

Joint Pub 3-12



Doctrine for Joint Nuclear Operations



15 December 1995

PREFACE

1. Scope

This publication provides guidelines for the joint employment of forces in nuclear operations.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff. It sets forth doctrine to govern the joint activities and performance of the Armed Forces of the United States in joint operations as well as the doctrinal basis for US military involvement in multinational and interagency operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders and prescribes doctrine for joint operations and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the joint force commander (JFC) from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall mission.

3. Application

a. Doctrine and guidance established in this publication apply to the commanders of combatant commands, subunified commands, joint task forces, and subordinate components of these commands. These principles and guidance also may apply when significant forces of one Service are attached to forces of another Service or when significant forces of one Service support forces of another Service.

b. The guidance in this publication is authoritative; as such, this doctrine (or JTTP) will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the activities of joint forces unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine and procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable.

For the Chairman of the Joint Chiefs of Staff:



WALTER KROSS
Lieutenant General, USAF
Director, Joint Staff

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EXECUTIVE SUMMARY

COMMANDER'S OVERVIEW

- Discusses the Objectives for Nuclear Forces
 - Covers the Employment of Nuclear Forces
 - Provides Guidance on Strategic Force Integrated Operations
-

National Security Objectives and Nuclear Forces

The permanent security interest of the United States is its survival as a free and independent nation, with its fundamental values intact and its institutions and people secure.

The permanent security interest of the United States is best achieved by a defense posture that makes possible war outcomes so uncertain and dangerous, as calculated by potential enemies, as to remove all incentive for initiating attack under any circumstance. Thus, **the fundamental purpose of US nuclear forces is to deter the use of weapons of mass destruction (WMD), particularly nuclear weapons, and to serve as a hedge against the emergence of an overwhelming conventional threat.** Credible and capable nuclear forces are essential for national security. Deterrence of the employment of enemy WMD, whether it be nuclear, biological, or chemical, requires that the enemy leadership believes the United States has both the ability and will to respond promptly and with selective responses that are credible (commensurate with the scale or scope of enemy attacks and the nature of US interests at stake) and militarily effective.

Capabilities must range from nation building or civil military operations through direct denial of military objectives and conventional defeat of enemy forces to the full-scale destruction of enemy warmaking and economic infrastructures, while minimizing the enemy's ability to retaliate. These capabilities require **maintaining a diverse mix of conventional forces** capable of high-intensity, sustained, and coordinated air, land, sea, and special operations; **survivable and capable nuclear forces**; and the command, control, communications, and computer systems required to control these forces.

Range of Military Operations

US nuclear forces serve to deter the use of weapons of mass destruction across the range of military operations.

Deterrence must be carefully weighed in the design of US forces and strategy including survivability, credibility, safety and security. Considerations during peacetime operations are regional contingencies, conventional threats, conflict avoidance, readiness, and escalation of the crisis. Wartime considerations are deterring the use of WMD; failure of deterrence which would include repelling or defeating a military attack and terminating the conflict on terms favorable to the US and its allies; and controlling escalation. Post-wartime considerations are war termination, termination strategy and reserve forces.

Fundamental Employment Considerations

The use of nuclear weapons represents a significant escalation from conventional warfare and is caused by some action, event, or perceived threat.

The decision to employ nuclear weapons at any level requires the explicit decision of the President. Senior commanders should be consulted and, based on their considered judgment make recommendations affecting nuclear policy decisions on force structure, weapons and/or force capabilities, and alternative employment options. Consequently, those responsible for the operational planning and the direction of US nuclear forces must fully appreciate the numerous and often complex factors that influence the US nuclear planning process and would likely shape US decisions on the possible use of nuclear weapons. International reaction toward the nation that first employs WMD is an important political consideration. Although there are a number of arms control agreements restricting deployment and use, **there is no customary or conventional international law to prohibit nations from employing nuclear weapons in armed conflict.**

Considerations in Force Planning and Employment

Considerations in force planning and employment must include the characteristics and limitations of the nuclear forces available and seek to optimize both the survivability and combat effectiveness of these forces.

To provide the desired capabilities, **nuclear forces must be diverse, flexible, effective, survivable, enduring, and responsive.** If no one weapon system possesses all of the desired characteristics, a variety of systems may be necessary. Other considerations are strategic stability, centralized control, and command, control, communications, computers, and intelligence (C4I) which must support the employment of nuclear weapons through all phases of a conflict. **Targeting considerations include preplanning and target planning of nuclear strikes; countervalue and counterforce targeting; prioritization of targets; layering,** which involves employing more than one weapon against a

target to increase probability of destruction; **crosstargeting**; **preplanned options** of maintaining centralized control while minimizing the impact of response time; **emergent targets and adaptive planning**; **limiting collateral damage**; and **damage criteria**. The immediate and prolonged effects of WMD—including blast, thermal radiation, prompt (gamma and neutron) and residual radiation—pose unprecedented physical and psychological problems for combat forces and noncombatant populations alike. Not only must US forces be prepared to survive and perhaps operate in a WMD environment for long periods of time, but they must have effective, sustained C4I to accomplish their missions. **Military planners must contend with significant challenges in a WMD environment.** The mitigation efforts of WMD effects require planning in advance and warning personnel, partial offsetting of long-term degradation, and appropriate operating procedures.

Strategic Force Integration

To effectively integrate nuclear operations into a coherent whole is a fundamental national requirement.

An integrated operational plan, or a series of sequential plans, predicated on commonly agreed strategic objectives, is an absolute prerequisite to unity and, hence, economy of effort including clarity and common appreciation of the joint operational objectives. The United States Strategic Command accomplishes detailed analyses of weapons effects and targeting systems and optimizes weapons application. Aircraft forces, intercontinental ballistic missiles and sea-launched ballistic missiles must be properly integrated to effectively deter or respond to a nuclear attack / crisis. Strategic nuclear forces may also be used to target and hold regional targets at risk.

Theater Nuclear Force Integration

The employment of theater nuclear forces are bound by the same nuclear policy constraints as strategic nuclear forces.

Approval for use of theater nuclear forces rests with the President. **Weapons and systems may be deployed into theaters, but local commanders have no authority to employ them until it is specifically granted.** There are seven elements to control and constrain the use of theater nuclear force weapons: a decision to use nuclear weapons; the number, type, and yields of weapons; types of targets to be attacked; geographical area for employment; timing and duration of employment; damage constraints; and target analysis. **Nuclear forces deployed to or tasked to support theater nuclear requirements link conventional forces to the full nuclear capability of the US.** This linkage must be strong and visible in order to deter the enemy. The

employment of theater nuclear force weapons must be capable of favorably altering the operational situation to the advantage of the user.

Theater Nuclear Force Planning and Coordination

The employment of nonstrategic nuclear weapons is constrained, both politically and militarily, to a greater degree than employment of conventional weapons.

Advanced planning and coordination must be part of employment. **Geographic combatant commanders are responsible for defining theater objectives, selecting targets, and developing plans required to support those objectives.** After conflict occurs, combatant commanders may also be tasked to develop adaptively planned options to strike targets not previously identified. Joint nuclear operations are planned, coordinated, and controlled by the combatant commander including multinational military operations. **A theater-level combined and joint planning of nuclear resources must be considered** including quantity, type, backup, survivability, vulnerability, deconfliction criteria, collateral damage restrictions, the magnitude of nuclear operations, and the expected retaliation of weapons. The combatant commander has the pivotal role in deciding how best to employ theater nuclear resources. **For the combatant commander, the key element in command and control is timing.**

Offensive-Defensive Integration

Offensive and defensive forces should be integrated to ensure interoperability.

For integration to be successful, **offensive and defensive forces should be doctrinally and procedurally linked.** Defensive systems include space warning and defense capabilities, air defense warning and interceptors, ballistic missile defense warning, and a worldwide Integrated Tactical Warning and Attack Assessment system. **Defensive forces can directly support offensive forces in five important areas:** strategic application, regional conflicts, synergistic application, early warning forces, and air defense. Considerations for integrating offensive and defensive forces include flight corridors; land, air, sea, and special operations forces; impact point prediction information; priority of defended assets and enemy targets; decision timeliness; employment concepts; and C4I linkages of the offensive and defensive forces.

