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other countries take military secrecy lightly.

Spying, in the present context, means the gathering of information about military matters that are not subject to an arms control agreement. The substitution of random sampling for systematic searching, in an attempt to deter violation rather than detect it, may go some way toward meeting this difficulty; however, the difficulty will remain. Jerome Wiesner, science advisor to President Kennedy, gives an example of a random sampling program, in Arms Control: Issues for the Public: "A reasonable inspection procedure would be to examine five to 10 per cent of [each nation's] total area at any one time, and to have several cycles of inspection per year so that 30 to 50 per cent of a country would be covered in that period." If, as in this example, almost half the area of a country is inspected each year, the opportunity for spying will be considerable.

Supposing that the arms control measure is a militarily significant one (and only such a measure has any real value) then there will at the same time be a very strong incentive for spying-- that is to say for extending the range of objects being inspected beyond those specifically sanctioned by the treaty. It is not enough, after all, for a nation to formulate suspicions of cheating; before it dare abrogate the treaty it will have to find evidence of cheating that can hope to stand up in the court of world opinion. As every court lawyer will attest, a case is not proven by a simple invocation of facts, but by the weight of evidence.

This is only one of the reasons for seeking to widen the scope of inspection. Another is that "inspection and surveillance must serve to keep each side informed of significant military developments that may require modifications in the agreement, or supplementary understandings." (See Strategy and Arms Control, by Thomas C. Schelling and H. Halperin.) An arms control agreement may be acceptable to both sides in the context of one military picture and yet may favor one side if the other makes adjustments in its forces. Naturally the other will seek to make precisely those adjustments. (I shall return to this point, later.)

Finally, we must take note of the important fact that (quoting Wiesner again), "interaction of . . . various inspection systems would make up for the uncertainty permitted by any one."

These three considerations all argue for a flexible and wide-ranging inspection. However, this will surely be unacceptable except in the context of a wide agreement.

This suggests the possibility that the wide agreement might take the form of a package of partial measures. However, there appears to be a grave difficulty with this approach. If as a result



of changing tactics or technology, a signatory to the agreement feels compelled to release himself from one of the controls comprised in the package (I shall suggest below that this is a likely contingency), this could necessitate a complete reassessment of the interlocking inspection system. The entire treaty would be thrown in jeopardy. If it survived it would be at the expense of heightened suspicion. If it failed to survive, it would be an important failure which could have serious consequences.

In essence the problem of inspecting partial arms control agreements will be to satisfy a legitimate demand for broad and flexible inspection, without at the same time doing violence to the equally legitimate requirement for military secrecy. The middle ground between these two requirements may be narrow and shifting; if this is the case there is a real danger that over a period of time arms control will aggravate international tension. If, then, arms control agreements break down (and even if they do not), we must expect an acceleration of the dangerous competition and in aggravation of the other dangers we have been seeking to combat.

#### Tactical Arms Race

The problem of inspection has been discussed first simply because it is so conspicuous. It constituted the principal subject for debate in three years of negotiation over the test ban treaty. However, the problem posed by the conflicting demands of military requirements and partial arms control is more fundamental and consequently more serious.

I have indicated that a major military requirement is stable deterrence. Stable deterrence enters into arms control in the following way. The condition of stable deterrence is one in which both sides are in possession of powerful and invulnerable forces. The term "invulnerable" is meant to imply that the force is sufficiently protected that it could still be used with devastating effect following a surprise attack by the opponent. Nuclear weapons are protected to some extent if they are hidden (the USSR has been able to accomplish this by secrecy), if they are mobile (in aircraft, railways, submarines), or shielded from blast (by concrete, or under the sea).

Any lesser force than this "invulnerable" one would be dangerously provocative, since in moments of international tension each side would be strongly tempted to make a preemptive first strike against the other; this being the only type of attack that offered hope of success. More armaments than the minimum required for invulnerable deterrence are also to be regarded as dangerous, since they invite an indefinite continuation of the arms race. Somewhere



in between lies a zone of stability (stable deterrence) which we must seek first to achieve and then to maintain. It is the role of partial arms control to assist in this by regulating the development, production, or use of strategic nuclear weapons.

The second military requirement is for a tactical force. In the world of stable deterrence major international disputes which could be settled by other means would, it is reasonable to suppose, be settled by a limited exercise of force. That is to say they could be settled by what, it is hoped, would be limited wars, fought by armies against armies, with the aid of tactical weapons.

There is no reason to look for an abatement, under stable deterrence, of the armaments race involving tactical arms. If this armaments race runs afoul of controls designed to moderate the pace of the other armaments race, that in strategic weaponry, then a serious strain will be placed on the controls. Since tactical armaments differ in degree and not in kind from strategic armaments, it is, in fact, very probable that controls designed to interfere with one type of armament will interfere with the other.

The test ban negotiations furnish an example. There is evidence that President Kennedy was under pressure to permit resumption of nuclear testing partly in order to facilitate the development of improved tactical nuclear weapons. This pressure was not, though under slightly altered circumstances it might have been, responsible for the breakdown of the negotiations. However, it is altogether to be expected that a similar pressure exerted by Russian generals on Mr. Khrushchev (the Soviets having tested fewer tactical weapons are probably significantly weak in this department) contributed to the USSR's resumption of testing.

The edifice of arms control is designed to rest on a foundation of stable deterrence, guaranteed by invulnerable strategic weapons. This foundation is both shaky and shifting. It is shaky for political reasons, shifting for technological ones.

The political limitation on deterrence is the following. The deterrent will only deter acts which are rationally conceived and rationally implemented. Regrettably, rationality is not the distinguishing characteristic of political actions. Hedley Bull makes this point in a passage in The Control of the Arms Race which deserves to be quoted in extenso:

In general there is no such thing as rational action. The notion that there is a distinction between rational action and other kinds of action, or between reason and the passions, is indefensible in philosophy and psychology, but has somehow survived in political theory. The notion of rational action is useful only when it is defined in a particular



way, for the purposes of a particular body of theory. A great deal of economic theory proceeds upon such a notion of what is rational action for economic man. A great deal of argument about military strategy similarly postulates a rational action of a kind of strategic man, a man who on further acquaintance reveals himself as a university professor of unusual intellectual subtlety. . . where rational action is defined to exclude the deliberate choice of military catastrophe, this is not a notion in terms of which it is possible to account for any great part of the history of international politics, or to base any confident prediction about its future. The idea that war is a catastrophe which no government will choose to bring about has been a commonplace of writing about international relations since the turn of the century. The decisions of governments on matters of peace and war, like those taken by the European powers in July and August 1914, do not always reflect a careful weighing of long-range considerations, or a mastery of the course of events: the questions which strike the historian of these decisions a generation afterwards as important appear crudely answered or, more often, not even asked: the governments appear to him to stumble about, groping and half blind, too preoccupied with surviving from day to day even to perceive the direction in which they are heading, let alone steer away from it.

Some of these threats to the stability of stable deterrence have been catalogued, in discussions of arms control, under the headings of "the danger of accident," "of folly," "of unauthorized action," and so forth.

These dangers are easier to catalogue than to combat. The measures that have been suggested to deal with them appear depressingly feeble ("improved communications," an "international inspection team" that will go to the scene of unaccountable nuclear explosions).

However, in my view, it is the technological threat to stable deterrence that will be decisive. Let us suppose that agreement is being sought or has been reached on one or more partial measures: a test ban, demilitarization of outer space, a cut-off in the production of fissile material, a limit on stockpiles, controls on numbers of missiles, renunciation of the first use of nuclear weapons. These measures are discussed in moderate detail in The Nation's Safety and Arms Control by Arthur T. Hadley, and in greater detail in Arms Reduction: Program and Issues edited by David H. Frisch. (The latter is alone in discussing the measures in the context of a stage-by-stage program leading to virtually complete disarmament.)



The opposing sides can only be expected to tolerate restrictions on their freedom to develop strategic weapons so long as there is in existence an unmistakable balance of strategic powers; that is to say, so long as the condition of stable deterrence obtains.

Dalimil Kybal, a leading exponent of stable deterrence, analyzes in Arms Reduction: Program and Issues the various types of technological breakthrough which could destabilize the strategic balance by rendering the deterrent (on one side or the other) vulnerable to a first strike. These include improved missile guidances accuracy, improved anti-submarine warning, and the development of anti-ICBM devices.

It should be noted that these innovations will not arise by chance. Even though both great powers may be fully committed to the stability of deterrence, neither can afford to take the chance that the opponent will be the first to make the destabilizing discovery; destabilizing in his (the opponent's) favor. So both must give top priority to research which is designed to undermine the very agreement that both (if they are convinced of the value of arms control) are most anxious to see remain in force. If this competition is allowed to run its course, then the arms race is, in large measure, continuing. Kybal makes this clear when he concludes that, "arms control agreements . . . should permit legal introduction of a new weapon system into the forces as soon as it is apparent that an enemy breakthrough has destabilized the existing force composition; this new weapon must be designed to counter the enemy breakthrough." However, Kybal hopes that some partially effective restraints can be applied to the arms-innovation race. It is, however, extremely hard to design such restraints. Unless we alter the nature of our society, developments in civil technology will continue to move very rapidly forward and are bound to affect the art of war.

The only hope of controlling military innovation--and it is a slim one--is at the testing, manufacturing and training stages. But is it really reasonable to suppose that, in a fully-armed world, our opponents will permit us to prowl around looking for evidence of testing, manufacturing, or training involving promising new types of weapons or anti-weapons? Surely this is tantamount to asking for an end to all military secrecy.

Of course, it may be argued that both sides, if they are basing their security on stable deterrence, should welcome the opportunity to give and to receive reassurance that the balance is not on the point of being upset. The difficulty with this argument is that in so vital and yet so elusive a matter as military innovation, the sort of reassurance that could be obtained from any



inspection scheme (any that might be acceptable to two armed camps) would be utterly inadequate. The problem of inspection for hidden stocks in a disarmed world (alleged to be the stumbling block in all disarmament negotiations) looks quite tractable by comparison.

Faced with the near-impossibility of ending all military innovation some writers have suggested that we adopt a policy which is the complete opposite, namely that we seek to establish joint research and development establishments with the USSR. These joint research undertakings would have to be staffed with the ablest men on either side and be provided with every facility, so that they could outdistance any independent research that might be going on secretly in the participating countries. The joint research would be directed not only at developing new weapons but also at developing the means of implementing a ban on these new weapons, should any country attempt to bring them through the testing, manufacturing, and training stages.

This proposal seems quite fantastic. It is impossible to believe that two fully armed antagonists could agree to undertake a vigorous program of joint military research. Indeed, they would be very rash to do so, in view of the large overlap between the technology of strategic weapons and the technology of tactical weapons. By cooperating in the development of strategic weapons and ancillary devices, they would also be assisting one another in the development of tactical weapons--the weapons that they would plan to use against one another in the event of a (limited) conflict.

#### Stability Vs. Control

We can hope to place some barriers in the way of technological innovation at the testing stage, through the agency of such measures as the test ban and the demilitarization of outer space. However, we cannot hope to stem the strong tide of innovation by this means, only at best, to deflect it. To protect our deterrent force from the destabilizing effects of innovations we must be prepared to reorganize and re-equip as the art of war develops. This is, of course, precisely what the great powers have been doing over the past decade of unstable deterrence. It has involved them in a continuous process of redesign and re-equipment. It is this process, coupled with the complementary activity of intensive military research, that has constituted the economic and psychological burden of the arms race.



How much different will the situation be in the next decade, even if we succeed in making it the decade of stable deterrence?

The two related major features of the arms race, competitive military research and the need to refashion our weapons system, will still be operative. Can we hope to moderate the pace of the arms race significantly by building a structure of partial arms control on the basis of the stable deterrent? Only, it would appear, in the short run. In the long run (and it is not a very long run, judging from the record of the test moratorium) the demands of stability, which take precedence over the need to control the arms race, will come into conflict with the provisions for arms control.

For example--the examples are hypothetical, and are offered simply by way of illustration--it may be considered necessary, in order to guarantee the invulnerability of the strategic deterrent, to place missiles beneath the polar ice cap. This could conflict with the only measure of arms control which has so far been achieved: the international agreement to demilitarize the Antarctic. Or (to give another example) it may be thought essential, in order to counteract the destabilizing effect of antimissile devices, that we increase the total number of missiles--contravening an agreement to limit this number. Or, to assure invulnerability to a first strike, it could be decided that we must disperse our deterrent force as widely as possible; this may suggest placing the weapons on satellites--contravening the demilitarization of outer space, at present the most hopeful area for arms control.

The consensus among scientists is that placing weapons of mass destruction in outer space cannot be justified on strategic grounds. For the present the earth is a large enough arena. However, in five years time, this may no longer be true. Moreover, while the arms race continues we must also consider the question of military prestige. If, as we know to be the case, the Soviet Union attaches importance to a 100 megaton bomb, a weapon which is more valuable for display than for use, it may also be tempted by the possibility of being the first to place a hydrogen bomb in outer space.

These considerations will be (and should be) in the minds of the delegates who sit down to negotiate agreements for partial measures of arms control. Realizing the limited utility and limited life-span of such agreements they will be loath to pay more than a minimal political price for them. Can we make the agreements salable under these conditions? We can try. But at the same time we should avoid placing too high hopes on success. Above all we must not conclude from a failure, such as the test ban failure, that it is impossible to reach agreements on armaments. All that



we may have proved is that you cannot reach agreements which are not worth reaching.

An agreement which would undoubtedly be worth reaching is one which represented a real step toward total disarmament, and which formed part of a program for total disarmament. The ultimate political price, as I have remarked, is high. It would involve a renunciation by all parties not only of wars from which they have nothing to gain, but of all wars.

Have we an alternative?

The danger is that we may think we see one in Kahn's proposal; a last attempt to tame the nuclear monster--by civil defense--and to set the clock back to the time when major wars could be fought and won. There seems little doubt that this would result in wars being fought; but there is very serious doubt as to who or what would win.



## FOUNDATIONS OF A STABLE WORLD ORDER

L. B. Sohn

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### Introduction

1. The foundations of a stable world order have been laid down in the Charter of the United Nations. Article 1 of the Charter explicitly states that in order to maintain international peace and security, it is necessary, on the one hand, "to take effective collective measures for the prevention and removal of threats to peace, and for the suppression of acts of aggression or other breaches of the peace," and, on the other hand, "to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace."

It also lists as one of the principal purposes of the United Nations the development of "friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples." Finally, it emphasizes the need for international cooperation "in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language or religion."

2. There can be no quarrel with these aims or with many further provisions in the Charter which are designed to implement them. But member nations have not always acted in accordance with the letter and spirit of the Charter, and the United Nations did not have sufficient powers to impose compliance with the obligations of the Charter upon recalcitrant members.

It is the purpose of this report to outline the problems involved in strengthening the methods and machinery for the maintenance of peace. It is assumed that there is general agreement on the dangers of the present situation, resulting from the arms race and an unstable balance of terror. It is also assumed that there would be in the near future a willingness on both sides to explore ways and means to a safer world in which both armaments and tensions would start to diminish rather than increase.

The ideas presented here are not entirely new; they have been discussed in various contexts over the last forty years and perhaps even earlier. It is desirable, however, to integrate



them into a comprehensive system and to show their interrelationship. There are many advocates of single, ideal remedies, but the claims made by them are grossly exaggerated. Neither disarmament nor world law nor an international police force, if taken singly, can provide a satisfactory solution. Several of them, taken together, may, however, provide a better chance of success.

3. For instance, it is often contended that complete disarmament of all the nations is an essential feature of world order. But one cannot expect nations to disarm, unless a sufficient guarantee is provided against any threats to their security. It is well known that no inspection system is foolproof and that a determined aggressor can secrete a sizable amount of dangerous weapons without risk of immediate detection. Those nations which have, nevertheless, surrendered all their armaments will thus never feel safe from attack, unless there is a strong international peace force, able to cope with a sudden threat of aggression. Without a stronger United Nations, able to deal severely with an aggressor or, even better, able to stop him at the first sign of danger, a mere agreement on disarmament may become a perilous trap.

On the other hand, an international peace force established in a world armed to the teeth, would present only a limited guarantee against aggression. It could, of course, prevent small wars in which none of the Big Powers is involved; it could police areas of potential danger and it might help to relieve some tensions. But it would not have sufficient strength to deal with the principal threat to peace, the constantly growing armaments of the Big Powers. Only after a considerable measure of disarmament would it be possible to rely on an international peace force as a real guarantee against war from any quarter.

There is also a close connection between disarmament and peaceful settlement of disputes. As long as there are no effective means for settling disputes between nations in a peaceful manner, nations cannot completely renounce the use of force for achieving their legitimate desires. Only the establishment of international courts with broad powers to deal with all kinds of disputes would enable nations to disarm.

The other side of this dilemma is also apparent. If one should concentrate first on the creation of international tribunals and on endowing them with ever increasing powers, it would become important to ensure that the judgments of these tribunals are properly enforced against recalcitrant nations. For this purpose, an international enforcement force would be required, and such a force could function effectively only in a world in which national armaments have been cut down completely. Alternatively, it would



be dangerous to have a strong international peace force, unless at the same time there were established strong international courts to which recourse could be made should the police force abuse its authority.

Finally, it is clear that there can be no peace in the world as long as more than two-thirds of the world's population are underfed, underhoused and underclothed. One cannot expect them to accept this fate forever and if there is no hope of improving their lot in a peaceful manner, they will not hesitate to disturb the peace if that should be the only way out of their present misery. Means have to be provided, therefore, for a gradual removal of this great danger to world peace, keeping always in mind that the nations which will have to contribute funds for the development of the less developed areas must at the same time be protected against interference with their own economic and social structure. This can be done easily if there is sufficient progress toward disarmament, as only in this manner can sufficient funds be released that are wasted now on an armaments race. Conversely, need for a large productive effort to build up the basic economic structure of many countries would make it easier to contemplate the cessation of the armament orders which seem to constitute an important factor in industrial production today. If proper plans can be prepared for the use of the industrial capacity of highly developed nations to increase the rate of development of other nations, the dangers of a sudden end of military production could be greatly diminished.

Thus the peace of the world depends on finding an adequate solution to at least four problems: disarmament, international peace force, peaceful settlement of international disputes, and more rapid development of less developed areas of the world.

Of course, there are many other problems in the world which cry for a solution, but any further broadening of the area for immediate action would create so many additional difficulties that it might make it impossible to achieve even the minimum. We must give priority to the main task of our generation--to prevent the suicide of mankind. If this can be accomplished and a peaceful world is established, the next generation will be given a chance to start to solve other problems. But if by broadening too much the scope of our inquiry we ruin the chance of finishing our job in time, there will be no other generations and the problems will never be solved.

#### Control of Armaments

4. It is generally recognized that the greatest danger to peace is created by the arms race. It must be stopped before, by



design or accident; an explosion of accumulating tensions destroys our civilization or even mankind. The goal here is clear--to limit all national armaments to such a level that no State shall have forces strong enough to be a serious threat to international peace. If threats of aggression by powerful neighbors could thus be removed, armed forces of each nation could be reduced to the levels strictly necessary for the maintenance of internal security.

The common objective should be, therefore, to define in precise terms the minimum armaments which each State would need for this purpose, and to fix a deadline by which national forces should be reduced to this level. The time limit here cannot be short, as confidence has to be built up and as each step should be small enough not to put complying nations at a disadvantage if one of the major powers should, at the last minute, refuse to do its part. The length of the period does not matter too much; but it is important to know in advance that at a certain definite date, if everybody will cooperate in good faith, the arms race will be over.

5. One can easily imagine that the disarmament period would be divided into three distinct stages. In the first one, national nuclear missile strength would be reduced to the point where no nation would have more nuclear missile systems than would be needed to ensure retaliation against a sudden nuclear attack. At the same time, other armed forces and armaments would be reduced to levels of equality for various categories of nations, taking into consideration their possible use in limited wars. Nuclear weapons might be completely removed from some areas, a proportion of foreign troops might be withdrawn from those and other areas, and some foreign bases might be abandoned. These levels might be reached through three to five substages, after which the second stage would start. During this second stage, an extension of the inspection system, installed in the first stage, would bring an added assurance that all States seem to be complying with the restrictions contained in the arms agreement. Finally, in the third stage, both the nuclear--missile and conventional--components of national forces would be reduced to the previously agreed upon minimum, again through several substages. Assuming a period of three years for the first stage, two years for the second stage, and five years for the third stage, the process of disarmament might be completed in ten years.

#### Maintenance of International Peace and Security

6. It cannot be expected that the nations of the world would be willing to abandon the protection, however tenuous, which they now find in their own armaments, unless security against aggression could be provided by other means. In the first stage such security



would be provided to some extent by national retaliatory forces, but even during that stage some other methods would be needed for preventing or stopping limited wars. Article 43 of the Charter of the United Nations provided that contingents of national forces should be put at the disposal of the United Nations for that purpose. Due to a disagreement as to the size and functions of these forces, no arrangements for their creation have been negotiated; the contingents made available to the United Nations in Korea, Egypt, and Congo were provided on a voluntary basis.

