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ARMS CONTROL AND SECURITY

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## ARMS CONTROL AND SECURITY

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## ARMS CONTROL AND SECURITY

### 1. Difficulties

The subject of disarmament and arms control is attracting the attention of large numbers of people who have never studied the problems of defence or national security, but who are frightened by the prospect of a nuclear war.

It is quite logical to be frightened by the prospect of a nuclear war, particularly if you happen to live in a place where it might occur. However, it is not logical to assume that the very real dangers of nuclear war have been produced by evil madmen bent on world destruction, or that the best way to solve the problem is to demand instant general and complete disarmament. There are hazards other than nuclear war which we also wish to avoid, such as world-wide conventional war, and such as the loss of our independence in the face of overwhelming military strength to which resistance would be clearly useless. So far, all of these hazards have been avoided, in spite of the dangers of the nuclear weapons which have been in existence for 36 years, not one of which has ever detonated by accident, and not one of which has been used as a weapon since the first two explosions in Japan in 1945. Nuclear weapons are indeed very dangerous things, but experience shows that they can be kept under control, and their existence used not to wage nuclear war but to prevent it.

It is tempting to follow appealing but simplistic theories without much examination. For example, it is often stated that "arms cause war". Therefore to prevent war, we must get rid of arms. It is also claimed that no nation which has acquired arms has ever

failed to use them. This latter claim is demonstrably false, and the former one must contend with the theories and experience of the Pax Romana (or even the Pax Britannica) which reasoned that those who wish Peace should prepare for War. Between the Battle of Waterloo (1815) and World War I (1914) the British fought many small wars but no big ones. They lost no significant territory during the period. Many ascribe this fact to the strength of the Royal Navy, none ascribe it to disarmament.

Obviously, a country planning to go to war will take the precautions to arm itself first. But the object of the intended aggression is more likely to ward off the war by arming itself too, than by remaining unarmed. If you don't believe this, you should study the period leading up to WW II. The researchers who claim that "arms cause wars" can demonstrate an association between the buildup of armaments and the outbreak of war. But as those of you who know anything about statistics will recognize this does not prove cause and effect.

The message that I hope to give you this morning is that the connection between security and disarmament is very complicated. Before you start giving advice about it or demonstrating in the street, you owe it to your audience to give this huge and immensely difficult question a lot of study. Quite a lot of study.

## 2. Three Approaches to Security

If one sought to analyse the problem of attaining and maintaining national security from a very abstract and academic point of view, it would be necessary to consider two extreme possibilities.

One would be that of obtaining for our nation (or our Alliance, if we are considering collective security) all the arms necessary to offset whatever arms are possessed (or which we expect to be deployed in the future) by our potential enemies. Such a policy is likely to be very expensive. If the other side adopted the same policy, the probable consequence would be the "spiralling arms race" so often cited by the opponents of military programs. But this policy of a unilateral decision to arm as necessary should enable us to deter our opponent.

The other extreme policy is that of unilateral disarmament, carried out in the hope and expectation that the other side will follow our example, and leave both without the means to harm the other. This policy is fraught with many dangers. If the opponent does not follow suit, our security is gone. If both did disarm completely, a very modest clandestine rearmament by either could leave his disarmed opponent in a helpless position. It is not necessary to have nuclear weapons to overcome a defenceless opponent: rifles and bayonets are sufficient. Third parties, hitherto weak and neutral, could become powerful and aggressive.

The ultimate goal of "General and Complete Disarmament" ignores the requirement for a nation to be able to protect itself against terrorism, insurrection, disorder, and crime. If you believe

that the Red Army was a factor in the suppression of revolution in Hungary, Czechoslovakia, or Afghanistan, you may feel that the lowest limit to which the USSR will be prepared to reduce the Red Army is not very low at all, quite apart from the strength on the NATO side.

Between these extremes there is the policy of arms control, which seeks a balance between the armaments on each side, a balance struck at a level providing adequate security at bearable cost. Aside from the requirement for some sort of agreement between adversaries, there are a number of difficult questions generated by this attempted solution. Some of these questions turn on a definition of what constitutes "adequate security". Do the two sides have to have exactly equal and symmetrical forces? If not, what degree of inequality or asymmetry can be accepted? What assurances are needed that the other side is honouring its undertakings? If the size and type of forces on the other side cannot be monitored precisely, how much uncertainty is tolerable? Thus, although the objective of obtaining security through arms control may seem highly desirable, it must be recognized that it is fraught with very considerable difficulties and dilemmas.

