TACTICAL NUCLEAR PLANNING CONSIDERATIONS--

RECENT PERSPECTIVES

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

J. H. McWHIRTER JR., LTC, USA
B.S., North Georgia College, 1957

Fort Leavenworth, Kansas
1976
Document Title: Tactical Nuclear Planning Considerations--Recent Perspectives.

AD Number: ADA029792
Subject Categories: GOVERNMENT AND POLITICAL SCIENCE
Corporate Author: ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH KANS
Title: Tactical Nuclear Planning Considerations--Recent Perspectives.
Descriptive Note: Final rept.,
Personal Authors: McWhirter, Julian H., Jr;
Report Date: 11 JUN 1976
Pages: 72 PAGES
Supplementary Note: Master's thesis.
Descriptors: *NUCLEAR WEAPONS, *WARFARE, *POLITICAL SCIENCE, *MILITARY PLANNING, FOREIGN POLICY, USSR, NATO, UNITED STATES GOVERNMENT, DECISION MAKING, DAMAGE ASSESSMENT, THESES, INTERNATIONAL RELATIONS, WEST GERMANY, WESTERN EUROPE, NUCLEAR WARFARE CASUALTIES.

Abstract: Approval to use nuclear weapons in some future war may require careful planning. One of the National Command Authority's concerns in the event of another war in Europe is collateral damage resulting from nuclear weapons use. The United States Army policy for the constrained use of nuclear weapons emphasizes this national concern. This study attempts to determine the planning factors which should be considered by a corps commander before he requests approval to make the initial use of nuclear weapons in Europe. The investigation is focused on an analysis of current United States and NATO policies, doctrine, and procedures.

Limitation Code: APPROVED FOR PUBLIC RELEASE
Source Code: 037260
Name of candidate: Julian Hubert McWhirter Jr., LTC, USA
Title of thesis: Tactical Nuclear Planning Considerations--Recent Perspectives

Approved by:

[Signature]
Research Advisor
[Signature]
Member, Graduate Research Faculty

Accepted this 12th day of May 1976 by
Director, Master of Military Art and Science.

The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the U.S. Army Command and General Staff College or any other governmental agency.
ABSTRACT

Approval to use nuclear weapons in some future war may require careful planning. One of the National Command Authority's concerns in the event of another war in Europe is collateral damage resulting from nuclear weapons use. The United States Army policy for the constrained use of nuclear weapons emphasizes this national concern.

This study attempts to determine the planning factors which should be considered by a corps commander before he requests approval to make the initial use of nuclear weapons in Europe. The investigation is focused on an analysis of current United States and NATO policies, doctrine, and procedures.

Investigation reveals that peacetime planning for the use of tactical nuclear weapons should be done and that current procedures may require modification if adequate plans are to be prepared. Further examination discloses that peacetime plans based on national and NATO command authorities' policy guidance may provide the principal information from which to prepare a justification for the use of nuclear weapons.
TABLE OF CONTENTS

ABSTRACT ............................................................................................................. 11

CHAPTER

1. INTRODUCTION ............................................................................................. 1
   BACKGROUND .................................................................................................. 1
   PROBLEM .......................................................................................................... 2
   SCOPE ................................................................................................................ 2
   METHODOLOGY ............................................................................................... 3
   METHODOLOGY FLOW CHART ........................................................................ 6
   NOTES ................................................................................................................. 7

2. POLICY ............................................................................................................. 8
   GENERAL .......................................................................................................... 8
   NORTH ATLANTIC TREATY ORGANIZATION ............................................ 8
   UNITED STATES OF AMERICA ...................................................................... 15
   FEDERAL REPUBLIC OF GERMANY .......................................................... 16
   UNION OF SOVIET SOCIALIST REPUBLICS ............................................. 18
   CONCLUSIONS ................................................................................................. 19
   NOTES ................................................................................................................. 21

3. DOCTRINE ..................................................................................................... 24
   GENERAL .......................................................................................................... 24
   CONSTRAINTS .................................................................................................... 24
   TARGETING CONCEPTS .................................................................................. 26
   PLANNING ......................................................................................................... 27
   RELEASE REQUESTING .................................................................................. 29
CHAPTER 1

INTRODUCTION

Background

From its inception, the aim of the defense policy of the North Atlantic Alliance has been deterrence of war. Since the North Atlantic Treaty Organization (NATO) conventional military strength in Europe was inferior to that of the Russians, an alliance strategy that threatened immediate NATO retaliation against any form of attack seemed to be the only way to achieve this aim. Because of this situation, the strategy of massive nuclear retaliation evolved.¹

Even though the NATO conventional strength was inferior, the importance of having a conventional option with a large ground force was recognized. This goal was too ambitious to be achieved and in 1959 the United States began deployment of tactical nuclear weapons to Europe. The conventional forces which were raised and stationed in Europe, as well as the tactical nuclear forces available to the NATO commander, were designed to hold against only minor incursions and to serve merely as a "trip wire" that would trigger the American strategic nuclear force. This concept for NATO defense continued to place great reliance on nuclear weapons.²

In 1961, the Kennedy Administration came to power with a group of decisionmakers and defense planners determined to emphasize the conventional aspects of the defense of Western Europe. The realization that a large-scale attack on NATO was not the most likely danger
and that both sides had the capability to survive a nuclear first strike and destroy important areas of an opponent's territory with nuclear weapons brought about yet another change in Alliance deter- rences policy.\textsuperscript{3}

In 1967, the strategy of "flexible response" was adopted by the NATO ministers.\textsuperscript{4} This defense concept, the most recent of the three developed since the inception of the North Atlantic Alliance, will be discussed more fully in chapter 2.

The ideas of how to implement the strategy of flexible response have been evolving and changing since 1967. As an example, in May 1973, the Chief of Staff approved a new United States Army policy for constrained use of nuclear weapons. Prior to this time, United States Army field manuals supported an unconstrained use of nuclear weapons.\textsuperscript{5}

Problem

The problem is to identify the factors (based on current United States and/or NATO policies, doctrine, and/or procedures) which should be considered by a United States Army corps commander (who has a sector of responsibility in Germany) before requesting authority to make the initial employment of nuclear weapons during a conventional war in which NATO countries are involved.

Scope

This thesis is an unclassified paper based on information which became available before 1 January 1976. Research was limited to the boundaries given in the problem statement.
United States Army doctrine and procedures are passing through a transition from unconstrained use of nuclear weapons to constrained use. Continued research of additional new information will be required to keep the conclusions of this paper current.

Additional research could identify factors which would apply to our Navy and Air Force commanders in NATO. Further study could determine the factors which would apply to all military services worldwide.

Because nuclear weapons can also be requested by allied commanders research could be done to determine factors which would apply to such a request.

Methodology

The methodology used in conducting the research and analysis for this thesis is summarized in the chart on page 6. For brevity, minimum essential information was placed in the flow chart.

A search of bibliographies, catalogs of abstracts and periodicals, as well as card catalogs was conducted to identify possible sources. In addition to these reference sources, indexes of field manuals, army regulations and Joint Chiefs of Staff publications were examined. Since much of the new Army information is still emerging, heavy reliance was placed on draft documents and conversations with knowledgeable personnel assigned to the Combined Arms Center, Fort Leavenworth, Kansas.

When a possible source was identified, it was examined to determine if it suggested other possible sources. Information in
source documents was subjected to a selection process to determine if it should be included in the thesis. The selection criteria consisted of the following:

First, did the source contain information which applied to the current United States and/or NATO policies, doctrine, and/or procedures regarding the constrained use of tactical nuclear weapons during a conventional war involving NATO countries? For the purposes of this thesis, tactical nuclear weapons were considered to be those delivery systems and their warheads normally considered to compose the NATO theater nuclear forces.

Second, did the source contain information which applied to United States Army's use of tactical nuclear weapons in Germany? This criteria focused attention on the NATO country where United States Army corps are currently stationed. Development of factors for other parts of NATO, while important, would probably be of lesser interest at this time to the United States Army.

Information which met these two standards was used. Where multiple sources said or implied the same information, only one source was noted. In an effort to provide the reader with the best set of references, the source stating the information in the clearest manner was noted. All sources, even though not noted, were listed in the bibliography.

