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Informal Report

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Deployment of Tactical Nuclear Weapons
I. Methodology and Guidelines,
NATO Central Front**

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Informal Report

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A Proposed NATO Force Based on the Deployment of Tactical Nuclear Weapons

I. Methodology and Guidelines,

NATO Central Front

Robert Shreffler *



ASL Consultant, specializing in the design and deployment of nuclear weapons.



A PROPOSED NATO FORCE BASED ON THE DEPLOYMENT OF TACTICAL NUCLEAR WEAPONS

VOLUME I: METHODOLOGY AND GUIDELINES, NATO CENTRAL FRONT

by

Robert Shreffler

ABSTRACT

A radically different NATO posture is proposed for Central Front defense. The posture offers greatly improved, very low cost security while presenting no offensive military threat to the Warsaw Treaty Organization (WTO) and no surrender of NATO territory. The force consists of three elements:

- Strategic forces, controlled by NATO nuclear powers, restricted to Soviet targets in retaliation for attacks on NATO non-military targets, isolated by a "firebreak" from the two defensive forces.

- Area Defense Forces, controlled by each Alliance member, protecting against subversive activity and air attack.

- A NATO-controlled Border Defense Force, responsible for defeating--largely with tactical nuclear missiles--all WTO forces as they cross NATO borders.

A methodology already familiar to the NATO Nuclear Planning Group is proposed. The first step defines Guidelines which bound the force and expound its substantial advantages; a draft is presented. The definition of a NATO Council plan, conforming to the Guidelines and defining the force and its tactics, is the second step.

Suggestions are made for future courses of action. The logic of the draft guidelines is applied to pressing issues: the definition of a tactical nuclear stockpile and the prudence of NATO deployment of long-range missiles.

I. INTRODUCTION

There is reason for concern about the adequacy of the NATO force deployed on the Central Front. Although there is considerable uncertainty in the description of the capability of the NATO force, it is difficult to argue with certain facts.

- The force is very expensive, involving annual costs approaching \$100 billion.^{1*}

- It depends heavily upon a strategic deterrent, with its potential for overreaction leading to world destruction.

- A Warsaw Treaty Organization (WTO) attack by conventional forces would make substantial penetrations into NATO territory,² if not conquer it totally.

- NATO is almost completely unprepared for any form of tactical nuclear-biological-chemical (NBC) warfare.

In an attempt to correct these ailments, NATO occupies itself with periodically reexamining a well-established list of problems.³ The substantive results of these reviews have been minimal. For example,

- The Nuclear Planning Group (NPG) was formed in the late 1960s to resolve the nuclear problems of the NATO defense, and to fill the void left by the failure of the Multilateral Force (MLF), which had somewhat similar objectives. The net product of ten years of effort has been the education of the Alliance members to the difficulty of changing anything substantial in the present force. The theater nuclear capability remains an enigma and an embarrassment to the United States and serves the Europeans only as an ill-defined tie of questionable value between the NATO conventional forces and the US strategic forces. Significantly, the NPG would be well suited to undertake the commission proposed in this document.

- For bureaucratic reasons and possibly a lack of conviction, it has been difficult to deploy new weapon systems, and it is almost never done in a timely fashion.⁴ Often when new weapons are considered, they are introduced more as an opiate or distraction than as a substantial contribution to the NATO force. The promotion of the neutron bomb is a classic example.⁵ The cruise missile⁶ and the conventional precision guided munitions (PGMs) are technologies that hold some advantage but which have been oversold to a highly receptive community.

This NATO situation is aggravated by continuing improvements in the quality and quantity of all elements of the Soviet-controlled WTO force. As Soviet strategic forces have reached a size comparable with NATO forces, the importance of ground forces has increased. This situation has developed over the years. Yet NATO retains its preoccupation with its WWII-like conventional forces, while

* Note that references include comments on and supplements to the text.

appreciating their incompatibility with any warfighting tactic involving the use of tactical nuclear weapons (TNWs). One danger that now looms is the prospect of precipitate and misdirected action on the part of NATO to correct its ills. The proposed development and deployment of large European-based strategic forces,⁷ for example, would leave Western Europe in the same precarious position as that of the United States and the Soviet Union. However, for the case of Western Europe, problems associated with the control, purpose, and deployment of a strategic force are more complex, dangerous, and counterproductive.⁶

It has long been recognized by a few⁸ that the present strategy of flexible response would not fit NATO's needs. However, there just did not appear to be any acceptable solution within the context of the present force structure. Recognizing this fact has led small, concerned groups in Germany,⁹ France,¹⁰ and the United States^{5,11-19} to explore the possibility of establishing a clear doctrine for the use of TNWs in a defensive warfighting role, appreciating that this could require substantial changes in the present force.* One such NATO force^{5,11-19} would present a border defense with nuclear fire restricted to NATO soil, at the border, in a prepared zone nominally 10 km wide. Its arsenal would consist of about 5000 relatively cheap ballistic missiles with a nominal range of 100 km, each tipped with a fission warhead with a yield somewhat less than 1 kt. Targets would be WTO forward maneuver companies. Conventional forces would be restricted to a support role, being deployed behind the nuclear fire zone to destroy penetrating WTO forces, to supply air defense support, and to defend against subversive and airborne attack. Under no condition would they preempt or usurp the primary role assigned to TNWs. NATO's defense strategy would be characterized by this evident border defense capability, low cost, low vulnerability, and military plans designed to place no noncombatants at risk from nuclear fire; to ensure release of its TNWs, this defense would be decoupled from forces with strategic characteristics.

However, three formidable objections to such a force are undeniable.

- Society reacts negatively to any proposed use of nuclear weapons. A force which depends upon the serious use of TNWs, even if for defense only, and even if it promises a superior deterrent to war, particularly nuclear war, would be met with public protests.

* The pioneer work was headed by Manlio Brosio while he was Secretary General of NATO. His memoranda on this subject are most significant.

- Drastic changes and reduction in NATO forces would be required to assure optimum performance. Military organizations, long accustomed to having to fight for budgetary survival in peacetime, react instinctively against such proposals.

- Severe adjustment in the political and economic structure of the Alliance and of the whole world would almost certainly follow. The magnitude of the changes consequent to reorganization of the NATO force structure is so enormous as to require a generation of time for adjustment.

In spite of these objections, there are good reasons to proceed with the definition of such a proposed NATO force. NATO's ailments, cited in the first paragraph, would be largely eliminated. There has been serious thought on these points.¹¹⁻¹⁹ Further, a rational, well-thought-out approach may substitute for precipitate and dangerous NATO reaction⁷ to perceptions of a worsening political-military-economic situation. The worsening situations could be continued WTO force improvements, coupled with a NATO reluctance to participate in an arms race; or the deployment, and conceivably the use, of a tactical nuclear warfighting force by a non-NATO power.¹³ At some future time, the SALT process could be broadened to include Alliance negotiations on NATO theater nuclear weapons.⁶ The advantages of the proposed NATO force and indeed, of any proposals for a more rational NATO force, deserve serious exploration well in advance of such a negotiating enterprise.

Any proposal for NATO force change must address the question of methodology. Herein an approach already familiar to the NATO NPG is adopted. The first step is the definition of Guidelines.²⁰ This permits the NATO Council to treat a complex subject in an orderly fashion. The main purpose of this document is to present a draft set of Guidelines. They appear in the next section and treat the following topics:

- | | |
|--------------|-----------------------------|
| Guideline 1. | Principles |
| Guideline 2. | Nuclear Forces |
| Guideline 3. | Existing Forces |
| Guideline 4. | Force Command and Control |
| Guideline 5. | WTO Reactions |
| Guideline 6. | Defense Force Configuration |
| Guideline 7. | Force Cost |
| Guideline 8. | Force Characteristics |
| Guideline 9. | Peaceful Goals |

The second step in this methodology employs the Guidelines as a basis for the NATO Council plan for the definition of the proposed NATO force and its tactics. This step would be executed in close cooperation with SACEUR. Clearly this method is iterative. Although Guidelines can be rather well defined in a first draft, the final product will evolve with the perfection of the proposed NATO force and its tactics.

As an introduction to the Guidelines section, the following points should be kept in mind.

- The Guidelines are based upon three assumptions regarding nuclear weapons: (1) The nuclear powers will maintain their capabilities to destroy one another with high yield weapons, (2) TNWs will be deployed with serious intention in a defensive warfighting role, and (3) Conventional weapons will be assigned to subordinate roles; under no condition will conventional forces preempt or usurp the warfighting role assigned to TNWs.

- It is believed that an objective and well-considered effort by the NATO Council to develop Guidelines would lead to a product very much like the one developed herein. At the very least, the nine topics presented here need to be addressed.