The best basis so far discovered on which to design effective arms control is that it should aim to establish mutual and stable deterrence. Mutual, for otherwise an agreement is unlikely to be signed or to endure, deterrence in order that both parties see war as likely to bring more destruction and loss to themselves than could be compensated by possible gains. The concept of stability is related to the robustness of the mutual deterrence; stability exists when deterrence is maintainable through short periods of intense stress and crisis, and also over long periods during which large deployments of new weapons could be completed.

There are, in fact, two distinct types of stability, which can be identified as crisis stability and arms control stability. An

arms balance is crisis-stable if neither party has any rational motive to attack first, or to set his response to a presumed attack on an automatic hair-trigger. In addition, to be stable, the state of the mutual deterrence must not depend on a precise assessment of the forces on the other side (whether correct or incorrect), so that, for example, a rumour that an enemy weapon system was temporarily unserviceable should not provide a rational reason to attack before the ailing system could be repaired. Crisis stability is concerned with stresses that may be of short duration. Arms control stability pertains to longer periods during which one or both sides might feel impelled to react to a particular deployment on the part of their adversary by building a new system of their own.

In judging an armaments plan or an arms control proposal, careful attention should be paid to the influence it will have on both crisis and arms control stability. It is not by any means an automatic conclusion that more of some weapons would be destabilizing, or that fewer would be stabilizing. In general, weapons enhancing capabilities for a counterforce first strike are destabilizing, while those invulnerable to a first strike are stabilizing. Examples would be the early vulnerable ICBMs, requiring a long period of preparation before they could be launched, and inviting a preemptive attack, as contrasted to the early SLBMs, which were virtually invulnerable at sea, and also too small and inaccurate to be a threat to opposing hard targets.



### 3. Strategic Systems and Arms Control

Because of the immense capabilities of intercontinental thermonuclear weapons for instant and widespread destruction of cities, most of the public interest and attention in arms control and disarmament has been focussed on proposals for limitation or reduction of the large strategic weapon systems of the two Superpowers. There can be no doubt that both the USA and the USSR consider their strategic systems to be the cornerstone of deterrence. A substantial proportion of strategic thinkers believe that it is the existence of those systems which has prevented World War III. Clearly one should tamper with such matters with extreme caution.

In discussing strategic nuclear weapons it is important not to be so obsessed by their undoubted power of destruction that one neglects to realize their power to deter major war. The world has very great cause to be gratified that all our wars since 1945 have been well below the scale of a World conflagration. For most countries, including Canada, they have been quite small and far away. If we have strategic nuclear deterrence to thank for this, let us give it its proper due, notwithstanding the potential power for destruction if the deterrence should ever fail.

The USA and the USSR went through the SALT I and SALT II negotiations seeking ways to apply limitations to their strategic weapon systems that would preserve stable mutual deterrence. A considerable measure of success was achieved, if one is content with limitations instead of reductions, and discounting the fact that while SALT II was signed, and appears to have been tacitly observed by both parties, it has not been ratified by the US Senate.

In fact, there is good reason to be satisfied with limitations instead of reductions in strategic nuclear weapons. Once the money has been spent to deploy a system, not very much is saved by reducing the numbers already deployed. The decrease in the probability of war breaking out by accident if the number of Minutemen missiles <sup>were</sup> ~~is~~ reduced from 1000 to 500 would be quite negligible, given the elaborate and ingenious precautions taken, and the record of all of the nuclear powers to date. It is true, of course, that if deterrence failed, a greater number of weapons launched would produce greater destruction. But most calculations are being based on the primary objective of making sure that deterrence does not fail. The supreme objective is to keep deterrence strong and stable, costs occupying no more than secondary consideration.

