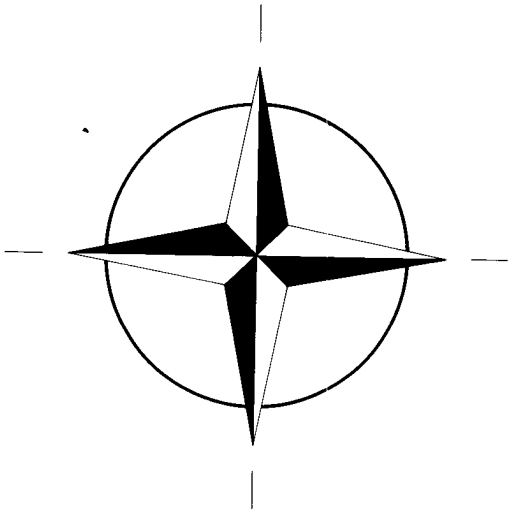
DIMINISHING THE NUCLEAR THREAT

NATO'S DEFENCE AND NEW TECHNOLOGY



THE BRITISH ATLANTIC COMMITTEE

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NATO'S Defence and New Technology

"The West needs a Strategy." – Lord Carrington,

Alastair Buchan Memorial Lecture, 1983.

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This report does not necessarily represent the views of all members of the British Atlantic Committee or its Council.

FOREWORD

By Marshal of The Royal Air Force The Lord Cameron,
President of The British Atlantic Committee

In 1980 The British Atlantic Committee asked me to chair a Group which would report on "A Global Strategy" for NATO. This was a task which the BAC was unusually qualified to undertake. NATO is our business; we are fortunate enough to have among our ranks a good number of members who have served NATO in the highest appointments; U.K. permanent representatives, military commanders, officials who have worked the machine from the inside and know it, so to speak, inside out. There can be few groups in Britain with more concentrated experience of NATO's problems.

The need to look afresh at these problems at that time was brought to a head by the challenges which the Alliance was facing in two new dimensions: the non-military threat, and the Soviet adventures outside Europe. These challenges were seen by different member countries in conflicting ways, causing such tensions in the Alliance that even its survival could not be taken for granted. Those of us who believed in it had to argue the case for active unity against the centrifugal pressures of fifteen governments.

At the same time, a third dimension was opening up: the home front. Never before in its 30 years had the public so actively debated the *raison d'etre* of NATO, and demanded explanations for some of its policies. Here again the BAC was in the middle of things, for our business has been not only to tell people about NATO, but to listen to their reactions; even the best salesmanship needs consumer research. The majority of every member country endorses the principle of the Alliance. But aspects of its policies have caused doubts among responsible electors who are, after all, NATO's masters. The BAC is thus uniquely placed to help to keep NATO policies in step with British public opinion, as well as influencing that opinion.

The present document brings this work up to date. It seeks to find a way through the turbulence of pressures which NATO should be considering in the light of the new military technology, and to chart a way forward which will command the respect of the Alliance as a whole. Numerous studies have been made of particular aspects of the new technology, but few have attempted to illuminate, let alone integrate, its many implications – political and economic as well as

military – into a single strategic conspectus. This has been our purpose.

The main issues are now emerging. The doctrine of "flexible response" needs to be replaced. The new technology offers the opportunity to do this. But it could be expensive; and conventional weapons costs are already rising astronomically. Meanwhile the threat to the world's stability lies increasingly outside Europe.

This may sound to some like an insoluble concatenation of events. But we know that it is not so. We know, for instance, that NATO is not well organised, let alone stripped for action. Though it spends considerably more on defence than the Warsaw Pact, the end product is a smaller amount of hardware. We are not clear about our strategy, let alone how to implement it. We know, in other words, that we can do better.

In a real sense, NATO has succeeded; but there are now new and different pressures bearing on it. We must see clearly what needs to be done, and then work more harmoniously and purposefully to achieve it. In this endeavour, if we get it right, I have no doubt that we will have the public on our side. This paper is a contribution to the urgent task of getting it right.

It has been agreed by the following Group under my Chairmanship:

General Sir Hugh Beach
Sir Frank Cooper
Sir Douglas Dodds-Parker
General Sir Anthony Farrar-Hockley
Hugh Hanning
Brig. Kenneth Hunt (Vice-Chairman)
Prof. Sir Ronald Mason
Major-General Christopher Popham

CAMERON.
London, February 1984

GLOSSARY

NATO	North Atlantic Treaty Organisation
WP	Warsaw Pact
PGMs	Precision Guided Munitions
VSTOL	Vertical or Short Take-off and Landing
ASW	Anti-Submarine Warfare
SSN	Nuclear attack submarine
SSK	Diesel attack submarine
ASM	Air to surface missile
SSM	Surface to surface missile
EW	Electronic warfare
C3	Command, Control and Communications
ECM	Electronic Counter-Measures
IFF	Identification Friend or Foe
S/O	Stand-Off
GIUK	Greenland-Iceland-UK Gap
FEBA	Forward Edge of the Battle Area
RPV	Remotely Piloted Vehicle
(N)AEW	(NATO) Airborne Early Warning

Battlefield nuclear weapons:	Those confined to the area of the immediate tactical struggle, with ranges up to 100 kms.
Theatre nuclear weapons:	These can also be delivered to the battlefield, but their ranges are greater.

INTRODUCTION

TOWARDS WORLD ORDER

Developments in science and technology have been so fast and far-reaching in their implications for war and peace that they demand a reconsideration and restatement of the basic purposes of the West.

The aim, transcending even that of disarmament, which can only be a palliative, must surely be the *pursuit of peace through systematic progress towards world order.* This is easy enough to advocate but exceptionally difficult to put into practice. It involves understanding, controlling and using science and technology – mastering them, and not allowing them to run away with the world.

The principal danger to peace today is that we live in an age of world anarchy. This is something fairly new. From the end of World War II to the 1970's, a degree of order was assured by the hegemony of the United States. The arrival of the Soviet Union as a super-power changed that. So too did the large increase in the number of sovereign, but not necessarily orderly, states coupled with the widespread access to arms and technology. Today a visitor from Mars would be amazed at the way in which the human race, equipped with the ability to kill millions of its members either by nuclear or conventional means, conducts its affairs with less understanding and regulation than exists in the average parish.

Against this background, a real improvement in world order is a modest enough ambition in all conscience. It might be defined as moving step-by-step towards the acceptance and observance of codes of conduct, understood by all and preferably enforceable, designed to diminish and prevent organised violence. At the moment, this situation simply does not exist. The need for it to exist is widely recognised.

Deterrence means preventing war – not simply nuclear war but conventional war. It has unquestionably kept the peace for more than a generation between the North Atlantic Treaty Organisation and the Warsaw Pact. Deterrence is a form of *implicit* communication which declares simply to any would-be aggressor that the price to be paid for aggression would be unacceptably high. In recent years, partly because of international politics and partly because of the rapid growth and far-reaching effects of the explosion in science and technology, doubts have grown in the West about the credibility of

the deterrent. This, in turn, has tended to create instability, not least because the West is an open society whereas the East is a closed society, in which these questions are not open for public debate and discussion. There is, therefore, a need for recognition and restatement of the meaning and practice of deterrence; for, like other mechanisms, it has developed weaknesses with the passage of time. These need to be explored and remedied. The growth of science and technology provides an opportunity to ensure effective deterrence in the future. There must be *explicit* and convincing communication about it both within our own NATO nations and to any would-be aggressor.

Flexible Response

At the core of present doubts are questions about the continuing validity of NATO's military doctrine. At present NATO's conventional forces are so inadequate relative to Warsaw Pact forces that the risk of the West having to resort to nuclear weapons to repel aggression at an early stage in any conflict is high.

Conversely, no one could conceivably seek a situation where it was possible to wage a long drawn-out conventional war; the toll would be horrifying. What is required is a situation which makes it clear and beyond reasonable doubt that the risks and price of any form of warfare are unacceptably high. This situation is not being achieved under the present NATO strategy of Flexible Response, which is now more than twenty years old and which has been neither re-examined nor seriously re-stated during that time.

Flexible Response was adopted in 1967 largely at the urging of the United States, which wanted a longer period to assess the scene before putting American cities on the line as part of the strategic nuclear exchange. The doctrine envisaged a graduated raising of NATO's level of response to an invasion, rather than sudden escalation to the strategic level. It would start with conventional forces, and if these proved inadequate, it would ascend to battlefield and then long-range theatre nuclear weapons, in both of which NATO was then superior. At that time it was hoped there would be a substantial increase in NATO's conventional capability and this would remove, or at least postpone, the necessity of initiating the use of nuclear weapons. But this increase did not materialise. On the contrary, the conventional balance has tilted still further against NATO, so that today Flexible Response signifies the early use of battlefield nuclear weapons. At the same time the WP has acquired

nuclear parity at all levels, so that this doctrine has ceased to retain much credibility as a deterrent, and needs to be replaced.

Where Technology can help

Technology now offers a genuine opportunity to reform strategy and re-inforce deterrence. By acting as a force multiplier, it can increasingly roll back the West's present over-dependence on nuclear weapons. These weapons will not disappear; they cannot be disinvented. But it should be possible to create a credible non-nuclear deterrent which is an essential part of deterrence. This will mean structural changes for the Alliance. It must affect traditional ways of thinking in NATO's armies, navies and air forces. It could also have significant effects on the relationship between the United States and Europe. But well thought-out and organised change is the life-blood of any living and vital organisation.

None of this will diminish the need for a substantial strategic deterrent to match that of the Soviet Union. Equally, it will not diminish the need to bring about reductions on both sides in the current super-abundance of such weapons. Nor, as we argue in Chapter 1, does it affect the issue of "first use", for which theatre nuclear weapons will still be needed. But a greatly enhanced conventional capability would ease the appalling dilemma of having to decide whether to initiate an early exchange of nuclear weapons. No-one can win a nuclear war.

Hence, technology offers the prospect of removing the need to deploy such a comprehensive spectrum of nuclear weapons as both sides now possess, and enables us to think clearly and positively for the first time about a *minimum deterrent.* The present weapon arsenals are far in excess of the needs of deterrence. There is no security requirement for weapons to include "every rung of the nuclear ladder". The concept of controlled, step-by-step, escalation is impractical nonsense in an unpredictable and largely uncontrollable and chaotic situation. The world would, in fact, be a safer place if some of these rungs were removed now. They merely encourage theories of nuclear war-fighting. The West possesses too many weapons systems and means of delivery for the task it is trying to achieve. So too does the Soviet Union.

Other weaknesses

By bringing to an end the present concept of Flexible Response, and its over-reliance on nuclear weapons in large numbers, technology

can make good this central weakness of deterrence. Meanwhile, there are other weaknesses; and here too technology can help. One is the danger of surprise attack. Another is the extension of the East-West conflict to arenas outside Europe, where political understandings, let alone guidelines, do not exist. Another is outer space. Technology can be invoked in these areas too – for example, through satellite and other forms of real-time surveillance – to reduce the danger of miscalculation.

Inevitably, technology carries with it Promethean problems of its own. Fears have been expressed that it could turn the West's conventional weakness into excessive strength and so increase the risk of war. Some of these fears, currently being circulated, are spurious. NATO is and always has been an Alliance committed to a defensive strategy; but recognition of this fact beyond those directly concerned with planning tends to be obscured by the notion propagated around the pacifist camp-fires that the Atlantic Alliance is aggressive in character like the Warsaw Pact.

It is remarkable that this idea has remained credible even while unilateral nuclear disarmers have conceded that the conventional resources of the Alliance are inadequate to sustain defensive operations. Perhaps the fact is so plain as to defy serious argument to the contrary: the military forces of NATO, including those of the United States, altogether lack the means to wage anything but a limited defence with conventional arms in general war and, given the political aims in consonance with popular will among the member nations, will continue to lack them. The consequence is that, in the event of war, the choice of time, form and principal lines of opening will lie with the Soviet Union, which itself commands now the means for sustained offensive action.

Ability to strike back

Widespread public acceptance of this within the Alliance has not, however, led to general agreement as to the form which strengthening of conventional arms should take. Anxieties concerning the event of nuclear war have prompted some outside the consensus of pacifism to advocate what may be called a policy of absolute defence: that is, exclusive reliance on weapons systems capable only of defensive operation; for example, the anti-tank guided missile as against the tank with its capability for offensive and defensive action. Such a policy would commit NATO's forces to defeat by progressive attrition.