CONCLUSION

The fundamental purpose of US nuclear forces is to deter the use of weapons of mass destruction, particularly nuclear weapons, and to serve as a hedge against the emergence of an overwhelming conventional threat. The decision to employ nuclear weapons at any level requires the explicit decision of the President. To effectively integrate nuclear operations into a coherent whole is a fundamental national requirement. The employment of theater nuclear forces is bound by the same nuclear policy constraints as strategic nuclear forces. For integration to be successful, offensive and defensive forces should be doctrinally and procedurally linked.

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CHAPTER I

OBJECTIVES

“Potential adversaries should recognize our capability to dominate any escalation of conflict should weapons of mass destruction be employed against us.”

National Military Strategy, 1995

1. General

a. **National Security Objectives and Nuclear Forces.** The permanent security interest of the United States is its survival as a free and independent nation, with its fundamental values intact and its institutions

b. **Strategy.** Credible and capable nuclear forces are essential for national security. During World War II, nuclear weapons were instrumental in ending the war on terms favorable to the allies. The US postwar strategy has been one of deterrence, and **nuclear forces have been developed,**



Sea-launched ballistic missiles deter potential aggressors from initiating an attack and remain deployed and ready should deterrence fail.

and people secure. This is best achieved by a defense posture that makes possible war outcomes so uncertain and dangerous, as calculated by potential enemies, as to remove all incentive for initiating attack under any circumstance. Thus, **the fundamental purpose of US nuclear forces is to deter the use of weapons of mass destruction (WMD), particularly nuclear weapons, and to serve as a hedge against the emergence of an overwhelming conventional threat.**

deployed, and maintained for the purpose of deterring large-scale aggression against the United States and its allies.

“The central concept of modern strategy is deterrence.”

Abba Eban
During an interview, 7 March 1965

c. **Objective of Deterrence.** The political leadership of an opposing nation is the central objective of deterrence, because that is where the ultimate decision to use military force lies. **Deterrence of a large-scale attack (either WMD or conventional) requires that US forces and command and control (C2) systems be viewed by enemy leadership as capable of inflicting such damage upon their military forces and means of support, or upon their country, as to effectively deny them the military option.** Deterrence of the employment of enemy WMD, whether it be nuclear, biological, or chemical, requires that the enemy leadership believes the United States has both the ability and will to respond promptly and with selective responses that are credible (commensurate with the scale or scope of enemy attacks and the nature of US interests at stake) and militarily effective. **Any deterrence assumes an opposing nation's political leadership will act according to the logic of national self-interest, although this self-interest will be viewed through differing cultural perspectives and the dictates of given situations.** Although nations possessing WMD have largely refrained from using them, their continuing proliferation along with the means to deliver them increases the possibility that **someday a nation may, through miscalculation or by deliberate choice, employ those weapons.** This assumption does not rule out the possibility that an opponent may be willing to risk destruction or disproportionate losses in following a course of action based on perceived necessity, whether rational or not in a totally objective sense. In such cases, deterrence, even based on the threat of massive destruction, may fail.

d. **Force Capabilities.** Deterrence is founded in real force capabilities and the national determination to use those forces if necessary. **To have a credible effect on an adversary, US military forces must be capable of achieving US national objectives throughout the range of military**

operations. Capabilities must range from nation building or civil military operations through direct denial of military objectives and conventional defeat of enemy forces to the full-scale destruction of enemy warmaking and economic infrastructures, while minimizing the enemy's ability to retaliate. These capabilities require maintaining a diverse mix of conventional forces capable of high-intensity, sustained, and coordinated air, land, sea, and special operations; survivable and capable nuclear forces; and the command, control, communications, and computer (C4) systems required to control these forces. **The mix of these forces must be capable of holding at risk those assets most valued by enemy leaders and providing a range of options in response to attack.** It is possible, however, that an adversary may misperceive or purposefully ignore a credible threat. Therefore, **should deterrence fail, forces of all types (both conventional and nuclear) must be structured, deployed, and ready to provide a variety of options** designed to control escalation and terminate the conflict on terms favorable to the United States and its allies.

2. The Range of Military Operations

US nuclear forces serve to deter the use of WMD across the range of military operations. From a massive exchange of nuclear weapons to limited use within a theater, **US nuclear capabilities must confront an enemy with risks of unacceptable damage and disproportionate loss** should the enemy choose to introduce WMD in a conflict.

a. Peacetime and Crisis Considerations

- **Forces and Strategy.** Deterrence must be carefully weighed in the design of US forces and strategy. As a minimum, **nuclear forces and strategy must pass the tests shown in Figure I-1.**

NUCLEAR FORCES AND STRATEGY EVALUATION CRITERIA

SURVIVABILITY

US forces must be able to survive a first strike and endure conventional and escalatory attrition with sufficient retaliatory strength to inflict unacceptable damage on the enemy in a counterstrike.

CREDIBILITY

The potential aggressor must believe the United States could and would use nuclear weapons to attain its security objectives.

SAFETY

The risk of failure through accident, unauthorized use, or miscalculation must be minimized.

SECURITY

Secure manufacture, transportation, and storage that are free from terrorist threat, theft, loss, and unauthorized access must be provided.

Figure I-1. Nuclear Forces and Strategy Evaluation Criteria

- Regional Contingencies.** **WMD deterrence should be the first priority.** The proliferation of WMD technologies and industrial capabilities in the world may allow a potential aggressor to develop a WMD arsenal capable of being employed against US forces deployed to a regional crisis. WMD used on US forces would cause a significant tactical or operational loss; greatly change the character of the war, putting the outcome in doubt and threatening escalation; and leave the United States with a difficult choice: to retaliate or not to retaliate. **A selective capability of being able to use lower-yield weapons in retaliation, without destabilizing the conflict, is a useful alternative** for the US National Command Authorities (NCA).
- Conventional Threats.** Because nuclear forces also serve as a hedge against the emergence of an overwhelming conventional threat, **the deterrent effect of nuclear weapons extends to enemy calculations concerning conventional conflict as well. The potential employment of nuclear weapons at theater level, when combined with the means and resolve to use them, makes the prospects of conflict of any type more dangerous** and the outcome more difficult to assess. The resulting uncertainty could reduce a potential

aggressor's willingness to risk escalation by initiating conflict. At the same time, a credible defensive capability that includes the means to threaten to employ nuclear weapons could bolster the resolve of allies to resist enemy attempts at political coercion.

- **Conflict Avoidance.** Conflict can often be avoided by pursuing alternative mechanisms and disincentives to conflict such as nonproliferation, counterproliferation, arms control and verification, and confidence building measures during peacetime operations. **These measures make conflict or war less likely** by improving communication, reducing opportunities for miscalculation, providing ways to resolve crises, and reducing the destructive capacity of available arsenals.
- **Readiness.** Increased readiness levels may be necessary to deter aggression. Consequently, an increased risk of attack, prompted by enemy war readiness measures, may require that US forces be maintained at visibly increased states of alert. Certain types of delivery systems can be postured to send a clear warning. **Alert posturing of nuclear delivery systems to dispersal locations can send a forceful message that demonstrates the national will to use nuclear weapons if necessary.** For example, the generation of nuclear forces to higher alert levels during the October 1973 Mideast Crisis sent a strong signal. However, the danger also exists that the enemy may perceive either an exploitable vulnerability or the threat of imminent use. Accordingly, **increased readiness postures intended to signal national resolve must be accompanied by measures that would allow for de-escalation.** Public affairs measures must also be taken to minimize the possibility that public concern over the conflict

might develop into mass panic upon implementation of US readiness measures.

