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SECRETARY OF DEFENSE
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THE THEATER NUCLEAR FORCE POSTURE IN EUROPE
A Report to the United States Congress
in compliance with
Public Law 93-365



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- **Armed Services**
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PREFACE

By Public Law 93-365 the Congress directed that the Secretary of Defense shall study the overall concept for use of tactical nuclear weapons in Europe; how the use of such weapons relates to deterrence and to a strong conventional defense; reduction in the number and type of nuclear warheads which are not essential for the defense structure for Western Europe; and the steps that can be taken to develop a rational and coordinated nuclear posture by the NATO Alliance that is consistent with proper emphasis on conventional defense forces. PL 93-365 further directs that the Secretary of Defense shall report to the Committees on Armed Services and Foreign Relations of the Senate and the Committees on Armed Services and International Relations of the House of Representatives on the results of the above study on or before April 1, 1975. Other legislation requires that reports on U. S. nuclear weapons also be submitted to the Joint Committee on Atomic Energy.

The following report is an unclassified version of the report submitted in compliance with PL 93-365.

The Theater Nuclear Force Posture in Europe
A Report to the U. S. Congress

A. DETERRENCE AND NATO'S MILITARY FORCES

1. NATO Objectives

The military forces of the North Atlantic Treaty Organization (NATO) have several objectives. First and foremost, they should deter armed attacks on the NATO Allies. If deterrence fails, these forces should be able to deny the enemy's military objectives and terminate the conflict quickly, at the lowest level of violence consistent with NATO's objectives. Achievement of these objectives requires the clear capability to fight effectively at any level of conflict threatened by the Warsaw Pact (WP). Equally important, these objectives can be achieved only if the NATO Alliance continues to manifest the political resolve to fight as necessary to maintain the political and territorial integrity of its member nations.

The resolve and cohesiveness of the NATO Alliance is essential if other important peacetime objectives are to be achieved:

- Deterrence of attempts to coerce members of the Alliance.
- Maintenance of a stable political, military, and economic environment to minimize the risk of crises or confrontations.
- Improvement of NATO security and increased stability in the critical central region.

2. Theater Nuclear Forces

The military postures of both NATO and the WP consist of three major elements -- strategic forces, theater nuclear forces, and conventional forces. On the NATO side the posture is referred to as the NATO Triad and is the means of deterrence and defense. The conventional forces of that Triad deter and defend against conventional attacks. Theater nuclear forces deter and defend against theater nuclear attacks; help deter and, if necessary, defend against conventional attack; and help deter conflict escalation. The final leg of the Triad, strategic forces, deter and defend in general nuclear war, deter conflict escalation, and reinforce theater nuclear forces if needed. During the 1970's, the Soviets achieved

overall parity in strategic forces with the United States. The threat of mutual annihilation limits the range of hostile actions which can be deterred by strategic forces and places more emphasis on the deterrent roles of theater nuclear and conventional forces. Even during a generation of great U. S. strategic nuclear superiority, the theater nuclear and conventional forces had important roles to play. Now, in the era of strategic equivalence, their importance has further increased.

Since the mid-1960's, NATO has been making substantial improvements in conventional forces. But the WP has also improved the quality and quantity of its conventional forces. While the range of actions which are deterred by NATO conventional forces is increasing, a successful conventional defense in Europe depends critically upon many assumptions -- e. g., timely NATO mobilization, keeping pace with WP mobilization; continued deployment of Soviet conventional forces to the Sino-Soviet border; the maintenance of an adequate NATO support and logistics base. Theater nuclear forces which act in direct deterrence of WP theater nuclear attacks are also an essential part of the deterrent of conventional attacks because they hedge against failure -- or WP perception of failure -- of one or more of these assumptions.

Operational Soviet military doctrine apparently does not subscribe to a strategy of graduated nuclear response; however, a few press articles have indicated that limited use of nuclear weapons is possible, but fraught with the danger of escalation. WP forces, current doctrine and training indicate a readiness, however, for conducting a war in Europe with theater-wide, large scale nuclear strikes. Their large armored forces are postured to exploit these nuclear attacks with rapid, massive penetrations of NATO lines. To deter such attacks, the WP must perceive that sufficient NATO theater nuclear forces can survive initial conventional and nuclear attacks and, in conjunction with surviving conventional forces, blunt WP armored attacks and attack remaining WP theater nuclear forces. If deterrence fails, NATO forces must be able to achieve these objectives and reverse the tactical situation, thus changing the assessment of WP political leaders regarding their prospects for early victory. This should create conditions whereby the conflict could be terminated relatively quickly and on terms acceptable to the Allies.

3. The Process of Changing the NATO Military Posture

US analyses indicate a need for change in the theater nuclear force posture, as in other elements of the NATO Triad. Recent analyses by NATO military authorities tend to support the US conclusion.

It is vital, however, that the process of change be recognized as equal in importance to the changes themselves, so that the military posture is improved while maintaining the political cohesiveness of NATO.

US theater nuclear forces deployed in Europe have been for years a major symbol of the earnest US commitment to the common defense of the Alliance. Consequently, possible changes in the theater nuclear force posture must be carefully evaluated from both the military perspective and with an eye to the message these changes convey to Allies and adversaries about the future US commitment to this common defense.

For many years the United States has strongly encouraged its Allies to depend on US nuclear weapons, rather than developing and deploying their own. The United States has deployed nuclear weapons in Europe, with the cognizance of the Congress, for potential use in wartime by US and Allied forces. It has worked closely over the years with the Allies to develop detailed doctrine and plans for use of these nuclear forces.

The following broad actions must continue to be carried out in close partnership with the NATO Allies:

- Pursuit of a more stable balance of forces in Europe through arms control negotiations.

- Modernization and improvement of NATO's conventional forces, to provide improved deterrence and defense against conventional attacks.

- Structuring of NATO's theater nuclear forces to improve survivability, provide for greater military effectiveness in combined conventional-nuclear conflict, improve command and control, reduce collateral damage, and increase the security of nuclear weapons in peacetime.

- Updating of doctrine and plans for theater nuclear operations in light of improved WP forces and NATO's conventional force improvements.

- Revision of plans and doctrine for employing strategic forces, to improve the deterrence of escalation in limited conflicts and to increase the military support which strategic forces can render to NATO for limited conflict.

B. NATO STRATEGY AND FORCE POSTURE

1. Basic NATO Strategy

Since NATO was established in 1949, the overall Alliance strategy, which is the basis for defense planning, has evolved through three basic phases. Each phase has had deterrence of war as the primary objective.