In seeking to improve the potential of the Alliance to defend itself by conventional military action, the ideas in this paper are rooted in the view that means must be disposed for limited or local offensives: to strike back, for example, at enemy airfields and their associated defences involved in operations against the Alliance or, at shorter ranges, to counter-attack enemy armoured formations on the ground with the aim of destroying them and recovering where practicable the territory of nations attacked. There is thus a need to maintain the capability currently disposed, albeit inadequately, by the tactical strike aircraft, the tank and the submarine. Against the trend of rising costs in military research, development and production, as also in man-power, the question to be addressed is: how can a stronger conventional defence be provided within the conceivable limits of member nations' defence budgets?

Genuine fears

Strengthening NATO's conventional capability does, however, raise genuine questions of a different kind. For example, if the West's strategy did threaten the large-scale use of conventional missiles to eliminate Warsaw Pact airfields, how could the Soviet Union be certain that their appearance on its radar screens did not mean a nuclear first strike? What form of agreement and inspection would be needed to avert such a misunderstanding? How is Moscow to be given sufficient reassurance to obviate the adoption of a "Launch on Warning" posture which could undermine the whole purpose of deterrence? Equally, how could Moscow reassure the West?

These issues cannot be shirked; for deterrence is an open concept, not a closed one like war. It means nothing if a potential adversary does not understand it; and therefore it can and should be discussed with him, once it has first been thoroughly examined and understood by ourselves. This is not the case today. Technology will certainly pose greater arms control problems in the years ahead. It is time to identify and take a view of them now. They will only be solved internationally by systematic East-West consultation in which Europe as well as the United States should play a full part.

Dialogue is essential

Without resolution and consultation, no amount of gadgets will be of any avail: indeed, they could be counter-productive. As a central contribution to world order, we need to establish between ourselves

and the Soviet Union the basic rules of co-existence: guidelines for confidence and conduct; clearer understanding of what each side considers intolerable, and crisper mechanisms for crisis management if these guidelines should break down. For these purposes the present level of communication, epitomised in the pre-printed hand-out, is worse than nothing. Exchanging messages is no substitute for face-to-face dialogue and discussion.

In this advocacy of world order there is nothing radical or Utopian. Its central importance to peace is going to be brought home to us sharply in the next decade when the two superpowers find themselves confronted with a world from which their nuclear hegemony has vanished, and their interests are threatened by small powers or terrorists with nuclear weapons.

Efforts to prevent this happening have broken down since Afghanistan. It is in the interests of both NATO and the Warsaw Pact that they should be revived, and incorporated in a new non-proliferation regime, along with progress in disarmament by the superpowers. This will only be possible through closer cooperation between the superpowers which, in turn, will involve recognition that the logical alternative to the use of nuclear weapons is a new level of world order.

We make no excessive claims for technology. It is not a magic wand, an elixir, or Beachcomber's celebrated "Snibbo" which claimed to be able to cure anything from foot-rot to cliff erosion. But, in our judgement, it has a very large potential for good or ill, and for war or peace. Deterrence is concerned exclusively with the prevention of war. Its credibility needs to be restored. Technology should be understood and used positively for that purpose before it runs away with us.

CHAPTER I

POLITICS AND POLICIES

Five ways the deterrent requires improvement, and how the new technology can help.

Technology's potential can only be constructively considered in the context of a framework of politics and policies.

The overriding aim must be the prevention of World War III. This can be achieved only be effective deterrence – the prevention of nuclear or conventional war – and by progress in arms control.

Deterrence has worked for nearly 40 years. The notion that peace has been preserved by deterrence has lately been challenged by the so-called peace movements ("so-called" because it can be strongly argued that their policies will create instability and have exactly the opposite effect to what is intended). Too often this scepticism about deterrence has been rebutted rather defensively. Nobody can absolutely prove, it is said, that peace has been due to deterrence. True; but it is beyond all reasonable doubt. It does not take a Thucydides to reach this verdict. During this century two major wars occurred in Europe before 1945, and scores of wars have occurred outside Europe since then. It is customary to ignore the appalling damage and casualties that these conventional wars created. The Battle of the Somme between 1st July 1916 and 19th November 1916 resulted in 1¼ million casualties. The British alone on 1st July lost 21,392 dead and 35,493 injured. One out of every seven of the 5½ million British subjects who took part in World War I was killed. Yet the total death toll was only 17.7% of the 55 million killed in World War II. Two conclusions can be reached. Deterrence must aim to prevent conventional war. The concept of a long drawn out conventional war is totally unacceptable as a basis for strategy.

Post-war Europe's freedom from war has been a unique phenomenon. The reason why there has not been a third world war must lie in an ingredient which is present today but was absent in 1914 and 1939, and is certainly absent today outside the North Atlantic. By elimination it is clear that this ingredient is the knowledge in the mind of a potential aggressor of the consequences of any aggression.

Preventing miscalculation

This is precisely what was missing in 1914 and 1939. The Kaiser and Hitler miscalculated. They did so because there was no clear

deterrence, and no trans-atlantic and European Alliance. There was no warning of the possible consequences. Today that warning exists. If it were removed, by the collapse of NATO, the trans-atlantic link would be broken, and Europe would degenerate into an anarchic group of nations lacking cohesion, as in the early parts of this century. Once again the rule of the strongest would prevail, pressure would be applied and liberties would be taken with the weak on a piecemeal basis. With such a prospect it is not relevant to argue that Russia is a defensive power with no more territorial ambitions. The fact is that in this world of international anarchy, without a clear "no entry" sign there is no assurance that the Soviet Union would not come into North Norway, for example, as she did into Afghanistan. As things are, she treats NATO with respect. There is no room for miscalculation.

Deterrence . . .

What comprises this deterrence which thus commands Russia's respect? It is the totality of consequences which would follow a Soviet aggression in Western Europe. It is sometimes implied by Western strategists that these consequences would be exclusively military. But any attempt to see the view westward from the Kremlin windows must recognise that a large segment of this deterrent is not military at all but political, social and economic. The Politburo is deterred from aggression by the knowledge that it would have to pay a crushing non-military as well as military price for any territory gained. It would lose all Western economic aid, all financial credit, all grain imports (which currently comprise one-third of Soviet consumption), as well as technology for its pipeline, and endure a multitude of other developments, including possible insurrection in Eastern Europe and guerrilla warfare in Western Europe. The Soviet Union would incur worldwide isolation, its image in the Third World would be destroyed and its economy wrecked. These prospects alone are a formidable deterrent. They are even more formidable when complemented by the military component of the Alliance.

. . . and Reassurance

In contemplating deterrence, we should never lose sight of the aim. That aim is peace. Victory is not an option. Unfortunately this obvious fact is the subject of a strange astigmatism in some quarters. Some say: "Of course there can be no victory. Just the same, we might as well keep trying for it." Some would seek to break the Soviet

economy in an arms race. Others think of fomenting insurrection in Eastern Europe. But NATO is and must remain a defensive alliance and its relationship with the Warsaw Pact should be one of mutual security. To reinforce this relationship, every artifice of reassurance needs to be brought to bear.

Yet it would be idle to deny that in the West serious questions have been raised about the effectiveness of the deterrent, and about nuclear and conventional strategy, and about arms control. In essence, these doubts centre around the issue of over-reliance on nuclear weapons and perceived weaknesses in conventional weapons. It is necessary to look at them and see how far technology can help to remedy them.

What is inherently defective in the present system? We propose to deal briefly with five main areas:

1. COST

Perhaps the most continuing cause of concern is the sheer cost of weapons systems, particularly conventional ones. NATO has always been unwilling to pay the price to match the Warsaw Pact in conventional weapons – particularly tanks, guns and aircraft; hence the doctrine of Flexible Response. Today, the cost of conventional weapons is escalating at such a rate that strains are opening up all over the Alliance; and the Warsaw Pact, with its longer assembly lines and cheaper unit costs, is becoming relatively stronger. The problem is strikingly illustrated by the fact that, during the last twenty years, the number of fighting ships in the Royal Navy has fallen by well over a half, and the number of combat aircraft in the Royal Air Force by nearly a half in the same period. This trend is evident in other countries as well. Shortages of logistic reserves, particularly missiles and ammunition are well known. It seems beyond the bounds of possibility for the West, on the basis of existing policies, to allocate resources in such a way as to halt this trend, let alone reverse it.

In this context, new technology is something of a two-edged sword. Some of it is very expensive. It raises, too, sharp dilemmas in terms of industrial policies. On the other hand, as we shall show, it has the welcome quality of a powerful force multiplier.

2. THE NUCLEAR DIMENSION

Cost escalation, unless checked by new policies, forces greater reliance to be placed on battlefield nuclear weapons at a time when

such a policy is becoming illogical, dangerous and unlikely to be totally credible to a potential aggressor. It is illogical because the Warsaw Pact can now match the West in these weapons, which it could not do when Flexible Response was introduced in 1967. It is dangerous because such a recourse would devastate Europe, and contains the high risk of nuclear escalation.

The contradiction contained in Flexible Response is now emerging into the spotlight of public opinion. An increasing number of people are unhappy with a defence policy over-biased in terms of vast numbers of nuclear weapons which are unnecessáry for deterrence, are incapable of use in large numbers, and have little practical significance.

Today there is strong public support for NATO, and rejection of unilateral disarmament. Yet there is a risk that current disquiet may develop into dissent in one or more members of the Alliance, burgeoning eventually into outright disaffection. There is no real sign of this at the moment. Yet disquiet must be recognised, because if it is not, it could fester into the greatest danger of all – a Soviet miscalculation based on the illusion that public opinion in one or more sectors of NATO had become disenchanted with the Alliance, and the political and public reaction to aggression had weakened.

Technology to raise the Threshold

For this reason alone it is important to resolve some of the contradictions in NATO's defence policy, and thereby not only increase deterrence but also enhance the willingness of the politicians and the public to support it both morally and tangibly. Defence requires greater credibility, and political and public unity, than currently exist. The use of technology can raise the nuclear threshold and offer, for a limited period, a more credible conventional defence against the Warsaw Pact, and thus diminish the risk of early resort to the use of nuclear weapons.

The need for a strong Western strategic nuclear deterrent to match that of the Soviet Union would be unchanged; and the case for a British strategic force would remain as strong as ever. Equally, some theatre nuclear weapons would be needed, though in much smaller numbers, to demonstrate the ability to retaliate. But it is now time to question –

(i) whether the West needs slavishly to match the Soviet nuclear armoury at every level. The complaint that one side or another should not be allowed to have a "monopoly" of some particular

nuclear weapons system is particularly illogical and has little to do with deterrence.

(ii) Whether the forward location of nuclear warheads any longer makes either military or political sense. From their present dispositions, the Warsaw Pact could destroy many of these delivery systems in quick time. The weapons themselves would present the Allies with the dilemma of "use them or lose them". At the same time, Allied resources are currently diverted to the conventional effort of protecting as well as supplying these advanced depots.

First Use

There has been much discussion in the last year or two about "First Use"; that is, being the first to use nuclear weapons in an existing conventional conflict. There is no serious basis for arguing that if it proves possible to raise the nuclear threshold, this would constitute grounds for a declaration of no "First Use". Such a declaration would be either meaningless or undesirable. Either the Soviet Union would not believe it – let alone make it a fundamental planning assumption – so that it would be meaningless; or if they did believe it, then it could encourage them to reconsider the possibility of conventional war, and so it would be undesirable. The West should not give way on the "First Use" issue.

As already remarked, NATO is a purely defensive alliance. it seems to have been totally forgotten that the Heads of Government at the Bonn Meeting in June 1982 made a public pledge that none of its weapons, conventional or nuclear, would ever be used except in response to attack. This is the fundamental truth to which we must stick. In Europe particularly, the real fire-break is between peace and any kind of war, and it is the breaching of this fire-break above all that we must prevent.

Battlefield Nuclear Weapons

Many people question whether, in this age of nuclear parity, nuclear weapons can ever be rationally used at all. Obviously their use in large numbers would bring about unimaginable destruction. It is also salutary to remind ourselves of the damage that ten middle-yield nuclear weapons could do. The right conclusion to draw is that there is a super-abundance of nuclear weapons deployed on both sides.

It is also argued that the "First Use" of any nuclear weapon would escalate any conflict out of control. This would certainly be true if a

barrage of battlefield nuclear weapons were involved; such an exchange would not only be extremely devastating in its own right, but would almost certainly trigger off a major nuclear response. Again, this argues strongly for the withdrawal of battlefield nuclear weapons on both sides.

Demonstrative Use

Any East-West hostility in Europe would fall into one of two scenarios: one in which Russia deliberately committed aggression, and one where a chain of exceptional circumstances led to some kind of hostility. The deterrent has ensured that the Soviet Union cannot afford a war, and does not want one. If some kind of hostility broke out by accident, then it would become necessary to make it unmistakably clear that it had got to be stopped, and that the Soviet Union had misread or miscalculated the situation. Essentially this would be a matter for diplomacy; but time would be needed to ensure that the situation did not escalate out of control.