7. If nations are to disarm, they must be given a better guarantee that assistance will be immediately forthcoming when needed. There seems to be only one effective way to accomplish this goal--an international, highly mobile military force must be established, strong enough to prevent or stop limited wars before they explode into bigger ones. A neutral force is needed, able to step into situations likely to endanger peace. By its very presence it should prevent the aggravation of the situation, and might make it easier for the contending parties to save face and cool off. It can be hoped that in most situations no actual display of force would be required, but the international force must be able to defend itself in case of an armed attack. Even where hostilities have started, the international force should not join one or the other side, but should attempt to separate the belligerents and to establish a neutral zone between the contending armies.

There can be no doubt that the establishment of an international force will be fraught with great difficulties, especially as only few studies have been devoted to this problem in the past. Various safeguards will have to be built into the structure of the international force to ensure that it would fulfill its role in an impartial and objective manner, that it would not be dominated by any group of nations, and that it would obey the orders of the competent supervisory organs. To avoid any unnecessary risks, it might be useful to experiment first with a small force, and to build it up only after all the important problems have been solved to the satisfaction of all concerned.

Among the safeguards which should be considered in creating an international force, the following might prove workable:

- a. The number of nationals of any nation serving in the force should at no time exceed certain small percentages (e.g., three per cent), and some limits might be put also on the total number of nationals from certain groups of nations (e.g., those belonging to NATO or which are parties to the Warsaw Treaty).



- b. The immediate direction of the force should not be in the hands of any single person, but should be entrusted to a committee of five or seven persons, all of whom should be nationals of small nations, and the majority of whom should come from neutral nations.
- c. Units of the force should be composed to the greatest possible extent of nationals of different nations; for instance, it might be provided that no national unit in the force should exceed fifty persons.
- d. Units of the force should be stationed in separate international bases, which would be scattered throughout the world and should be located exclusively in the territories of small nations, preferably on islands or easily defensible peninsulas.
- e. The world might be divided into some fifteen regions, and no less than five per cent or more than ten per cent of the total strength of the force should be stationed in any region of the world.
- f. There should be a standing committee of the political supervisory body to which would be entrusted the important task of keeping a close watch over the activities of the force.

8. Even more difficult might be the problem of determining the best means for controlling the use of an international force. It is important to provide maximum assurance of effective use, but to establish at the same time guarantees against misuse. An obstructionist minority should not be permitted to block the use of force in an emergency, but the majority should not be allowed to violate minority rights through an arbitrary use of the force. As far as possible, an action by the force in a crisis should be almost automatic, and no immediate decision by a political body should be necessary. One could envisage, for instance, the following approach to this problem:

United Nations "presence" could be established in all nations of the world, and several United Nations observers would be stationed in the territory of each nation. Their number would vary in proportion to the size of each national territory and to the likelihood of a conflict with a neighboring nation. If a particular observer group should have reason to believe that a military action by the nation in which it is stationed, or by a neighboring nation, is imminent, it would notify the command of the international force and would request that a contingent of the force be deployed in the threatened area. Unless the command of the force should have evidence to the contrary, it should consider such a request as sufficient proof of an emergency



and should dispatch the necessary troops to the trouble spot. Similarly, if there should be an armed attack by one nation against another, the command of the force would immediately receive reports on the subject from the two observer groups in the nations involved in the attack. The command would request the two parties to the conflict to cease hostilities and would send sufficient contingents of the international force to establish a neutralized zone between the two fighting armies. Only if both, or one, of the belligerents should make it impossible for the international force to establish such a zone, would action by a political body be necessary.

In any case, each request for the use of the international force would have to be transmitted simultaneously to the competent political body, either to the United Nations or to a separate international security organization, which would be linked to, but remain independent from, the United Nations. The political body should be entitled to take decisions by approving the use of the force or order the cessation of such use by a high majority, but there should be no veto. If there should be a considerable minority opposing the decision, it might be entitled to appeal to an international tribunal for an injunction. Should the tribunal find that there was no sufficient basis for the use of force, it would issue an injunction and might even assess damages against the international organization which authorized such use.

One can, of course, easily imagine other methods of control over the use of an international force, and careful provisions on the subject should be embodied in the treaty establishing the force. The size and functions of the force should slowly increase, in proportion to progress toward complete disarmament.

#### Maintenance of Law and Justice

9. It has often been said that there can be no peace without law, and one might add that there can be no law without justice. An effective prohibition of the use of force in international relations would deprive nations of their principal past remedy against real or alleged violations of their rights and interests. When force can no longer be used to achieve national aims, a dangerous vacuum might come into existence unless some other remedy could be provided for satisfying just grievances which one nation might have against another. At present, only a minority of the nations of the world has accepted the compulsory jurisdiction of the International Court of Justice (the World Court). There are many disputes, therefore, which cannot be presented to the Court, even if they could be easily resolved by resort to generally accepted legal principles. There are also disputes which are not suitable for submission to the Court;



they involve not the interpretation of a rule of international law, but a departure from such rule or a change in the status quo. They cannot be settled effectively on the basis of existing law; other means such as mediation, conciliation or arbitration might have to be used instead.

10. As in other areas, one cannot expect immediate acceptance of the jurisdiction of international courts and arbitral tribunals over all disputes between nations. One can achieve that goal, however, by a series of progressive steps. It might be possible, for instance, to accept at least the jurisdiction of the World Court over disputes relating to the interpretation and application of international treaties. In this category of disputes, there is no doubt about the law to be applied, as the principles to be applied by the Court are embodied in the treaty itself. Almost all nations of the world, including the United States and the Soviet Union, have already accepted the jurisdiction of the Court to interpret some treaties between them. This proposal would broaden the jurisdiction of the Court to all treaties.

In the second stage, a list of major subjects dealt with by international law might be prepared, and an agreement might be reached that each nation would be obliged to select annually one of them as the subject with respect to which it accepts the jurisdiction of the World Court. Assuming, for instance, that there are thirty such subjects, a nation would select every year that one which it considers least likely to endanger its national interest (e.g., consular immunities, diplomatic privileges, treatment of aliens, regime of the high seas, etc.), but after some years, its range of choice would be limited, and by the thirtieth year it would be bound to accept the jurisdiction of the Court with respect to the whole range of international law. As the acceptance of the jurisdiction of the Court is based on the principle of reciprocity, during this thirty-year period the Court would be able to hear a dispute only if both parties have already accepted its jurisdiction with respect to the subject matter of the dispute. This difficulty will no longer exist, however, after thirty years, as by the time all the nations would be bound with respect to all the subjects.

11. Theoretically, all disputes can be decided by a court on the basis of law, and a party presenting a claim not based on law will lose its case. Nevertheless, a distinction is often made between "legal" and "non-legal" disputes, or between disputes about the respective legal rights and obligations of the parties and disputes involving other conflicts of interests. With the constant growth of the area governed by international law, in particular because of a rapid increase in international treaty obligations, the number of questions which are not subject to international regulation diminishes rapidly.



There is, however, a residuum of important disputes which even in a well-ordered society are likely to require a political solution. To find such a solution is the function of a political body rather than a court, and the Charter of the United Nations quite appropriately gives jurisdiction over political disputes to the Security Council and the General Assembly. But the power of these two organs in respect of disputes is limited by the Charter to making recommendations and does not extend to rendering binding decisions similar to those rendered by the World Court in legal disputes. The Charter also emphasizes the fact that the Security Council and the General Assembly should not deal with the substance of dispute, except in the last resort, and should concentrate their efforts on finding "appropriate procedures or methods of adjustment." While this injunction has not always been observed by the Council and the Assembly, experience shows that these two bodies, composed of national representatives acting in accordance with instructions of their governments, are not really qualified to deal with disputes in an objective and impartial manner. Only an organ removed from daily political controversies and free from the temptation of arriving at final decisions through political deals between various blocs could be trusted to find a satisfactory solution, free from bias and treating all concerned in an equitable manner.

It might be desirable to have two separate bodies for the purpose of actually dealing with the substance of political disputes. In the first place, a World Conciliation Board might be established, with broad powers to investigate all facts and to endeavor to bring the nations concerned to an amicable settlement. Very often, once all the facts are known and objectively presented, the passions may subside and the parties may find it easier to reach a settlement. The Board might suggest to the parties various alternative ways of solving their controversy and one of them might prove acceptable to all the nations concerned.

If this method does not result in a settlement, another approach may be tried. The Security Council or the General Assembly would first make the preliminary decision that the dispute in question is likely to endanger peace and must, therefore, be settled before it reaches the explosive stage. Then the Council or Assembly would refer the matter to a World Arbitral Tribunal, composed of some fifteen persons, preferably elder statesmen well known to all, whose experience and reputation would furnish the best assurance of impartiality and breadth of view. The Tribunal would consider all aspects of the dispute and would prepare recommendations for a comprehensive solution, based on what it deems reasonable, just and fair to all concerned. It might be expected that these recommendations would have such great moral weight that the parties would not dare to reject them. Failing their acceptance by one or



both of the parties, the matter would be referred to the General Assembly, which might deem the situation so dangerous and the solution proposed by the Tribunal so satisfactory that it would be willing to impose it upon the recalcitrant party or parties. To ensure that such a decision by the Assembly would really be executed, it should be required that the General Assembly would be entitled to adopt a binding decision on the subject only by a preponderant majority of votes (three-fourths, four-fifths, or even five-sixths), which majority should include a two-thirds of the major powers (e.g., of the twelve or twenty largest nations). Such a decision could be enforced, if necessary, by economic sanctions or even by a limited use of the international force. Pressure for voluntary acceptance will be, however, so strong that resort to forcible means of execution will seldom be required.

While in this general area progress might be slower than in the area of judicial settlement of legal disputes, it might be possible to devise various stages for progressive acceptance of the jurisdiction of the World Conciliation Board and the World Arbitral Tribunal with respect to various types of disputes. As with respect to legal disputes, each nation might be permitted to choose which disputes it would be willing to submit immediately to these methods of settlement and which it would like to postpone to a later stage. But after a specified period of years, all disputes would become subject to the jurisdiction of the Board and the Tribunal.

### Economic and Social Development

12. The establishment of international tribunals with broad jurisdiction over disputes between nations would remove one of the important excuses for resorting to the use of force or the threat of war. But there are many grievances which require a different method of approach. In particular, as long as there is a tremendous gap between the standards of living in a few industrialized nations and those prevailing in the rest of the world, dissatisfaction, envy and hatred will continue to brew rebellion against this unbalanced state of affairs. The knowledge of possibilities of a better life is spreading quickly around the world, and it makes the present conditions of substandard existence in the underdeveloped areas more intolerable than in past eras of ignorance and apathy. In a world of increasing unrest there can be but small hope for real peace; drastic measures are needed before it is too late.

With our present knowledge, this is no longer an impossible task, but one which can be accomplished through a sustained effort in the field of technical and financial assistance. If some 20 to 25 billion dollars could be guaranteed annually for such assistance,



there would be not only a chance for an immediate improvement of the living conditions of some two billion persons, but what is more important, this development program would bring to those persons the hope that better things will soon be within their reach and that their children would live in a better world.

Though the sum proposed above appears large, it constitutes only one-fifth or one-fourth of present military budgets of the major powers. Should there be an agreement on disarmament, this sum could be made easily available from savings on arms expenditures. Allocation of funds for world development projects might also prove useful in facilitating transition from arms production to peaceful production and would help to avoid a dangerous sudden slump in industrial production. Though some savings from disarmament might be spent quite satisfactorily at home, a sufficient margin should be still available for use in the underdeveloped areas.

To make sure that the sums needed would be actually available, it would be desirable to include in the basic agreement on arms control definite provisions specifying the percentage of disarmament savings (or of national production) which would be transferred to an international development authority for the purpose of assistance to developing nations. The agreement should also indicate the priorities to be observed by the authority, the methods to be followed by the authority in allocating the funds to various areas of the world, and the procedures to be used by the authority to ensure that the funds are spent for the purposes for which they were allocated.

#### Structure of the United Nations

13. Most of the changes proposed above can be accomplished without any changes in the Charter of the United Nations; they can easily be embodied in treaties supplementing the Charter. But if an agreement can be reached on the new powers to be exercised by the United Nations, either directly or through a specialized agency, there should be little difficulty with respect to making changes in the Charter which would enable the United Nations to exercise those powers in the most efficient manner possible. It would be necessary either to establish new organs or to reconsider the structure and procedure of existing organs.

In particular, it might be necessary to enlarge the composition of the Security Council to ensure that on the one hand, all major powers (including, e.g., India, Communist China, West Germany) would be permanently represented, and, on the other hand, all regions of the world (including Eastern Europe, Asia, and Africa) would be adequately represented among the non-permanent members.



It would also seem desirable to investigate the possibility of introducing a system of weighted voting in the General Assembly to ensure that the smaller nations do not abuse their preponderant majority in that body. It might be required, e.g., that the new powers to be conferred on the General Assembly by the proposals made above should be exercised not by an ordinary two-thirds majority but by a special majority including both a majority of the smaller nations and a majority of the big powers. Alternatively, each nation might be assigned a certain number of votes on the basis of population, industrial power or some other factors or a combination of them. Either of these methods would make it easier for the big powers to accept the decisions of the General Assembly, and would facilitate their enforcement.

### Conclusions

14. The suggestions for a more stable world order which are outlined above represent the minimum necessary to ensure peace. They contemplate only such limitations on national governments as are required to prevent them from committing suicide, and provide instead honorable ways for satisfying their just demands.

For the first time in history mankind is confronted with the fact that the cost of even a victorious war exceeds any price that nations may have to pay for peace. All the peoples of the world want peace, and their governments slowly, if reluctantly, have come to the conclusion that they must accede to this demand. The only thing that is still needed is to devise the methods which are required for maintaining peace in these new circumstances. The proposals made here try to present a basis for a more thorough discussion of the crucial questions. Before an agreement can be reached, many problems would have to be considered and many new solutions would have to be carefully evaluated in order to ensure that new approaches do not create even greater dangers. But if this can be done in an honest and impartial manner, with the common good of all humanity as the basic goal, no nation would dare to reject such an agreement.



## ON DISARMAMENT

by

Leo Szilard

- Chapter 1 - Inspection
- Chapter 2 - The Securing of the Peace
- Chapter 3 - Political Settlement in Europe
- Chapter 4 - Treaty Providing for Far-Reaching Disarmament
- Appendix - Living With the Bomb



## Chapter 1

### Inspection

The difficulties of the problem of "inspection" appear to be almost insurmountable only because this problem is approached in the wrong way. People have become accustomed to think in terms of a foolproof treaty which would spell out in detail the measures of inspection that would be imposed on the United States, the Soviet Union and the Peoples' Republic of China, as well as the other nations involved.

Most of those who adopt this approach fail to realize that, even if it were possible to draft such a treaty, it would take many years to do so. I personally do not believe, however, that it is possible to draft such a treaty, for no treaty which might be drafted could make provisions for every secret evasion which is at present foreseeable and new ways of evading such a treaty might be developed as time goes on.

One may be led to a constructive approach to the problem of "inspection" by recognizing that no treaty providing for disarmament could remain in force if either America, Russia or China would cease to want to keep in force, and that any one of these three nations would be able to sabotage the operation of the treaty, without having to resort to open violations of the treaty. Any one of these three nations can withdraw from such a treaty if it wishes to do so.

It follows that if Russia, China, and America enter into a treaty providing for far-reaching disarmament which they wish to keep in force, on account of the great benefits which they derive from disarmament, then it will be necessary for them to convince each other that they are not secretly violating the treaty, because unless all three nations can be convinced of this, one or the other of them may withdraw from the treaty.

As far as these three nations are concerned, the treaty need not say anything specific about measures of inspection that may be imposed upon them. Instead, the treaty needs explicitly to recognize that any one of these three nations can halt or reverse the disarmament process if it cannot be convinced that the others don't secretly evade the agreement.

Naturally, it would serve no useful purpose for America, Russia, and the Peoples' Republic of China to enter into such a



treaty, unless they first reach a meeting of the minds on the means that may be available to them for convincing each other of the absence of secret evasions. But the means that, say, America may choose in order to convince the Russians and the Chinese that she does not secretly evade the agreement need not be the same as the means that, say, the Soviet Union may choose to convince the Americans and the Chinese.

That a certain amount of inspection would be needed is, of course, a foregone conclusion. I do not believe, however, that inspection is the answer to all of our problems. In particular, I do not believe that foreign inspectors, even if admitted to Russian territory in virtually unlimited numbers, would be able to find bombs and rockets if the Soviet Government wanted to hide such bombs and rockets.

In a discussion which I had with N. S. Khrushchev, Chairman of the Council of Ministers of the U. S. S. R., on October 5, 1960, the question came up whether the Soviet Union would be willing to create conditions in which America could rely on Soviet citizens in general, and Soviet scientists and engineers in particular, to report secret violations to an International Control Commission. On the basis of that discussion and extended private conversations which I had on this subject during December of last year in Moscow, I am now convinced that the Soviet Union would be willing to give serious consideration to this possibility.

I should make it clear at this point, however, that we are dealing here with two questions:

- a) Would the Government of the Soviet Union be willing to create such conditions?
- b) Assuming that the Government of the Soviet Union is willing to create such conditions, would she be able to do so?

I made a considerable effort to clarify in my own mind, this second point, but I cannot say that I have reached a final conclusion. Still, I have reached the stage where I can say that by exploring this point further, a final and favorable conclusion could probably be reached.

We may envisage that after a treaty providing for general disarmament is concluded and goes into effect disarmament will progress step-by-step. Presumably there will be a First Period during which there still may be military secrets left that would need



to be safeguarded. But we may assume here that this would no longer be necessary after the end of the First Period and that, from that point on, all-out inspection would be acceptable to all nations.

Presumably a disarmament agreement would set a limit to the number of bombs which each nation may retain at the end of the First Period, when all-out inspection goes into effect. How could America, from that point on, reassure Russia and the other powers of the world that she has not illegally retained, and hidden in secret, bombs in substantial numbers?

One way of accomplishing this would be for the President of the United States to address the American people over television, radio and through the newspapers. He would explain why the American Government had entered into this agreement, and why it wished to keep it indefinitely in force. He would make it clear that any secret violations of the agreement might lead to an abrogation of the agreement by the Russians or the Chinese, and that the American Government would not condone such violations. The President would admit violations might occur, and state that if they did occur, they would have to be regarded as the work of over-zealous subordinate governmental agencies, whose comprehension of America's true interests and purposes were rather limited. The President would make it clear that, in these circumstances, it would be the patriotic duty of American citizens in general, and of American scientists and engineers in particular, to try to discover such secret violations of the agreement, and to report them to the International Control Commission. In addition to having the satisfaction of fulfilling a patriotic duty, the informant who discloses a major violation of the agreement would receive an award of one million dollars from the President's Contingency Fund. The President would announce that no income tax would be levied on such an award, and that the recipient of such an award, who wishes to enjoy his wealth by living a life of leisure and luxury abroad and would want to leave America with his family, would not be hampered by currency restrictions in transferring the award abroad.

This system ought to work well in America. It has the drawback, however, that if no bombs were hidden, it would be frustrating for people to keep looking for bombs and to never find any. Vigilance might soon cease, in such circumstances.

Moreover, the system would probably not set an example that could be blindly followed, say, by the Soviet Union. If the Chairman of the Council of Ministers of the Soviet Union were simply to follow the example of the President of the United States and say that bombs might have been secretly hidden in the Soviet Union by over-zealous subordinate agencies, acting against the orders of the Soviet Government, people in the Soviet Union might not know what to make of this. They might find it difficult to believe that any subordinate agency



would act against the orders of the Soviet Government.

In view of all this, it might be better for America to choose a somewhat different system for the purpose of assuring other nations that no bombs or rockets were illegally hidden. Such a system may be represented by a "game" of the following kind: America would hide, during the First Period, a certain number of bombs and rockets. For this purpose, the Government could appoint small committees composed of three to seven men and each such committee could be assigned the task of hiding a bomb or rocket. These committees would be permitted to lie, to cheat and to threaten, and to do whatever is within their power to keep the location of the hidden bombs or rockets secret. They would be free to tell gullible citizens that it was necessary to keep such rockets or bombs hidden because the Government had received secret information that bombs and rockets are being illegally hidden in substantial numbers by other governments. As an incentive for doing a good job the members of these committees would receive, each year, a bonus equal to their regular salaries, and they would continue to receive these bonuses as long as the bomb or rocket which they had hidden, remains hidden.

Whenever a bomb or rocket was hidden by one of the committees appointed for the purpose, the committee would prepare a protocol describing the circumstances under which the bomb or rocket was hidden, and the measures adopted for keeping it hidden. The Government would place each such protocol in a sealed envelope, carrying a code number, and would deposit it with the International Control Commission. In addition, the Government would deposit with the Control Commission a number of similar envelopes, each bearing a code number, but containing merely an empty sheet of paper.

From time to time, the President of the United States would appeal to the American people to participate in the "game," and thus to help convince other nations that no bombs or rockets were illegally hidden in America. He would point out that it was the patriotic duty of all citizens to try to discover the bombs or rockets, which have been hidden. A substantial reward would be paid to those who report to the International Control Commission the location of a hidden bomb or rocket.

