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TITLE

"IS THE PRESENT CLASS V SUPPLY SYSTEM ADEQUATE  
TO MEET REQUIREMENTS OF FAST MOVING SITUATIONS  
UNDER CURRENT CONCEPTS OF TACTICAL OPERATIONS?"

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PREFACE

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The point of view expressed in this paper is that of the author - not necessarily that of the United States Army Infantry School or the United States Army.



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## INTRODUCTION

There are three basic essential elements in warfare: the soldier, his gun and his ammunition. Ammunition is the lifeblood of the gun. When there are no more cartridges, the gun virtually becomes lifeless. When the soldier has a gun but no cartridges for it, he has only a dubious club or a clumsy bayonet handle which is not long enough to reach the enemy several hundred yards away who is shooting real bullets at him (16:V). An ammunition supply system must be in existence to provide the soldier with the cartridges to return the fire.

Throughout history the ammunition supply system has been altered whenever the requirements of a new organization have changed. This is especially true today with our new pentomic organization. The recent change of organization has resulted in increased amounts of rapid fire and close support artillery type weapons in the forward infantry units (22:Table 11). This increase has further resulted in a major supply requirement because the front line soldier must be provided with more ammunition than ever before in history.

The purpose of this monograph is to determine whether the present Class<sup>2</sup> supply system is adequate to meet the requirements of fast moving situations under current concepts of tactical operations. Many of these terms, even though in common usage, are quite nebulous and have many interpretations. Annex A contains definitions, interpretations and assumptions of the author.

To limit the discussion, this monograph will be devoted to the supply of ammunition in the current battle group organization and will pertain only to the fast moving defensive situation.

As the current organization is new, having only been adopted by the United States Army in 1956, there has been no opportunity to combat test the ammunition resupply system. The resultant lack of reference material has necessitated the formation of many assumptions by the author which are based only upon the principles of ammunition resupply and personal experience.

## DISCUSSION

The new infantry organization is heavy with organic weapons, not only the powerful supporting slow fire type such as the 4.2 inch mortar but also machine guns. This heaviness of weapons indicates that the new organization possesses a tremendous firepower capability. Firepower, a much abused phrase, is perhaps best defined by Major General E.F. Harding, who stated "Firepower is bullets hitting people" (16:V). The weapon itself is merely a carrier whose object is to deliver a killing missile to the target. The gun, by itself, does not affect the enemy (23:576).

The man with the gun must be supplied with an initial quantity of ammunition and concurrently with expenditure he must receive additional of the proper type to replace that expended (2:III:3). The initial quantity is referred to as the basic load and is expressed in a specific number of rounds per weapon. The basic load is a prescribed amount of ammunition authorized to be in possession of a unit and which is sufficient to initiate combat and sustain the unit in action until it can be resupplied (3:23). For the purpose of this discussion we will assume that a unit in a fast moving situation will begin the action with a full basic load for all weapons. The amount of various types of ammunition in the basic load is established by Department of the Army (7:226).

General Halleck, at Pittsburg Landing after the battle of Shiloh, ordered: "When the cartridge boxes of the men are found unfilled, the commander of the company will be a-

rested for neglect of duty" (32:407). This concern on the part of the Department Commander for the ammunition resupply of the most forward fighting elements indicates the importance of replenishment of basic load. Even those commanders in Korea who stated "We had to retreat because we ran out of ammunition" (23:576) can attest to the fact that if replenishment of the basic load had been adequately carried out they would have been able to accomplish their missions. In future operations neither our fighting troops nor our combat leaders should be faced with the need for disciplinary action, as ordered by General Halleck, or the need to retreat because of an inadequate supply system.

To properly analyze any system of operation, the basic factors must first be isolated. Successful ammunition supply is the delivery of correct type and amount to the right place at the right time (31:126). The first factor readily apparent is the delivery system. The delivery system is wholly dependent on available transportation. To insure that the correct type and amount of ammunition is placed into the delivery system, a requisition procedure must be in effect. A communication system is necessary to place the unit requisition in the hands of logistical personnel. The last factor is time. The ammunition supply system is dependent upon each individual factor. If any factor were to be either missing or ineffective, the entire system would be inadequate. The principles of simplicity, availability and flexibility should be considered when analyzing each factor in turn.