The first phase was predicated on building and maintaining a large conventional force structure to match that of the USSR and its allies. This strategy proved to be beyond that which NATO could economically support. It then evolved into the so-called "trip-wire" response, stated in Military Committee Document 14/2 (MC14/2), during the period of unquestioned United States nuclear superiority. MC14/2 emphasized deterrence through the threat of massive retaliation with nuclear weapons in lieu of large conventional forces. The inherent unsuitability to lower level threats of aggression and the inflexibility of this strategy, coupled with the growth of USSR strategic and tactical nuclear capabilities, eventually eroded its credibility. Accordingly, NATO's current strategy of "flexible response" (MC14/3) was approved in 1967 by NATO as essential to redress these inadequacies.

MC14/3 emphasizes a spectrum of military capabilities to provide numerous defensive alternatives ranging from conventional warfare to the use or the threat of use of strategic nuclear weapons. A potential enemy is faced with great uncertainty as to which response might be selected.

The flexible response strategy calls for conventional and nuclear forces, doctrine, and planning which can accomplish the following objectives:

- To deter WP aggression.
- If deterrence fails, to defeat aggression at any level of attack (conventional or nuclear) made by the enemy.
- If direct defense fails, to use deliberately increased military force as necessary to make the cost and risk disproportionate to the enemy's objectives and cause him to cease his aggression and withdraw.

-- In the event of general nuclear war, to inflict extensive damage on the Soviet Union and other WP countries. This objective would be accomplished in conjunction with the strategic forces of the NATO nuclear powers.

2. Elements for Implementing the NATO Strategy

Military forces, coordinated planning among the NATO nations, nuclear weapons and positive political control of nuclear forces are essential to implement the NATO strategy. The current status of these elements is:

a. NATO Military Forces

An examination of NATO and WP conventional forces shows some important asymmetries. The WP has a large numerical superiority in tanks. However, for NATO defensive operations, these advantages are offset, in part, by NATO's large number of anti-tank weapons and more extensive support structure. NATO has a small numerical advantage in aircraft if US reinforcements are considered. NATO's aircraft are of higher quality and could contribute to the defense against armored attacks.

NATO and WP theater nuclear force postures differ. There are large numbers of IR/MRBM's, medium bombers, and ballistic missile submarines based in the USSR which are capable of conducting strikes on NATO. NATO forward-deployed nuclear forces consist of battlefield support systems (artillery, short range surface-to-surface missiles (SSM's) and atomic demolition munitions (ADM's)), nuclear air defense systems (Nike Hercules) and longer range systems (air delivered bombs, long range SSM's and submarine launched ballistic missiles (SLBM's)). WP battlefield nuclear support systems consist of FROG and SCUD SSM's which could be equipped with nuclear, chemical, or non-nuclear warheads. WP forces also include nuclear-capable tactical aircraft.

b. Coordinated Planning

Coordinated planning to support the NATO force posture and defense plans is carried out primarily through the following mechanisms:

-- General policy and broad political-military planning is provided by the NATO Defense Planning Committee and the NATO Military Committee.

-- Nuclear policy and broad political-military nuclear planning is provided by the Nuclear Planning Group (NPG) and its parent organization, the Nuclear Defense Affairs Committee (NDAC), for approval by the Defense Planning Committee.

-- Coordination of NATO nuclear plans with US nuclear employment plans is provided by a detachment of NATO officers at the US Joint Strategic Target Planning Staff (JSTPS) at the US Strategic Air Command (SAC) Headquarters.

-- Detailed military planning, primarily for land and air defense, is provided by Supreme Allied Commander Europe (SACEUR), a position which has always been filled by a US general.

-- Detailed naval military planning is provided by Supreme Allied Commander Atlantic (SACLANT), a position which similarly has been filled by a US admiral.

c. Nuclear Weapons

The Soviet Union maintains what are believed to be nuclear weapon storage sites to support Soviet and other WP forces.

When Public Law 93-365 was enacted on August 5, 1974, the United States had about 7,000 nuclear warheads deployed in Europe. Except for a small number of anti-submarine warfare (ASW) weapons for US and Allied long range patrol aircraft, these weapons support US and Allied air force and army units. NATO is also supported by aircraft carriers with tactical nuclear bombs and by other naval forces with SLBM's, nuclear ASW weapons, and nuclear air defense weapons.

A substantial proportion of the US warheads in Europe are deployed for use by allied delivery vehicles under Programs of Cooperation (POC's) and stockpile agreements. These are formal bilateral agreements between the United States and other nations which involve transfer of delivery vehicles capable of nuclear delivery or deployment of nuclear weapons for use by the host nation under the direction of SACEUR or SACLANT. Host nations provide support for US weapons

and weapons provided for their use. The nuclear warheads remain in US custody until released by the US President in time of war.

The 1958 Public Law 85-479 requires approval by the President and review by Congress before a Program of Cooperation can be established. The Joint Committee on Atomic Energy has the key role in the Congressional review.

d. Political Control of NATO Nuclear Weapons

The United States maintains positive control in peace and war over all NATO nuclear weapons except those belonging to the United Kingdom and France. The US President alone can release US nuclear weapons in Europe for use, following appropriate consultation with Allies. Weapons for both US and Allied forces are maintained under the positive, two-man control of US personnel until released by the US President. Additionally, all US nuclear weapons deployed in Europe are locked with coded devices (Permissive Action Links -- PAL's) which physically enforce this US control.

Procedures for release of US nuclear weapons in Europe, while complex in detail, are simple in concept, as shown in Figure 1 (this figure depicts only release procedures and not the more general command relationships). Once the US President had released nuclear weapons for use by SACEUR, the release authorization would be transmitted through USCINCEUR to US delivery units and US custodial units supporting Allied forces. The United States would simultaneously notify the other NATO governments of its decision. At the same time the President would authorize a major NATO commander, e.g., SACEUR (same individual as USCINCEUR, but with an Allied staff and command post facilities separate from those of USCINCEUR), to use the weapons, who would in turn signal authorization to the executing commanders via NATO communications channels.

