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TACTICAL NUCLEAR WEAPONS RESPONSIBILITY:
ORDNANCE VERSUS FIELD ARTILLERY

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BY

LIEUTENANT COLONEL JOSEPH A. FIELDS, OD

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USAWC MILITARY STUDIES PROGRAM PAPER

**TACTICAL NUCLEAR WEAPONS RESPONSIBILITY:
ORDNANCE VERSUS FIELD ARTILLERY**

AN INDIVIDUAL STUDY PROJECT

by

Lieutenant Colonel Joseph A. Fields, OD

**Colonel Duane Williams
Project Advisor**

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ABSTRACT

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There has existed and still exists an operational dichotomy in the area of the provision of tactical nuclear weapons to United States Army forces versus those allied forces in a combined theater of operations. Specifically, within the NATO environment and to a very small degree within Combined Forces Korea, there exists a condition where tactical nuclear weapons are supplied to the U.S. firing unit by an organization under the proponentcy of the Ordnance Corps. On the other hand, within the same theater, the non-U.S. force receives their tactical nuclear weapons by an organization under the proponentcy of the Field Artillery. This paper will examine the functions performed by this duplication of supply organizations and briefly list the supporting structure. It will then explore any possible purpose for the duplication which would justify this apparent mission replication. Discussion will then follow which will list the pros and cons of staying with the status quo or the possible assignment of the supply function to a single branch proponentcy. Conclusions are then drawn and recommendations made for improving the current system of tactical nuclear weapon support.

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PREFACE

I have spent most of my Army career both within the Ordnance Corps and directly involved with the supply of both conventional and nuclear ammunition. Further, this experience has ranged from Europe, to Korea, to the doctrinal initiation element of TRADOC. This project was nominated by Major General Hallada, Commanding General of the Field Artillery School and Center. It was sponsored at the U.S. Army War College by the Department of Command, Leadership, and Management. I accepted this project both because I feel I bring some career experience to this subject as well as an element of objectivity. The sponsoring Project Advisor specifically requested an officer whose branch was "other than" Field Artillery. This was done in the hopes that recommendations submitted would propose those actions that would be good for the Army and as free as possible from specific branch parochialism. This, I believe, I have accomplished. My research has encompassed numerous personnel that have experience which make them credible references for this effort. Both proponent schools have provided valuable input. I have conducted many interviews with senior officers, both Ordnance Corps and Field Artillery. They expressed strong opinions on this subject. Their experience has ranged from former artillery group commanders in support of NATO, to several members of the USAREUR Inspector General's office which inspected both the ordnance companies which support the U.S. Field Artillery within the U.S. Corps as well as the field artillery groups in support of NATO artillery units. The research has included a trip to Germany made possible by the 59th Ordnance Brigade which added the dimension of that Brigade's innovative Warhead Support Concept, a vital and integral addition to the original scope of this effort. A special thanks goes to Major General Hallada at Fort Sill, Brigadier General Benchoff at the 59th Ordnance Brigade, and Mr. Harvey Adams of the Ordnance Missile and Munitions Center and School. I would finally like to thank the faculty and classmates of the Army War College who gave advice and perspective on this question. These have included Colonels Joe Spielbauer and Duane Williams and Lieutenant Colonels Kevin Byrnes and Jim Crabbe. To all those who named and un-named, I am sincerely grateful.

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**TACTICAL NUCLEAR WEAPONS RESPONSIBILITY:
ORDNANCE VERSUS FIELD ARTILLERY**

**CHAPTER I
INTRODUCTION**

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The purpose of this effort is to examine the apparent dichotomy that exists in the area of responsibility for the custody to the "delivery-to-shoot" sequencing for tactical nuclear weapons. With the certainty that the Army will undergo a restructuring effort (with respect to endstrength), it is imperative not only that everyone "do more with less" but that missions and functions be reviewed for appropriateness and efficiency. The issue has been raised many times over the years concerning the appropriateness of the missions of the field artillery groups/custodial detachment support which is provided to NATO. There is ongoing agreement between the Chiefs of Field Artillery and Ordnance to study the advantages and disadvantages of the maintenance of the status quo versus the transfer of the custodial/supply function to total Ordnance Corps proponency.