The selection of a mode of transportation for ammunition resupply in a fast moving defensive situation is dependent on the availability of all modes organic, attached and under control of higher headquarters. Serious consider-

ation must also be given to available routes, light conditions, enemy patrols within defensive areas and enemy fires affecting the routes.

Dispersion, required by the enemy atomic potential (11:6), will result in distances between units which cannot be covered by observation and in some instances not even by fire. These distances will permit the enemy during hours of darkness to patrol between and behind forward defensive positions. During daylight hours the possibility may exist of observed enemy fires along the route of supply.

The present battle group has available to it the most modern transportation facilities. Organic to the ammunition supply system of the battle group are ammunition bearers and motor vehicles. Vehicles range in size from the  $\frac{1}{2}$  ton truck with it's trailer, to the five ton truck with it's specially designed two ton ammunition trailer. Also organic to the battle group, however with a primary duty of other than ammunition resupply but which could be used in emergency operations, are many other wheeled vehicles and limited amounts of armored vehicles (Annex C). Available on request at division are sufficient surface and air vehicles to move ammunition in gross amounts at rapid rates (Annex D). Aircraft could land ammunition in critical areas or airdrop it directly into or near the defensive positions. The transport helicopter, although limited in range and weight carrying ability, can also be used. Because of the speed of the helicopter in comparison to surface transportation, it can disperse convoys over 5-10 times more area than can surface transportation while moving to a common objective and can still concentrate the supplies transported in the same area (13:14). The helicopter also has the obvious advantage of not needing the road or trail network required by trucks for

moving to the area of critical ammunition supply, loading and unloading and turnaround.

The simplicity of the ammunition distribution system will be dependent upon the transportation plan developed by the S-4 in the field. This plan must be basic and uncluttered by detail. Vehicles are available in sufficient amounts both within and without the battle group to carry tonnages of ammunition which would exceed any requirement of a fast moving defensive situation. The system possesses a large degree of flexibility because of the available modes of transportation and their centralization.

One of the basic rules of supply is that impetus of supply is from the rear. However, in the ammunition portion of resupply operations, because of the unpredictability and the extreme contrasts between amounts expended at different times (4:I:582), it is actually from the front (10:31). This necessitates the requesting of specific types and amounts of ammunition by the forward units.

Within the battle group the requisition is informal in nature and may range from a verbal request over the administrative radio net to a hastily scribbled (but readable) note on available paper. This informality in itself establishes within the requisition procedure a near maximum in flexibility and availability. Simplicity is limited only by the requirement that specific amounts and types of ammunition be stated in the requisition.

When utilizing supply point distribution, as is the case in a normal defensive situation, communication does not present a problem because the request will be hand carried directly to the ADP. In a fast moving defensive situation there will be little or no change to this system within the rifle elements. However, the author believes that other el-

ements and forward tactical units of company size will be either too engrossed in the action to permit any of their personnel or vehicles to travel to the LCP (4-7 miles to the rear)(3:10) or will find the routes to the rear are not trafficable because of enemy fires. Unit distribution will then be in effect. To transmit the requisition to the supply agency, an efficient and rapid method of communication must be readily available. Other than messenger, which we have already ruled out, wire and radio are available within the battle group.

The wire system may or may not be available for the transmission of ammunition requests. In a fast moving defensive situation under current tactical concepts, it is not anticipated that a battle group will remain in a static defense except for brief periods. Tactical units will change rapidly from offensive action to retrograde or delaying action. These brief periods of defense and the extreme distances between units because of the required dispersion will make it extremely difficult to install a wire system as we have become accustomed to in the past. The possibility of enemy patrols within the battle area has also increased along with the requirement for dispersion. Enemy patrols operating within the battle area may destroy portions of wire systems they discover. That portion of a battle group wire system which remains effective after enemy patrol activity and /or incoming artillery would probably be cluttered with tactical and fire control traffic. Limited ammunition request traffic would probably be able to be transmitted on the wire system.