Each time the Control Commission receives such a report, the U. S. Government would give the Control Commission the code number of the envelope which contains the protocol that describes the hiding of that particular bomb or rocket. As long as no bombs or rockets were hidden--except as a part of the "game"--each bomb or rocket discovered would be covered by a protocol describing how that particular bomb or rocket had been hidden.



Other nations could, from time to time, check on how effective the American citizenry was in reporting bombs and rockets that were hidden in America, by selecting at random, say fifty envelopes deposited by the American Government with the International Control Commission, and thus determining what fraction of the envelopes contained a protocol relating to a hidden bomb or rocket, rather than an empty sheet. On the basis of checks of this type performed from time to time, it should be possible to estimate how long a bomb or rocket hidden in America may be expected to remain hidden.

If the American Government wanted to hide bombs and rockets outside of the "game," it would not deposit with the International Control Commission protocols with respect to these bombs or rockets. The probability of discovering bombs and rockets that were hidden outside of the "game" would, however, be just as great as the probability of discovering rockets and bombs which were hidden as part of the "game." Thus, if the American Government intended to violate the agreement by secretly hiding bombs and rockets outside of the "game," it could do no better than it was doing within the framework of the "game."

If the "game" showed that bombs and rockets might remain hidden for one or two years, but rarely any longer, then the nations need not fear that some governmental agency would risk hiding bombs or rockets outside of the "game."

In a state of virtually complete disarmament, the United States would have no military secrets left that need to be safeguarded. In these circumstances, America might choose to permit other nations to employ American citizens as plainclothes inspectors whose identities are not known. The task of these plainclothes inspectors would be to move about unobtrusively in American territory and try to discover secret violations of the agreement that might have escaped the notice of the citizen at large. Such inspectors would carry a badge and it would be understood that they would be immune from arrest.

One may perhaps ask: What is the difference between a plainclothes inspector whose identity is not known to the Government and a spy? Today a foreign agent operating in America as a spy, serves the interest of a foreign government, as well as his own interest; he does not serve the interests of America. But, in the conditions which we envisage here, a plainclothes inspector, operating on behalf of a foreign government on American territory, would serve the interests of America, as well as the interests of the foreign government. He would be part of the means chosen by America for the purpose of convincing foreign governments that there are no



secret evasions of the disarmament treaty on America territory.

If there is any apprehension that such plainclothes inspectors might be foreign agents, engaged in trying to subvert America rather than trying to discover secret violations of the disarmament agreement, America could obtain assurance on this point in the following manner: The plainclothes inspectors, in the employ of foreign governments, might be required to register with the International Control Commission and the International Control Commission in turn might be required to disclose each year the identity of a small number of such inspectors, selected at random. These inspectors could then be placed under surveillance by the FBI for the purpose of determining whether any of them were engaged in subversion, instead of pursuing their legitimate "spying" activities.

It is my belief that even though a few bombs and rockets might be hidden by one nation or another it would be impossible for any nation to maintain--under a reasonable system of inspection--a bomb delivery system in operation that could endanger any of the great powers.

Bombs could be delivered from one continent to another, by almost any commercial aircraft capable of crossing the Atlantic or the Pacific. But if any nation were to fear that this might be done, such fears could be alleviated by assigning a team of, say, three inspectors to any such aircraft and such a team could be carried on board every flight. The expense involved in the subjecting of all aircraft to this type of inspection would be negligible.

It has been proposed that America, Russia and perhaps some other nation might want to retain a small number of bombs, as an insurance against being attacked by means of bombs that other nations may have retained in secret. It is my contention that once a reasonable inspection system has been in operation for a few years, the number of bombs that nations would need to retain, as an insurance, could be set very low.



## Chapter 2

### The Securing of the Peace

We may assume that virtually complete disarmament would mean the elimination from the national armament of all atomic weapons, all other heavy mobile weapons such as heavy tanks, guns, etc., as well as the dissolution of all standing armies, navies, and air forces, etc.

In such a virtually disarmed world machine guns would presumably still be available in essentially unlimited quantities and might be freely transported legally, or illegally, across national boundaries. Thus armies equipped with machine guns could spring up, so to speak, overnight.

The security of the Soviet Union, the United States, and the Peoples' Republic of China would not be directly threatened by such improvised armies, for the forces maintained in these countries for purposes of internal security, even though they may not be equipped with anything heavier than machine guns (and perhaps light tanks), could be bolstered by militia, and should be capable of repelling an attack by an improvised army equipped with machine guns.

These three nations would presumably also remain strong enough to extend military protection to their neighbors. But it would no longer be possible for America to extend military protection against Russia to nations located in the geographical proximity of Russia, or Russia to extend such protection to countries located close to America, etc.

Since today America is committed to the defense of countries lying in the geographical proximity of Russia and China, she can accept general and complete disarmament only if she can extricate herself from her existing commitments. In order to make it possible for America to do this, it might be necessary to devise political settlements which she could accept without loss of prestige and without doing serious damage to the vital interests of the other countries involved.

Before dealing with the question to what extent and in what sense small countries located in the geographical proximity of America, Russia or China, might remain secure from military intervention on the part of their powerful neighbor, we shall first address ourselves to a series of other issues.



If the world were disarmed today down to machine guns, we would have a rather unstable situation in a number of disturbed areas of the world where political tensions are acute. Armies equipped with machine guns could be improvised in such disturbed areas and if a nation were attacked by its neighbor it might appeal to America or to Russia for help. In such circumstances America and Russia might be tempted to rearm and to intervene on opposite sides. Clearly it is necessary to devise means for securing the peace in the disturbed areas of the world.

Peace might be secured one way or another by maintaining an international armed force in every such disturbed region. It is well to keep in mind, however, that the main purpose of disarmament is to abolish war, and if this purpose is to be achieved then the armed forces maintained in the disturbed areas must not be armies that would resort to war against some offending nation located in the region, but rather they need to be police forces. These forces must be organized in such a fashion that they should have both the power and the capability to arrest individuals in general, and officials of an offending national government in particular. We may envisage that they would be standing, professional forces.

Assuming that the nations of the area are disarmed down to machine guns, then in order to be able to restrain the national police forces from protecting individuals against arrest the international police force need not be equipped with any weapons heavier than light tanks.

How should these international forces be controlled? A centrally controlled world police force with the Secretary General of the United Nations acting as Commander-in-Chief, would not be acceptable to Russia in the circumstances which prevail today, and it might not be acceptable to America in the circumstances which might prevail a few years hence. It might well be that as long as we think in terms of a single, centrally controlled, world police force, none of the control mechanisms that might be devised would prove to be acceptable to both America and Russia.

Perhaps instead of thinking of a centrally controlled police force we ought to think in terms of maintaining a separate regional force for each disturbed region. Each such regional force could then be controlled by a different commission, composed of representatives of between five to seven nations, which would preferably not be drawn from the region itself.

Such regional police forces could operate under the auspices of the United Nations, and each region's commission could then be appointed with the majority vote of the Security Council, including



the concurring votes of the permanent members. Alternatively, the regional police forces could operate under the auspices of an International Disarmament Administration and the different slates of nations which make up the commission for the different regions would then be appointed by a majority of the High Council of the International Disarmament Administration, with the concurring votes of the permanent members. We may envisage that America, Russia and China would be permanent members of the High Council.

I do not believe that very much would be gained were the great powers merely to agree to set up regional forces in all disturbed areas, with a different commission in charge of each regional force. Rather, it would be necessary for the powers to enter into negotiations with each other, at an early date, in order to discover as soon as possible whether they would be able to select different slates of nations for the different regional commissions, without seriously risking a veto when the slates came up for approval before the Security Council or the High Council of the Disarmament Administration.

As a first step, America and Russia might explore in informal discussions whether they could select slates for all the disturbed regions of the world and agree that neither of them would veto these particular slates. Obviously, there is room for quid pro quo in a negotiation of this sort. Even if Russia did not particularly like a slate favored by the United States, say, for the region of Central America, she might agree not to veto that slate provided America would not veto some slate which Russia favors, say the slate for the region of the Middle East.

That a region might become a sphere of influence for one or other of the great powers cannot be excluded with absolute certainty, but this danger could be minimized by prudent selection of the slates of nations for the various regions. Thus, for instance, if the slate for the region of Central America were to consist of Canada, Australia, Uruguay, Denmark and Austria, this would not mean that Central America would be within the sphere of influence of the United States, but it would mean that Central America would not be within the sphere of influence of the Soviet Union.

As far as the great powers are concerned, an agreement among them on the selection of the commissions which control the various regional police forces would be tantamount to a political settlement, with respect to these regions.

The commissions in charge of the various regions would be undoubtedly pledged to refrain from intervening in the internal affairs of any nation of the region, but the possibility that they might



intervene could not be excluded with certainty. If, in the course of fulfilling their proper and legitimate function, a regional force were impelled to arrest the leading members of the government of an offending nation, then the regional commission might be forced to take over the government of that nation, for a shorter or longer period of time. I do not believe that it would be possible to devise a workable system which could exclude under such circumstances any abuse of power on the part of the commission of the region. But it may be possible to devise various means through which an abuse of power could be discouraged.

Thus, for instance, a regional peace-court may sit in permanence in each region where a regional police force operates and habeas corpus proceedings might then be instituted on behalf of any individual before such a court. The fact that such a court could not itself enforce its rulings would set a limit to the protection that it may be able to extend to the citizens of the nations, located in the region.

We may envisage that the operations of the regional police forces would be financed through dues, paid by all nations who participate in the disarmament agreement, to the regional commissions. We may further envisage that there would be provided financial inducements for an individual citizen to pay his dues directly to one or the other of the regional commissions, rather than indirectly (through paying a special tax to his own government). The individual citizens, as well as the national government, may be left free to shift, within certain limits, their dues from one regional commission to another.

Each regional commission may under such a system receive a financial contribution toward the operating cost of the regional force, in an amount that would lie, say, between 80 per cent and 120 per cent of that cost. If a given regional commission, and the corresponding regional police force, operates to the satisfaction of the governments of most nations, as well as their citizens, it should be able to count on receiving 120 per cent of the operating expenses, i. e., the commission should be able to count on making a profit, in the amount of 20 per cent of the operating expenses.

In contrast to this, if the governments of many nations or their citizens were to hold that the commission of a given region abuses the power with which it is invested, they might divert their dues to other regions and the dues received by the "offending" commission could fall to 80 per cent of the operating expenses of the regional force. Thus if many people were to hold that the commission in charge of a given region abuses the power with which it is invested, that commission would suffer a financial loss.



Under the system described above, the financial loss would be limited to 20 per cent of the operating costs of the regional police and it would not be possible to cut off completely the financial support of the regional police force, even if a substantial majority of nations, and their citizens, were to disapprove of the conduct of that regional force.

Any regional commission could of course always be replaced, provided it were possible to select another slate of nations which could command a majority vote in the High Council with the concurring votes of the permanent members. Accordingly, if a commission for a region were to abuse its power, it might or might not be possible to replace it, depending on whether the permanent members were to act in concert to this end or were to disagree with each other.

The system of control of the regional police forces outlined above is aimed at securing peace with justice, but it takes into account that peace with justice might not be obtainable in every case and that we may have to choose between peace and justice. The system of control outlined above favors peace over justice, in cases where these two goals cannot be reconciled.

Prior to Second World War, it would have been possible to argue, when faced with such a choice, in favor of justice rather than peace. But these days, a strong argument can be made in favor of the opposite choice, particularly if it is doubtful whether justice would be attainable either without, or with, war.

It would not be practicable to maintain a regional police force in Europe, strong enough to restrain the national security forces of, say, Germany or France, from protecting individuals against being arrested by the regional police.

It is probably true that, in order to secure the peace in Europe, it would be necessary to have political settlements that would leave no nation in Europe strongly motivated by its vital national interests to resort to force. If there is an adequate political settlement in Europe, even though it might not fully satisfy all major national aspirations, the nations in Europe might be restrained from resorting to force, if they greatly benefit from disarmament because if there were a resort to force, this would put an end to disarmament.

The problem posed by the nations of Europe is posed even more sharply by the United States, the Soviet Union, and the Peoples' Republic of China.

At the end of the last war the nations were faced with the task of setting up some machinery that would secure the peace. It was generally believed that it would be impossible to devise any machinery that would be still capable of securing the peace if one of the great powers refused to cooperate to this end. Therefore, those who



drafted the Charter of the United Nations set themselves the more limited objective of setting up a machinery which would be capable of protecting the smaller nations, with the cooperation of the great powers.

In order to preclude a head-on collision between the United Nations and one of the great powers, the great powers were given permanent seats on the Security Council, carrying the right to veto.

Attempts to use the machinery of the United Nations for purposes other than for which it was intended, have weakened this organization, but nevertheless it is probably true even today, that given great power cooperation, it could effectively restrain the smaller nations from resorting to force against each other.

It is my contention that if the world were disarmed it would still be possible to set up machinery for the protection of the smaller nations against each other. But what machinery could be established, that would effectively protect a small nation against an adjacent big power, such as the Soviet Union, the United States, or China?

One may first of all ask in what sense would--in the absence of such machinery--the countries lying in the geographical proximity of the Soviet Union, China, or the United States be secure from a military intervention, on the part of their big neighbors? Knowing that they cannot look for military protection to any geographically distant nation, it is likely that the countries located adjacent to one of these three giants would readjust their behavior and would try and lessen the incentives for a military intervention by their neighbor. Clearly, Finland is in no danger of a military intervention from Russia today, nor is Mexico in danger of a military intervention from the United States, but this is so only because Finland and Mexico refrain from any actions that might provoke such a military intervention. Because disarmament, once it is established, would prove to be of very great benefit to them, America, Russia, and China might refrain from resorting to force--even when confronted with a certain degree of provocation--for fear that this would bring disarmament to an end.

Would this be enough of a restraint or would it be necessary to go further? And how much further would it be possible to go?

In discussing the securing of peace in a disarmed world, one hears frequently the demand that there shall be set up an International Security Force of sufficient military power to overcome any nation, or group of nations, which attempts to use military force against any other nation.



I believe the time has come to grab this bull by the horns and look it in the eyes:

It is my contention that it would be physically, economically, and politically impossible to create and maintain a force that would have such military power except if that force were equipped with atomic bombs. It is further my contention that if such a force were equipped with nuclear weapons, then there would be no politically acceptable solution to the issue of how that force should be controlled.

Is there, then, any way in which nations like America, Russia, or China could be restrained in a disarmed world from resorting to force?

It is my contention that, if these great powers were willing to be restrained, it would be possible to set up a system that would exert a measure of restraint that might be sufficient in a conflict in which a minor or perhaps even a substantial national interest is involved. But even if America, Russia, and China were willing to go very far in this direction, it might still be impossible to devise a practicable system that would effectively restrain any one of them in a conflict involving a very major national interest, or the very existence of the nation.

Accepting this limitation, we may now examine what kind of restraints might be possible, assuming that America, China, and Russia would be willing to institutionalize such restraints.

After the Second World War an abortive attempt was made to define "crimes against peace" and to hold individual Germans and Japanese who committed such crimes responsible for their actions.

A system in which only such individuals can be brought to justice whose nation is defeated in war would hardly exert much restraining influence, for no nation starts a war if it considers it likely to lose that war. But let us suppose now, for the sake of argument, that the nations, including America, Russia, and China, were to set up a World Peace Court by treaty and were to define by treaty a set of laws--restricted to crimes against peace--broad enough to cover the advocating of a war or invasion, in violation of the United Nations Charter, or the provisions of the disarmament agreement.

To what extent, and in what sense could such laws, applicable to individuals, exercise restraint, say, on American citizens, if the United States were, for instance, tempted to improvise an army equipped with machine guns, and to invade Mexico, in order



to unseat a legally elected Communist government?

Presumably the possibility of such an invasion would be publicly debated in the American newspapers, with some editorial writers in favor of such an action and others opposed to it. Presumably the issue would also be debated in the high councils of the Government, with occasional leaks to the press, disclosing the stand that the Secretary of State and various advisors to the President were taking on the issue. Could the Peace Court step in at this point and summon into its presence some of the individuals involved where they would stand accused of a Crime against Peace?

The Court would be in no position to arrest Americans who may be summoned to appear in Court and who may refuse to appear, if such individuals enjoy the protection of the American police (or other American security forces) and were America seriously to contemplate invading Mexico, such protection would be likely to be forthcoming.

It is my contention that the only way to make the Court effective in such a contingency is to empower the Court to impose the death penalty for failure to appear in Court, when summoned. Such a death penalty imposed by the Court might not be meaningless even if there were considerable doubt whether it could ever be executed.

In the Middle Ages, when the Catholic Church had no power to execute a death sentence, it still could and did pronounce death sentences by outlawing certain individuals. Anyone could kill such an outlaw and be absolved by the Church.

The Court passing the death sentence, for non-appearance in court, on American citizens in general, or officials of the Government in particular, might not be in a position to execute the sentence but it would remove the moral inhibition that normally protects the lives of all individuals.

The Court could deputize any and all American citizens to try and execute the sentence. An American citizen killing an "outlaw" could not be legally tried for murder in an American court, inasmuch as the treaty setting up the Court would be the law of the land. This does not mean that an American citizen executing the judgment of the Court would be likely to escape alive; he might be lynched by a mob, or be killed by the police "while attempting to escape."

In addition to "relying" on American citizens thus deputized, the Court could employ perhaps 500 to 1,000 marshals. These "international marshals" could be drawn from all nations. It would be the duty of the marshals to try to execute the death sentences imposed



by the Court, Because they might lose their lives in attempting to do so, it would be necessary to assure their families a high financial compensation in case they come to harm in the course of performing their duties. Obviously, it would be advisable for the marshals to reside with their families outside of their country of origin.

The Government might provide bodyguards for those Americans who are under a death sentence of the Court and it is, therefore, difficult to predict how often, if ever, such a death sentence could be carried out. But Americans tempted to commit a Crime against Peace would be restrained by the fear that if they are summoned before the Peace Court, refuse to appear and are condemned to death, then from thereon, they would have to be accompanied by a bodyguard, no matter where they may go.

It need be no serious handicap for a government official to be accompanied by a bodyguard if he goes to attend a meeting of the National Security Council. But officials are human beings and a bodyguard would be a serious encumbrance to them in their private life, even while holding office. It would be an even worse encumbrance when they cease to hold office.

At present, there is a strong moral inhibition against political assassinations. In the absence of such moral inhibition, England and France could have arranged to "eliminate" Nasser without having to resort to an armed attack against Egypt, and the C.I.A. could have arranged for the "elimination" of Castro without having to mount an invasion of Cuba by Cuban exiles.

An argument could be made in favor of exempting heads of states and prime ministers from any death sentences that may be passed by the Court, on the ground that if such men were sentenced to death for non-appearance in court and were subsequently killed, this would weaken the prevailing moral inhibition against political assassination. Another argument could be made in favor of such an exemption on the ground that America, Russia, and China might be more likely to enter into a treaty setting up a Peace Court, and adequately defining crimes against peace, if heads of state and prime ministers were exempt from the jurisdiction of the Court. At this juncture it would be difficult to say whether these arguments should be permitted to prevail.

The Peace Court would not be a court set up for the settling of legal disputes among nations. It would be a criminal court and its jurisdiction would be limited to "crimes against peace." The members of the Court should be appointed for life.



The Court could be composed of twelve justices. Guilty verdicts might be made to require eight votes out of twelve. The members of the Court could be elected by majority vote of the Security Council from a list of eligible judges. In order to be eligible a man would have to be a member of the highest court of the next lower court, or be at the Head of a law school in his own country. In order to be eligible, the institution with which he is affiliated in his own country must have been in operation for twenty-five years. Also he would have to speak fluently one of the languages specified in the treaty setting up the Peace Court.

The composition of the Court would be balanced at any time in the sense that an equal number of judges would be drawn from three lists of nations, the list being spelled out in the treaty setting up the Peace Court.



## Chapter 3

### Political Settlement in Europe

If one of the nations of Europe, Germany for instance, were strongly motivated to resort to force in a generally disarmed world, the means for the securing of peace, discussed above, would be wholly inadequate for restraining her.

As long as there are two completely unrelated German States in Europe, the unification of Germany is likely to emerge sooner or later as a rather explosive issue, because it represents a political objective on which all Germans may unite.

It has been repeatedly proposed that the two German states be united on the basis of free elections, that Germany renounce the recovery of the territories lost to Poland, and that all the great powers join in guaranteeing the Oder-Neisse Line.

The unification of Germany in the near future on the basis of free elections may not be politically acceptable. Moreover, it is open to doubt that the unification of Germany on this basis would offer a substantial guarantee of stability in Europe.

If Germany were thus united, it might not take long until the recovery of the territories lost to Poland would emerge as an explosive issue because it would represent a political objective on which all Germans may unite. The majority of Germans might be rather indifferent to this issue, but a minority who have strong feelings on the issue would be likely to become the politically controlling factor. Presumably there would be two major political parties contending for the majority in parliament and they would be impelled to compete for the vote of this minority.

Guaranty of the Oder-Neisse Line by America would be meaningless, since in a generally disarmed world America would be in no position to render military assistance to Poland, even if she were inclined to do so. In the absence of far-reaching political integration of Western Europe, the other Western European nations would be in no position politically to restrain Germany. Nor would they be likely to render military assistance to Poland against Germany, even in contingencies where they might be legally obliged to do so.