Even if new strategic weapon systems are built, a numerical limitation represents a degree of control over the cost. And so far as the expenditures on strategic systems contribute to the burden on national economies, they are no more than 10 to 20% of the defence budgets of the nuclear weapon states, and nothing at all for the others. Those whose prime objective in arms control or disarmament is to save money should concentrate on conventional weapons and forces, because this is where nearly all of the resources are expended.

SALT I, signed in 1972, consisted of the ABM Treaty plus an interim agreement on the limitations of strategic offensive arms. The ABM Treaty, which is still in effect, represented an important step towards arms control stability. There may, however, be pressures in the coming decade to alter or abrogate it in order to provide protection for ICBMs against attack by very accurate multiple independently-targeted re-entry vehicles (MIRV). The agreement on offensive arms, which expired in 1977, limited both sides to the number of ICBMs and SLBMs deployed or under construction at the time of signature <sup>in 1972</sup>, thus legitimizing a numerical advantage to the USSR (1618).

to 1054 for ICBMs, 62-44 for strategic submarines, and 950-710 for SLBMs). It also legitimized the possession by the Soviets of 313 heavy ICBMs (of the SS-9 type) against none for the USA. The large size and throw-weight of these SS-9 missiles, and especially of their SS-18 replacements, have now been exploited by the USSR to mount large numbers of MIRVs (in fact ten per missile as contrasted to three on the American Minutemen III). Being a bilateral treaty, it did not make specific mention of the nuclear forces possessed by the UK or France. In ratifying the agreement the US Senate added an amendment urging that any future agreement "would not limit the US to levels of intercontinental strategic forces inferior to the limits" for the Soviet Union.

SALT II, negotiated for seven years prior to its signing in 1979, extended the application of numerical limits to long range bomber aircraft and to missiles fitted with MIRV. This time all limits were the same for both sides.

Stability is, of course, closely related to the power of one side to deliver a successful disarming first strike against the weapons of the other. Because MIRVs are being made extremely accurate, the fear is rising that an ICBM force equipped with a large number of very accurate MIRVs could decimate the opposing ICBMs in their fixed silos. Hence the limitations placed by SALT on large ICBMs, and on the number of MIRVs, is a factor for stability.

Several of the plans for deployment of the MX missile were designed to reduce its vulnerability to a Soviet counterforce first strike. One was the scheme for shuttling one missile among a number of protective shelters, so that an attacker would need to target every shelter to be sure of hitting the missile. With enough warheads, the attacker could overcome such a system. However, this form of deployment has not <sup>been</sup> approved. Opponents of the MX point out that

its ten accurate MIRVs could threaten the Soviet ICBMs in their silos, but it is doubtful that the planned number of 100 MX missiles is sufficient to make this a serious threat.

Because SALT II reached the state where it was signed by both parties, and unless new deployments considerably larger than 100 MX or 100 B1 bombers are made, it would seem that the balance between the two Superpowers in intercontinental strategic weapons is a stable one.

Canada has no strategic weapons of her own. However, her contributions to NORAD and to maritime surveillance play roles in the protection of the American deterrent forces. There have been no well-developed suggestions for arms control for air defence or maritime defence forces, and the role they play is very clearly defensive and stabilizing.

#### 4. Intermediate Nuclear Systems and Arms Control

The large number of nuclear weapons assembled in the European theatre is giving rise to increasing concern, for the reason that many of them have ranges and energy yields adequate to destroy the cities of both Western and Eastern Europe without needing any help from the intercontinental weapons already described under the heading of strategic systems.

To draw up the balance for these intermediate nuclear forces one needs to list the various systems in comparable categories. This is not a simple matter, and its difficulties are compounded at the present time by the arms control talks in Geneva in which the USA and USSR are striving for advantage in negotiating positions. In "The Military Balance 1981-82", published by the International Institute for Strategic Studies, the chapter on Theatre Nuclear Forces in Europe gives estimates of the number of nuclear-capable systems deployed and

available for use in Europe in July 1981. The relationship between number of nuclear-capable systems and number of warheads is not obvious, since some weapons (like the SS-20) will always carry several nuclear warheads, some (like dual-capable aircraft) will often carry no nuclear warheads, and some (like artillery pieces) can fire any number of conventional or nuclear rounds. However "The Military Balance" does include an estimate of "warheads available" for long and medium range systems. Lumping long and medium range systems together, and including British, French, and US systems in the NATO inventory, they estimate an advantage to the WP over NATO of about 4400 to 1300 in land-based delivery vehicles, and 2000 to 650 in nuclear warheads available. If one adds in sea-based systems, one must decide whether to include the 400 US Poseidon SLBM warheads normally declared available to the Supreme Allied Commander, Europe, for use in the European Theatre, but already counted in the balance of intercontinental strategic nuclear forces. Including these and other sea-based systems changes the total score to about 4400 to 1550 in nuclear carriers, 2000 to 1150 in available warheads.