- Although each Guideline is formulated in the context of the preceding Guidelines, each one stands reasonably well by itself. This has required some repetition.

- Only the tactical nuclear element of the NBC problem is addressed, because this element is the most important and the most difficult to resolve. Steps must also be taken to resolve the chemical and biological elements.²¹

- Approved Guidelines may well serve as an expression of NATO strategy. However, to preserve NATO practice and to officially replace the present strategy, a new strategy is presented in Fig. 1. The reader is advised to read it carefully before continuing.

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CONSEIL DE L'ATLANTIQUE NORD
NORTH ATLANTIC COUNCIL

ORIGINAL: ENGLISH
January 1979

DOCUMENT

NAC/XXXX

TITLE

Strategic Concept for the Defense of the
North Atlantic Treaty Organization

- References: 1. NATO DPC source document for MC 14/3
2. MC 14/3

1. This document replaces the reference documents.
2. The objective of the North Atlantic Treaty Organization (NATO) is to
 - deploy a military force which prohibits the Warsaw Treaty Organization (WTO) from penetration of its borders;
 - support national forces which prevent the intrusion by the WTO into Western Europe by air or by subversive attack; and
 - insure that strategic attack by the WTO is deterred.
3. A NATO Border Defense Force, dependent upon nuclear forces and supported by subordinate conventional forces, will guard NATO's land and sea borders. This tactical force will function under the following constraints:
 - under no condition will it intrude onto WTO territory
 - nuclear fire will be restricted to the border area on NATO territory
 - every reasonable precaution will be taken not to expose NATO citizens to effects from nuclear weapons that exceed approved levels.

The definition of this force and the procedures under which it operates is the responsibility of the NATO Council. The operational command and control of the force, including the control and release of nuclear weapons, is delegated to SACEUR.

4. Each NATO member will assume the responsibility for complementing the Border Defense Force with an Area Defense Force for defending against subversive action, and WTO attack from the air. Each member will arrange with the NATO Council for support and coordination with respect to
 - Intelligence assessment
 - Air space surveillance and warning
 - High altitude air defense, and
 - Crisis management.

5. The deterrence of strategic attack against NATO non-nuclear powers is the responsibility of the NATO nuclear powers. To this end the NATO nuclear powers will release strategic weapons only in response to attack on NATO non-military targets. Targets for NATO strategic weapons will be restricted to the Soviet Union and chosen on a *quid pro quo* basis.

6. The NATO nuclear powers assume the responsibility for strategic deterrence and for the supply of tactical nuclear weapons to SACEUR, appreciating that their NATO allies will not acquire nuclear weapons of their own.

Fig. 1. An example of a document defining a new NATO strategy.

II. NATO FORCE GUIDELINES

GUIDELINE 1

Principles

The task of the proposed NATO force is to pose an evident capability to deter an attack on Western Europe by strategic forces and protect NATO's territorial integrity while presenting no offensive military threat to the WTO. This mission is to be carried out by a proposed NATO force which consists of three elements; the strategic forces controlled by the NATO nuclear powers; the Area Defense Forces, each controlled by an Alliance member; and a Border Defense Force under the direct control of the NATO Council.

NATO must be vitally concerned with all three elements of the proposed NATO force; however, the Guidelines must focus upon the heart of the force, the Border Defense Force: its definition, its relationship with the other two elements, and its interaction with the WTO. The Border Defense Force will explode tactical nuclear weapons, with restraint, on NATO territory, at the border, in whatever numbers are required to execute its defense mission. Conventional weapons will be assigned subordinate roles; under no conditions will conventional forces preempt or usurp the warfighting role assigned to TNWs.

The potential and configuration of the proposed NATO force must be evident to both NATO and the WTO. The force and its tactics shall demonstrate military excellence and operational simplicity. To this end, a NATO Council plan for the proposed NATO force must be defined in peacetime as accurately and in as much detail as possible. The plan should be specific and present a minimum number of acceptable alternatives for action. Further, it should include requirements for frequent exercise and demonstration through practice alerts, war gaming, and field exercises. In light of its strong dependence upon the use of tactical nuclear weapons, and the consequent implications, its deployment can only follow a NATO conviction that the proposed NATO force demonstrates clear economic, social, political, and military advantages over the present force. In particular, the deployment must result in a much lower prospect of war--particularly nuclear war--and the force cost must be dramatically reduced.

Comment

This Guideline briefly defines the proposed NATO force goals and spells out salient differences from the existing NATO force. Implicit in the Guideline is an attempt to satisfy a number of factions.

- The force is intended to be a superb defensive force supported by a meaningful strategic deterrent in order to meet the requirement of those who contend that Western Europe's security can only be maintained through military strength.

- Other factions contend that war in Europe is so unlikely under any condition that no force is required; at the most, the strategic forces of the NATO nuclear powers would suffice. Whether this group is motivated by the exorbitant cost of existing NATO forces or the provocative posture it presents, they should be assured that the proposed NATO force must be configured to be relatively very cheap, and benign (unless attacked on its own soil).

When dealing with the deployment of nuclear weapons, political superiors must be acutely aware of how their military subordinates will employ these weapons in the event that they need to be used. This is one reason for insisting upon operational simplicity and requiring that the NATO Council plan should be specific and present a minimum number of alternatives. These characteristics also minimize the prospect for WTO miscalculation. Of course, it requires a superior defensive capability.

GUIDELINE 2

Nuclear Forces

The objective of nuclear weapon deployment is to maximize NATO's security through the attainment of two objectives: (1) Deter attack on NATO non-military targets with strategic nuclear forces, and (2) Prevent the penetration of NATO borders with NATO forces dependent upon TNWs. These objectives must be accomplished while minimizing the probability of a WTO attack and insuring that, in the event of attack, the resulting damage is minimized. To meet these objectives, NATO's strategic and Border Defense Forces

- must have an evident capability
- must be totally independent of one another; i.e., a firebreak must decouple the two forces, and
- must not threaten the WTO but must invite it to deploy similar non-threatening forces.

Only by so doing can NATO insure its safety *with control of TNWs in the hands of the field commander*, while eliminating the prospect of a defensive action escalating to a strategic exchange. This requires that NATO take the following measures:

1. Remove NATO fixed military targets which invite the offensive use of WTO nuclear weapons. These targets include existing conventional and nuclear ammunition storage sites and other relatively fixed concentrations of ground, air, and sea forces.

2. Plan a NATO defense with all necessary forces, equipment, and supplies essentially in place. There will be no extensive and vulnerable logistic train or bases.

3. The Border Defense Force will be overtly defensive. It will contain a minimum conventional offensive capability. Under no condition will it trespass or fire on WTO territory. The yield of TNWs will be as low as possible, consistent with essential military requirements. It must inspire confidence that it can function against any WTO attack without surrendering NATO territory.

4. The NATO strategic deterrent will reside with the existing strategic nuclear forces of the NATO nuclear powers. Those forces, committed to the defense of non-nuclear NATO powers, will be employed only if NATO non-military targets are attacked by the Soviet Union. Its targets will be restricted to the Soviet Union and chosen on a *quid pro quo* basis.

5. Any NATO-controlled nuclear forces capable of striking deeply within the WTO should be removed. All Pershings and aircraft-delivered nuclear weapons should be removed from the theater and at no time in the future should such a capability be acquired.

6. The command and control of the strategic forces is totally isolated from the command and control of the Border Defense Force.

Comment

The purpose of this Guideline is to define the purpose for nuclear weapons in the NATO theater and to establish the relationship between strategic and defensive use of such weapons. In the existing NATO force, this purpose and relationship is far from clear.

The principle of coupling of NATO tactical and strategic forces, as codified in present NATO strategy, is considered by many, particularly the Western European Allies, to be a principal ingredient of NATO security. Although the position of the United States supports this coupling, American leaders emphasize strong support to conventional forces in an attempt to insure that the coupling will not be tested. However, if NATO elects to deploy TNWs in a defensive warfighting role, there is simply no choice but to abolish this principle and decouple them from forces with strategic characteristics.

There are a number of reasons other than decoupling for getting rid of Pershing and aircraft-delivered nuclear weapons, the NATO nuclear forces capable of striking deeply within the WTO. Many of these reasons argue for no future consideration of NATO long-range systems (e.g., MRBMs).

- The strength and flexibility of the NATO deterrent is not significantly enhanced by these long range forces. Their capabilities represent a small fraction of the enormous strategic forces of the NATO nuclear powers. These much stronger forces can be employed to meet strategic needs of the proposed NATO force.

- Military opposition to the removal of the NATO forces in question should pose no serious problem. Both the NATO air forces and surface navies are losing their appetites for this nuclear weapon delivery. The existing Pershings have limited capability and are inadequate for attacks on the Soviet Union.

