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INTEGRATED NUCLEAR CONSIDERATIONS, MANEUVER BATTALIONS (AND LOW--ETC(U)

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DNA001-80-C-0243

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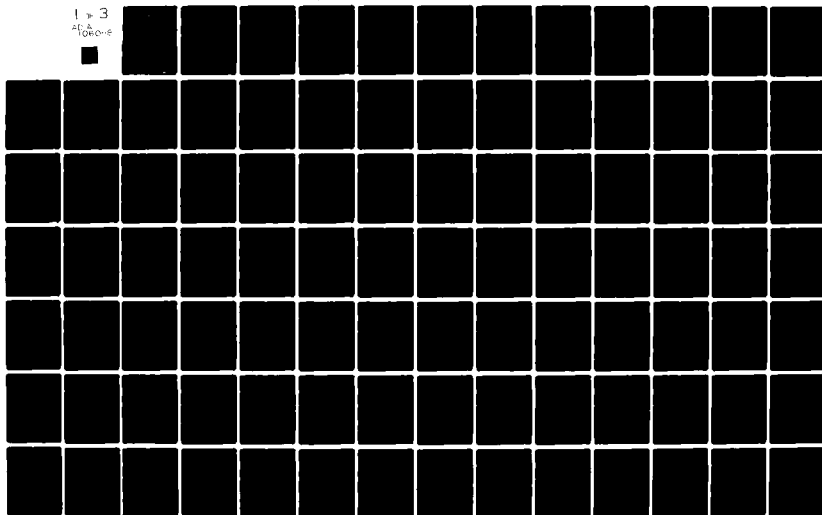
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INTEGRATED NUCLEAR CONSIDERATIONS

Maneuver Battalions (and lower) Combat, Combat Support and Combat Service Support in the Absence of Continuous Command and Control

JAYCOR
205 South Whiting Street
Alexandria, Virginia 22304
30 November 1980

Final Report for Period 28 March 1980—30 November 1980

CONTRACT No. DNA 001-80-C-0243 ✓

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DNA 5499F	2. GOVT ACCESSION NO. AD-A106 6889	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) INTEGRATED NUCLEAR CONSIDERATIONS, Maneuver Battalions (and lower) Combat, Combat Sup- port and Combat Service Support in the Absence of Continuous Command and Control.		5. TYPE OF REPORT & PERIOD COVERED Final Report for Period 28 Mar 80 - 30 Nov 80
7. AUTHOR(s) George W. Krause Thompson L. Raney		8. PERFORMING ORG. REPORT NUMBER J318-81-004/2191
9. PERFORMING ORGANIZATION NAME AND ADDRESS JAYCOR 205 South Whiting Street Alexandria, Virginia 22304		6. CONTRACT OR GRANT NUMBER(s) DNA 001-80-C-0243
11. CONTROLLING OFFICE NAME AND ADDRESS Director Defense Nuclear Agency Washington, DC 20305		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Subtask V99QAXNL129-19
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 30 November 1980
15. SECURITY CLASS. (of this report) UNCLASSIFIED		13. NUMBER OF PAGES 208
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES This work sponsored by the Defense Nuclear Agency under RDT&E RMSS Code B380080464 V99QAXNL12919 H2590D.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Division 86 Integrated Nuclear-Nonnuclear Battlefield Armored Battalion-Division 86 Infantry (Mech) Battalion-Division 86 Conceptual Armored Combat Battalion Conceptual Combat Arms Battalion		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report analyzes three areas within the integrated battlefield considerations for future operations: (1) Ability of the tank/mech battalions to function on the integrated battlefield in the absence of continuous command and control; (2) Requirement to provide 1½ trailers to haul the increased amount of ammo/POL expected to be consumed during the conduct of the active defense in Central Europe; (3) Evaluation of the unit replacement system versus the individual replacement system on a nuclear/nonnuclear battlefield.		

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SECTION I

EXECUTIVE SUMMARY

**COMBAT MANEUVER BATTALIONS' OPERATIONS
IN ABSENCE OF CONTINUOUS COMMAND AND CONTROL**

PURPOSE

TO DETERMINE IF THE PROPOSED ORGANIZATIONS OF COMBAT MANEUVER BATTALIONS, AND THE PROVISIONS FOR COMBAT SERVICE SUPPORT, ARE CONDUCTIVE TO OPERATIONS ON THE INTEGRATED BATTLEFIELD IN THE ABSENCE OF CONTINUOUS COMMAND AND CONTROL.

OBJECTIVE

PROVIDE A COMBAT EFFECTIVE FORCE, CAPABLE OF PERFORMING THE COMBAT, COMBAT SUPPORT AND COMBAT SERVICE SUPPORT FUNCTIONS REQUIRED ON THE INTEGRATED BATTLEFIELD, IN THE ABSENCE OF CONTINUOUS COMMAND AND CONTROL.

APPROACH

- UNDERSTAND DIVISION 86 ORGANIZATIONAL AND OPERATIONAL CONCEPTS

COMBAT
COMBAT SUPPORT
COMBAT SERVICE SUPPORT

- ANALYZE - MISSION, FUNCTIONS AND TASKS
- EVALUATE - LACK OF CONTINUOUS COMMAND AND CONTROL ON:

COMBAT AND COMBAT SUPPORT OPERATIONS
COMBAT SERVICE SUPPORT CAPABILITY
- IDENTIFY SHORTCOMINGS
- PROPOSE FIXES FOR SHORTCOMINGS
- EVALUATE - ORGANIZATIONAL, PROCEDURAL AND MATERIEL REQUIREMENTS

THE OBJECTIVE DIVISION (DIV 86)

MISSION: To conduct integrated air/land combat against modernized ground forces in the year 1986 and beyond.

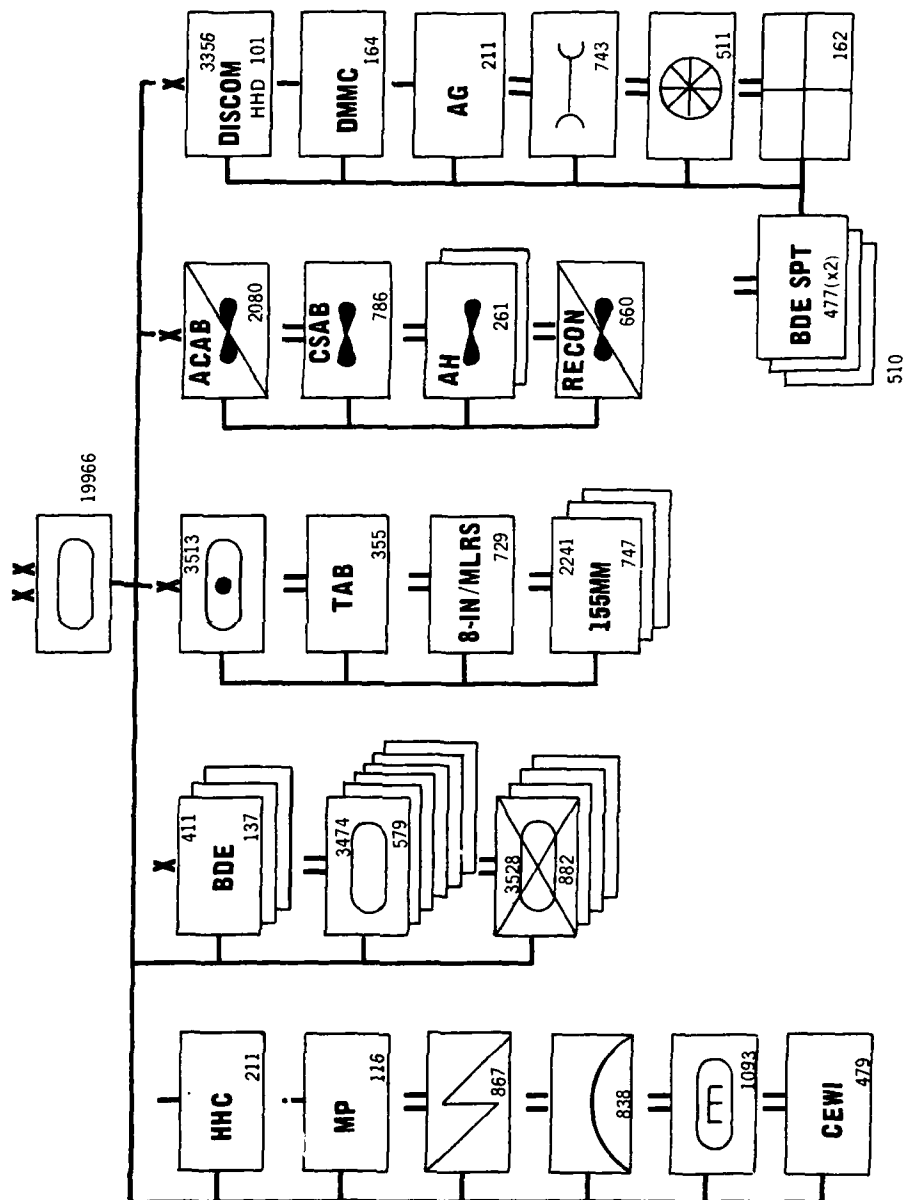
THREAT/ENVIRONMENT:

A highly mobile, well balanced combined arms combat force trained to establish and maintain a fast tempo of offensive action in Central Europe.

PRINCIPLES OF FORCE DESIGN:

- Integrate weapons systems to: Maximize firepower forward - Enable combined arms teams to maneuver quickly - Provide essential leadership forward.
- Simplify tactical, technical and training responsibilities.
- Combined arms integration at battalion and brigade.
- Integrate air/land battle at division and corps.
- Integrated (conventional, nuclear and chemical) operations.
- Organize C³ to integrate functions within the central battle.