Nevertheless, in any circumstances, the West should certainly reserve the right to use the nuclear weapon in a strictly limited role, with the purpose not of fighting a war but of conveying to the Soviet Union that it had embarked on a course of action which would not be tolerated. Clearly, any such use might provoke reciprocal action, which argues strongly for any use by the West to be of the most limited kind, and probably of a demonstrative nature.

3. OUTSIDE EUROPE

This area again presents a major weakness of the deterrent philosophy. Where nuclear weapons exist in significant quantity, a deterrent has worked and is well understood in an institutional framework. This situation barely obtains outside Europe, to which must be added the fact that there are few political understandings, force is difficult to apply, and in some areas, law and order is at a discount. The record has shown that there is considerable scope for miscalculation, not only between the super-powers but also in smaller conflicts. Cuba, the Congo and the Middle East are the classical examples of the 1960's, and thereafter there is a long list; South-East Asia, the Horn of Africa, Afghanistan and the continuing turmoil in the Middle East are but a few examples. Problems of this kind will be with us for the foreseeable future. Not enough has been done to generate an effective dialogue within the West, let alone between East and West. It is here that the real threats to world peace are at

their strongest. There is an urgent need for all these issues to be addressed, and effective dialogues to take place.

What kind of part can technology play here? Clearly, the role is more limited than in the institutionalised arrangements between East and West; but there is certainly a great deal more scope for using modern techniques for surveillance, as well as other means of acquiring intelligence. Much more could be done in terms of establishing warning measures and, when necessary, by the provision of well-equipped international forces, in which NATO members should be ready to play a part. The crux of the matter, however, lies in the need for East-West agreement, in the context of world order. It is these apparently localised issues which present a real risk of a serious conflagration. It is therefore in the interests of both East and West to establish guidelines and procedures outside the NATO area.

Lack of such mechanisms was manifest throughout the 1970's as the Soviets essayed a series of colonial adventures culminating in Afghanistan, and at the same time strengthened its nuclear armaments. The West became anxious, tried limited diplomatic pressures and responded with its own nuclear rearmament. The last was an understandable reaction, yet it had no bearing on the real problem in hand. It did not get the Red Army out of Afghanistan.

The myth of nuclear diplomacy

Nuclear diplomacy and deterrence in situations of this kind are a myth. Of all the instruments available for dealing with Soviet action outside Europe, nuclear weapons are amongst the least relevant. They sometimes seem to be treated as sovereign coinage in a market where they have little or no value. Above all, they contribute nothing to the introduction of clarity which is today's most urgent need in East-West relations – rather the reverse. The most potent instruments of pressure available to the West are simple conventional military capabilities together with such steps as truly cohesive political and economic action, pressure for Human Rights, stronger broadcasting (soon to include TV) inside the Soviet Union and other miscellaneous but powerful levers dependent upon the situation, and above all on the united pressure of foreign states. These are dynamic weapons. If they were consolidated into a coherent arsenal of activity, and clearly related to a known code of conduct, at last some clarity would be introduced into East-West relations. If the scope for miscalculation is to be removed, particularly outside Europe, it will not be by nuclear body-building exercises but through the evolution

within NATO nations of techniques for clarifying, defining and following up East-West guidelines if there are violations: a tall order but a necessary one. Conflict is certain outside Europe. There is an urgent need to diminish the risk of larger conflicts as well as to encourage the observance of law and order.

4. STAR WARS

If the European deterrent can be outflanked in Africa, Latin America or Asia it could also be outflanked in space. This brings us to the fourth weakness of deterrence. Unregulated competition in space would give a further impetus to the arms race by arousing new fears of a first strike. These fears would foment suspicion, exacerbate international relations and destabilise the deterrent. The fear would be that one side could wipe out the satellites on which the other depended for warning against surprise attack, and for navigation, targeting and command/control/communications, military and civil, in the event of such an attack. There is no doubt that a great deal is at stake. Some 70 percent of all US military communications overseas are by satellite. The first target in a global war is likely to be the eyes and the ears of the other side. But are these fears of a first strike rational? Do they justify an acceleration of military programmes in space? There is the potential of "directed energy" weapons, using either a particle beam or a laser beam to impinge sufficient energy on the target to destroy it. This capability has recently been advanced in the United States through the energising of a laser by a micro-nuclear explosion. The Soviet Union has tested conventional anti-satellite missiles.

In the atmosphere, though laser weapons have been tested successfully at very short range, the energy loss is such that it is hard to foresee them developing an early long-range capability. In space there is no such loss, and a beam could travel enormous distances at the speed of light. The problem has been to project an energy source of sufficient power into space. But it may be possible to overcome this lack by space shuttle techniques. Both superpowers could have the capacity to deploy anti-satellite weapons (ASATS) by around 1990.

A fantasy

Could the use of space in this way affect the military balance? Could it produce a new defensive system which would be so effective as to destroy deterrence? In President Reagan's "Star Wars" speech of 23rd March 1983 he apparently envisaged a capacity to shoot down all

incoming ICBMs through directed energy weapons. But later in 1983, the laboratory fantasy seems to have been treated more prudently. This is just as well; for it is only a fantasy. The truth is that there is a fundamental qualitative and quantitative difference between doing something once and being absolutely certain of having the ability to do it with a 95% success rate against a large number of targets.

Existing international agreements prohibit the stationing of weapons of mass destruction in space and interference with other states' satellites. They do not constrain the deployment and testing of non-mass destructive anti-satellite or anti-aircraft weapons in space.

By other standards, space is still relatively unspoilt. There is still a flexibility in attitudes. The arms space race should be curbed now and attempts made to convert it into cooperation. Satellite surveillance is one of the great stabilising forces in the world today. As such it benefits both sides. Both therefore have an interest in maintaining that attitude, and in promoting it cooperatively, providing each can be sure that the other is not cheating. Can this be done?

Calling it Off in Space

The Russians, having taken an initial lead in ASAT technology, now fear being overhauled by the US programme directed from the new Space Command.

They have proposed a treaty calling for a ban on the testing and deployment of weapons in space and the elimination of all existing ASAT systems. The US has disputed whether such an agreement could be verified. A major problem is the large overlap between civil and military uses; the ability to perform an in-orbit rendezvous could be almost identical with the collision technique of an ASAT.

Yet the only military value of an ASAT capability would be one of a scale which could knock out virtually every one of literally hundreds of satellites simultaneously. This aim is in practice unrealistic; but any attempt to achieve it must involve a massive ASAT programme which could not be camouflaged as civil in intent. This offers a reasonable scenario for verification. Coupled with the enormous cost of such a programme, which must reduce its attractions to the military of both sides, the space race could, if prudently handled, peter out for the same reasons as the ABM race: a project which is in theory technically feasible but which weakens deterrence, is militarily unnecessary, diplomatically dangerous and economically ruinous. It therefore offers little rewards to either side. There is much to be said in favour of a Treaty which would forbid the testing in space, or

against space objects, of any weapon that can destroy, damage, render inoperable or change the flight trajectory of space objects.

5. ARMS CONTROL

The fifth major problem, already mentioned, arises from the use of technology to redress the conventional imbalance: namely, the possibility that it may actually over-correct the inferiority of the West, or be genuinely felt by Moscow to be doing so. Thus, finally, it has to be asked: what deters, and what is considered to threaten?

The technology exists for the West to produce conventional weapons capable of inflicting enormous damage on the Warsaw Pact, not least by striking at its support forces, or second echelon, and its air-fields and military concentrations, communications centres, and logistic support centres deep in Eastern Europe. It may be suggested that aircraft provide this capability at the moment; but they would suffer large casualties, and are at present inadequately armed with stand-off weapons. Failure of such strikes would increase the risk of an early resort to theatre nuclear weapons.

Yet present technology can provide the ability, through precision-guided conventional munitions with multi-purpose war-heads, to bring about great damage and delay to any aggressor. Would such a capability be stabilizing or de-stabilizing? Would it alarm the Russians? Would it reduce the risk of an early resort to theatre nuclear weapons?

Legitimate Soviet Fears

The Russians should have nothing to fear from NATO's conventional weapons so long as NATO remains a purely defensive Alliance. No Soviet leader could rationally fear a NATO conventional attack in the way that they feared Hitler or Napoleon. This kind of technology could never give NATO the conventional capability to invade the Soviet Union.

What the Russians fear is devastation of their homeland. It has happened twice in this century. It is a legitimate fear. It is heightened by the West's over-dependence on theatre nuclear weapons. The US Committee on the Present Danger stated strongly its belief in a Soviet "Window of Opportunity" during the 1980's largely because of the strength of the Soviet land-based nuclear forces. It is just as possible that Moscow's strategists are equally concerned about an American "Window of Opportunity" resulting from the increasing strength of United States strategic underwater nuclear forces.

More reliance on conventional technology would require a clarification of the intentions and expectations of each side. If the West plans to strengthen its conventional defences, it should be ready to explain to the Russians why it is doing so. In particular it would be essential to demonstrate that all the changes were for defensive purposes, and aimed at redressing Soviet conventional superiority, so as to allow more time before being faced with the possible need to resort to nuclear weapons.

Yet there are problems. One is illustrated by the Pershing II missile. This has two of the three critical elements liable to generate Soviet fear: it is nuclear and it has a short flight-time. It does not have the third ingredient – the capability to reach Moscow from West Germany. But the Russians claim to believe that it does. If it were given conventional warheads, not only would the third problem remain, but there is no known way of distinguishing a conventional missile in flight from a nuclear-carrying one. The same is true of aircraft. Some kind of guidelines and internationally recognised procedures are urgently required. With conventional weapons, such as technology can now supply, it would not be easy for either side to reassure the other that these could not be converted to dual-purpose at short notice. But the other two criteria should be carefully considered. Is it possible to give reassurance about range, by reciprocal on-site inspection? Would this be accepted? As to flight-time, there is a very strong case in favour of cruise rather than ballistic missiles, since these provide, subject to location or launch point, significantly longer warning time.

Indeed, it is arguable that confining all cruise missiles to carrying conventional loads would be a considerable step to clarifying the whole position as to what weapon might be nuclear and what might be conventional. In a significant number of cases there is no way of telling. This is a neglected and deplorable situation. We would suggest that there is an outstanding need for full examination of this problem, which seems to have been largely ignored.

Chemical Weapons

Finally, the Soviet Union has a large capability in chemical weapons. This is an exceptionally destabilising factor because it is essentially a unilateral threat to the West, and particularly Europe. The nature of the threat is such that renewed efforts should be made to prohibit the production and possession of such weapons. The Soviet Union must recognise the risk that its possession of these weapons runs the major

risk that the West would be forced to resort to retaliation by nuclear weapons. The Soviet Union's chemical weapons present a much under-estimated threat to peace and are a positive incitement to nuclear escalation.

The way ahead

To recapitulate: NATO is a defensive organisation. Its first and only true task is to stay at peace with the Soviet Union and the Warsaw Pact countries. To do this it must deter aggression, which means preventing war by making it clear to any aggressor that the price to be paid is unacceptably high. Nuclear weapons and conventional forces are both essential ingredients of deterrence.

The deterrent has been weakened by the belief that it relies over-heavily on nuclear weapons. This view is shared on both sides of the Atlantic. So too is the belief that technology offers an opportunity to strengthen our conventional defence capability. This would make the deterrent more credible, raise the nuclear threshold, and make a contribution to restoring public confidence in public policies.

Change would take years, not months. It would bring in its train new domestic and international problems. These need to be identified, examined and resolved. This paper now examines some of the practical possibilities as a contribution to seeking a way forward which will enhance the cohesion of the West, be understandable to the East, and contribute to the security of all.

CHAPTER II

THE NEW TECHNOLOGY

How it could Affect the Battlefield

Technology has long been identified as a major force multiplier. New explosives chemistry and mechanical engineering made the major contributions to weapons systems in World War I. In World War II, physics and electrical engineering provided revolutions in capabilities such as surveillance, communications and rocketry.

Today it is the wide range of electronics systems which is at the centre of change: remote sensing, surveillance and communication by space vehicles; tactical surveillance, precision-guided munitions, and electronic support and counter-measures in the air, land and maritime environments. These reflect the West's technological lead which, if properly exploited, can advance our ability to meet the threat of numerically superior force and so enhance total deterrence.