- In the context of East-West negotiations to limit destabilizing armaments in Europe, a *quid pro quo* for this removal of NATO long range nuclear forces would be the reduction of Soviet missiles and aircraft targeted on Western Europe. It should be emphasized that the prospect for success in such an undertaking is probably low, and should not significantly influence a decision to deploy the proposed NATO force.

- Relationship with non-Soviet WTO members could improve. In particular, the FRG should welcome the fact that the GDR would no longer be targeted.

- NATO long range nuclear forces, no doubt, head the WTO target list. Their continued presence is an invitation for a Soviet nuclear disarming strike as their initial step to war.

- Removal of NATO's long range nuclear force would demonstrate NATO's intention to emphasize its defensive forces. Significantly, it would also permit the NATO military organization to concentrate on the NATO Council plan for a Border Defense Force by removing a major military distraction, long range nuclear forces.

The removal of NATO long range nuclear forces no doubt will be resisted by Western Europeans, who view the present deployment as a major contribution to coupling. Their concern is further buttressed by the presence of Soviet and US strategic forces of comparable size, combined with the SS-20 missile and Backfire bomber threat. To this situation can be added the fact that a new, invulnerable NATO-assigned MRBM force could be quickly and cheaply acquired and deployed, provided it were not excessively large or complicated (e.g., a force

restricted to attack on Soviet cities). Though one can generate sympathy for this case, logic rests strongly with those reasons cited for abolition.

This Guideline clearly leads to a much simplified and better defined role for the strategic forces of the NATO nuclear powers, a role which permits their numbers to be drastically reduced. Because this Guideline would also reduce the confusion over TNWs, it should result in a significantly more satisfactory and less dangerous situation for the world at large, as well as for the NATO nations.

GUIDELINE 3

Existing Forces

An appraisal of the capabilities of the existing NATO force is required to establish the need for the proposed NATO force. The following characteristics of the existing force must be reviewed:

- NATO defense budget: \$100 billion/year.
- WTO offensive potential: unacceptably superior to NATO defense.
- Relationship between existing NATO conventional forces and TNWs in a warfighting role: incompatible.
- Escalation risk to strategic level: unacceptably high.

Comment

The role of the conventional elements of the existing NATO tactical force is to repel a conventional attack by the WTO at the border, thus preventing intrusion into NATO territory and the necessity for subsequent use of nuclear weapons. Assuming that the conflict remains conventional, the disagreement over the capability of NATO to limit the success of the WTO and meet this objective is enormous. For example:

- One view is that improvements in conventional munitions (PGMs) have enhanced the NATO defense to such a degree that they might replace TNWs as well as older conventional munitions. Indeed, there has been significant improvement in the defense; however, some improvement also accrues to the offense. The net advantage is exaggerated by both sides.⁴

- Another faction contends that a modest improvement in the assets of existing NATO armies and their deployment can produce a capability for ultimately reversing an intrusion and reestablishing of the *status quo ante*. Others, equally respected, contend that Western Europe would be deeply penetrated,² if

not conquered, within a few days. Opinions regarding the warfighting capability of the NATO air force and surface navy are equally divergent.

This high uncertainty and a number of other factors attest adversely to NATO's dependence on its existing conventional elements. In the first place, the Soviet Union will probably seek to maintain what NATO judges to be WTO conventional superiority. A NATO effort to maintain the conventional balance could intensify the arms race without adding to NATO security. Secondly, Western Europeans are reluctant to become a party to a holocaust for a third time this century. This would be the case, almost independent of the relative sizes of the NATO and WTO forces, were a conventional war to take place. No doubt surrender would be preferred to a conventional conflict which converted even a modest fraction of the Federal Republic of Germany (FRG) into a battleground. Third, and most important, there is little advantage in deploying a conventional force that can be so easily destroyed by an adversary who has indicated few scruples about using nuclear weapons in its attack, and who is prepared to do so. *In fact, it seems clear that to improve NATO conventional forces is to increase the probability that, if war does come, it will be initiated with a Soviet nuclear disarming strike, i.e., contrary to the generally accepted position, improving NATO's conventional force would lower the nuclear threshold.*

This description does not inspire confidence in the NATO conventional forces. One might expect military organizations, with the explicit responsibility for designing an optimum NATO defense, to actively explore the potential of a tactical nuclear defense. To a degree this has been done by the US Army. Since the detonation of the first nuclear weapons, it has conducted over ten extensive studies and field exercises from which they learned a great deal. However, the principal lesson, the fundamental incompatibility of conventional forces of maneuver and the use of TNWs, has never been openly acknowledged. This is a consequence of a requirement to support a strategy of flexible response, which requires TNWs, while maintaining conventional maneuver forces as a political necessity.

The surface navy,²² already in serious trouble to define a conventional role, is desolate at the prospects of any nuclear war; in such event, aircraft carriers and amphibious forces would lose whatever survivability they now have. It is difficult to imagine an engagement with the Soviet Union, involving aircraft carriers, which is not nuclear. As far as NATO is concerned, the navy

would seem to have two options: it can content itself with its present "peacetime" role, or consider a quite different naval force built to function in a nuclear reference frame.*

The plight of the NATO tactical air forces with respect to tactical nuclear weapons is almost as serious. Their bases are highly vulnerable, particularly to WTO disarming attacks; the probability of their inflicting damage against defended targets, even with nuclear weapons, is low; at the present time the orchestration of the use of nuclear weapons by the air force with that of the ground forces is essentially indefinable; allocation of dual-capable assets and training, for both conventional and nuclear tasks, has always posed a problem for NATO air forces. They, like the navy, would seem to prefer not to have to consider any nuclear weapon delivery assignment, so that they could turn their attention to the attainment of air superiority over a WTO air force of increasing quality and greater size.¹

This Guideline assigns an annual cost of \$100 billion to NATO defense. This is the cost/year to be considered in the situation created in this study, in which one force is ultimately replaced by another. The figure was derived from the following information:

- NATO nations (including France) expend \$185 billion/year for their military forces.¹

- The US is by far the largest contributor to NATO defense. Its total FY 79 budget will be in the neighborhood of \$125 billion. About \$100 billion will be expended on General Purpose Forces. (The remainder is assigned to the Strategic Force.) It is reasonable to assign half of this to NATO and half to the rest of the world.

- One senior US official estimated \$46 billion to be expended on NATO in 1977 (Associated Press, Washington, August 26, 1977).

The most evident impact of the replacement of the existing NATO force by the proposed NATO force could be a dramatic reduction in force size and cost. To prevent social and economic dislocation, this would require careful planning and a transition period of many years. Consequently, one result of this study should be an accurate accounting of costs for both the existing and proposed forces (Guideline 7). For the moment, the \$100 billion estimate is adequate to identify the problem.

* See Chapter 7 of Ref. 18, "The US and a Tactical Nuclear Umbrella."

From these comments, it is concluded that the existing NATO tactical force is an inadequate warfighting machine, and it is very expensive. At the very best, it could counter the WTO in a conventional conflict only after fighting over a significant fraction of NATO soil; at the worst, it would be defeated quickly and/or there would be hasty capitulation. In the event that the WTO employs nuclear weapons in an attack, the only sensible avenue, in light of the gross vulnerability of the NATO force and the likely consequences of NATO nuclear weapon response, would seem to be prompt surrender. Obviously, an objective evaluation of the existing NATO force is long overdue, as is the consideration of those proposed solutions which offer more than a perturbation of the present posture.

The military deficiencies of the NATO force may largely be ascribed to the *peacetime* desires of the many elements of the NATO member countries. In order to better meet the *wartime* requirements, two diametrically opposed alternatives have been proposed. One alternative, supported by some concerned US military officers, would essentially eliminate TNWs and develop a NATO strategic nuclear capability deployed in Western Europe in order to deter the use of TNWs by the WTO; NATO conventional forces should be improved to that level which would insure Western Europe's security.²³ In spite of its obvious flaws, it may be the direction of present US policy. The second alternative is the proposed NATO force.

GUIDELINE 4

Command and Control of the Proposed NATO Force

The ultimate responsibility for the command and control of the proposed NATO force is held by the NATO Council. This responsibility is largely executed by defining a force plan during peacetime that will rarely require political intervention during wartime. This permits the Council to delegate the authority for its security.

- The operational command and control of the Border Defense Force is delegated to the Supreme Allied Commander, Europe (SACEUR), within constraints generated with host countries. SACEUR will further delegate authority to his field commanders to insure their prompt response when the border is penetrated by the WTO.

- The command and control of strategic forces will be the responsibility of the NATO nuclear powers.

- Each NATO member retains command and control of its own Area Defense Force.