This endeavor will discuss the critical elements pertinent to the mission assignment question. While it is realized that the subject of mission transfer is a dynamic one and literally changing daily, this "snapshot" is nonetheless a deliberation of

the major points at this time.

Finally, the recommendations proposed are conceptional in nature and reflect my own personal views rather than official U.S. Army position. It is realized there will be some individual "tweaking" of the organizational structure but the concept is the pertinent element.

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CHAPTER II
MISSION
DEFINITION

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There are several elements of tactical nuclear weapon's support that differentiate it from that of standard conventional ammunition. These peculiarities and their second order requirements form the basis of the functions to be discussed.

The principles of control, accountability, security, field storage, maintenance, and safety are the salient factors.¹ These factors thus lead to the mission to be discussed and the missions being performed by both field artillery as well as ordnance units.

The primary mission that I will examine is that of custody. A unit that is designated a custodial unit is one "charged with responsibility to maintain custody of nuclear weapons, issue nuclear weapons to delivery units, and conduct nuclear logistical operations."² The sub-elements that are derived from this custodial mission are numerous. They encompass, naturally, the ownership of the item which represents legal title to each weapon and always stays with the United States.³ Possession of the weapon is physical control and denotes the control of access of the weapon and its' components.⁴ The element of security is the

provision of a safe and secure environment and that of accountability is the provision of a formal record of the ownership of the item.⁵

Contained within the "issue" element are such diverse sub-parts as the transportation of the weapon, documenting the appropriate transfer of possession, and ancillary tasks such as appointment of custodial agents. It is evident that safety and security weigh heavily during all elements of the "issue" process as with all other processes.

Finally, the definition of "conduct nuclear logistical operations", contains tasks such as performing:

- *the assembly of the weapon
- *pre-operational checks
- *operational/organizational maintenance
- *permissive action link (PAL) operations
- *weapon emergency destruction and nonviolent/semiviolent disablement
- *maintenance and proficiency of a "U.S only" secure communication/release system
- *nuclear surety program precepts

While this list is not all inclusive, it serves to highlight the vast majority of tasks performed at the "custodial unit" level.

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CURRENT STRUCTURE FOR MISSION ACCOMPLISHMENT

The doctrine for the nuclear weapon support operation is in consonance with the currently deployed structure. Within a theater of operation (USAREUR, for example), there exists an ordnance brigade which commands the requisite number of ordnance battalions which provide supply support to the U.S. deployed corps. The recently published FM 9-6 (1 Sept 89) discusses the inclusion of Field Artillery in the supply support mission by stating:

Within a theater of operations that is a combined theater, USAAGs (U.S. Army Artillery Groups) are assigned to support host nation forces. During peacetime, these USAAGs are composed of a US ordnance company and US field artillery detachments (USFADs) and are responsible for storing and maintaining nuclear warheads and nuclear projectiles in support of host nation forces. Host nation security forces provide external security for nuclear weapons stored by USAAG ordnance companies and USFADs.

The vast majority of tactical nuclear support structure is found within USAREUR. The 59th Ordnance Brigade is the command and control headquarters for tactical nuclear weapon support. It accomplishes this mission through subordinate ordnance battalions providing support to deployed U.S. corps and USAAGs providing support to non-U.S. forces. There are five USAAGs commanded by lieutenant colonels. Each one of these groups has from two to

five custodial detachments assigned. They also have at least one ordnance company which provides both direct support and selected general support maintenance. All the artillery groups mentioned are located within the Federal Republic of Germany (FRG).

Additionally, there are three groups located outside of the FRG (but within the confines of NATO) which have a similar structure and mission. They differ in that they range in detachment strength from two to four and they are commanded by colonels. Like their counterparts in the FRG, each group has an assigned ordnance company. There is one other organization, which exists in the Eighth United States Army, that is similar to the

artillery groups. It is the Weapons Support Detachment-Korea (WSD-K). Its' unclassified mission statement is to be prepared to "provide Nuclear Support Teams (NST) prepared to deliver nuclear weapons using Republic of Korea weapons systems under the provisions of the Eighth United States Army Tactical Nuclear Standing Operating Procedures."⁷ This unit, with an average military strength of 163, is so unique in its tactical nuclear weapons mission and "one-of-a-kind" command relationships that I will not include it in further discussion. Suffice it to say that it exists and it is different from the custodial unit definition previously listed. If a re-look of the organization of WSD-K is deemed necessary, it should be undertaken as a separate study.