THE OBJECTIVE DIVISION



ANALYSIS AND OBSERVATIONS

- The capabilities of the units shown on the accompanying chart were assessed to determine their inherent advantages and disadvantages in terms of the following major functions:

- Combat
- Combat Support
- Combat Service Support
- Command and Control

- Considered in this assessment were :

- Organization and Manning
- Organic Weapons Systems
- Mission
- Employment Doctrine

UNITS INCLUDED IN THE ANALYSIS
(Division 86)

TANK PLATOON	MECHANIZED PLATOON
TANK COMPANY	MECHANIZED COMPANY
TANK BATTALION	MECHANIZED BATTALION
COMPANY TEAM	
BATTALION TASK FORCE	

ESSENTIAL ELEMENTS OF ANALYSIS

1. **QUESTION:**
In the absence of continuous command and control, are the maneuver battalions organized to effectively conduct combat missions on the integrated battlefield?
- CONCLUSION:**
Temporary organization for combat will prevent the achievement of the full combat potential of the combined arms team.
2. **QUESTION:**
What are the maneuver battalions' /task forces' capabilities to conduct combat service support on the integrated battlefield in the absence of continuous command and control?
- CONCLUSION:**
Temporary task organization will make more complex the already difficult task of conducting CSS operations in combat; the difficulties will be compounded without continuous communications.
3. **QUESTION:**
What is the appropriateness of large battalion /task force trains vis-a-vis fragmentation of support into smaller, dispersed teams?
- CONCLUSION:**
Echelonment of support elements into company trains and battalion combat and field trains, whose composition may be adjusted as required, provides more responsive forward support along with the necessary degree of dispersion than does fragmentation into smaller, more dispersed teams.
4. **QUESTION:**
What are the advantages and disadvantages of a demand-supported resupply system vis-a-vis a push system of pre-packaged supplies for company /battalion?
- CONCLUSION:**
Either system will work, however, neither is efficient under the temporary task organization concept in the absence of continuous communications between supported and supporting units.
5. **QUESTION:**
What is the impact on companies /battalions if capacity is increased to transport larger volumes of combat consumables?
- CONCLUSION:**
There appears to be an excess POL /Ammo transportation capability in Division 86 maneuver battalions.
6. **QUESTION:**
What command and staff functions (if applicable) should be changed at battalion and subordinate formations to conform with integrated battlefield operations?
- CONCLUSIONS:**
 - o The S1 /S4 and the S2 /S3 staff elements within the Bn Hq should be organized and operate as integrated sections.
 - o The Bn Hq section should be combined with elements with related missions and physical locations.
 - o The Bn trains should consist of the logistics and administrative elements of the Bn under a single commander.
 - o The Bn trains should be provided with a dedicated security element.

SUMMARY OF ANALYSIS

1. RESULTS:

The tank and mechanized battalion organizations are optimized to fight effectively as pure organizations rather than organized as they would normally fight, in an integrated combined arms configuration. The latter permits the greatest flexibility in continuous, sustained combat against an ill-defined, well equipped threat, under varying environmental conditions in a nuclear and nonnuclear conflict under non-continuous command and control. This is how synergism is achieved.

2. IMPLICATION:

Combat

Mutual support provided by the tank/mech combination is not measured solely by the physical presence of their weapon systems on the battlefield. The intangibles of leadership, morale, trust, discipline, esprit de corps and camaraderie gained by being organized and trained as one normally fights, may be equal to or of greater importance than the physical combination of their weapon systems.

Combat Support

Familiarity with the capability of units and their personnel and equipment, habitually available to provide combat support, increases the likelihood of obtaining support more nearly matching the systems capability of the integrated units' combat effectiveness.

Combat Service Support

Projection of logistics support is more reliable and efficient when the number of support variables are reduced to a minimum. Skills and services of combat service support troops approach peaks of efficiency when the troops are highly motivated to produce the utmost within their capability. This does not just happen. It comes about primarily by men being concerned enough about the well being of friends to give forth the extra effort that makes the difference between success and failure.

3. CONCLUSION:

A combat battalion organized and trained as if it were to go into combat tomorrow, i.e., as a mutually supporting integrated tank and mechanized unit, will be a more effective and cohesive fighting force and will still retain the flexibility to be tailored to accomplish varying missions if the situation so dictates.

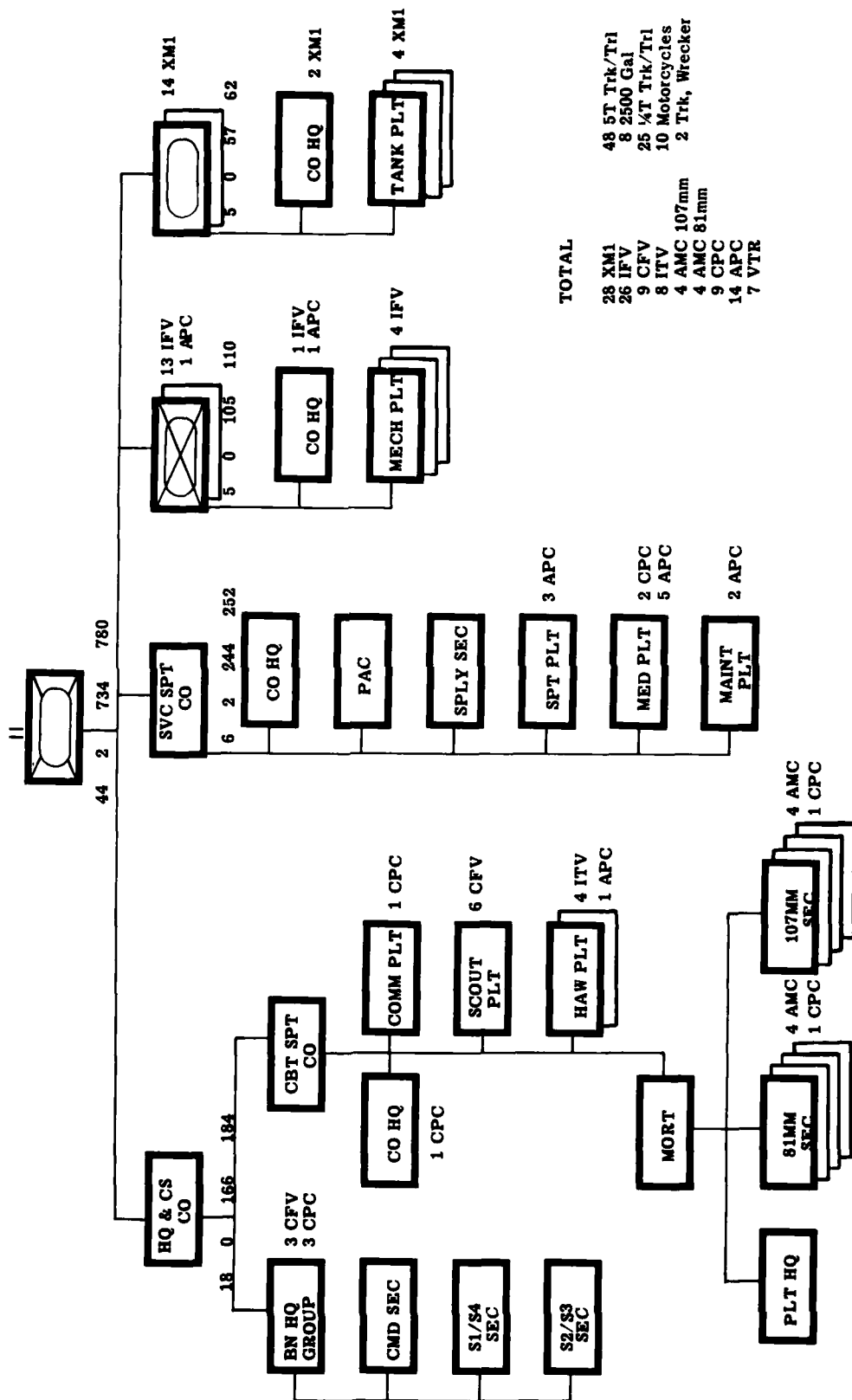
ALTERNATIVE ORGANIZATIONS

ALTERNATIVE 1 - The Armored Combat Battalion

- Comprised of a HQ & CS Co, a Cbt Svc Co, two tank companies and two mech companies.
- Combined arms integrated at Bn level; organization for combat will normally involve only organic units, thus maintaining continuity in command relationships and SOPs and capitalizing on teamwork achieved in training.
- Combat service support simplified because administrative elements will normally support only units of their battalion; temporary attachments to battalions are largely avoided.
- Command and staff functions realigned to conform with integrated battlefield operations.
 - CSS elements in Service Co, whose CO commands Bn trains, with staff supervision by the S4.
 - S1 and S4 combined into one section which operates in trains area; S4 relieved of responsibility for trains security.
 - S2 and S3 combined into one section; operates in Bn CP and Forward CP (when formed).
 - Combat support elements (HAW, mortar, scout and Commo Plat), which normally operate under supervision of S2 and S3, combined into a HQ and Cbt Spt Co.

ARMORED COMBAT BATTALION

ALTERNATIVE #1 - DIV 86 MANEUVER BATTALION



ARMORED COMBAT BATTALIONS

ALTERNATIVE #1 - COMPARISON WITH DIV 86 MANEUVER BATTALIONS

● COMBAT/COMBAT SUPPORT

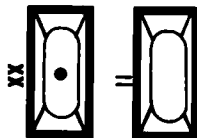
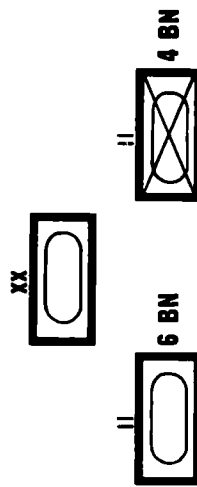
Although the personnel strengths of the 9 armored combat battalions are about equal to the 10 maneuver battalions in Div 86, there are fewer officers. The total force is a balance of tanks and infantry fighting vehicles and the firepower of the 96 fewer tanks is compensated by the addition of 53 TOW carrying armored vehicles, each having two TOW launchers. To support the infantry in dismounted missions where track mobility is restricted, 81mm mortars have replaced half of the 107mm in each of the battalions. The benefit accrues in the new organization of being organized and trained as if to fight tomorrow. This is a highly flexible organization readily adaptable to be temporarily organized as pure tank or pure mech task forces.

● COMBAT SERVICE SUPPORT

Except for replacing all 2½T and 10T cargo trucks with 5T cargo trucks, the same combat service support is available to both organizations. Again a primary benefit of the armored combat battalion is the stability of the battalion organization, with internal team organizations having minimum impact on logistics support. In the absence of communications, battalion push packages can be sent forward, based on data maintained in the battalion S4 section. Exact numbers of personnel within the various support skills will have to be adjusted based on new densities of equipment where appropriate.