The information selected for incorporation in this thesis was analyzed. The purpose of this analysis was to determine factors by answering the question:

Does current United States and/or NATO policies, doctrine, and/or procedures indicate that a United States Army corps commander in Germany
should consider this information prior to requesting authority to make
the initial employment of nuclear weapons. The search was for factors
that were explicitly stated in or implied by the source. The factors
thus identified and analyzed constituted the primary results or con-
clusions of this paper. For the purposes of this thesis, a factor was
considered to be a United States and/or NATO policy, military doctrine,
and/or technical fact regarding tactical nuclear weapons and their
effects which may have an effect on the decision to request approval
to make the first use of nuclear weapons.

Once the noted information was analyzed and the factors deter-
mined, it only remained to correlate the information, discussion and
conclusions (factors) in a meaningful manner.

The extracted and analyzed information was organized into three
major groupings, based on whether the information pertained to policy
(Chapter 2), doctrine (Chapter 3), or procedures (Chapter 4). Within
each of these three chapters there is an introduction giving an over-
view of the chapter. Succeeding sections with each chapter present
the selected information. The final section draws all identified
factors together in the chapter conclusions. The final chapter (5)
provides any analysis required to clearly summarize the conclusions
of the preceding three chapters and presents the factors which should
be considered by a United States Army corps commander before requesting
authority to make the initial employment of tactical nuclear weapons
during a conventional war in which NATO countries are involved.
**Methodology Flow Chart**

1. **Conducted Literature Search.**
2. **Identified Possible Sources.**
3. **Did a Possible Source or Its Bibliography Suggest Additional Sources?**
   - Yes
   - No
4. **Evaluated Sources Against the Selection Criteria:** Did the source contain information which applied to current United States and/or NATO policies, doctrine, and/or procedures regarding the constrained use of tactical nuclear weapons during a conventional war involving NATO countries?
   - Yes
   - No
   - Eliminated
5. Did the source contain information which applied directly or by implication to United States Army use of tactical nuclear weapons in Germany?
   - Yes
   - No
   - Eliminated
6. **Extracted Information Which Met the Above Criteria.**
7. **Analyzed the Extracted Information Against the Question:** Does current United States and/or NATO policies, doctrine, and/or procedures indicate that a United States Army corps commander, with a sector of responsibility in Germany, should consider this information before he requests authority to make the initial employment of tactical nuclear weapons during a conventional war involving NATO countries?
   - Yes
   - No
   - Not a Factor
8. **Factor. The Factors Thus Identified Constituted the Primary Results or Conclusions of This Paper.**
9. **Incorporated the Information, Analysis, and Factors in the Thesis.**
10. **Searched for Additional Information.**
CHAPTER 1

NOTES


4Ibid., p. 92.

5U. S., Department of the Army. Headquarters United States Army Training and Doctrine Command, Tactical Nuclear Doctrine, Letter with inclosures (Fort Monroe, Virginia, 12 December 1975). As reprinted in:

CHAPTER 2

POLICY

General

The United States and North Atlantic Treaty Organization (NATO) policies and philosophies are intertwined. This close alignment and a strong military force are necessary to the deterrence objective of NATO.

The United States has positioned two army corps and tactical nuclear weapons in the Federal Republic of Germany. The use of these nuclear weapons might cause a drastic change in the form of conventional warfare. What factors must a United States Army corps commander consider before requesting permission to make the initial use of nuclear weapons in a conventional war involving NATO countries? Information drawn from source documents will be presented in four sections (NATO, United States, Federal Republic of Germany, and Union of Soviet Socialists Republics) in an effort to answer this question. Each section will close with a brief summary. These summaries will be used to draw the chapter conclusions.

North Atlantic Treaty Organization

There is no clear division between the military and the political business of the NATO Alliance anymore than there is in national affairs. This is particularly true today, so that ministers may make
their decisions in the knowledge that Alliance military plans and posture are based on political realities.¹

During the 1950's, deterrence of conflict by NATO was based on the threat of nuclear reprisal to any military aggression. The inflexibility of this deterrent strategy became apparent. Thus, NATO began to shift toward a strategy of "flexible response" based on a spectrum of defensive alternatives which depend on a triad of conventional, theater nuclear, and strategic nuclear forces.² The most important of these elements is an effective conventional force.³

Agreed policy developed by the United States and her NATO allies show a considerable understanding of deterrence and doctrine for the possible use of nuclear weapons. The primary documents developed through detailed study and consultation are:

1. The Athens Guidelines (1962), which provides assurance that the United States and the United Kingdom will make available nuclear weapons to meet the needs of the NATO defense.


5. Political guidelines for the employment of atomic demolition munitions (1970).⁴

The NATO defensive concept is to preserve peace by establishing a credible deterrent military force supported by a clear willingness to escalate to nuclear operations if necessary. Credible deterrence requires that a potential enemy clearly perceive that any attack against NATO would encounter a formidable defense supported by the capability
to inflict unacceptable damage by nuclear operations against the aggressor's homeland. The capacity of NATO forces to deter or limit war is enhanced by nuclear weapons, but their greater lethality will increase the possibility of causing self-inflicted losses, collateral damage, obstacles to future military operations, and unwanted escalation. These concerns can be minimized by careful selection of nuclear weapons and targets.

Decisionmakers may be deterred in their use of nuclear weapons by what they know about them as well as what they do not know. They know that nuclear weapons could make a war different from any other in the history of mankind. Nuclear weapons could make the war more destructive than any other and could also reduce the time for decisionmaking which may have significant consequences for mankind. Weapons which are feared and abhorred are much less likely to be used automatically in response to any kind of signal. Someday a nation might decide to engage in nuclear warfare. She might even claim victory at the conclusion of the war; but, that country may also find that it cannot afford another victory. Nuclear war must be conducted in such a manner that win and lose will be concepts with a sensible application to the results of such a war. As a consequence, nuclear weapons and their delivery systems are national weapons as much as military ones. The final decision on first use of nuclear weapons will be at the national level and probably made as the result of military recommendations.

Should deterrence fail, one of the first military strategy considerations should be to minimize collateral damage.* The better

---

*Collateral damage is the unwanted loss of civilian lives and destruction of property which occurs while achieving desired effects on military targets.
this is done the more credible will be NATO's use of nuclear weapons on its own territory. Targeting procedures of the Supreme Allied Commander Europe (SACEUR) are intended to limit the collateral damage from use of NATO nuclear weapons. In the interest of minimizing collateral damage, nuclear weapons will be used only if necessary. This policy on the part of NATO will not deter their intent to use nuclear weapons in retaliation or to prevent "major" loss of NATO forces, territory, and/or public and private property.

The use of tactical nuclear devices may be impossible in Western Europe or in most continental areas without extensive collateral damage to nonmilitary targets and the civilian population. Collateral damage most often occurs from heat, blast, initial nuclear radiation and fallout radiation. The latter occurs principally from the use of atomic demolition munitions (AIMs). Other United States nuclear weapons are generally planned for employment at an altitude which precludes significant fallout radiation. There is no practical way to avoid civilian casualties or damage to private property and public facilities. People move on the same roads, seek protection in the same shelters and find themselves caught in the same target areas as military personnel. Many of the things which would be destroyed, representing years of history and culture, would be irreplaceable. It should be remembered, however, that the Warsaw Pact countries may not match NATO's concern over collateral damage.

NATO must be able to counter military aggression of any kind, cause the aggressor political leaders to reevaluate their changes for early victory, and create a situation conducive to negotiations. An adequate force of tactical nuclear weapons in Western Europe may
deter the Soviets from initiating a conflict with the use of nuclear weapons by linking credible conventional force capabilities with the incredible employment of strategic nuclear weapons. Escalation to general nuclear war could endanger the survival of the state.