In all of this, the key technological capabilities are those of sensors, of signal/image/data processing and of communications into a command and control function. The semiconductor device and circuit and digital electronics are strategic technologies in both the civil and defence sectors of the West. Active and passive sensor technology is now capable of exploiting a great variety of characteristics and parameters of targets – shape, size, temperature, radar cross-section, speed and direction, electromagnetic emissions and so on – so that, *inter alia,* a major force multiplier of the past, viz. surprise, is much more difficult to develop and sustain. Exploitation of target characteristics is also at the centre of developments in accurately guided missiles. Here, typically, thermal and/or acoustic signals are received by an appropriate sensor, and advanced signal processing via digital electronics provides for the necessary discrimination and guidance. As was so dramatically brought out in the recent confrontations in the Lebanon and South Atlantic, the guided missile brings an entirely new dimension to vulnerability on the electronic battlefield, so that a force based on more conventional systems is having to consider a range of expensive counter-measures if investment is not to be wasted.

The tactical management of resources, of exploiting interactions between various systems – in short, of tactical command and control – is lending itself increasingly to automation, with information

technology (the coupling of advanced computers to telecommunications) having major force multiplication properties which come from sensible and sensitive combinations of various assets. Essential to future developments in information technology will be the evolution of artificial intelligence – so-called expert systems, which will be able to absorb increasingly complex information and will thus be instrumental in further changing the man-machine interface. There is a need to recognise the impact which opto-electronics may have on the battlefield, and in particular the laser sensor damage weapon against relatively unsophisticated sensors.

To get the best out of this technology, there must be a clear dialogue between demand and supply. The operational requirement must be articulated, but it must be within the range of feasibility. This means that it must be both effective and survivable. If it is not survivable it will not justify the very large sums of money which such projects can consume.

It is thus appropriate first to summarise the broad categories of artefacts which technology can offer between now and the end of the century, recognising that they are likely to be equally available within a short time to the Soviet Union. In Chapter 3 we consider how these opportunities offered by technology relate to the operational requirements of NATO.

The central contribution of the new technology is by way of force multiplication. We must continue to base our response to threats not on matching of numbers but on the exploitation of asymmetries in technology capabilities between the West and the Warsaw Pact.

1. Surveillance

For NATO the first application of the force multiplier should be to counteract the primary advantage of any adversary: surprise. A *sine qua non* of deterrence is thus not only the ability to provide real-time warning of mobilisation, but also the capability to assess the combined significance of intelligence from many sources. NATO has command and control needs not only in the military but also the political arena. Its arrangements need constantly testing, to guard against allowing the increasing flow of data to choke the assessment apparatus.

Adequate *strategic* surveillance is thus fundamental to deterrence, and therefore to stability between East and West. The advance of satellite and airborne technology now affords a breakthrough in the science of preventing surprise attack.

At the *tactical* level, too, surveillance is a vital ingredient of defence and therefore deterrence. Even in the absence of strategic surprise, the WP might well, in the present state of NATO's defences, reckon that it could achieve victory through tactical surprise. Better tactical warning is essential to prevent NATO forces from being overwhelmed by a surprise localised threat.

Here, the emergence of Remotely Piloted Vehicles, based on microelectronics, could eventually open the way to a new and cheap form of reconnaissance and target acquisition.

2. Night Fighting

A second opportunity offered by technology, of possibly decisive importance, lies in the field of all-weather night-time fighting. The development of thermal imaging systems, based on a standard series of modules for variations in ranges, offers a way to meet a wide variety of applications in a truly effective way. The capability to turn night into day on the battlefield is still a long way off; but if it is considered to be an operational requirement, as it should be, it is one which NATO could attain long before the Warsaw Pact. Britain leads the world in important applications of thermal imaging night sights, and this should be a priority for further development.

3. Weapons

In weaponry, the aim of present developments is to provide "fire-and-forget" precision delivery at short ranges, and completely autonomous target detection, recognition, homing, fusing and attack at longer ranges. Here the problem of cost-effectiveness is critical. The objective should be the delivery by a single missile of large numbers of autonomous weapons each capable of taking out a militarily significant target, such as a tank or communication facility. This terminal guidance is, in the present state of the art, not cheap; but it is getting cheaper in real terms. With mass production and standardisation of weapons as between land, sea and air targets, we can expect a marked improvement in the relationship between "smartness" and cost. Care needs to be taken to find the most cost-effective sensor package for detecting a target against its background, which will probably include decoy shapes and sounds, and destroying it. In such an environment the best results may well come from deploying a mix of sensors.

4. Command and Control

In tactical command and control, a difficult balance has to be struck. Technology will provide the means for an unprecedented degree of oversight of the battlefield. The risk is that this oversight will be extremely vulnerable, and lead to over-centralisation, and thus be unworkable in practice. With the enormous increase in data available, attention needs to be focused on network management, filtration and message routeing to ensure that the right people get the right information. Considerable precautions need to be taken against disruption by enemy electronic warfare. Redundancy of communications links will be needed to provide survivability. The agility, flexibility and programmability of modern EW devices is essential. NATO has systematically under-invested in command and control of electronic warfare equipments. The position needs urgent remedial action.

Many of these assets will in due course be available to the Warsaw Pact. As things stand today the WP enjoys massive advantages which we identify in the following chapter. These include superiority in combat aircraft and armour, a degree of airborne as well as ground control which the West cannot begin to match, and the capacity to strike with up to 4,000 helicopters well behind the NATO front line. To these assets the new technology will certainly add the ability to immobilise the majority of Western airfields, to destroy our command, control and communication centres, and decimate our manned platforms as surely as we could theirs.

It is time to recognise that what this portends is a battlefield of unprecedented confusion.

The ability to see further and hit further would not only cause enormous destruction but also dictate dispersal, placing acute strains on C3 facilities. More and more decisions would devolve on battalion and operational flying commanders, and delegation would be essential to survival. Further confusion would be caused by the tempo of events: the process of acquiring and hitting targets which currently may take four hours could soon be performed in four minutes.

The Battlefield of Chaos

In this way it seems probable that the arrival of highly precise weapons systems in the 1980s and 1990s is ironically likely to engender a highly imprecise situation, in that the level of destruction will be very high, so that disruption, not least of C3, could merge into chaos. With due anticipation this totality of effect could benefit the

defender. It is true that confusion could confer certain obvious benefits on the side with an advantage in sheer numbers. It could also be skilfully exploited by diversionary tactics, recalling those which a failing German army used so effectively in the Ardennes in 1944 and for which WP planners have a well-trained capability.

1. But chaos could be turned to the West's advantage. Successful aggression, in contrast to defence, requires lengthening lines of communication, logistics, reinforcement and not least air cover. The vulnerability of all these targets offers the defender a technological opportunity perhaps greater than the aggressor. The weakness is inherent in offensive operations, and open to exploitation if it is recognised.

With this prospect of a battlefield of chaos, the long-term emphasis of NATO must be on survivability; on massive firepower, particularly in stand-off form; on the ability to fight in all weathers and at night; and on human initiative. Field Marshal Slim cogently argued that a nuclear battlefield would resemble jungle warfare in the premium it placed on initiative down to the lowest level, and survivability in conditions of maximum confusion. The same is likely to be increasingly true of conventional warfare. The more complex, destructive and accurate it becomes, the closer to a state of disorder it is likely to approximate.

2. Two further advantages could accrue to NATO with the intelligent adoption of new technology. One is the fact, already noted, that it could undoubtedly injure most the side most dependent on manned platforms.

3. The other is that the West's technological base, being more creative than that of the WP, is also more flexible. This should enable it to opt for those scientific opportunities which will favour the defence.

The central question for decision-makers is thus: *where and how the capability to see further and hit further can be most productively applied* to strengthen the West's defences, and with them its capacity to make war unacceptable to an aggressor. This we now consider.

CHAPTER III

THE DEFENCE NEEDS

Remedying NATO's battlefield weaknesses

1. OVERALL STRATEGIC

What then are NATO's military requirements for new technology?

The most comprehensive single weakness is the likelihood that a conventional invasion by the Warsaw Pact could at present only be successfully halted by the use of nuclear weapons.

Raising the nuclear threshold

Clearly a contradiction in NATO's strategy would be resolved if it were able to defend itself against a conventional attack without resort to nuclear weapons. That this has not been achieved so far is in some measure due to Western lack of commitment. With a combined wealth twice that of the Soviet Union, the European members of NATO alone could have at least greatly strengthened their conventional capability. It cannot be denied, however, that the Warsaw Pact, because it is an empire, enjoys ill-gotten advantages over an alliance of democracies: it can pay its troops practically nothing, it can devote three times the percentage of its wealth to defence, and it can deploy immensely long assembly lines for its hardware. The West by closer international integration, could reduce these disparities; but from the birth of NATO, it has been unwilling to do so. At a time of financial exigency it looks less likely than ever to spend more on doing so now. Thus, if the nuclear threshold is to be raised by greater conventional capability, and with it the level of safety in which we live, the onus rests heavily on technology.

To what aspect of Western defence should it be most urgently applied?

Particular weaknesses

The greatest generic weaknesses of the West, which together constitute the above disequilibrium, can be expressed in terms of the WP's advantages. These include:

1. The WP's recently acquired ability to launch a major attack with a very short warning time.
2. Its 3:1 superiority in armour and artillery.

3. Its 2:1 superiority in the air.
4. Its consequent ability to destroy much of NATO's ground radar in the opening hours of war, which would leave only NAEW as the means of carrying through surveillance for, and control of, NATO's air defence systems.
5. Its superiority in electronic warfare equipment, in service, to most of the NATO countries which it faces.
6. Its ability to dominate the air environment through massive S/A missiles of ranges now approaching 200 miles from the FEBA.
7. Its developing ability to mount clandestine operations deep behind NATO's front line, and in any European country of the Alliance, using diversionary brigades. These are formations specially trained in such operations and equipped with the languages, uniforms and weapons of NATO nations as part of this subterfuge. They represent a threat to sensitive political and military targets in nations' home bases as well as in the rear of the battle area.
8. The ability of its transport air force, in combination with fighter escort and EW aircraft, to deliver parachute formations to a depth of several hundred miles inside NATO territory. At the shorter ranges it has several thousand helicopters capable of carrying large numbers of troops.
9. Its chemical warfare capability, unmatched in the West.
10. Its submarine fleet whose numbers, speed and evolving quietness poses a far greater threat to Allied shipping than that of the German navy in 1940-4.
11. Its satellite surveillance of the Atlantic which, linked to those submarines and to long-range aircraft with stand-off missiles, raises major questions about the means of transatlantic reinforcement.

Missiles v. Platforms

There can be no doubt that in an age of precision-guided munitions of increasing range, the dominance of the platform on land, air and sea is sharply declining. On land and in the air, where Soviet strength lies in its massive array of platforms, this can only benefit the West. At sea, the boot is on the other foot, to the extent that the West's reinforcement strategy has been heavily dependent on platforms. Even here, however, the Soviet are vulnerable; in the cruise missile age, the powerful Soviet surface fleet could be made to face insuperable problems in trying to reach the Atlantic through the Greenland/Iceland/UK gap.

Because of this asymmetry, the new technology, based on radars, lasers, passive electromagnetic sensors, infra-red, acoustic and optical sensors and imagers, could in Europe confer on NATO much greater advantages than on the WP. If wisely handled it could be more cost-effective than the present systems. The tank, for example, is still irreplaceable as a form of mobile firepower; but the idea that a tank, which can now cost over £1m. is the best answer to another tank has ceased to be true ever since reliable wire-guided anti-tank weapons have been available for around £2,000 (now £4,000). Likewise the use of an aircraft, costing up to £15m. and with a life expectancy of perhaps half a dozen missions in a hostile environment, can only be viewed as cost-effective, compared with a missile, against exceptional targets, such as mobile ones. As to warships, the Falklands told its own story: six major ships out of twenty-three were sunk, and sixteen might have been seriously damaged if all the Argentinian fuses had gone off. In the long run – over two decades – missile technology, if prudently deployed, could be actually cheaper in real terms than one depending on costly platforms with high unserviceability rates, maintenance costs, and expensively trained crews.

Strategic Options

In strategic terms this potential presents the West with a number of options.

(i) The one currently favoured by NATO's Supreme Allied Commander Europe is to acquire the ability to dislocate the Warsaw Pact's *second echelon* theatre reserve and strategic reserve as they moved up to replace the first echelon. This would be done through the interdiction by precision-guided missiles of choke-points dictated by the terrain where armour could be concentrated, together with bridges, airfields and other strategic control centres. To achieve this, SACEUR has called on NATO members to raise from 3% to 4% their targetted annual increase in defence spending for the next eight years. It is doubtful whether this is likely to be supportable within the Alliance.

(ii) Some, while recognising the force of this strategy, consider that prior attention must be given to halting the massive momentum of the *first echelon*. If this means making less imaginative use of new technology which has yet to be deployed, they say, so be it. The first need is to stop the machine in its tracks, hopefully by every available *tactical* device available on the shelf now – particularly in short-range

target acquisition, in concealment, and in night fighting – but also by an increase in the *quantity* of basic consumables proved necessary by the colossal rate of attrition in recent wars elsewhere.