There are approximately 170 officers and 1335 enlisted soldiers with artillery occupational specialties serving in the

command and control and custodial unit operating structures of the NATO artillery groups. It is this structure that I will address in the remainder of this paper.

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STRUCTURE EVOLUTION

In discussing the structure evolution, I will look back at the reasons and the environment that has resulted in today's organizations. My premise is that the original reason for this concept is not as important as the realization that the field artillery personnel manning the USAAGs do not require any "field artillery" peculiar skill to carry out their custodial unit mission requirement.

It is interesting to note the way in which the structure for tactical nuclear weapons support, present in the European theater, has evolved over the years. A brief look at this evolution may prove helpful in the discussion that is to follow. Doctrine development in this area can be summarized by viewing the deployed force structure in USAREUR and then listing that structure in the proper field manual. I am not casting dispersions upon the competence of any group of individuals or organizations, but the doctrine development process in this arena is clear. For example, when there were direct support special ammunition ordnance companies in support of the deployed corps, the doctrinal manuals so reflected this organization. In 1977 the 60th Ordnance Group transferred the direct support companies

to the (at that time) 59th Ordnance Group. The 59th Ordnance Group immediately re-structured into a direct/general support concept. The doctrinal manuals eventually reflected the new structure implemented by the 59th Ordnance Group. Doctrine development in the nuclear weapon's supply arena has simply followed the deployed USAREUR structure. The Warhead Support Concept (which I will discuss later and is currently under evaluation) is but one in a long line of this phenomenon.

Through interviews with active and retired ordnance and field artillery personnel, it appears that the association of field artillery personnel with their NATO counterparts was initially mandated due to a training requirement. In the early days, when allocation of tactical nuclear weapons were initially made to the NATO corps, there existed a concern as to the level of training of our allies and to put it very plainly, their competence. Shooting a free flight rocket, like the Honest John, with a large "nuc" bolted to the front of it was challenging even for crack U.S. artillery troops. Over the years, however, the relationship between the artillery groups and their supported units has changed in that there is no emphasis today on the technical field artillery tasks. There is not a case where a USAAG would issue a round of nuclear ammunition and then proceed to check and verify the fire direction data. Nor do the personnel of the artillery group check the laying of the particular field gun or howitzer. Upon release, the tactical nuclear weapon is issued to the supported unit, period. If there

were other reasons for the USAAG/NATO firing unit lash up, I have not discovered them.

ENDNOTES

1. US Department of the Army, Field Manual (FM) 9-84, Special Ammunition(Nuclear) Direct and General Support Unit Operations, (Washington DC: Government Printing Office December 1984), p. 2.

2. US Department of the Army Field Manual(FM) 100-50, Operations for Nuclear-Capable Units, (Washington DC: Government Printing Office September 1988), p. Glossary-3.

3. Ibid., p. 3-2.

4. Ibid.

5. Ibid., p. 3-2 and 3-3.

6. US Department of the Army Field Manual(FM) 9-6, Munitions Support in Theater of Operations, (Washington DC: Government Printing Office September 1989), p. 3-7.

7. US Department of the Army Table of Distribution and Allowances(TDA) P8W34MAA, UNCLASSIFIED MISSION STATEMENT, (Washington DC: Government Printing Office October 1985).

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CHAPTER III
PERCEPTIONS OF THE CURRENT STRUCTURE
FROM THE FIELD ARTILLERY SIDE

From many interviews conducted, ranging from non-commissioned officers to a major general, it is the overwhelming opinion of the field artillery community that the mission being performed by field artillerymen in the USAAGs is one that they should not be performing. They point to such inconsistencies as the provision of security at the site. In the USAAG, field artillerymen with the 13B MOS perform the security functions such as entry control and warhead guard. In the U.S. Corps, military police personnel with the 95B MOS perform the security functions. The function is the same, only the MOSs are different.

Similarly, the functions of unlocking, pre-fire inspection, mating/de-mating, and others are performed by MOS 13B in the USAAGs. The MOS 55G performs unlocking in the ordnance companies, and the 55G will perform pre-fire inspections, fuze setting, and other related functions under the Warhead Support Concept in the future. Two different MOSs are performing the same functions.