Comment

The credibility of the Alliance is degraded by its present consultative and command and control procedures. The basis of past policy has been the insistence by the United States that it control the release of nuclear weapons. This situation might be acceptable were it to permit a credible plan for operation. It does not. However, there seems to be no reasonable alternative within the present force posture.

For the proposed NATO force, it must be demonstrated that TNWs can always be managed with extreme care to insure that they do not fall into unauthorized hands, and that they will always be available when needed. Final weapon readiness, which may involve any permission procedure, final weapon assembly, and preparation for fire, should not take longer than about three minutes, the time necessary to acquire a target and assign it to a firing unit. Adherence to the Guidelines and proper employment of existing technology should lead to a Border Defense Force which meets such requirements.

There are a number of other aspects of the command and control process which must be borne in mind:

- The detonation of a subkiloton nuclear weapon, in a reasonably isolated border area under attack, and in the context of a force constructed according to these Guidelines, is not a particularly disastrous or ominous event, hardly to be related to a disaster on the scale of Hiroshima. More important is the fact that the detonation of these nuclear weapons to repel a major attack at the border is far less likely to be necessary than the less discriminate use of much larger yield nuclear weapons in support of the existing NATO force, because of the deterrent value of the doctrine espoused here.

- The NATO Council is a body for deciding policy matters after debate which frequently lasts for years. It is simply incapable of operating as a decision making body to manage the battlefield during wartime. To pretend otherwise can be fatal. The Council has no alternative but to delegate operational command of its defensive and strategic forces. Of course, the delegation of the use of TNWs into the hands of the battlefield commander places great responsibility on the Council to formulate a credible plan during peacetime.

- It is *apropos* to speculate on the demands placed on NATO command and control resulting from a WTO attack. Whatever the intensity of the border intrusion, the disruption in Western Europe could be minor relative to a conflict with existing forces; there would seem to be little need for formal declarations or terminations of conflict. NATO would fire on WTO forces until none remained on NATO soil. The engagement would involve largely forces and material in being; mobilization would involve indigenous forces with a minimum of transport. The control of the battle at the border would rest almost completely in the hands of the local commander. These demands on NATO command and control would be spelled out in the Council's plan.

- Finally, there are implications of the United States relinquishing its responsibility for the release of TNWs to SACEUR and his field commanders. In many respects, the action has the complexion of creating another powerful nuclear power which functions under a totally unfamiliar set of ground rules. No doubt one should be prepared for the impact to be profound, not only among the members of NATO and the WTO, but throughout the world. A continuing evaluation of this impact by the Council is essential.

GUIDELINE 5

WTO Reactions

A major objective of the proposed NATO posture is that it render NATO security insensitive to actions of, or changes in, the WTO force, while presenting no overt threat to the WTO. While the WTO may generally applaud NATO's intention, this seemingly benign NATO deployment could be interpreted by the Soviets as fatal to their intentions. Consequently, NATO must guard against improbable but drastic Soviet reactions, by completely and continuously informing the WTO of NATO intentions, while remaining sensitive and responsive to both adverse and constructive reactions.

Comment

A decision by the NATO Council to proceed with the development of Guidelines should be well received by the non-Soviet members of the WTO. Their territory would no longer be targeted by NATO long-range nuclear weapons; their borders would not be threatened by offensively capable NATO forces. Under such incentives, NATO might expect these powers to reduce their existing forces.

The Soviet leaders' reaction is unpredictable. They might welcome a reduction in what they interpret as an offensive threat posed by the existing NATO forces. At the other extreme, they might have cause for alarm. The proposed NATO force would essentially cancel the politically coercive impact of the existing WTO force. It would largely eliminate the *raison d'etre* for Soviet forces on the soil of its WTO allies. The Soviet investment in conventional military hardware is much larger than NATO's and therefore represents a much greater loss if made obsolete. The proposed approach could substantially increase the stature of Western Europe as a world power and adversary. Therefore, NATO must remain alert to all possible Soviet reactions.

The deployment of the proposed NATO force should result ultimately in a far more stable relationship between NATO and the WTO, based upon a much clearer exposition of the intent of both. Ideally, the WTO would deploy a similar force, and the result would be a tactical stalemate; the competition between ideologies would shift from the military to the economic and social arenas.

GUIDELINE 6

Defense Force Configuration

The proposed NATO force is composed of three elements: the strategic forces controlled by the NATO nuclear powers (see Guideline 2), a Border Defense Force for which the NATO Council is responsible, and an Area Defense Force for which each country retains responsibility.

The Border Defense Force is the responsibility of the NATO Council. It is composed of two elements: the Defensive Nuclear Force and the Conventional Support Force. The Defensive Nuclear Force is an elite multinational professional force under the direct command of SACEUR. It is responsible for defeating WTO forces as they cross the NATO-WTO border. For study purposes, its arsenal consists nominally of 5000 nuclear missiles with a maximum range of 100 km. The force is responsible for the security of its nuclear weapons and all aspects of the nuclear fire mission; target acquisition, fire control, nuclear weapon operation, maintenance, deployment, and firing.

The Conventional Support Force could be composed of indigenous professional forces, conscripts, and militia. Its principal armament is lightly armored vehicles, helicopter transports, and missiles. It is responsible for the defeat of any WTO forces that filter through the nuclear defense, for the air defense of the battle area, and for the security of the Defensive Nuclear Force. Under

no circumstances should this force be considered a substitute for the Defensive Nuclear Force. The size of the Conventional Support Force should diminish as NATO acquires confidence in the capability of the Defensive Nuclear Force.

Each NATO member is responsible for its own Area Defense Force, which would operate during time of crisis to suppress subversive action, and counter any attack from the air. The configuration of the force will depend strongly upon the country's perception of its situation. It is intended that a characteristic force should be composed predominantly of indigenous militia, and be equipped with small, multipurpose conventional missiles, and lightly armored vehicles.

The NATO Council will be responsible for coordinating the Border Defense Force and the Area Defense Forces. It is essential that the command and control relationship for crisis management between SACEUR and the proper national authorities be developed during peacetime. Each member nation will arrange with the NATO Council for support and coordination with respect to:

- Intelligence assessment,
- Air space surveillance and warning,
- Higher altitude air defense, and
- Crisis management.

Comment

This Guideline proposes a configuration for the proposed NATO force which best satisfies the other Guidelines. It also serves to meet many of the problems raised in an article³ by Robert Komer, now Advisor to the Secretary of Defense for NATO affairs. The following statement is taken from his introduction:

"Parochial national considerations tend to override collective defense needs in determining national budget allocations. Balanced national, rather than NATO, forces are the order of the day. NATO's fourteen separate national force structures (including France but not Iceland), each with its own separate overhead, weaponry, arsenals, R&D programmes and training base, entail wasteful overlap and duplication."

As a consequence:

"...there is really no such thing as a NATO defense posture, only a collection of heterogeneous national postures, which differ far more in their equipment, organization, and procedures than do their Warsaw Pact counterparts."

The approach taken to this problem since NATO's birth, and the one proposed by Mr. Komer, is to force the members of the Alliance to participate in constructing a "rationalized" conventional force, while making a polite nod in the direction of the nuclear weapon arsenal. Judging from past experience, the prospects for success are minimal.

The Guideline provides that all forces deployed on the Central Front except those composing the Defensive Nuclear Forces could be from the Federal Republic of Germany (FRG). This point merits careful examination.

- As long as the force cost is in the neighborhood of \$100 billion/year as it is today, it must be shared by all Alliance members. The cost of the proposed force (see Guideline 7) is estimated to be \$17 billion, the present FRG annual investment. This represents only 3.2% of the FRG gross national products (GNP), no great burden for the most prosperous country in Western Europe.

- In the present context, neither ally nor adversary would permit the development of a huge FRG war machine, nor would they be comfortable with nuclear weapons in FRG hands. The proposed FRG force would be defensive, essentially devoid of offensive capability; it would possess no nuclear weapons. There should be no legitimate fear of a re-armed FRG.

- At the present time, the FRG takes on the complexion of an armed camp. This is particularly true during those periods when realistic military field exercises are carried out. With the proposed indigenous force employing light equipment in a defensive role, the problems would markedly diminish even though field exercises could be more frequent.

- These issues deeply involve the entire world. By choosing to undertake their own defense (*sans* nuclear elements), the FRG preempts the *raison d'etre* for large conventional forces maintained by many allies. For example, even with the Korean and other commitments, the defense needs of the United States would hardly require an army of 775 000.

Evidently, the decisions regarding the roles of the various Alliance members in the proposed NATO force require a reconsideration of many NATO traditions.