ARMORED COMBAT BATTALIONS

ALTERNATIVE #1 - COMPARISON WITH DIV 86 MANEUVER BATTALIONS

ARMD CBT DIV		DIV 86	
			
AC BN	TK BN	MECH BN	
780	579	895	
28	58	0	
26	1	55	
9	6	6	
8	0	12	
4	6	6	
4	0	0	
9	6	8	
14	9	25	
7	7	7	
7020		7054	
252	348	348	
234	226	226	
81	60	60	
72	48	48	
36	60	60	
36	0	0	
81	60	60	
126	154	154	
63	70	70	
+		-	
PERS		PERS	
8		34	
21		96	
24		24	
36		28	
21		7	
DIFFERENCE		DIFFERENCE	
XMI		XMI	
IFV		IFV	
CFV		CFV	
ITV		ITV	
AMC (107mm)		AMC (107mm)	
AMC (81mm)		AMC (81mm)	
CPC		CPC	
APC		APC	
VTR		VTR	

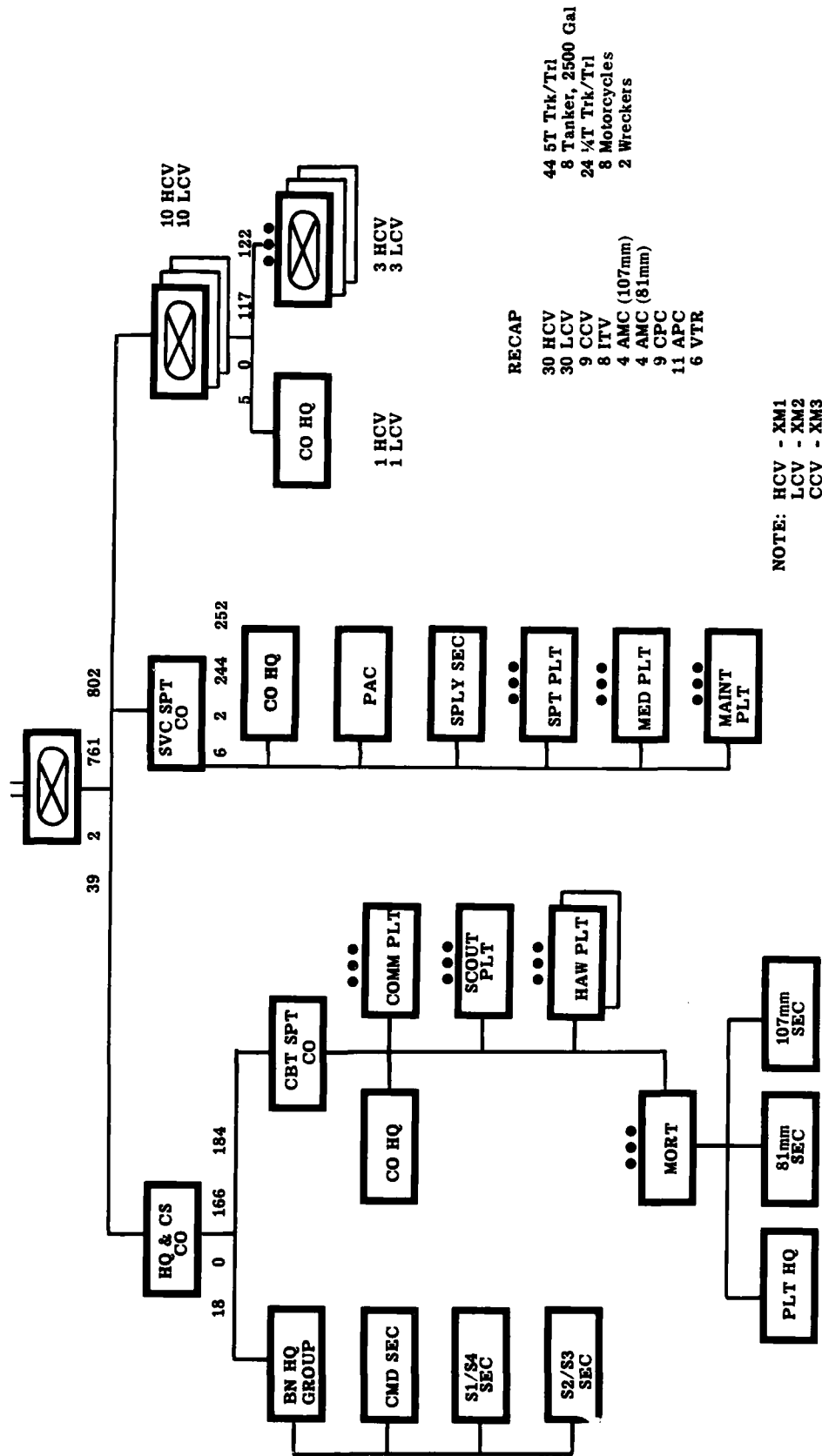
ALTERNATIVE ORGANIZATIONS

ALTERNATIVE 2 - The Combat Arms Battalion

- Comprised of a HQ & CS Co, a Svc Co and three combat arms companies each with three platoons.
- Tank/mech team integrated at lowest organizational level; reorganization for combat unnecessary; all echelons fight as they have trained.
- With 122 personnel and 10 XM-1s and 10 XM-2s, the combat arms company has considerably more combat power than a typical cross-reinforced tank or mech company.
- Commanded by a major, with a captain as XO, the company is capable of conducting limited independent operations.
- Bn HQ command and control elements, combat support and CSS restructured to align functions with physical locations and provide unity of command in trains area.

COMBAT ARMS BATTALION

ALTERNATIVE #2 - DIV 86 MANEUVER BATTALION



COMBAT ARMS BATTALIONS

ALTERNATIVE #2 - COMPARISON WITH DIV 86 MANEUVER BATTALIONS

● COMBAT/COMBAT SUPPORT

This alternative has slightly more personnel than either alternative 1 or Division 86 maneuver battalions. The 78 fewer tanks are offset by the 89 additional armored TOW carriers. The mortar platoon within each battalion has a 81mm mortar section of 4 tubes plus a 107mm mortar section of 4 tubes. Combat effectiveness is based on a day-to-day relationship between the tank and mech teams as they live and train together as a unit, similar in all respect to the quality exhibited by the present day cavalry units. This unit is not as adaptable to provide pure tank and pure mech units should the situation dictate.

● COMBAT SERVICE SUPPORT

As with alternative 1, 5T cargo trucks have replaced the existing 2½T and the future 10T cargo trucks. This simplifies planning and provides emergency carrying capability without unnecessarily providing excess transport capability. Exact numbers of personnel within the combat service support area would be based on new densities of equipment within each of the new organizations.

COMBAT ARMS BATTALIONS

COMBAT ARMS DIV

DOCTRINAL IMPLICATIONS

- Since it is difficult to measure the contributions to the success of battle when a tank company is exchanged for a mechanized company, commanders should not consider any unit smaller than a battalion/task force to weigh the outcome of battle. Establishment of priorities for combat support to include close air support and nuclear weapons are additional means to weigh the outcome of battle. The following statements, therefore, should be doctrine.
 - A battalion/task force is the smallest maneuver unit to be considered for attachment to a brigade to influence the outcome of battle.
 - Maneuver companies will normally remain with their parent battalion where tank/mech company teams can readily be organized to carry out the missions. Cross attachment to form pure battalions or tank and mech heavy task forces will be limited to an exchange between two battalions within the same brigade. (Forming a pure tank battalion automatically results in a pure mech battalion.)

CONCLUSIONS

- The current system of organizing separate tank and mechanized infantry battalions to be formed into temporary combined arms task forces on the integrated battlefield, in the absence of continuous command and control:
 - Inhibits the combined arms team from achieving its full combat potential.
 - Makes more difficult the provision of combat service support.
- Structuring a maneuver battalion with two mechanized and two tank companies, to train in peacetime as it will fight, will obviate the disadvantages of the current system yet retain the flexibility to cross-attach companies between battalions when required. It will also facilitate development of common maintenance and logistics push-package concepts, since all battalions will have the same basic organization.
- The command and staff functions in the current tank and mechanized infantry battalions are not organized to provide optimum unity of command by either function or geographical location within the battalion area of operations.
- Organization of a HQ & CS Co and a service company, and combining the S1/S4 and the S2/S3 sections will enhance unity of command and combine related missions/functions consistent with their locations in the battalion CP and trains area.

RECOMMENDATION

RECOMMEND THAT CACDA EXAMINE THE ALTERNATIVE ORGANIZATIONS PROPOSED IN THIS STUDY WITH A VIEW TO RECOMMENDING TO HQ TRADOC THAT THEY BE SUBJECTED TO FORCE DEVELOPMENT TESTING AND EXPERIMENTATION.

ANALYSIS OF DIV 86 TANK/MECH BATTALIONS
AMMUNITION/POL CARRYING REQUIREMENTS

PURPOSE

EXAMINE DIVISION 86 TO DETERMINE IF UNIT CARRYING CAPACITY SHOULD BE INCREASED TO HAUL GREATER VOLUMES OF MATERIEL. IF GREATER CARRYING CAPACITY IS REQUIRED OR DESIRED, ARE TRAILERS ATTACHED TO COMBAT VEHICLES A VIABLE MEANS OF HAULING VOLUME LOGISTIC ITEMS SUCH AS POL AND AMMUNITION.