Another area that surfaced with extreme ardor on the part of the interviewees was the question of career progression or one might state "career non-progression". One of the standard themes

that I heard throughout the discussion process was that the current system does not allow for individuals to "grow up within the structure." Many field artillery officers feel that the supply mission removes them from the mainstream of field artillery work. They perceive this duty as almost a different specialty. The lieutenants assigned in this area fall behind their contemporaries in the opinion of the majority of persons interviewed. They are at an extreme disadvantage when it comes to the process of obtaining battery command or when returning to the technical realities of field artillery cannon units. When an officer excels in the area of tactical nuclear weapon support, there is a tendency to send them back to this specialty at a latter date. This, it is felt, only places them further behind their contemporaries. My interviews have shown that field artillery officers, who have served in the area of nuclear weapons, believe the supply mission is a mal-assigned one for the Field Artillery. They persist in this belief even though a transfer to Ordnance would mean the loss of five lieutenant colonel and three colonel command slots and twenty eight detachment command positions at the captain level.

I was provided an antidote by a senior field artillery officer that I believe exemplifies their position succinctly. The story purports that during the late 1950s or early 1960s a request was made to review the procedures of an 105mm howitzer firing team for efficiency of action. The civilian experts duly noted all of the actions of the firing crew from the un-boxing of

the semi-fixed ammunition to the firing of the round. They carefully noted each movement and analyzed it in accordance with time and motion standards. At the completion of the exercise they were astonished by the presence of two crew members standing approximately 25 meters from the center of the action.

Apparently, these two individuals were not actively involved in any of the actions accomplished by the crew. When one of the evaluators inquired as to their purpose, he was told that those two individuals were "the horse holders." "Wait a minute," the analysts replied, "you don't pull the howitzers with horses anymore!" The reply from the field artilleryman was: "Yes, but they have not changed the manual." This statement aptly describes the Field Artillery position with respect to the NATO supply mission.

FROM THE ORDNANCE CORPS SIDE

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From the discussions I have had and a review of several documents on the topic of transfer of the USAAG mission, the position of the Ordnance Corps has ranged from one of noncommitment to one that can be characterized as "proceed with extreme caution." There are several specific Ordnance concerns and I will address these point by point.

The major objection or concern on the transfer of mission concerns the Space Imbalance of Military Occupational Specialty (SIMOS). This topic relates to "how many" slots you have for the

MOS of a particular field overseas versus CONUS. The Department of the Army goal is 55%. For those ammunition MOSs in the grades of private first class through chief warrant officer 4, Ordnance is now ranging between 57% to 59%. Absorbing the Ordnance portion of the 170 officers and 1334 enlisted spaces would push the imbalance to 70% to 78%.¹ Some estimates would project the imbalance even higher. This situation would result in a scenario where soldiers in the ammunition field would spend over 80% of their career out of CONUS. If you cannot recruit individuals to accept this situation, the accomplishment of the mission is not possible.

The second concern is the political impact of replacing the field artillery command structure with ordnance. It is felt that field artillery people speak the same language even if they are from different nations. This equates to professional credibility. Would our NATO allies be affronted by the change? It is of worthy of consideration.

A third element from the Ordnance perspective pertains to the use of female soldiers both in the forward battle area delivering the weapon and the NATO interface and acceptance of this change in structure. The Ordnance Corps does not close any MOS to female soldiers either enlisted or officer. Their integration in ammunition ranges from explosive ordnance disposal, to nuclear weapon technician, to conventional ammunition specialist. Up to this time, however, some claim there has not been a requirement for the ordnance female soldiers

to travel as far forward as the firing position for a 155mm howitzer. Further, considering the political aspect of NATO sensitivities about the use of women, a position of caution is prudent.

In summary, I believe that upon scrutiny of the arguments presented above, the Ordnance Corps would agree that the tactical nuclear weapon's supply mission is theirs. I would submit, however, that they may state that it does not do any good to accept a mission that you cannot perform.

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OTHER PERSPECTIVES

An important consideration on the subject of the potential transfer of functions from Field Artillery to Ordnance is found within U.S. Army Europe and specifically in a USAREUR initiative titled: Warhead Support Concept. The problem the CINCUSAREUR identified for effort in early 1989 was that "current nuclear mission requirements; peacetime and wartime, detract from cannon artillery battalion capability to fight the conventional battle."² The CINCUSAREUR guidance was that he wanted to "ease nuclear mission burden and eliminate Emergency Action requirements within Divisions and provide (a) concept that allows artillery units freedom to concentrate primarily on conventional fire support."³ In response to this challenge, the 59th Ordnance Brigade developed the Warhead Support Concept.