A few additional comments with respect to the Defense Forces are in order:

- The configuration of the 14 Area Defense Forces, being under national control, is determined by such issues as the country's geographic location, its perception of the threat, the level to which it chooses to expend its assets to cope with this threat, its desire to maintain a "balanced" military force, and

many others. As a consequence, all forces are different. Within rather broad limits, the configuration of these forces is not a NATO concern. However, by NATO's properly executing its responsibilities with respect to border and strategic security, the Area Defense Forces could simply constitute an extension of peacetime police and other national organizations.

- A WTO airborne attack is doomed to failure if it is confronted with a well-trained Area Defense Force which denies it a proper landing, adequate supply, and (along with a Border Defense Force) reunion with the main attack. In addition, such an airborne attack should have difficulty penetrating the air defense of the Border Defense Force.²⁵

- The composition of the Border Defense Force can not be specified until the NATO Council plan has been developed. The logical procedure would seem to be to first define the Defensive Nuclear Force. As the capabilities and demands of this force element become clear, the Conventional Support Force can be defined. To the degree that it is possible within military prudence, indigenous militia should be employed.

- SAMs²⁶ are required in preference to aircraft for an air defense for several reasons. Aircraft are expensive and are plagued with the disadvantages cited in the comment to Guideline 3; their deployment violates these Guidelines. Second, by removing NATO aircraft along with the present NATO target complex, the WTO no longer has much incentive to maintain an airforce; i.e., the air threat may disappear. Finally, it is probably unrealistic to deploy SAMs and aircraft together for air defense. No matter what precautions are taken (e.g., advanced IFFN²⁷ devices), some NATO aircraft will be shot down by NATO SAMs. SAMs, to be effective in the proposed NATO force, must have license to "shoot at anything that flies."

Part III of this series of documents will treat a seaborne attack. At this moment, this defense is conceived to depend upon a nuclear defense of the shoreline and would require a force similar to the Border Defense Force. Of course, a seaborne attack against a well-trained force is a precarious undertaking; against a nuclear defense, it would be totally futile.

GUIDELINE 7

Force Cost

The annual cost of an effective Border Defense Force must be accurately determined, and it should be a small fraction of the cost of the existing NATO

force. For planning purposes, the annual budget for this force for the protection of the NATO Central Front is \$10 billion. One billion dollars is assigned to the Defensive Nuclear Force; this cost will be assumed by NATO at large. Nine billion dollars is assigned to the Conventional Support Force, and eight billion dollars a year is assigned to the Area Defense Force of the FRG; these costs will be assumed by the FRG.

Comment

A major reason for adopting the proposed NATO force will be that it is very much cheaper than the existing NATO force, at the same time providing more security for NATO.

In order to determine the cost of the proposed NATO force, it is necessary to have a completed plan for the Border Defense Force, along with the intentions of the Alliance Members with respect to their Area Defense Forces.* Since this information does not exist today, one can only make uncertain estimates. Through the iterative process, these cost goals will be refined. The initial estimates posed in this Guideline stem from an opinion that this amount of money is reasonably sufficient, and from an effort to meet the current estimated 1979 FRG budget, \$17 billion.¹ In addition, the following opinion pertains:

One billion dollars for the nominal Defensive Nuclear Force is a reasonable cost from a consideration¹⁸ of the following data:

(1) Targets (WTO maneuver companies)	2 500
(2) Weapons (NATO 100-km nuclear missiles)	5 000 **
(3) Professional force	20 000
(4) Cost/troop (\$/year) [(6)/(3)], or	50 000
(5) Cost/missile (\$/year) [(6)/(2)]	200 000
(6) Total cost (\$/year)	1 billion

Studies of the proposed missile place the annual cost lower than the \$200 000/year;¹⁸ existing systems, such as Pershing, are considerably more costly. Certainly, the definition of the interface between the Conventional Support Force

* It is assumed that the NATO strategic commitment will place no additional financial burden on the NATO nuclear powers.

** 5000 weapons is a reasonable number that assigns nominally 6 weapons/km of front. Assignment of a more realistic number should probably await definition of the NATO Council plan. Evidently, multiplying or dividing the number by two does not significantly influence the arguments presented here.

and the Defensive Nuclear Force influences this cost. The Defensive Nuclear Force should be composed of all NATO nationalities, and it should be under the absolute control of SACEUR. It should be supported by NATO at large, possibly with annual contributions based upon the GNP of the member countries. One billion dollars is an arbitrary estimate of the amount that one could annually assess from NATO.

- This Guideline and Comment support the option for the FRG to assume the responsibility for a total defense of the Central Front (without the nuclear forces) which might well find general acceptance by its allies and adversaries. The \$17 billion cost is only 3.2% of the FRG GNP. Nine billion dollars for the Conventional Support Force would support a force of about 360 000 professional FRG troops, assuming that each man costs \$25 000 a year to maintain. Currently this figure is \$35 000,¹ but it includes those costs involved in support of a modern offensively oriented conventional force. This would leave over \$8 billion for the German Area Defense Force, which, being composed predominantly of militia, should be a very large and adequate force.

- Of course, a major point to be made with respect to force cost has to do with the drastic reduction from the neighborhood of \$100 billion/year to the neighborhood of less than \$20 billion/year. An adjustment of this magnitude could take many years. However, only through such drastic cost reductions, while maintaining security, will the world be able to balance its budget.²⁸

GUIDELINE 8

Force Characteristics

Comment

In the course of the development of the NATO Council plan, conclusions regarding the details of the force will be reached which should be formalized in the Guidelines. This Guideline states four such conclusions. No doubt, more will be added.

GUIDELINE 8A Force Invulnerability

The proposed NATO force must exhibit acceptable invulnerability to subversive action, conventional attack or nuclear attack, and still maintain a high level of military effectiveness. The force must also operate within acceptable limits of safety and security. With respect to the Border Defense Force, this requires that

- the force present a low number of vulnerable targets that can be acquired in real time. This may require that some fraction of the force be deployed at all times. The fraction would be determined by consultation between SACEUR and the host country.

- the troops and their material must be protected from the effects of conventional and nuclear fire.

- nuclear weapons must be deployed in the many NATO caserns and with their launchers in the field, employing available techniques to ensure appropriate invulnerability, safety, and security in times of both peace and war.

- emphasis must be placed upon a redundant, secure, and invulnerable system of command, control, and communications.

Comment

A major objection to the existing NATO force is its vulnerability, particularly to nuclear disarming strikes against vital fixed military targets. Pertinent examples are the relatively few nuclear weapons storage sites, in which weapons are stored and from which they are seldom removed. There is no choice but to revise these procedures totally. Weapons must be deployed, some in the caserns and some with their delivery systems.¹⁸ In either situation, fissile material should be inserted into the weapon explosive system only when the weapon is to be fired. This step greatly improves safety, security, and survivability, and may significantly simplify weapon development. Explosive systems should be made of suitably insensitive explosive. Weapons should be deployed in the field in secure vehicles employing hardware and methods currently in use and designed for similar purposes.

The target acquisition capability can be destroyed by an indiscriminate nuclear attack. NATO's response would be to reconstitute its defense behind the devastated area and to fire weapons so as to deny the occupation of the devastated area to the WTO. Continued use of this WTO tactic could ultimately lead to a NATO strategic response.

The vulnerability of some targets cannot be significantly reduced. Port installations are an example. In this case, one would be advised to adopt a posture which placed emphasis on fighting with deployed forces and material; i.e., not dependent on resupply through the ports. Such a step not only would improve confidence in the ability of the NATO force but would tend to remove the port from the WTO target list.

GUIDELINE 8B Target

The WTO maneuver company (composed nominally of 11 armored vehicles), as it crosses the NATO border, is the essential target of interest for TNW attack. Smaller targets in this zone are also admissible.

Comment

The maneuver company is the building block of the WTO ground force. It must be made ineffective by destroying some assigned fraction of each company or forcing it to disperse into smaller units, permitting the fragments to be defeated by either conventional (PGM) or TNW* fire. Defining the maneuver company as a principal target²⁴ permits simplification of military procedures by restricting the warhead to a single subkiloton fission yield and a single height of burst. Larger targets are composed into company-sized units for attack; though more warheads are required, the total yield employed and the unwanted damage created are substantially reduced. It is no longer necessary to attack second-echelon enemy forces; this is not only a difficult and costly task, but it would violate the Guidelines if these targets were still on WTO territory and if they required higher yield warheads. These conditions are evidently consistent with the formulation of a "firebreak" between defensive and strategic nuclear forces (Guideline 2).

GUIDELINE 8C Unwanted Damage

The rules for the employment of TNWs are not to place noncombatants and friendly combatants at excessive risk from nuclear effects, and the damage to property should be minimized within reasonable restriction on military performance. This requires that

- the lowest possible yield of nuclear weapon be employed commensurate with military effectiveness,
- ground burst of nuclear weapons, which generates fallout, be forbidden,
- nuclear fire be restricted into fixed target areas in proximity to the border as opposed to firing at more random locations,
- population be removed from these border nuclear fire areas during time of crisis,

* The costs associated with a proposed NATO TNW are significantly lower than the costs associated with a WTO tank.

