

NUCLEAR WEAPONS EMPLOYMENT AT  
DIVISION LEVEL

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SUBJECT: Nuclear Weapons Employment at Division Level.

1. PROBLEM. To determine whether the present procedures and techniques for the employment of nuclear weapons at Division level are feasible.
2. ASSUMPTIONS.
  - a. The Division Commander is the releasing authority for artillery nuclear weapons; the Brigade Commander is the releasing authority for Davey Crockett.
  - b. Communications systems function properly.
3. FACTS BEARING ON THE PROBLEM.
  - a. Department of the Army prescribes broad policy concerning employment of nuclear weapons. Major commanders devise specific procedures. (Annex A)
  - b. Formal training in nuclear weapons employment encompasses technical procedures in target analysis and weapon selection but does not include acquisition of nuclear targets and details of the weapons systems. (Annex B)
  - c. Doctrine of the Soviet Union, our most probable opponent in a nuclear war, indicates that nuclear targets will be plentiful on the nuclear battlefield but very difficult to acquire and attack. (Annex C)
  - d. Present target acquisition means are not compatible with capabilities of weapons systems organic to the Division. (Annexes D and E)
4. DISCUSSION.
  - a. A war involving the use of tactical nuclear weapons has not been conducted, therefore a combat proven doctrine does not exist. General policy for the Army in the employment of these weapons is contained in TC 100-1. The circular recognizes difficulties inherent in the system and directs emphasis be given to several areas of training, including:
    - (1) Intelligence aspects with particular emphasis on target acquisition and combat surveillance.
    - (2) Procedures designed to reduce staff and system reaction time.
  - b. Until new weapons systems are devised, the principal cause for delay in the delivery

of a nuclear weapon are the target acquisition procedures and staff and system reaction time.

- c. Training in nuclear weapons employment is encountered by most officers during the career course. Periodic refresher training is required after successfully completing the basic course. The principal deficiencies in employment procedure - target acquisition and reaction times - are lightly treated in training. (Annex B)
- d. Current Soviet doctrine parallels our concepts of nuclear war in many cases. Emphasis is given to continuous offensive movement. Offensive and defensive maneuvers employ "hugging" tactics - a measure designed to discourage use of nuclear weapons by the enemy because of troop safety factors. Development of the factor of surprise seems to conclusively indicate that there will be few targets on the battlefield for us to sit back and analyze. (Annex C)
- e. Target acquisition and the time required to prepare a system for firing play an important role in a successful nuclear mission. Presently the Division does not have a capability that will enable it to acquire targets at the range of its most powerful weapon, the Honest John. Consequently, it does not have a reliable means to determine that the target is still in position when the round is ready to be fired. (Annex D) Considering the fluid nature of the nuclear battlefield, the time available from target acquisition to engagement will be relatively short. Annex E contains various time factors which must be considered in preparing a nuclear strike with weapons under Division control.

## 5. CONCLUSIONS.

- a. Present procedures and techniques used by the Division are feasible when employing nuclear weapons against targets which can be retained by front-line observation means.
- b. The Division does not have the means to acquire or observe targets beyond the range of six to eight thousand meters. The absence of reliable acquisition means beyond these ranges limits efficient use to the Davey Crockett and the fraction of the ranges of the 8-inch howitzer and Honest John falling within this distance.
- c. Reaction times of the present employment system will permit accurate fire against targets possessing a relative degree of permanence. Many of the good nuclear targets that will be found on the nuclear battlefield cannot be engaged because of dissipation too rapid for



ANNEX A--U.S. Policy on Nuclear Weapons Employment.

1. (U) In a war in which nuclear weapons are used, they will be employed to destroy or degrade enemy combat capabilities. While inflexible rules governing the employment of nuclear weapons should not be established, priority should be given the destruction of the enemy's nuclear capability. (12:2)
2. (U) Tactical commanders and staffs at all echelons must know the operational capabilities and limitations and logistical requirements of nuclear weapons. Certain staff officers must be specially trained in employment and the administrative support of these weapons systems. (12:2)
3. (U) Normally, a nuclear weapon should be employed only when there is good expectation of securing significant target casualties or damage. When detailed target information is not available, specific target damage cannot be predicted with any degree of precision. Thus, when the target is ill-defined, weapons effects should not be given undue weight in target analysis ..... without complete knowledge of the target, the actual casualties or damage in a target area cannot be predicted accurately. (12:8)
4. Policies outlined above are contained in TC100-1 which continues with further requirements that the commander must meet. Probably the most flexible is the matter of target verification. The circular points out that each target must be verified but the actual verification is up to the commander who has releasing authority; he must decide on the degree of verification. *sp*
5. Present basic doctrine has been developed around the situation in which the United States possesses nuclear superiority over an opponent with a mobile, sophisticated army. We have no concepts or guidance for a condition of nuclear parity, which is likely, or a guerilla type opponent. (9:12)