The NATO initial limited use of nuclear weapons carries a grave risk of escalation and should be considered only when the consequences of conventional defeat would be worse than the dangers and consequences of NATO initial use of nuclear weapons. But selective and limited tactical use of nuclear weapons should not be deferred until NATO's conventional defenses are in a desperate position. NATO can control the size and scope of its first nuclear action while at the same time attempting to achieve its goals. The NATO first use of nuclear weapons should be effective enough to prevent extensive deterioration of the military situation and determined enough to show a willingness to move to higher levels of nuclear violence if necessary. Escalation to a higher level of conflict may be lessened if the Warsaw Pact leaders perceive dim prospects for achieving their objectives by further escalation of the conflict. This perception may cause them to cease their aggression and withdraw from NATO territory. Quick termination of the conflict on terms acceptable to NATO should then follow. Successful implementation of this NATO strategy will require National Command Authority control of nuclear forces.

The purpose of the first nuclear strike will not be interpreted by the intent of the sender but by the perception of the receiver. The one being attacked will decide the level of response and the degree of escalation. If unacceptable escalation is to be avoided as a result of NATO's use of nuclear weapons, the enemy must
without any doubt perceive the attack as limited. Theater nuclear forces constitute a lowered risk of escalation since they do not pose a major threat to the Soviet homeland. Their use would be less escalatory than the use of strategic nuclear forces. It is judged that short-range nuclear artillery has even less chance of resulting in theater nuclear war than longer-range surface to surface missiles (SSMs) or tactical aircraft. This opinion should be considered by commanders when making decisions on what nuclear weapons to select for first use. Atomic demolition munitions, being defensive in nature and most likely to be used on NATO territory, probably have lower escalation potential than most other theater nuclear weapons. These munitions may also cause collateral damage in the form of fallout. This effect of atomic demolition munitions may or may not be acceptable to NATO.

The enemy's ability to communicate and operate should not be jeopardized. Major command and control headquarters as well as second echelon or deeper reserves and general support nuclear capable delivery means should be avoided. The first nuclear attack against the enemy should be aimed at his leading elements and immediate reserves. Since the most threatening enemy targets should be engaged with theater nuclear forces, adequate target acquisition will be required. To be successful, target acquisition must have sufficient accuracy for the nuclear weapon system to be used and be accompanied by communications capable of passing necessary information in a timely manner.

Summary

The North Atlantic Alliance members are closely tied together by their international and national policies, political philosophies
and concern about a possible future war. In the event of a war involving NATO, those member nations on whose soil the war would be fought will be vitally concerned.

The introduction of nuclear weapons into a war is generally anticipated to cause a change in the form of conventional warfare. Nuclear devices will be considered national weapons and the ultimate NATO decision on their release and use will be made by the national leaders of the North Atlantic Alliance.

Use of nuclear weapons is generally considered to be an escalation of the war and may be approved only when conventional defeat would be worse than the consequences of NATO's initial use of nuclear weapons. Extensive collateral damage will be unacceptable if the results of war are to have a sensible meaning.

NATO may make the first use of nuclear weapons. The primary objective for the initial use would be the rapid termination of the war on terms acceptable to NATO. The first use of nuclear weapons should stop the enemy military force, allow further options by National Command Authorities, and show that NATO is willing to escalate the war if necessary. This selective use of nuclear weapons should be made while NATO's conventional defenses are strong enough to continue fighting without additional nuclear weapons.

The receiver of a nuclear strike decides the level of response and the degree of escalation. To achieve NATO objectives, the enemy must clearly perceive the initial nuclear attack as defensive and limited. Careful selection of targets, nuclear weapons, and shorter-range airburst delivery systems may provide the lowest risk of escalation.
The United States will make available appropriate nuclear weapons to meet the needs of NATO defense. The following types of United States nuclear weapons systems are available to NATO and could be incorporated in the planning of a corps commander.

1. Artillery—8 inch and 155 MM.
2. Short-range surface to surface missiles (SSMs)—LANCE, Sergeant and Honest John. The latter two are being replaced by the first throughout much of NATO.
3. Atomic demolition munitions (ADMs).
4. Nuclear air defense systems—Nike Hercules and aircraft.
5. Long-Range SSMs—Pershing.
6. Air delivered bombs—Air Force or Navy.
7. Submarine launched ballistic missiles (SLBMs).

Weapons for the above systems can be released for use in NATO only by the President of the United States, and then only after appropriate consultation with NATO allies. Once the decision to employ nuclear weapons for the defense of NATO is made, Supreme Allied Commander Europe and the NATO governments would be notified simultaneously.

The primary United States objective for the use of nuclear weapons is the rapid termination of the war on terms acceptable to the United States and its allies. Any use would be kept to the lowest feasible level of conflict consistent with the above objective. This objective is consistent with the NATO policy on deterrence and the possible use of nuclear weapons.
United States strategic nuclear forces as part of the NATO
Triad of conventional, theater nuclear, and strategic nuclear forces
are coupled to deterrence of an attack on NATO. Plans are available
for a wide range of optional uses of these forces in support of
European defense.43

Summary

All nuclear weapons systems available to NATO should be con-
sidered when deciding what nuclear weapons will best accomplish the
mission. United States nuclear weapons for use by NATO can be released
only by the President of the United States and then only after appro-
priate consultation with the other North Atlantic Alliance allies. If
released, the primary United States objectives for the initial use of
nuclear weapons would be the rapid termination of the war on terms
acceptable to the United States and her NATO allies. The President of
the United States may place constraints on the use of nuclear weapons.
Constraints and release procedures are more fully discussed in Chapter
3.

Federal Republic of Germany

Failure of deterrence will first victimize German territory.44

The possibility of unacceptable collateral damage resulting from the
use of tactical nuclear weapons is one of the underlying considerations
influencing West German political opinion on tactical nuclear defense.45
Germany, its people and property can be effectively destroyed by the
collateral damage effects of tactical nuclear weapons: The defense of
Europe with nuclear weapons must be done in such a way that upon the
conclusion of the war, the peoples of West Germany and their property
will not have been destroyed.46

One German general proposes that cleaner and lower yield nuclear
weapons, "mini-nukes," be developed in an effort to greatly reduce
collateral damage. He further proposes that these devices not be con­sidered nuclear weapons; and that they not be subject to the national
constraints on the use of nuclear weapons.47 This is a view expressed
to justify further development and planned use of these weapons. But,
will the nation who is the object of these "mini-nukes" abide by this
philosophy and not escalate the war with larger and dirtier nuclear
weapons.48

West Germans are grudgingly, but realistically, turning their
military thinking to the defensive role of tactical nuclear weapons.
German military planners are urging that any major invasion be met
early with tactical nuclear weapons as a compliment to conventional
firepower.49 If this early use fails to bring the war to a quick and
satisfactory conclusion, West Germany sees the need to couple the de­fense of NATO to the use of United States strategic nuclear weapons
in hopes of avoiding the destruction of West Germany.50

The West Germans feel that escalation from limited use to theater
nuclear war is inevitable and that maintaining levels of nuclear use
is unrealistic. Furthermore, weapons that might be viewed as tactical
to the United States might just as well be viewed as strategic to West
Germany and the Warsaw Pact. The only meaningful firebreak becomes the
one between conventional and nuclear war.51
Summary

West Germans are concerned with the fate of their country and massive casualties among their civilians. Extensive collateral damage will be unacceptable. Win and lose must be concepts with a sensible application to the results of war. Nuclear forces in Europe must be carefully applied so that at the conclusion of the war they will not have destroyed what they were trying to protect.

Union of Soviet Socialist Republics

The Soviet military doctrine does not subscribe to a strategy of gradual nuclear response. The relative indiscriminate nature of the Russian tactical nuclear arsenal of approximately 3,500 warheads, virtually precludes the kind of selective targeting and minimization of collateral damage that are the key features of restrained tactical nuclear warfare. Russia does not foresee the possibility of limited nuclear weapons use, but this use is fraught with the danger of escalation.

Nuclear war in Europe is seen as likely and Soviet doctrine contends that the side which first employs nuclear weapons with surprise can favorably predetermine the outcome of the war. Warsaw Pact military forces are trained and prepared to exploit the large scale use of theater nuclear forces. If the Warsaw Pact believes NATO is about to launch a nuclear attack against the Warsaw Pact forces, it will try to strike NATO military targets first with a massive concentration of nuclear and conventional firepower. Then follow with major armor thrusts against the disrupted and demoralized NATO forces.