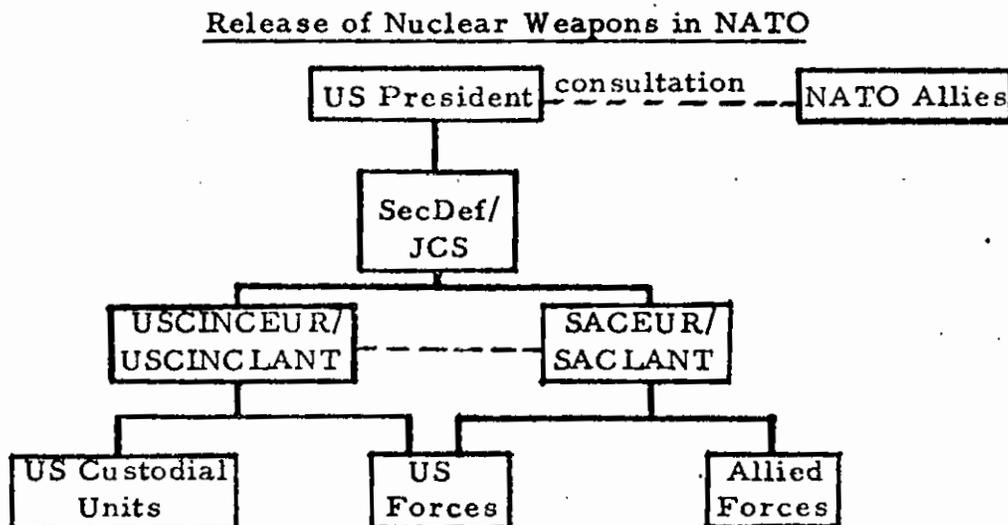


Figure 1.

3. Evolution of NATO Nuclear Doctrine and Force Posture

Many changes in the global strategic environment have occurred since 1967 when NATO adopted MC14/3, the strategy of flexible response. The more significant are:

-- The achievement by the Soviets of parity of strategic forces with the US, which places greater emphasis on the deterrent role of conventional and theater nuclear forces.

-- The evolution of US doctrine for employing nuclear weapons which sets as the primary objective for the use of nuclear weapons the termination of war on terms acceptable to the United States and its Allies at the lowest feasible level of conflict.

-- Continued improvement of the conventional forces on both sides and the gradual growth of confidence in the conventional forces' contribution to overall NATO deterrence.

-- New technology for improving both nuclear (e.g., survivability improvements) and conventional forces, the adoption of which will serve to raise the nuclear threshold, consistent with NATO strategy.

-- Prospects for bringing greater stability between the East and West through negotiations, including strategic limitations and force reductions in Europe.

-- The increase in peacetime threats to the security of forward-deployed nuclear weapons.

The flexible response strategy remains a sound basic approach to NATO defense planning in the 1970's. Within this overall strategy, however, NATO's nuclear doctrine and force posture have been evolving since the inception of MC14/3. They must continue to evolve in order to increase effectiveness under changing conditions.

C. INTERDEPENDENCE OF CONVENTIONAL, THEATER NUCLEAR, AND STRATEGIC FORCES

This section responds to the first two questions of Public Law 93-365:

-- What is the overall concept for use of tactical nuclear weapons in Europe?

-- How does the use of such weapons relate to deterrence and to a strong conventional defense?

To put these questions into perspective, we first discuss WP strategy, doctrine and forces. Then follows a review of the roles of the three elements of the NATO Triad -- conventional forces, theater nuclear forces, and strategic forces. Overall concepts for use of theater nuclear forces are considered and the section concludes with an evaluation of the current NATO theater nuclear force posture.

1. Warsaw Pact Strategy, Doctrine, and Force Posture

US and NATO understanding of Warsaw Pact strategy and doctrine is based on observations for many years of Soviet and WP policy declarations and writings, training exercises, and the organization and structure of WP forces*.

In Soviet and WP strategy, military forces are viewed first and foremost as instruments for achieving political goals. The primary Soviet aim is to create a "correlation of forces," in Soviet terminology, which favors them. This, along with political initiatives, they believe will lead, in the long term, to increased divisiveness among the NATO nations and increased Soviet influence, if not dominance, over Western Europe.

The Soviets do not view this policy as inconsistent with detente -- they continue to modernize and improve all elements of their military forces. While most attention has been focused on Soviet strategic force developments and deployments, they have remarkably increased their capabilities in theater nuclear and conventional forces.

WP strategy emphasizes defense of the WP territory through a strong offensive capability for counterattacks and destruction of NATO forces. NATO is pictured as the aggressor in WP exercises, but after a brief defensive phase, WP exercises are devoted mainly to tactics for massive offensive penetrations. WP objectives are to deter NATO attacks and, if deterrence fails, drive to victory through destruction of NATO military forces and seizure of NATO territory.

* For Soviet exposition of this strategy and doctrine see, for example, A. A. Sidorenko, The Offensive (A Soviet View), US Government Printing Office, 1970, pp. 221-2.

These objectives apply to both nuclear and conventional conflict. The WP does not think of conventional and nuclear war as separate entities. Despite a recent trend to improve its conventional forces and to recognize that a conventional war in Europe need not escalate to nuclear war, the WP strategy, doctrine, and forces are still strongly oriented towards nuclear operations.* The Soviets apparently see escalation of war in Europe to nuclear conflict as likely.

The WP poses air, ground, and naval threats to all areas of NATO Europe -- the Northern flank region, the Central region, and the Southern flank area. While there are differences in WP forces for each region, the WP doctrine emphasizes surprise, shock, and rapid exploitation of nuclear attacks with conventional forces in all areas. Wherever possible, armored forces and their immediate support (artillery, tactical air, and SAM's) play a key role in WP tactics.

-- Surprise. Soviet declarations indicate that if the WP believes NATO is about to launch a major nuclear attack, it will seek to preempt with nuclear strikes on military targets.

-- Shock. Massive concentration of nuclear and conventional firepower on key military targets is a strong tenet of WP doctrine. The objective is to rapidly disrupt and demoralize NATO's forces, creating opportunities for armored blitzkrieg attacks. Prime targets for WP attacks are NATO nuclear delivery units, military bases, ground combat forces, command posts and support units.

-- Exploitation. WP armored forces and their immediate support (artillery, tactical air, SAM's) are postured and trained to exploit nuclear attacks by rapid, deep, multiple thrusts to destroy remaining NATO forces and seize NATO territory. These armored forces are equipped for operations in a nuclear and chemical environment, so as to maintain movement and keep constant pressure on NATO forces.

In a war in Europe would the Warsaw Pact actually follow this highly escalatory doctrine? And if so, how effective would their attacks be?

National leaders are not, of course, constrained to follow the doctrine their military forces use to guide training or exercise forces

*Evidence suggests that the WP thinks in terms of employing all "weapons of mass destruction", nuclear, chemical, and biological, concurrent with conventional force use.

in peacetime. In fact, in past crises in which the United States or NATO nations have shown a determination to use the force necessary to protect their interests, Soviet leaders have reacted very cautiously. Nevertheless, WP forces are postured primarily for the type of theater-wide nuclear strikes pictured in the doctrine and exercises, as evidenced, for example, by their strong dependence on SSM's estimated to have relatively poor accuracy and large yields.