- to a maximum degree within prudent limits of military effectiveness, military personnel should be protected and the border defense should be instrumented with target sensors.

Comment

For high airburst nuclear weapons with fission yields less than 10 kt, the predominant weapon effect is nuclear radiation.* Tactics that expose noncombatants and friendly troops to excessive amounts of radiation will not be acceptable. As the TNWs are taken more seriously, one should expect the limit for noncombatants to drop toward some low limit. For study purposes, the present accepted industrial dose of about 1 rad/year will be employed. Present radiation levels for friendly troops, assigned by the US Army (150 rad), may be set much lower.

A specific example may clarify this subject. Consider an airburst explosion of a fission weapon of 10 kt. According to US Army criteria, tank crews would be promptly incapacitated for an area of 1.5 km². The surrounding 20 km² would be exposed to more than 1 rad, the anticipated level for noncombatants. The surrounding 7 km² would be exposed to more than 150 rad, the present limit for friendly troops.

By dropping the fission yield to 1 kt, one obtains the following results:

Lethal area (16 000 rad)	0.41 km ²
Present friendly combatant unsafe area (150 rad)	3.3 km ²
Noncombatant unsafe area (1 rad)	11.0 km ²

This lower yield is more than adequate to defeat a WTO maneuver company. Incidentally, at this yield, fission warheads offer the same advantages that would be realized by other technologies.

GUIDELINE 8D Optimized TNWs

TNWs should be chosen to support the proposed NATO force in an optimum fashion. The nuclear warhead delivery system should not be compromised for conventional warhead delivery.

* At the higher end of this yield range, thermal radiation should probably be considered as well. For fission weapon yields below 1 kt, thermal radiation may be ignored. Substantial effects to property from blast (5 psi) are restricted to that same small area in which tank crews are considered to be promptly incapacitated by radiation.²⁴

Comment

Most TNWs in the present stockpile are dual capable; i.e., the delivery systems can employ either a nuclear or a conventional warhead. A major reason cited for such action is that a large part (usually all) of the cost of the operation, maintenance, and procurement of the delivery system can be borne by the conventional force. Even if this were justified, the disadvantages of dual capability are decisive.

1. Dual capable weapons lose their legitimacy as contributors to the nuclear military deterrent, since the conventional option is dominant in the hands of political and military organizations which are reluctant to give serious consideration to a TNW warfighting role. This situation is amplified by the practice of locking the weapons in storage sites and essentially forgetting about them.

2. In almost every instance, weapons delivery systems are designed for conventional munitions. A nuclear role is often added as an afterthought. As a consequence, the system, particularly for nuclear use, is far from optimum. Dual capable missiles (LANCE) are probably the best examples. To be effective in the conventional mode, the delivery systems are sized to carry large quantities of high explosives (1000 lbs), an order of magnitude more weight than is required for a nuclear warhead.

3. The artillery-launched atomic projectile (AFAP) is another example of a nuclear warhead being compromised by a conventional delivery system. Its design employs excessive amounts of fissile material, and presses technology in some instances beyond its limits; it is difficult to test under realistic artillery firing conditions. Compared with a simple fission warhead for a missile, it is inordinately expensive; to certify a nominal stockpile lifetime in an era of impending nuclear test curtailment is questionable. These disadvantages might be tolerated if the weapon served some purpose. In fact, it is launched from guns of inadequate range which are significantly outperformed by the guns of the WTO. Such poor performance could force NATO to dedicate some fraction of its guns for nuclear use only, thus negating the initial advantage. In addition, the nuclear role places a higher value on NATO artillery as a WTO target.

4. Dual capability requires more complex equipment, dual procedures, and dual training of troops. This has always proved to be difficult and a sore issue within the Alliance.

In summary, there is no situation on the battlefield where the principle of dual capability works to advantage; in fact, it serves to entrench current conventional approaches, and results in the production of inferior (and less credible) nuclear weapons. Objective scrutiny rarely shows it to present any advantage.

GUIDELINE 9

Peaceful Goals

The deployment of the proposed NATO force must lead to a more secure and peaceful world. The proposed NATO political-military posture should be structured to cope, as indicated, with the following issues:

- Strategic force reduction: NATO should delegate control over strategic forces to the NATO nuclear powers. It should remove all Pershings and aircraft-delivered nuclear weapons from the theater. Military objectives (NATO and WTO) would no longer serve as targets for strategic weapons, whose number therefore could be drastically reduced.

- Nuclear weapon proliferation: NATO nuclear powers should be able to supply TNWs to SACEUR without placing their own countries in jeopardy. Under these conditions, NATO nuclear powers can guarantee nuclear weapon support; in return, non-nuclear powers will guarantee not to develop nuclear weapons.

- War prospect: The proposed force cannot be deployed unless the NATO council is convinced that this action substantially reduces the prospect for war, particularly nuclear war, from that associated with the existing NATO force.

- Arms race: The proposed NATO force must be structured so that it is relatively threat independent. That is, NATO should be able to counter a substantial force increase by the WTO with a nominal force increase of its own.

- Arms reduction: The proposed NATO force must require substantially less manpower, armament, and cost while maintaining a superior military capability to protect NATO. There could be strong incentive for the WTO to follow the same course.

NATO emphasis of the border defense role of TNWs should prepare the way for the worldwide reduction and elimination of massive, offensively oriented conventional forces and strategic nuclear forces. The deemphasis of concern over nuclear weapon proliferation goes hand in hand with the reduction in the importance of strategic nuclear forces.

Comment

Today there is an increasing effort to re-explore arms control measures.²⁹ This involves analyzing history for lessons which prohibit repetition of mistakes and which might open new avenues. Such activity is prudent in light of the alternative--enlarging and improving conventional forces and deploying NATO's own strategic force. Though new avenues may be exposed which, in the present context, could lead to some success, it is unlikely that these results would be comparable to the quantum jump in arms control measures associated with--indeed, necessitated by--the deployment of the proposed NATO force. The traditional goals of East-West arms control are met: the economic cost of preparing for war is greatly reduced, as is the damage of war if it breaks out. With cautious but determined management, the third goal--increased stability--is met in an overwhelming manner.

Each of the elements of this Guideline is pregnant with arms control potential. For example, the force's independence of WTO reaction, along with its evident potential and the open quality of its strategy, permits the advantages of unilateral behavior; i.e., a force is constructed of optimum quality in its own right without concern for catering to or accommodating WTO reaction. Further, such annoying features as verification of WTO behavior would be drastically reduced in importance. A satellite record of troop movements would be desirable; however, there would be little need for monitoring any feature of Soviet strategic forces. The Soviet Union and the United States could continue to engage themselves with SALT. The subject of NATO's strategic deterrent would be a closed issue, non-negotiable in such a forum.

III. CONCLUDING COMMENTS

This document questions the posture and capability of the existing NATO force. Guidelines are presented which prescribe a new force based upon the defensive use of TNWs. This force would have substantial advantages over the existing force. The price would be a gross dislocation of the present system, a price which could discourage the Council from composing Guidelines. The following steps are proposed to prepare NATO for making a decision favoring such an undertaking and to prevent actions which might later be regretted.

1. Existing forces should be carefully and objectively analyzed by the Council (Guideline 3). Particular attention should be given to an assessment of the compatibility of conventional modes of employing existing forces with TNWs.

In this regard, present field manuals defining procedures for the use of TNWs should be reviewed. The many military studies and field exercises involving TNWs which have been carried out by NATO and within member countries should be investigated. Pertinent non-NATO policies of member countries should be reviewed. It is anticipated that such an investigation will be sobering; it will expose the superficial manner in which this vital issue has been treated.

2. The logic underlying the Guidelines affords a useful perspective from which to assess the disabilities and problems of the existing NATO force.

An example is the possible deployment of a large, long-range missile force in the FRG.⁷ Whatever its advantages, such a step would be contrary to the Guidelines which state that no such force should be deployed, and that the Pershings and aircraft-delivered nuclear weapons should be removed from the theater. These steps are essential for the proposed NATO force, but they also retain many advantages for the existing force, as listed in the Comment on Guideline 2. In summary, instead of considering the deployment of a NATO MRBM, NATO should more logically be considering the removal of Pershings and aircraft-delivered nuclear weapons.