This initiative, while remaining within current force levels and maintaining artillery unit equipment/personnel status, will solve the problem and satisfy the CINCUSAREUR guidance. Briefly, the concept would use the ordnance unit in its' relationship with the supported U.S. field artillery firing unit in the same way as the current USAAGs operate with their supported NATO firing unit. The ordnance unit would be responsible to:

Maintain custody, accountability and security of corps nuclear stocks at current peacetime sites.

Conduct GS/DS organizational maintenance on corps nuclear stocks.

Establish a close peacetime association with supported Field Artillery units.

- *FTXs/CPXs
- *ARTEPs
- *REFORGER
- *Computer Battle Games

Submit Weapons Status Report (WSR).

Train and maintain personnel to act on SACEUR/UNCINCEUR EAM traffic.

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The largest single change in ordnance unit operations would see the ordnance ammunition personnel delivering the round to the firing battery and assembling/fuzing the item.

This concept was assessed during REFORGER 90 and it had no major flaws. Before formal approval of this effort and the commencement of implementation, there will be additional testing and refinement. I will discuss this effort further in the Chapter IV.

The final consideration that I explored on the subject of the possibility of ordnance personnel performing duties

previously handled by the field artillery was produced by the Defense Nuclear Agency. Their study concerned an assessment of the 59th Ordnance Brigade's Warhead Support Concept.⁵ The DNA assessment is classified and I wish to keep this discussion at the unclassified level. Therefore, I will simply state that there are no elements in their assessment that preclude its' successful implementation and the DNA concerns deal with primarily administrative areas and definitions.

In the next chapter I will address the concerns and on-going initiatives on the subject at hand.

ENDNOTES

1. US Army Field Artillery Center and School Memorandum, ATSF-TSM-CN, Trip Report-Transfer of NATO Special Weapons Support From Field Artillery to Ordnance Joint Working Group, 30 August 1989.

2. US Army 59th Ordnance Brigade, Briefing Slides, Warhead Support in a U.S. Corps, undated, slide 3.

3. Ibid., slide 2.

4. Ibid., slide 6.

5. US Defense Nuclear Agency, Assessment of Procedures for the Dispersal of Artillery Fired Nuclear Projectiles, (U) (S), September 1989.

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CHAPTER IV

ANALYSIS AND CONCLUSIONS

ANALYSIS

On the topic of the supply of tactical nuclear weapons there exists a "hodgepodge" in doctrinal terms. On the one hand, in a combined theater there is a field artillery organization in the supply business. When dealing with strictly U.S. firing units, the Ordnance Corps supplies the item. Currently, if CENTCOM would deploy to an area within its' responsibility and tactical nuclear weapons would be required for our allies, the Army would turn to the Field Artillery and ask for an USAAG from either a CONUS or reserve force structure. Therein lies the problem. The USAAG does not exist outside of USAREUR. The USAAG was invented as a peacetime, USAREUR peculiar organization. Thus, I believe, a doctrinal void exists.

I conclude that the supply of tactical nuclear weapons to anyone (ally or U.S. unit) does not belong in field artillery channels or under field artillery proponency. If allies require assistance in firing nuclear weapons, you can assist them without assuming the supply function. The current case results in the commitment of 170 field artillery officers and 1300 soldiers solely to accomplish the supply function.

Discussion/investigation has revealed that a transfer of personnel in the USAAGs from Field Artillery to the Ordnance

Corps/Military Police Corps, assuming present strength figures, is estimated to take 36 months. A more realistic picture would evolve if a smaller USAAG force were chosen for transition. Nonetheless, I believe it would require a mammoth effort on the part of the Ordnance Corps to:

- *Retain the maximum number of individuals currently in the force to support this effort.

- *Recruit and train additional personnel at a "mobilization" level-of-effort rate to acquire the needed functional specialties.

- *Resist force structure cuts in both the Ordnance Corps and the Military Police Corps troop levels.

The supply of tactical nuclear weapons is clearly an Ordnance Corps responsibility. The need exists for that proponent branch to develop doctrinal initiatives to accomplish this mission. In viewing some of the issues raised by Ordnance in this regard, I will present the following.

