)	(2)	(3)	(4)=(2) +(3)	(1)-(2)	(1)-(4)	(4) as percentage of (1)
1965	8,282	2,460	877	3,337	5,822	4,945	403
1966	8,251	2,755	995	3,750	5,496	4,501	<u>45.5</u>
1967	9,726	2,817	1,095	3,912	6,909	5,815	<u>40.3</u>
1968	10,470	3,345	1,277	4,622	7,125	5,848	<u>44.2</u>
1969	11,068	3,687	1,482	5,169	7,381	5,899	<u>46.7</u>
1970	11,625	4,195	1,817	6,013	7,430	5,612	<u>51.7</u>
1971	12,983	4,707	2,082	6,790	8,276	6,194	<u>52.3</u>

Source: World Bank/IDA, Annual Report, 1973, table 8, p. 92.

a/ Grants and loans, both public and private.

b/ Total disbursements minus amortization.

c/ Total disbursements minus amortization and interest.

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Table 2. Illustrative projections for 81 developing countries of gross disbursements, debt-service payments and the resulting foreign exchange availabilities in 1981
(millions of dollars)

	1971 (actual)	1981 projection
I. <u>Total</u>		
Gross disbursements	12 984	34 398
Debt-service payments	6 790	22 189
Net transfer	6 194	12 209
Debt-service payments as percentage of gross disbursements	52.3	64.5
II. <u>Official bilateral</u>		
Gross disbursements	6 380	11 847
Debt-service payments	2 078	4 538
Net transfer	4 302	7 309
Debt-service payments as percentage of gross disbursements	32.6	38.3
III. <u>Multilateral institutions</u>		
Gross disbursements	1 782	4 470
Debt-service payments	917	2 930
Net transfer	865	1 540
Debt-service payments as percentage of gross disbursements	51.5	65.5
IV. <u>Private</u>		
Gross disbursements	4 822	18 081
Debt-service payments	3 795	14 722
Net transfer	1 027	3 359
Debt-service payments as percentage of gross disbursements	78.7	81.4

Source: UNCTAD secretariat calculations.

Note: The terms assumed throughout are: official bilateral loans; 3.3 per cent interest, 7 years grace and 27 years maturity; concessional multilateral loans; 0.75 per cent interest, 10 years grace and 50 years maturity; other multilateral loans; 7.25 per cent interest, 5 years grace and 23 years maturity; private credits; 8.5 per cent interest, 2 years grace and 8 years maturity. The annual rates of growth assumed are 8.4 per cent for official bilateral lending, 9.7 per cent for multilateral lending, and 15.2 per cent for private lending. Grants were assumed to decline by 1.4 per cent per annum.

rate of inflation in recent years, but also because since 1972 the dollar has effectively been devalued as against most other major currencies. e/

25. The Development Assistance Committee has now published series which make it possible to correct the figures which they publish for aid flows both for price changes and for changes in exchange-rates; and some of the consequences of using these adjustment factors are shown in tables 3 and 4 below.

26. If we take the figures for the total public and private flow of financial resources to the developing countries (lines 1 (a) and (b) of table 3), the annual rate of rise in the last decade, in current money terms, is 8.8 per cent; however, in real terms that figure comes down to 5.5 per cent.

27. For the purpose of this report, however, it is more sensible to look at the figures for official development assistance only (lines 3 (a) and (b) of table 3). The annual rise here over the last decade, in money terms, is 4.8 per cent; but in real terms it comes down to only 1.3 per cent a year.

28. Both these series are net of capital repayments, but not net of interest repayments. From 1965 onwards there is the series (already discussed in paras. 18-19) for the total private and public flow to 81 developing countries, net of both capital and interest payments (table 4). From 1965 to 1971, which is the latest year available, net transfers, in real terms, show virtually no rise at all. Over the whole six years, the net transfer of real resources rose just over 2 per cent - that is, at a rate of less than 1/2 per cent a year.

29. In real terms, therefore, official development assistance has risen very little in the past decade. Against this background it is important to ensure that the addition to aid, under any of the alternative proposals for cuts in military budgets considered in this report, will be a real addition to the volume of official development assistance.