A second example pertains to the configuration of the NATO nuclear weapon stockpile. There is constant pressure by the US technical-military community to "modernize" this stockpile on the grounds that the present stockpile is obsolete and/or expensive to operate and maintain. However, the US Congress is reluctant to appropriate funds when they are unable to obtain reasonable answers to such basic questions as: why are such weapons needed in the first place? How should they be deployed, and how will they be used? With the proposed NATO force, these questions are easily answered in support of a large stockpile of subkiloton fission warheads for missiles. To the point in question, in the support of the existing NATO conventional force, the deployment of a Defensive Nuclear Force, as defined under the Guidelines, would make far more sense as a warfighting tool than current proposals for the refurbishment of the stockpile.* Indeed, the deployment of LANCE and nuclear artillery projectiles saddle NATO with inferior weapons for their lifetime (~20 years); it is a step to be stoutly resisted.

* A most difficult aspect of this proposal will be to attract US attention to the allocation of TNWs for the immediate use of the field commander. The approach to be taken may require that the Defensive Nuclear Force be composed initially of US forces with a US general as SACEUR.

3. To insure that the proposed NATO force is evaluated fully in such a comparison, two additional studies are planned after this one:

"A Proposed NATO Force Based on the Employment of Tactical Nuclear Weapons, Volume II: A Plan for the Protection of the NATO Central Front," and

"A Proposed NATO Force Based on the Employment of Tactical Nuclear Weapons, Volume III: A Plan for the Protection of NATO."

Volume II would develop the details of the proposed NATO force and its associated tactics, conforming to the Guidelines of Chapter II. Volume III would apply the methodology used for the proposed force defending the Central Front in Volumes I and II to the remainder of Western Europe. Volume III will involve both land and sea frontier defenses.

The immediate advantage to NATO authorities of making a study such as is proposed herein would be their acquisition of a much better appreciation of the potential of nuclear weapons in the protection of the Alliance. They would be forced to review the many difficult and pressing issues involving strategic weapons. They would gain an appreciation of the advantages of deploying TNWs, along with a realization of the difficult problems to be resolved. Most difficult but unavoidable would be the essential commitment to the detonation of subkiloton nuclear weapons in the air at the NATO-WTO border, under the conditions and constraints described herein. NATO's political leaders would become aware of the importance of taking great pains with peacetime planning for the wartime use of all nuclear weapons. In particular, they would realize that a force designed to fight with TNWs has very little in common with the existing NATO configuration; TNWs do not just extend the firepower capabilities of present conventional forces, as many would have them believe. Only through such understanding can NATO be made secure.

ACKNOWLEDGMENTS

For the last seven years I have worked with colleagues at the Los Alamos Scientific Laboratory on the subject of a more reasonable US political-military posture. A number of us had served in various capacities in Western Europe and became concerned over the structure of the NATO military force. In our investigation, the progress of which has been recorded in a number of documents,^{5, 11-18} we were privileged to work in the relatively unconstrained atmosphere of the Los Alamos Scientific Laboratory to develop our ideas in what we felt to be in the

best interest of the United States. In this endeavor we received assistance from friends on both sides of the Atlantic.

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1. The Military Balance, "Table 4, Comparisons of Defense Expenditures," IISS (1978-1979), p.88.
2. Burt, Richard, New York Times (January 17, 1978). This article reviews Presidential Review Memorandum (PRM) 10 entitled, "Military Strategy and Force Posture Review."

The following is a pertinent sentence: "The chance of NATO stopping an attack with minimal loss of territory and achieving its full objective of recovering that land which has been lost appears remote at the present time."

Davis, J. K., "Soviet Doctrine Implications for NATO," National Defense (January/February 1979), p. 28.

This article superbly defines the deplorable military state of the NATO Alliance. It would seem that the challenge to NATO posed by the article can only be met by the deployment of the proposed NATO force.

3. Komer, Robert W., "Ten Suggestions for Rationalizing NATO," Survival (March/April 1977), pp. 67-72.

Since Mr. Komer is Special Assistant to the U.S. Secretary of Defense for NATO Affairs, one can speculate that this article presents a close representation to the US approach to NATO. The article begins with the following sentence: "Rationalization is a concept whose time has come in NATO." Unfortunately, Mr. Komer's interpretation of this statement involves how one would optimize the present system to better fight a conventional war. Were that the issue there would be little in the article with which to find fault. It is interesting that concern over NATO's theater nuclear posture is not ignored altogether, though this limit is approached by reducing concern to one brief paragraph in a six page article:

"(9) Since the NATO triad remains the cornerstone of effective deterrence, rationalizing NATO's theater nuclear posture must go hand in hand with the rationalizing of conventional forces. Its objectives should be less vulnerability, some reasoned reduction in obsolescent weapons, and improved warfighting capability in NATO's theater nuclear posture."

These are noble words which have little (including money) to support them.

4. "New Conventional Weapons and East-West Security," Part I, Adelphi Papers 144; Part II, Adelphi Papers 145 (Spring 1978).

These documents present the papers discussed at the annual meeting of the IISS in September 1977. Christoph Bertram's summary begins with a statement

that well summarizes the conference. "The papers presented here make it more rather than less difficult to answer the question: what are the implications of new conventional weapons for East-West security?" He correctly goes on to say, "If there was one common plea that emerged from practically all papers and most discussions, it was for a common and coherent concept, some blueprint which might give us the sense that our judgment is based on analysis rather than gut feeling, and which would enable us to make use of what the new technologies have to offer." As long as NATO chooses to retain its current debatable posture, one can expect such conclusions irrespective of the quality of technology.

5. Shreffler, Robert, "The Neutron Bomb for NATO Defense: An Alternative," ORBIS (Winter 1978), pp. 959-973.

This article proposes that NATO capitalize on the public attention being given to the neutron bomb to reconsider how battlefield nuclear weapons might be deployed to strengthen NATO security.

6. Report on "Workshop on Strategic Arms Control and Western European Interests," June 13-16, 1978.

This document summarizes the opinions expressed at a workshop sponsored by the IISS and the Aspen Arms Control Consortium, by notable representatives from the US, GB, France, and the FRG. The discussions exposed the NATO strategic nuclear problem and the associated arms control efforts with candor and intelligence. The divergence of opinion and the complexity of the problems when dealing in the present political-military reference frame were exposed as enormous. The advisability of the introduction of the NATO strategic problem into SALT III was seriously questioned in light of the complexity of the problem and the present state of confusion. Cruise missile shortcomings are mentioned.

7. Pincus, Walter, "U.S. Considers Long Range Missiles for Europe," Washington Post (8 November 1978), p. 29.

The US is considering the development by 1982 of a GLCM (ground-launched cruise missile) and an extended range Pershing, both with ranges capable of striking the Soviet Union. The reasons are perceived pressures from Western Europe to strategic parity and improved Soviet long range capabilities, improved prospects for Senate ratification of SALT II, and as a bargaining chip. A \$100 million supplemental appropriation is reportedly put into the FY 79 budget for this purpose. This article updates one dated 3 August on the extended range Pershing.

An article by Richard Burt in the New York Times (29 July 1978) states that the subject of NATO long range systems was proposed by Chancellor Helmut Schmidt in the May meeting of the Western Leaders: "Accordingly, Mr. Carter has ordered an interagency study to be completed in six months. An Alliance-wide group has already begun to discuss future nuclear deployment, but officials said the issue carried with it the potential for creating deeper European-American strains than does the controversial neutron bomb." ... "Officials said the Defense Science Board, in a study for Defense Secretary Harold Brown, had advocated the deployment of 2000 mobile, land-launched cruise missiles in Europe..."

A later article [New York Times (20 January 1979), p. 1] by Burt relates that this missile was discussed at Guadeloupe. "The discussions at Guadeloupe were said to have underscored what the officials called the 'bewildering array' of technical and political questions that must be resolved before the final decision is made." "...the question whether the West needs to field a new class of long range missiles in Europe has emerged as a major issue in European-American relations because it is viewed as having enormous implications for the future of Alliance unity as well as for prospects of further progress in Soviet-American arms control." "...some officials indicated that the longer range Pershing was the leading candidate."

8. Brodie, Bernard, "What Price Conventional Capabilities in Europe?" *The Reporter*, (May 23, 1963).

This article is a classic and makes as much sense today as it did 15 years ago. Brodie is probably the most eloquent and scholarly critic of NATO's conventional force emphasis. His recent death will leave a void which can not be filled.