2. The NATO Triad

The NATO Triad provides:

-- Conventional forces to deter and defend against conventional attacks.

-- Theater nuclear forces to deter and defend against theater nuclear attacks; help deter and, if necessary, defend against conventional attack; and help deter conflict escalation.

-- Strategic forces to deter and defend in general nuclear war, deter conflict escalation, and reinforce theater nuclear forces if needed.

The roles of each of the three forces are complementary and strengthened by the others. An important example is the mutual support of conventional and theater nuclear forces. WP conventional air and ground forces would likely have to mass to penetrate NATO defenses successfully. However, NATO theater nuclear forces deter this massing, thus enhancing NATO conventional defense capabilities. Generally, NATO theater nuclear forces introduce major uncertainties into WP planning, complicate the tactical problems of the WP, and increase the risks in any WP attack on NATO.

Some important general principles are associated with the NATO Triad.

-- The WP should not be allowed to perceive opportunities for successful military action at any point in the spectrum of potential conflict. A strong deterrent extending across this spectrum will discourage crises or minor conflicts which could escalate. In the event of major conflict, there will be downward pressures to contain the war and move to negotiations, rather than pressures for escalation, if the prospects are dim for successful military action by the Soviets at higher levels.

-- We would prefer where possible to deter through provision of direct defense and denial of WP military gains (e. g., seizure of territory), rather than deterrence only through the threat of escalation and all-out retaliatory attacks on WP resources -- though these latter options will be maintained.

-- In the interest of minimizing possible wartime destruction in NATO Europe, it is highly desirable to maintain a high nuclear threshold and use nuclear weapons only if absolutely necessary (e. g., in response to WP use of nuclear weapons or to prevent major loss of NATO territory or forces if conventional defense fails).

-- US strategic forces continue to be coupled to deterrence of attacks on Europe, both through the threat of escalation of any conflict to general nuclear war and the provision of operational plans for limited use, as necessary, of strategic forces in support of theater conflict.

Stalwart conventional forces are an essential element of deterrence and the primary initial means of defense against conventional attacks. US conventional forces are planned in concert with those of our NATO allies to provide a credible deterrent and a strong, immediate defense capability against conventional attacks considered most likely under current assumptions about the threat, mobilization, and other critical factors affecting the outcome of a war in Europe. A credible conventional capability is one perceived as sufficient to hold well forward without early recourse to theater nuclear weapons. Such a strong conventional defense raises the nuclear threshold and NATO continues to strive toward this goal.

Theater nuclear forces deter WP use of nuclear weapons in Europe by providing a capability for credible retaliatory responses. Theater nuclear forces, because they do not pose a major threat to the Soviet homeland, constitute a retaliatory capability which carries a perceptively lower risk of escalation than the use of strategic nuclear forces. Theater nuclear forces also help deter conventional attacks by posing a threat of nuclear use should the conventional situation warrant. NATO planning must also consider the possibility that conventional attacks against NATO could take place under conditions more favorable to the WP than are reflected in the planning assumptions. For example, NATO may not be able to mobilize as quickly as necessary

or the Soviets may draw divisions from the Sino-Soviet border. Theater nuclear forces, in limited use, to complement conventional forces, could serve the political purposes of showing NATO's resolve and creating a situation conducive to negotiations, and could help avert major loss of NATO territory.

Strategic forces have utility in limited attacks to support theater forces -- e. g., SLBM's provide highly survivable means for striking WP air bases in response to WP nuclear attacks on NATO air bases. Strategic forces are also the primary capability for extensive attacks against Eastern Europe and the Soviet Union in general nuclear war. The strategic forces, coupled in this way to the defense of Europe, help deter all levels of conflict and, if deterrence fails, could help to contain the conflict and move it to negotiations by deterring WP escalation.

3. Overall Concept for Use of Theater Nuclear Forces

The NATO strategy of flexible response requires the capability to employ nuclear options at various levels of conflict. These potential options range from limited use against enemy forces on the battlefield to extended use in the theater, or to general nuclear response. Of the various levels of NATO theater nuclear force employment which might be considered, two are especially important -- (a) response to a theater-wide, preemptive nuclear attack by the Warsaw Pact and (b) response to an overwhelming WP conventional attack.

a. WP Theater-Wide Nuclear Attacks. As previously discussed, the WP forces are generally structured for offensive rather than defensive operations. While there are indications that WP strategists have accepted the concept of a possible initial conventional phase, WP forces are in fact postured and trained for theater-wide nuclear strikes against NATO nuclear and conventional military forces and for follow-on attacks by their armored conventional forces to exploit the nuclear attack and rapidly seize NATO territory. A primary purpose of NATO theater forces is to provide credible retaliatory responses to such attacks and thereby to deter them. The objective for employment of NATO theater nuclear forces in this situation is as follows:

-- In conjunction with surviving conventional forces, to blunt the WP armored exploitation, to attack WP theater nuclear forces which continue to threaten NATO, and to attack or threaten WP targets of value.

-- To achieve this objective with shock effect and decisiveness, so as to dramatically change the tactical situation, change the assessment of WP political leaders regarding early or cheap victory, and create a situation conducive to negotiations in which NATO has some tactical advantages.

-- To accomplish the above while trying to avoid escalation to general nuclear war. Such escalation would not be in the interest of either the United States or its European Allies, nor the WP for that matter. Efforts would be made to control escalation in such desperate circumstances by a combination of clearly perceivable limits on the NATO nuclear response and the threat of more extensive strikes with theater and strategic forces if the WP chooses to escalate.

This objective, as well as a more detailed consideration of WP threats faced by NATO in the flank areas and the center region, implies some general characteristics for NATO forces. First, the theater nuclear forces and their essential support (e. g., warheads, delivery systems, intelligence, command, control and communications (C³), and logistics) must be sufficiently survivable to have credible retaliatory capability. Deterrence is enhanced and the nuclear threshold is raised if the WP nuclear forces are unable to destroy a significant portion of any leg of the NATO Triad without carrying out an attack of such large proportions that it threatens to precipitate an equally damaging attack against the WP by US and NATO nuclear forces. The theater nuclear forces should also be highly survivable under conventional attacks, so as to avoid situations in which NATO is forced to choose between early use of theater nuclear forces or losing this capability.

Second, NATO conventional forces should be able to operate satisfactorily in a nuclear environment. The theater nuclear forces should be capable of complementing the conventional forces in combined conventional-nuclear operations. The force posture, operational plans, and command and control must reflect this objective.