In these circumstances I do not believe that recognition of the Oder-Neisse Line by the powers either now, or at the time when Germany might be unified, would really settle the issue of the



territories that Germany lost to Poland.

These days one frequently hears in Germany that the recovery of the territories lost to Poland is a major political objective, but that it must not be accomplished by the use of force. This, of course, is a meaningless statement, as long as there is no way of accomplishing the return of these territories, except through the use of force.

The situation would be different if it were politically possible to create a united Germany, and if it were politically possible to give such a united Germany an option to recover from Poland step-by-step strips of territory--by paying a compensation of, say, \$20,000 to each Polish family that would have to be relocated. Even if the compensation were set considerably higher, it would be cheaper for Germany to pay such compensation than to resort to force. If the compensation were set high enough, Germany might not take up the option, because the political party in office would have to weigh the popularity it would gain by purchasing territories from Poland, against the popularity it would lose by financing such purchases through increased taxation. Thus, if the compensation were set high enough, the Germans might not take up the option, but whether they did or did not, the option might still eliminate the issue of the recovery of territories lost to Poland, as a major element of political instability, from the European scene.

The unification of Germany on the basis of free election does not appear to be a politically acceptable solution in the near future. In a generally disarmed world, there would not arise the issue of whether such a united Germany would be militarily in the Western camp, but there would still remain the issue of whether state ownership of all means of production would be preserved in East Germany if Germany were united.

This problem could perhaps be solved if, instead of contemplating unifying Germany through free elections, we were to envisage a more or less loose federation between the two German states, as has been, once before, proposed by East Germany.

In this case the treaty setting up the federation could guarantee state ownership of the means of production in East Germany for, say, fifty years. Such a federation of the two German states might gradually evolve the direction of greater federal control, without touching the socialistic economy of Eastern Germany. If a number of years after the federation was established there were free elections in Germany, the Social Democratic Party might pledge the preservation of the socialistic economy of Eastern Germany and might be voted into office on this basis.



It is conceivable that maintaining a socialist economy in Eastern Germany would provide Germany with a buffering capacity, in case of depressions that might hit the free economy of the Common Market, and thus give the economy of Germany a flexibility not possessed by the other nations of Western Europe. It is further conceivable that it would become politically possible for Germany to obtain an option for the purchase of territories lost to Poland, if these territories were added to the state-controlled economy of Eastern Germany rather than to the free market economy of Western Germany.

At this point, one may ask whether one could not stabilize Europe without having to make provisions for the possibility of returning to Germany territories she had lost to Poland. One may also ask whether one could stabilize Europe, without uniting Germany on the basis of free elections, or even without setting up a federation between the two German states.

I believe that Europe might be stabilized even in such a case, but only if the economic integration of Western Europe which is now in progress were to be accompanied by a far-reaching political integration of Western Europe. In case of a far-reaching political integration Germany could be politically restrained, by the other nations, of Western Europe, from pursuing national aspirations that would run counter to the interest of these nations.

The chances of a far-reaching political integration of Western Europe cannot be appraised, however, at the present time, with any degree of assurance. At the time of this writing France has not yet solved her colonial problems. No one can tell today whether if DeGaulle were to die the French army might not take over and establish a Fascist regime. This might even happen while DeGaulle is alive. If such a change were to take place in France, would there emerge a Fascist Franco-German alliance or would the old enmity between Germany and France flare up again and block the integration of Western Europe?

I propose to assume here, for the sake of argument, that within the predictable future the crisis in France will be resolved in favor of a return to parliamentary control and that Western Europe will continue to move toward economic integration. On this basis, I propose to examine what the chances might be for a far-reaching political integration of Western Europe.

It is usually assumed that such a political integration could be achieved through the creation of super-national agencies and the step-by-step delegation to such agencies of sovereign rights of the individual nations.



I venture to predict that there will be no substantial progress along this line, in the predictable future, toward political integration of Western Europe. Western Europe might conceivably move, however, toward political integration through an entirely different route.

There could be a limited representation in the parliament of each Western European nation of the other Western European nations. In each case "foreign representation" in the parliament could start very low, say, at a few per cent of the seats and increase step-by-step until it reaches perhaps 20 per cent or 25 per cent of the seats.

Such a limited "foreign representation" in each of these parliaments would correspond to the actually existing interdependence among the nations of Western Europe. It would not affect the voting strength of the extreme left parties in the parliaments of Europe. It would, however, decrease the influence of the extreme right-wing parties, because the representatives of these parties of two neighboring nations would be likely to vote on the opposite side of the explosive controversial issues.

Only if political integration goes along with economic integration would the nations in Western Europe be able politically to restrain each other from pursuing their individual nationalistic aspirations which might endanger the peace.

At the time of this writing, the so-called Berlin crisis occupies much public attention. If we assume that the goal is to maintain stability in Europe, in a disarmed world, then it becomes possible to put forward reasoned argument in favor of one or another "solution" of the problem posed by Berlin.

A "Letter to the Editor," which is attached, illustrates how such reasoned arguments might be applied to this problem.



The Berlin Crisis

Extension of Remarks of Hon. John Sherman Cooper of Kentucky,  
in the Senate of the United States, Wednesday, July 5, 1961.

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Mr. COOPER: Mr. President, I ask unanimous consent to have printed in the Appendix of the Record an article on the Berlin crisis, written in May, 1960, by Dr. Leo Szilard, of the University of Chicago.

There being no objection, the article was ordered to be printed in the Record, as follows:

(From the Bulletin of the Atomic Scientists, May, 1960)

The Berlin Crisis

Dear Sir: Whether in the so-called atomic stalemate America and Russia may succeed in avoiding the war which neither of them want, will depend on a number of factors which are involved. It seems certain, however, that the stability of the stalemate would be enhanced if the great powers were to reach an understanding on the necessity of freezing the map for an extended period of time. It might be somewhat difficult to freeze the map as it stands at present, because it includes a number of arbitrary arrangements which were meant to be temporary, and perhaps it would be easier to freeze the map after certain readjustments have been made.

Those readjustments which may at present be negotiable are of necessity rather modest ones, but they might represent a first step in the direction. Let us take the Berlin issue, for instance. Russia once proposed that there be established a loose federation between the West German state and the East German state. I suppose this would mean the setting up of a Federal Council with an equal number of delegates from West Germany and East Germany. Presumably, the delegates from East Germany would represent the Government of the East German state, whereas the delegates from the West German state might either represent the Government of the West German state, or else they might be elected, by the Bundestag perhaps, or directly by the citizens of West Germany. Presumably, the ground rules of the Council would provide that it could take action only with the concurrence of 75 per cent of the delegates. This rule would insure that action taken by the Council had the support of the majority



of the delegates of both the West German state and the East German state.

There are enough issues on which the interests of West Germany and East Germany coincide to keep such a Federal Council busy and effective for many years to come--in spite of the severe restrictions imposed by the ground rules.

We may assume that, if such a loose federation between the two German states were established, there would be no bar to the migration of Germans within the federation. In order to keep migration to West Germany within tolerable limits, the government of East Germany would have to eliminate those restriction which have in the past caused their people to flee to West Germany. Even so, there would probably be some migration to West Germany, at least initially, because the standard of living there is higher. In the case of a major economic recession in West Germany, however, migration would probably be reversed.

If we accept the thesis--as I believe we should--that, at some future time, such a federal council may be set up as a first step toward unifying Germany, then it would appear reasonable to propose that we resolve the current Berlin crisis along the following lines.

Let East Germany shift its capital from East Berlin to Dresden, and West Germany shift its capital from Bonn to Munich. Let us then set up East Berlin and West Berlin, each as a free city with a government of its own and, in addition, establish a council of Berlin, in which half of the delegates would represent East Berlin and the other half, West Berlin.

If such an arrangement were adopted, we would have made a constructive use of the current Berlin crisis, because the arrangement would enable us to find out how this type of federation would actually work, and Berlin might set the pattern for a subsequent federation of the East German State and the West German State.

About two years ago, I spent several months in West Berlin. There was no telephone communication between East Berlin and West Berlin at that time. People could freely cross over from one half of the city to the other, but taxicabs could not cross the dividing line. There was good theater both in East Berlin and West Berlin, and people crossed the line in order to go to the theater. It was very difficult, however, to find out in West Berlin what was playing in the theaters of East Berlin, because the West Berlin papers did not carry this information and there were no posters on display. I imagine the situation in East Berlin was quite similar,



Once the two Berlins ceased to be pawns in the cold war, Berlin could again become a great cultural center; its theaters and concert halls might once more attract visitors from all over the world, as they did for a short time between the two world wars. The council of the two free cities, even though they could take action only with the concurrence of 75 per cent of the delegates, should be able to adopt a number of nonpolitical measures which would enhance the welfare of the people of Berlin and would make both East Berlin and West Berlin a far more attractive place to live than they are today.

If the current Berlin crisis were resolved along these lines, then when Germany is ultimately united, it might end up having Munich as its capital rather than Berlin. This might be just as well, however, for the thought of Berlin as capital of Germany is something of a nightmare to those who find it difficult to forget the past.

Leo Szilard

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## Chapter 4

### Treaty Providing for Far-Reaching Disarmament

While disarmament would have to be carried out step-by-step, it is not possible to reach an agreement on disarmament step-by-step. Prior to the drafting of a treaty on disarmament the nations involved would have to reach a meeting of the minds--

- a) on the issue of how peace would be secured in a disarmed world;
- b) on the means that would be available to them for convincing each other that the disarmament provisions of the treaty are not secretly violated;
- c) on the political settlements which would have to go into effect when the arms level falls to the point where the nations would no longer be able to live up to their pre-existing commitments militarily to protect areas which are geographically remote from their own territory.

Disarmament will not reach a stable point until it goes far enough to give the nations a very substantial economic benefit, so that they would want to keep the treaty in force in order not to lose those benefits. Therefore, America, Russia, and China would be ill-advised to enter into a treaty, providing for disarmament, unless they had reasonable assurance that such a stable point would be reached within a very few years.

The problem of inspection is not solved when the nations reach a meeting of the minds on how inspection would operate in a generally disarmed world, where there would be no legitimate military secrets left to be safeguarded. We cannot go in one step from the present so-called atomic stalemate to such a disarmed world, and in the early phases of disarmament it might be still necessary to safeguard some such secrets.

We may envisage for the purposes of this discussion that the disarmament agreement may cover three periods and that full inspection would go into effect at the end of the First Period.

In order to be able to talk about the transition from the present so-called atomic stalemate to general disarmament in a concrete fashion, it is necessary to make certain assumptions concerning the general route that the nations might be willing to take:

The Soviet Union has proposed soon after the last war that the use of atomic bombs be outlawed. Outlawing the bomb would mean that the nations pledge themselves not to resort to the use of atomic bombs except in retaliation for an attack with atomic bombs.

As long as stockpiles of atomic bombs are retained, the outlawing of atomic bombs would not necessarily prevent the nations from resorting to the use of the bomb in case of war. But once atomic bombs are outlawed, thereafter no nation could, in peace time, threaten to use atomic bombs in furtherance of its national objectives. Moreover, the governments of the great powers would then be impelled to reorganize their defense set-up, so that they may be able to rely on conventional forces, as the "deterrent."

The Soviet proposal for outlawing the bomb has not been accepted so far by the United States and her allies. Up to rather recently, many people in America advocated that the United States should rely on her capability to fight unlimited wars in which atomic bombs would be used against troops in combat. At present, however, the weight of opinion is shifting toward the view that an atomic war could not be limited and that the United States needs to reorganize her defense set-up in order to be in a position to fight limited wars with conventional weapons, rather than with atomic bombs.

I personally do not believe that it is possible to solve the problem that the bomb poses to the world by attempting to turn the clock back in such a fashion. This problem can be solved only by abolishing war. On the other hand, if the United States were to enter into an agreement providing for general disarmament, then--as an interim measure--the outlawing of the bomb might furnish the key for solving the intricate problems posed by the period of transition.

Accordingly, I propose to assume here that if the United States were to enter into an agreement providing for general disarmament, she and her allies would be willing to set a date, within the period of transition, for the outlawing of the atomic bomb. I further assume that the date set for the end of the First Period, when all-out inspection goes into effect, would be also the date set for the outlawing of the bomb.

No nation would then have a legitimate reason for wanting to retain bombs beyond the end of the First Period, except as a sort of insurance against bombs that may have been secretly retained by others.



We shall refer to the nuclear force level that the disarmament agreement sets for the end of the First Period as the Intermediate Nuclear Force Level.

The guiding principle, for setting the Intermediate Nuclear Force Level, shall be the consideration that the number of bombs retained by America and Russia need to be reduced to the point where there are not enough bombs left for the adoption of a counter-force strategy. Neither America nor Russia would then need to fear thereafter, that their capability to retaliate in kind against a nuclear attack could be destroyed by a surprise attack.

So that it may be possible to appraise and specify in the agreement the appropriate number of bombs that America and Russia shall be permitted to retain within the framework of the Intermediate Nuclear Force Level it will be necessary for America and Russia to state--prior to the conclusion of the disarmament agreement--to what extent they wish to rely for the delivery of bombs, on planes, long-range rockets which may be launched from fixed--soft and hard--bases, intermediate-range rockets which may be launched from submarines, long-range rockets which may be moved around on land--on railroad cars and trucks.

At the outset of the Second Period far-reaching measures of inspection will have to go into effect and some of these might lead to the disclosure of the location of fixed rocket launching bases. Such rocket launching bases might be vulnerable to a surprise attack, carried out by bombs legitimately retained within the framework of the Intermediate Nuclear Force Level, and the disclosure of the location of such bases might therefore involve a substantial loss in military security for a nation relying on fixed soft rocket launching bases.

In these circumstances, Russia and America might wish to reorganize their bomb delivery system and to shift prior to the conclusion of the disarmament agreement, or during the First Period, to rockets that may be launched from mobile bases of various sorts. If, in order to accomplish some such shift, they need to conduct bomb tests during the First Period, they shall be free to do so.

At the end of the Second Period the conventional forces would be reduced to a level--the Intermediate Conventional Force Level--which is set by the agreement.

The guiding principle for setting the Intermediate Conventional Force Level shall be the consideration of reducing the conventional forces of each nation to the point where no nation would be in a position to wage war in, or to extend military protection to, an area which is geographically distant from its own territory.



All standing armies, air forces, and navies would be disbanded at this point. All heavy mobile guns or heavy tanks would be destroyed.

At the present time, America has certain commitments to protect areas which are geographically remote from her own territory. Since she could not live up to such commitments after the end of the Second Period, it would be necessary to make it possible for her to liquidate all such commitments during the First and Second Period, without endangering the security of the nations involved.

As far as America's commitments in Europe are concerned, this would need to be accomplished by a suitable political settlement. As far as Formosa is concerned, however, it might be impossible to arrive at an adequate settlement within the next few years. Therefore, it might be necessary to leave Formosa in possession of defensive weapons--within the framework of the Intermediate Conventional Force Level set by the agreement--in such quality and quantity as would be necessary to enable Formosa to defend herself against an improvised army equipped with machine guns, that might disembark on her shores.

All foreign bases would be dismantled and all military alliances would be dissolved at the end of the Second Period. Therefore, by the end of the Second Period it would be necessary to have regional police forces in operation in the disturbed areas of the world. Such forces could be built up during the First and Second Period, in the same measure in which funds became available for this purpose, through the savings resulting from arms reductions.

From the outset of the First Period all nations shall refrain from transferring to the control of any other nation nuclear weapons and means suitable for the delivery of such weapons, as well as fissionable materials of weapons grade (also such other fissionable materials as may be specified in the agreement, as well as such "bomb ingredients" as may be specified in the agreement).

At the outset of the First Period America and Russia shall, as a first step, dismantle a certain number of bombs and the fissionable material (and other bomb ingredients) contained in these bombs shall be placed in depots that are under appropriate international supervision (or in the custody of the International Disarmament Administration). The dismantling of each bomb shall take place in the presence of international inspectors and the materials shall be transported to the appropriate depots under the surveillance of such inspectors. All materials derived from America shall be kept in depots located on American territory.



The number of bombs dismantled in the first step by a nation shall be larger than one-third of the difference between the number of bombs possessed by that nation and the number of bombs which that nation is permitted to retain at the end of the First Period--within in the framework of the Intermediate Nuclear Force Level set by the agreement.

America and Russia would not need to disclose at this point how many bombs they possess and thus it might not be possible immediately to check whether the number of bombs which are dismantled in the first step, (in the presence of inspectors) is, in fact larger than one-third of the above-defined difference. If, at this point, either Russia or America wish to give the impression that they have more bombs than they actually have, they shall be free to do so provided that they are willing to pay the price and dismantle more bombs than they would otherwise be obliged to dismantle at this point.

Also--in the first step--America and Russia shall remove from their stock of fissionable material (which is not incorporated in bombs) at least one-half of each of the various categories of fissionable material and shall transfer these materials to the appropriate depots.

At the outset of the First Period America and Russia will be in possession of stocks of materials, including compounds of heavy hydrogen, which the agreement may specify as bomb ingredients. America and Russia shall at the outset of the First Period transfer at least half of each category of bomb ingredients (not as yet incorporated in bombs) to the appropriate depots.

From the outset of the First Period on, fissionable materials and bomb ingredients (as specified by the agreement) which are then currently produced by any nation, shall be currently transferred--in toto--to depots under appropriate international supervision.

Throughout the First Period the elimination and control of the means of delivery shall progress in parallel with the elimination and control of nuclear bombs, fissionable materials and bomb ingredients.

Throughout the First Period new means of adequate inspection shall be instituted, and the applications of the means already instituted shall be expanded, in the measure in which, step-by-step, atomic bombs are eliminated and stocks of fissionable materials (as well as bomb ingredients) are transferred to internationally supervised depots.

During the First Period the nations shall be free to readjust their conventional forces so that by the end of the First Period they



should be in a position to defend themselves individually or collectively without resorting to the use of atomic bombs.

At the outset of the Second Period far-reaching measures of inspection shall go into effect. There shall remain no information from then on protected by any government on the ground that it may represent a legitimate military secret--with the possible exception of the current location of mobile rocket carriers.

At the outset of the Second Period the production of means suitable for the delivery of bombs shall cease.

During the Second Period there shall be a reduction in the number of bombs--in stages--and a parallel reduction of the means of delivery. The number of bombs that each nation may be permitted to retain at the end of each stage shall be specified in the disarmament agreement.

During the Second Period there shall also be a stage-by-stage reduction in conventional arms and the level of the conventional forces that each nation is permitted to retain in each stage is to be specified in the disarmament agreement.

The stages relating to the number of legitimately retained bombs (and the corresponding means of delivery)--which shall be referred to as N-stages--need not coincide with (and may go into effect quite independently of) the stages which relate to the conventional force level--which shall be referred to as C-stages.

The rate at which the world may pass on from one N-stage to the next N-stage, i. e., the rate at which nuclear bombs will be eliminated, shall be determined solely by the guiding principle that the number of bombs America and Russia is to be permitted to retain in any given stage, shall be commensurate to the number of bombs that may have been illegally retained and may have remained up to then undetected. Accordingly, the rate at which bombs would be eliminated during the Second Period would depend solely upon the ability of the Atomic Powers to convince each other that no bombs have been retained by them in secret.

While the agreement would specify the Intermediate Conventional Force Level which would be retained at the end of the Second Period, it would not set the nuclear force level that may remain in existence at the end of the Second Period.

During the Third Period there would be a further stage-by-stage reduction of the nuclear force level and as time goes on bombs and means for their delivery might be completely eliminated from the nations' arsenals.



During the Third Period there would also be a stage-by-stage reduction in the Conventional Force Level toward the final Minimal Conventional Force Level, set by the Agreement, that would limit the conventional forces of each nation to that necessary for maintaining internal security.

It is envisaged that disarmament will be carried out under the control of an International Disarmament Administration which either operates under the Security Council of the United Nations, or a similar Council of its own--referred to as the High Council of the International Disarmament Administration. It is envisaged that the Soviet Union, the United States and the Peoples' Republic of China (and presumably also certain other nations such as, for instance, Britain and France) may have permanent seats on the High Council, while the other seats may rotate among the other nations which are a party to the Disarmament Agreement.

If the United States, the Soviet Union and the Peoples' Republic of China conclude a Disarmament Agreement, they will presumably have a strong desire to keep the agreement in force. In fact, the agreement could not remain in force if either of these nations should cease to wish to keep it in force. It is, therefore, envisaged that these three nations (and perhaps also the other permanent members of the High Council) would have certain Special Rights which may be as follows:

1. During the Second Period the progression from one N-stage to the next N-stage or from one C-stage to the next C-stage shall require a majority vote of the High Council of the Disarmament Administration with the concurring votes of the United States, the Peoples' Republic of China, and the Soviet Union (and perhaps with the concurring votes of the other permanent members of the High Council also).

2. If either the Soviet Union or the United States or the Peoples' Republic of China (and perhaps also any one of the permanent members of the High Council), or the majority of the High Council, remains unconvinced that there are no major violations of the disarmament agreement, then each of these individual nations, as well as the majority of the High Council, shall have the right--upon giving due notice--to demand that the disarmament process be reversed and they shall then be free to revert from the prevailing N-stage to a preceding N-stage. All other nations shall then also be free to revert to the same preceding N-stage.