(iii) *Defence in depth.* This could combine elements of both strategies. Since it is plain that WP planning envisages attack in depth, it makes little military sense for NATO to stake its strategy so exclusively on holding the WP on the German border, regardless of the consequences of a breakthrough. Physical obstructions and demolitions can and should be used much more to delay an advance; but they will never halt it. The weakness of such a forward strategy is that it is a standing invitation to the WP to go for a quick victory. Worse, it is likely to present, early rather than late, the need for a decision on the use of nuclear weapons; it thus lowers, rather than raises, the nuclear threshold.

To the Warsaw Pact the picture would be much less inviting if the WP first echelon faced the prospect of heavy fighting 50 miles further from its main airfields, radar and supply dumps, while its second echelon was being disrupted by smart weapons in a way which would have been impossible in the 1970's. An exclusively forward strategy may be politically attractive, but militarily it is so irrational that it could amount to the difference between success and disaster. Sensitivities within the Alliance about the German border are an abiding political factor. Obviously any NATO strategy must aim to hold an attack as far forward as possible. But the new technology, by adding strength to the Alliance, can help to reconcile the needs of a forward strategy with defence in depth. If this new factor can prompt a dispassionate return to this debate in NATO, it will not be before time.

Meanwhile the new technology offers NATO an unprecedented capability for taking the counter-offensive. Previously the WP has had little to lose by a conventional attack, and NATO has had to concentrate on ensuring that it has little to gain either. The new opportunity for a counter-offensive capability, without breaching the nuclear threshold, should be exploited. It would compel the WP to switch resources from the offensive to the defensive. A significant key to deterrence is the ability to counter-attack; and the basis of the strategy should be the conventional stand-off missile.

2. THE AIR/LAND BATTLE

In the previous chapter we noted the pervasive climate of chaos which would characterise any European battle. We now consider what

would be its main features and the particular weaknesses of the West in coping with them.

The most salient problem on land, lying at the heart of all NATO's inferiority, is the shortage of war stocks. The extent of the shortage is not publicly realised. NATO countries are supposed to possess twenty-eight days' of stocks, but at current expectations of attrition in some vital respects they have about seven days'. There is a grave weakness in surface-to-air missiles – meagre enough on the central front, but acute in Norway and Turkey. Supplies of basic ammunition, vehicle stocks and spares are dangerously low. The serviceability rate of armour and artillery, already outnumbered, cannot be put above 75%; and the prospect of significant seaborne reinforcements within less than a month is low.

Against this force, the Warsaw Pact could at present, without reinforcements from Soviet Russia, deploy some 20,000 tanks, enjoying massive air cover. Its initial target would be the Allied ground radars and AEW systems. Ground radars would at present be hard put to survive for more than a few hours, and they require protection as a matter of high priority. AEW, composed of some 30 Nimrods and E3As, would become an immediate target for WP aircraft; and if they are to survive they should be equipped with an element of self-defence, notwithstanding the weight of air defence provided for them. This air battle for the eyes and ears of the surface forces would precede, and could heavily influence, the outcome of the land battle.

The Air Battle

The air defence environment of the WP is of great strength and sophistication. Operating against a concentration of missiles, the SAM 5 and SAM 10 and their successors with ranges up to 200 miles, as well as large numbers of supersonic interceptors, NATO aircraft would be in an environment more hostile than any known to airmen even in the grimmest raids of World War II. The utility, in sheer terms of cost-effectiveness, to put it no higher, of using so large an investment as a tactical strike aircraft more than 50 miles beyond the FEBA would be justified only for exceptionally high-value targets.

In meeting this imbalance of air power, new technology could play a vital role. With medium-range ground-based or air-launched missiles it will be possible, as it is not now, to immobilise the WP's 40 main airfields from which the bulk of its air cover by land and sea would operate.

This would not be a simple task. WP airfields are today much better protected than they were 10 years ago. The operational viability of those in the Kola peninsula, along the Baltic and on the central front has been progressively extended. Nevertheless, cratering and area-denial fused warheads could immobilise airfields with significant effect on the air/land battle.

We cannot agree with those in the US Air Force who believe that airfields can be made survivable against really determined bombardment. No amount of hardening, by shelters, will avail if there is no airstrip to fly off.

Here is a mission – the persistent disruption of the Warsaw Pact air force – which could have a decisive effect on the land battle. This in turn would provide a deterrent comparable, in the calculations of any Soviet strategist, with the use of nuclear weapons. The probability of fighting without some local superiority in the air would be even more daunting in its way than the mere possibility of encountering tactical nuclear weapons.

The new technology, as already observed, will cut both ways. NATO's forward airfields, under conventional or chemical attack, are unlikely to remain operational for more than a day or two. But when it comes to the most effective counter – Vertical and Short Take Off and Landing – the West's air forces enjoy a technological and operational advantage in quality and quantity over the Warsaw Pact. The Harrier, in the Falklands, showed the way ahead. Properly developed, the VSTOL concept could give NATO the capability of sustaining at least an element of air power after massive WP interdiction. Problems of significantly extending range and payload for VSTOL aircraft have so far defied solution, although the Harrier II has twice the range of Harrier I. Such range is needed not for deep penetration but for flexibility in the deployment of stand-off missiles. It seems that scientists and technologists have not been challenged sufficiently, because of lack of funds and official interest. Further progress would richly repay investment, both in the European theatre and outside it.

Manned Aircraft

Manned aircraft will retain important roles. A high priority must be the defence of the ground radars and AEW aircraft feeding the NATO command with information of developments 200 miles over the ground horizon. Their survival will require more self-defence capability and more interceptor aircraft than are at present available.

Elsewhere the targets of the manned aircraft will be not dissimilar from those of earlier wars, but their mode of operation will be revolutionised by the stand-off weapon. The effect of this weapon has not yet been fully assimilated by Western policymakers. To bring the lesson literally home; for Britain, the defence of the Home Base would bear little visible relation to the dogfights of 1940. An enemy aircraft which penetrated within 100 miles of the British coast would already have got through. The task of the defence must be to prevent him from penetrating so far, and if this failed, to harass him sufficiently to confuse his guidance system. This could be done, for example, by ADV Tornados against Backfire bombers seeking to penetrate the GIUK gap.

Likewise over the land battle, smart stand-off missiles must be the main weapon, with ranges of up to fifty miles. These need to be able to destroy in a single sortie a considerable number of targets to justify the exchange rate. With multiple, self-guiding warheads, aircraft could account for high-value mobile targets which would be hard to destroy in any other way.

The combat aircraft, thanks to its speed and flexibility, has qualities of survival in the missile era. But these should not be exaggerated. The Beka'a Valley raids showed that ground-based missiles can sometimes be finessed by aircraft; but it would be extremely unwise to deduce on that basis that air forces had managed to put the clock back to the days before the Israeli Air Force was checked by missiles in one day of October 1973. In the first place the Syrians, untried in the skills of counter-measures, were not prepared for the use of drones to flush out their radars. The arrival of Russian advisory reinforcements makes it unlikely that this could happen again in the same way, and it certainly would not on the European front. Secondly, the environment over the Lebanon was benign compared with that which could be expected over Central Europe. Thirdly, the Israelis prudently moved the emphasis of the reconnaissance function from the manned aircraft to the unmanned drone. Even against the inexperienced Syrians they had no wish to risk manned aircraft for tactical reconnaissance. It has to be recognised that tactical battlefield reconnaissance is no longer a viable role for the manned aircraft in a sophisticated air environment.

The Land Battle

The aerial support provided by stand-off missiles along the lines indicated above would greatly alleviate the task of the men fighting

against odds on the ground. If WP airfields, transport and supply centres and choke-points could be disrupted, the problem of halting a blitzkrieg would become much more manageable. Yet still, in a real sense, NATO's armies are unable to defend themselves. Sheer numbers of weapons are lacking. Some commanders report that they would prefer ten Milan anti-tank weapons now, rather than two smarter ones in ten years' time. They argue that the cost of weapon systems increases exponentially as a function of the depth of the target. Pitted against heavy odds, they say that it is not technology which they need, but money to buy more of the same, with merely incremental improvements. The initial demand is therefore less for quality than for quantity.

In varying degrees as between different NATO countries, Army priorities include: more vehicles, guns, assemblies, spares and combat supplies; more tracked anti-aircraft weapons and anti-tank missiles; greater concealment and deception against infra-red and radar; more reliable protection against electronic counter-measures; greater tactical warning capability; more medium-lift helicopters; and more men, in the shape of available trained reservists.

Three Pressing Needs

Qualitatively, three of the most urgent operational requirements for new technology are:

1. Protection against electronic and infra-red scanning to enable headquarters, fighting units, stores, supply parks or VSTOL sites to function effectively.
2. Secondly, for counter-attack, major improvements in vehicles in respect of mobile firepower and survivability.
3. Thirdly, the task of the battle groups would be greatly facilitated if the development of RPVs for fighting units, recently discontinued, could now be resumed. There is in general an urgent need for target acquisition, early warning and response systems. Information about enemy capabilities and intentions is vitally important to the commander of the weaker side. This controversial subject deserves more attention.

In this century, aircraft have become the most effective means of conducting both strategic and tactical reconnaissance. Surface and airborne radars have enhanced scouting with eye and camera. The rapid advance of air defence weaponry, conferring a formidable efficiency in area protection, combined with the introduction of radar homing missiles, has already reduced the reconnaissance viability of

the aircraft except where, as in the case of the NATO Early Warning system, technology permits an aircraft deep in its own air defence zone to survey an expanse of air and surface at a distance simultaneously. Fortunately, strategic surveillance is now being conducted with increasing efficiency by satellites, despite the intermittent restrictions of weather conditions. Neither satellite nor early warning aircraft will be immune to physical attack indefinitely.

A parallel capability in aerial reconnaissance persists in both the strategic and tactical spheres. Assuming that manned aircraft will not be able to fill this role without intolerable loss in men and machines, an option to hand is the remotely piloted vehicle. Development is already beyond the crude form of pilotless vehicle, the drone, and the tethered "spy in the sky". Some cruise missile technology will assist in further development. Arguably, it might be possible now to develop a programmed missile for strategic reconnaissance; but there would then also be a need to identify the role of the missile to avoid giving a false signal of nuclear attack. However, it seems likely that a vehicle able to respond to post-launch instructions during deep reconnaissance will require much effort.

Tactically, at sea or over land, there is a prospect for early development of a capability to reconnoitre at low-level point and linear targets by remote pilotage. The need arises across the tactical spectrum; and since range is likely to prove the most difficult area to incorporate, the case for bringing first into production vehicles for short-range reconnaissance is strong.

To date, technology has provided remarkable advances for the technical supply and signal corps. Improvement in the above three areas would give similar advantages to those engaged directly in combat.

★ ★ ★

In addition, as mentioned earlier, NATO possesses no answer to the Warsaw Pact's huge stock of chemical weapons, and in the event of their use, in violation of international obligations, would be almost bound to have recourse to nuclear weapons.

The US at the moment possesses a limited stockpile of elderly chemical weapons. The UK has virtually no CW capability, and none of the other NATO countries have any defence against chemical warfare. In a few years, when the US stocks have deteriorated, the West could be caught without any chemical capability or means of

delivering it; NATO has no delivery system comparable with the WP's Scud and Frog missiles and aircraft sprays. Such could be the devastation of a Soviet chemical blitz, particularly at airfields, ports and other transport centres, that NATO now needs the option of the same kind of deterrent which inhibited Hitler from the use of these weapons. Either CW must be abolished by verifiable convention, which the British government has been trying to achieve, or the West must have its own chemical deterrent.

The need for choice

Contemplating this exorbitant shopping list, it is clear that we cannot have everything. Nor is this necessary. As already observed, deterrence has worked, so far, more effectively than in any situation in history. The present situation is tenable. What it lacks is the assurance that the Warsaw Pact would suffer unacceptable damage even if nuclear weapons were not employed. This is at present not the case. With a little effort it could be achieved, so long as we make the right choices.

Clearly the new technology provides a major advance in certain areas. Any such capability to confront the WP with totally unacceptable damage deserves the prime attention of our technologists. We have already identified several candidates for high priority. In the Land/Air battle these include stand-off missiles, RPVs, better EW and counter-EW equipment, longer-range VSTOL and night-fighting capability. Budgets being limited, however, there could be dangers in the unchecked pursuit of novelty at the sacrifice of basic essentials.