There are three radio nets available to most organizations of the battle group which could be utilized in the ammunition resupply role. The Administrative Net would be

utilized primarily. Neither the Mortar Battery, Reconnaissance Platoon nor the Assault Gun Platoon are in this net (26:72) and must depend either on communications of adjacent units or use of other nets or another type of communication. The command and fire control nets, in a defensive situation, would ordinarily be used for those tactical transmissions which could not be sent by wire. If ammunition is short, there is scarcely any other type of message that could possess more tactical importance. These nets, because of the insecure nature of radio transmissions, are subject to electronic jamming by a resourceful and aggressive enemy and to terrain and climatic conditions. Even though the units were proficient in decreasing the effect of these difficulties, a delay in receipt of the transmission would still be expected.

The Administrative Net is made up of AN/PRC-10 radios (with two exceptions which do not ordinarily affect the ammunition resupply system). This radio has an FM signal, which is limited to line-of-sight, and has a maximum range of 5 miles (26:7) unless retransmission or relay facilities have been established. Keeping in mind that the recommended distance of the LCP from the forward edge of the battle area is 4-7 miles and that the FM signal could be seriously impeded by intervening hill masses, the effectiveness of the Administrative Net is limited in the resupply of ammunition role.

The communication system available to support the ammunition supply system is complex rather than simple because of its many technical limitations. It is available to most of the resupply system and is as flexible as is the type selected for utilization.

The last factor to be considered, but by far the most

important is time. Combat forces do not care how far away the supply point is--what they want to know is how soon can they get the ammunition that they need (20:7).

The basic load of a unit can be totally expended in a very short time when weapons are fired as required in a fast moving situation. Annex E indicates the amount of time that the basic load of certain weapons of the current organization would last if the weapon was fired at or near the maximum rate of fire (2:VII)(22:58&71). Time is of the essence to the forward units. A delay in any phase of the ammunition resupply system would reduce the effectiveness of the system. The front line soldier and his leaders must not only anticipate and initiate the request before the possibility exists that the ammunition will not arrive prior to the expenditure of the entire basic load but must also realize the reaction time required within their particular logistical organization.

The personnel and units between the requesting soldier and the Ammunition Distribution Point and the personnel and units who comprise the ADP must be well trained and able to function accurately and without delay regardless of physical discomfort or fatigue. This in itself will reduce the reaction time which is so important to that soldier who is in possession of only a "dubious club or bayonet handle which is not long enough to reach the enemy several hundred yards away who is shooting real bullets at him (16:V). If he does not receive his resupply of ammunition in sufficient time to utilize it, he cannot use it in the hereafter.

## CONCLUSIONS

The present Class V supply system is not adequate to meet the requirements of a fast moving defensive situation under current concepts of tactical operations because of the limitations of the communication system upon which it must rely.

## ANNEX A - Definitions, Interpretations and Assumptions.

Class V supplies consist of ammunition, explosives and chemical agents. Examples are small arms and artillery ammunition; grenades and mines; explosives such as dynamite, TNT, fuses, blasting caps and detonators; pyrotechnics; and chemical agents including flamethrower fuel (3:I:2).

The present Class V supply system is based upon the principles of simplicity, availability and flexibility (2:III:3) which have essentially been the same throughout the history of warfare. Technological advances however, have altered the application of these principles from the procurement of ammunition on the spot, as did the caveman of ancient times when he stooped to pick up stones and sticks from the ground, to the current system as taught at the United States Army Infantry School. This current system is based upon the advent of mass destruction weapons (Atomic Bomb) in 1945 and is characterized by centralization of effort (simplicity) and mobility (flexibility). Annex B is a diagram of the present system.

The principle of availability is really the point in question. For purposes of this monograph availability will be measured in terms of adequacy or effectiveness. The effectiveness of any ammunition supply system is measured by it's ability to place required (adequate) amounts of proper type of serviceable ammunition in the hands of the using troops (3:22).