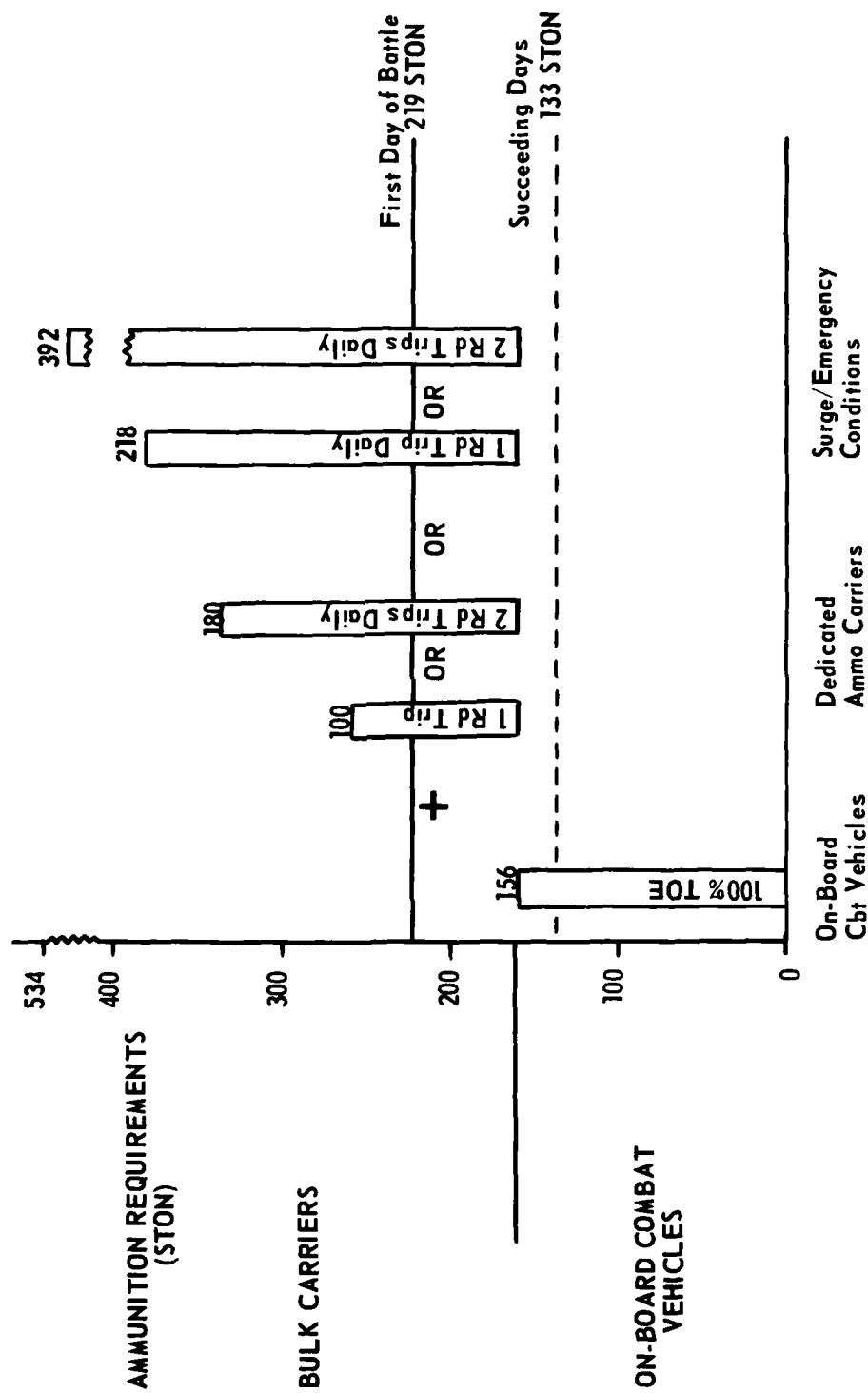
APPROACH

- Using the data available in FM 101-10-1, compute ammunition and POL consumption in a worst case situation.
- Compare the consumption data obtained with that data used in Division 86 organizational development.
- Analyze validity of using worst case situation to drive requirement for ammunition and POL transportation requirements.
- Examine alternative means available to battalion commanders to accomplish ammunition and POL transportation requirements.
- Determine if there is a need for additional transportation, and if there is, can it be satisfied by attaching 1½-T trailers to combat vehicles?

AMMUNITION CONSUMPTION VS CARRYING CAPACITY - TANK BN

- A comparison of the ammunition consumption for the tank Bn in defense of position (heavy combat) with its organic transportation carrying capacity indicates that the battalion has adequate dedicated capacity. The adjoining figure reflects the ammunition requirement for the first day of combat plus each of the next three succeeding days.
- The solid line represents the consumption of ammunition based on 100 percent of TOE combat vehicles available to fire during the first day of heavy combat. The dashed lines represents ammo consumption during each of the next three succeeding days.
- Under dedicated ammo vehicles, the 10 10T trucks are assumed to be available with each carrying its normal limit of 10T on one round trip daily for a total of 100 STON. In making a second round trip 80 percent are assumed to be available for a daily total of 180 STON. Using MHE and organic personnel the ATP located in the BSA can handle 500 STON daily.
- In a surge or emergency situation as represented by heavy combat, a do or die situation, the commander can establish priorities for other organic transportation to be used to haul ammo. It is assumed that 50 percent of the 1½T trailers, 2½T and 5T trucks would be available to haul their normal limit, while 100 percent of the 10T cargo trucks would operate at 50 percent overweight. This would provide a capacity to haul 218 STON on one round trip daily. Assuming an 80 percent availability for a second round trip provides a daily total of 392 STON.
- Under these conditions and assumptions, the tank battalion commander has adequate transportation assets available without considering the use of 1½T trailer to haul ammo behind each of his combat vehicles.
- Using realistic consumption data, locating an ATP in the BSA and two round trips daily, the number of dedicated ammunition trucks could be reduced by at least 4 10T cargo trucks.

TANK BN - AMMUNITION CONSUMPTION VS CARRYING CAPACITY (Consumption based on Defense of Position - Heavy Combat)



ALTERNATIVE CARRYING CAPACITY

TANK BN POL TRANSPORT CAPACITY VS CONSUMPTION ANALYSIS

- Organic to the tank battalion are 93 tracked and 84 wheeled vehicles which have an on-board fuel carrying capacity of 43,467 gallons of diesel fuel plus 1,614 gallons of MOGAS. Also, available within the battalion are 11 2,500-gallon tank trucks with a hauling capacity of 27,500 gallons.
- In computing a 150 KM movement which is one half on-highway and one half off-highway, approximately 20,265 gallons of fuel are consumed by the vehicles. Due to the different cruising ranges of the vehicles, the 24,816 gallons of fuel remaining on-board vehicles will not permit the battalion to move much beyond 200 KM without a major refueling stop. Off-highway movement consumes more than three times the on-highway movement rate. For a day's operation, additional factors, such as service usage and wastage, must be considered to determine the total consumption for the battalion.
- Considering a refueling stop after 150 KM of combined on-off highway movement the jag in the adjoining figure represents the transfer of about 20,000 gallons of fuel from the bulk carriers to the individual vehicles. After refueling, two tankers with 5,000 gallons of diesel and one tanker with 1,500 gallons of MOGAS continue on with the battalion, while eight tankers return to the CI III SP in the BSA to get another load of diesel. The reserve capacity on bulk carriers may vary from 5,000 to 6,500 gallons during the period the empty tankers are reloading POL. In an emergency, the division supply and service company 5,000 gallon tankers are available for unit distribution.
- Although these computations are based on an unrealistic 100 percent availability of all vehicles, there appears to be more than ample POL carrying capacity with the existing vehicles without adding trailers to the combat vehicles.
- With the availability of 35 5,000-gallon tankers in the division Supply and Trans Bn, the turn-around for the battalion's fuel trucks to reload could support a reduction of two of the battalion's organic 2,500-gallon tank trucks.
- Division 86 under intense combat uses consumption factors that show the division tank battalion moves about 200 KM per day off-highway or farther using a combination of on-off highway. At the same time, the battalion consumes 219 STON of ammo.

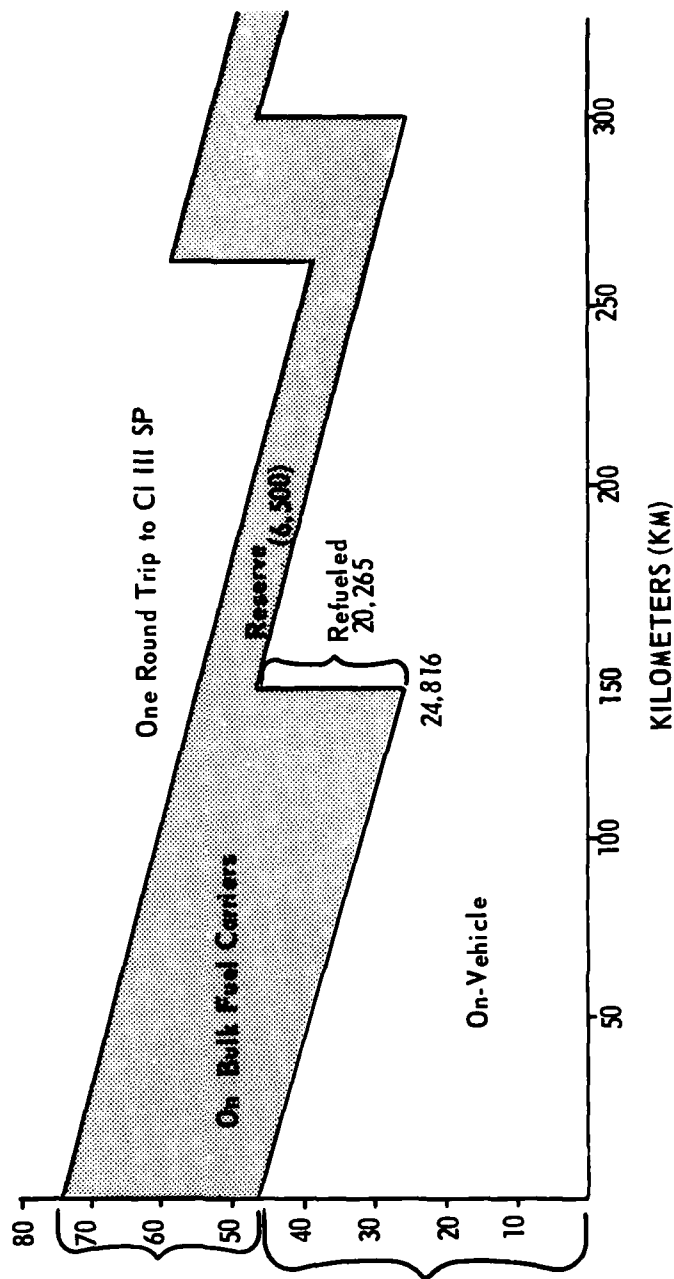
TANK BN POL TRANSPORT CAPACITY VS CONSUMPTION (50% On-Highway, 50% Off-Highway)

POL TRANSPORT
CAPACITY
(GALLONS)