3. MARITIME

We have observed that the declining role of the platform in the missile era tends to benefit the West on land and air and the Warsaw Pact at sea. Certainly the prospect of reinforcing the land battle in Europe by ships sailing in convoy across the Atlantic looks more incredible every year. Subject only to bad weather and the destruction of satellites and reconnaissance aircraft, commanders sitting in Moscow can observe every vessel in the area, and communicate their observations to submarines, and long-range aircraft such as the Backfire.

Not only the practicality of the whole reinforcement mission is in doubt, but its very purpose. It has never been expected that large-scale convoys could reach Europe until about thirty days after the start of a conflict. With the present imbalance on land described in the

previous section, coupled with the reduction of warning time since the days when Flexible Response was introduced, the need to bring the land and naval strategy into line has become urgent.

The vulnerable surface ship

Ships are more vulnerable even than aircraft to the electronic revolution. They are larger targets; their speed has not advanced comparably with aircraft; and they do not look likely to benefit so much as airborne platforms from the new means of evasiveness, such as "Stealth" and ECMs. Techniques in signature reduction, such as changing the vessel's profile, can equally be applied to the incoming missile. The detection, identification and tracking of surface vessels has become a relatively simple task, and even well-defended ships are vulnerable to a growing range of target-locating and terminally-intelligent sea-skimming missiles.

The convoy system which saved Britain in World War II depended on three main factors. Long-term speed was greater than that of submarines; the convoy was able, more or less successfully, to function as a moving fortress controlling an area of sea; and the whole convoy could lose the attackers by manoeuvre. None of these conditions would seem to apply in the age of satellite surveillance, stand-off missiles and nuclear submarines. The latter, though noisier than diesels, are benefiting from quietening technology, and improvements in tracking devices have not brought any major breakthrough; the rate of submarine "strikes" during NATO exercises is seldom high.

Convoys . . .

In deep water the submarine is actually becoming harder to detect. The sonar signatures of submarines are decreasing.

In shallow water the diesel, with its very low signature, is mainly vulnerable to non-acoustic detection, e.g. when snorting, although in certain conditions it has been detected by SSNs (nuclear-powered submarines) using active sonar at over 15 miles. Passive sonar has encountered insuperable limitations, so that new efforts are being made to inject more power into active sonar.

Satellite-based technology to detect radar images likewise yields results only on submarines close to the surface. This continuing relative invulnerability of the submarine, of course, spells greater stability at the strategic nuclear level, with its assurance of a second strike capability. but it is bad news for convoys.

. . . and Warships

Concurrently, the ability of surface warships to defend themselves was hardly impressive in the Falklands. Not only would Britain have lost or sustained serious damage to a majority of its vessels if all the warheads had exploded, but HMS Invincible, the aircraft carrier, could have been sunk by a submarine if its torpedoes had worked. With better fuses, Argentina would have won a notable victory.

Nor were her forces even modern by WP standards. Against a range of around twenty-five miles for the Exocet, the WP's latest missiles can travel 250 miles, and this will soon be extended to over 600. Again, except for a few Canberras, the Argentinian air force was operating near the limits of its combat radius, with consequent impairment of performance. Had its bases been 300 miles from the Falklands instead of 400, the Task Force would hardly have survived. What is more, all of these aircraft had to over-fly their targets except the missile-armed Super Etendards, which were unscathed. There are disturbing lessons for NATO here.

Moreover, a whole dimension of naval warfare to be expected in the North Atlantic was missing in the Falklands: that of air-sown mines in the blockade of ports, to which no satisfactory answer has yet been found.

A further blow to the convoy concept is that the West now simply lacks merchant hulls. The US today possesses a mere 600 merchant ships against 6,000 in 1939. The "Red Duster" has suffered a similar decline. Flags of convenience are different from maritime marines. Thus we have to ask: Are there enough such ships available, with loyalty to NATO and prepared for such an operational role?

All in all, a large weight of evidence might seem to suggest that a naval reinforcement strategy for NATO is becoming increasingly unrealistic. And even if the massive task of earmarking convoys in peacetime were to be put in hand, would that materially strengthen the West's deterrent? The time may have come for the whole Alliance to think the unthinkable and to concentrate instead on the increased prepositioning of supplies in Europe, with the corollary of troop reinforcement by airlift. But this view needs to be qualified. We consider the options in the section on the Royal Navy (below).

IMPLICATIONS FOR BRITAIN

THE ARMY

For Britain, the main problem on land is that the shortage of war stocks, itemised in the preceding section is particularly acute. Britain has a well-trained but inadequately equipped army. Making good these shortages must be a high priority.

As to new technology, it would be quite wrong to suppose, as some appear to do, that it offers us a cheap way of defending ourselves without nuclear weapons. Much of the strategic hardware is beyond the means of any but a superpower, and is likely to remain so because it does not lend itself to long production lines.

Tactical hardware is inherently cheaper, and will cheapen further as it comes into NATO service, providing it can be standardised between Services, and hopefully between Allies. Even so, it will clearly call for some restructuring of forces, and reallocation of roles between the Services, which is bound to add to cost.

We must reject the temptation to advance speculatively on a broad front, with an open-ended R and D commitment. Our approach must be highly selective, concentrating on specialisations: among them, thermal imaging for night fighting, VSTOL, and C3 technology. The merit of these particular disciplines is that Britain already leads the world in many aspects of them; that they embody a high degree of commonality between conflicts in Europe and outside it; and they also have a large commonality between the military and the civilian market.

Outside Europe

Such are the principal needs of the British Army in the NATO area. But at a time when the challenge from the Soviet Union is worldwide, and the danger of miscalculation in the Third World is chronic, we believe that its talents and those of the other two Services, should not be confined to Europe. Their experience in political and para-military operations, in areas where Allied interests are sometimes today at risk, is exceptional in the Alliance. It is in NATO's interests that these talents should be available for such situations.

The operational requirement Out-of-Area is none the less valid for being hard to define. To describe it as "the unexpected" may sound nebulous; but the unexpected happens in the Third World with monotonous frequency, sometimes to the detriment of the Atlantic Community. Without knowing the times or places, we can be certain

that in the coming years appeals will be made to us from friendly governments in trouble; from countries which need help in restructuring their security forces; from one of the numerous new "micro-nations", such as Grenada; from victims of natural disaster; from Allied citizens in peril; and continuously from international and regional groupings which require some military stiffening with a sophistication beyond their means. In all these scenarios, the new technology can help by multiplying flexibility and mobility. This kind of assistance at second hand need not be a burdensome commitment. To bottle up every available British solider on the Central Front would be a misuse of assets which would not serve the Alliance well. We should consult with our Allies on the subject.

In doing so we should be able to give them firmer assurance of reinforcement by reservists in the event of war. With this in mind, we should end the situation whereby we are one of the few members of the Alliance to make no provision for civilian defence of the home front. Most NATO countries have total mobilisation under which almost every able-bodied person not in the regular Services is committed either to home or civil defence. The order of battle for the Central front, particularly against diversionary tactics, depends heavily on the *Heimatschutzen* or German Home Guard. There is a good case for the formation in Britain of a volunteer home defence force – a resuscitated Home Guard – charged with helping to defend this country's nerve centres against a conventional attack. This could simultaneously strengthen our civil defence capability.

ROYAL AIR FORCE

For the RAF, as we have suggested, there is no shortage of roles: but these will change. There is already a major expansion of their function in the Eastern Atlantic. There is vital air defence and close support work over the land battle. And there is the wider mission of delivering stand-off missiles beyond the battle area. Of this last function it has been reasonably calculated that eight modern aircraft could soon do more damage to a target then 290 B-17s (Flying Fortresses) in World War II, owing to the greater accuracy and survivability which the stand-off missile confers. There also remains a role outside Europe.

The RAF will need to take in the implications of these developments. Of recent years they have acquired a somewhat "stealth"-like immunity to detailed scrutiny. They have tended to elevate the platform at the expense of the weapon. They are inclined

to order an aircraft and leave till later the question of its armament, and thus to some extent its role. This is understandable, given the procurement system and the need to acquire the costliest item first; but it is necessary to think in terms of a total weapons system. The RAF are known to be reconsidering dispassionately which roles can only be done by manned aircraft – and we believe this should rule out overland strategic reconnaissance and long-range interdiction in Europe – and how to equip those aircraft with survivability. In this connection the advanced VSTOL should be receiving greater attention.

THE ROYAL NAVY

For the Navy, the adjustments necessitated by new weapons have already caused debate and a Ministerial resignation. It has been argued that the government was wrong to order in 1981 the reduction of its escort fleet by some 25% in the long-term, and the phasing out of several of its larger warships, and that the Falklands has confirmed this. The proposal was certainly greeted with dismay by our Allies, and would have found us barely able to launch the operation at all had the war occurred later than it did. But as an object lesson in systems analysis it totally vindicated the government's apprehension about the utility of the point defence system, in the shape of highly expensive escort vessels, relative to the submarine and long-range aircraft. To draw any other conclusion from the evidence would be unwise. The experience has proved salutary in concentrating designers' minds on ways of improving the cost-effectiveness of escorts which can cost over £150 m. today, but which seem to be nearly as vulnerable as the ships they are supposed to protect. There is a need for a cheap vessel, modest in speed but powerfully armed, which could serve the purpose both of inshore defence in a European war and the promotion of stability outside Europe.

Three main threats

The defence of merchant shipping calls for a mix of systems to be deployed against the three main threats.

Against submarines, and recognising that there is unlikely to be any major breakthrough in ASW technology in the next two decades, the main emphasis should be on area and barrier operations. This will involve the interception of transitting submarines in the Norwegian and Barents Seas; establishing a barrier in the GIUK gap; and the destruction of submarines in the shipping band itself.

This last should take the form of area searches principally by aircraft and towed array frigates; sowing the GIUK gap with mines equipped with the latest technology of remote arming and some form of IFF; and sensor nets for alerting aircraft to the passage of submarines.

Of the other two main threats, Soviet surface warships, vulnerable at the GIUK choke-points, should be countered by the development of ASMs and submarine SSMs. The air threat is best met, as on the Central front, by the use of airfield denial weapons, particularly the conventional cruise missile. But in addition, air defence barriers over the GIUK gap and approaches to the Channel will also be needed.

Within this conspectus the escort ship, or towed array frigate, retains a significant role. But air defence based on maritime platforms, and centred on the aircraft carrier, cannot be considered cost-effective in an environment of missiles with a decreasing radar cross-section and increasing range.

The Americans, after major reductions in the 1970s, are again looking towards a 600-warship navy, and seem confident in the power of the carrier group complete with frigate screen, seaborne E2Cs for surveillance and long-range combat patrols of F-14s. Whether or not the concept is sound – and the system is now being questioned in senior American naval circles – it is one which Britain simply cannot afford. Rather than seeking to emulate our narrow transatlantic success in World War II, we should continue to concentrate on maximising the benefits of our geography in the ways outlined above.

Independent sailings

Such tactics, complementing those of the Americans, could reduce merchant shipping casualties to manageable proportions. But the task would be greatly facilitated to the extent that merchant ships were equipped to protect themselves. This could not be done in large numbers; but the concept of independent sailings by fast, high-value merchant ships furnished with sonar helicopters and anti-missile missiles is undoubtedly correct. Here, speed is of special value because, although the Soviets have real-time surveillance and communications at sea, they do not have real-time targetting under satellite surveillance; and this must give a valuable advantage to the fast vessel. The concept is correct because of the extreme vulnerability of convoys, the length of time they would take to assemble, and the shortage of merchant shipping available. More study should be given to the question of what equipment packages

could be made available to merchant ships, particularly high value vessels, and the legal and administrative consequence of doing so.

Home Waters

Within home waters it is worth considering the possibility of an Exclusion Zone, which would seek to exclude enemy warships from the Straits of Dover north to the Norwegian coast and west to the Western Approaches. If this could be accomplished, economies could be effected, in that the area could be patrolled by smaller, cheaper ships than those required in the Atlantic.

This concept would intimately involve our Allies, and would suggest the establishment of a new NATO Command, which would coincide with the area of shore-based air defence, as distinct from organic air.

It should be possible to keep most Soviet warships out of such an Exclusion Zone. The Tornado, and cruise missiles, would counter any surface formations and enable our own submarines to deploy right up to the front line. Such an area should exclude Soviet SSNs, though not necessarily diesel-powered SSKs completely.

Persistent disruption of WP airfields must be the key to air control. Some enemy stand-off aircraft would get through; but with better surveillance and the help of EW, it should be possible to cope with them.

All these developments spell changes for the Royal Navy's role, but no diminution of it. Control of home waters must be its first province, and it should be conducted with due recognition of the vulnerability of the surface ship. The Navy needs to go more underwater, as it is beginning to do. On the surface it requires cheaper platforms with smaller hulls, fewer crews and more firepower. Such attributes would be equally suitable for a supporting role outside Europe.