The principles of war have not changed since the beginn-

ing of warfare and will not change in the future because they are basic and sound. However, the application of the principles, i.e. concepts, will change along with technological developments. Current concepts of tactical operations are based upon the advent of the Atomic Bomb and are characterized by dispersion and aggressive exploitation.

A fast moving situation can exist in one of two types depending upon the basic phase of combat considered. In the offense it would be characterized by rapid physical movement of an entire force from one locality to another, as in pursuit or exploitation, with the resultant lengthening of lines of supply and little expenditure of ammunition. In the defense it would be characterized by:

a. A force remaining in one general location throughout the action. Today's concepts of operations indicate that a force will be in<sup>a</sup> defensive situation for only a short period of time following an offensive or during a delaying action. This short period of time may preclude the elaborate communications networks and dug in defensive positions peculiar to latter portions of Korean action and commonplace in World War I.

b. Expenditure of ammunition by defending force at near maximum rate.

c. Fairly constant length of lines of supply throughout the action.

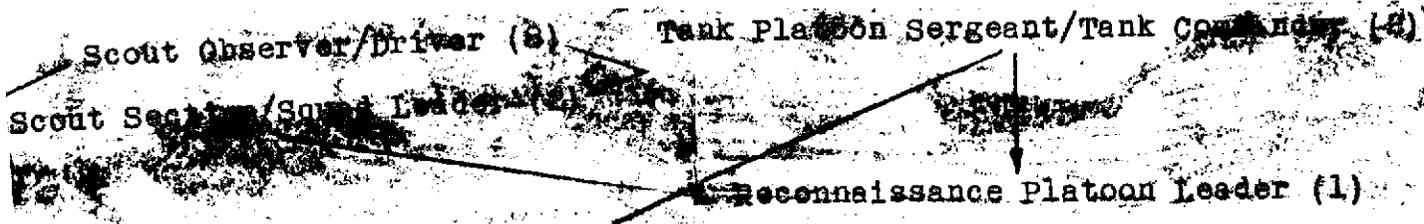
d. Extremely aggressive enemy using all means at his disposal to remove or to make ineffective the defending force.

e. Greatly increased traffic along all available supply routes.

A fast moving situation also requires certain depar-

tures from planned procedures and established doctrine and results in the use of expedients (8:1).

Annex B - Ammunition Supply System within Infantry Division  
 Battle Group (22:2-4); (28:129-135, 139, 147, 212); (3:26-27,  
 29); (6:48-49); (29:31-55, 86-93, 98-103).



Organization and authorized vehicles

- 1/2 ton trailers
- 1/2 ton ambulances
- 3/4 ton trucks
- 3/4 ton trailers
- 1/2 ton trucks
- 1/2 ton trailers