Third, the level, mix, and characteristics of NATO theater nuclear forces should provide capabilities (in combination with surviving conventional forces) to destroy targets such as front line and second echelon WP armored units and their immediate tactical support -- surface-to-surface missiles and rockets, artillery and tactical air capabilities. Armored forces for exploitation of both conventional

and nuclear attacks and their supporting units are key elements in the WP strategy and doctrine. The ability to destroy these forces after a nuclear attack is believed to contribute to deterrence of such attacks. The threat of nuclear retaliation against urban-industrial targets or rear-based forces in Eastern Europe or the USSR is probably less stable in a crisis and a less credible deterrent. If deterrence fails, such retaliation would be less effective in removing the threat to NATO territory. Nevertheless, the threat of such retaliation must certainly provide a strong deterrent to WP planners contemplating massive nuclear strikes.

Fourth, while theater nuclear forces for deep interdiction have less immediately decisive effects on the tactical situation, such forces are needed in the event that nuclear attacks on WP forward armored units and their support are not sufficient. They also provide counters to WP interdiction attacks. Such threats against East European countries may also diminish their willingness to cooperate with the Soviets, thus weakening WP solidarity.

b. Overwhelming WP Conventional Attack. NATO conventional forces are structured for a range of likely conditions of NATO and WP mobilization, likely assumptions about the number of Soviet divisions committed against NATO, and expected performance of forces of both sides. It is possible to envision significantly worse circumstances than those planning assumptions, in which NATO conventional forces are unable to hold under conventional attack. Consequently, such a contingency makes it impossible to rule out NATO first use of theater nuclear forces.

The first use of theater nuclear forces, even in very limited ways, carries grave risks of escalation and should be considered only when the consequences of conventional defeat would be even more serious. If the alternative is, for example, major loss of NATO territory or forces, NATO political leaders may choose to accept the risks of first use.

As is the case with retaliatory theater nuclear attacks, NATO should have a wide range of nuclear options to provide responses suitable to the provocation. First use should be clearly limited and defensive in nature, so as to reduce the risks of escalation. However, the attack should be delivered with sufficient shock and decisiveness to forcibly change the perceptions of WP leaders and create a situation conducive to negotiations.

-- Rationalization and specialization of defense tasks and programs, so as to increase combat capabilities while decreasing large and inefficient national support overheads.

-- Standardization and interoperability of weapons systems and other equipment.

-- Provisions for the flexible use of forces where they are needed, to include mutual logistic support.

-- Making better use of the warning time likely to be available to achieve higher readiness of active forces and national mobilization.

Our Allies spend most of their procurement funds for improvements to conventional forces. For instance, of at least \$25-30 billion (in 1973 dollars) that will be spent by our Allies on procurement of major equipment and ammunition over the next five years, only about \$200 million will be spent on nuclear weapons systems; i. e., Lance (not counting continuing UK and French strategic nuclear programs). The Allied efforts at maintaining their procurement programs despite inflation and other rising costs have been commendable.

US force improvements also emphasize conventional capabilities. With the exception of Lance, there are a vast number of improvements which are exclusively conventional. The increased conventional composition of the tactical air forces will improve conventional close air support and air defense. The Army is achieving much greater anti-armor capabilities, and its conventional artillery improvements outpace nuclear improvements in number, variety and funds allocation.

At the same time, WP conventional forces continue to improve as well. Furthermore, the WP nations have shown no predisposition to reduce the strength of their nuclear capabilities. At the same time that they improve conventional forces, they are improving their nuclear capabilities. For this reason alone, theater nuclear weapons remain essential to the NATO deterrent posture in Europe.

Theater nuclear forces which fulfill the retaliatory objectives described above also are generally well suited for hedging against conventional force failures. They are designed to attack the same targets -- WP armor and its immediate tactical support that pose the most immediate threat to NATO forces. They are survivable under conventional attacks and thus need not be used early to avoid their loss to enemy action. While they cannot substitute for adequate conventional forces, they could temporarily reverse the tactical situation and create a stalemate or NATO advantage which could be used to induce negotiations. It should also be noted that conventional forces cannot substitute for an adequate theater nuclear force.

In addition to these characteristics, the credibility of the use of theater nuclear weapons on NATO territory is enhanced if the targeting and characteristics of these weapons reduce collateral damage to civilian structures and population, without removing the ultimate deterrent value of the fear of escalation, involving US strategic forces.

4. Evaluation of the Current Theater Nuclear Force Posture

NATO theater nuclear forces in Europe consist of SSM's, artillery, tactical aircraft, SAM's, ADM's, and SLBM's. This section evaluates the current posture and forces including their target acquisition, command, control and communications, survivability and effects of collateral damage.

a. Theater Nuclear Weapons Systems

(1) Surface-to-Surface Missiles

NATO's SSM's consist primarily of Pershing, Sergeant and Lance, with Lance currently being deployed to replace the older Sergeant missile and Honest John rocket. The primary role of Pershing is attack of fixed targets; Lance, Sergeant and Honest John provide tactical support to the battlefield.

Some Pershing missiles are on peacetime Quick Reaction Alert (QRA) at fixed locations. QRA missiles are designated against specific WP high priority, time sensitive targets.

As compared with Sergeant and Honest John, Lance is more survivable and more responsive. It has better peacetime security through an improved Permissive Action Link (PAL)

system (coded locks on the warhead). Because of these improvements, Honest John rockets and Sergeant SSM's are being replaced with Lance in most NATO countries.

(2) Nuclear Artillery

Artillery's high accuracy, low yield, rapid responsiveness, and ease of control by local commanders should provide for effective attacks against targets in proximity to friendly troops. Because of its relatively short range, confining nuclear effects to the immediate battle area, it is judged that use of nuclear artillery in limited nuclear conflict probably has less chance of resulting in escalation to theater-wide nuclear war than longer range SSM's or tactical aircraft.

Ways to improve the effectiveness of nuclear artillery projectiles are under study. The Department of Defense has assigned high priority to development of an improved 8-inch nuclear projectile. This system is now in engineering development. Investigation is also underway to develop ways to improve the current 155mm nuclear projectile.

(3) Nuclear-Capable Tactical Aircraft

Some of NATO's tactical aircraft are completely nuclear-capable, that is, configured to carry nuclear weapons, supported by nuclear weapons, and with crews designated and trained for nuclear missions. Other aircraft are technically capable of delivering nuclear weapons, but are not all supported with nuclear weapons and crews trained for nuclear delivery. All of these aircraft can also carry conventional weapons. A small number of US and Allied tactical aircraft are kept on peacetime QRA, launchable within a short period of time. More could be generated in a time of tension or hostilities.