- **Escalation.** Should a crisis become so severe as to prompt the United States to place all its nuclear forces at a high level of readiness, the United States must also be prepared to posture its nuclear forces as quickly as possible. Nuclear forces should be generated and managed to ensure a sustained high level of readiness. Conventional forces and intelligence activities would have to be prudently managed to ensure avoidance of inadvertent escalation or mistaken warnings of nuclear attack. In the event that the crisis is successfully resolved without employment of nuclear weapons, **reductions in the alert posture of nuclear forces must be carefully managed**, taking into account enemy force readiness. This would ensure that no destabilizing military advantage accrued to the enemy during the de-escalation phase of the conflict.

b. Wartime Considerations

(See Figure I-2)

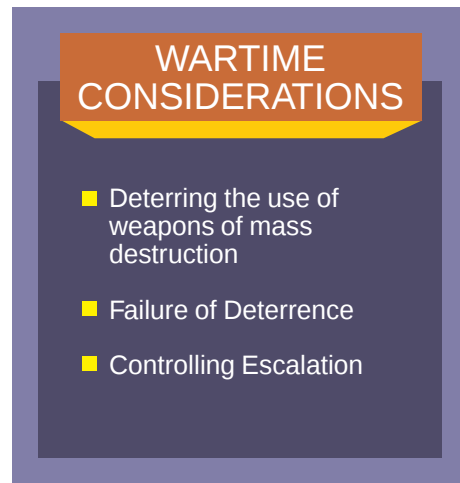


Figure I-2. Wartime Considerations

- **Detering the Use of WMD.** In war, and operations other than war, **deterrence of WMD attack depends on the enemy's perception of its warfighting (and winning) capabilities** and will be relative to those of the United States. However, **wartime circumstances may alter such perceptions**, possibly because of changes in the strategic situation. Shifts in the strategic balance may result from military action in which one side suffers significant destruction of military forces and industrial and economic infrastructures. Thus, a **prolonged conventional conflict may lower the nuclear threshold** by posing greater costs to a nation and, therefore, may make nuclear attack appear to be a less risky option.
- **Failure of Deterrence.** **Should deterrence fail, it is the objective of the United States to repel or defeat a military attack and terminate the conflict on terms favorable to the United States and its allies.** Accomplishing this objective requires the capability for measured and effective response to any level of aggression while seeking to control the intensity and scope of conflict and destruction. **Employment plans**, in conjunction with political and other military action, **must provide for selected military operations.** Specific nuclear objectives are specified in Annex C to the Joint Strategic Capabilities Plan (JSCP).
- **Controlling Escalation.** Nuclear weapons may influence the objectives and conduct of conventional warfare. Additionally, **conventional warfare may result in attrition of nuclear forces and supporting systems** (through antisubmarine warfare, conventional attacks in theater, sabotage, or anti-satellite warfare), either unintended or deliberate, which could affect the forces available for nuclear employment. If this attrition results in a radical change in the

INTERNATIONAL ENVIRONMENT: WEAPONS OF MASS DESTRUCTION

The threat of nuclear attack against the American homeland today has diminished but there are still thousands of nuclear warheads and strategic delivery systems in the world. Despite the internal political and economic changes underway in the states of the former Soviet Union, we must remain mindful of these capabilities. For as long as these weapons exist, they will remain a threat to our security.

Especially troubling is the prospect that some of these weapons or their component materials might be stolen or otherwise acquired by third parties. Thus, the security and accountability of all nuclear warheads, weapon systems, and materials remain a grave concern.

Indeed, the proliferation of weapons of mass destruction, nuclear, chemical, and biological—is one of the most troubling dangers we face. The ongoing efforts to obtain such weapons by a number of countries present great and growing risks for the United States and its allies. The continuing diffusion of missile delivery technology is increasing the risks we face. Even the prospect of a hostile regional power or terrorist group gaining access to nuclear, chemical or biological weapons contributes to regional insecurities and increases the difficulty of settling disputes peacefully.

SOURCE: National Military Strategy of the United States of America, 1995



The bomber leg of the strategic Triad provides a flexible and recallable nuclear capability, which is essential in escalation management.

strategic force posture by eliminating intermediate retaliatory steps, there may be a rapid escalation. **The ability to precisely gauge the attrition of conventional and nuclear forces will directly effect calculations on the termination of war and the escalation to nuclear war.**

c. Post Wartime Considerations

(See Figure I-3)

- **War Termination.** The fundamental differences between a potential nuclear

war and previous military conflicts involve the speed, scope, and degree of destruction inherent in nuclear weapons employment, as well as the uncertainty of negotiating opportunities and enduring control over military forces. Depending on the scope and intensity of a nuclear war, **how and under what conditions it is brought to a conclusion may be very different from previous wars.** Terminating a global war involving the use of large numbers of WMD on both sides and the degradation or destruction of their central means of control could be vastly more difficult than ending a theater or regional nuclear conflict involving the relatively constrained use of a limited number of nuclear weapons. In the latter case, war-termination strategies may more readily lead to a cessation of hostilities, assuming that the belligerents' interests in war termination are mutual.

- **Termination Strategy.** The objective of termination strategy should be to **end a conflict at the lowest level of destruction possible, consistent with national objectives.** However, there can be no assurances that a conflict involving



Figure I-3. Post Wartime Considerations

weapons of mass destruction could be controllable or would be of short duration. Nor are negotiations opportunities and the capacity for enduring control over military forces clear. Therefore, **US nuclear forces, supporting command control, communications, computer, and intelligence (C4I) systems** (e.g., sensors, communications, command facilities), **and employment planning must provide the capability to deny enemy**

war aims, even in a conflict of indefinite duration.

- **Reserve Forces. Adequate nuclear reserve forces reduce opportunities for another nation to dominate or coerce behavior before, during, or after the use of WMD.** Such forces provide the US with the capability to continue to deny enemy war aims, influence other nations, and exert leverage for war termination.

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CHAPTER II

EMPLOYMENT OF FORCES

"In the military operations off Cuba President Kennedy did not look for military victory, he sought to change Mr. Khrushchev's mind, and he succeeded."

Vice Admiral Sir Peter Gretton, 7 April 1965

1. Fundamental Considerations

a. **Implementing the National Military Strategy.** The decision to employ nuclear weapons at any level requires the explicit decision of the President. Senior commanders should be consulted and, based on their considered judgment, should make recommendations affecting nuclear policy decisions on force structure, weapons and/or force capabilities, and alternative employment options. Consequently, those responsible for the operation planning and the direction of US nuclear forces must fully appreciate the numerous and often complex factors that influence the US nuclear planning process and would likely shape US decisions on the possible use of nuclear weapons. Clearly, the use of nuclear weapons represents a significant escalation from conventional warfare and is caused by some action, event, or perceived threat. However, the fundamental determinant of action is the political objective sought in the use of nuclear or other types of forces. The decision to use nuclear weapons involves many political considerations. Together, these considerations will have an impact not only on the decision to use nuclear weapons, but also on how they will be employed. Other prominent planning and employment factors include the strategic situation, type and extent of operations to be conducted, military effectiveness, damage-limitation measures, environmental and ecological impacts, and how such considerations may interact.

b. **International Reaction.** International reaction toward the nation that first

employs WMD is an important political consideration. The United States and its allies have articulated their abhorrence of unrestricted warfare, codifying "laws of war" and turning to definitions of "just war." The tremendous destructive capability of WMD and the consequences of their use have given rise to a number of arms control agreements (refer to Appendix A, "Treaty Obligations") restricting deployment and use, and in the case of the 1987 Intermediate-range Nuclear Forces Treaty, even prohibiting the development of an entire class of weapons. At the same time, it is important to recognize that there is no customary or conventional international law to prohibit nations from employing nuclear weapons in armed conflict. Therefore, the use of nuclear weapons against enemy combatants and other military objectives is lawful. The nation that initiates the use of nuclear weapons, however, may find itself the target of world condemnation.