9. Kielmansegg, J. A. Graf. The former CINC CENT proposes some solutions to Central Front security along the lines of the proposed NATO force. He is a proponent of nuclear weapon availability in the hands of the field commander under a political "negative veto." He proposes the use of low yield nuclear weapons in a "conditioned reflex defense."
10. Geneste, Marc. Geneste has written many articles in the French and English journals on the subject of tactical nuclear warfare. His views conform to those in this paper, though he does not recognize so strong an incompatibility between conventional forces and TNWs.
11. Bennett, W. S., Sandoval, R. R., and Shreffler, R. G., "A Credible Nuclear-Emphasis Defense for NATO," *ORBIS*, Vol. XVII, No. 2 (Summer 1973), p. 473.
12. Bennett, W. S., Sandoval, R. R., and Shreffler, R. G., "United States National Security Policy and Nuclear Weapons," Los Alamos Scientific Laboratory report LA-5785-MS (November 1974).
13. Sandoval, R. R., "Consider the Porcupine: Another View of Nuclear Proliferation," *Bulletin of the Atomic Scientists*, Vol. 32, No. 5 (May 1976), pp. 17-18.

Sandoval suggests that "It remains to be seen whether some hitherto nuclear-naked country will opt for a nuclear defense, forego posing the risk of destruction to its potential enemies, and accept the risk that its enemies may find a reason to destroy it, though they could not capture it intact." He goes on to say, "With the defense of its borders entrusted to forces structured around the firepower of nuclear weapons, any nation not now a nuclear power, and not harboring ambitions for territorial aggrandizement, could walk like a porcupine through the forests of international affairs: no threat to its neighbors, too prickly for predators to swallow."

Sandoval, R. R., "NATO: I. Choices or Imperatives; II. Once Again, Deterrence or Defense," unpublished work, 38 pp. (December 1978).

This document is available on request from the author. It is the best-known review of the NATO situation.

14. Buden, D., et al., "A Defense Force for NATO's Central Region," Los Alamos Scientific Laboratory report LA-5991-MS (December 1975).

This report makes an attempt to define the elements of a NATO defense force somewhat similar in structure to the one proposed in this document. It summarizes a considerable effort by the authors which leads to one conclusion, that the force which they proposed would cost about half that currently being spent in NATO. This results primarily from the reduction of the professional force by 50% and its replacement by militia.

15. Wellnitz, B. A., Panel Secretary, LASL Panel on Tactical Nuclear Warfare, Report on Third Meeting, 14-15 May 1974, Los Alamos Scientific Laboratory report LA-6059-MS (September 1975).

16. Hayes, J. K., "Computer Simulation of Tactical Nuclear Warfare," Los Alamos Scientific Laboratory report LA-5806-MS (December 1974).

This document describes a computer code to simulate nuclear engagement of a Border Defense Force. The sensitivity of the important parameters is studied through visual situation displays of the battlefield throughout the course of the battle. This work has been extended at Los Alamos and elsewhere.

17. Wellnitz, B. A., Panel Secretary, LASL Panel on Tactical Nuclear Warfare, Report on Fifth Meeting, 5-6 April 1977, Los Alamos Scientific Laboratory report LA-6908-MS (August 1977).

This document presents the positions of some 20 prominent and concerned US citizens, plus the debate from a well-informed audience. Of particular pertinence is the indictment of the existing NATO force by Jeffrey Record (p. 36). His position was later published in *Survival* (September-October 1977).

18. Shreffler, Robert, "The New Nuclear Force," Chapter 10 of a SIPRI document, Tactical Nuclear Weapons: European Perspectives, pp. 296-341, Taylor and Francis, London (1978)

This paper describes the considerations any country should undertake prior to the deployment of tactical nuclear weapons for security purposes. It serves as a background paper for this document. It was presented at SIPRI in October 1976.

Shreffler, Robert, "The Question of a NATO Tactical Nuclear Force in Support of the Central Front," Speech before Committee on Defense Questions and Armaments of the WEU (11 September 1978). In the speech, this Guideline approach was suggested. The last paragraph is particularly pertinent.

"In summary, it doesn't make a great deal of sense to promote tactical nuclear weapons unless one has developed a context for

their use. Once a strategy with supporting tactics and forces has been formulated and accepted, acquiring the funding for supporting weapons should be routine. Without such a context, possibly like the one I have described, efforts to refurbish the stockpile will be nonproductive and may be ill-advised."

19. Osborn, Palmer, and Bowen, William, "How to Defend Western Europe," Fortune (9 October 1978), p. 150-162.

This is an excellent article which proposes that WTO forward maneuver elements be crushed between the jaws of a "nutcracker" composed of two classes of firepower: hitting weapons (PGMs) which destroy combat vehicles one at a time, and area munitions (PGMs and low-yield nuclear weapons) which destroy concentrated WTO formations. A new force posture is put forth somewhat like the "proposed NATO force." The proposed NATO force involves a far more distinct firebreak between tactical and strategic forces and divorces itself far more from the existing NATO force than does Osborn's proposal. Osborn has long been a proponent of a "PGM Dune Buggy." This is discussed at some length and is clearly a weapon needed in support of any modern force. In summary, this article gives a different point of view than is taken in the Guidelines paper and in many respects supplements it.

20. Middleton, Drew, "NATO Approves Rules for Defensive Use of Tactical Nuclear Weapons," New York Times (4 December 1969), p. 1.

Beacher, William, "US has a Stockpile of 7000 Tactical Nuclear Weapons in Europe for NATO," *op. cit.*, p. 13.

These articles present the background on NATO's present Guidelines for TNWs as well as other pertinent information regarding the TNW stockpile.

21. Hoeber, Amoretta H., and Douglass, Joseph D., Jr., "The Chemical Warfare Problem," American Security Council Washington report (August 1978), p. 1.

This article outlines the deplorable state of the US (NATO) chemical warfare (CW) capability vis-a-vis the Soviet Union. CW can have an enormous impact on any conflict. Nominal NATO expenditures could have significant impact. What is required is a major change in attitude.

22. Bagley, Worth, "Seapower and Western Security: The Next Decade," Adelphi Papers 139, 40 pp.

This is a well-written document which makes the best possible case for a surface navy. The role of nuclear weapons is restricted to less than a page and it is not understandable (pp. 21-22).

23. Collins, A. S., Jr., "Tactical Nuclear Warfare and NATO: Viable Strategy or Dead End?" NATO's Fifteen Nations (June-July 1976), pp. 73-87.

General Collins adopts the attitude of many senior officers in the United States Army: that tactical nuclear weapons are an anathema to the battlefield. He contends that nuclear weapons should be relegated to deterring nuclear war on the battlefield by threatening to strike the Soviet Union, albeit at their border. He supposes that this would free the Army to fight its conventional war without fear of nuclear interruption.

24. Department of the Army, "Staff Officers' Field Manual: Nuclear Weapons Employment Doctrine and Procedures," FM 101-31-1 (March 1977).

This is a recent and drastically revised field manual, which describes the role of TNWs as support for the conventional NATO force. The manual calls for a field (corps) commander to fire packages of rather large numbers (50 or more) of higher yield nuclear weapons within a short time and features the saturation of selected areas with nuclear fire.

25. Gavin, James M., "On to Berlin, Battles of an Airborne Commander, 1943-1946," Viking Press, New York (1978).

This is one of the more recent histories of the Western European phase of WWII. It cites many lessons to be applied in defining the proposed NATO force. For example, airborne divisions in many respects are structured and have missions similar to the Conventional Support force.

26. Jane's Weapon Systems (1977), "Land Mobile Surface to Air Weapons," pp. 70-99.

Anti-aircraft guns and missiles are described. Some weapons have anti-tank and anti-missile capabilities. The description of many systems is sketchy. The author is left with the feeling that this technology has not been developed as rapidly as it could to the limit of its potential, a limit which may be approached by such impressive systems as Patriot and Alternate Stinger.

27. Nahin, Paul J., "IFFN, a Technological Challenge for the '80's," Air University Review (28) #6 (September-October 1977), pp. 2-16.

The initial two sentences of this article define a fundamental air defense problem: "Many modern weapon systems have a large mismatch between their maximum performance capability and the performance they are actually allowed to achieve. Because current rules of combat engagement normally call for visual identification of a target as hostile before weapon firing can be initiated, many weapon systems do not operate at anything approaching their design capability." This article describes the avenues for the possible solutions of the identification problem. The question arises: Is the solution very difficult or just impossible?

28. Cousins, Norman, "Getting Serious about Inflation," Saturday Review (20 January 1979), p. 14.

A pertinent paragraph is reproduced from this editorial:

"Whether Jimmy Carter can succeed in mounting a genuine anti-inflationary program will rest on his ability to stand up not just to the military but to the labor unions and industry and all those who have a stake in high defense production. The President must find some way to persuade the American people of the mutually suicidal nature of the new warfare. The people need to be told that they must look to the control of force, rather than to the pursuit of force, if they truly are concerned about the safety of the nation and of the world itself."

29. Bertram, Cristoph, "The Future of Arms Control: Part II, Arms Control and Technological Change: Elements of a New Approach," Adelphi Papers 146 (Summer 1978).