Nuclear-capable tactical aircraft will continue to have a place in the NATO theater nuclear posture. They provide a means of rapidly concentrating nuclear firepower anywhere in the area of NATO operations. Against non-fixed targets well beyond the front lines, the manned aircraft has a potential advantage over current missiles in that the pilot could make last minute changes in his aim point, to correct for target movement, providing in effect a form of terminal guidance.

(4) Nuclear-Capable Surface-to-Air Missiles

Nike Hercules is a dual-capable SAM system deployed in NATO Europe which can counter extremely high altitude/high speed

WP aircraft. Nuclear warheads for Nike Hercules deter massed air attacks and significantly increase the single-shot kill probability against aircraft at high altitudes, where collateral damage to NATO territory would be negligible.

(5) Atomic Demolition Munitions

ADM's are nuclear demolition devices which are manually emplaced and detonated by timer or command. They can be used to destroy bridges, cave in tunnels or defiles, cut roads, and otherwise create barriers to slow enemy movement or induce concentrations of his forces. These actions could produce lucrative targets for attack by conventional or nuclear forces, and buy time for conventional reinforcements. Being defensive weapons and most likely to be used on NATO territory, they probably have lower escalation potential than most other theater nuclear weapons, often without direct casualties.

Studies are underway to examine alternatives in the form of earth penetrators delivered by missiles or aircraft.

(6) Submarine-Launched Ballistic Missiles

Currently the United States is committed to share with NATO a portion of its sea-based strategic nuclear deterrent system in support of the Alliance. The highly survivable Poseidon RVs provide high confidence that they will be available under all conditions of war initiation. Since these RVs are relatively ineffective against hard targets, other systems are required, such as Pershing with its higher yield and tactical aircraft with a higher yield capability and greater accuracy. Because of its relatively low yield, Poseidon will produce a low level of collateral damage except when employed against military installations collocated with urban areas. Here, weapons with lower yields and greater accuracies such as those currently deliverable by tactical aircraft would be used.

b. Command, Control and Communications

Command, control and communications (C³) support is essential to both deterrence and flexible employment of theater nuclear forces. The wartime operational command of the forces, delivery vehicles and units, would be exercised by the NATO international

military command structure (e. g., Allied Command Europe (ACE)). The United States maintains positive control of the nuclear warheads in both peace and war.

The United States and NATO are continuing to upgrade situation reporting and message handling procedures, and are continuing a series of communications improvements, including the NATO Integrated Communications System (NICS), which are intended to improve the overall flexible response capability.

The NATO nations have made substantial efforts over the last several years to upgrade NATO communications systems. The United States currently has in engineering development improvements to the command, control and communications system for US theater nuclear forces in Europe. Also in advanced or engineering development are various intelligence system improvements which will provide for improved targeting and direct intelligence support of theater nuclear and other forces.

c. Target Acquisition

Successful target acquisition requires:

-- Detection and identification of threatening targets before they can inflict significant damage on NATO forces.

-- Location of the target to an accuracy consistent with weapon delivery accuracy and effects radius.

-- Communication of this information in time for attacks to be made before the target is lost or the military benefits of attacking the target are substantially reduced.

Good target acquisition is important for all military operations. Special attention must be given to target acquisition for theater nuclear forces, because these forces should be employed against the most threatening of enemy targets in ways which best complement the conventional operation. Improved target acquisition will make more targets available for consideration and permit greater selectivity in targeting by NATO nuclear forces. Target acquisition for theater nuclear forces must also take into account that enemy nuclear attacks may degrade many of the usual means of acquiring targets.

NATO has good capabilities for acquisition of fixed targets such as air bases and established enemy defense positions. There are good capabilities to support operations against mobile targets within line-of-sight of the forward edge of the battle area (FEBA). Target acquisition capabilities against mobile or relocatable targets are less effective beyond line-of-sight of the FEBA.

There are a number of programs currently in research and development to improve target acquisition capabilities and reaction time. Use of tactical air in a terminal search and attack mode can also help improve acquisition of targets which have moved since their initial detection.

d. Survivability

Survivability of NATO theater nuclear capabilities under both conventional and nuclear attack is a major requirement. This particularly means that alerted, dispersed units and their essential support (e.g., warheads, intelligence, C³, logistics) should be survivable. Early and persuasive warning of imminent attack, conventional or nuclear, is essential to ensure alerting and dispersal measures can be taken.

It has not been possible in the past to assess quantitatively the survivability of dispersed theater nuclear elements of NATO ground forces. Generally it is judged that the maneuverability of these elements enhances their survivability. Past DoD theater nuclear force modernization programs were not fully keyed to specific threats to their survivability. To reduce these uncertainties and improve our modernization programs, a theater nuclear force "security" R&D program has been initiated with the following objectives:

-- To assess the survivability of these elements under conventional and nuclear attack, identify deficiencies and develop improvements.

-- To develop technology to counter possible future threats to the survivability of these theater nuclear elements.

As NATO continues to improve its air defenses and construct aircraft shelters, the nuclear-capable tactical aircraft are becoming more survivable to conventional attacks on their bases. However, NATO air bases remain vulnerable to WP nuclear attack. Studies are in progress to find ways of improving survivability under nuclear attack.

e. Collateral Damage

Since the tactical use of nuclear weapons may involve detonation on NATO territory, reduction of collateral damage should make it more credible to the WP that the Alliance will use nuclear weapons. Further, if deterrence fails, weapons with low collateral damage would reduce civilian casualties and perhaps reduce the risks of uncontrolled escalation. The current stockpile has a large number of low yield weapons. SACEUR's targeting is intended to limit the collateral damage from use of NATO's current stockpile of nuclear weapons. Recent studies indicate that collateral damage could be further reduced, with acceptable reduction in military effects, by changing tactical procedures now in use for selecting weapon-target combinations and utilizing to a greater extent the current low yield weapons.

Further reductions in collateral damage can be made by improvements in weapon systems (e.g., reduced yields, special warhead effects such as enhanced radiation, improved delivery system accuracy). However, it is necessary to keep in mind that NATO attempts to reduce collateral damage might not be matched by corresponding changes in WP capabilities or targeting doctrine.

D. DEPLOYMENT OF WEAPONS TO SUPPORT THEATER
NUCLEAR FORCE POLICY

This section responds to the third question of Public Law 93-365, which calls for study of reductions in the number and type of nuclear warheads which are not essential for the defense structure of NATO Europe. To put this question into perspective, there is first a discussion of Alliance political considerations followed by a discussion of the need for nuclear weapons deployed in Europe, concluding with a summary of current US and NATO reviews of nuclear weapons in Europe. The section concludes with a review of improvements being made in the security of storage sites in Europe.