Total 72,581

Bulk Fuel Tankers
27,500

On-Board 45,081

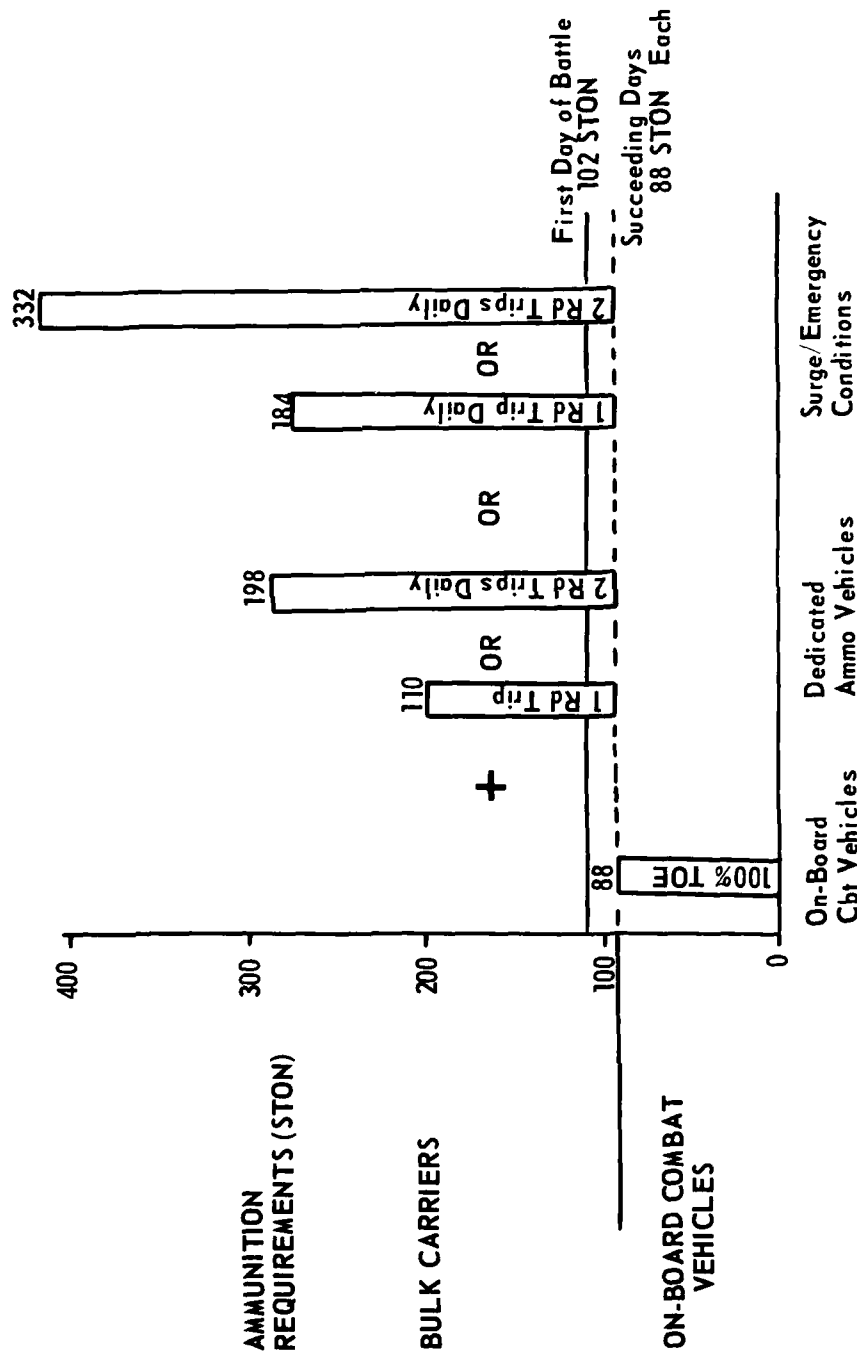


Top-off or Refuel at 150 KM Increments.

AMMUNITION CONSUMPTION VS CARRYING CAPACITY - MECH BN

- A comparison of the ammunition consumption for the mech Bn in defense of position (heavy combat) with its organic transportation carrying capacity indicates that the battalion probably has an excess dedicated capacity. The adjoining figure reflects the ammunition requirements for the first day of combat plus each of the next three succeeding days.
- The solid line represents the consumption of ammunition based on 100 percent of TOE combat systems available to fire throughout the first day, and the dashed line for each of the next three succeeding days.
- Under dedicated ammo vehicles only 14 5T and 4 10T trucks are considered, since the APC will be limited to local shuttle in emergency situations. Using one lift daily, 110 STON can be carried, assuming 100 percent availability of vehicles. For two round trips daily, 80 percent of the authorized vehicles are assumed to be available for the second trip, for a total of 198 STON. This is about twice the daily consumption for the battalion in heavy combat.
- During a surge or emergency situation such as represented by heavy combat, in a do or die situation, the commander can establish priorities for use of all available transportation plus increase their pay load. In this analysis, it was assumed that 50 percent of the 1½T trailers and 2½T/5T trucks could be used to haul 12, 42 and 70 STON, respectively, during one round trip. The capacity of the 4 10T trucks was increased to 15T. This combination could move 184 STON on one trip daily. Assuming 80% availability for a second round trip, a total of 332 STON could be hauled daily.
- The battalion commander has sufficient organic transportation assets available so that he does not have to consider requesting 1½T trailers to haul ammo behind combat vehicles.
- Using realistic consumption data, availability of an ATP in the BSA and making two round trips daily with dedicated ammo vehicles, 10 5T trucks should be adequate and more effective than the combination of 14 5T and 4 10T cargo trucks.

MECH BN - AMMUNITION CONSUMPTION VS CARRYING CAPACITY (Consumption based on Defense of Position - Heavy Combat)

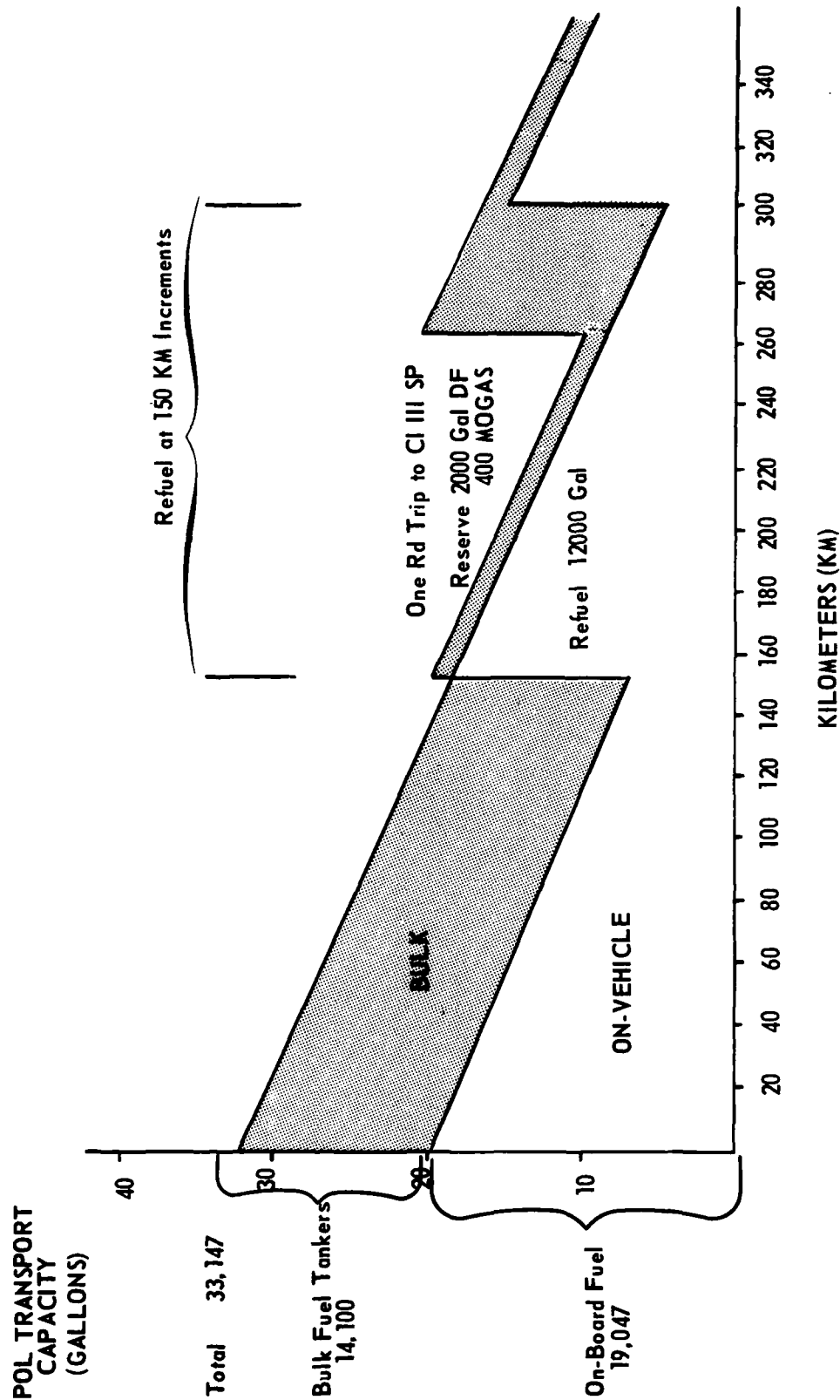


ALTERNATIVE CARRYING CAPACITY

MECH BN POL TRANSPORT CAPACITY VS CONSUMPTION ANALYSIS

- The mech Bn has organic 119 tracked and 80 wheeled vehicles which have an on-board fuel carrying capacity for 17,881 gallons of diesel and 1,165 gallons of MOGAS. Bulk fuel is carried by the five 2,500-gallon tank trucks to haul 12,500 gallons of diesel plus a truck and trailer mounted tank and pump unit for 1,600 gallons of MOGAS.
- In computing a 150 KM movement which is one half off-highway and one half on-highway, the battalion consumes approximately 12,000 gallons of fuel. Off-highway movement consumes more than three times the fuel for the same distance on-highway.
- At the end of a 150 KM movement approximately 7,000 gallons remain on board vehicles and 12,000 gallons from the tankers is used to top off all the vehicles. This leaves a reserve of 2,000 gallons of diesel and 400 gallons of MOGAS.
- The four empty tank trucks and the truck mounted tank and pump unit return to the POL SP for refill, while one tanker and a trailer of MOGAS is available as a reserve. If the movement is continued, the refilled tank trucks will rejoin the unit. The availability of 5,000-gallon tankers in the BSA reduces the turn around time for the fuel trucks. Under prudent risk, no bulk fuel carriers are with the battalion on a continuous basis.
- The POL carrying capacity is sufficient not to warrant consideration of providing trailers for combat vehicles to haul POL. There is always an option using any number of the 30 1½ T trailers, each capable of carrying 440 gallons (8 55-gal drums) of fuel.

MECH BN POL TRANSPORT CAPACITY VS CONSUMPTION (50% On-Highway - 50% Off-Highway)



CONCLUSIONS

- The term "BASIC LOAD" is dynamic and has little meaning at the individual/small unit level.
- The surge rate of ammo expenditure computed at 100 percent of combat systems is used to support ammo transport requirements on a daily basis.
- One round trip per day for ammo trucks is used as the planning figure. This does not consider the mobility capability of the vehicles nor the proximity of the newly established ammo transfer points in each brigade support area.
- The use of three different types of cargo trucks, 2½ T, 5 T and 10 T, within each of the battalions complicates planning, manning, supply and maintenance.
- Establishing priorities for the use of tactical wheeled vehicles in surge situations could reduce the number of dedicated ammo hauling vehicles. Also, consideration of availability of the 5,000-gallon tank trucks available in the division could reduce the number of POL tankers authorized in the battalions, especially the tank battalions.
- In any event, trailers attached to combat vehicles to haul either ammo or POL are neither necessary nor desirable. The capability does exist, however, to haul 3,000 lbs of ammo or 440 gallon (8 55-gal drums) per 1½ T trailer at any time the commander decides to do so.
- Austerity criteria appear to have carried little weight by the battalion organization developers in striving for battalion independence.