Russian military doctrine may or may not be followed by Soviet political leaders. But, since the Warsaw Pact military forces are
trained to fight in a major nuclear war, the Soviet political leaders have the NATO political leaders in a quandary—Will the Soviet Union resort to theater nuclear war in Europe to accomplish its political objectives? NATO determination to use necessary force in the past has caused Soviet leaders to act with caution. 57

Summary

The Soviets are prepared to fight a major nuclear war and may even make a preemptive nuclear strike if they determine that NATO intends to resort to the use of nuclear weapons. Russian military thinking questions the possibility of gradual nuclear escalation and the tactical nuclear arsenal available to Russia virtually precludes the kind of selective targeting and minimization of collateral damage that are features of constrained tactical nuclear warfare.

Conclusions

Should deterrence fail, nuclear weapons could be used. Controlled escalation of a conflict is desired but may not be obtainable. Therefore, the only meaningful distinction in the form of warfare is the one between conventional and nuclear war. Nuclear devices are national weapons and the ultimate decisions on their use will be made by the President of the United States and the other national leaders of the North Atlantic Alliance.

Initial use of nuclear weapons may be escalatory and should be considered only when conventional defeat would be worse. Nuclear force in Europe must be carefully applied since extensive collateral damage will be unacceptable.
If NATO made first use of nuclear weapons, the primary objective would be the rapid termination of the war on terms acceptable to the United States and NATO. The first use of nuclear weapons should be effective enough to prevent extensive deterioration of the military situation, limited enough to allow further options later if required, and determined enough to show that NATO is willing to move to higher levels of nuclear violence if necessary. Decisions on this selective and limited tactical use of nuclear weapons cannot be deferred until NATO's conventional defenses are in a desperate position.

The possible Soviet and Warsaw Pact responses to NATO's use of nuclear weapons must be considered. In order to achieve NATO and United States objectives, the Warsaw Pact countries must perceive an initial nuclear attack as defensive and limited.

A corps commander must justify the absolute need for nuclear weapons and identify the actions he intends to take to demonstrate that the initial use is clearly limited, defensive, and avoids extensive collateral damage. Failure to properly justify his request may result in its denial or, pending receipt of additional information, an unacceptable delay in approval.
CHAPTER 2

NOTES


2. U. S., Department of the Army, Headquarters United States Army Training and Doctrine Command, Latest TRADOC version of Tactical Nuclear Operations chapter for FM 71-100, undated. As modified (December 1975) by LTC W. V. Murry, Doctrine Section, Department of Tactics, OSGC, p. 4-1.


   As reprinted in:


   As reprinted in:


14 Ibid., p. 12.


17 Ibid., p. B-55.

18 Santilli, Joseph F., Jr., LTC, loc. cit., p. 17.


23 Ibid., p. ll.


28 Scott, John F., op. cit., p. 52.


31 Ibid., p. 4.

32 Ibid., p. 2.

33 Ibid., p. 5.


Ibid., pp. 17-18.


Ibid., pp. 5, 16-17.

Ibid., p. 17.

Ibid., p. 8.

Ibid., p. 12.

Ibid., p. 33.

Davidson, Charles N., op. cit., p. 47.

Ibid., p. 54.


Davidson, Charles N., op. cit., p. 51.

Ibid., p. 53.


Record, Jeffrey, op. cit., p. 11.


Record, Jeffrey, op. cit., p. 10.


Ibid., pp. 10-11.
CHAPTER 3

DOCTRINE

General

The United States Army has adopted the doctrine of constrained use of nuclear weapons. As a result of this action, what factors must a United States Army corps commander now consider in preparing for the employment of nuclear weapons? Information drawn from the most recent source documents available will be presented in five sections (constraints, targeting concepts, planning, release requesting and release) in an effort to answer this question. Each section will close with a brief summary. These summaries will be used to draw the chapter conclusions.

Constraints

The tactical employment of nuclear weapons will be subject to constraints designed to achieve compatible political and military objectives. To assure the uniform application of politically acceptable nuclear weapon use throughout the duration of a limited nuclear war, constraints will be dictated at the National Command Authority (NCA) level, and implemented in NATO by SACEUR. These constraints will include, but may not be limited to the following:

1. The areas within which nuclear weapons may be used.
2. The degree of destruction permitted.

3. The type and location of nuclear targets.

4. The type of nuclear weapons released.

5. The number of nuclear weapons released.

6. The yield of nuclear weapons released.

7. The time frame within which the released nuclear weapons may be fired.

8. Collateral damage limitations.
   a. The areas to be avoided because of their national, historical and/or religious value.
   b. The degree of damage which must be precluded.

NCA will constrain the employment of nuclear weapons in an effort to reduce the risk of escalation and to ensure that collateral damage is commensurate with national interests. The first seven constraints above will be used in an effort to promote a clear perception by the enemy that nuclear weapons employment is being voluntarily limited. It is hoped that an unmistakably constrained use of nuclear weapons in the defense will halt aggression before unacceptable attrition of forces or ruinous escalation could take place. By careful selection of weapons and targets, collateral damage from NATO use of nuclear weapons can be minimized and civilian casualties and property destruction kept within acceptable limits.

In recognition of the limited, constrained, and selective use of nuclear weapons which the NCA might authorize, operations must be conducted in a manner that is not dependent on the use of nuclear weapons for success. If nuclear weapons are released for use, NATO forces will most likely be authorized to employ them in support of
counterattacks in the conduct of defensive operations\textsuperscript{13} to reduce an enemy's superiority in combat power and to drastically alter the tactical situation by inflicting losses that will halt his attack.\textsuperscript{14} From a division viewpoint, however, nuclear weapons may be employed to support both offensive and defensive tactical operations. In the defense, the division is concerned with defeating the postulated threat. In the offense, the division is concerned with providing the tactical advantage necessary to ensure a successful counterattack.\textsuperscript{15} The controlled employment of nuclear weapons will be the key effort of division, corps, and higher echelons of command.\textsuperscript{16} It is essential that commanders and staffs at all levels understand the nature of nuclear operations and the possible consequence and risk of such operations.\textsuperscript{17}

Summary

No operational plan should be based on the assured release of tactical nuclear weapons. If they are released, their use will be constrained in time, space, and intensity.

**Targeting Concepts**

Nuclear weapons will be planned for use against the targets which pose the most immediate threat to the defense.\textsuperscript{18} Along the forward edge of the main battle area the principal targets will be the enemy units in contact and their reserves, field artillery and air defense artillery supporting the attack, and command and control elements. In penetrations, the main targets will be the follow and support forces, and lead elements of the second echelon.\textsuperscript{19}
To minimize the size and number of nuclear weapons required, the weapons should be targeted for personnel casualties rather than equipment damage.20 The most lethal effect to troops in the battle area from the smaller yield nuclear weapons is radiation.21 Immediate incapacitation is desired for close-in forces while less immediate incapacitation is acceptable for deeper forces.22

To overcome target acquisition limitations, lethal weapons effects will be maximized in those areas which the enemy must occupy to accomplish his mission. Use of the largest nuclear weapon consistent with collateral damage limitations and friendly troop safety requirements will achieve this result and ensure a militarily effective strike. Tactical flexibility may be enhanced by using a larger number of small yield nuclear weapons.23

Summary

Targets which pose the greatest threat to the defense will be engaged first. The greatest results in this respect can be achieved by maximizing radiation effects against personnel—even those protected by tanks.

Planning

Advanced planning for nuclear weapons use is essential to timely employment. Plans should identify avenues of approach where the enemy is likely to concentrate and areas where penetrations might occur. Planning must consider the collateral damage constraints issued by all higher authorities to include the releasing authority.24 Collateral damage and safety considerations will usually limit the weapons suitable for planning.25
Based on the above planning considerations and the targeting concepts previously discussed, nuclear weapons will be selected for possible use and placed in groupings called packages. Division groupings of nuclear weapons are subpackages of a corps package. Corps will review division subpackages and consolidate them into the appropriate corps nuclear weapons packages. Each package, thus formed, will be continuously updated and treated as a single entity for the purposes of request, modification, release (approval), refinement, and control (employment) by the corps.