This large advantage of 4400 to 1300 in land-based vehicles breaks down into 1250 to 200 in missiles, and 3100 to 1100 in aircraft. If one chooses to separate long from medium range weapons then the WP leads NATO in long range land-based carriers (combat radius over 1500 km) by about 600-18 in missiles and 1000-250 in aircraft. For the medium range category (150-1500 km) the WP leads by about 650-200 in missiles and 2100-850 in aircraft.

In every one of these comparisons of long and medium range land-based nuclear vehicles the WP has a significant advantage over NATO. The greatest of the discrepancies (as of July 1981) was in long range land-based missiles, with over 600 SS-20s, SS-4s, and SS-5s being opposed by a mere 18 French S-3 missiles. Moreover, the SS-20s have three warheads each, and are being deployed at a steady

rate of one every six days, with a corresponding number of single-headed SS-4s or SS-5s being deactivated. It is to offset this very large discrepancy that NATO is planning to introduce 464 ground-launched cruise missiles, and to replace 108 Pershing I medium range missiles by the longer ranged Pershing II, beginning in 1983, unless an agreement can be reached to withdraw the long range Soviet missiles. It should be noted that the ranges of SS-20 and SS-5 exceed 4000 km, while GLCM will reach to 2500 km and Pershing II to 1800 km. GLCM and Pershing have single warheads.

In sea-based systems NATO has the advantage, with 144 British and French SLBMs in 9 submarines, 400 Poseidon SLBMs in US submarines, and 72 carrier-based aircraft. The USSR is thought to deploy 57 SLBMs on 19 submarines for the European Theatre role. The status of sea-based systems as part of the European balance is a bit less clear than for systems based on land, especially in the case of the USA. The submarines and aircraft carriers can be deployed and redeployed anywhere, on various missions, and their presence and availability is less evident to ordinary citizens than is that of land-based missiles and aircraft.

From the point of view of stability, dual capable aircraft (i.e. aircraft able to deliver either nuclear or conventional weapons) located on large bases offer a tempting invitation to preemptive attack, whether nuclear or conventional, in order to remove their nuclear threat. On the other hand, cruise missiles have a stabilizing tendency. Their mobile basing makes them very difficult to destroy, while their slow speed makes them a poor weapon for a first strike, so that there is less incentive for the opponent to make them the objective of a preemptive attack.

Mobile missiles pose a serious difficulty for an arms control agreement for two reasons. If they are withdrawn from the forward region, they can always be brought back. And they will not be easy to locate or count for purposes of verifying compliance with an agreement.

The forum for discussion of limitations on Intermediate Nuclear Forces is the bilateral Geneva conference. The weapon systems under discussion were not covered by SALT or MBFR. The avowed intention was to concentrate on missiles rather than aircraft, but this may prove insufficient, given the difficulties in identifying mutually acceptable negotiating packages.

The efforts being made in Geneva pose special difficulties for the United States, since the advantage lies with the USSR in all land-based categories of weapons, while some of the NATO weapons, being British or French, are not included in the assets to be bargained. And the American position is weakened by the public protests in the European countries against acceptance of the GLCM and Pershing II weapons which would reduce the imbalance if they are deployed.

Canada withdrew from its nuclear roles in Europe in 1972, where the CF-104 aircraft had had nuclear bombs and the artillery had operated the Honest John missile.

##### 5. Other Land-Based Nuclear Weapon Systems

In addition to the Intermediate Nuclear Forces just discussed, there are other nuclear weapon systems deployed in the European Theatre. Of these, the most important are Short Range nuclear systems (defined here to have a range less than 150 km). In this category NATO is thought to have a large advantage in nuclear-capable artillery pieces (1900 to 150), but the WP has more short range nuclear rocket launchers (700 to 200). Probably more important than the number of guns or launchers is the number of nuclear warheads, but this is not public knowledge.