1. Alliance Political Considerations

Our NATO Allies attach considerable importance to US theater nuclear weapons in Europe because of their military value and also because of their political and psychological significance. To our Allies and the WP, the weapons are concrete evidence of the US nuclear commitment to NATO. That commitment is an essential part of the NATO

flexible response strategy and thus of a credible deterrent. Both we and our Allies are highly conscious of the fact that the tactical nuclear role in NATO strategy is a shared one. The US has encouraged, and the Allies value highly, the shared responsibility for planning and participation in the possible employment of theater nuclear weapons within NATO's strategy. These political and psychological considerations must be taken fully into account in any assessment of the US nuclear posture in Europe and in determining whether adjustments in that posture are desirable.

Another area of major concern to our Allies, and one which needs careful attention, is that any reductions and adjustments must flow from a careful military assessment of the NATO force posture.

In view of the foregoing, any possible adjustments to theater nuclear forces should be made for the purpose of strengthening the theater nuclear leg of the NATO Triad and preserving an important nuclear role for the Allies. In this way it should be possible to ensure continued Allied confidence in the US nuclear commitment, the viability of a common defense through the NATO structure, and a general reinforcement of US/NATO deterrence objectives.

2. The Need for Nuclear Weapons in Europe

While arguments can be made against the deployment of nuclear weapons in Europe, the United States and its NATO Allies continue to hold that such deployments are an essential part of a credible NATO military posture.

The most important reason for this conclusion is that US nuclear weapons in Europe are a visible symbol to Allies and adversaries of the US commitment to provide for Europe's nuclear defense. Deterrence is enhanced by the presence of these weapons in the theater, because WP conventional or nuclear attack plans must take into account the possibility of early NATO nuclear responses. If deterrence fails, the responsiveness of NATO theater nuclear forces is greater if the weapons are collocated with delivery forces and readily available for use.

US nuclear weapons in Europe for Allied delivery vehicles increase NATO cohesiveness by allowing the Allies to share the risks and responsibilities of Europe's nuclear deterrent. Moreover, the familiarity of US and Allied troops with the nuclear weapons is increased if weapons are deployed in Europe and are part of the normal training practices.

There are disadvantages to having nuclear weapons deployed overseas, but the United States and its Allies believe there are sufficient reasons to continue such deployments in Europe. In their peacetime locations, the nuclear weapons are vulnerable to attack by WP theater nuclear forces, as are almost all of NATO's military forces. However, a surprise nuclear attack on NATO in the absence of a crisis or other warning sufficient to permit dispersal of many of the weapons is regarded as very unlikely.

Nuclear weapons in Europe would be vulnerable to overrun and capture by WP conventional forces, if they were deployed too far forward and the NATO conventional defense was insufficient. But NATO has taken care to minimize the number of such forward sites. The United States is currently studying closure of sites and consolidation of weapons into more secure locations, where this may be warranted.

Deployment of weapons in Europe involves higher costs for manning storage sites than would storage in CONUS, but it is concluded that the benefits in terms of tactical advantage and enhanced deterrence warrant these additional costs. European deployment also entails greater problems of peacetime security, although major improvements in site security have been made and are continuing, as discussed below.

3. US/NATO Review of Nuclear Warheads in Europe

The size, composition and deployment of the theater nuclear stockpile are matters of political as well as military importance in the continued security and stability of Europe are at stake. There must be full consultation with the Allies in both the military and political deliberations that could lead to any changes in posture.

A preliminary and general analysis of the currently authorized nuclear stockpile has been made in NATO which considers current strategy, associated war plans, the characteristics and numbers of weapons, and related logistics factors. The United States is asking NATO to conduct more detailed analyses of the present posture based on the following considerations identified in the NATO study and in related US studies.

-- The impact of modernized theater nuclear weapons on deployments.

-- Deployment of modern conventional air munitions (e. g., Maverick and laser-guided bombs).

-- Changes in employment policy.

4. Site Security Improvement

The potential threat to nuclear weapons by terrorist elements has been of serious concern since the start of international terrorism in 1970. The activities of such groups may continue and possibly increase in the future. While nuclear weapons security programs had previously been directed toward countering a threat from a small group attempting to covertly gain entry into storage sites, it has become evident that preparations must be made to defend the weapons against an overt, violent attack by a larger group using sophisticated guerrilla tactics.

This potential threat has caused a comprehensive reexamination of our storage site security. Both short and long term strengthening and restructuring of procedures and requirements have produced actions such as revised security standards; reduction of weapons movements; consolidation of storage sites; increased site defense and training of security forces; improved physical layouts to include lighting and road barriers; and improved weapons security devices.

In addition to the functional improvements mentioned, a security survey of all nuclear storage sites was conducted in 1973. Specific improvements were identified for each of those sites to counter the terrorist threat. To give an idea of the magnitude of this effort, about \$50 million was approved for expenditure during FY 73-75, with about \$30 million approved for FY 75. Additional funds will be sought in FY 76.

Long range plans also involve revising NATO security criteria based on updated US improvements. Initial discussions in this area indicate strong Allied interest in these improvements. Concurrent with programs for improved physical security measures at storage sites, research continues on technological devices that add to overall weapons security. The devices are designed to (a) detect intrusion into restricted areas, (b) increase the time to gain access into the

storage structure, and (c) prevent the use of a nuclear weapon in the most unlikely event that one is captured. They include electronic sensors, improved intrusion alarm systems, non-lethal gas, smoke, foam and noise generators, and improved internal protective hardware which could selectively disable the weapon either permanently or temporarily. Site security has been, and will continue to be, a subject of utmost concern to insure adequate protection for nuclear weapons deployed in Europe.

E. IMPROVEMENTS IN THE NATO MILITARY POSTURE

This section discusses the final question raised by Public Law 93-365: What steps can be taken to develop a rational and coordinated nuclear posture by NATO that is consistent with proper emphasis on conventional defense forces?

NATO currently has a nuclear strategy and posture which is coordinated and overall is rational. When viewed in its detail, however, the NATO nuclear posture needs further improvements to meet more fully the objectives and criteria discussed in foregoing sections of this report. NATO is actively pursuing these goals, as discussed below.

1. Current Status

The presence of US nuclear weapons in Europe has long served an essential purpose, as continued peace and stability attest. Despite diplomatic progress towards detente, the objective confrontation of large military forces continues. It will be necessary to maintain nuclear weapons in Europe until this confrontation is substantially reduced.

a. NATO Planning Arrangements

During the past decade, considerable understanding of deterrence and doctrine for the possible employment of nuclear weapons has been achieved in NATO. This understanding has been reflected in agreed policy documents developed by the United States and its Allies through a process of detailed study and consultation. Primary among these documents are the following:

-- The Athens Guidelines (1962), which provided assurance that the United States and United Kingdom will continue to make available to the Alliance nuclear weapons adequate in number and type to meet the needs of NATO defense.