All in all, the maritime theatre is as ripe as any for the observation of Henry Kissinger that "NATO is reaching a point where the strategic assumptions on which it has been operating, the force that it has been generating, and the joint policies it has been developing will be inadequate for the 1980's".

CHAPTER IV

IS THE WEST CAPABLE OF TAKING THE RIGHT DECISIONS?

1. NATO

It should by now be clear that, as indicated in the opening chapter, the new technology requires nothing less than a total review of NATO's strategy. Our primary recommendation, therefore, subsuming most of the others, is that the time has come for a third NATO Review. We have ventured to anticipate some of the principles and policies which we believe that NATO's future strategy should contain. (Others were delineated in the BAC's publication "A Global Strategy"). What concerns us now is whether the West's decision-making machinery, international and national, is capable of assimilating the evidence and processing it into the right decisions.

At the international level, the "disarray" within NATO over the last few years has reflected a new era in which NATO has suddenly become of interest to the public because of inadequate political leadership and concern about out-of-date policies. The neutron bomb and the ground-based cruise missile issues provided a vivid reminder that the people of NATO now have to be carried along with any major decisions. NATO needs not only to have a sound strategy, but also to be seen to have one, and this development is both healthy and unlikely to be reversed. While public opinion throughout the Alliance has been implicitly solid behind NATO, it has lately asserted the right to question particular decisions.

NATO should welcome, not fear this debate, Common interests, not to say commonsense, may begin to overcome the ascendancy alike of national and sectional interests. Supposing, for instance, that the perennial question of standardisation were ever to be launched into the public arena – a not impossible and highly desirable contingency – it could well be that a large majority in any poll would vote to end the system whereby NATO, for example, produces 15 types of escort ship against only four in the WP. There are more taxpayers than there are beneficiaries of weapons production. They pay, and they are beginning to exercise the right to have an opinion, and to require greater access to the facts on which to base it. But at present, even after two years of the "peace" debate, NATO's public relations are still not geared to this need.

Little thinking has been done

Looking forward in this context, the public would be astonished if it knew how little collective thinking the Alliance has done about the new technology. Nor is it certain that the NATO machinery is equipped to undertake the task. There is a real danger that any creative thinking will be submerged in the Sargasso Sea of international bureaucracy unless it is taken seriously at the highest political level.

Still less has there been detailed study of the allocation of effort – and benefit – arising from the new technology. The forum simply does not exist in which this crucial question might be under discussion. The consequence is that at this moment, the new technology is simply inheriting the system of predominantly nationalistic catch-as-catch-can which has be-devilled NATO for years. There is not, in any serious degree, a sharing of research, or even the intention of sharing it. Nor has there yet been any serious attempt to allocate specialisation between countries – a difficult though worthwhile subject to explore.

A Wasteful System

The absence of any system was illustrated in Britain by the recent Harm/Alarm debate. It may be argued that the decision, hotly contested both politically and industrially, to adopt the British anti-radiation missile (Alarm) against the American one (Harm) was sensible in the circumstances. But it had all the classical hallmarks of the old NATO criteria: the national weapon was more expensive and less developed than its foreign rival – in fact not even off the drawing board – but it was adopted. The plea that "we must preserve our technological base" is legitimate. But with the advent of the new technology and the enormous proliferation of choice it presents, the Alliance will not be able to go on like this.

Here is a subject which can only be effectively handled at heads-of-government level after thorough preparation. Many attempts to deal with it, and the attendant questions of specialisation and burden – sharing, below that level have proved abortive. Sectional interests militating against standardisation and the two-way street are powerful, not least in the US Congress. Only at the summit level can these be trumped by an agreed Alliance strategy which would impose concessions on each member country in the greater interests of all.

Strategic Planning

If this is true of hardware, it is even more true of higher strategy. In the last two years the incapacity of NATO for coordinated strategic thinking has been publicly exposed. We reached a position where the Americans appeared to lose patience with Europe, and the Europeans, when they complained, had no clear or positive proposals of their own. Having thus lost influence with Washington, they could hardly have been surprised at America's adoption of policies at variance with their own views. The situation is more serious than many Europeans seem to realise, with Washington simply discounting Europe in the formulation and execution of its policies.

The greater part of this estrangement is due to misunderstanding and lack of real communication and dialogue. There is scope for honest debate between the representatives of all sides, but the debate has never been properly joined. It should be taking place regularly, at the highest level, and serviced by an international staff tasked with the conception of creative ideas, designed to identify options. Nowhere is this more necessary than in relation to the new technology. For example, Americans resent Europe's reluctance to spend more on defence; Europeans resent America's failure to treat arms control with the necessary priority. It is quite conceivable that linking these issues might give scope for mutual concessions. This is a concept well worth pursuing. However, at the moment NATO lacks any adequate systems and processes for conceiving strategic concepts, let alone germinating them, or reconciling differences creatively.

Agenda for a NATO Review

A whole group of other issues, already raised in this paper, demand attention at top level. One is that of defence in depth, if only because of its political implications. Another is the burden-sharing consequences of technology. Yet another is the question of Out-of-Area operations. Europe, with the exception of France, works to ignore them; the British work to evade them. The United States has become increasingly concerned about them. The fact that these issues are so various and so complex need not be daunting; on the contrary, it could increase the scope for productive log-rolling between friends. But the first requirement is to establish the necessary apparatus which would enable Summit meetings to be productive. Simultaneously, the case for a third NATO Review to consider some of these issues, after a gap of fifteen years, is now overwhelming.

2. WHAT SHOULD WE DO IN BRITAIN?

At the national level, changes are equally needed. The 1981 measures did at least revive the principles of systems analysis. But subsequent events suggest a lack of realism and of urgency which is inappropriate in face of the problems now posed by escalating weapons costs.

On the hardware side, for example, the White Paper on the Falklands barely seemed to recognise that the Navy faces a problem, let alone the risks so bravely taken. "No fundamental design defects" it said, "have been identified"[2] in our warships. Procurement policies and practices – over the whole field – have returned to the pre-Falklands norm, despite the quick, productive and superb efforts made in 1982 which produced such an effective return. Complacency rules again.

Likewise the structural problems of political early warning remain. The organisation in Whitehall is still not right. Governments do not clearly formulate or answer difficult questions about objectives or methods. The logic of the British political system, as it operates in this field, recalls that of the Irish level-crossing keeper, who kept the gate half open because he was half expecting a train.

The Logic of Priorities

Faced with the escalation of costs, and having no more commitments to cut, Britain in the 1980's needs a logic of priorities. Only the super-rich can afford to muddle through without one. In evolving one, technology can help, but it cannot relieve us of the effort of deciding what we want to do. Continuing evasion of the issues cannot provide a policy, let alone a system of priorities.

While the Falklands may not happen again, the same cannot be said of the economic and industrial pressures which forced Britain to review her defences in 1981 against a background of an overloaded programme. The lack of any logic of security priorities at that time was conspicuous. Hasty efforts had to be made to decide unilaterally whether reductions in Army or Navy planned programmes would do less damage to the Alliance. There was no long-term strategy behind the decisions.

What about our Allies?

In fashioning a logic of priorities, the views of our Allies should be considered. It is the cardinal tenet of British policy – as it has been the centre of the case against unilateral disarmament – that to weaken Britain's contribution to NATO would encourage our Allies to follow

suit. But there is no evidence that our European Allies have any policies or priorities. The truth is that no-one wants to talk about these matters, and in consequence it is widely considered that all countries will pursue a negative self-interest – downwards. This is almost certainly a false assumption. What is needed, to provide a logic of priorities for Brtish defence, is a candid discussion among Allies about the choices which Britain and other countries, for reasons of cost, will be unable to avoid in the years ahead, with special reference to the possibilities of a more businesslike approach to burden-sharing in NATO.

At present Britain is shouldering four major strategic commitments: the maritime contribution in the Eastern Atlantic, the land/air contribution to the Central Front, the defence of the United Kingdom base, and the strategic nuclear deterrent. To this must be added a large contribution to the flanks of NATO and Out-of-Area activity. Against a background of all-volunteer forces and a consistently poor economic growth record, with the prospect of an end to the oil boom, these commitments are far more ambitious than any of our (mainly wealthier) Allies attempt. Something will have to give.

Outside Europe

The problem is made even more difficult by the question of what contribution Britain should make outside Europe. NATO nations individually are more or less convinced that somebody, somehow, should be doing more to protect their interests in the Persian Gulf, the Indian Ocean and Africa. They are equally convinced that it is nothing to do with NATO. This situation is unlikely to change.

Through the heritage of history Britain has a political entrée to many areas outside Europe. Moreover, our Radio services are among the most respected in the world; our military are welcome in many countries to take part in exercises or to provide advisors; and our educational system has many overseas admirers.

Yet the BBC overseas services has been threatened with its eighth cut in 10 years at a time when there are over 60 million short wave radios inside the Soviet Union and many millions more in other countries: strict cash limits are placed on military involvement in overseas exercises and on the crucial overseas training assistance programme: and much has been done to price Britain out of the overseas educational market.

There should be an About Turn

There is a breeze, if not a wind of change, blowing. The birth of the Fifth Airborne Brigade modestly recognised the importance of "outside Europe." The accent on flexibility and mobility, made possible by new technology, is now more in evidence. In 1983 several naval formations have been active outside the Atlantic.

In terms of overall deterrence Britain could develop this line of thinking in consultation with her Allies. If it proved unwelcome to some of them, so were Angola, Ethiopia and Afghanistan. It is not unreasonable to ask them to recognise that their interests, precariously dependent as they are on African and Asian commodities, would best be served by sanctioning the readiness of BAOR personnel and units to operate Out-of-Area. They showed admirable patience when major NATO-assigned units were diverted to the Falklands. They could surely do the same in areas where their own interests – oil and raw materials in particular – are at stake. A small British investment can produce a large return for the West as a whole.

If foreign policy were more decisive than it is in the formulation of defence policy, then these missions would carry more weight in the logic of Britain's defence priorities. The key phrase is "to act on invitation". There is no requirement for a large opposed landing capability. We did not reckon to have one throughout the 1970's, and it is right to argue that a capability for another Falklands is not a basic requirement. But a capability to intervene, or train, *on request,* is something quite different. The decision whether or not to intervene will always be difficult. But shortage of invitations is not likely to be a problem.

Europe should agree

NATO would not be unduly depleted. No doubt it should be agreed that BAOR would not fall permanently below a minimum level: say, 35,000. But the fact is that with the force multiplication effect of the new technology, this number can today achieve incomparably more than the four divisions and a tactical air force equivalent fighting capability arbitrarily negotiated by Eden 30 years ago. Properly equipped in ways indicated earlier, it would be far more effective than it was then. It is a matter of real, but ignored fact, that the Army has counted its contribution in heads and the Royal Air Force in fighting capability. It is easy to see which is wrong.

Finally, the influence which Europe individually or collectively can

exert on the US will be directly proportional to the amount of effort which it is prepared to display in sharing America's burdens outside the NATO area. *This has been the missing piece in the transatlantic dialogue;* for if Europe has nothing to offer but advice, that advice will not carry much weight, particularly if it is critical. Any improvement in the level of European effort would greatly strengthen the Atlantic linkage.

The Home Front

A more broadly based security policy would have major domestic repercussions. The response to the 1981 changes gave notice that vigorous sectional opposition can be expected to greet almost any change. To ride out such opposition, the balanced strategy within which it is taken should be as clearly conceived and presented as our government can make it. It must be able to stand up to not only sectional Service and industrial interests but also to the Treasury. The Treasury does not really pretend, or see any need, to understand the mechanics of defence and foreign policy. It does not, for example appreciate how wasteful and inappropriate to long-term defence projects is the annuality system of budgeting. It simply cares about the cash, not the consequences.

A logic of priorities thus calls for strengthening the apparatus for conceiving and executing strategy. Nothing less will suffice if capabilities are to be matched with commitments; if individual Services are to accept new roles and discard old ones; if the Treasury is to cooperate more sympathetically in the conduct of security policy; and if the whole is to be embodied in a defence strategy that is both cost-effective and affordable.

In any country this search for cost-effectiveness is an uphill struggle. Britain's defence establishment is of the highest calibre. Defence equipment is admirable in quality. But we cannot continue to carry all our commitments without reforms of the system.

Its convolutions were exposed during the Falklands war, when eminently satisfactory results were achieved by leap-frogging committees and telescoping the normal process of weeks, months, or even years into a few days.

Industry

No-one can complain about the amount of investment. Over 50% of Britain's total scientific research goes into defence, while most of our Allies devote less than 10%. Of the defence budget, 48% now goes

into equipment, which is a far greater proportion than that of any of our Allies. Yet we have major equipment gaps, particularly on land and sea; we have been slow to develop and procure missiles; and our export record has not reflected this degree of investment.