30. The effect of price increases is not simply that it leads us to reassess the past trends in aid, so that we see that in volume terms it has hardly been rising. Inflation also erodes the value of aid commitments which have already been made - assuming that they have been made in money terms - because of the lag between commitments and disbursements. Further, inflation directly affects both the need for international assistance and the possible ways of meeting that need. The situation in 1974 is a good example of this. Especially when inflation is accelerating, this tends to lead to acute balance-of-payments problems and often

e/ One may take as an example a European country which pays the salary of a teacher in a developing country. If, comparing this year with last year, his or her salary has risen, purely as a consequence of a general salary award, by 10 per cent; and if, in addition, that country's currency has been revalued by 5 per cent as against the dollar, the data will show an increase in aid in current dollars of 15-1/2 per cent ($110 \times 105 = 115.5$), although the real resources transferred are still the same, at one man year.

also to restrictions on world trade. So the need for increased aid transfers may become especially acute at the very time when donor countries, because of their economic difficulties with inflation, are tending to cut back Government expenditure: and one of the first candidates for such cuts tends to be aid to developing countries.

31. A continuous process of inflation will have important implications for those characteristics and conditions of aid transfers discussed in paragraphs 11-23. The concessionality or grant element of aid may differ widely in real terms from the figures calculated in the way described in paragraph 12. It will be a central issue for the management of the debt of developing countries - as it is for the management of many types of debt within countries - to find ways of spreading the real value of debt service more evenly over time. However, it is not our task here to analyse further these problems and their implications for aid policy.

Characteristics of official development assistance

32. There are always constraints of some kind on the amount and form of official development assistance available to a recipient country. Some are useful to ensure that the funds will be efficiently employed for the purpose of furthering economic development and welfare in the developing countries. These criteria are discussed in paragraphs 40-46. Here we note that they should be negotiated in concert with the recipient countries, and should not be imposed by donor countries. In the actual practice of official development aid there are, however, many other ways in which the recipients' free use of aid resources is restricted in the interest of the donor countries. These "conditions" for aid tend to work against the interest of the recipient countries in at least two ways. First, by diminishing the possibility for the recipients to use the full amount of aid funds in the most efficient way for the stated purposes, they impose a burden or cost and thereby decrease the value of official development assistance received. Secondly, the conditions imposed by the donor countries can be used as a lever to extract commercial or political advantages in a way that infringes upon the economic and political sovereignty of the developing countries. For these reasons the aim must be to remove these kinds of conditions from the administration of the aid flows we are considering here. (This recommendation, and those in the following paragraphs, refer throughout to this additional flow of aid.)

33. Within this context the terms for official development assistance credit may be viewed in certain cases as an instance of conditions for aid, and for this and other reasons we have already recommended above that the additional aid we are discussing here should largely be given as grants. Aid given in inconvertible currencies may restrict the recipient's choice of the market in which he can purchase the necessary imports. This might decrease the value of official development assistance. Whenever possible, aid should be given in convertible currency. f/

f/ Some qualifications to this general conclusion are set out in paragraph 35.

Table 3. Flows of financial resources to developing countries from DAC countries, in current and constant prices: a/ 1971 and 1972 compared with 1962 and 1963

(Millions of United States dollars)

	1962	1963	1971	1972	Percentage change, 1962 to 1972
(1) Total public and private flow, net of capital repayments					
(a) At current prices	8,437	8,572	18,158	19,653	+133
(b) At constant (1970) prices	10,056	10,168	17,049	16,957	+ 69
(2) Price index, 1970 = 100	83.9	84.3	106.5	115.9	+ 38
(3) Official development assistance, net of capital repayments					
(a) At current prices	5,438	5,772	7,759	8,654	+ 59
(b) At constant (1970) prices	6,428	6,742	7,238	7,346	+ 14
(4) Price index, 1970 = 100	84.6	85.6	107.2	117.8	+ 39

Source: Organisation for Economic Co-operation and Development, Development Co-operation, 1973 Review (Paris, November 1973), table II-2, p. 42, and table A, annex, p. 176.

a/ The deflators used correct for price changes and for changes in exchange-rates relative to the dollar.

/...