RECOMMENDATIONS

- The term "BASIC LOAD" is dynamic, changing with varying situations, thus has little meaning at system/individual levels. It should represent their capability to carry and fight. The units' load then would be some multiple or fraction of the total system/individual basic load, depending on the situation and level of intensity.
- Ammo/POL carrying capacity should be based on realistic consumption factors, not on a worst case situation. Availability of weapon systems on a day-to-day basis plus the threat target exposure rate must be considered.
- Ammo/POL trucks should be expected to make at least two round trips daily to reload from ATP or CI III Supply points in the brigade support area. The ATP can handle 500 STON per day and the CI III SP can provide 5,000 gallon tankers for unit distribution in an emergency.
- The types of cargo trucks should be reduced to a minimum - preferably all 5T configurations. In addition to its increased weight carrying capacity, the 5T truck provides 15 percent more space than the 2½T truck and can be used for both POL and ammo hauling.
- Commanders must establish priorities for use of vehicles to haul ammo/POL during surge/emergency situations. The Unit SOP should reflect vehicle use priorities.
- Trailers should not be considered for combat vehicles. There are better alternatives open to the commander, rather than having trailers available which inhibit mobility of combat vehicles.
- Supply discipline, as discussed in paragraph 7-3, FM 101-10-1, should be adhered to by the TOE developers and reinforced by the reviewers at all levels. The battalion must be considered as part of the division, not an independent entity. The most effective system should include a combination of battalion/division support effort not an addition to each other's system.

INDIVIDUAL VERSUS UNIT REPLACEMENT SYSTEMS
AND UNIT RECONSTITUTION

- **Purpose.** To analyze the present individual replacement system vis-a-vis a unit/team replacement system; detail the advantages/disadvantages of each system. Identify advance provisions necessary to support unit reconstitution.
- **Objective.** To describe the current replacement system and assess its viability under conditions of general war; to identify the merits of individual versus unit/team replacement and to determine methods of reconstituting severely damaged units and information required for the reconstitution process.
- **Definitions.**
 - Unit - any element of squad size or larger.
 - Team - fire team, tank crew, artillery section, etc.
 - Individual replacement system - personnel are assigned as individuals to fill vacancies.
 - Unit/team replacement system - a unit or team is assigned to a parent organization to replace a like element.
 - Unit reconstitution - to restore a unit to combat effective status by providing personnel, equipment and training.
 - Rotation - to remove a person or unit from combat.

- The present individual replacement system.

- Commanders of some 150 installations/activities submit requisitions directly to MILPERCEN. Requisition lead times are:

CONUS - 5 months
Overseas - 9 months
Emergency - 3 months

- MILPERCEN assigns personnel by name to units using an automated system which compares qualifications required for positions against qualifications recorded for each officer, WO and enlisted person.

- This system:

Is highly centralized and designed for peacetime, with maximum consideration for the individual.

Has no automatic or "push-package" provisions.

Would require drastic simplification in event of mobilization.

- The US Army replacement system in previous conflicts.

- World War II: Essentially an individual system, although men were organized in casual units for movement. In 1945, effort was made to keep men intact in four-man groups from training into combat. System had many deficiencies: diversion of personnel, men too long in pipeline, training and morale suffered.

- Korea and Vietnam: Individual systems, although platoon package used extensively in Korea. Officers and WO assigned by name at DA level; EM by levy on each CONUS installation. The system worked satisfactorily; personnel moved through the pipeline faster than heretofore.

- Unit versus individual replacement.

- In assessing the desirability of employing one versus the other, consider:

- Size of unit(s) involved.
 - Number of combat-capable survivors.
 - Availability and location of unit replacements and individual replacements.
 - Status of equipment in theater.
 - Urgency of need for the unit(s).

- Advantages and disadvantages of each system.

- Advantages of a unit system:

- Better suited to meet requirements of the integrated battlefield.
 - Provides for better morale and esprit de corps.
 - Facilitates C2 during deployment -- cohesive units which have developed teamwork.

- Disadvantages of unit system:

- Relative inflexibility; except when entire unit is destroyed, personnel assets may not coincide with requirements.
 - Lack of combat experience.

- Advantages of individual method of replacement:

- Flexibility and economy; replacement increments can be tailored.
 - Enables a unit to be rebuilt and take advantage of survivors' combat experience.

- Disadvantages of the individual system:

- A collection of individuals who have not trained together and developed teamwork and esprit.
 - Morale, training proficiency and discipline are likely to suffer when personnel do not deploy as members of a unit.

- Unit reconstitution. Plans must be made to replace and reconstitute units up to division size. The assumption must be made that requirements for trained units and individuals will exceed assets.

- A relatively small number of active and reserve component combat units will be available in the CONUS as shown below:

	Active	Guard & Reserve	Total
Divisions (all types)	10	8	18
Separate brigades (all types)	3	24	27
Armored Cav Regts	1	3	4
Arty Bns, non-div (155 & 8-in)	12	65	77
Lance Bns	2	0	2
Pershing Bn	1	0	1

- Readiness dates for deployment of above units will vary from a few days to six months. Thus, after mobilization a variety of organizations will be available as a source of unit, team, or individual replacements for the purpose of reconstituting decimated units. (A comparable situation exists for combat support and CSS units.)
- The Individual Ready Reserve (IRR) with a strength of about 396,000 in FY 1979 will constitute an initial source of individual replacements. After this pool, plus the relatively small number of personnel in the training centers, has been exhausted, the Army will have to turn to CONUS units in training for individual replacements until the mobilization training centers start turning out trained personnel. (A training period for newly inducted personnel of approximately three months must be assumed.)
- It is unlikely that all units of a division would be destroyed by a nuclear strike. Likewise, there will probably be some survivors, and serviceable equipment, from battalions and larger units. Some elements of the division may suffer little or no damage. Typical damage to a division might involve a number of maneuver battalions, artillery battalions, command and control headquarters, and combat support and CSS units of company through battalion size suffering such severe casualties and damage that they are no longer combat effective.

● Unit reconstitution (continued).

- Sources of replacement units and personnel to reconstitute this division may include:

Units from theater assets; for example, two maneuver battalions from neighboring divisions.
Units from CONUS drawn from divisions, separate brigades, and artillery brigades/groups at an appropriate stage of training if time permits or the status of theater forces dictates.

Replacement personnel from the theater replacement command. (If the division has been in combat for a time, hospital returnees will constitute another source of replacements.)

Key command and staff positions should be filled by levy on other theater Army units.

- A replacement division, if available, should be deployed from the CONUS.
- Replacement equipment should be furnished from theater and CONUS stocks. Whether replacement units from the CONUS bring their equipment with them or travel with only minimum essential equipment must be determined by urgency of need for the units coupled with availability of equipment in theater stocks.
- Advance provisions necessary to support unit reconstitution should include:

An estimate of the number and type of units which may have to be reconstituted.

Data on the composition of each type unit in theater.

A system for earmarking CONUS units for potential employment as replacement elements.

Forecasts on the number of trained personnel to be produced monthly by CONUS training centers and schools.

Current data on the casualty rate in theater by grade and MOS.

Estimate on the number of men by unit expected to return from hospitals.

A plan for an "infusion program" for units arriving from CONUS whereby a number of combat-experienced personnel from "old" units would trade places with officers and soldiers from the new units.

Information on which to base a decision on whether CONUS units should bring their equipment with them; for example:

Urgency of need for the units (based on assumptions prior to fact).

Status of theater stocks.

Status of equipment in hands of CONUS units.

Availability of air and sea transportation.

Status of LOCs.

● Conclusions.

- The present centralized, by name, individual replacement system will not work in the event of general war.
- A decentralized system wherein MILPERCEN levies requirements on CONUS commands/installations is required.
- A unit/team and an individual replacement system each has advantages and disadvantages. The advantages of one generally offset the disadvantages of the other. A replacement system embodying both will be required to support Army forces on the integrated battlefield.
- Most important among the advance provisions necessary to support unit reconstitution are:

An estimate of the number and type of units which may have to be reconstituted.

Data on the composition of each type unit in theater.

A system of earmarking CONUS units for potential employment as replacement units.

● Recommendations.

- Develop and prepare plans and supporting doctrine for a replacement system encompassing both individuals and units/teams under conditions of general war.
- Prepare plans and supporting doctrine addressing the reconstitution of combat units from battalion through division-size, and of combat support and CSS units of battalion and group size.

SECTION II

COMBAT MANEUVER BATTALION'S OPERATIONS IN ABSENCE OF CONTINUOUS COMMAND AND CONTROL

PURPOSE

TO DETERMINE IF THE PROPOSED ORGANIZATIONS OF COMBAT MANEUVER BATTALIONS,
AND THE PROVISIONS FOR COMBAT SERVICE SUPPORT, ARE CONDUCTIVE TO OPERATIONS ON THE
INTEGRATED BATTLEFIELD IN THE ABSENCE OF CONTINUOUS COMMAND AND CONTROL.

OBJECTIVE

PROVIDE A COMBAT EFFECTIVE FORCE, CAPABLE OF PERFORMING THE COMBAT, COMBAT SUPPORT AND COMBAT SERVICE SUPPORT FUNCTIONS REQUIRED ON THE INTEGRATED BATTLEFIELD, IN THE ABSENCE OF CONTINUOUS COMMAND AND CONTROL.

ESSENTIAL ELEMENTS OF ANALYSIS

Using as a starting point the current combat, combat support and combat service support doctrine, organizations and procedures --

- Assess current and proposed combat maneuver battalion (and lower) organizations with respect to their capability to effectively and efficiently function on an integrated battlefield, in the absence of continuous command and control.
- Assess the capability of combat service support organizations to logistically support combat battalions and subordinate formations on the integrated battlefield, in the absence of continuous command and control.

Specifically, consideration shall be given to the following essential elements of analysis:

- In the absence of continuous command and control, are the maneuver battalions organized to effectively and efficiently conduct combat missions on the integrated battlefield?
- What are the maneuver battalions/task forces' capabilities to conduct combat service support on the integrated battlefield in the absence of continuous command and control?
- What is the appropriateness of large battalion/task force trains vis-a-vis fragmentation of support into smaller, dispersed teams?
- What are the advantages and disadvantages of a demand-supported resupply system vis-a-vis a push-system of prepackaged supplies for company/battalion?
- What is the impact on companies/battalions if capacity is increased to transport larger volumes of combat consumables?
- What command and staff functions (if applicable) should be changed at battalion and subordinate formations to conform with integrated battlefield operations?