It is envisaged that secret evasions or open violations of the disarmament agreement by one of the powers who possess the Special Rights listed under (2), would lead to a reversal of the

disarmament process and the step-by-step moving back from the prevailing N-stage to preceding N-stages. This "sanction" would go into effect at the demand of at least one power who possesses the Special Rights listed under (2), or at the demand of a majority of the High Council.

In case of a secret evasion or open violation of the Disarmament Agreement by a nation, which does not possess the Special Rights listed under (2), there shall be applied such sanctions as may be specified in the Disarmament Agreement.



## Appendix

### Living With the Bomb

Until such time as it may become possible to negotiate an agreement providing for far-reaching disarmament, both America and the Soviet Union are likely to retain large stockpiles of bombs. It is conceivable that within the next few years America and her allies may accept an earlier Soviet proposal and that the atomic powers will pledge not to resort to the use of the bomb except in retaliation, if they are attacked with such bombs.

In the meantime, however, the bomb is going to be retained as a "deterrent." Threats which could not be carried out without leading to all-out destruction of both America and Russia will not have a substantial deterrent effect, because the threat of "murder and suicide" is not a believable threat--particularly if it is made by either America or Russia--in a conflict where no basic issue is involved that would threaten the very existence of the nation. In these circumstances, the Departments of Defense, of both America and the Soviet Union, are bound to devise plans for strategic uses of the bomb which could be carried out without leading to all-out destruction.

The public does not know what these plans may be because both governments keep their plans secret. Secrecy in this instance is likely to be self-defeating, however. A strategy of this type might be unilaterally decided upon by either America or Russia, but it may not attain its objective of avoiding all-out destruction unless both the governments fully understand the nature and intent of the strategy--ahead of time. Accordingly, there ought to be arranged informal discussions on a governmental level between America and the Soviet Union on plans for the strategic uses of the bomb which might avoid all-out destruction.

There are only a limited number of strategies to choose from. I have described one of these strategies on various occasions,\* which represents one end of a rather wide spectrum of strategies. It is a strategy for replacing war--in the usual sense of the term--inasmuch as it replaces the killing of men by the destruction of property.

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\* Bulletin of the Atomic Scientists, Oct., 1959; Feb., 1960.  
The Voice of the Dolphins, Simon & Schuster, New York, 1961.



This particular strategy could be unilaterally adopted either by the United States or the Soviet Union, but it could not attain its objective of avoiding all-out destruction, unless it was fully understood by the governments of both of these nations. Moreover, it might take some sort of an understanding between America and Russia to avoid a dangerous controversy over the question which American city may be regarded as equivalent to which Russian city.

The text which follows (taken from The Voice of the Dolphins) describes the strategy I have singled out for the purpose of this discussion. It describes the strategy in the form of a recital of a sequence of events as viewed in retrospect by a future historian:

"Between 1962 and 1965 the world passed through an agonizing transitional phase in the so-called atomic stalemate. At the beginning of this period America had still to rely mostly on bombers, based on airfields located in the proximity of Russia. Because of the possibility of a surprise attack which could have knocked out America's ability to strike a counter-blow, in times of crisis America felt impelled to keep one-third of her bombers in the air, on an around-the-clock basis. Russia, on the other hand, had no foreign bases, nor was she in need of any, since she possessed an adequate stockpile of long-range rockets which could be launched from bases inside of Russia and were capable of carrying hydrogen bombs large enough to demolish a city. By 1965 America had an adequate stockpile of such long-range rockets also and thereafter she was no longer in need of having foreign bases either.

"By 1965 America and Russia were capable of destroying each other to any desired degree. Their long-range rockets could be launched from submarines, trucks or railroad cars that were kept constantly on the move and thus it would have been impossible for either Russia or America to destroy, by one single sudden blow, the power of the other to strike a devastating counter-blow. With the fear of a surprise attack thus eliminated, the atomic stalemate began to gain a stability which it did not formerly possess.

"At a time when America and Russia could have destroyed each other to any desired degree, the threat of massive retaliation would have been tantamount to a threat of murder and suicide. Such a threat might be believable if made in a conflict by a nation whose very existence was at stake, but it would not be believable if made by America in a conflict in which American interests were at stake, but not America's existence, as a nation. In these circumstances America concluded that for the defense of her national interests she could no longer rely on long-range rockets, carrying a large bomb, and that she ought to maintain highly mobile forces which could be



rapidly transported to almost any part of the globe. It was assumed that, in the case of an armed conflict, America would send troops to the area involved and resist by using small atomic bombs against troops in combat, within the contested area.

"In time, Americans came to understand well enough that the 'real aim' of such a limited war could not be victory, which clearly might not be obtainable in every case, but rather the exacting of a 'price' from the 'enemy.' If America were able to exact a price higher than the price which the 'enemy' would be prepared to pay, then America's capability of fighting a limited atomic war, anywhere on the globe, would effectively deter the 'enemy' from attempting to change the map by force. It was recognized of course that, in order to freeze the map, America might have to be prepared to pay a price as high as she proposed to exact, both in money and in lives--the lives of the young men who would die in the fighting.

"It was generally taken for granted that the large bombs and the long-range rockets would play no role in any of the foreseeable conflicts. They were kept as an 'insurance' for the sole purpose of discouraging Russia or China from attacking America, by means of such large bombs. In this sense, and in this limited sense only, did the large bombs seem to serve a useful purpose as a 'deterrent.' "

\* \* \* \*

"No one had any doubt that the revolution in Iraq, which caught America by surprise in 1970, was in fact communist-inspired and America responded promptly by landing troops in the Lebanon and Jordan. This time she was determined to settle the issue of the control of the Middle East and thus to end, once and for all, the threat that Western Europe might be cut off from its Mid-Eastern oil supply. Egypt and Syria declared that they would regard an invasion of Iraq by American troops as an attack against themselves. Turkish troops were poised to move into Syria, and Russia was concentrating troops on the Turkish border, for the purpose of restraining Turkey.

"At this point America proclaimed that she was prepared to send troops into Turkey, to use small atomic bombs against Russian troops on Turkish soil and in hot pursuit perhaps also beyond the pre-war Turkish-Russian boundary.

"It would appear that Russia disliked the prospect of fighting an atomic war on her southern border. There was little assurance that such a war could not spread and finally end up in an all-out war, and rather than to take this risk Russia decided to adopt another kind of strategy. In a Note, which was kept very short, she proclaimed that she would not resist locally, by force of arms, an American



intervention in the Middle East, but would rather seek to deter America by setting a high price. The price would not be set, however, in terms of human life but in terms of property. The Russian Note listed twelve American cities by name. Russia stated that if American troops crossed over into Iraq she would single out one of these twelve cities, give that city four weeks of warning to permit its orderly evacuation--as well as to allow time to make arrangements for the feeding and housing of refugees--and thereafter the city would be demolished with one single long-range rocket.

"The American reply indicated that for each city that Russia would demolish in America, America might demolish two cities in Russia.

"To this, Russia replied in a second Note--a Note of unprecedented length--that if America were to demolish two cities in Russia for each city that Russia may have demolished in America, and if Russia were to demolish two cities in America for each city that America may have demolished in Russia, then the destruction of one city would trigger a chain of events which would step-by-step lead to the destruction of all American as well as Russian cities. Since clearly America could not possibly want this result, she may not make such a threat of 'two for one' and expect it to be believed. Russia, on her part, would tolerate that America demolish one Russian city, in return for Russia having demolished one American city. But for each additional city that America might demolish, Russia would demolish one and just one additional city in America.

"This second Note made it clear that even though Russia would abide by such a principle of 'one for one,' this did not mean that America would be free to demolish a large city in Russia in return for a small city demolished in America. What would count in this respect, so the Note stated, would be the size of the city, as expressed by the number of inhabitants, rather than by the number of square miles covered by the city.

"Twenty-four hours after this Russian Note was received in Washington, the American members of the Steering Committee of the Seventh Pugwash Conference issued a document which listed the number of inhabitants of all American and all Russian cities. They stated in the preface that if American troops were to invade Iraq and Russia were to demolish one of the twelve cities she had listed, an undesirable controversy might arise over the issue of which American city was equal to which Russian city, unless an authentic list of the number of inhabitants was readily available.

"This document was issued so promptly that it aroused Russian suspicion. The Russians thought that somehow the American



members of the Pugwash Group Steering Committee might have had inside information about Russian intentions and thus were able to prepare in advance this list of cities.

"The second Russian Note caused a turmoil in Washington. Various groups urged the Government that it adopt a rigid policy of demolishing two Russian cities for each city demolished in America, or that it accept the principle of 'one for one,' or that it do neither but just keep the Russians guessing.

"At the meeting of the National Security Council several experts expressed the view that, were Russia actually to demolish one of the twelve cities she had listed, the public would demand that America retaliate by demolishing a large number of Russian cities. They said that the President would thus not be able to abide by the principle of 'one for one,' without seriously risking the defeat of his party at the next elections.

"The Government thereupon asked Gallup to conduct a poll on an emergency basis. Residents of the thirty largest cities were asked whether if Rochester, N. Y., one of the twelve cities named, were demolished, America ought to retaliate by demolishing just one Russian city, or whether she ought to retaliate by demolishing more than one Russian city. To the surprise of the Government, 85 per cent of those who had an opinion declared themselves against America demolishing more than one Russian city.

"In retrospect, this response does not appear to be so very surprising; the people polled knew very well that if America were to demolish two Russian cities in retaliation for Rochester, Russia would demolish one additional American city, and this additional city might be their own.

"Some of the members of the National Security Council declined to take this poll at its face value and said that the people would react differently if Rochester were actually demolished. The rather involved psychological argument they cited in support of this view was never put to a test, however, for America did not intervene militarily in Iraq.

"Within a few days after the receipt of the first Russian Note which listed the twelve cities, people began to register in Washington as lobbyists for one or other of the twelve cities, and ten days later there was not a hotel room to be had in the whole city. It was the most powerful lobby that ever hit Washington. With steadily increasing editorial support across the nation, after an initial period of uncertainty, this lobby succeeded in forcing a re-examination of the whole Mid-Eastern issue. Doubts were raised as to whether Western

Europe was really in danger of losing its supply of oil, since there was no other market for mid-eastern oil. It was said that, while the price of oil from the Middle East could be raised, it could not be raised very much, since it could be replaced by oil from the Sahara. As the result of a re-examination of the Mid-Eastern issue, America decided to withdraw her troops from the Lebanon and Jordan.

"This decision was reached in the face of strenuous opposition on the part of a small, but vocal, and influential, group of opinion makers. There were prophets of doom who declared that if America were to yield to Russia's threat on this occasion, then from here on Russia would be in a position to get her way on any issue; she would be in a position to change the map at will, simply by threatening to demolish a limited number of American cities, in case America should try locally to resist, by force of arms.

"Fortunately, these prophecies proved to be incorrect. For the time being at least, Russia appeared to be quite satisfied with the map as it stood."

It is conceivable that the above-described strategy is being considered either by the United States Department of Defense or by the Government of the U. S. S. R., or by both. Therefore, I take the liberty to propose that if either America or Russia were to invoke the above-discussed strategy, then in applying the principle of one to one they regard cities as equivalent which have--according to the attached list--the same population.

The United States and the Soviet Union may, of course, agree at any time on a more up-to-date list for the number of inhabitants, or alternatively they might at any time reach a meeting of the minds in favor of some principle, other than "size of population," for determining the equivalence of cities.



Population of U. S. Cities--100,000 or more1,000,000 and over

New York, New York	7,801,957
Chicago, Illinois	3,620,962
Philadelphia, Pennsylvania	2,071,605
Los Angeles, California	1,970,358
Detroit, Michigan	1,849,568

900,000

Baltimore, Maryland	949,708
Cleveland, Ohio	914,808

800,000

St. Louis, Missouri	856,796
Washington, D. C.	802,178
Boston, Massachusetts	801,444

700,000

San Francisco, California	775,357
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600,000

Pittsburgh, Pennsylvania	676,806
Milwaukee, Wisconsin	637,392

500,000

Houston, Texas	596,163
Buffalo, New York	580,132
New Orleans, Louisiana	570,445
Minneapolis, Minnesota	521,718
Cincinnati, Ohio	503,998

400,000

Seattle, Washington	467,591
Kansas City, Missouri	456,622
Newark, New Jersey	438,776
Dallas, Texas	434,462
Indianapolis, Indiana	427,173
Denver, Colorado	415,786
San Antonio, Texas	408,442

300,000

Memphis, Tennessee	396,000
Oakland, California	384,575
Columbus, Ohio	375,901
Portland, Oregon	373,628
Louisville, Kentucky	369,129
San Diego, California	334,387
Rochester, New York	332,488
Atlanta, Georgia	331,314
Birmingham, Alabama	326,037
St. Paul, Minnesota	311,349
Toledo, Ohio	303,616

200,000

Jersey City, New Jersey	299,017
Fort Worth, Texas	278,778
Akron, Ohio	274,605
Omaha, Nebraska	251,117
Long Beach, California	250,767
Miami, Florida	249,276
Providence, Rhode Island	248,674
Dayton, Ohio	243,872
Oklahoma City, Oklahoma	243,504
Richmond, Virginia	230,310
Syracuse, New York	220,583
Norfolk, Virginia	213,513
Jacksonville, Florida	204,517
Worcester, Massachusetts	203,486



100,000

Tulsa, Oklahoma	182,740	Baton Rouge, La.	125,629
Salt Lake City, Utah	182,121	Scranton, Pa.	125,536
Des Moines, Iowa	177,965	Knoxville, Tenn.	124,769
Hartford, Connecticut	177,397	Tampa, Florida	124,681
Grand Rapids, Michigan	176,515	Camden, N. J.	124,555
Nashville, Tennessee	174,307	Cambridge, Mass.	120,740
Youngstown, Ohio	168,330	Savannah, Georgia	119,638
Wichita, Kansas	168,279	Canton, Ohio	116,912
Springfield, Massachusetts	162,399	South Bend, Indiana	115,911
Spokane, Washington	161,721	Berkeley, Cal.	113,805
Bridgeport, Connecticut	158,709	Elizabeth, N. J.	112,817
Yonkers, New York	152,798	Fall River, Mass.	111,963
Tacoma, Washington	143,673	Peoria, Illinois	111,856
Paterson, New Jersey	139,336	Wilmington, Del.	110,356
Sacramento, California	137,572	Reading, Pa.	109,320
Albany, New York	134,995	New Bedford, Mass.	109,189
Charlotte, North Carolina	134,042	Corpus Christi, Tex.	108,287
Gary, Indiana	133,911	Phoenix, Arizona	106,818
Fort Wayne, Indiana	133,607	Allentown, Pa.	106,756
Austin, Texas	132,459	Montgomery, Ala.	106,525
Chattanooga, Tennessee	131,041	Pasadena, Cal.	104,577
Erie, Pennsylvania	130,803	Duluth, Minnesota	104,511
El Paso, Texas	130,485	Waterbury, Conn.	104,477
Kansas City, Kansas	129,553	Somerville, Mass.	102,351
Mobile, Alabama	129,009	Little Rock, Ark.	102,213
Evansville, Indiana	128,636	Utica, New York	101,531
Trenton, New Jersey	128,009		
Shreveport, Louisiana	127,206		

Population of USSR Cities With More Than 100,000 Inhabitants

	<u>Thousands</u>		<u>Thousands</u>
Moscow (without suburbs)	4,389	Krasnodar	271
Leningrad (with suburbs)	3,176	Vladivostok	265
Leningrad (without suburbs)	2,814	Ufa	265
Kiev	991	Prokop'yevsk	260
Baku (with suburbs)	901	Tallin	257
Baku (without suburbs)	598	Barnaul	255
Khar'kov	877	Izhevsk	252
Gor'kiy	876	Voroshilovgrad	251
Tashkent	778	Kalinin	240
Kuybyshev	760	Kemerovo	240
Novosibirsk	731	Gorlovka	240
Sverdlovsk	707	Arkhangel'sk	238
Tbilisi	635	Penza	231
Stalino	625	Groznyy	226
Chelyabinsk	612	Chkalov	226
Odessa	607	Tomsk	224
Dnepropetrovsk	576	Kirov	211
Kazan	565	Nikolayev	206
Riga	565	Chernikovsk	206
Rostov-na Donu	552	Vil'nyus	200
Molotov	538	Kaunas	195
Stalingrad	525	Stalinabad	191
Saratov	518	Frunze	190
Omsk	505	Kishinev	190
Minsk	412	Taganrog	189
Voronezh	400	Kaliningrad	188
L'vov	387	Ul'yanovsk	183
Yerevan	385	Shakhty	180
Zaporozh'ye	381	Kursk	179
Yaroslavl	374	Kadiyevka	170
Karaganda	350	Samarkand	170
Stalinsk	347	Syzran	169
Alma-Ata	330	Komsomol'sk-	
Krasnoyarsk	328	na-Amure	169
Krivoy Rog	322	Murmansk	168
Tula	320	Dneprodzer-	
Ivanovo	319	zhinsk	163
Irkutsk	314	Chita	162
Makayevka	311	Shcherbakov	162
Nizhniy Tagil	297	Simferopol	159
Magnitogorsk	284	Ordzhonikidze	
Khabarovsk	280	(Severo-Oset-	
Astrakhan	276	inskaya ASSR)	159
Zhdanov	273		



Population of USSR Cities With More Than 100,000 Inhabitants

	<u>Thousands</u>		<u>Thousands</u>
Ulan-Ude	158	Kirovabad(Azerbaijdzhan SSR)	111
Orsk	157	Stalinogorsk	109
Kostroma	156	Orehobo-Zuyevo	109
Tambov	150	Makhachkala	106
Kopeysk	149	Mogilev	106
Dzerzhinsk	147	Kurgan	106
Gomel <sup>4</sup>	144	Vinnitsa	105
Zlatoust	143	Namangan	104
Ashkhabad	142	Leninakan	103
Chernovtsy	142	Babushkin (Moskovskaya	
Ryazan <sup>4</sup>	136	Oblast <sup>1</sup> )	103
Semipalatinsk	136	Serpukhov	102
Kherson	134	Armavir	102
Sevastopol <sup>4</sup>	133	Voroshilov	101
Perovo	132		
Smolensk	131		
Chimkent	130		
Poltava	129		
Vitebsk	128		
Orel	128		
Vologda	127		
Tyumen <sup>4</sup>	125		
Cheremkhovo	124		
Lipetsk	123		
Stavropol <sup>4</sup>			
(Stavropol'skiy Kray)	123		
Kamensk-Ural'skiy	122		
Kaluga	122		
Bladimir	121		
Leninsk-Kuznetskiy	119		
Petropavlovsk			
(Severo-Kazakh-			
stanskaya Oblast <sup>1</sup> )	118		
Petrozavodsk	118		
Kramatorsk	117		
Kiselevsk	116		
Anzhero-Sudzhensk	116		
Kirovograd	115		
Andizhan	115		
Kutaisi	114		
Polol'sk	113		
Biysk	112		
Kuntsevo	111		
Bryansk	111		

## THE PRESENT STATE OF THE DISARMAMENT PROBLEM

Academician A. V. Topchiev

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We are starting to discuss an extremely important--I might say crucial--problem for all of mankind, the problem of disarmament. Our discussion of the problem of disarmament coincides with a sharp intensification of international tensions and a sharp increase in the danger of war. If mankind will allow it to come about, it will inevitably assume world-wide dimensions and will be the most catastrophic thermonuclear war.

It is quite clear that it is our duty, the duty of participants in the broad movement of scientists to fight against the danger of global nuclear war, to intensify our efforts and direct them against sliding into a destructive war. We must qualify and point out authoritatively those elements and factors of the current international situation which threaten an explosion and which would throw the peoples of the earth into a nuclear catastrophe. We must also point toward ways for its prevention.

In the interest of the correct clarification of the essence of the current tense international situation and the determination of ways of overcoming it, we must clearly outline the conditions and causes which have created it.

Our meetings and conferences, up to and including the sixth one in Moscow, have established in our consciousness enough confidence in the prospect that mankind will go toward peace and not war. The realization of the inadmissibility of thermonuclear war was shared not only by wide circles among peoples but also by those persons from the world of science who have an authoritative influence on the politics of the governments.

The widest and most varied circles of world and national societies, including our own movement, have accepted in principle the idea of total disarmament. It has also been announced by members of governments.

The Soviet Union offered for consideration of the General Assembly of the United Nations a concrete, well-argued program, worked out in all detail on total and universal disarmament which took into careful consideration the suggestions of Western governments, especially those concerning a concrete system of disarmament. This program has been widely accepted and supported by the United Nations as well as by the international community.



Thanks to the initiative of the Soviet Union, no nuclear tests were conducted for a period of several years, although in Geneva endless and fruitless arguments on this matter were continued.

In the realm of ideology important advances were made, directed at the scientific substantiation of life without war and armaments, and pathways toward this goal were indicated.