## ANNEX B--Nuclear Weapons Employment Training

1. Nuclear weapons training in US Army service schools follows the general outline contained in DA Pamphlet 39-1. A specific course of instruction may be found in the Program of Instruction for the Infantry Officer Career Course, Fort Benning, Georgia.
2. An examination of both sources indicates strong emphasis on target analysis techniques, effects data and tactics of employment. The essential elements of target acquisition and surveillance are not included in the scope. The general categories of "Stockpile to Target Sequence" and "Capabilities and Limitations" of several type organizations are included.
3. Training conducted during Field Exercises and Command Post Exercises is based on the function of the Division Fire Support Element (FSE). Analysts at this level are well trained to perform the target diagnosis. However, post mortems almost invariably criticize the unreal patterns of target selection, surveillance and attack. Training in these areas is practically non-existent; procedures are devised by each command under the general guidance of the Field Army. (e.g., 7th Army in Europe has developed a comprehensive SOP covering the employment of nuclear weapons).
4. Lt. Col. Donald M. Nethery, in a discussion of nuclear weapons training, made these comments:  
"The reason for target analysis is elementary-to decide if a target can profitably be attacked with nuclear weapons, and, if so, the specific weapon suitable to do the job. More difficult to obtain and resolve is data we need about the target to make analysis meaningful. The analyst should know target location...shape...size...composition...vulnerability...stability...and topography. Precise target analysis fades in importance when the accuracy variables of any of these factors is considered. Solving the problem is a big order, but one which we must fill if we are to justify precise target analysis procedures we teach today.
5. "At present there is no way to find the target, report the target, and watch the target until it is attacked". (10:57) Col Nethery concludes:  
"Many more officers presently take the nuclear weapons course than actually use it - we need to train those who will be involved in the precise method - others should be taught a rapid, simplified form that will enable immediate attack". (10:58)

ANNEX C--Current Soviet Military Doctrine.

1. At present Soviet forces possess the capability to deliver nuclear weapons by both aircraft and missile. Delivery techniques are classified, however, it is well known that they believe in precise target analysis. Opinions have been expressed that, because of the inaccuracies of the precise method, the Russians might follow their long held theory of massing fires in preference to trying to locate and engage a point target. (10:56)
2. An indication that the Soviets are thinking about speed in employing nuclear weapons is contained in the following quotation from a Russian authored book: "There can be no doubt that the employment of atomic and thermonuclear weapons and missiles requires that surprise be considered in Soviet military science and that it must be the object of profound study". (13:87)
3. To better understand the improbability of the Red forces sitting still long enough to allow us to analyze a target during their offensive actions, consider the Soviet thoughts on fighting: emphasis is on the use of armor, speed, dispersion and mobility. After the initial stage of the ground offensive, Soviet doctrine visualizes the battle as a fluid operation during which nuclear strikes are exploited by rapid, deep armor thrusts to secure vital objectives and to prevent reorganization by the enemy. The Soviet plan is to continue the offensive night and day in order to maintain the momentum of attack and use nuclear weapons to punch holes in our defenses. (3:3)
4. The concept of defense is characterized by dispersion in depth, with troops, materiel and supplies dug in. Defensive operations are designed to delay and compress enemy forces into concentrations vulnerable to nuclear attack, and then to counter-attack enemy penetrations with strong armored forces. A defensive posture is assumed when unavoidable, but then only temporarily. (3:5)
5. Protective techniques against nuclear weapons exploit "hugging" tactics - that is, maintaining close contact with the enemy to discourage his use of nuclear weapons on forward echelons. The necessity for frequent movement, camouflage and dispersion as passive defense measures is emphasized. (3:5)
6. Although not stated specifically, it is evident that Soviet commanders think their control techniques for the coordination and delivery of nuclear fires are fast and efficient. Soviet theory states that nuclear fires often can be used more quickly to influence the action than maneuver elements can be moved from the second echelon or reserve. (1:45)

ANNEX D--Target Acquisition and Surveillance.