Also found in the inventories of armies in Europe are nuclear-armed Surface-to-Air missiles and Atomic Demolition Munitions.

Nuclear artillery and rockets could be employed offensively or defensively, whereas anti-aircraft missiles and nuclear mines are very clearly defensive in character.

Because the short range systems are designed for use on the battlefield rather than against targets deep in the rear, it can be claimed that they contribute less to deterrence than do the longer range weapons. On the other hand, if one power is far weaker in conventional forces than the other, it may be difficult for him to deter attack except by the threat of use of nuclear weapons. In order to preserve the possibility of stopping a war before it escalates to all-out destruction of population by strategic nuclear weapons, a system of graduated deterrence will need some means to contain reverses on the battlefield.

#### 6. Significance for Stability of the Theatre Nuclear Balance

The previous two sections could be summarized by saying that the Warsaw Pact is distinctly superior to NATO in the capabilities of its intermediate nuclear land-based missile and air forces, the imbalance being reduced but by no means equalized when sea-based theatre nuclear capabilities are included. On the other hand NATO appears to have some advantage in shorter range nuclear systems.

From the point of view of stability, the present imbalance in long range capability gives cause for serious concern. While there is no requirement for precise equality in each category of nuclear weapon systems, a severe inequality may offer an opportunity for the superior adversary to threaten or to pursue a course which the other cannot counter. In the case of the long range theatre nuclear weapons,



there is an asymmetry of the very greatest potential danger for NATO. Simply put, the USSR can use its SS-20s, SS-5s, and Backfire bombers to destroy any target in Western Europe, whether military or civilian, without recourse to the intercontinental strategic weapons. In return, the capability of NATO to retaliate on military or civilian targets in the Soviet Union using the nuclear forces presently based in Western Europe, is extremely restricted. Consequently, unless the Soviets are completely convinced that the USA is prepared to carry a conflict to the ultimate level of direct Superpower confrontation, they have a strong incentive to use this advantage to threaten, if not to demolish, the European members of the Alliance in the course of a serious confrontation. Unless some roughly equivalent countercapability is available to NATO, we face a situation of crisis-instability.

If the NATO short range nuclear systems are superior to those of the Warsaw Pact, as appears to be the case on the basis of the incomplete evidence available to us today, the significance for stability is likely to be positive. As will be demonstrated in the succeeding sections of this presentation, the WP holds a distinct advantage in the type of forces most useful in the conduct of a conventional offensive. To deter their possible employment for initiation of aggression, the presence of a strong battlefield nuclear capability could provide some stabilizing compensation for a relative inferiority in conventional capability.

#### 7. The Balance in Land Forces and Arms Control

The Military Balance (1981-82) draws up a table comparing NATO and Warsaw Pact manpower and equipment, with accompanying warnings about what can properly be deduced from raw numbers. In the summary they say that "The numerical balance over the last 20 years has slowly but steadily moved in favour of the East ". This would be consistent with estimates of defence expenditure, which show very steady growth

In total ground force manpower and in anti-aircraft guns neither exceeds the other by as much as 50%.

The inequalities outlined above give grounds to suppose that it is the WP which is best equipped to attack. Although it is often claimed that the attacker needs a numerical superiority of 3 to 1 in order to succeed, it should not be concluded that NATO could contain a WP attack because of the approximate equality in total manpower. Superiority need be secured only in the immediate area where the attack is made, and a breakthrough can so disorganize the defence as to bring about a collapse. This is what happened in 1940, when the Germans succeeded in defeating an Allied force in France which was not inferior in numbers of weapons. If a substantial degree of surprise is achieved by the attacker, the defender will need to exercise determined political will followed by instant reaction.

The arms control forum charged with negotiations for reduction of ground forces in Europe is the one in Vienna commonly described as MBFR (Mutual and Balanced Force Reductions). It has been in session since 1973, and in spite of many proposals and counter-proposals not much has been accomplished. From the point of view of stability, and taking note of the comparative ease with which Soviet forces could be reinserted into Europe, it is not at all evident that small reductions would be advantageous. Large reductions would probably be destabilizing.