Later on, a new programming document was issued--the Project of the Program of the Communist Party of the Soviet Union--which contains the principal bases of Soviet theory and practices on the question of war and peace. It is considered as the basic problem of the present day. "The main thing is to prevent thermonuclear war, not to let it flare up." We believe that the present generation of mankind is able to prevent war. The Program underscores: "To destroy wars, to institute eternal peace on earth is the historic mission of communism. The peaceful coexistence of socialist and capitalist countries is the objective necessity of development of human society. War cannot and must not serve as a method for settling international disagreements."

"Peaceful coexistence or catastrophic war--this is the question posed by history." The Program of the Communist Party of the Soviet Union discloses the content of peaceful coexistence. It presupposes denial of war as a means of settling arguments between nations and their solution by means of discussions; equal rights, mutual understanding and trust between nations, consideration of each other's interests; nonintervention into internal affairs; recognition that each country has the right to decide independently all problems pertaining to its own country; a full respect of the sovereignty and territorial integrity of all nations and the development of economic and cultural cooperation on the basis of complete equality and mutual advantages.

This is how we understand policies for peaceful coexistence; we believe that the support of principles of peaceful coexistence corresponds to the interests of those circles of the West, including representatives of the capitalist class, who realize the destructiveness of nuclear war.

I have described our program in some detail in order to show that the peaceful policies of the Soviet Government are not just tactical ways, but that they flow out of the essence of our system. There can be no discrepancy between theory and practice in the realm of government policies in our case. You can be sure that the principles of our program, the principles of peace and of peaceful coexistence will be recreated into life consequentially and unflinchingly. It is particularly important to understand it now, in the days of sharpening of international relations, when some politicians and organs of



the western press distort in all sorts of ways the essence of Soviet foreign policy.

The foreign policy course of the Soviet Union was directed consequentially and clearly toward ways to peace, to peaceful co-existence, to the avoidance of war by means of total and complete disarmament under the strictest international control.

The Soviet Government has also endeavoured in every way to achieve peaceful regulation in Europe, i. e., to abandon that peculiar state where, sixteen years after the end of the second World War, there still is no peace treaty which would fixate its results and where transition to peaceful status would be based on international lawful norms.

Allow me to draw your attention now to what confronted the Soviet Government during the realization of the Program for Peace and what were the policies of the Western States, particularly of the United States as the acknowledged leader of the Western world in the field of deterrence of war and the establishment on earth of foundations for peaceful coexistence.

You have seen at the sixth Pugwash Conference in Moscow that the advent of President Kennedy and the new government in the United States was favorably received in the Soviet Union. We believed the official statements, as well as the commentaries of the press, that the foreign policy of the new administration of the United States will be directed toward peace and the lessening of tensions. During the sixth conference our American friends tried to help us in every way to understand those favorable objectives which might have developed in the relations between our countries, and in general between the East and the West.

Our American friends pointed out also those internal difficulties which the new leadership would face in the transition toward the policies of diminishing international tensions and warned us that this would take from four to six months. They pointed out the importance of the fact that during that period the Soviet Union should not undertake anything which might have made the position of the new President difficult, in particular with respect to the regulation of the German problem. We were advised to look calmly upon those actions of the new administration which we may not like but which are necessary for tactical reasons. As time and the course of events have shown, the Soviet Union has carefully considered all these circumstances, although during this period there was no lack of steps made by the United States which would have been qualified as a "challenge," if they were undertaken by the Soviet Government.



I don't want to offend anyone, but I think we must talk very frankly about the relationship between our governments. We have come here as friends visiting friends, in order to understand each other better and, furthermore, to find together ways to eliminate tensions which carry the threat of nuclear war. We came here, as was well stated at the opening of our conference, not for discussions but in order to study together the present situation, and in order to search together for ways to eliminate the dangers of war.

We are not diplomats, but scientists. Now, as scientists, we must analyze the basic conditions of the present-day international situation and indicate the recommendation of scientists, who look broadly upon the fate of the world and progress.

Allow me to start with the problem of universal and complete disarmament. The principle of universal and complete disarmament has been accepted widely; although we have not arrived at a unified point of view on this problem any more than on other problems of contemporary international relations. As I said before, the Soviet Union has presented a concrete program of universal and total disarmament. More than a year has elapsed since then, and if one considered the proposals of N. S. Khrushchev during the 14th session of the General Assembly of the United Nations, more than two years have elapsed. Although these proposals have received approval and support on the part of the world community and the United Nations, it appears that up to this date, the leaders of the Western powers cannot find the time, nor the possibility to discuss these proposals.

We are told that the Soviet proposals contain clauses which are not acceptable to the Western powers. But, up to the present, not a single Western government has submitted equally concrete proposals to begin round table discussions at which Soviet proposals could be taken up point by point, so that those acceptable to all governments could be chosen.

A great many of our Western partners kept insisting that the Soviet proposals did not include sufficient controls. This statement does not correspond to reality and is used by the opponents to disarmament in order to confuse public opinion. As a matter of fact, in the disarmament program proposed by the Soviet Union during the fifteenth session of the General Assembly of the United Nations, this problem was thoroughly examined. Moreover, the head of our government, N. S. Khrushchev, repeatedly stated that the Soviet Government is ready to accept any proposal put forward by Western powers concerning international control.

According to the statements put forward by the Soviet Union, one thing only was expected from the Western powers, namely that



they should join us in our proposals for general disarmament and they should add their proposals concerning general controls. What seems to us extremely surprising is that the governments of Western powers remain silent, although they have unlimited possibilities of formulating and implementing their ideas concerning systems of international control.

Unfortunately, there is silence concerning this question also on the part of the community and of scientists of the West. At the risk of appearing as poor hosts and of imposing upon our guests, we repeatedly tried to obtain a proposal about control from our friends during the sixth Pugwash Conference in Moscow and during the Crimean Conference of the Soviet-American community. Some of the participants of both these conferences are also attending the present conference. But, so far, we have not received an answer from them.

How are we to understand such a proposal? Involuntarily, the thought comes to mind that Western powers are not really interested in and do not want to disarm. If, in addition, we take into account that among Western powers the theory of preservation of atomic armaments as a deterrent force is openly taking shape, (in other words, that the possibility of atomic war is not eliminated and that there is a strong argument for the necessity of so-called limited wars with atomic weapons), it becomes obvious that the Western powers have a negative attitude concerning the problems of disarmament. Such an attitude obliges the Soviet Union and other socialist countries to adopt caution and vigilance, and necessitates the adoption on their part of steps directed toward the insurance of security. This seems to us fully justified.

I shall now turn to the second problem which causes great concern to large circles of the world community and to peoples of practically the whole problem of nuclear tests.

The Soviet Government was recently compelled to adopt a decision concerning the resumption of nuclear tests. As has been announced by the Soviet Government, it was compelled to take this step with a heavy heart, with much regret, and only as a result of a most thorough and comprehensive study of this question. The Soviet Government was compelled to take this step, the meaning of which it fully appreciates, only under the pressure of the international atmosphere and because the policy of the leading members of NATO do not leave the Soviet Union any other way out. But I will say more about this later. In the meantime, let us, objectively, as befits scientists, glance at the events tied up with elimination of nuclear tests.



As is well known, at the beginning atomic weapons were the monopoly of the United States; accordingly, they used this monopoly as a right to test at will, and ignored the proposals concerning the prohibition of nuclear weapons. But this monopoly ended; atomic weapons made their appearance in the armaments of the Soviet Union and England. The atomic club grew in size; the volume of nuclear tests rose sharply and, at the same time, increased the danger to humanity. Scientists clearly indicated the danger of such tests, among them the initiators of our movement. The peoples of the world began to demand the prohibition of nuclear tests. The Soviet Union responded first to such demands; unilaterally ceased nuclear tests and began actively to ask for the general abandonment of nuclear tests. I want to stress that the Soviet Union stopped tests of nuclear weapons when, even according to the evaluation of Western specialists, the number of tests made by them was three times smaller than the number of tests made by the Western powers.

Moreover, Western powers did not follow the Soviet Union at once in the stopping of nuclear tests. Before doing this they effected a significant and fairly intensive program of nuclear tests--about 60 explosions between April and October, 1958. I mention this only in order to help throw some light on the factual side of the problem concerning nuclear tests. Then started prolonged, difficult, and fruitless negotiations in Geneva concerning the banning of nuclear tests.

I shall not tax your attention with the enumeration of all stages of these negotiations, of all the facts linked with the rejection by Western powers of the recently accepted proposal based on scientific and authoritative data provided by experts of many countries. Finally, it became clear that the Western side does not aim toward the banning of nuclear weapons tests and is using these negotiations to conceal its policy in this problem, and wants to leave open for itself the possibility to continue, as it sees fit, tests of certain weapons in the development of which it is especially interested.

The system of control, as proposed by Western powers, was set forth in such a way as to serve not so much the purpose of detection of possible violation of the nuclear test ban, but rather to organize the general strategic and even tactical reconnaissance in the Soviet Union.

By the way, I want to remind you that during a period of over three years of actual stopping of tests, even in the absence of a system of controls, the Soviet Union has not violated its gentleman's responsibilities and, when the policy of Western powers concerning this problem compelled the Soviet Union to take this step, she openly declared her intentions and explained to the peoples of the world the motives which compelled her to take this step.



Defining further the process of the Geneva negotiations about the discontinuance of nuclear tests, one must note the insistence displayed by our Western partners on creating such a system of management of controls that would change this international organization into an obedient servant of Western governments. The negotiations reached a dead-end and, in order to pursue them, the Soviet Government proposed to link solution of the problem of nuclear test ban with that of general and complete disarmament. This proposal should have simplified the decision concerning the problem of creation of a system of control and increased the possibilities of reaching an agreement.

But the proposals set forth by the Soviet Union were met aggressively and considered as propaganda. The meaning and purposes of these proposals were subjected to useless distortion. We were told here, too, that the West supposedly made big concessions to the East during the Geneva negotiations. But this is not so. When partners are divided, let us say by 200 meters, it is not essential that each side move 100 meters to effect a rapprochement. However, one cannot call it a rapprochement if one side moves only 10 meters and obliges the other side to move 190 meters; and, if the other side refuses to do so, to blame it for the refusal to meet and effect this rapprochement. But this is not all. As experience showed during the Geneva negotiations, even in the face of agreement on the part of the Soviet Union, new obstacles would have been created, new demands would have been made. One must say that there was and there is sufficient data to consider that the government of the United States was already preparing for conduction of the nuclear tests and their resumption was only a matter of time.

Allow me to submit a selection of materials on this matter, which have found their reflection in the Soviet press. The number of the excerpts I am going to quote could be significantly increased.

1. "The Air Force, military industrialists, some fairly influential scientists and other elements in the Pentagon insist that President Kennedy should either stop negotiations, or declare that, although negotiations will continue, the United States, none the less, will resume tests."

Washington Post and Times  
Herald, May 24, 1961



2. "The Kennedy Government is quickly moving in the direction of resuming underground nuclear tests. The debates within the government have not so much to do with questions of whether or not tests should be resumed, but rather when and where they should be resumed."

New York Herald Tribune, June 22, 1961

3. "Demands concerning the resuming of nuclear tests are coming from all sides, but particularly from Congress. Among both parties the demand for termination of negotiations and resumption of tests have sharply increased. The Pentagon is seeking to obtain the testing of new weapons, and on this matter there is full agreement among all concerned; the quicker it will be possible to start unlimited testing, the better. Among the types of weapons which the Pentagon would like to test are the following:

--Atomic warheads for 'Polaris' rockets installed on submarines and for ballistic rockets of airforce 'Minutemen'.

--Perfecting of warhead for ballistic rockets 'Atlas' and 'Titan' (the old warheads for these rockets were tested before the moratorium but they are too cumbersome).

--Small atomic bombs and missiles for use in small war areas.

--A neutron bomb which destroys all life but leaves untouched buildings and has a short-lived radioactive effect."

Newsweek, June 26, 1961

4. "The Atomic Energy Commission plans to conduct in December an underground atomic explosion at a point approximately 25 miles south of Carlsbad, New Mexico. This test will be conducted on the basis of the program GNOM intended for utilization of nuclear explosions. At the direction of the Commission this project was transferred into the hands of scientists in the Radiation Laboratory of the University of California in Livermore, California. Dr. Wilmot Hess, who works in this laboratory stated that the power of this explosion will be five kilotons. This is a nuclear charge whose power

of explosion is equal to 5,000 tons of trinitrotoluene."

San Francisco Chronicle, July 17, 1961

5. "On the testing grounds north of Las Vegas tunnels have been excavated several miles below ground. It is supposed that the installations intended for tests, for which an order of priority already has been established, are waiting only for a signal from the Capitol to be dispatched to Nevada and assembled in the tunnels, upon which American testing will resume."

Associated Press, August 31, 1961

To this one should add frequent mention of the necessity of nuclear testing, in particular of a neutron bomb, which is reflected in the scientific literature of Western countries.

I remind you also that, according to the statement of former President Eisenhower, December 31, 1961, the United States considers itself free of the moratorium on nuclear testing. Nor can we ignore nuclear testing by France. These tests were conducted in spite of warning by the Soviet Union that it will be forced to renew its testing if France will not stop its nuclear experiments. International public opinion is disturbed by the fact that France is testing atomic weapons in cooperation with other members of NATO, in particular with the active cooperation of Western Germany.

It is characteristic that those governing circles of the Western powers who now accuse the Soviet Union of violating the moratorium on nuclear tests, did not do anything to restrain their ally from conducting nuclear experiments, while other powers abstained from it.

Moreover, representatives of these circles did not even find words of censure, and when the General Assembly of the United Nations debated a resolution calling upon the Government not to conduct nuclear tests, the United States and England refused to support such a resolution.

It is proper to ask whether such a position reflects an interest of these powers in nuclear testing in the Sahara.

Such is the state of affairs with respect to the nuclear tests ban. As you see, this state is such that it demands responses on the part of the Soviet Government for the security of its people and the defense of its country.



Finally, we cannot bypass the sharp increase in the danger of war in the zone of Western Germany. As stated by the Soviet Government in connection with its decision to renew nuclear testing, "the Soviet people, the Soviet Government, cannot neglect the fact that again, as twenty years ago, at the approaches to the borders of our country there are gathering ominous clouds of war and that Western Germany and the present allies of German militarists are shaken by the fever of military preparations." The Government of Adenauer and the powers that support it are already moving in the direction of transformation of Western Germany into a militaristic state armed to the teeth. It is very clear to any disinterested observer that the main purpose of the foreign policy of this Government is revenge and reconsideration of the borders which were established in Europe as the result of the Second World War.

So, when it became necessary to do away with the remnants of the Second World War by the conclusion of the German peace treaty, which would assure the safety of nations from new encroachments of German militarists, we were met not only with direct opposition on the part of Western powers but also with an open threat to the Soviet Union and other socialist countries of the unleashing of a third world war. And not only verbally. The Western powers increased their military budgets, increased their armed forces by recalling of reserves, by movement of troops, by introducing into Berlin new military forces of Western powers. Military drumbeating is unleashed in Berlin, and around it an atmosphere extremely susceptible to war explosion is created.

Under these conditions, as was stated by the Soviet Government, "it would be unforgivable and shortsighted not to make proper deductions from the situation which was created by the aggressive policy of the military bloc of NATO and not to take care of improving the security and strength of the Soviet State--the great socialist camp of all peace-loving nations."

We remember too well the Second World War, remember how it was prepared and who prepared it, and we shall not permit the repetition of it.

We are openly threatened by force and we have nothing left but to answer force with force. We are not Tolstovians and not followers of Ghandi. The Soviet Government clearly understands its responsibility to its people and to the entire socialist brotherhood, to the whole of humanity.

It solemnly declares again and again that the armed forces of the Soviet Union never will be the first to take up arms. You must not doubt it. The Soviet Union is also ready at any moment to sign an agreement on universal and total disarmament which would put an

end to the testing of nuclear weapons.

What should we scientists who understand well the tremendous danger of war do? Our duty is again to raise our voice in defense of peace. With the entire force of our authority, we must demand universal and total disarmament under strict international control, as the only radical method of excluding the danger of any war which would eliminate the necessity for any testing of nuclear bombs. They will not be needed by anybody.

Assuming the necessity of universal complete disarmament in order to decrease international tension and strengthen trust between governments, it would be possible to arrive at agreements about such separate undertakings as creation of zones free from atomic weapons in Central and Northern Europe, in the Near East, and in other areas of the world; about decreasing of military forces and military equipment of the countries of the world, those who are members of NATO and those who are members of the Warsaw Pact, and about establishment of international inspection; about the removal of all foreign military forces from foreign countries within the limits of international borders. We can also conclude a pact of nonaggression between governments--members of NATO and of the Warsaw Treaty, prohibit the utilization of the space for military purposes, liquidate military bases in foreign territories, make solemn statements about not being first to use nuclear weapons.

We come to you also with the proposal to conclude a German peace treaty, to settle the German problem. This would greatly ease the international tensions.

We call on you to state strongly and authoritatively that never before in history was a peace treaty a cause of an outbreak of war. It should not serve as a push toward the war in our days either, when such a war would lead to a global catastrophe.



### III. SHORT CONTRIBUTIONS AND COMMENTS ON OTHER PAPERS

## A CREATIVE POLICY

M. Oliphant

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Disarmament is a road to peace. If we embark on this journey, we must know what lies at the end of the road. How can we choose the right route or the correct carriage in which to travel if we know nothing of the country toward which we move? For, what do we know of a world-wide state of peace, without arms, a condition which has never yet existed in this world?

What objectivity would there be in preparing to put a man on the moon if it were a dark body, whose geography and properties were quite unknown? On the other hand, when an objective appears to be clear, as the summit of Mount Everest, man invariably achieves it. The Russian revolution was successful because Marx and Lenin had drawn a picture of a different and more desirable social organization.

Much mention has been made of objectives--e. g., Topchiev, Harrison Brown. However, both were in fact concerned with machinery, with means, and not with the objective other than the vague word "peace."

In his written paper Szilard has mentioned more details of possible conditions for peace with verifiable trust, but here again he is most concerned with machinery.

What will a peaceful world be like? How do we remove the causes and motives for war? How do we ensure stability in a positive way and not merely by prohibitions? For prohibitions never work in practice except under totalitarian conditions.

How do we solve the problems of population in relation to world resources in food and materials? How do we ensure that backward countries do have the opportunity to advance? How do we deal with a pattern of trade between nations of very different standards of living?

The myth, stressed so strongly by Topchiev, of the internal inviolability of nations, cannot be maintained. Would he stand aside from a resurgence of nazism in Germany, would he ignore events in South Africa, the Congo, or Hungary? There are many aspects of the internal affairs of every country which are of vital importance to all other nations. How do we deal with these problems?



I believe that positive acts are far more powerful than any negative prohibitions. Men of science are men of positive acts and real attempts to understand, not of prohibitions and dogmas.

Hence, I propose that we advocate a real and concrete contribution to the peaceful state of the world. This is an objective survey of the existing and potential resources of the whole world, in relation to population, an agreed minimum standard of living for all men, and hence the maintenance of peace.

I suggest that this be organized and carried out as a gigantic I. G. Y., by far the greatest international undertaking of all time. This is a job which we can do, a task which we understand. Whereas, in the field of peace politics, our contribution can be no greater than that of other earnest men. Our acts as men of science will influence politics. Our expressions of political opinion or conviction will carry no more weight than those of fifty-five other intelligent men.

Professor Tamm has proposed an experiment in demilitarization and control in Germany, and Professor Thirring has made a similar admirable suggestion. Being a scientist, I am naturally in favour of any well-planned experiment with positive objectives. However, once again this is an experiment in politics and not in science, and I hope the politicians and social scientists will plan it, with the aid of natural scientists to plan inspection techniques.

I am sure that if the East and the West would combine in this great contribution to the welfare of mankind, I believe sincerely we would do far more to bring peace than by any incursion into politics.

While I appreciate the many appeals made today to history, the recollections of the crimes of war, it is now in the past. I believe that history is the worst basis for human action. Let us try to build a new world, give the benefits which science can bring to all men. From cooperation in such common tasks we learn to live together, to understand one another, to share one another's achievements. There is no room for war in such an atmosphere. We help to build a climate of opinion in which disarmament is natural and peace inevitable.

## POLITICAL CONFLICTS AND DISARMAMENT\*

Eugene Rabinowitch

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1. The resumption of the arms race in consequence of the Berlin crisis demonstrates beyond any doubt that progress toward disarmament becomes interrupted or even reversed whenever an acute political crisis breaks out.
2. Every time a crisis breaks out, people believe that "if only this crisis could be surmounted everything will be fine." It is, however, clear that unless a great change should occur in international relations, one crisis will follow another.
3. How can we advance, under these conditions, toward disarmament? I submit that this can be possible only if acute crises are avoided for a sufficiently long time to allow disarmament and other trust-creating processes to proceed beyond the "critical point."
4. To reduce the frequency and acerbity of political crises, all major nations must agree to avoid "rocking the political boat," i. e., not to try to change the present distribution of political power in the world, but "freeze it" as completely as possible. This could not prevent all upheavals in various parts of the world; but it would take them more or less effectively out of the dangerous context of the power contest between the main political camps.
5. To accelerate the growth of confidence in the time interval made available by such a political truce, disarmament steps should be accelerated, and at the same time, rapid and major steps should be taken on the road to constructive cooperation between nations in science and technology, as outlined in the final statement of our preceding conference.