I will first present an analysis of the political implications of such a proposed change. From interviews conducted with former field artillery group and detachment commanders, it is universally felt that the NATO user units do not view the USFADs as "warfighters". At the moment in the battle, when a tactical nuclear weapon will be employed, I do not foresee either an ally or a U.S. firing unit checking the branch insignia of the supply element.

Likewise, the question of whether women can or would

traverse the battlefield to areas as far forward as the firing point is a moot one. The women are forward today. Within the Ordnance Corps, one can find enlisted women in MOS 55D, explosive ordnance disposal, plying their trade wherever unexploded ordnance is found.

With respect to the SIMOS issue, I do not think it will provide an impediment to transfer of mission. I make that statement for two reasons. First, other organizations were faced with a mission that required them to have the vast majority of a particular MOS outside of CONUS. Specifically, the Field Artillery MOSs dealing with the Pershing missile system comes to mind. When that situation develops, you can not place it in the "too-hard" box and relegate the mission to either someone who is willing to take it or to one who has it de facto at the time. Rather, the question of "What is right for the Army?" should be the deciding factor.

The second reason for SIMOS not being a stumbling block for mission assignment is the certainty that in the very near future a NUCLEAR FREE ZONE within Central Europe is a fait accompli. There are many factors which contribute to this assumption. Of course, the withdrawal of Soviet Forces and the dismantling of East European communists Governments weigh heavy in this regard. The increase in warning time from anywhere from the current 14 to 30 day scenario to somewhere in the realm of 90 to 180 days has a major impact. With the long warning time becoming the "conventional wisdom" on this subject, it is my opinion that the

withdrawal of tactical nuclear weapons from Europe to the U.S. appears to be the course of choice for the United States.²

The public opinion within Western Europe will bolster this course. With the Belgian government announcing that their 25,000 troops are no longer needed within the Federal Republic of Germany, I believe the clamor for nuclear weapons withdrawal will soon follow. I sense that Western Europeans are not stating that nuclear weapons are not needed to deter, but rather that with the advent of an increase in warning time you can deter from the United States. All you need is a process and forces to demonstrate the re-introduction of the weapons at the appropriate time and with the required dispatch. For years we have practiced the return of forces to Germany (REFORGER). In the future, an exercise to practice the deployment of tactical nuclear weapons (trainers-only) and the forces to insure delivery to the firing units may be a yearly occurrence.

No one either in the U.S. government or on the Western European side wishes a condition whereby, within the West German populace, a groundswell of support arises to force tactical nuclear weapons out. When peace seems to be breaking out all over, the U.S. does not want to face the situation of German women and children by the thousands pressed against the fences of nuclear weapon storage sites. While I would think that there is in place a plan to initiate a gradual drawdown of stocks, I would caution that U.S. policy planning has severely underestimated the pace of actions on the European continent.

In summary, the removal of nuclear stocks, and I believe they will be removed, will neuter the SIMOS question.

The final portion of this analysis will concern itself with the current force structure initiatives as they pertain to this issue. The Warhead Support Company concept tested during REFORGER 90 was, to my mind, a success. It demonstrated that an ordnance unit could deploy tactical nuclear weapons to a firing location and it validated the functional skills required to accomplish this mission. The company, which numbers about 202 officers and soldiers, has at its' heart the Supply and Assembly (S&A) team which will make the actual delivery to the firing unit. The assessment of this concept during REFORGER 90 did not result in unqualified approval. This was due to training deficiencies, the environmental setting in which the operation was conducted, and the lack of field artillery user unit participation. There were no recognized flaws in the concept itself. I would predict that the 59th Ordnance Brigade will refine and test this operation again and USAREUR will formally approve this concept by July of 1990.

The strawman of another delivery unit has been developed and has the same basic structure as the Warhead Support Company of the 59th Ordnance Brigade. The Ordnance Missile and Munitions Center and School (OMMCS) has developed an organization to provide complete round tactical nuclear weapon support to allied firing units. Titled the Ordnance Custodial Detachment, this organization, which numbers 64 personnel has the same S&A team

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approach.⁴ The major difference in this approach is that rather than replace current field artillery custodial detachments on a "one-for-one" basis, this structure integrates the NATO ordnance company personnel into the detachment concept. Thus, you gain a DS/GS maintenance capability in an organization where it previously did not exist. With 13Bs being replaced (for the most part) by 55Bs, there is no appreciable increase in the 55G population.