Each corps package will cover the frontage of the Corps from just behind some assumed line of contact out to the range of delivery systems available to the corps. Enough nuclear weapons will be planned in each package to dramatically alter the tactical situation and to ensure accomplishment of the corps mission. Each package will be planned for possible employment during a time frame of several hours to a day or more during which the corps foresees the need for nuclear weapons; and, technically designed for delivery within a narrow timespan of minutes. This timespan depends on the technical capability of delivery units to execute the expenditure, on the operational necessity for command, control, warning, and tactical flexibility, and on national approval. At any time, a corps may have one or more nuclear weapons packages planned (one for each probable contingency), and a given group of targets may be a part of more than one package.

Summary

Peacetime planning for the use of nuclear weapons should be conducted and corps nuclear weapons packages developed. Each package
should plan for the use of sufficient nuclear weapons to accomplish the
corps mission and objectives.

**Release Requesting**

The enemy threat and actions that would rationally justify the
initial tactical employment of nuclear weapons cannot be adequately
evaluated below corps level. Recognizing also that higher authorities rule on the use of nuclear weapons for obvious reasons, corps will
card furnish complete situational information in its reports, from the time
hostilities appear imminent. Situation reports, providing the basic
facts covering the progress of the battle will be complimented by warn-
ing messages that cover the proposed use of nuclear weapons in order to
furnish a complete battle picture to higher authorities.

Warning messages, sent when the tactical situation begins to
deteriorate, detail what has happened, what has been done to reinforce
conventional forces, and then assesses the seriousness of the situation.
Warning messages further describe how the nuclear package, when request-
ed, would be used to counter the immediate threat and permit resumption
of conventional operations. Warning messages will continually update
the situation until a release request is submitted. It is possible that
the information and the situation is such that higher authorities may
direct the use of nuclear weapons without the necessity for a request from
subordinate commanders.

When the corps commander concludes that his combat resources are
inadequate to ensure the present defense, or that in providing for the
immediate defense his forces will not be capable of withstanding subsequent attacks, he may initiate a request for the release of a package of
nuclear weapons designed to counter the anticipated enemy threat.\textsuperscript{37} Such a request should be made in time for the package to be released and employed before the corps has lost the capability to conduct a conventional forward defense after the strike with the remaining conventional forces.\textsuperscript{38} Only one nuclear weapons package will be requested by corps; but, until that request is approved, disapproved, or canceled, it will be continually modified in accordance with the changing tactical situation.\textsuperscript{39}

\textbf{Summary}

The corps commander must keep his higher authorities continually apprised of the possible need for the use of nuclear weapons. When the corps commander concludes that a nuclear strike will be required for his corps to accomplish its mission, he will submit a request for the release of an appropriate package of nuclear weapons.

\textbf{Release}

The NCA will consider requests for the release (authority to use) of nuclear weapons and determine if they should be employed.\textsuperscript{40} Approval will probably not be granted until the defense has been tested and it becomes apparent that sufficient conventional resources are not able to accomplish complementary military and political objectives.\textsuperscript{41} When approval is granted, the NCA will impose specific constraints (discussed earlier in this chapter) on the use of nuclear weapons.\textsuperscript{42} The approved package of nuclear weapons may contain more or less weapons of smaller or larger yields than those requested.\textsuperscript{43} Release will be conveyed from the NCA through the operational chain of command.\textsuperscript{44}
When released, nuclear weapons will be directed and controlled by corps and may be delivered by theater, corps, divisions, and/or tactical air resources. If the released package achieves the shock and decisiveness for which it was designed, the enemy will be forced to halt his aggression and reconstitute forces.

**Summary**

Release of nuclear weapons may not occur until it has been clearly determined at the National Command Authority level that complimentary military and political objectives cannot be achieved without the use of nuclear weapons. If nuclear weapons are released, the NCA will constrain their use and may approve a package different than that requested.

**Conclusions**

The doctrine for the constrained use of nuclear weapons must support National Command Authority policies and objectives. It must be realized by military authorities that no operational plan should be based on the assured release of nuclear weapons. However, peacetime planning for the use of nuclear weapons should be conducted and corps nuclear weapons packages developed. Each package should plan for the use of sufficient nuclear weapons to accomplish the corps mission and objectives.

As hostilities become imminent, the corps commander must keep his higher authorities continuously apprised of the possible need for the use of nuclear weapons. When the corps commander concludes that a nuclear strike will be required for his corps to accomplish its
mission, he will submit a request for the release of an appropriate nuclear package.

Release of nuclear weapons may not occur until it has been clearly determined at the National Command Authority level that complimentary military and national objectives cannot be achieved without the use of nuclear weapons. If nuclear weapons are released, the National Command Authority will constrain their use in time, space, and intensity.

Nuclear weapons released will be controlled by the corps. Since the package approved may be different from the one requested, the targets which pose the greatest threat to the defense will be engaged first. The best results from battlefield use of nuclear weapons can be achieved by maximizing initial nuclear radiation effects against personnel—even those protected by tanks.
CHAPTER 3

NOTES


2. U. S., Department of the Army, Headquarters United States Army Training and Doctrine Command, Tactical Nuclear Doctrine, Letter with inclosures (Fort Monroe, Virginia, 12 December 1974). As reprinted in:


4. U. S., Department of the Army, Headquarters United States Army Training and Doctrine Command, Latest TRADOC version of Tactical Nuclear Operations chapter for FM 71-100, undated. As provided (December 1975) by LTC W. V. Murry, Doctrine Section, Department of Tactics, OOSC, p. 4-2.


6. Ibid., p. 4-1.

7. FM 71-100, Draft chapter, loc. cit., p. 4-2.


9. FM 71-100, Draft chapter, loc. cit., p. 4-2.

10. Ibid., p. 4-2 and 4-5.


12. U. S., Department of the Army, Headquarters United States Army Training and Doctrine Command, Latest TRADOC version of Tactical Nuclear Operations chapter for FM 100-5, undated. As provided (December 1975) by LTC W. V. Murry, Doctrine Section, Department of Tactics, OOSC, p. 9-6 and 7.


14. FM 71-100, Draft chapter, loc. cit., p. 4-2.
15. FM 71-100, Draft chapter, op. cit., p. 4-1 and 4.
17. Ibid., p. 4-1.
18. Ibid., p. 4-1.
20. Ibid., p. 4-1.
22. FM 71-100, Draft chapter, op. cit., p. 4-1.
23. Ibid., p. 4-1, 6 and 7.
25. FM 71-100, Draft chapter, loc. cit., p. 4-6.
27. RB 100-30, Vol. I, loc. cit., p. 4-1.
28. FM 71-100, Draft chapter, op. cit., p. 4-3.
29. Ibid., p. 4-3.
32. FM 71-100, Draft chapter, loc. cit., p. 4-5.
33. RB 100-30, Vol. I, loc. cit., p. 4-1.
34. Ibid., p. 4-3.
35. Ibid., p. 4-3.
38. Ibid., p. 4-2.
39. Ibid., p. 4-2.
40. FM 71-100, Draft chapter, loc. cit., p. 4-2.
41 RB 100-30, Vol. I, loc. cit., p. 4-1 and 2.
42 FM 71-100, Draft chapter, loc. cit., p. 4-2.
44 Draft FM 100-5, loc. cit., p. 9-6.
46 FM 71-100, Draft chapter, loc. cit., p. 4-7.
CHAPTER 4

PROCEDURES

General

The United States Department of Defense has approved a new set of initial nuclear radiation casualty criteria for land battlefield targets, and the United States Army has adopted the doctrine of constrained use of nuclear weapons. As a result of these actions and National Command Authority's desire to keep collateral damage to an absolute minimum, a United States Army corps commander must now consider several factors in preparing for the employment of nuclear weapons. Information drawn from the most recent source documents available will be presented in two sections (new initial nuclear radiation casualty criteria and command guidance) in an effort to discern these factors. Each section will close with a brief summary. These summaries will be used to draw the chapter conclusions.