-- Political guidelines for initial defensive tactical use of nuclear weapons (1969).¹

-- Guidelines for consultation procedures on use of nuclear weapons(1969).

-- Role of theater nuclear strike forces in Allied Command Europe (1970).

-- Political guidelines for use of ADM's (1970).

An important vehicle for continued evolution of the nuclear posture is the NATO Nuclear Planning Group (NPG). The NPG was established in December 1966 to provide increased Allied participation in Alliance nuclear affairs. There are four permanent NPG members -- the United States, United Kingdom, Federal Republic of Germany, and Italy -- and eight rotating members which alternately fill four positions for 18-month terms.

The NPG provides the NATO nations greater voice in Alliance nuclear planning as well as a realistic appreciation of the complexities of nuclear policy and planning. The NPG also reserves for the FRG and Italy (through "permanent" seats) a special place alongside the nuclear power members. It should be recalled that all of the members of the NPG (and, indeed, all of the NATO Allies save France) are signatories to the Non-Proliferation Treaty. There is unquestionably a linkage between the foresaking of national nuclear forces and the continued US commitment to the nuclear defense of Europe.

During its first years the NPG served primarily as a forum for receiving and discussing US nuclear information, the results of US nuclear studies, and certain other national papers. Subsequently, the NPG launched a number of its own studies, often multinational in nature, and policy-making took the form of more general "guidance" papers to reflect political consensus and to direct the planning of the military authorities. For the past several years, the NPG has been engaged in a series of detailed multilateral studies to provide the basis for development of further guidelines for the tactical use of nuclear weapons. The NPG is currently conducting a study of means whereby new technology can improve the NATO military posture.

b. NATO Theater Nuclear Forces

If NATO is to improve its deterrent posture for the future, the following major conditions must be met for theater nuclear forces:

First, we must reduce their vulnerability to sabotage, seizure, and conventional assault. Measures are already underway to ensure this condition in cooperation with our Allies.

Second, the vulnerability of these forces to surprise attack should be reduced, and the more exposed systems should have the capability to disperse quickly so as to match a surprise dispersal by the Warsaw Pact. The introduction of the Lance missile with its improved munitions should also increase the survivability, controllability, and effectiveness of the forces. ✓

Third, we need to improve our command and control and situation reporting capabilities to the point where reliable and comprehensive information about both non-nuclear and nuclear attacks, and the status of defending forces, can be more rapidly and reliably communicated to those political leaders and military commanders who are involved in nuclear decisions and the release of nuclear weapons.

Fourth, target acquisition systems that can survive at least the first phase of any nuclear use still remain essential if we are to be able to implement a range of selective and controlled options, and at the same time limit the collateral damage from their implementation.

Fifth, we should continue to develop selective, carefully controlled options that will permit us: (a) to enhance our ability to deal with major penetrations of a sector and achieve a quick, decisive reversal of the tactical situation; and (b) to engage, if necessary, in a highly discriminating interdiction campaign against enemy lines of communication or forces behind the FEBA. Both options are designed to minimize the incentives for the enemy to reply at all or to respond with uncontrolled attacks.

It should be evident that these are demanding conditions, and that they will be difficult to satisfy. For many reasons we cannot regard our theater nuclear forces as a substitute for powerful conventional capabilities. They have a unique role to play in the spectrum of deterrence, and we should continue to maintain and improve them. But they should not be viewed as a crutch that can replace a strong conventional leg of the deterrent Triad.

The process whereby adjustments are made to the theater nuclear force posture is highly important. An essential element of deterrence is the political solidarity of the NATO Alliance. The United

States is consulting and will continue to consult fully with its Allies in order to strengthen NATO solidarity. If the United States were to act unilaterally and precipitously, the Alliance and its deterrent could be weakened.

An equally important reason for careful attention to the process of force posture improvement is the effect on the Soviet leadership. The Soviets take the view that the political and military factors involved in the East-West balance of power -- the "correlation of forces" in Soviet terminology -- is shifting in their favor. Divisions among the NATO Allies, increased economic problems in the Western nations, and continued improvement in Soviet military forces all could contribute in Soviet eyes to a favorable trend in the correlation of forces.

A steady weakening of the Western nations on all fronts -- political, economic, and military -- could eventually result in greater extension of Soviet influence into Western Europe, an increase in US-Soviet or NATO-WP confrontations, and an overall reduction in deterrence and stability in a crisis. On the other hand, a careful, coordinated process of NATO military improvements -- conventional and nuclear -- will demonstrate a common Alliance determination to do what is necessary to maintain an adequate defense and should help to disabuse Soviet leaders that the correlation of forces is in fact swinging in their favor.

2. Future Goals

The United States and its Allies are embarked upon a careful, coordinated process of force posture improvements. These improvements are being addressed in the following politico-military context:

- Enhancing the deterrent capability of the NATO Triad.
- Preserving the role of direct Allied participation in NATO's nuclear posture.
- Ensuring that any changes are implemented with due consideration for overall Alliance objectives.

Within this overall framework, the following specific goals have been discussed throughout this report and are summarized below.

a. Theater nuclear force improvements which are under review include the following:

-- Improved survivability of nuclear forces and weapons under conventional and nuclear attack.

-- Commitment of more Poseidon RV's to NATO.

-- Modernization of the theater nuclear forces to enhance and maintain the deterrent and war termination capabilities.

-- Improved target acquisition capabilities.

-- Continued improvement in security of nuclear weapon storage sites and, where militarily sound and economically advantageous, consolidation of sites.

b. Improvements in capabilities to employ nuclear forces are being pursued as follows:

-- Upgrading of communications capabilities for command and control of nuclear forces.

-- Improvements in command, control, and planning for combined conventional-nuclear operations. A recent example is the establishment of a new command, Allied Air Forces Central Europe (AAFCE), to provide an overall planning and command center for all tactical air operations in Central Europe.

-- Continuation of NATO employment planning efforts for limited use of theater nuclear weapons to complement conventional battlefield operations.

c. Conventional force improvements must continue to be made by the United States and its NATO Allies. At the recent meeting of Defense Ministers in Brussels, all agreed that conventional forces constitute the weakest leg of the NATO Triad and must continue to be given priority over nuclear weapons improvements. Adequate conventional force capabilities are a necessary foundation of total NATO deterrence. Improvements include:

-- Basic force improvements in areas of most significant deficiencies, such as anti-armor weapons, aircraft shelters, mobile air defense, electronic warfare, modern munitions, and war reserve stock levels.