Both the 59th Ordnance Brigade and, to a lesser degree, the OMMCS concept are somewhat limited in scope in that the primary focus is on artillery fired atomic projectiles (AFAPS). I believe this view to be somewhat myopic in nature. The same organization and skills required to deliver AFAPS to the firing unit could deliver Lance or Follow On To Lance warheads. The same organization could likewise deliver Atomic Demolition Munitions (ADMs) to engineer units for emplacement. Once the basic structure is fleshed out for the AFAPS, the concept could be easily exported to cover a myriad of nuclear items.

CONCLUSIONS

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Based on the investigation and analysis of this subject, I conclude that:

*Doctrinal innovations are needed in the area of tactical nuclear weapon supply. These innovations must cover all types of Army tactical nuclear weapons.

*The Ordnance Corps should assume proponency for all supply support in this area.

*The two most promising vehicles which will facilitate the transition of missions from the Field Artillery to the Ordnance Corps is the Warhead Support Company developed by the 59th Ordnance Brigade for supply to U.S. firing units and the Ordnance Custodial Concept developed by OMMCS for supply to allied firing units.

*The process of transition in the USAAGs, from Field Artillery to Ordnance will take approximately 36 months.

*The pressure for the establishment of a NUCLEAR FREE ZONE in Western Europe will continue to increase exponentially with the perception of threat reduction vis-a vis the Soviet Union and what was previously referred to as its' Warsaw Pact comrades.

*The return of tactical nuclear weapons to the CONUS is a virtual certainty. The only uncertainty is the "not-later-than" date.

*Upon return of weapons to CONUS, the doctrine and an accompanying unit structure (either active or reserve) must be in existence to effect re-deployment.

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ENDNOTES

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2. Taylor, Theodore B. & Sidney D. Drell, "Why Not Now? Debating a Nuclear-Free Millennium", The Bulletin of Atomic Scientists, July/August 1989, p. 25-31.
3. US Army 59th Ordnance Brigade, Briefing Slides, Warhead Support in a U.S. Corps, undated, slide 7.
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CHAPTER V
RECOMMENDATIONS

The initial direction on this question must be in the doctrinal and unit development areas. The Ordnance Missile and Munitions Center and School should proceed rapidly to finalize their effort on the Ordnance Custodial Detachment concept. Further, OMMCS should enter the Warhead Support Company into the TOE process. Coordination with the 59th Ordnance Brigade on the WSC concept is on-going and should be continue at an increased pace.

The OMMCS, as the lead agency, as supported by the Field Artillery School and Center and the Combined Arms Training Center should change those doctrinal publications which deal with nuclear weapon supply support. The doctrine in this area should reflect that this function is an Ordnance Corps responsibility. Through the development of the doctrine and the change in force structure, the planning for the removal of nuclear weapons from Europe can be finalized as to methods and units for re-deployment if required.

With respect to the changing the current USAAG from field artillery to ordnance personnel, I would recommend that if tactical nuclear weapons will remain in NATO for a period to exceed 36 months, then a plan should be developed to change the

units from Field Artillery to Ordnance. If however, the stocks of the USAAGs will return to the CONUS within 36 months, then I propose that the mission remain with the current MOS structure. The Field Artillery would then extricate themselves from the tactical nuclear weapon supply mission through attrition.

Force structure initiatives within the Army must be undertaken that will insure a structure for supply of tactical nuclear weapons worldwide. Elements of these initiatives could include the co-locating of ordnance Warhead Support Companies with CONUS Corps. Such a move would allow the participation of the tactical nuclear weapon support element with major divisional and corps field training exercises. Relationships would be developed in peacetime which would aid in the transition to war process.

EPILOGUE

The focus of this effort was on clarifying and improving the question of the supply of tactical nuclear weapons. I truly believe that there is a doctrinal gap in this area and I have made considered recommendations for correction of the deficiency.

I realize that there exist field artillery and ordnance personnel that I did not interview that hold to the idiom: "If it is not broken, then don't fix it." I can understand their view but I believe it is completely parochial and fails to consider the larger question of "What is best for the Army."

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