APPROACH

- UNDERSTAND DIVISION 86 ORGANIZATIONAL AND OPERATIONAL CONCEPTS

COMBAT

COMBAT SUPPORT

COMBAT SERVICE SUPPORT

- ANALYZE - MISSION, FUNCTIONS AND TASKS
- EVALUATE - LACK OF CONTINUOUS COMMAND AND CONTROL ON:

COMBAT AND COMBAT SUPPORT OPERATIONS

COMBAT SERVICE SUPPORT CAPABILITY

- IDENTIFY SHORTCOMINGS
- PROPOSE FIXES FOR SHORTCOMINGS
- EVALUATE - ORGANIZATIONAL, PROCEDURAL AND MATERIEL REQUIREMENTS

UNDERSTANDING THE OBJECTIVE DIVISION

THE OBJECTIVE DIVISION (DIV 86)

- GENERAL UNDERSTANDING OF:
 - ORGANIZATIONS
 - FUNCTIONS
 - TECHNIQUES
 - INTERRELATIONSHIPS

MANEUVER BATTALIONS

- DETAILED KNOWLEDGE OF:
 - COMBAT MISSIONS, FUNCTIONS AND TECHNIQUES
 - COMBAT SUPPORT - HOW PROVIDED
 - COMBAT SERVICE SUPPORT - HOW PROVIDED
 - COMMAND AND CONTROL - HOW MAINTAINED

THE OBJECTIVE DIVISION (DIV 86)

MISSION: To conduct integrated air/land combat against modernized ground forces in the year 1986 and beyond.

THREAT/ENVIRONMENT:

A highly mobile, well balanced combined arms combat force trained to establish and maintain a fast tempo of offensive action in Central Europe.

PRINCIPLES OF FORCE DESIGN:

- Integrate weapons systems to: Maximize firepower forward - Enable combined arms teams to maneuver quickly - Provide essential leadership forward.
- Simplify tactical, technical and training responsibilities.
- Combined arms integration at battalion and brigade.
- Integrate air/land battle at division and corps.
- Integrated (conventional, nuclear and chemical) operations.
- Organize C³ to integrate functions within the central battle.

The diagram illustrates a system architecture with multiple functional blocks connected by a central bus. The components are organized as follows:

- Top Row (Left to Right):**
 - HHC** (211)
 - MP** (116)
 - CEWI** (479)
- Middle Section (Left to Right):**
 - A stack of **BDE** units (411, 137).
 - A stack of units (3474, 579).
 - A stack of units (3528, 882).
 - A stack of **155MM** units (2241, 747).
 - 8-IN/MLRS** (729).
 - TAB** (355).
 - ACAB** (2080) with a diagonal slash.
 - CSAB** (786) with a bow-tie symbol.
 - AH** (261) with a bow-tie symbol.
 - RECON** (660) with a bow-tie symbol.
- Bottom Row (Left to Right):**
 - DISCOM** (3356) with "HHH 101".
 - DMHC** (164).
 - AG** (211).
 - A unit with a crescent moon symbol (743).
 - A unit with a wheel-like symbol (511).
 - A stack of **BDE SPT** units (477(x2)).

Interconnections include direct lines, double parallel lines (||), and 'X' marks indicating specific connection points or types.

COMBAT BRIGADE

FUNCTIONS:

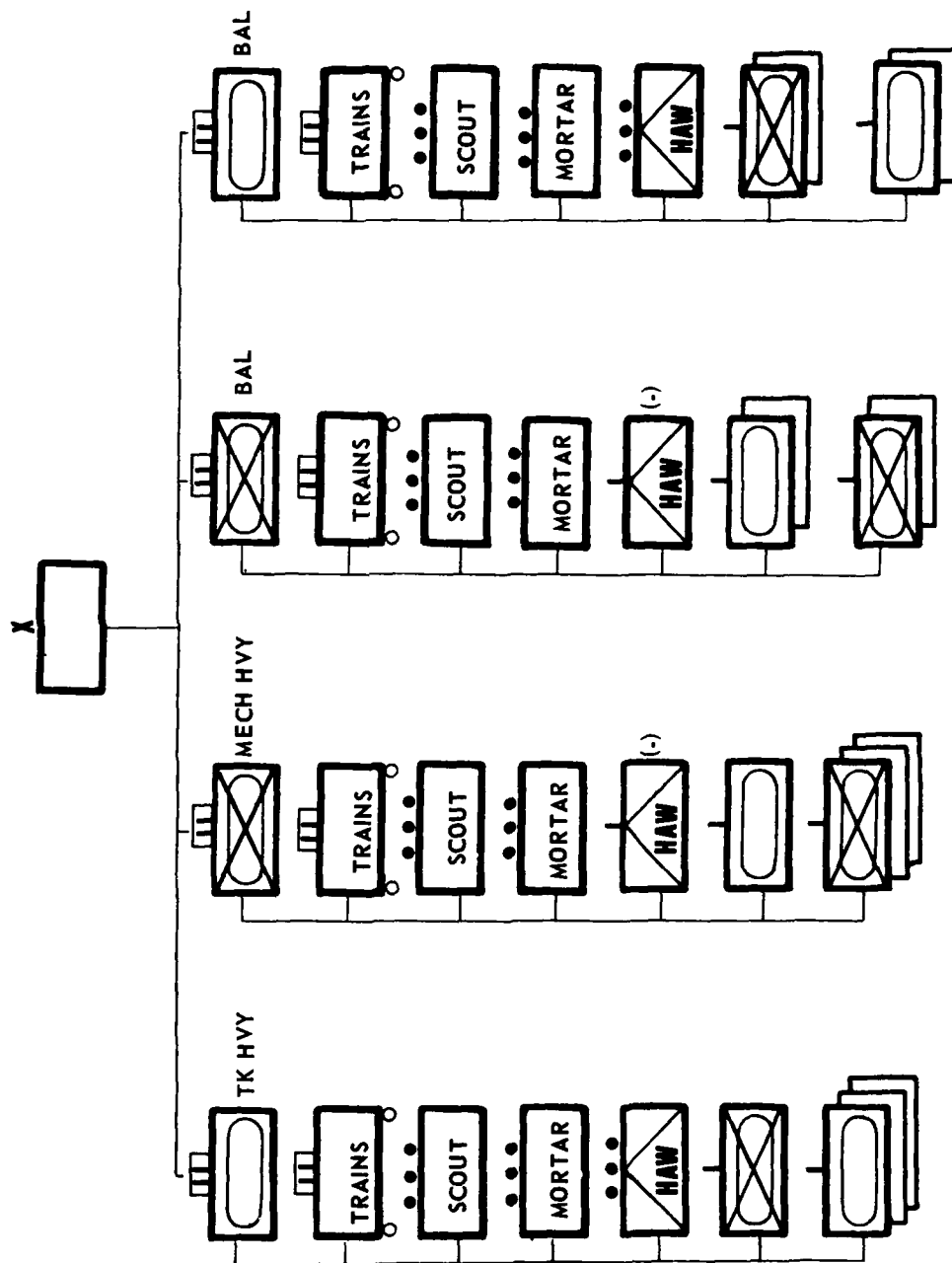
Provides the organizations and command and control to conduct and direct the battle.

TECHNIQUES:

- Organizes cross reinforced task forces.
- Establishes priorities for combat support/ combat service support.
- Maneuvers the forces to bring fires to bear against the enemy, when and where they are needed.

A COMBAT BRIGADE

WITH TANK HVY, MECH HVY AND BALANCED MECH & TANK BN TASK FORCES



COMMON MISSIONS FOR MECHANIZED INFANTRY AND TANK UNITS

- The adjoining table illustrates the common missions that the mechanized infantry and tank units are capable of performing in accordance with their TOE.
- The upper portion shows the common missions for the mechanized infantry and tank platoons and companies. Missions which can be performed by both type units without external support are shown in the first column while missions which require support are shown in the second column.
- Numerals shown in the columns under required cross-reinforcement and combat support indicate the reinforcement or support echelon above company level that furnishes this support. As indicated in the legend at the bottom of the table, the numeral 2 represents battalion, 3 brigade, 4 division and 5 above division.
- Common missions for the mechanized infantry and tank battalion begin in the center of the table. The check marks indicate support organic to both type battalions while the "x" indicates organic to the mechanized battalions only.

COMMON MISSIONS FOR MECHANIZED INFANTRY AND TANK PLATOONS AND COMPANIES

Missions which can be performed by both type units without external support:*	Missions which require support	Required Cross-reinf		Combat Support							Grd		Tgt
		Inf (For Tk unit)	Armor (For Inf unit)	107mm Mortar	Arty	Engr	Scout Heli	Atk Heli	CAS	AD	(applicable to Mech Inf)	Surf RAD	
1. Destroy enemy tanks and APCs	1. Movement to contact												
	Case I-Following another plat/co			2									
2. Defend against air attack	Case II-Lead Plat/Co (behind covering force)			2	4								
3. Reserve	2. Close with and destroy enemy	3		2	4								
	3. Consolidate and reorganize after attack; repel counterattack			2	4								
	4. Covering force	3		2	4								
	5. Repel enemy attacks			2	4								
	6. Counterattack			2	4								
	7. Exploitation/pursuit			2	4								
	8. Breach/reduce obstacles	3		2	4								
	9. Delay			2	4								
	10. Screen an area or force			2	4								
	11. Flank security			2	4								

COMMON MISSIONS FOR MECHANIZED INFANTRY AND TANK BATTALIONS

1. Destroy enemy tanks	1. Movement to contact													
	Case I-Following another Bn			✓	4									X
2. Defend against air attack	Case II-Lead Bn (behind covering force)			✓	4	4	4	4	5					X
3. Reserve	2. Close with and destroy enemy	3			4			4	5					X
	3. Consolidate and reorganize after attack; repel counterattack				4		4	4	5					X
	4. Exploitation/pursuit			✓	4	4	4	4	5	4				X
	5. Covering force (normally tank-heavy)	3			4	4	4	4	5					X
	6. Repel enemy attacks	3		✓	4	4	4	4	5	4			4	4
	7. Counterattack	3		✓	4	4	4	4	5	4			4	4
	8. Delay	3		✓	4	4	4	4	5				4	4
	9. Screen an area or force			✓	4	4	4	4	5				4	4
	10. Flank security	3		✓	4		4	4	5				4	4

Legend:

A numeral indicates the specified reinforcement or combat support and the echelon which furnishes it. 2 = Bn; 3 = Bde; 4 = Div; 5 = Above div (. indicates organic to both battalions; X = organic to Inf Bn.)