Some would point the finger of blame at British industry. It is not adventurous. Ship procurement and design has shown some of the worst features of a nationalised industry – notably expense and lack of imagination. The case for privatisation is very strong, as is the transfer of all ship design to industry.

British Aerospace have great talent; but again, is it right that they should be the only effective source of British missiles at such a critical juncture in the development of technology? Britain's poor record on missiles suggests strongly that a greater element of competition would be beneficial. If we are right in believing that the stand-off missile should be at the centre of Britain's strategy in the 1990's, can we be satisfied with the record of the present system for producing it?

The Procurement System

Industry may pass the blame back to the procurement system to which it has to work. It would say, for example, that Service staffs rotate too rapidly and have little understanding of industrial problems; that all the procedures are tedious, time-wasting and lengthy; that staff requirements are too narrow, giving little scope for either creative or economical thinking; and that the Ministry is endlessly injecting new specifications.

Some changes have been made, notably through the "cardinal point" system which lays down only a minimum of parameters for an operational requirement. Industry is being brought in earlier to the procurement process. More changes are needed, including greater reliance on industrial and scientific research staffs. Thinking about defence should not be a Whitehall monopoly. Private research staffs should be pressed for an answer to fundamental questions, such as: "If you had the contract to defend Europe by fighting almost entirely at night, how would you do it?"

The Services

This in turn raises the perennial problem, common to all governments, of the organisation of the still very large Ministry of Defence and its establishments. As with any such organisation there is a built-in resistance to change. Each Service, with the best possible will, naturally fights its own corner, and so does each "arm" within

each Service. Tribalism has been, and must always tend to be, an inherent obstacle to technological progress. Any transfer of a mission from one Service to another, or from one corps to another, is always bound to cause resistance. Better mechanisms are needed to overcome the system.

Allied with this has been the axiom "only the best will do". This precept can be, and recently has been, pursued too far, at the expense not only of quantity but of adequate equipment for those with less forceful lobbies.

Many solutions for this problem have been suggested. One proposal of the Jacob-Ismay report in the 1960's which was never introduced was the notion of a single Service above one-star level. This at least recognised the problem. Another approach would be the abolition of the single-Service budget, and its replacement by a defence functional budget. A new look is required. Whatever course is adopted, a primary object should be to ensure that a senior officer is not penalised for advancing views which elevate the defence of the country above the interests of individual services. In this and other ways the voice of the Centre, representing Defence and the taxpayer, needs to be further strengthened.

Certainly servicemen destined for high rank should be better prepared than they are at the moment. For the present system requires them not only to execute policy, at which they are superb, but in very large measure to make it. It may be a mistake to assume that men of action will be the best policy-makers. Moreover, policy cannot be made effectively by people who change jobs every two years or so. Tenure, analysis and technology are the names of the game. The system needs to reflect these requirements. The case for review is overwhelming. But as long as the present system prevails, we need to widen the horizons of our Service leaders and their ability to think analytically from an early stage in their career.

Costs

Pruning the organisation will save money – but not enough. The question must be asked: Can we afford this new technology? Some proposals have suggested a percentage increase in NATO's defence spending. The political outlook for such an increase is not encouraging. It has also been suggested that the 3% annual rise prescribed for NATO should be raised to 4%, and that this would cover new technology, but NATO is not observing the 3%, let alone 4%.

We believe that the extra resources should be found not in increased taxation but in ruthless weapons system selection plus greater efficiency. In this paper we have been continuously conscious of cost. We have called for more quality and more quantity, on a selective basis. This will require real economies; but we have indicated how these economies might be achieved.

To list some of them:

1. Rejection of the concept of the gold-plated weapon, still very much a feature of British equipment.
2. Fewer types of ships, vehicles, aircraft and other weapons systems.
3. Greater emphasis on missiles than on platforms.
4. A determined effort to produce a basic missile system for use on sea, land and air.
5. An assault, eventually at summit level, on international standardization and collaboration, particularly in Europe.
6. Service Staffs to be better trained for the tasks of policies and priorities, fewer in number, and to remain longer in their jobs.
7. Real competition between defence contractors.
8. More attention to exports and investment in projects by industry.
9. A much healthier ratio between initial investment and production expenditure.
10. More ruthless decision-making procedures.
11. Ending the wasteful tyranny of annuality.
12. Cuts in overheads, including individual training costs, and the progressive transfer of research and development to industry.

In addition, the greater use of civil resources could prove an administrative quantum jump comparable to those in the scientific sphere. The Falklands showed the value of civilian ships – around 50 of them – in a military operation, and this precedent deserves more attention than it received in the White Paper on the subject. In the air, in-flight re-fuelling could be increasingly performed by civil aircraft. Stand-off missiles could be launched almost as easily from a civil aircraft, or merchant ship, as from a combat platform built specially for the purpose. There are tens of thousands of civil vehicles in use which could readily be acquired in an emergency.

These and other innovations would bring a new realism and credibility to Britain's defence posture vis-a-vis the taxpayer and a greater impact to our contribution to NATO, and thereby command greater public support.

For the creation and execution of such a strategy, what is needed most is the vision at the top to seize the opportunity offered by the new technology, and a conscious decision to put it to work on the real needs of our security. The rest will follow.

PROPOSALS

NATO

NATO should move towards a strategy in which the first use of nuclear weapons is no longer an essential part of the deterrent. This is quite different from a declaration of no first use, which would not be sensible.

It should do this by (a) removing battlefield nuclear weapons, whose role could now be fulfilled by conventional weapons (b) exploiting the new technology to acquire a counter-attack capability based on strategic conventional weapons, particularly cruise missiles and other stand-off weapons, and precision-guided munitions.

This would involve recognising the new primacy of the missile in modern warfare relative to the "platform" on land, sea and air.

Implicit in this would be the greater use of new opportunities in surveillance, target acquisition and C3.

The new strategy would improve the credibility of the deterrent and thus the stability of world peace.

NATO should now seriously consider a strategy of defence in depth in response to these technological developments.

There is a need for a third NATO review, which would encompass this whole subject, not least its arms control and Out-of-Area implications.

New machinery is needed for consultation, strategic planning and the servicing of Summit conference, which could, if this were done, beneficially be held more often.

An attempt should be made to reach agreement whereby the European countries spend more on conventional defence if the US adopt a more flexible approach to nuclear disarmament.

The public of NATO, having lately reaffirmed its support in principle for the Alliance, should be seen as a potentially helpful force in the strategic debate. It should prove an ally in the search for a more logical strategy, for example over the problem of value-for-money, and standardisation in particular.

Outside Europe, NATO countries should be prepared to recognise the fragility of the deterrent, due to the scope for miscalculation, and act on its implications.

An immediate effort should be made to halt the arms race in space.

U.K.

1. Policy

UK defence needs a logic of priorities. Based on cost-effectiveness to NATO, this would give a high priority to defence of Western interests, and promotion of stability, outside the Atlantic area. It could involve double-earmarking some elements of BAOR.

Industry should be brought in early on staff targetting, and greater competition should be introduced in procurement. We welcome both trends in the Ministry of Defence.

MoD planning should place more emphasis on missiles and less on platforms than it has been doing in the past.

Major targets for investment should include longer-range VSTOL, night fighting equipment, information technology, and artificial intelligence systems.

Greater use should be made of civilian resources. A whole range of reforms in Whitehall could achieve major economies.

2. Army

A considerable inventory of war stocks is needed to bring the British Army up to the standards of its Allies. (This also applies to the other two Services.)

Night fighting equipment and training should have a high priority, and so should the introduction of RPVs.

3. Navy

The Type 23 should set the pace for more drastic economies in ship design. The Navy now needs a vessel which can serve offshore both in home waters and Out-of-Area: simple and powerfully equipped with stand-off missiles. The concept of an area around the UK, from which most WP aircraft and warships could be excluded, should be considered.

The whole concept of the convoy may now be out of date, and attention should be paid to the concept of high-value independent sailings.

4. R.A.F.

The role of the RAF remains as vital as ever, though the function of the manned offensive aircraft is changing, and is likely now to become that of a lifter and deployer of stand-off missiles. The stand-off missile is vital for the future. Since it could be fired from even a civil aircraft, the operational options thus require extensive study.

THE ARGUMENT

INTRODUCTION

The West's object should be the promotion of peace not merely through disarmament, which is not an adequate strategy, but through a deliberate advance towards world order, based on clearer guidelines for East-West conduct. The most effective instrument of world order at present is the deterrence provided by NATO; but it has its own weaknesses, and is beset by new challenges.

One of these weaknesses is NATO's own strategy of Flexible Response, which is no longer credible. Technology can help to provide a non-nuclear and thus far more credible defence, if wisely deployed. It can thereby remove the need for the enormous quantity of nuclear warheads on each side, which in terms of deterrence are counter-productive. The change should be made openly and discussed with the Soviet Union. It should be accompanied by clearly understood rules of East-West co-existence.

I. POLITICS

This will have the desirable effect of raising the nuclear threshold. It will not remove the need for a nuclear capability, nor the option of First Use; but it will remove the *raison d'etre* for each side slavishly to emulate the other, and the present senseless obsession about the other side having a "monopoly" of some species of weapon. It should also mean the removal of forward-based nuclear warheads.

Of the other vulnerable points in deterrence: (a) Technology can help to remove miscalculations in the *Third World* by surveillance, warning measures and the equipment of international forces. (b) In *Space,* surveillance can be a powerful stabilising element; thus any race to achieve a Star Wars capability would not only be chimerical but could cause a grave weakening of deterrence. (c) Deterrence, unlike defence, implies *Arms control.* The new technology offers NATO a "counter-punch" conventional capability, which is much safer than the present strategy. However, it raises questions on which the Soviet Union should be reassured.

II. THE NEW TECHNOLOGY

Electronic innovations offer advances in target acquisition, communications and precision-guided munitions which, if properly exploited, would help the West to offset the Warsaw Pact's superiority in numbers. They can provide a major force multiplier in

the areas of weapons systems, surveillance, night fighting, and command and control. It has to be accepted, however, that the WP is also developing such capabilities: but NATO's defensive conventional capability would be greatly improved as an added deterrent.

Because of the new accuracy, fire power and reaction speed, any future battle in Europe is likely to be chaotic. The West's emphasis should be on survivability, firepower in stand-off form, and the ability to fight in all conditions.

III. NATO's DEFENCE NEEDS

To counter the WP's heavy superiority in hardware, the new technology should be embodied in a new strategy of defence in depth. This would not mean abandoning the present forward strategy completely, but it would eliminate the worst feature: the need to make a nuclear decision early.

In the air the WP's superiority is best met by exploiting the new ability to knock out WP airfields. This could be reciprocated; but the West is ahead in VSTOL, which should be pursued as a high priority. The role of the manned offensive aircraft in Central Europe either in long-range strategic bombardment or reconnaissance is now greatly limited. But there remain vital roles for it, especially with stand-off missiles, and also outside Europe.

On land the West badly lacks basic war stocks: guns, ammunition, tracked anti-aircraft weapons, better vehicles. These must not be ignored in the quest for new technology, which should be channelled selectively, particularly into stand-off missiles, EW and counter-EW equipment, VSTOL and night fighting.

On sea the prospect for strategic reinforcement is, to put it mildly, overcast. The Falklands environment was benign compared with what might be expected in the North Atlantic, with 600-mile stand-off missiles, Backfire bombers, quieter submarines, air-sown mines around ports, and total surveillance of the whole ocean from Moscow. Nevertheless reinforcement could get through, particularly individual sailings by fast armed merchant ships.

The needs of the Alliance call for a more active response to the Soviet challenge outside Europe. This is a role for which Britain is better qualified than any other of the Allies, and in fulfilling it, new technology could be a major asset.

IV. (1) ALLIANCE MACHINERY

The Alliance has not paid enough collective attention to the new technology. Unless it does so soon, we could waste a great deal of money without conceiving, let alone achieving, a clear result. The problem needs to be addressed at heads-of-government level. At the same time NATO needs a third Review to consider the interaction between strategy, technology, East-West relations and arms control.

Meanwhile NATO should welcome the new public voice in the wider debate, since it could help in introducing more rational procedures.

(2) UK MACHINERY

Britain needs a logic of priorities in its defence policy, and we consider what it should be. Such a strategy would be easier to sell to the taxpayer than the present succession of financial circle-squaring exercises. It would therefore facilitate the streamlining of defence procedures which, as we show, are at present very wasteful. If our recommendations on the subject were adopted, the problem of cost presented by the new technology would largely solve itself.

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