2. Considerations in Force Planning and Employment

(See Figure II-1)

a. **Employment Options.** Combatant commanders responsible for the employment of nuclear forces must ensure those forces are fully capable of executing the full range of employment options required by the NCA. To this end, employment planning must fully consider the characteristics and limitations of the nuclear forces available and seek to optimize both the survivability and combat effectiveness of these forces.

CONSIDERATIONS IN FORCE PLANNING AND EMPLOYMENT

Employment Options

Characteristics

Force Diversity
Flexibility and Effectiveness
Survivability and Endurance
Responsiveness

Other Considerations

Strategic Stability
Centralized Control
Command, Control,
Communications,
Computers, and
Intelligence

Figure II-1. Considerations in Force Planning and Employment

b. **Characteristics.** To provide the desired capabilities, **nuclear forces must be diverse, flexible, effective, survivable, enduring, and responsive.** If no one weapon system possesses all of the desired characteristics, a variety of systems may be necessary.

- **Force Diversity.** To confront any potential aggressor with insurmountable attack and defensive problems and to hedge against the failure of any one US component, **nuclear forces must be diverse. The United States maintains a strategic Triad of intercontinental ballistic missiles (ICBMs), sea-launched ballistic missiles (SLBMs), and bombers** as a hedge against unforeseen developments that might threaten US retaliatory capabilities. Each leg of the Triad has unique capabilities that complement those of the other legs. **Nonstrategic nuclear forces (NSNF) offer options short of strategic response in those situations where escalation control is desired.** In addition, NSNF increase the overall deterrent value of US forces by their direct deterrence at regional level. Both strategic and nonstrategic nuclear forces hold regional targets at risk.
- **Flexibility and Effectiveness.** To provide deployment and employment options that allow the United States to



Intercontinental ballistic missile systems are able to strike quickly once the decision to employ nuclear weapons has been made.

maintain effective deterrence and, if necessary, successfully execute a broad array of missions against the full spectrum of potential targets, **forces must be flexible and effective**. Flexibility allows engaging the enemy at an appropriate level or place with the capability of escalating or de-escalating the level of conflict, if desired. Flexibility is important because **deterrent credibility hinges on having a convincing capability** to execute a variety of nuclear and nonnuclear options. The flexible application of responses tailored to the provocation would afford greater control over the possible escalation of conflict. **Flexibility is also essential in escalation management** because available nuclear and conventional weapons can be tailored for specific military and political outcomes without destabilization of the conflict.

- **Survivability and Endurance.** US nuclear forces and C4I must be able to survive enemy attacks to convince potential aggressors that, in any scenario, sufficient US capability will

remain to deliver a devastating retaliatory strike. Nuclear forces and C4I must also be able to survive enemy attacks for both warfighting utility and deterrence purposes. **Survivability is enhanced by a combination of multiple redundant systems, mobility, number of weapons, hardened sites, and employment concept.** (For example, mobility increases survivability because the forces cannot be attacked with any certainty of destruction due to the unpredictability of the location of the weapon at the time of attack.) **Survivability also strengthens deterrence** by providing nuclear forces for continued retaliation against the enemy.

- **Responsiveness.** Some targets must be struck quickly once a decision to employ nuclear weapons has been made. Just as important is the requirement to promptly strike high-priority, time-sensitive targets that emerge after the conflict begins. Because force employment requirements may evolve at irregular intervals, some surviving nuclear weapons must be

NUCLEAR FORCES

In September [1994], the President approved the recommendations of the Pentagon's Nuclear Posture Review (NPR). A key conclusion of this review is that the United States will retain a triad of strategic nuclear forces sufficient to deter any future hostile foreign leadership with access to strategic nuclear forces from acting against our vital interests and to convince it that seeking a nuclear advantage would be futile. Therefore, we will continue to maintain nuclear forces of sufficient size and capability to hold at risk a broad range of assets valued by such political and military leaders. The President approved the NPR's recommended strategic nuclear force posture as the US START II force. The forces are: 450-500 Minuteman ICBMs, 14 Trident submarines all with D-5 missiles, 20 B-2 and 66 B-52 strategic bombers, and a nonnuclear role for the B-1s. This force posture allows us the flexibility to reconstitute or reduce further, as conditions warrant. The NPR also reaffirmed the current posture and deployment of nonstrategic nuclear forces; the United States will eliminate carrier and surface ship nuclear weapons capability.

SOURCE: A National Security Strategy of Engagement and Enlargement, The White House, February 1995



Sea-launched ballistic missiles provide an effective, survivable capability for the purpose of deterring large-scale aggression against the United States and its allies.

capable of striking these targets within the brief time available. **Responsiveness** (measured as the interval between the decision to strike a specific target and detonation of a weapon over that target) **is critical to ensure engaging some emerging targets.**

c. **Other Considerations.** Strategic stability, centralized control, and C4I systems are also important considerations in nuclear force planning and employment.

- **Strategic Stability.** A crucial goal in designing and fielding US nuclear forces is to forge a balance of military capabilities between the United States and potential adversaries that reduces the incentives for potential adversaries to seek a decisive military advantage (in

military operations other than war) or to initiate conflict. **Such stability is a function of relative capabilities at all potential levels of conflict** and requires the constant assessment of nuclear and conventional forces.

- **Centralized Control.** Centralized control ensures that US national policy decisions directly affect deployment or employment of nuclear forces. Militarily, centralized control provides **clarity of purpose** and **unity of command** while ensuring nuclear forces are responsive, properly used, and integrated. It guides a broad plan of action while providing the flexibility for subordinate commanders to plan authorized attacks in the most operationally effective manner.
- **C4I.** C4I must support the employment of nuclear weapons through all phases of a conflict. C4I must be able to provide the appropriate political and military authority with a survivable, secure, and endurable C4I capability through which execution, direction, assessment, and termination of nuclear operations can be ensured during all phases of a conflict, especially in its termination. **Reporting residual capability assessment information through C4I systems is essential** to providing the NCA with an understanding of the military capabilities remaining in a post-attack environment. Because of their central importance to US response capabilities, **the destruction or degradation of C4I systems will likely be a primary enemy objective.** Consequently, such systems must be **robust, redundant** (where essential to guarantee continuity of operations), and **rapidly recoverable.**

3. Targeting Considerations

(See Figure II-2)

a. **Preplanning.** Guidance for planning nuclear strikes is promulgated from the NCA to the combatant commanders through documents such as National Security Directives, the Policy Guidance for Nuclear Weapons Employment, and/or the JSCP, Annex C. The combatant commanders then preplan nuclear targets using this guidance.

b. **Target Planning.** Conditions leading to US employment of nuclear weapons may not necessarily lead to an all-out exchange of WMD. Consequently, **several strategies or factors must be considered in planning joint nuclear operations.**

- **Countervalue Targeting.** Countervalue targeting strategy directs the destruction or neutralization of selected enemy military and military-related activities, such as industries, resources, and/or institutions **that contribute to the enemy's ability to wage war.** In general, weapons required to implement this strategy need not be as numerous or accurate as those required to implement a counterforce targeting strategy, because **countervalue targets generally tend to be softer and unprotected** in relation to counterforce targets.
- **Counterforce Targeting.** Counterforce targeting is a strategy to employ forces to destroy, or render impotent, **military capabilities of an enemy force.** Typical counterforce targets include bomber bases, ballistic missile submarine bases, ICBM silos, antiballistic and air defense installations, C2 centers, and WMD storage facilities. Generally, the nuclear forces required to implement a

TARGET PLANNING CONSIDERATIONS

- Countervalue Targeting
- Counterforce Targeting
- Prioritization of Targets
- Layering
- Crosstargeting
- Preplanned Options
- Emergent Targets and Adaptive Planning
- Collateral Damage
- Damage Criteria

Figure II-2. Target Planning Considerations

counterforce targeting strategy are larger and weapon systems more accurate than the forces and weapons required to implement a countervalue strategy, because counterforce targets generally tend to be harder, more protected, difficult to find, and more mobile than countervalue targets.