Table 4. External resource flows and transfers, net of debt service, to 81 developing countries, at current and constant prices a/

(Millions of United States dollars)

	1965	1966	1970	1971	Percentage change, 1965 to 1971
(1) Gross disbursements, public and private					
(a) At current prices	8 282	8 251	11 625	12 983	+57
(b) At constant prices	9 500	9 170	11 625	12 200	+28
(2) Price index, 1970 = 100	87.2	90.0	100.0	106.5	+22
(3) Net transfers - net of capital and interest payments					
(a) At current prices	4 945	4 501	5 612	6 194	+25
(b) At constant prices	5 671	5 001	5 612	5 816	+ 2
(4) Price index, 1970 = 100	87.2	90.0	100.0	106.5	+22

Source: World Bank/IDA, Annual Report, 1973, table 8, p. 92; Organisation for Economic Co-operation and Development, Development Co-operation, 1973 Review (Paris, November 1973), table A, annex II, p. 176.

a/ The deflators used correct for price changes and for changes in the exchange-rate relative to the dollar.

34. The kind of conditions which in the past have proved most restrictive and costly for the recipient countries are those inherent in the prevailing practice of so-called "tied-aid". This can take various forms and aid may, for instance, be tied:

(a) To its place of origin, that is, requiring the recipient to spend the sums transferred in the donor country;

(b) To special goods and services, which means that the recipient country must rely solely on certain special capacities of the donor country;

(c) To shipping, i.e., requiring the recipient country to use the means of transport of the donor country.

35. By far the greater part of official bilateral development assistance is tied. The donor countries put forward the following arguments for this practice: exports are promoted, and the impact of international economic assistance on the balance of payments is reduced; excess production capacity is utilized; surplus agricultural products may in this way be disposed of; the economic assistance is in this way identified with the donor country; and it is easier, with tied aid, to obtain public support for international economic assistance. On some occasions economic aid is part of long-term agreements for mutual co-operation between developed and developing countries. Some developing countries consider this practice acceptable. Such agreements often prescribe the exchange of certain specified goods and services.

36. Aid-tying will impose a cost on the recipient country relative to untied aid, to the extent that the transaction prices at which the flows are valued by donor countries may be above world market prices, and to the extent that the flows include an inferior selection of goods from the point of view of the recipient country. As a result, the real volume of goods and services actually transferred and its value to the recipient country may be far less than it would have been had the developing country been provided with an equivalent amount of cash and left to purchase the required goods and services on world markets. In the past, aid-tying has been estimated to lead to the overvaluation of resource flows to developing countries on the average by between 15 and 20 per cent, depending on the nature of the project and the donor country. g/

37. A special case of tied-aid is that a substantial part of food aid has originated in production surpluses resulting from the domestic farm policies of donor countries. An additional cost is imposed where such aid is valued at prevailing world prices, whereas the price that would have prevailed had the surplus been put on to the world market would have been lower. Technical assistance -- though not in itself an unfavourable form of assistance, especially when channelled through multilateral

g/ See "The costs of aid-tying to recipient countries: progress report by the secretariat of UNCTAD", Proceedings of the United Nations Conference on Trade and Development, Second Session, vol. IV, Problems and policies of financing (United Nations publication, Sales No.: E.68.II.17).

agencies - sometimes involves similar valuation problems. It is presently valued according to the budgetary outlays of donor countries, i.e., by using the salaries actually paid to the personnel in question and other associated costs. This may produce a distortion, where the recipient country, had it been given cash, might have been able to obtain - at lower prices - the services of either local or third-country personnel of equivalent or almost equivalent capability.

38. The dominant part of official development assistance is bilateral. Even if no other special conditions are imposed, the bilateral form in itself may, by establishing ties of obligation and dependence between donor and recipient, make it possible for the donor country to effect an undue political and economic influence over the recipient country. The bilateral form also makes it much more probable that the various kinds of special conditions mentioned above will be imposed on the aid transaction. For these reasons it is preferable to have the additional aid channelled through multilateral agencies, even though this does not eliminate all possibilities of imposition on the part of the donor countries. At the moment, a relatively small proportion of official development assistance comes through multilateral institutions - but the proportion is rising (see table 3 in annex I). For DAC countries, this proportion was only 7 per cent in the first half of the 1960s; it rose to 16 per cent in 1969 and reached 22 per cent in 1972. Any new flow of aid resulting particularly from the reduction in military budgets should eventually all be routed through multilateral institutions. Given the comparatively small role which multilateral institutions have hitherto played, this would be a radical change in the system by which economic aid is administered.