1. On the nuclear battlefield, the enemy can be expected to present only transitory targets...G2 has the problem of obtaining information on such targets promptly for the analysis to be completed, decision to fire made and delivery accomplished before the target dissipates. (2:138)
2. During the execution phase of an operation or after the initial nuclear preparation has been fired, most targets will become transitory in nature requiring far greater emphasis on speed in planning, decision and execution...under these conditions, the normal planning procedures must be telescoped in time. (2:140)
3. Organic to the Division are certain elements which assist in acquiring targets and conducting the surveillance necessary for nuclear employment. These are:
  - a. A Cavalry Squadron.
  - b. The Division Aviation Battalion.
  - c. The Target Acquisition Platoon in Division Artillery.
  - d. Thirty Forward Observers.
4. These agencies can provide adequate front-line surveillance and target acquisition, however, there is no reliable way to obtain the intelligence we need at distances greater than 10,000 meters. (10:56) Even equipment now under development, if it lives up to design expectations, will not provide all the target information required in our present nuclear target analysis procedure. (10:55)
5. Specifically, the highest priority targets for nuclear attack are nuclear delivery sites, reserves, and logistical and support units. Targets closer to the FEBA would be profitable targets for our sub-kiloton yields, but not the type that would require detailed target analysis.
6. One of the Division's major problems is extending the effective depth and scope of the intelligence collection effort to at least the range capabilities of the weapons systems available. (7:67) The longest range delivery system available to the Division Commander is the Honest John with a range of approximately 39,000 meters. Normal general support missions will locate the "John" from 5,000 to 7,000 meters behind the FEBA. The Division, then, should have the capability of acquiring targets 30,000 meters into enemy territory to make full use of the Honest John capability. At present, the Division cannot do it. In the absence of this acquisition ability, the Division must turn to higher headquarters for



CONTINUATION OF ANNEX D

help.

7. Acquisition is only part of the problem. After our nuclear attack has been made, information regarding the time of burst, yield, ground zero and height of burst must be transmitted to the FSE. Then, theoretically, a damage assessment is made to determine the success of the nuclear mission and its effect on the operation. (2:140)

ANNEX E--Time Factors.

1. Organic to the ROAD Infantry Division is the Honest John, the 8-inch howitzer, and the Davey Crockett.
2. Each of these weapons systems has been subjected to extensive tests and provide the Division Commander with highly reliable means to deliver nuclear weapons.
3. The element of time in preparation of a particular system has been established and must be considered for planning purposes. Following are current time factors for preparation of the various weapons:

System	Scheduled	On Call	Target of Opportunity
Honest John	on time	10 min	75 min *
8-inch How	on time	5 min	75 min *
Davey Crockett	on time	3 min	20 min **

\* Table II, Inclosure 1, Subcourse 470, The Employment of Nuclear Weapons, US Army Artillery and Missile School, Fort Sill, Oklahoma, 1960.

\*\* Estimated.

4. In order to realistically incorporate a time factor into planning, a consideration must be made of the total time required to prepare the system. This procedure involves two variables:
  - a. Travel time to the firing position.
  - b. Time required to transmit target data, decision to fire, and fire commands.
5. Nuclear delivery systems characteristically "hide" to avoid detection by the enemy. The fire unit will occupy a delivery position only to perform a mission and will then return to the "hide" area. As an example, tactical employment of the Honest John involves location of the firing position from two to four kilometers from the "hide" area. Therefore, in planning to employ the honest John, an estimate must be available of the time required to reach the firing position and this figure added to the preparation time listed in paragraph 3, above.
6. No accurate estimate can be made of transmission times.
7. The G3, through the FSE, must be continuously aware of these time elements in order that he may advise the Commander properly on the feasibility of engaging a particular target. Knowledge of these time elements related to permanence of the target is critical in making the decision to attack with nuclear weapons.

ANNEX F--Letter, Recommended Changes to Nuclear Weapons  
Training Program.

HEADQUARTERS UNITED STATES ARMY INFANTRY SCHOOL  
Fort Benning, Georgia

October 1962

SUBJECT: Recommended Changes to Nuclear Weapons  
Training Program

TO: Commandant  
United States Army Command & General Staff College  
Fort Leavenworth, Kansas

1. The Infantry School has completed a study of the techniques used in the employment of nuclear weapons at Division level. The study indicates certain areas of training require improvement.

2. The study has revealed that the Nuclear Weapons Employment course, while comprehensive in analysis techniques, contains weaknesses in:

- a. Target acquisition and surveillance.
- b. Weapons and delivery systems.
- c. Realistic reaction time evaluation.

3. A conclusion of the study was that "Prefix 5" officers are poorly trained in the above categories.

4. The following action is recommended:

a. Modify the present course to include comprehensive training in target acquisition and surveillance techniques.

b. Add to the course a detailed description of weapons systems to include capabilities and limitations based on time.

c. Limit the number of officers who attend the course; fully train those who are likely to be assigned these duties.

d. Offer a short familiarization course to all other officers to develop a general awareness of nuclear weapons. Prefix digit 5 would not be awarded for this course.

e. Continue refresher training for those officers who hold the prefix digit 5.

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5. The Infantry School feels strongly that these changes will improve the capability of those officers assigned to duties involving employment of nuclear weapons, particularly at Division level where speed will be essential to successful attack of nuclear targets.

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