- **Prioritization of Targets.** Targets are normally prioritized based upon the overall targeting strategy. Further refinement of target priorities will be made within each target category (e.g., industrial, military, energy facilities, storage facilities, weapon storage areas) based on the operational situation and the objectives established by the appropriate command authority.

- **Layering.** Layering is a targeting methodology that plans employing more than one weapon against a target to increase the probability of its destruction or to improve the confidence that a weapon will arrive and detonate on that target and achieve a specified level of damage.
- **Crosstargeting.** At the same time it incorporates the concept of “layering,” crosstargeting also uses different platforms for employment against one target to increase the probability of at least one weapon arriving at that target. Using different delivery platforms such as ICBMs, SLBMs, or aircraft-delivered weapons increases the probability of achieving the desired damage or target coverage.
- **Preplanned Options.** Preplanned options are a means of maintaining centralized control while minimizing the impact on response time. These options should be capable of being executed individually or in combination with other options to expand the attack either functionally or geographically.
- **Emergent Targets and Adaptive Planning.** Even after the initial laydown of nuclear weapons, there may be a residual requirement to strike additional (follow on and/or emerging) targets in support of retaliatory or war-termination objectives. Commanders must maintain the capability to rapidly strike previously unidentified or newly emerging targets. This capability includes planning for and being able to perform “ad hoc” planning on newly identified targets and maintaining a pool of forces specifically reserved for striking previously unidentified targets. **It is important to recognize that success in engaging emerging targets depends heavily upon the speed with which they are identified, targeted, and attacked.**
- **Collateral Damage.** US forces will limit collateral damage consistent with employment purposes and desired effect on the target (see JSCP, Annex C, for a more detailed discussion).
- **Damage Criteria.** Damage criteria are standards identifying specific levels of destruction or materiel damage required for a particular target category. These criteria are normally levied on the executing commander by higher authority, in accordance with national strategy and policy. **These criteria vary for the intensity of the damage and also vary by particular target category, class, or type.** Commanders must estimate the number and characteristics of the weapons and delivery systems that will be needed to achieve the level of desired damage to designated targets while minimizing undesirable collateral effects. **Damage criteria**, based on the nature of the target (size, hardness, mobility) as well as its proximity to military or nonmilitary assets, **provide a means by which to determine how best to strike particular targets and, following the attack, to evaluate whether the target or target sets received the amount of damage required to meet operational objectives.**

4. Operations in a WMD Environment

a. **WMD Effects.** The immediate and prolonged effects of WMD—including blast, thermal radiation, prompt (gamma and neutron) and residual radiation—pose unprecedented physical and psychological problems for combat forces and noncombatant populations alike. Not only must US forces be prepared to survive and perhaps operate in a WMD environment for long periods of time, they must also have effective, sustained C4I to accomplish their

missions. Military planners must contend with significant challenges in a WMD environment. When planning operations in such an environment, **planners should refer to authoritative documents detailing WMD effects** published by the Department of Defense, Department of Energy, or qualified scientific authority and **incorporate mitigating or avoidance measures into operation planning.**

b. **Mitigation Efforts.** Actions required to mitigate the effects of WMD are shown in Figure II-3.

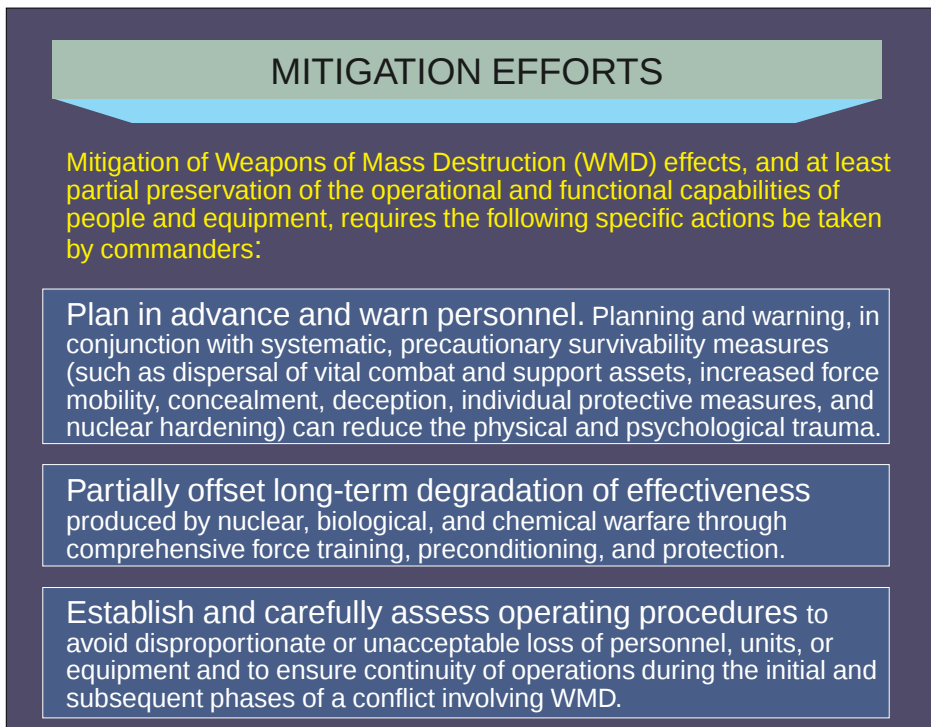


Figure II-3. Mitigation Efforts

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CHAPTER III

INTEGRATED OPERATIONS

"It is a doctrine of war not to assume the enemy will not come, but rather to rely on one's readiness to meet him; not to presume that he will not attack, but rather to make one's self invincible."

Sun Tzu
The Art of War

1. Strategic Force Integration

(See Figure III-1)

a. **Effective Integration.** To effectively integrate nuclear operations into a coherent whole is a fundamental national requirement: the most efficient use of available resources to ensure national security. By eliminating duplicate target coverages and ensuring optimal tasking and synchronization of US nuclear forces prior to and during conflict or war through systematic and thorough coordination of mission planning, commanders can promote economy of effort.

b. **Integrated Operation Planning.** An integrated operation plan or a series of sequential plans, predicated on commonly agreed strategic objectives, is an absolute prerequisite to unity and, hence, economy of effort. Clarity of joint operational guidance as well as a common appreciation of its

fundamental objectives are vital prerequisites to a more effective identification, prioritization, and assignment of targets, and the deconfliction of their associated means of coverage.

c. **Global Force Integration.** United States Strategic Command accomplishes detailed analyses of weapons effects and targeting systems and optimizes weapons application. These targeting functions include deconflicting nuclear operations by time, space, and geography.

- **Integration of aircraft forces should be accomplished** for the employment of nuclear weapons in support of the Single Integrated Operational Plan and theater nuclear options. **Aircraft and air-launched missile planning factors should be developed** to include prelaunch survivability, probability to penetrate, weapons systems reliability, circular error probable, weapon system performance characteristics, and sortie separation criteria.
- **ICBMs or SLBMs should be employed based on an analysis of weapon system characteristics, capabilities, and limitations.** ICBM or SLBM prelaunch survivability and probability to penetrate planning factors must also be developed. **Analyzing the effects of nuclear environments before and during launch, in powered and ballistic flight, and during reentry is essential.** Equally



Figure III-1. Strategic Force Integration



Each leg of the Triad brings a unique set of characteristics to be integrated with the other two, thus forming an effective strategic force.

important is consideration of the effect of enemy defense capabilities and limitations.