39. There are many difficulties which will be encountered on the way towards removing the conditions imposed on official development assistance transactions. These difficulties may prove especially intractable in the short run when one has to carry out the kind of drastic increases in levels of official development assistance that would follow from the proposals of cuts in military budgets studied in this report. Some countries would find it more difficult than others to ensure that the whole of a substantial increase in aid was untied or made in convertible currencies. This results from, among other things, the balance-of-payments structure, the relative size and competitiveness of the national export industries, and existing patterns and agreements on foreign trade. Acknowledging these difficulties and differences does not detract from the importance of working steadfastly towards the aim of gradually removing the conditions for aid. An important prerequisite for such a move is to have more detailed and continuous information on the extent and costs of aid-tying and other characteristics of aid.

Criteria and machinery for aid

40. Establishing criteria for eligibility and distribution of aid is a very complex task. It is also very hard to clarify from analysis of historical data on aid transfers what the prevalent criteria have been in the past. Regional and country analyses that have been made of aid flows often show patterns for which it is difficult to find justification. Three main types of criteria have however been

discussed in the literature on the subject. We can here call them the criteria of need, efficiency and effort respectively.

41. The criterion of need is based on the notion of a fair distribution of economic welfare between people in different countries and could be interpreted as giving aid priority to the countries with the lowest per capita incomes. The criterion is simple to use in principle, although implementation encounters all the usual problems of international comparisons.

42. The criterion of efficiency is usually taken to mean that aid should be channelled to those countries and those projects where it will yield the most. The yield of invested aid funds then has to be measured with the help of some cost-benefit calculus, which in this context is far from being a simple operation. Of central importance will then be the choice of a valuation basis for this calculus -- whether costs and benefits are valued according to commercial standards and the yield measured in terms of the eventual export earning that directly or indirectly will accrue, or, if costs and benefit are instead somehow valued in a way that takes in all aspects of the economic and social well-being of the people concerned into consideration. Whether the use of an efficiency criterion is consistent with the wish to attain a just distribution of aid among developing countries or regions will depend on whether or not there are other means of redistributing the yield of development.

43. The criterion of effort is usually taken to mean that a main consideration in distributing aid should be the efforts deployed by the different countries in terms of social and economic development. Obviously this "effort" is rather difficult to measure even in relative terms, although attempts have been made in the literature to link it with magnitudes like increases in investments and savings, efficiency of investments and export performance. There may be reason to assume that use of this criterion would often give results similar to those obtained by the use of an efficiency criterion.

44. To the extent that the additional aid under discussion is distributed for development rather than natural disaster relief, it will be important for recipients to work up, in so far as possible, effective programmes for the absorption of the new assistance.

45. Decisions on the criteria to be used imply a specification of the countries which would be eligible for additional aid. In the past the various lists of developing countries have differed in the countries they include; these classifications have used, amongst others, criteria of political status and technological advancement, as well as the criteria we have listed above.

46. The choice between the different criteria will, among other things, depend on the time-horizon used and the relative weights given to efficiency and justice respectively. It is not our task here to pre-judge the outcome of the deliberations that will have to deal with this issue, especially since the decisions may very well vary with different contexts -- different times, countries and projects.

47. A further requirement for aid which we think it essential to add is that measures should be taken, as far as possible, to ensure that the aid that comes from reductions in military budgets by donor countries should not be used by the recipient countries to increase their own military expenditure.

48. If the aid resulting from the proposals considered in this report is not too big to be handled by the already existing multilateral administrative machinery within the framework of the United Nations, there is no reason why existing institutions should not be used for this expanded task. If the aid is larger, there may be reasons for setting up new international administrative machinery. However, in any case, there may be grounds for wanting the political decisions on distribution to be settled by some international authority such as the Special Committee on the Distribution of the Funds Released as a Result of the Reduction of Military Budgets, established by the General Assembly in resolution 3093 A (XXVIII) of 7 December 1973.