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Comments prepared for Working Group V.



## A PROPOSED SOLUTION OF THE GERMAN PROBLEM

Hans Thirring

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I wish to draw the attention of the conference to a plan outlined here for a radical solution of the Berlin crisis. This plan is a slight modification of a project which has been drafted by Mr. Wilhelm Keller, lecturer at the Pädagogische Hochschule at Lüneburg, Western Germany.

Plan for a UN-defended Federal Republic of Germany:

(1) Both Western and Eastern Germany should be merged into a Federation of partly autonomous states. For the sake of brevity it will be called here G. F. (German Federation).

(2) The G. F. consists of the states Deutsche Bundesrepublik and Deutsche Demokratische Republik within their present frontiers. The nonviolability of these frontiers will be guaranteed by an international treaty protected by the United Nations.

(3) The sole right and duty of the defense of the frontiers of the G. F. should be transferred to an ad hoc created U.N. Police force (in the following abbreviated U. N. P. F. ).

(4) To finance the costs of the U. N. P. F. both parts of the G. F. should pay a certain percentage (for instance, between 50 and 70 per cent) of their present defense budget to a separate fund of the U. N.

(5) No national armed forces should exist in Germany with the exception of the normally equipped Home Police Forces (called H. P. F. ) of pre-war strength required for keeping order within the country.

(6) The U. N. P. F. should be recruited on an international and voluntary basis. A certain maximum percentage (below 50 per cent) may consist of German citizens. The supreme command should lie in an authority which is elected from, and responsible to, the Security Council or the General Assembly of the U. N.

(7) A strict limitation of the rights and responsibilities of the U. N. P. F. and the H. P. F. should be set by ruling that the former must be used only in the case of a military intervention from abroad while the H. P. F. is solely authorized to defend law and order within

the country.

(8) The bases of the U. N. P. F. should be situated within and near the frontiers of the G. F.

(9) The G. F. should be a kind of pilot plant to demonstrate the possibility of peaceful coexistence of different economic systems. To ensure the implementation of such an experiment the administrations of the different states of the G. F. should be pledged to retain their respective systems for a certain period, e. g. , ten years. That implies that within this period of probation no industrial or agricultural enterprise in the Eastern states should be reprivatized, nor in the Western ones nationalized.

(10) All travel restrictions within the G. F. should be rescinded. Every German citizen should be entitled to obtain a passport and travel inland and/or abroad as far as he likes, and his own finances or the rules of the destination states permit.

(11) In order to avoid local overpopulation and/or unemployment, the right of settling or working at a specific place of the country may be bound to a permission granted by state or local authorities. On the other hand, everybody should be free to leave his residence for good after having paid his debts and legally solved his appointment contract.

(12) The constitution and the laws of the G. F. should comply with the human rights according to the U. N. Declaration of Human Rights.

(13) The build-up of a constitution and a federal government should be done stepwise starting with the existing authorities whose task it is first to administer the merger, removal of internal frontiers, conversion of existing military forces into the U. N. P. F. , setting up a H. P. F. , creation of a common market and currency. A joint committee composed of delegates from both parts of Germany, assisted by the existing authorities should see to it that this first step is done orderly and with as little friction as possible.

(14) The next step would be general elections for a constituent assembly and subsequently of a federal parliament, installation of a federal government.

(15) During the first phase of this transformation the present occupation forces should be gradually replaced by the U. N. P. F.

(16) The conditions outlined above should be fixed in an international treaty made between the new Germany and the United Nations.



(17) All foreign trade relations of the present two Germanies should be continued and if possible widened.

(18) An undivided Berlin will be the capital of the G. F. and the seat of her government as soon as it is installed.

#### Discussion of the Merits of the Plan:

The advantages of the scheme outlined here will be discussed separately from the view point of East and West.

#### Advantages for the Western party:

(1) Definite solution of the acute Berlin crisis that is threatening to deteriorate into war and world catastrophe.

(2) Restoration of a unified free Germany.

(3) Economic relief by radically lowering the defense costs.

(4) Gain of manpower for productive purposes.

(5) Pioneer work done by experimenting with a scheme of defense by a supranational authority as a prototype of the system that eventually will be adopted by the whole world.

#### Advantages for the Eastern party:

(1) Removal of the threat from a remilitarized revengeful Germany.

(2) Elimination of one of the strongest and perhaps most dangerous members of NATO.

(3) The opportunity of exercising in a highly industrial country the peaceful co-existence between states with different economic systems. The existence of the G. F. could clearly demonstrate the sincerity of the following statement of the New Draft Program of the Soviet Communist Party saying: "It is not through war with other countries, but by the example of a more perfect organisation of society, by rapid progress in developing the productive forces of men, that the ideas of communism will win the minds and hearts of the masses."

In a Germany freed of the threat of foreign intervention and inhabited by an industrially talented population, the conditions are quite favorable for testing what communism might achieve if the opportunity of free development is given.

I propose that the Conference discuss this proposal, and, in the case of a favorable judgment, that the Conference forward the idea to the leading statesmen as another basis of negotiations for the next conference on the Berlin question.



## COMMENT ON THE BROWN-KATZ PAPER

C. H. Townes

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Suppose one accepts the idea that some kind of not-too-large, fairly invulnerable strategic forces on each side are necessary as disarmament begins and until attitudes and institutions can be shaped into a world security system. One way to have such forces is to set them aside at the start and leave them intact as the disarmament of other forces proceeds. This is about what Brown and Katz suggest. A serious handicap of their proposal, of course, is that building up sizable new nuclear forces seems a peculiar way to begin disarmament. Getting going on a disarmament plan may depend much more upon political and other factors and upon national propagandistic positions than upon the logic of military stability. I'm afraid that any disarmament plan that starts by building up some nuclear forces as a first step has almost no chance of general acceptance at the present time, and I hate to see an otherwise excellent approach wasted because of this.

In the case of a reciprocal zonal plan with a large enough number (say 20-40) of zones on each side, it seems likely that each side would be able to maintain a deterrent force it considered sufficient by choosing its zones with enough care.\* The force might be maintained until 50 per cent or perhaps even 80 or 90 per cent of the zones were disarmed. Reciprocal zonal disarmament with small zones and inspection will not be rapid, and should give enough time for increasing trust and building international security arrangements. It avoids the very tough problem of setting aside special forces at the start.

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\* One zone need not have contiguous parts: It could be selected U. S. counties, for instance. This range of possibilities in zones should let each side keep a good part of its strategic forces in operation, albeit with some inefficiencies and extra costs. What's needed is a careful look--perhaps a gaming study--with actual geography, base and plant locations, etc.

## A POSSIBLE AND EFFECTIVE TEST-BAN AGREEMENT

Toshiyuki Toyoda

-Abstract-

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A possible and effective international agreement for a nuclear test ban is proposed in order to terminate the present tedious discussions in Geneva. The proposed agreement is as follows:

No country should perform any nuclear explosion test which can be detected by scientific instruments. Obviously, the ending of tests is quite useful to prevent the spread of nuclear weapons. It is also effective in suppressing the intention of developing them in the countries who have plenty of weapons. The latter reason seems to be a kind of moral restriction, but may be quite a strong restriction if the agreement will be clearly signed by all nations. Concerning detectable explosions both the United States and the Soviet Union might have no reason against the agreement. On the other hand, the future development of detection techniques will diminish the domain where undetectable tests can be done in secret.

### I

Since the first Pugwash Conference the fallout problem has been a very powerful check against the intention to continue or start nuclear explosion tests. There has been also another moral factor against the tests from the standpoint of avoiding the raising of international tensions. As is well known, the representatives from the United States, the Soviet Union, and the United Kingdom have been discussing and negotiating a test-ban agreement in Geneva since October 31, 1958. The meetings have been held behind closed doors with only representatives of the three big countries present. They have reached several important agreements; for example, the ultimate goal of the negotiation is to eliminate and prohibit completely nuclear weapons; the time of the agreement should be unlimited. However, with respect to the most important and urgent points of the agreement, the discussions are far from convergence. It is not the purpose of this paper to investigate both assertions or to advocate one side. Instead, we shall point out what is hindering the negotiation from the standpoint of an observer who can get information only through press, and propose a possible and effective test-ban agreement to meet the very urgent demands of people in the world.



## II

Although I am not an expert on military affairs, it seems clear to me that each side has a different strategic advantage. Namely, the military bases of one side surround the other side more completely in the geographical sense. On the other hand, the latter side seems to have superiority with respect to the means of delivery of nuclear weapons. In consequence there seems to be tentatively a metastable equilibrium of strategic positions. It is likely that this fact is reflected in the arguments about how many times and by what means to inspect nuclear explosions of the opposite side. The detection technique can be definitely a scientific problem, but the situation mentioned above unfortunately can scarcely be treated in a purely scientific way. In conventional negotiations where mathematical figures are argued, it is usual to take the arithmetical mean to settle the negotiation, when an urgent solution is very necessary. This is, however, not possible in this case, because both figures have essentially different implications, even if the observers were seriously anxious about the delay of the agreement.

On the other hand, the results of science can scarcely be hidden for a long time. Science makes progress by its own logic. In fact many countries are trying to cultivate nuclear bombs for their own uses. This is not only stupid, but regrettable. Unfortunately they are disguising themselves with the following excuses: There is not yet any test-ban agreement in the present world; any nation can make a claim to the prestige of having the best weapon to protect herself. We, Japanese, who suffered from nuclear bombs, cannot be indifferent to such a mood. In order to stop this tendency, we urge a test-ban agreement. Otherwise the spread of nuclear weapons cannot be prevented.

## III

Our proposal for the test-ban agreement is simple. Although the legal expression may be opened to question, the idea is as follows: Any country who signs the agreement should not perform any nuclear explosion test which can be detected by whatever means by scientific instruments. In other words, we should prohibit at least any explosion test detectable in the present situation. Here we mean by a detectable explosion, any explosion about which we may derive a scientific verification by making use of the present scientific devices without entering into the testing country.

As is well known, nuclear explosion tests in the atmosphere are most dangerous because of radioactive fallout. Fortunately, the feasibility of detection in this case is certain as Japanese physicists



have been showing. Therefore, if this agreement can be concluded unanimously among all nations, it will be quite powerful in preventing the spread of nuclear weapons.

As far as the big countries who are debating in Geneva are concerned, both will lose nothing except the following moral point. According to this treaty there will be some room for both of them to cultivate advanced nuclear weapons, trying to keep the necessary experiments as secret as possible. If we accept the modern concept of individual independence, it may be rather natural to extend this concept to the individual countries, so that the sending of inspectors to other lands cannot avoid conflict unless a supreme power beyond both powers exists in the world. However, it should be kept in mind that the remaining freedom for both of them is nothing else but immorality in the name of human beings. Nobody can deny that it is immoral to afford human beings the means of suicide through mass annihilation weapons. In this sense, if the big countries who have already plenty of such weapons would explicitly sign the agreement, this would be a considerably strong restriction against new tests.

#### IV

Finally we would like to discuss the possibility and effectiveness of our proposed test-ban agreement. Let us consider the so-called inspection problem that seems to be the most serious point of the present negotiation in Geneva. As was discussed in the sixth Pugwash Conference, it is rather doubtful that a few inspectors sent to the opposite side could prevent the tests. In addition, since detection techniques are being improved day by day, it does not seem practical to define precisely the inspection system at a certain time.

On the contrary, our proposal does not involve such an intricate problem as the inspection system. Countries can inspect the other side while staying on their own side, and can ask the world community for its judgment by showing their scientific data. We have not fixed the detectability, but understand it as normally taken in the progress of science. Therefore, this agreement will become stricter later, although the proposal is apparently a retrogression because of putting the inspection problem aside.

In any way, the very urgent conclusion of the present test-ban agreement is earnestly desired. We hope our proposal may contribute to the negotiation.

I would like to acknowledge the cooperation and valuable discussion of the members of the Japanese Pugwash Study Group in Japan.



COMMENT BY T. TOYODA

(Presented at the Second Plenary Session)

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I would like to say only a few words concerning the general attitude of today's discussions. In my belief there is no doubt that all people in the world strongly desire general and complete disarmament. The problem which we are facing is to find how to achieve this supreme aim of human beings. However, in order to reach the goal, the policy of "force to force" may not be justified if we remember the Vienna declaration. In this sense we are strongly against any nuclear test explosion to develop mass annihilation tools by any country. We urge sincerely big countries to abandon their policy of "force to force." Who can say the balance of terror by mass annihilation is a peaceful state?

#### IV. BACKGROUND PAPERS



## CRITIQUE OF SOME CONTEMPORARY DEFENSE THINKING \*

P. M. S. Blackett

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The impact on Western opinion of the Soviet A-bomb in 1949, the H-bombs in 1953-54, and the Sputnik in 1957, acted as a powerful stimulus to new thought on the fundamental bases of Western foreign and military policy. After a gradual start, the output of articles and books rose rapidly to a veritable flood. The main authors are either academic civilians writing in their spare time, or civilians working full-time in special institutes, often attached to universities.

The writings of these civilian military analysts contain many wise and highly relevant studies of the problems raised by nuclear weapons; however, some of them contain some conclusions which seem to me wrong and dangerous. I propose to examine some of these conclusions in detail. Before doing so, however, I will make a few remarks on the analytic methods by which these complex problems of nuclear war can be approached. As no large-scale nuclear war has ever occurred, there is no body of operational data on real events on which to base a common-sense analysis, such as was available to the Operational Research Groups attached to the Services during the long-drawn-out operations of the last war. It is difficult, therefore, to avoid using some type of theoretical approach, in which the vast complexities of the real world are at first set aside and an attempt is made to construct a simplified model which will represent the real problem in as many essentials as possible. When such a model has been set up, either verbal or mathematical arguments are used to deduce conclusions on points of practical importance.

The essential difficulty of this method is to know whether the model which has been constructed is sufficiently like the real events which it purports to represent to allow conclusions which have much relevance to executive action. When a highly simplified model has to be used, any prediction made by its use is likely to be so uncertain that it is essential to check it against the conclusions reached in a more intuitive manner by attempting to envisage the situation as a whole.

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One of the most important lessons, which the wartime operational research groups had to learn, was that there were only a few problems, perhaps only one-tenth, where they could add something useful to the decisions arrived at by the trained Services staffs through the exercise of their traditional military judgment and wisdom. This small fraction arose because in most operations the staff themselves got the right answers, or because there was not enough factual data of past operation to extrapolate from, or because the operations proposed by the staffs were too novel to allow realistic predictions of the likely results. It is thus clear that the work of the operational research groups was an addition to, and not a substitute for, the exercise by the trained staffs of conventional military wisdom.

In the present world of nuclear plenty, when both Western and Soviet blocs have the power to destroy each other many times over, it is clear that, to a degree never before equalled in history, there can be no military policy independent of both home and foreign policy. Thus any purely military analysis will almost certainly leave out of account some vital factors and so can lead to fallacious results. Again, just because the life of a nation is involved, any military analysis which leads to definite recommendations for decisions must be readily intelligible to the political and military leaders who have the responsibility for executive action. It would be almost true to say that in the field of major strategy, as opposed to weapons design and tactics, the only good arguments are simple arguments. If they are not simple, they will not be generally understood and so no action should be taken on them.

Because of the essential complexity of real events, many of the most important decisions of war have necessarily to rest on rough calculation. It is certainly a duty of an operational research group to help the staffs to improve on these, but when they cannot, they should keep silent: Never should they fall into the trap of decking out what is essentially only a hunch with a pseudo-scientific backing.

When I come to study in detail some of the arguments of these new military writers about nuclear war, I will necessarily have to adopt many aspects of their own methods and terminology, that is, I will have to meet them on the methodological ground of their own choosing. I want therefore to apologize in advance for the nauseating inhumanity of much of what I will have to say.



## Delicate Balance of Terror

I will start by discussing some aspects of the influential article "The Delicate Balance of Terror" by Albert Wohlstetter of the Rand Corporation, published in Foreign Affairs in January, 1959. This contains many cogent arguments and analyses, but it also contains at least one important conclusion which I believe to be fallacious. A key part of the arguments rests on the enormous advantage which it is alleged the possession of thermonuclear weapons gives to an aggressor. Other writers who take a similar view are Klaus Knorr and Oscar Morgenstern of Princeton University, Herman Kahn and Bernard Brodie of the Rand Corporation.

Mr. Wohlstetter starts by listing a large number of people who in one way or another have stated the view that the present nuclear balance is relatively stable against rational acts by America or Russia. He then sets out to refute this view and to substitute for it the thesis that the stability was then in 1959 very precarious, in fact more so than previously, and that, unless very drastic steps are taken, will be still more precarious in a few years' time.

Though there are many acute statements and much quoting of the details of numbers of weapons and their performance, etc., there is little attempt to envisage realistically the whole situation which would arise in the event of the present balance being really unstable. Instead one finds a number of verbal statements, some of which I will analyze in detail, and which are explicitly directed toward reversing the commonly held view, which, in his own words, "would make aggression irrational or even insane." As we will see, Wohlstetter puts much emphasis on the circumstances in which nuclear aggression would be, in his view, both rational and sane.

Let us look at the verbal statement of the alleged enormous advantage to the aggressor in the light of some numerical figures, which may be plausibly assumed to have some relation to the reality of the present strategic nuclear balance between the Western and Soviet blocs. I will start with a highly simplified abstract model and then bring in step by step some additional features.

Suppose firstly that two major and similar hypothetical countries can inflict 100 million deaths on each other by an all-out attack on the other's population, and secondly, that if either launches a surprise attack on the enemy's retaliatory force, it can destroy the high fraction of 90 per cent of what it otherwise would be, so that the retaliation will only inflict 10 million deaths on the aggressor.

If, however, anything goes wrong with the preparations for this surprise attack, so that the intention to strike becomes known to the intended victim, the latter will be likely to make a forestalling



blow with everything it has, directed against both cities and retaliatory forces; this would, on our model, produce 100 million killed. If, on the other hand, the aggressor does not strike at all, there will be no reason to suppose that he will be attacked--at any rate, not then.

So, at any rate, in the short run, the political leaders of the potential aggressor have to make the choice between not attacking, and so having no killed, and of attacking successfully, and so having 10 million killed, and attacking unsuccessfully, that is, losing surprise, and so having 100 million killed. In this simple numerical model, the aggressor could hardly be considered sane if it made such an aggression. If now one works through this model with a variety of different numerical assumptions, the enormous advantage the aggressor would gain by making a nuclear attack still seems a bit elusive.

For instance, suppose, to take an extreme case, that the aggressor could hope to destroy 99 per cent of the enemy's retaliatory forces, then the result of the three possible eventualities mentioned above could be 0, 1, and 100 mega-deaths respectively. However, no military planners would ever expect to pull off such a fantastically successful first strike.

Alternatively, let us go back to our 90 per cent assumption but suppose that the aggressor's nuclear strength was five times that of his victim so as to allow him to inflict 100 mega-deaths, but that as his enemy is only one-fifth as strong, his full retaliatory capacity would kill only 20 million. Then in this eventuality, no attack, successful attack and unsuccessful attack, would lead to 0, 2, and 20 mega-deaths respectively.

The above calculations underestimate the destruction suffered by the aggressor in the case of a successful first strike, because the victim country is likely to concentrate its remaining retaliatory force against the most worthwhile target, for instance, the big cities. Because of this, the casualties suffered by the aggressor might be as much as twice as high as indicated above.

Actually I have made my first model look much too favourable to the aggressor. For I have spoken as if its High Command could be certain to reduce the enemy's retaliatory power to 10 per cent of its initial capacity, so as to be able to inflict only 10 million deaths on the aggressor. However, they could not be certain of this. All that the aggressor's operational analysts could justifiably conclude would be that 10 million would be the probable number, but that the essential uncertainties of such an operation and of the calculations would not exclude the possibility that it might reach, say, 30 million or more.



Even this is too favourable to the aggressor. For, consider the nature of the intelligence about the enemy's retaliation force which its High Command would have to rely on to make the calculation which I have assumed leads to 10 million as the most probable number. How could their Intelligence Service obtain sufficiently reliable and up-to-date information of all the multitude of facts necessary for a successful first strike? The whereabouts of every long-range bomber, the location of every missile site, the deployment of all medium-range fighter bombers with nuclear warheads-- all would be needed, accurate up to the last hour. Aircraft aloft would clearly be immune to attack. It must not be forgotten that 100 fighter bombers, perhaps flying low, armed with normal A-bombs, could, if they reached their city targets, kill five to 10 million people.

Wohlstetter expresses a qualitative truism when he writes: "A totalitarian country can preserve secrecy about the capabilities and dispositions of his forces very much better than a Western democracy." Can it, however, do this well enough? Is there no chance of there being a few dissident individuals, amongst tens of millions of people, who would notice the not inconsiderable preparations for such a massive operation as a first strike? Would any country seriously contemplate initiating a first strike, which would bring an expected 10 mega-deaths from the counter blow, without the slightest preparation or warning to its civil defense authorities? Consider the half-million tourists from the various Soviet countries, and the many thousands from the West, who visit the U. S. S. R. every year. Could the Soviet authorities be sure that there were no foreign agents among these? How could they exclude the possibility of a Western agent penetrating their high councils as successfully as their agent, Richard Sorge, did those of Japan for so many years?