New Initial Nuclear Radiation Casualty Criteria

Personnel exposed to nuclear radiation will become casualties regardless of whether or not an immediate visible response occurs. Some personnel will be immediately incapacitated and perform at 50% or less of their preirradiation performance level. Others will be functionally impaired to a lesser degree but not yet considered casualties.
On 12 May 1975, the Joint Chiefs of Staff approved a new set of radiation casualty criteria for land battlefield targets. These radiation casualty criteria are being used for the revision of the FM 101-31 series manuals. The radiation criteria apply only to initial radiation doses resulting from a single nuclear detonation. Moreover, these criteria do not consider compounding of injuries due to the air blast and/or thermal energies that accompany initial radiation. These new radiation casualty criteria doses bring about responses as follows:

Immediate Permanent Incapacitation (IP): 18,000 rad—Personnel will become incapacitated within five minutes of exposure and for any task will remain incapacitated until death. Death will occur within one day. 8,000 rad—Personnel will become incapacitated within five minutes of exposure and for physically demanding tasks will remain incapacitated until death which will occur in one to two days. A review of the personnel tasks generally performed during combat show that nearly all tasks require some degree of physical activity. This criterion would almost be the highest needed for producing the desired immediate and permanent casualties.

Immediate Transient Incapacitation (IT): 3,000 rad—Personnel will become incapacitated within five minutes of exposure and will remain so for 30 to 45 minutes. Personnel will then recover but will be functionally impaired until death. Death will occur in four to six days.

Latent Lethality (LL): 650 rad—Personnel will become functionally impaired within two hours of exposure. Personnel may respond to medi-

*Rad is a unit of measurement of the absorbed dose of radiation.
cal treatment and survive this dose; however, the majority of exposed personnel will remain functionally impaired and die in about two weeks.

The data for prompt and delayed casualties contained in the July 1970 version of FM 101-31-2 can be used to approximate effects radii for the immediate transient incapacitation (3,000 rad) and the latent lethality (650 rad) criteria, respectively.

Examining the four doses in terms of distances on the ground gives insight into criterion selection. As an example, consider a hypothetical 1 KT fission weapon detonated as a low air burst against a target of exposed personnel. The approximate radii of damage (RD) to which doses of initial nuclear radiation corresponding to the four radiation casualty criteria extend are:

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Dose (rads)</th>
<th>RD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP - undemanding</td>
<td>18,000</td>
<td>400</td>
</tr>
<tr>
<td>IP - demanding</td>
<td>8,000</td>
<td>500</td>
</tr>
<tr>
<td>IT</td>
<td>3,000</td>
<td>640</td>
</tr>
<tr>
<td>LL</td>
<td>650</td>
<td>760</td>
</tr>
</tbody>
</table>

It is readily seen that even though the differences between the criteria appear large in terms of rads, the differences are not as significant in terms of actual distances from ground zero. (For personnel targets and most tactical yields, initial nuclear radiation is usually the governing casualty producing mechanism.) It is especially important to emphasize that the response descriptions apply only to personnel on the edge of the applicable RD circle. All personnel closer to ground zero than the applicable circle will receive a higher radiation dose and are expected to respond accordingly. To illustrate the point: Personnel within 71% of the area inside the LL coverage circle (650 rads) would receive the IT criterion dose (3,000 rads).
or higher, and personnel within 43% of the area would actually receive
8,000 rads or more. Thus, selection of the most severe radiation dose
criterion may neither be required nor desired since selection of a
lesser dose inherently produces severe casualties to significant por-
tions of the area.11

Summary

Unless radiation casualty criteria are understood and properly
used during the targeting process, they may be of little value. The
proper selection of radiation casualty criteria requires an understand-
ing of the expected response of soldiers to a dose of radiation with
particular attention being paid to the time delay aspects of that
response and the distribution of the doses on the ground.

Command Guidance

Basic nuclear guidance in the form of planning constraints is
determined by the National Command Authority (NCA), and forwarded
through channels to the corps. The corps commander provides his staff
necessary additional guidance. This guidance could include the purpose
and manner of nuclear weapons employment within the corps and the
general nature of the targets having particular interest to the corps.12

The corps commander devotes at least the same thought and effort
to his development of planning guidance concerning nuclear weapons
employment as he does to the employment of maneuver forces and other
fires. The corps commander establishes guidance by Standing Operating
Procedures (SOP) and verbal orders. Verbal guidance is appropriate when
departures from the SOP are desired as additional guidance is required
throughout the planning and execution process. Corps commanders and staff officers must understand the effects of nuclear weapons, the capabilities and limitations of the various delivery systems, and the procedures for employing these weapons.\(^{13}\)

**Limiting Requirements**

Restrictions placed on the employment of nuclear weapons are referred to as limiting requirements.\(^{14}\) These limiting requirements are imposed to avoid undesirable effects caused by friendly nuclear weapons and may occur in one of the following forms:\(^{15}\)

a. Collateral damage. The NCA will specify collateral damage which the military must preclude from designated areas. These areas might be communities or population centers or areas of national, historic, or religious value.\(^{16}\) The corps commander may increase the announced constraints, but he may not lessen them.\(^{17}\) Constraints placed on the use of nuclear weapons are probably the principle factors determining employment location.\(^{18}\)

b. Casualties to friendly troops. There are three degrees of risk associated with troop safety—negligible, moderate, and emergency.\(^{19}\) The commander will normally, per SOP, desire negligible risk to friendly forces.\(^{20}\) Moderate risk may be accepted when significant military advantages will be gained. Emergency risk should be accepted only when it is absolutely necessary and troops will not be required to operate at full efficiency after a friendly burst. The conditions of personnel vulnerability expected at the time of a friendly burst are: unwarned, exposed; warned, exposed; or warned, protected.\(^{21}\) Warning allied forces of friendly nuclear strikes may be essential if the commander's guidance on risk to friendly troops is to be met.\(^{22}\)
c. Creation of unwanted obstacles or damage to needed installations.\textsuperscript{23} Destruction of manmade structures or natural terrain features, tree blowdown or fire areas, and creation of high-intensity residual radiation contamination areas may create undesired obstacles or damage.\textsuperscript{24} When undesirable effects of nuclear fires cannot be prevented, alternative courses of action are recommended to the commander for consideration.\textsuperscript{25} Consistent with military objectives, unnecessary destruction and radiological contamination should be held to a minimum.\textsuperscript{26}

Fallout may extend to greater distances and cause more casualties than any other effect from a nuclear weapon. The area that will be affected by fallout is difficult to predict. The size, shape, and location of fallout patterns are sensitive to wind variances. Fallout persists for relatively long periods and is difficult to decontaminate. Tactically significant fallout may occur if rain or snow falls through the nuclear cloud. When a surface burst is employed tactically significant fallout results.\textsuperscript{27} To minimize fallout, friendly nuclear weapons are normally employed as airbursts at or above a fallout-safe height of burst.\textsuperscript{28} However, the possibility of obtaining an inadvertent surface or near-surface burst must always be kept in mind.\textsuperscript{29}

When militarily significant weapon effects are expected to extend into the sector of another commander, that commander must be informed and his concurrence received.\textsuperscript{30} Conflicts may be resolved by the first commander to whom both concerned commanders are responsible.\textsuperscript{31}

d. Damage to friendly aircraft in flight. All Allied aircraft within the area of operations are given advance warning to avoid areas scheduled for nuclear strikes.\textsuperscript{32} The Air Force must arrange for this aircraft warning.\textsuperscript{33}
e. Preinitiation. The radiation from one nuclear weapon may cause a subsequent weapon to achieve a reduced yield. Chapter 3, FM 101-31-3 shows that preinitiation can be avoided if the desired ground zeros are separated in time by up to 3 minutes and/or distance by up to 10,000 meters.

**Targeting Considerations**

The targeting techniques explained in FM 101-31-1 assume that targets will be precisely located or that appropriate assumptions will be made concerning the location of the targets. The desired ground zero location is placed at target center and if necessary, moved to meet a limiting requirement. The smallest nuclear weapon which will accomplish the commander's guidance will be planned for use.

Another nuclear targeting technique called "preclusion oriented analysis" has been advanced. In general with this technique, the largest nuclear weapon available that will meet the limiting requirements will be planned for use. This procedure will provide effective strikes without reliance on precise target acquisition. The techniques explained in FM 101-31-1 can be modified to accomplish this type of analysis. Within this concept, precisely located targets will continue to be analyzed using the target oriented techniques discussed in the preceding paragraph.