Canada is a member, since we have forces stationed in the zone under negotiation (known as the NATO Guidelines area). In 1970 Canada reduced the number of men in the land and air forces stationed in Europe from 10,000 to 5000.

## 8. The Balance in Air Forces and Arms Control

The USA outweighs the USSR in intercontinental nuclear strategic bombers, with 316 B-52 bombers against 105 Bears and 45 Bisons. The newer B-52 models will be fitted with Air Launched Cruise Missiles, which will make it less necessary for the aircraft to expose themselves to air defences. The US also possesses 60 FB-111 medium range bombers. Both powers have tanker aircraft to refuel their bombers in flight.

Returning to the table in The Military Balance for forces in Europe, and speaking of conventional weapons rather than nuclear, the WP outnumbers NATO by 360 to 80 in bombers, 1550 to 300 in fighters, 1500 to 600 in interceptors, and 900 to 400 in reconnaissance aircraft, assuming Soviet strengthening after mobilization. NATO has more armed helicopters, with mobilization affecting the numbers drastically, and both sides have large numbers of fighter-ground attack aircraft. Because of the significance of quality and performance, plain numbers do not tell the whole story of the air balance. An important factor is the air defences against which the aircraft would have to operate. There has been a notable tendency in recent years for the WP to change their emphasis from defensive interceptor aircraft to offensive ground attack machines.

Although the MBFR negotiations have emphasized ground forces, they have also considered reductions in air forces. MBFR probably constitutes the most likely forum for discussion of arms control of conventionally armed aircraft in the European theatre.

## 9. The Balance in Maritime Forces and Arms Control

The table in The Military Balance 1981-82 includes naval units and naval and maritime aircraft, but those are confined to the European Theatre, including the Atlantic.

NATO leads by a significant margin (i.e. more than 1.5 to 1) in aircraft carriers (12 to 4), destroyers (128 to 23), frigates (178 to 109), amphibious ships (412 to 197), maritime attack aircraft (314 to 127), maritime fighter aircraft (159 to 0), maritime reconnaissance aircraft (253 to 70), and antisubmarine helicopters (321 to 172). The Warsaw Pact is ahead in cruise missile submarines (54 to 0), fast attack craft (412 to 231), and maritime bomber aircraft (280 to 0). There is equality (within the 1.5 to 1 ratio) in attack submarines, cruisers, mine countermeasures ships, and anti-submarine fixed wing aircraft.

In terms of absolute maritime fighting power NATO is superior. However, it must be remembered that NATO has nearly half its population and more than half of its material wealth on the Western shore of the Atlantic Ocean, and would be cut in two if unable to use the sea. The WP can live without use of the sea; NATO would die. Two of the categories in which the WP is ahead (cruise missile submarines and maritime bomber aircraft) are precisely those designed to cut the sea lines of communication. This is not a symmetrical contest in which one would expect the same force structure on each side. The maritime balance needs to be studied in terms of three vital questions. One is the ability of NATO to preserve its sea lines of communications. For this purpose the ratio that matters is that of the WP attack submarines and maritime bombers to the NATO aircraft carriers, guided missile cruisers, destroyers, frigates, maritime fighter aircraft, maritime patrol aircraft, and AS helicopters. In terms of numbers, this ratio is considerably less favourable to the defence than that which enabled the Allies to win the Second Battle of the Atlantic in 1943.

A second maritime question is the ability on both sides to preserve the sea-based part of the strategic nuclear deterrent, in the form of ballistic missile submarines. The US has 36 SSBN submarines at sea, with 576 SLBMs; the USSR 84 SSBNs and SSBs with 989 SLBMs. The US are building Trident missiles and Trident submarines, the Soviets are building Typhoon submarines and new missiles.

The third main maritime question against which the balance must be assessed is the ability to secure and maintain control of the Norwegian and the Mediterranean Seas. For this purpose NATO has built strike fleets based on carrier battle groups, and the WP has its carriers, cruisers, submarines, and land-based maritime strike aircraft.