LOGISTICAL CONTROL POINT

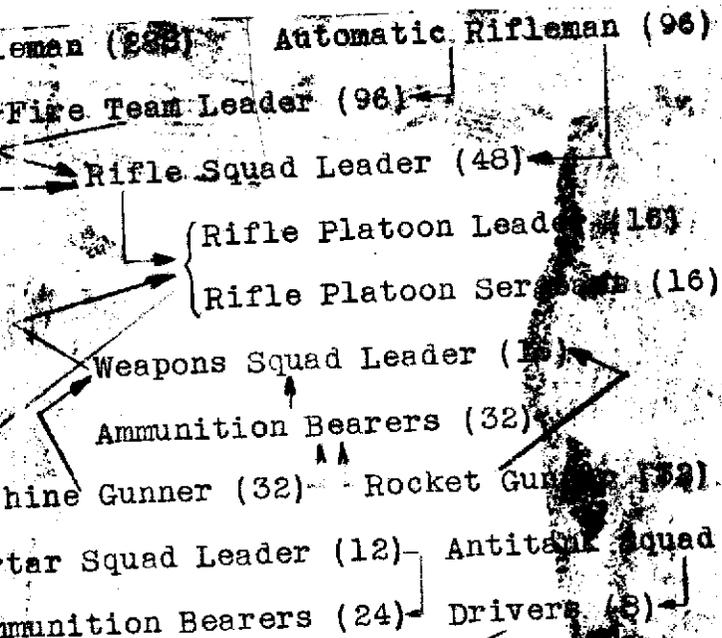
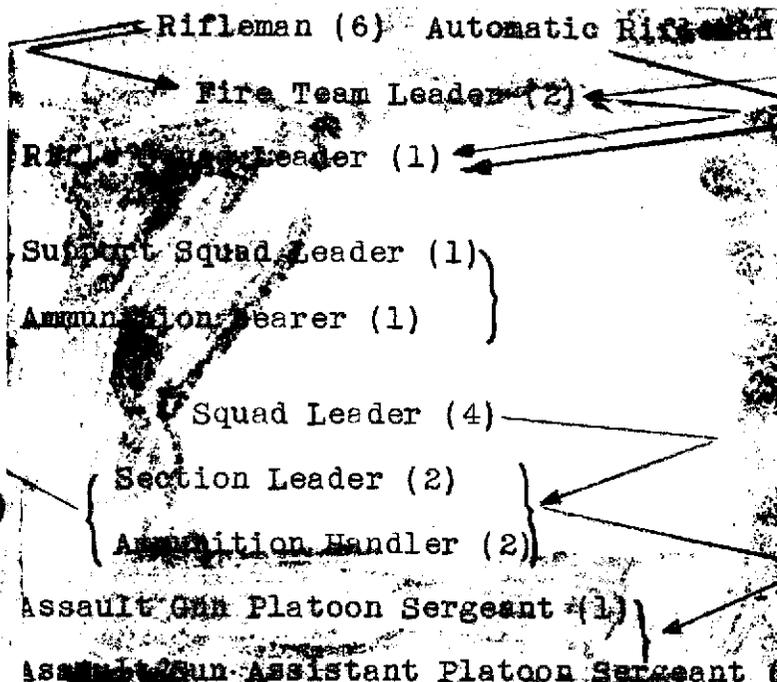
- Supply and Maintenance Platoon Leader (1)
- Supply Officer (1) Supply Sergeant (1)
- Assistant Supply Sergeant (2) Supply Clerks (4)

AMMUNITION DISTRIBUTION POINT

- Ammunition Squad Leader (1)
- Ammunition Specialist (1)
- Ammunition Bearers (2)
- Truck Drivers (10)

Mortar Section

Mortar Battery Supply



Assault Gun Platoon Sergeant (1)  
 Assault Gun Assistant Platoon Sergeant (1)



Organization  
Authorized Vehicle

Assault Gun Platoon

Bank, 90mm Gun

4 ton trucks

1 ton trailers

3/4 ton trucks

3/4 ton trailers

Supply and Maintenance  
Platoon

Anti-Air Squadron

2 ton trucks

11 ton trailers

5 ton trucks

2 ton trailers

Other trucks and sec-  
ondary battle

1 ton trucks

Weapon  
Ammunition  
Other  
Missiles  
Emergency  
Missiles

4 4 4 3 3

4 1 1 3

4 1 1 3

1 1 1

1 1 1

6 6 2 4 2

2 2 4 2

4 4 4 2

2 2 4 2

2 2 4 2

2 2 4 2

2

less than 10 seconds  
 less than 1 minute  
 less than 1 1/2 minutes  
 less than 2 minutes  
 4 minutes  
 less than 7 1/2 minutes  
 less than 1 1/2 minutes  
 less than 2 1/2 minutes  
 less than 13 minutes

	Ammunition Resupply Mission	Other Missions	Emergency Ammunition Resupply Mission
9			
8			
4			
	24	4	24
	8		1
	8		1
	9		5
			5

ANNEX D - Vehicles Under Division Control Which Could Be  
Used For Ammunition Resupply Of The Battle Group (22:41,45).

Transportation Battalion

Infantry Carrier.....	115
2½ Ton Truck.....	87
1½ Ton Trailer.....	83

Aviation Company

Helicopter Utility.....	8
Airplane Utility.....	6
Helicopter Reconnaissance.....	20
Airplane Observation.....	16



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