Prior to a conflict, terrain analysis of the potential area of operation should be performed to determine the location and the identification of collateral damage preclusion areas. If the minimum safe distance for negligible risk to unwarned exposed civilians is adhered to, then the greatest effect on civilians may be temporary flashblind-
Constraint guidance regarding collateral damage preclusion and yield limitation will dominate weapon and desired ground zero (DGZ) selection.\(^{41}\)

Targeting also requires predicting the probable type, size, and locations of enemy units.\(^{42}\) An evaluation of intelligence, the situation, and the terrain should indicate where the enemy can employ his forces in a strength that could overwhelm the local defensive forces.\(^{43}\)

Avenues of approach where the enemy is likely to make strong efforts should be identified.\(^{44}\) These areas should be examined in detail using on the ground terrain evaluation, air reconnaissance, map analysis, or a combination of these methods.\(^{45}\) The type targets and their sizes that may be located in the area of the enemy's main effort should be identified.\(^{46}\) Suitable target areas can then be analyzed to determine tentative delivery systems, desired ground zero locations, yields, and heights of burst.\(^{47}\)

Nuclear firepower as a matter of SOP will be employed to complement direct fire, maneuver, and nonnuclear fire support.\(^{48}\) For personnel targets and most tactical yields, initial nuclear radiation is usually the governing casualty producing mechanism.\(^{49}\) Since initial nuclear radiation from low yield weapons has a greater lethal range than does blast, nuclear weapons will cause immediate radiation casualties to armored vehicle crews while leaving large numbers of these vehicles usable.\(^{50}\)

Initial weapon sizes and delivery means are chosen to maximize lethal coverage of probable enemy locations within established limiting requirements.\(^{51}\) The yields and types of weapons available should be listed in the corps SOP.\(^{52}\) Assaulting armored forces should be targeted to produce radiation casualties to armored vehicles crews.\(^{53}\)
The effectiveness of a nuclear strike depends, to a great extent, on the accuracy, completeness, and timeliness of intelligence. Between the initial planning and the eventual delivery of nuclear weapons, all intelligence information and situation reports will be used to locate the most immediate enemy threat and DGZs adjusted accordingly. This continuous and dynamic fire planning is based on continuing to maximize lethal coverage of probable enemy locations within limiting requirements.

Summary

The corps commander should issue guidance based on the results he desires from the use of nuclear weapons as well as those results he wants precluded. His instructions on the preclusion of damage from the effects of nuclear weapons should address collateral damage constraints, troop safety, aircraft safety, and his desires on the prevention of preinitiation. The corps commander must also provide instructions concerning preclusion of obstacles which may have an adverse effect on further friendly military operations.

The nuclear weapon results desired by the corps commander can be enhanced by wise peacetime planning. Collateral damage preclusion and weapon yield limitations will dominate his desired ground zero (DGZ) selections. Within these constraints, weapons, yields, and DGZs will be selected to maximize lethal coverage of probable enemy locations. Precisely located targets will continue to be analysed using target oriented techniques and the lowest possible yield.
Conclusions

The corps commander should understand the characteristics of the nuclear delivery systems available to the corps, the effects of the nuclear weapons they can deliver and how best to use these systems and weapons to support the corps mission. Guidance on the use of nuclear weapons from the corps commander, both SOP and verbal, are required by the corps staff and subordinate commanders. These instructions must relay what the corps commander wants done by nuclear weapons as well as what damage he wants precluded. Collateral damage, preclusion and weapons yield limitations will dominate DGZ selections. Within these constraints, weapons yields and DGZs will be selected to maximize lethal coverage of the probable enemy location. The best nuclear weapons results can normally be achieved with initial nuclear radiation. A soldier's performance ability is effected by his distance from ground zero and the elapsed time after exposure to initial nuclear radiation. For personnel targets and most tactical yields, initial nuclear radiation is usually the governing casualty producing mechanism.
CHAPTER 4

NOTES


2 Ibid., p. 6.

3 Ibid., p. 8.


5 Nuclear Notes Number 3, loc. cit., p. 8.

6 Ibid., p. 5.

7 Ibid., pp. 8-9.

8 Ibid., p. 8.

9 Ibid., p. 8.


11 Nuclear Notes Number 3, loc. cit., p. 9.


16 U.S., Department of the Army, Headquarters United States Army Training and Doctrine Command, Tactical Nuclear Doctrine, Letter with inclosures (Fort Monroe, Virginia, 12 December 1974). As reprinted in:

17. FM 6-20 Test, loc. cit., p. 8-109.


20. Ibid., p. 4-6.


22. U.S., Department of the Army, Headquarters United States Army Training and Doctrine Command. Latest TRADOC version of Tactical Nuclear Operations chapter for FM 100-5, undated. As provided (December 1975) by LTC W. V. Hunter, Doctrine Section, Department of Tactics, OGSC, p. 9-10.


25. Ibid., p. 4-7.


27. FM 101-31-1, Draft of chapter 4, op. cit., pp. 4-50 and 51.


29. FM 6-20 Test, op. cit., p. 13-3.


31. Ibid., p. 4-9.

32. FM 101-31-1, Draft of chapter 4, op. cit., p. 4-24.


34. FM 101-31-1, op. cit., pp. 3-11 and 12.

35. U.S., Department of the Army, Headquarters United States Army Training and Doctrine Command, Latest TRADOC version of Tactical Nuclear Operations chapter for FM 71-100, undated. As provided (December 1975) by LTC W. V. Hunter, Doctrine Section, Department of Tactics, OGSC, pp. 4-8 and 5.


37. FM 6-20 Test, op. cit., p. 13-12.

38. FM 71-100, Draft chapter, op. cit., pp. 4-3 and 5.

48

10. FM 71-100, Draft chapter, op. cit., p. 4-7.


12. Ibid., p. 8-99.


16. Ibid., p. 4-10.

17. FM 6-20 Test, op. cit., p. 8-32.


20. FM 71-100, Draft chapter, loc. cit., p. 4-7.


22. FM 101-31-1, Draft of chapter 4, op. cit., p. 4-11.


24. FM 101-31-1, Draft of chapter 4, op. cit., p. 4-21.

25. FM 6-20 Test, op. cit., p. 8-100.

CHAPTER 5

CONCLUSIONS

General

The objective of the North Atlantic Treaty Organization (NATO) is deterrence of war. Should war occur, nuclear weapons could be made available to NATO military forces. Any nuclear weapons which are released for use by United States Army corps commanders will be employed following the new United States Army doctrine of constrained use. These same corps commanders will be applying the new United States Department of Defense initial nuclear radiation casualty criteria for land battlefield targets. As a result of these new doctrine and the National Command Authority's (NCA) desire to keep collateral damage to an absolute minimum, what factors must a United States Army corps commander consider in preparing for the initial employment of nuclear weapons? Information drawn from the conclusions of Chapters 2, 3, and 4 will be presented in an effort to answer this question. The final section of this chapter will summarize the conclusions of this thesis.

Factors

United States nuclear weapons can be released for use in the defense of NATO only by the President of the United States. Expenditure of these nuclear weapons for the defense of NATO may require the
further concurrence of the other leaders of the North Atlantic Alliance. National leaders may be reluctant to use nuclear weapons for the defense of NATO because of the prospects of further escalation by either side and the collateral damage which may result. The NCA may authorize nuclear weapons when achieving complimentary military and national objectives is more important than the possible consequences of a nuclear war.

A United States Army corps commander in the Federal Republic of Germany will receive nuclear policy guidance from national and NATO command authorities. These policies will probably emphasize that the primary purpose of tactical nuclear weapons is deterrence of war. If nuclear weapons are authorized for use in NATO, the North Atlantic Alliance leaders will try to control escalation of the war by demonstrating that the NATO initial use of nuclear weapons is limited and only defensive in nature; but NATO is willing to escalate the war if necessary. The NCA would like for the initial use of nuclear weapons to bring the war to a rapid conclusion on terms acceptable to NATO while at the same time preserving as many people and as much property as possible.