- **Strategic nuclear forces may also be used to target and hold regional targets at risk.**

2. Nonstrategic Nuclear Force Integration

a. **General.** The employment of NSNF such as dual-capable aircraft and nuclear TOMAHAWK land-attack missiles **is bound by the same nuclear policy constraints as strategic nuclear forces. Approval for their use rests with the President.** Weapons and systems may be deployed into theaters, but local commanders have no authority to employ them until it is specifically granted. **NCA control and constraint of NSNF weapons has the seven elements shown in Figure III-2.**

Treaties and agreements between the United States and its allies may impose additional restrictions on the use of nuclear weapons (refer to Appendix A, “Treaty Obligations”). Host-nation governments have legitimate interests and affect what otherwise

could be prudent unilateral operations. Command and coordination chains may become complex and lengthy. Specific consultation and coordination procedures are stated in treaties or should be developed by specific agreements prior to deployment of nuclear forces into a theater.

b. **Theater Nuclear Posture.** **Nuclear forces deployed to or tasked to support theater nuclear requirements link conventional forces to the full nuclear capability of the US.** This linkage must be strong and visible to the extent of being capable of deterring a potential enemy from believing political and/or military advantage can be achieved by means of threats to employ nuclear, biological, or chemical weapons or by the threatened or actual execution of an all-out conventional offensive. Specific conditions for employment are provided in Annex C to the JSCP.

c. **NSNF Employment.** In the event of a deteriorating military situation, **employment of NSNF must be capable of favorably altering the operational situation to the advantage of the user.** Otherwise, the risks of using nuclear weapons might outweigh any conceivable advantage. Complete destruction

NATIONAL COMMAND AUTHORITIES CONTROL AND RESTRAINT OF NONSTRATEGIC NUCLEAR WEAPONS

- ✓ A decision to use nuclear weapons.
- ✓ The number, type, and yields of weapons.
- ✓ Types of targets to be attacked.
- ✓ Geographical area for employment.
- ✓ Timing and duration of employment.
- ✓ Damage constraints.

Figure III-2. National Command Authorities Control and Restraint of Theater Nuclear Weapons

of enemy forces is not necessarily required to achieve the desired objective; rather, **containment and a demonstrated will to employ additional nuclear firepower toward a specific goal is the preferred method.** Employment of weapons and yields must be kept at the lowest level possible to

reduce the possibility that the enemy will in turn escalate the conflict.

d. Employment Options. Theater nuclear options define the type and number of weapons as well as the employment area. Options can range from the selective



Weapon systems with strategic capabilities can be employed in a nonstrategic role when their use alters favorably the operational situation.

employment of a limited number of nuclear weapons against a carefully constrained preplanned or emerging target set to a general laydown of weapons against a larger and/or more diverse set of targets. **An option or portion of an option can be used to send a signal.** Such an option should be very restrictive, with tight limits on area and time so that the adversary will recognize the “signal” and not simply assume that we have moved to general nuclear war.

e. Planning and Coordination

- **The employment of nonstrategic nuclear weapons is constrained, both politically and militarily, to a greater degree than employment of conventional weapons.** High-level political and military decisions, treaties, and agreements dealing with employment of nuclear weapons will continue to cause the evolution of nuclear weapon employment doctrine. However, advance planning and coordination must be part of employment.
- **Geographic combatant commanders are responsible for defining theater objectives, selecting targets, and developing plans required to support those objectives.** Detailed mission planning, when required, is generally accomplished at the geographic combatant commander level, with US Strategic Command assistance where appropriate. **Combatant commanders may also be tasked to develop adaptively planned options to strike previously unidentified targets.** Because the strike is meant to be decisive, it takes precedence over other missions.
- **After conflict occurs, combatant commanders may also be tasked to develop adaptively planned options to strike targets not previously identified.** Nuclear weapons planning is continuous and is fully integrated with planning for conventional weapons. **Each commander with a nuclear planning capability identifies and requests authorization to strike any targets necessary to accomplish the mission.** Individual nuclear target requests are further refined, approved, or disapproved and combined at each command echelon into an option or sub-option. Ad hoc planning can also use preplanned options as starting points and modify the preplanned option or sub-option given the situation actually experienced. **When recommendations from combatant commanders and the situation result in a Presidential decision to escalate the conflict to employment of nuclear weapons, specific guidance, including target identification, refinement, and constraints, along with selected number of weapons are released to the geographic combatant commander for employment.** If the decision is to disapprove escalation or employment of nuclear weapons, the planned strikes may be retained as a basis for further target planning or for strike by other weapons.
- **Joint nuclear operations are planned, coordinated, and controlled by the combatant commander.** Component commanders also plan and coordinate execution of their portions of the joint operation. **The possibility that conventional theater operations may escalate to use of nuclear weapons within the theater must be a key planning consideration.** Planning should consider enemy capabilities and intentions and the vulnerability of US forces to those capabilities. Planning should also encompass recommendations for response to an enemy first use of any weapon of mass destruction, a battlefield asymmetry, or an operational-level situation offering potential for conflict termination.

- **The planning and coordination of multinational military operations is extremely complex**, owing to differences in tactical and operational doctrine and the diversity of kinds of combat and combat support systems employed by the various national forces. **Nuclear operations will compound the complexity inherent in coalition operations. Standard combined nuclear operational procedures and terminology, organization of liaison teams, and combined training** must be developed and its use encouraged. Commanders must anticipate that combined theater nuclear operations will prove difficult to plan, coordinate, and execute but must be prepared to carry out these operations as directed by the NCA.
- Considerations for theater-level combined and joint planning are shown in Figure III-3.
- **Basic employment considerations are closely tied to the capabilities of assigned nuclear weapons systems** (assigned forces are those weapons, delivery systems, and supporting systems under the combatant command [command authority] of the combatant commander). **Dual-capable aircraft** can strike a variety of targets in the battle area as well as deep targets. **Sea- and air-launched cruise missiles** also provide the capability for nuclear strikes against targets of known location.

f. **Command and Control.** **The combatant commander has the pivotal role in deciding how best to employ NSNF.** For the combatant commander, **the key element in C2 is timing.** The pace of modern war dictates streamlined and efficient methods of C2. To facilitate timely decisionmaking, either in response to a combatant commander request or to support a “top-down” release,

the NCA must have the most current and available situation information and intelligence and must be familiar with the commander’s plans and options. Top-down communication does not mean the NCA should directly target nuclear weapons or conduct a piecemeal, weapon-by-weapon release. **Top-down communications ensure critical orders are received for execution** and can also be helpful in reducing survivability and vulnerability problems of C4I systems.

3. Offensive-Defensive Integration

a. **General.** **Offensive and defensive forces should be integrated to ensure interoperability. For integration to be successful, offensive and defensive forces should be doctrinally and procedurally linked.** Defensive systems include space warning and defense capabilities, air defense warning and interceptors, ballistic missile defense warning, and a worldwide Integrated Tactical Warning and Attack Assessment system. These systems, coupled with additional passive defense measures, offer a damage limitation potential to US warfighting capabilities. Active theater ballistic missile defense interception capabilities add an additional dimension to defense capability. **Defensive forces can directly support offensive forces in five important areas.**

- **In a strategic application, strategic defensive systems offer the potential of improving US deterrent posture** by increasing the enemy’s uncertainty of achieving its attack objectives.
- **In regional conflicts, missile defense offers protection against potential adversaries acquiring ballistic missile technology.** Although offense is necessary for retaliation and conflict control, defense may also play an

CONSIDERATIONS FOR THEATER LEVEL NUCLEAR PLANNING

- Theater level combined and joint planning of nuclear resources must include consideration and evaluation of certain basic parameters:
- The quantity of nuclear weapons available (nonstrategic nuclear force generation and reconstitution capabilities of the Services), characteristics of these weapons, and the delivery requirements to place them over approved targets at the correct time.
- The trade-off considerations on selection of delivery systems for nuclear weapons for specific targets; i.e., flexibility, mobility, mission survivability, availability, and competing mission requirements.
- Weapons and delivery systems that should be kept in reserve.
- The expected survivability and vulnerability of remaining and reserve assets.
- Deconfliction criteria and measures to prevent or reduce fratricide.
- Collateral damage restrictions consistent with target damage criteria.
- The magnitude and nature of follow-on conventional, nuclear, or mixed operations.
- The expected retaliation--conventional, nuclear,

Figure III-3. Considerations for Theater Level Nuclear Planning

important, complementary role in nonstrategic applications (e.g., irrational actor scenarios).