The aggressor's enemy might be an "open" country, but this does not mean that the aggressor's agents would be left free to radio back every hour all the latest military movements. Intelligence from orbiting satellites or high-flying aircraft could be neither reliable enough nor comprehensive enough to be adequate. If a country spent a small fraction of what is now devoted to missile research to systematic camouflage and decoy schemes, it could do much to nullify confidence in satellite or aircraft intelligence. Thus any planned attack on the enemy's retaliatory forces would have to be preceded by a great increase of illicit radio signals from the aggressor's agents. This would certainly alert the enemy, and thus surprise would be lost.

Another point related to this is the time factor in launching a surprise attack against enemy nuclear strength. Manned bombers could not be used, because radar warning would allow the victim



country to get its nuclear bombers airborne, so that they would be able to retaliate. So a surprise attack would have to be done with missiles. Now the technical problem of launching a few hundred ICBM within a few minutes is severe. To let the firings spread over half an hour or so is to lose surprise and to increase the retaliatory blow.

Let us now turn to another of Wohlstetter's statements " . . . it takes great ingenuity at any given level of nuclear technology to devise a stable equilibrium." We have seen that when some plausible numerical figures are introduced into the balance of terror, it is clear that no country could make use of even a very substantial degree of nuclear superiority by staging a first strike without incurring a high probability of very heavy destruction. Moreover, this conclusion remains valid for a very wide range of numerical assumptions about the relative size of the nuclear strength of the two contestants. If then the present nuclear balance is rather stable, it follows that only some very big technological change could upset it. What sort of change? I think one can rule out the operational possibility of a neat 100 per cent anti-missile and anti-aircraft defense, which would allow the country which had it to attack with impunity another which had not. Improved accuracy of missiles or bigger explosive power at the same weight would make fewer missiles necessary to reduce the enemy's power of retaliation to a given level, but would alter fundamentally the numerical demonstration already given of the essential insanity of a first-strike policy.

### Russian Psychology

I will now make some comments on Mr. Wohlstetter's views about the effect of Russian history on Russian psychology. He says:

Russian casualties in World War II were more than 20 million. Yet Russia recovered extremely well from this catastrophe. There are several quite plausible circumstances in the future when the Russians might be quite confident of being able to limit damage to considerably less than this number--they make sensible choices and we do not. On the other hand, the risks of not striking might at some juncture appear very great to the Soviets, involving, for example, disastrous defeat in a peripheral war, loss of key satellites with danger of revolt spreading--possibly to Russia itself--or fear of attack by ourselves. Then, striking first, by surprise, would be a sensible choice for them, and from their point of view the smaller risk.



My first comment is that if the U. S. S. R. were involved in the disastrous situation depicted above, the Western world would be alerted and the utmost dispersal of nuclear carriers would be made, geographical security would be clamped down over large areas and all suspected Soviet agents would be rounded up. So the conditions for a successful surprise attack against Western nuclear forces would be absent. My second comment is that the suggestion that Russia, because she had suffered 20 million casualties in the last war, would willingly act so as to make probable a similar catastrophe seems to conflict with all common sense and all history. The history of Russia, both Tsarist and Soviet, tells of many invasions but few military aggressions. Military caution has been a marked characteristic, even to the point, as in 1941, of nearly fatal playing for time. As a suggested alternative in Wohlstetter's assessment of the influence of Russian history on Russian psychology, I put forward the following. "Any country which has experienced the horror of losing 20 million people in one war is very unlikely to take any avoidable risk of it happening again." I doubt the prediction value of any such verbal statements, but of the two I am sure that mine is nearer the truth. Wohlstetter's argument suggests to me that he has neither thought very deeply or imaginatively about the consequences of the nuclear war, nor has he ever imagined himself in the position of taking the action which he seems to think it sane for the Soviets to take.

In the list of imaginary circumstances which are depicted above as likely to provoke a Soviet strike, there is only one, in my opinion, which has any semblance of reality; this is the fear of an immediate attack by America. Clearly an urgent and major task of the Soviet and American governments is to find ways of allaying each other's fears about such surprise attacks. In all negotiations toward this important objective, it is essential to start with a realistic view of the technical possibility of achieving a successful one. It is not likely to help the search for ways of reducing the chance of surprise attack to exaggerate greatly its military feasibility.

As regards the technical question of whether the U. S. S. R. has now, or is likely to have in the near future, a sufficient nuclear superiority to have any chance of making a successful first strike, the evidence is rather clear. For instance Secretary of Defense Thomas S. Gates, said to a House Sub-Committee on 13th January, 1960: "It is the conclusion of those who have analyzed the matter that even a surprise attack by all the missiles the Soviets could muster would not suffice to destroy enough of our retaliatory forces to enable him to make a rational decision to attack." The available evidence makes it certain that, in all-round nuclear strength, the U. S. A. is still markedly stronger than the U. S. S. R.



When Wohlstetter wrote his articles over two years ago, in 1958, certainly the Soviet nuclear strength was weaker relative to American than it is today. Yet his articles gave the impression that he considered the balance of terror to be rather unstable. If he did think it then unstable, there seem only two alternatives: either he must have got wrong information about the relative American and Soviet nuclear strength, or he must have feared that America might under certain circumstances exploit her undoubted over-all superiority to initiate nuclear war.

I want now to draw attention to a revealing sentence in the quotation given above about probable Soviet action. This reads: ". . . they make sensible choices and we do not."

Since the U.S.A. has certainly an over-all nuclear superiority now, and had a still larger one a few years ago, then Wohlstetter's general argument suggests that it would have been a sane policy for the U.S.A. to have initiated a nuclear attack, but that this was not made, presumably for moral reasons. In any negotiations with the U.S.S.R. about possible surprise attacks, the Western delegation would have to prove to the Russian that there is no possible chance that the moral inhibitions of America would ever weaken, so that it was perfectly safe for the U.S.S.R. to assume that the West would never take Wohlstetter's "sane" action.

This amounts in effect to asking the U.S.S.R. to base its military planning on the West's stated intentions. However, one of the doctrines of the academic theorists is that it is necessary to plan on the basis of the enemy's capability, which one can know, and not on the basis of his intentions which one cannot. Wohlstetter's doctrine seems to be that the West must plan on the enemy's capability, but the U.S.S.R. should plan on the West's intentions. If the Western nations enter discussion on the surprise attack problem, the control of armaments, and disarmament, on the basis of this assumption of asymmetric morality, they are not likely to make much progress.

It is, of course, perfectly correct to bring into the analysis of the global situation the broader considerations of expediency, morality, and common sense. But these broader considerations must be brought in consistently and not arbitrarily just when it suits a particular argument. It is wholly correct that a nation should believe in, and pride itself on, the morality of its behaviour. It is an amiable and common conceit that one's own behaviour is better than that of one's opponent, and it may even be true upon occasion. What is absurd is that we should expect an enemy to base its military policy on our own estimate of our own moral character.



Let us now consider more fully the argument that the present nuclear balance is less stable against rational acts by the two giant Powers than it was a few years ago and that it is likely to get still more unstable in the next few years. During the earlier period, say, 1954 to 1957, which has been often referred to as one of exceptional stability, the U. S. A. had a very large superiority of A-bombs, and of long-range aircraft deployed on dozens of bases around the perimeter of the Soviet Union. On the other hand, the U. S. S. R. could not then counter-attack seriously against America through lack of long-range aircraft. However, it was quite clear that this great relative nuclear superiority of America could not last long, and that therefore the diplomatic power and prestige resulting from it also could not last; so that, if no steps were taken by America, this power and prestige would be reduced. In military history, many wars have had such a preventative character. However, wider considerations, including no doubt moral ones, intervened, and preventative war was not waged. On the other hand, in 1954 A-bombs were very nearly dropped at Dien Bien Phu--it is said that the American National Security Council recommended this, but President Eisenhower rejected it. Thus close came a nuclear war--if only a small one--but with what vast possible consequences!

Again, the deep shock produced by the Sputnik in 1957 could have sparked off a drive in America to take the last possible chance of successful preventative war. This dangerous moment--dangerous, that is, from the viewpoint of all the tenets of the academic practitioners of theoretical warfare--passed. I consider that in both theory and fact the period 1954-57 was most critical of post-war years. The crisis passed because American wisdom and good sense won the day and she did not behave like one of the amoral automats of the theorists.

I have no doubt that the balance of terror is now more stable against sane actions of rational governments than it was a few years ago, just because the two sides are nearer equal in nuclear strength. The increase in the number of Soviet missiles has markedly reduced the over-all imbalance but certainly has not yet produced, nor is likely to produce in the near future, a marked imbalance the other way. Both common sense and the more detailed arguments of abstract military theory alike associate stability with near equality of defense capability. They therefore lead to the conclusion that the last few years have been a period of increasing stability against rational government actions. When Wohlstetter reaches the exact opposite conclusion, he does so by negating the conclusions of both common sense and of formal military theory by introducing a large and arbitrary degree of moral asymmetry between the two contestants. By this methodological device the period 1954 to 1957 is held to be a safe period because, though America had a large nuclear



superiority, she was pacific, while the present time is dangerous because this superiority is less and the U. S. S. R. is aggressive.

The introduction of assumption of moral asymmetry into military arguments is full of pitfalls. Against the assumed moral superiority of the West, weight should be given to the very close integration of military and political policy in Soviet theory and practice. This implies that the probable consequences on the world situation of any proposed act will be carefully thought out.

If a man from Mars studied the history of the last few decades, what conclusion would he come to about the likelihood of East or West staking everything on a nuclear gamble? He might notice that poker is the national game of America, while chess is that of Russia, and that a country whose creed included the inevitable triumph of its own social system is not likely to try to accelerate history by a nuclear gamble.

Klaus Knorr, in his book NATO and American Security, published in 1959, expresses views which are rather similar to those of Wohlstetter which I have criticized. Knorr considered that by the mid-1960's, the nuclear balance would be unbreakably stable due to improved missiles and greater dispersion and mobility. However, he held that the balance was then in 1959 very unstable and would remain so until new technical developments came about. Thereafter the bases "would be protected against surprise attack and a counter-force strategy would no longer be attractive"; so in 1959 Knorr held surprise attack to be attractive. "However, known possibilities are such that the risk of Soviet surprise attack on the United States may well be substantial and, indeed, dangerously high." No convincing evidence is produced to suppose that it would be technically possible for Russia to achieve the near 100 per cent effective first strike without which a surprise nuclear attack would neither be "sane" to use Mr. Wohlstetter's word nor "attractive" to use that of Mr. Knorr.

### Dangerous Years

It may be objected that I am giving too much weight to the practical consequences of the wide dissemination of the military writings which I am criticizing. Unfortunately, in my view, these writings have had a rather big influence. In NATO in the 1960's by Alastair Buchan, we read: "It is this enormous advantage now accruing to the man who strikes first and the degree of surprise that the missile permits that does more than anything else to create the instability of the strategic balance. . . ." The influence of the "delicacy of the balance of terror" thesis is found also in the study



Foreign and Military Policy for Peace and Security, published in 1959 by the Advisory Council of the Democratic National Committee of the Democratic Party of America. The view that the next few years, that is, until improved Western weapons are available, are exceptionally dangerous, is stated clearly by Paul Nitze in a recent article in Survival. The same view is taken by John Strachey in a recent lecture at Chatham House, and is explicitly derived from Wohlstetter's and Morgenstern's books. All these documents are very serious works containing a great amount of cogent analysis. But they all, either implicitly or explicitly, support the thesis of the progressive worsening of the present situation unless there is a great increase of expenditure on research and development on long-range missiles, and a large increase in their invulnerability. I believe this thesis to be false, and that its promulgation by so many able people is likely to lead to wrong allocation of priorities as well as worsening of the international atmosphere.

One danger arising from the theory of "The Delicate Balance of Terror," assuming that it greatly exaggerates this delicacy, lies in the hope it gives that Russia and America might reasonably strive to acquire a first-strike capability. America had this in effect from 1954 to 1957, since Russia had no effective power of hitting America at all. If, however, as I believe, a successful first strike would now demand not only a very large margin but also a quite unattainable degree of Intelligence, then the attempt to achieve a first-strike capability would be fruitless.

Though the American Administration seems to have set itself firmly against attempts to regain a first-counter-force capability by improved missiles and reconnaissance satellites, there seems to be a group which would like to try, and they must have been greatly heartened in their endeavour by the arguments that this can be done, given enough effort. This way leads to an endless and increasing arms race. Another group in America, who must welcome the "delicacy" school's conclusions, is the anti-test ban lobby. The case for further tests--America is said to have made about 170 tests to the Soviet's 60, so presumably has better bombs--is that further improvements to existing nuclear weapons would be of decisive significance in relation to the present balance. Till recently this appears to have been the view of the Atomic Energy Commission. I do not believe this to be the case. Since the British Government has been all along one of the chief architects of the near-successful test ban agreement, it has every reason to be wary of the conclusions of the academic military theorists, which have in fact often been used in favor of further testing.

If I personally believed that the present balance of nuclear terror was as unstable as these writers seem to think, I would in



all seriousness conclude that the safest possibility for Great Britain, and ultimately for the world, would be for Britain to opt out completely from the nuclear arms race. Moreover, I myself would give up the arduous labour of studying the intricate arguments of these writers and devote myself to campaigning to achieve this.

By far the greatest danger of the "delicacy" thesis is its possible effect on negotiations for disarmament and arms control. It has, in fact, been widely used to suggest that serious negotiations with the U. S. S. R. should be postponed until the mid-1960's when the expected weapon developments will have occurred. For if the balance is really so delicate that it can be upset by some small increase in the numbers of deployed nuclear weapons on either side, or by some technical improvement in their performance, then it is clear that a degree of inspection and control would be required which might be unacceptable to both Soviet and Western blocs. Fortunately, I am sure that the present situation is rather stable, at least for the time being, and that the already grossly exaggerated feasibility of a successful surprise nuclear attack could be still further reduced by mutually acceptable control and inspection methods.

Belief in the thesis that the main danger to humanity at present is that Russia might find itself in a position to bring off a successful first strike and that it would be, in Wohlstetter's words, a sane policy for her to do so, tends to divert attention from real and immediate dangers. I have not the slightest doubt that the main danger today is not from the rational act of responsible statesmen, but is due to essentially irrational acts of irresponsible, frightened, humiliated, revengeful or just mad people--or perhaps, more likely still, from the confused actions of well-meaning people overwhelmed by complex circumstances beyond their mental or moral ceiling. Clearly, the more nuclear weapons there are in the world, the more nations which possess them, the more will all defense systems become inextricably bound up with nuclear weapons, so that the number of fingers on nuclear triggers will grow and with it the danger of accidental or irresponsible nuclear war.

### Bases and Vulnerability

The present Western drive to make its nuclear bases more invulnerable is intended mainly to reduce the likelihood of a deliberate surprise counter-force attack by the U. S. S. R. If I am right in supposing that the arguments which suggested that this was the main danger are quite false, since the system as a whole is already invulnerable enough, then the urgency of further hardening becomes less. It should be noted that the invulnerability of bases is of no



value against irresponsible or mad attack which could be made directly against cities.

The hardening of bases has also the role of reducing the necessity for quick decision as to whether and when to retaliate against a suspected "irresponsible" attack--I assume a "responsible" one is in the highest degree unlikely. So it is essential that the attempt to make the Western bases more invulnerable by hardening, dispersal, and mobility must in no way increase the chances of accidental or irresponsible attack. This may be quite a difficult task.

Moreover, the danger of "accidental" war due to too quick reaction to false information, for instance spurious radar signals, is greatly increased by the belief that a surprise attack is likely to succeed. But if such an attack would lead to many mega-deaths to the attacker, then the advantage of reacting quickly is much less.

Looking broadly at the writings of this new school of academic military strategists it will be useful to try to detect how they have reached the false conclusions discussed above. I think the influence of the Theory of Games has been almost wholly detrimental. I can see little if anything in the methods outlined in such works as Theory of Games and Economic Behaviour by J. von Neumann and Oscar Morgenstern, or in The Strategy of Conflict by T. C. Schelling which are useful for making practical predictions. If they had, such methods would have become accepted by investors and card players. If such abstract theory cannot be applied in practice to such relatively simple activities, then it is clearly useless for the much more complicated problems of war. In fact the abstract theory of games is a branch of pure mathematics and almost wholly irrelevant to decision-making.

Then I think far too much is made of clear-cut logical distinctions in fields where a continuous gradation of facts and possibilities makes them inapplicable. It has been said that clear-cut definitions have little place at the beginnings of a scientific subject, and may be detrimental to progress. I believe this to be true of the present state of military analysis.

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An example of this is the great stress laid on the distinction between vulnerable and invulnerable bases--a useful and common-sense distinction of venerable antiquity in military practice and theory. But when this distinction is carried too far in its application to practice, it can lead to absurdity. For instance, it is often concluded by these writers that the present Thor bases in Britain



are now highly provocative because they are very vulnerable and so could only be used for a first strike. Thus--so the reasoning goes--their existence is a denial of the West's avowed intention not to make a first strike. In effect these writers are asking the U. S. S. R. to believe that the now alleged provocative nature of Western nuclear bases only began on the day when the Soviets acquired the power to destroy them. Would these writers have come to the same conclusion if the U. S. S. R. had produced nuclear weapons four years before the U. S. A? Although the more realistic of these writers do agree that the nuclear balance becomes more stable, the more invulnerable the bases of both sides, they do not always pay tribute to the Soviet insistence on keeping their bases relatively invulnerable by their system of geographical security; nor have I noticed any strong disapproval of those aspects of Western policies which attempt to destroy this invulnerability by ceaseless propaganda and by aircraft and satellite reconnaissance. If this objective were achieved, then the theorists must conclude that the balance would be upset. Then an American surprise attack on the U. S. S. R. would become, in Wohlstetter's phrase, a sane policy. Of course this conclusion is not made because at this point the assumption of moral asymmetry is quietly inserted into the amoral world of games theory. There are legitimate differences of opinion about the moral characteristics of different nations; however, where the verbal and scholastic bias of these writers has led them astray is in their failure to clothe the skeleton conflicts of the theory of games with the complex flesh and blood attributes of real nations; hence the bizarre nature of some of their practical conclusions.

Another current logical distinction is that between preventative war and a pre-emptive first strike. The first is defined as an aggressive attack by a power which believes itself temporarily superior but knows that this superiority will not last. It is generally held in the West that the West will never wage preventative war. On the other hand, a pre-emptive first strike is an attack on the enemy when you know he is about to attack you; this, so the reasoning goes, is morally justified, if not imperative as the only way to avoid destruction. However clear-cut such distinctions may seem in a University study group, they are likely to become almost meaningless in the discussions of a High Command at a time of international crisis. For the unreliability of intelligence as to the enemy's strength and intentions, and the general fog of war preparations, is likely to dissolve these verbal distinctions into nothingness. It may be that some future historian may dig out of the ashes of a nuclear holocaust evidence for or against the view that some nation immorally waged preventative war or morally made a pre-emptive first strike.



At the back of these mistaken practical judgments lies, firstly, the failure of these military analysts to imagine themselves in the position of having to take the executive action they recommend, and secondly, the failure to grasp the complexity of the problems with which they would then be faced.

### Social Pessimism

Finally, I feel conscious of a strain of deep social pessimism combined sometimes strangely with an almost neurotic contemplation of destruction. Perhaps this is more marked in the remarkable last chapter of Morgenstern's book. Under the revealing chapter heading "The Fascination of War" are to be found some astonishing dogmatic statements, made usually without the semblance of proof.

The most interesting things in science at present are done only if they are related to war and war preparation. . . . Society does not accept the desire for knowledge unless it is in some way tied to war.

These statements are just false in the West today. The exciting advances in high energy nuclear physics, in visual and radio astronomy, in organic and bio-chemistry, in molecular biology, in embryology and immunology and a dozen other fields are wholly independent of war preparations. In fact, the fields directly affected are rather few. Morgenstern continues, "war preparations are necessary in order to justify the deepest human desire for knowledge." Here Morgenstern gives a non-military justification for armaments and one, which if followed literally, would lead to an endless arms race unrelated to real military needs. It would follow that disarmament would be a scientific disaster. Would he have President Kennedy tell Mr. Khrushchev that unfortunately America cannot reduce her armaments because this would mean falling behind in pure science? Some deep emotional factor must lie behind such absurdity.

If Morgenstern can make such gross mistakes about the rather simple facts of the effect of war preparations on modern pure scientific research, how can one trust his judgments on the far more complex and hypothetical problems of war? Temperamentally he seems to me to exhibit a deep social pessimism which contrasts flagrantly with the traditional extrovert optimism of America.

Some may think that the unexpectedly rapid deployment of Polaris armed submarines has greatly improved the stability of the balance, so that it is only of historic interest as to whether the balance was stable or unstable a few years ago. I do not think this

is correct. For one thing, the number of such nuclear missiles now deployed operationally is too small a fraction of the West's total nuclear strength to turn an unstable into a stable system. More important is the possibility that the arguments which have been, in my view, falsely used to prove the balance unstable in recent years may be used in the future to prove it again unstable, in spite of expected improvement of weapons. So the truth or falsehood of the delicacy thesis will remain for many years of vital importance.