The first use of nuclear weapons may be the most difficult nuclear decision for national leaders to make. In order to achieve the greatest chance of obtaining NCA approval to employ nuclear weapons, military commanders should develop plans for the initial use of nuclear weapons with the NCA concerns in mind. Failure to do this may result in delay while additional information is provided. Failure to consider national realities could result in an outright denial.
In an effort to understand the problem facing the national leaders in NATO, an American might try to visualize the problem by deciding how to use tactical nuclear weapons along the eastern seaboard between Washington, D. C., and Boston, Massachusetts. Or another way might be to formulate a decision on how to use tactical nuclear weapons in the vicinity of your hometown where your family, relatives, and friends are living. Your analysis should consider the elements of national policy which may have a significant bearing on the decision by the NCA and should be within the guidance issued by the national command authority.

Corps commanders should make plans in peacetime for the possible use of tactical nuclear weapons. This planning should begin by considering the guidance and constraints provided by the NCA and all higher military authorities. The corps commander may even want to add additional guidance and constraints important to the accomplishment of his mission.

The corps commander should understand how his planners will determine where nuclear weapons can and cannot be used. He can use this information to arrive quickly at decisions concerning the employment of nuclear and conventional forces.

Based on all known guidance and constraints the corps planners can develop a set of overlays of the corps area showing where nuclear weapons damage must be constrained. These overlays should be guided by protecting civilian and friendly forces from the governing effect of each nuclear yield. In the tactical yields most likely to be used on a potential NATO battlefield, the governing effect will normally be initial nuclear radiation. Following damage preclusion procedures outlined in
FM 101-31-1, the corps planners can determine areas within which a desired ground zero (DGZ) can be selected. This procedure should be followed for each delivery system and yield that might be employed in the corps area of operation. These possible DGZ location areas will require modification based on the location of friendly troops to insure that the desired degree of risk to Allied forces is not exceeded.

Nuclear weapons effects cannot extend into the sector of another commander without his or a higher commander's approval. If this approval cannot be obtained, the possible DGZ locations must be modified to preclude nuclear weapons effect extending into the sector of another commander.

When this part of the nuclear targeting process is completed, the corps commander will have overlays by yield and delivery system showing where nuclear weapons DGZs can be located. A composite overlay could be developed showing the largest yield and delivery system that could be used in each area of the corps sector.

Overlays of this type should be of great value to a corps commander. As they will not only show him where he could use nuclear weapons by yield and delivery system; but, also where he must use conventional forces. These overlays would contain sensitive information because they would also show a potential enemy where he might deploy his forces and avoid exposure to nuclear fires.

As no plan should be based on the assured release of nuclear weapons, the corps plans must be developed based on the use of conventional forces, augmented by nuclear fires when that is the only way the corps mission can be accomplished. If the best results are to be achieved from the use of nuclear weapons, commanders must understand the
effects of initial nuclear radiation on the ability of soldiers to perform their duties with particular attention being paid to the time delay after receipt of initial nuclear radiation doses and the distance of the enemy soldiers from ground zero. These needed nuclear fires should be designed as a package of nuclear weapons and as many packages developed as the corps commander feels are necessary.

Planning should also be based on the fact that NCA may constrain the initial use in time, space, and intensity. Time could be a critical factor since in a limited period only so many nuclear weapons can be delivered because of the availability and dispersion of delivery systems, the rate of fire of each nuclear delivery system, time to change positions if required, preinitiation, and actions taken to enhance survivability of nuclear delivery systems. The corps commander cannot base his planning on the assumption that his initial use of nuclear weapons will terminate the war. He must be prepared to continue to fight; and, if the enemy chooses to use nuclear weapons, to survive a nuclear attack. If the enemy's attack develops as the corps commander visualized it, corps packages and plans will be the basis for requesting the release of nuclear weapons.

One method of developing the best possible peacetime plans might be to process them through all higher levels of military command to include SACEUR until they contain all information desired by these higher echelons to make a decision on release, and are approved in concept. This concurrence would not constitute a guarantee of approval in time of war, but merely an agreement as to concept and content. Likewise, a corps commander would not be bound by his peacetime plans.
These plans should be continually reviewed in an effort to eliminate the need for the nuclear weapons package or any part thereof. Anytime there is a change in the packages or a change in commanders from corps to the highest level of peacetime consideration, the corps plans should be reprocessed for concept and content concurrence.

The Supreme Allied Commander Europe (SACEUR), not corps commanders, will be the military interface with the NCA. If the military leaders below SACEUR feel that the use of nuclear weapons is justified, they must provide SACEUR with all possible assistance and information which will aid him in convincing the NCA to permit NATO military forces to use nuclear weapons. Any insight into the possible thinking at the NCA level may help military leaders prepare a justification which will be acceptable to the NCA.

The justification and approval process from corps level through the chain of command to the NCA and back to the corps could require days. It is not possible to specify a precise time; but some of the procedures that may be required can be identified. When a corps commander requests the initial use of nuclear weapons, he should assume that each military command level between himself and the National Command Authorities will carefully consider his request and may ask for additional information before giving approval. Message preparation at each level might require 30 minutes to 2 hours. Message transmission and receipt and processing time at each level of command will be based on priorities and the communication system. Nuclear request and release message traffic should have a high precedence. Putting a definite time span on this procedure is possible but might be misleading. Even more difficult to determine is the time requirement in the decisionmaking
process at each level of command. When the request finally reaches the North Atlantic Council and the President of the United States, further time will elapse and more information may be sought before a final decision is made. The decisionmaking time at this level is the most difficult to determine. The ultimate decision could be approval, modification, or denial of the request. Return of the decision to corps level should take only a matter of a few hours. A corps commander should visualize the requirement for nuclear weapons far enough in advance of the actual time he needs to use them to allow the request, approval, and final targeting process to take place.

Nuclear weapons released by NCA may be less than those requested and may be of different yields. By using the targeting overlays previously developed by corps planners, the corps commander will be able to visualize more quickly where he can employ the released nuclear weapons to maximize their initial nuclear radiation effects against personnel—even those in tanks—in an effort to accomplish his mission.

**Summary**

The primary purpose of tactical nuclear weapons for the defense of NATO is deterrence of war. Should war occur, the leaders of the North Atlantic Alliance want to control escalation, keep collateral damage to the minimum, and stop the war as quickly as possible on terms acceptable to NATO. Nuclear weapons may not be released for use by the President of the United States and the other leaders of the North Atlantic Alliance until the National Command Authorities (NCA) determine that defeat may be worse than the consequences of nuclear war. Therefore, the request and release process could take days. A corps
commander should anticipate this and submit his justification in sufficient time to allow the request, authorization, and final targeting process to take place.

The modification of plans developed in peacetime for the use of nuclear weapons may be the best source of information from which to prepare a justification for the initial release of nuclear weapons. The development of these plans should be based on the policy guidance received from national and NATO command authorities regarding the constrained use of nuclear weapons.

NCA guidance should be considered and followed when preparing a justification for the initial use of nuclear weapons. Failure to keep NCA concerns in mind and to provide all possible information to satisfy their concerns may cause delay in approval while additional information is provided or could result in outright denial.

The corps commander should consider the possibility that the nuclear weapons finally released may not be the ones requested and may be controlled in time, space, and intensity. The best results from the use of these released nuclear weapons may come from the proper application of the initial nuclear radiation effects against target areas containing enemy soldiers.

NATO's initial use of nuclear weapons may not stop the war. The corps commander should consider this eventuality and realize that his forces could be subjected to a retaliatory or a preemptive nuclear strike.

The corps commander's primary consideration is how to accomplish his mission. The use of nuclear weapons is just one means of force.
which may be authorized. Following all guidance from higher authorities and applying all means of force made available the corps commander will do his best to accomplish his mission.
BIBLIOGRAPHY

Books


Government Documents


As reprinted in:


Periodicals


Unpublished Material


U. S. Department of the Army. Headquarters, United States Army Training and Doctrine Command. Latest TRADOC version of Tactical Nuclear Operations chapter for FM 71-100, undated. As provided (December 1975) by LTC W. V. Murry, Doctrine Section, Department of Tactics, CGSC.

U. S. Department of the Army. Headquarters, United States Army Training and Doctrine Command. Latest TRADOC version of Tactical Nuclear Operations chapter for FM 100-5, undated. As provided (December 1975) by LTC W. V. Murry, Doctrine Section, Department of Tactics, CGSC.