A significant proportion of the NATO maritime forces are dedicated to the antisubmarine role. These are needed for all three purposes, i.e. protection of the sea lanes, control of the opponents' SSBNs, and defence of the strike fleet.

One area in which NATO cannot afford any reduction is in its maritime forces. It would be possible to seek some sort of arms control intended to improve the security of the sea-based deterrent, i.e. the SSBNs on both sides. This might be achieved by a zonal arrangement providing sanctuaries. But all of NATO's antisubmarine forces are needed for protection of the sea lanes and of the strike fleet.

Canada has a very important role to play in the anti-submarine defence of the Atlantic sea lines of communication. Her maritime forces are designed for that specific purpose, but the ship component is in urgent need of modernization. In the Pacific, the operation of the new USN Trident submarines out of Puget Sound will require antisubmarine defence in a zone to the west of Vancouver Island.

10. ARMS CONTROL AGREEMENTS(1) 1899 to 1960

International Peace Conferences, The Hague, 1899 and 1917.

- modified the rules of war
- set up international court in The Hague
- outlawed poison gas and some other weapons

Washington conference on arms limitations 1921

- 5:5:3 ratio in naval tonnage

*UK: US: Germany Japan: France? Italy*

*1:1.75:1.75*

London Treaty 1930

- more limitations on naval construction

Naval Conference 1935

- unable to reach any effective agreement

Naval treaties expired in 1936

- *subsequently it was found that former naval construction had exceeded the agreements*

Geneva Conference of 1925

- protocol on CBW 42 had acceded by 1940 (incl Canada, excl  
USA and Japan)

115 accessions by 1982 (incl USA since 1975)

Kellogg-Briand Pact of 1928

- US, France, 61 others, renounced war as an instrument of  
national policy

General disarmament conference of the League of Nations, 1932-1937

- French proposed international police force
- Soviets proposed GCD
- US proposed force reductions, abolition of CW, tanks,  
bombers, heavy artillery

- Germany demanded the right to rearm unless other nations disarmed to her level
- conference dissolved in deadlock in 1937.

Baruch Plan 1946

- US proposed placing of nuclear energy under international control
- no agreement

UN Disarmament Commission 1952-

- first subcommittee had five members, incl Canada
- Eighteen Nation DC 1961
- CCD 1969 with enlarged membership
- forum for a number of multilateral agreements

(2) Regional Type Agreements

Rush-Bagot Agreement 1817 US/UK limited naval forces on Great Lakes and Lake Champlain

The Antarctic Treaty 1961 22 parties (not Canada)

Latin American Nuclear-Free Zone 1968 22 South American states have ratified main treaty (not Canada)  
not in force for Argentina, Brazil, or Chile  
Protocol I (demilitarization of territories in South America)  
ratified by UK, Netherlands  
II (for NWS) ratified by US, USSR, PRC, France

Seabed Treaty 1972 68 parties (incl Canada)

Outer Space Treaty 1967 89 signatories (incl Canada)

(3) Prevention of Misunderstandings

*- not exactly an arms control agreement, but certainly directed against outbreak or escalation of violence*

Hot Line Agreement 1963 US/USSR

Hot Line Modernization Agreement 1971

Accidents Measures 1971 US/USSR

Measures to Prevent Nuclear War 1973 US/USSR

(4) Banning of Certain Non-Nuclear Weapons

Biological Weapons Convention 1975 111 signatories (incl Canada)

Environmental Modification 1978 48 signatories (incl Canada)

(5) Nuclear Weapons

Voluntary Moratorium on testing 1958. Broken by Soviets in 1961

Limited Test Ban Treaty 1963 106 signatories (incl Canada, excl France and PRC)

Threshold Test Ban Treaty 1974 US/USSR 150 KT

Peaceful Nuclear Explosions 1976 US/USSR

Non Proliferation Treaty 1970 97 signatories (incl Canada, excl France, PRC, Israel, South Africa, India, Pakistan)

(6) Strategic Forces

SALT I 1972 US/USSR ABM Treaty, plus Interim Agreement on Strategic Offensive Arms

SALT II signed in 1979 US/USSR Offensive Arms Treaty, plus Protocol expiring end 1981, not ratified by US