- **In a synergistic application, defenses allow a regional commander to**

consider employing offensive counterforce strikes on the enemy while enjoying some sense of security from catastrophic results if the enemy launches under attack.

- **Early warning forces include an integrated tactical warning and assessment capability**, providing the NCA with enough warning to maximize the survivability of US and allied forces. Deterrence is, therefore, enhanced because of the increased survivability of US retaliatory force.
- **Air defenses also serve to enhance our deterrent capabilities** by increasing the enemy's uncertainty that weapon systems will arrive at their targets.

b. **Integration.** Considerations are shown in Figure III-4.

- **Flight Corridors.** When strategic offensive nuclear forces launch, ballistic missiles and aircraft could be in the same flight corridors simultaneously. Blue-on-blue engagements over the friendly territory could affect both strategic aircraft and ICBM flyout. **Commanders should create and ensure strict adherence to flight plans through corridors that avoid potential enemy**

launch sites and defense intercept areas. This planning should include using alternate landing sites (in case the primary runway is under attack during the return flight) and (when friendly defenses are active) immediately identifying and transmitting ingress and egress routes. **These routes should avoid areas scanned by defenses to reduce potential execution against friendly aircraft.**

- **Land, Air, Sea and Special Operations Forces.** The employment of land, air, sea, and special operations forces into or through an area that has a high probability of having enemy nuclear warheads or nuclear delivery systems must be avoided to the maximum extent practical. These areas may be high-priority targets and, therefore, have the greatest potential for nuclear detonations as the result of attack operations or defensive intercepts.
- **Utilize Impact Point Prediction (IPP) Information.** Ground and space systems can provide the commander near-real-time IPP information following the launch of enemy missiles. Dependent on the location of forces, the commander can use the IPP data to move threatened forces or other targets, execute intercept of enemy missiles, or allow a missile to reach its predicted impact point when it is expected to detonate in a nonthreatening area (e.g., desolate, uninhabited land or waters).
- **Defended Assets and Enemy Targets.** A priority list for defended assets and enemy targets must be maintained. This list should help commanders in their decision process for employment of forces as resources are reduced over time in a conflict including execution of passive protection measures. (Based on these priorities, active defenses should be



Figure III-4. Offensive-Defensive Integration

deployed near the highest priority resources to maintain effective execution of offensive forces). **Priority lists for defended assets should include protection of C4 nodes, supply points, and population centers.**

- **Decision Timelines.** The decisionmaker may be required to review and select defensive and offensive actions within severely compressed timelines. Consideration must be given to procedures and equipment allowing informed decisions in this environment. Predelegated defensive engagement authority should be considered under certain conditions to permit efficient engagement of ballistic missile threats. **The commander must evaluate the situation, weigh the options, and execute the optimum offense-defense force in a relatively short period of time.** The time is limited because of the relatively short flight time of theater missiles (TM) and potential increased uncertainty of mobile offensive force target locations. Deployment of air defenses should be accomplished early enough to send an unmistakable signal of NCA concern and resolve, thereby maximizing the deterrent potential of these forces.

- **Employment Concepts**

- **Command.** Normally, unity of command is greatly desired. However, **strategic offense or defense integration may be a case where the United States must promote integrated operations without requiring absolute unity of command. Very short timelines impact decisions that must be made.** In a matter of seconds for the defense, and minutes for the offense, critical decisions must be made in concert with discussions with the NCA. It may be beyond the capability of one commander

to do this for both strategic offensive and strategic defensive forces. However, **force commonalities must be considered and conflicts avoided.** Nevertheless, the joint force commander should have access to near-real-time tradeoff analysis when considering the execution of any forces.

- **Independent Operations.** **Independent operations should be employed to maximize the output of the offense and defense.** Under situations where the offense and defense are not utilizing the same flight corridors or airspace, **independent operations will allow both forces freedom to execute operations without restriction.**

- **C4I linkages.** C4I linkages assets may be shared by both offense and defense to acquire information and get the execution orders to the forces. The offense and defense C4I nodes should maintain survivable (robust and redundant) communications with each other and be able to operate independently if enemy attacks eliminate individual nodes (for this reason, collocation of offense and defense nodes should be avoided). **In addition to providing warning of a nuclear attack and the data necessary to initiate a defensive response, defensive C4I systems also provide valuable information to update the offensive commander regarding counterforce targeting options.**

- **C4I systems and processing nodes.** Near-real-time data receipt and processing will be necessary to target the TM threats and their launchers (for counterforce actions). **Adequate surveillance systems and associated C4I systems are required** to provide timely warning of a bomber or cruise missile and ballistic missile attack.

Certain processing nodes will be required to analyze the proper intercept locations of launched enemy TMs and provide

tradeoff information to the decisionmaker if deconfliction is required between offensive and defensive forces.

OPERATION CROSSROADS

The atomic bomb tests conducted near Bikini Island in the Pacific following World War II were designed to gather weapons effects data that had been collected from neither the detonations at Hiroshima, Nagasaki, nor even the initial tests at Alamogordo. These tests were conducted to examine the effect of an atomic explosion on equipment and personnel at sea.

An agency created by the Joint Chiefs of Staff called Joint Task Force One accomplished OPERATION CROSSROADS in July 1946, undoubtedly the most elaborate of scientific tests that had yet been attempted. As such, Joint Task Force One, made up of Army and Navy groups, pioneered the solution to many new problems.

Choice of site was one of the biggest problems. A number of relatively near-at-hand sites in the Atlantic, the Caribbean, and the nearer parts of the Pacific satisfied many of the requirements, but none of these satisfied all of the requirements. What was needed was:

- A protected anchorage at least six miles in diameter. (It must contain not only the enormous target fleet but also the even larger supporting fleet.)
- A site which was uninhabited, or nearly so. (All inhabitants would have to be evacuated.)
- A location at least 300 miles distant from the nearest city. (Radioactive materials released in the air might menace persons scores of miles to leeward.)
- A location within 1000 miles of a B-29 base. (The airburst bomb was to be delivered by a B-29 bombing plane.)
- Freedom from severe cold and violent storms.
- Predictable winds directionally uniform at all altitudes from sea level to 60,000 feet. (There must be no chance that the radioactive materials carried high into the air could be wafted back over the task force personnel by a fluke counter-wind.)
- Predictable water currents of great lateral and vertical dispersion; fast currents avoiding important fishing areas, steamer lanes, inhabited shores. (Radioactive materials released in water must be dispersed reasonably rapidly, and without harm to persons or to the fishing industry.)
- Control by the United States.

SOURCE: Shurclif, W.A., Historian of Joint Task Force One, Bombs at Bikini, The Official Report of Operation Crossroads, Wise & CO, 1947

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APPENDIX A

TREATY OBLIGATIONS

1. Outer Space Treaty

Prohibits the placement, installation, or stationing of nuclear weapons in orbit around the earth, in outer space, or on celestial bodies. Suborbital nuclear missiles are not prohibited by this treaty. Withdrawal provision (Article XVI) requires 1 year prior written notice.*

2. Seabed Arms Control Treaty

Prohibits placement of nuclear weapons (nuclear launching devices, storage or testing facilities) on the ocean floor beyond a 12-nautical-mile coastal zone measured from the baseline of the territorial sea, as stated in the Convention of the Territorial Sea and the Contiguous Zone of 1958. Withdrawal provision (Article VIII) requires 3 months advance notice.*

3. Nuclear Test Ban Treaty

Prohibits testing of nuclear weapons in the atmosphere, outer space, and underwater (including territorial water or high seas). Restricts underground testing to the extent that radioactive debris would pass outside the testing state. Withdrawal provision (Article IV) requires 3 months advance notice.*

4. Nonproliferation Treaty

Prohibits nuclear states from passing nuclear weapons, weapons technology, and weapons grade fissionable material to nonnuclear states. Transfer of fissionable material to nonnuclear states for peaceful purposes is subject to safeguards to prevent diversion of the material into weapons development. Withdrawal provision (Article X) requires 3 months advance notice.*

5. Additional Protocols I and II of the Treaty of Tlatelolco

This treaty and its protocols essentially make Latin America a nuclear-free zone. The United States is not a party to the original treaty and ratified the Protocols subject to “understandings and declarations.” Withdrawal provisions in Protocol I, Article 2, and Protocol II, Article 4, incorporate the denunciation provision in Article XXX of the original treaty.*

6. Antarctic Treaty

Prohibits establishment of military bases, fortifications, maneuver, any testing of any type of weapons, including nuclear, or disposal of nuclear wastes in Antarctica. Limited withdrawal provision (Article XII) requires 2 years notice.*

7. Bilateral Nuclear Arms Control Agreements

The United States and the former Soviet Union have concluded a number of bilateral agreements designed to restrain the development of nuclear warheads and launchers and to lessen the danger of miscalculation that could trigger nuclear conflict. Among these agreements are the:

- a. Direct Communication MOU of 1963.
- b. Direct Communication Agreement of 1971.
- c. Accidents Measures Agreement of 1971.
- d. 1973 Agreement on Prevention of Nuclear War.

e. Anti-Ballistic Missile Treaty of 1972 and its Protocol of 1974.

Bush and Gorbachev on 31 July 1991; agreement awaits full ratification and entry into force.

f. Threshold Test Ban Treaty of 1974.

Additionally, some US military basing rights agreements restrict the storage or installation of nuclear weapons in the host country.

h. Strategic Arms Limitations Talks (SALT) Agreement of 1973 and 1977 (SALT I, Interim Agreement has expired; SALT II was never ratified).

* Withdrawal provisions of the identified agreements permit a state to denounce its treaty obligations if it decides that extraordinary events, related to the subject matter of any treaty, have jeopardized the supreme interests of the state. In time of conflict, or impending conflict, a state party to these treaties may take steps to begin the withdrawal process.

i. Intermediate-range Nuclear Forces Treaty of 1987.

j. Strategic Arms Reduction Talks (START) Agreement: Signed by Presidents

APPENDIX B

REFERENCES

The development of Joint Pub 3-12 is based upon the following primary references:

1. Joint Pub 0-2, “Unified Action Armed Forces (UNAAF).”
2. Joint Pub 1-02, “DOD Dictionary of Military and Associated Terms.”
3. Joint Pub 3-0, “Doctrine for Joint Operations.”
4. NUWEP, “Guidance for the Employment of Nuclear Weapons”
5. Joint Strategic Capabilities Plan—Annex C (Nuclear).
6. National Military Strategy Document—Annex B (Nuclear).
7. SIOP-(YR) (Basic).

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APPENDIX C

ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to the Joint Warfighting Center, Attn: Doctrine Division, Fenwick Road, Bldg 96, Fort Monroe, VA 23651-5000. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

The lead agent for this publication is the US Strategic Command. The Joint Staff doctrine sponsor for this publication is the Director J-5, Strategic Plans and Policy.

3. Supersession

This publication supersedes Joint Pub 3-12, 29 April 1993, "Doctrine for Nuclear Operations."

4. Change Recommendations

- a. Recommendations for urgent changes to this publication should be submitted:

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Routine changes should be submitted to the Director for Operational Plans and Interoperability (J-7), JDD, 7000 Joint Staff Pentagon, Washington, D.C. 20318-7000.

- b. When a Joint Staff directorate submits a proposal to the Chairman of the Joint Chiefs of Staff that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal. The Military Services and other organizations are requested to notify the Director, J-7, Joint Staff, when changes to source documents reflected in this publication are initiated.

- c. Record of Changes:

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GLOSSARY

PART I—ABBREVIATIONS AND ACRONYMS

C2	command and control
C4	command, control, communications, and computers
C4I	command, control, communications, computers, and intelligence
ICBM	intercontinental ballistic missile
IPP	impact point prediction
JSCP	Joint Strategic Capabilities Plan
NCA	National Command Authorities
NSNF	nonstrategic nuclear forces
SLBM	sea-launched ballistic missile
TM	theater missile
WMD	weapons of mass destruction

PART II—TERMS AND DEFINITIONS

allocation (nuclear). The apportionment of specific numbers and types of nuclear weapons to a commander for a stated time period as a planning factor for use in the development of war plans. (Additional authority is required for the actual deployment of allocated weapons to locations desired by the commander to support the war plans. Expenditures of these weapons are not authorized until released by proper authority.) (Joint Pub 1-02)

command, control, communications, and computer systems. Integrated systems of doctrine, procedures, organizational structures, personnel, equipment, facilities, and communications designed to support a commander's exercise of command and control, across the range of military operations. Also called C4 systems. (Joint Pub 1-02)

crisis. An incident or situation involving a threat to the United States, its territories, citizens, military forces, possessions, or vital interests that develops rapidly and creates a condition of such diplomatic, economic, political, or military importance that commitment of US military forces and resources is contemplated to achieve national objectives. (Joint Pub 1-02)

nuclear coordination. A broad term encompassing all the actions involved with planning nuclear strikes, including liaison between commanders, for the purpose of satisfying support requirements or because of the extension of weapons effects into the territory of another. (Joint Pub 1-02)

nuclear planning and execution. Worldwide Military Command and Control System application systems that support strategic and tactical nuclear planning, execution, termination, and reconstitution. (Joint Pub 1-02)

Nuclear Planning System. A system composed of personnel, directives, and electronic data processing systems to directly support theater nuclear combatant commanders in developing, maintaining, and disseminating nuclear operation plans. (Joint Pub 1-02)

proliferation (nuclear weapons). The process by which one nation after another comes into possession of, or into the right to determine the use of nuclear weapons, each potentially able to launch a nuclear attack upon another nation. (Joint Pub 1-02)

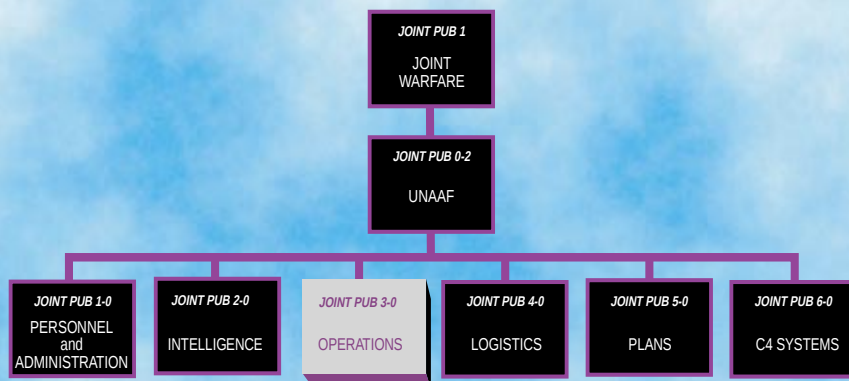
residual forces. Unexpended portions of the remaining United States forces that have an immediate combat potential for continued military operations, and that have been deliberately withheld from utilization. (Joint Pub 1-02)

theater missile. A missile, which may be a ballistic missile, a cruise missile, or an air-to-surface missile (not including short-range, non-nuclear, direct fire missiles, bombs, or rockets such as Maverick or wire-guided missiles), whose target is within a given theater of operation. (Joint Pub 1-02)

weapons of mass destruction. In arms control usage, weapons that are capable of a high order of destruction and/or of being used in such a manner as to destroy large numbers of people. Can be nuclear, chemical, biological, and radiological weapons, but excludes the means of transporting or propelling the weapon where such means is a separable and divisible part of the weapon. (Joint Pub 1-02)

withhold (nuclear). The limiting of authority to employ nuclear weapons by denying their use within specified geographical areas or certain countries. (Joint Pub 1-02)

JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint doctrine and tactics, techniques, and procedures are organized into a comprehensive hierarchy as shown in the chart above. **Joint Pub 3-12** is in the **Operations** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