COMBAT SUPPORT

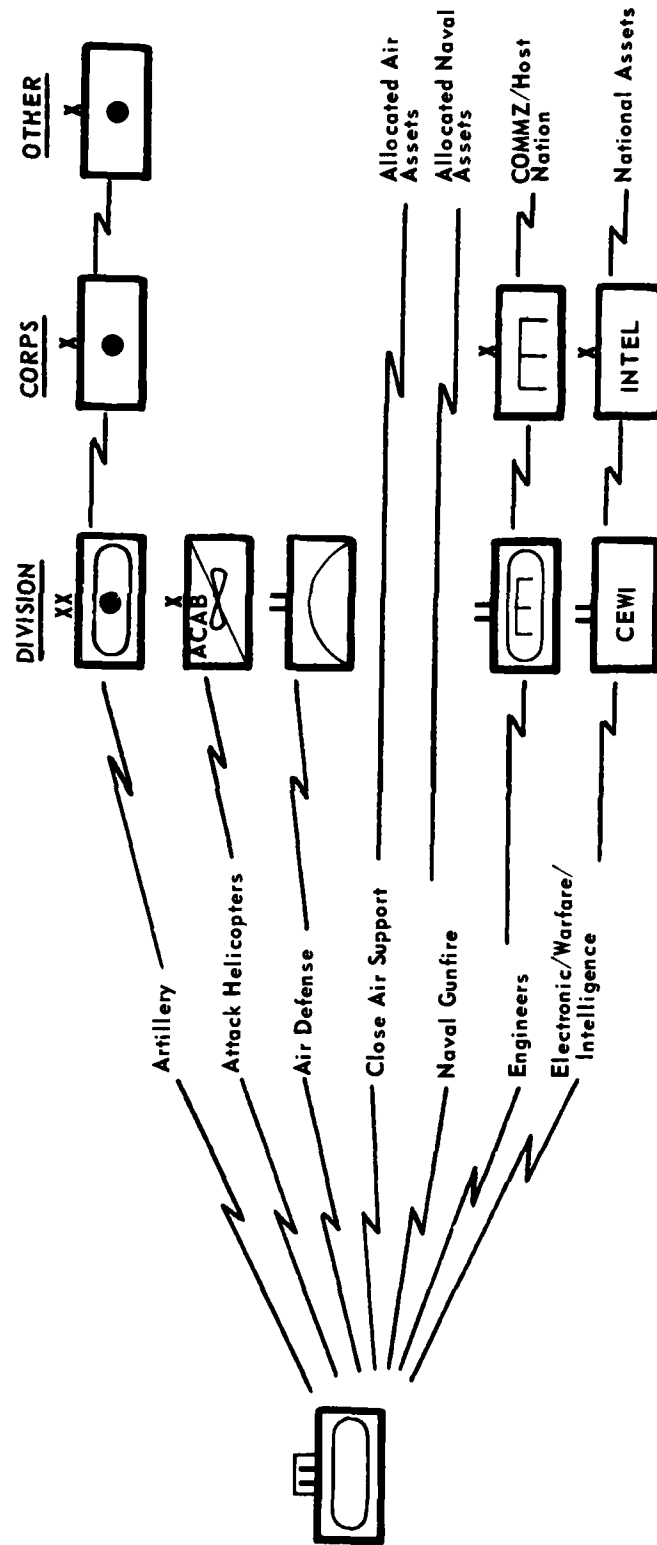
FUNCTIONS:

- Field artillery is available from DIVARTY direct support and general support battalions, corps artillery brigades and army artillery units.
- Attack helicopters of Air Cavalry Attack Brigade are allocated through the division and brigade tactical operations centers.
- Air defense units are generally provided on an area basis. A DIVAD gun battery is normally located in each brigade area with Stinger teams available from the Chaparral batteries.
- Engineer support is allocated from the division Engineer Bn; priorities are set by the TOCs.
- Close air support is requested by the Air Liaison Officer and coordinated by a tactical air control party. Aircraft allocations and priorities established by the TOCs.
- Naval gun fire, when available, is requested and controlled by a shore fire control party.

TECHNIQUES:

After priorities are established, combat support can be provided as direct support, general support, reinforcement, attachment or OPCON to the user unit. Some support may also be provided on an area or mission basis.

COMBAT SUPPORT



COMBAT SERVICE SUPPORT

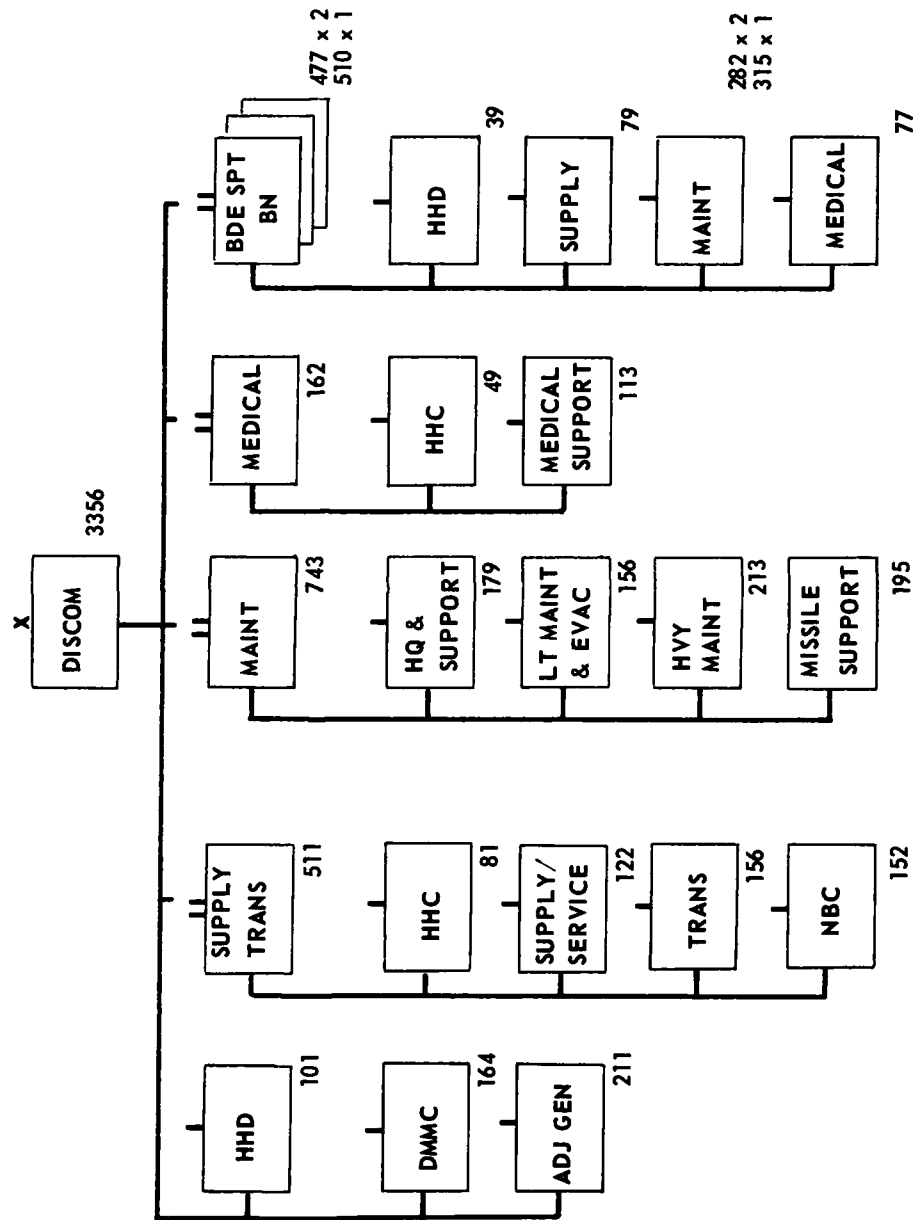
FUNCTIONS:

- Provide support on a weapon systems or commodity basis.
- Insure the maximum availability of additional weapon systems and equipment in the hands of the troops.

TECHNIQUES:

- DISCOM commander is principal combat service support operator in the division.
- Brigade Support Battalion (BSB) tailored to meet the varying needs of the brigade and other units being supported within the brigade area.
- BSB provides support on a unit, area or task basis.
- Support forward to arm, fuel, fix and man on or near the forward combat positions.

DIVISION SUPPORT COMMAND (DISCOM)



COMBAT SERVICE FOR MANEUVER BATTALION, DIV 86

CSS FUNCTIONS	LOCATION/UNITS	DIVISION SUPPORT COMMAND (DISCOM)	BRIGADE SUPPORT AREA (BSA) BRIGADE SUPPORT BATTALION (BSB)
<u>SUPPLY</u>		<u>SUPPLY AND TRANSPORTATION BN</u> <u>SUPPLY AND SERVICE CO.</u>	<u>SUPPLY CO</u>
CI I - Rations		• OS CI, I, II, IV and VIII supply opns are at Div supply points. The main SP, operated by the Sply Plt, provides support to rear area units.	• Provides division level support from Bde SP - sply pt dist SP - Supply pont distribution.
CI II - Clothing/Equip			
CI IV - Const/Barrier Mat'l			
CI VII - Repair Parts			
CI X - Misc - Maps			
Collection/Classification			
CI V - Ammo		• SP has limited Col/Clas capability • CI V Sec, Sply Plt, Opr ATP for 8" Ammo (500 STONS daily)	• SP distribution from Corps ASPs
CI III - POL		• POL Storage and Dist Plt handles CI III in Div rear. Has 35 - 5000 Gal tankers to haul POL to the BSBs for distribution	• Supply Point Distribution
<u>SERVICES</u>		• Graves Registration Plt (Augmt) • Clothing Exchange and Bath Sec (Augmt)	• Collect & Evac Tm within BSA • CEB facilities within BSA
<u>DECONTAMINATION</u>		• NBC Co - 15 Decon Points	• 3 decon or bath pts in BSA
<u>FOOD SERVICE</u>		• HHC for S&T Bn units	• Consolidated for selected units
<u>TRANSPORTATION</u>		<u>MOTOR TRANS CO</u> • Trans 600 STON in one lift	• BSB Coord non-organic Transportation
<u>MAINTENANCE</u>		<u>MAINTENANCE BATTALION</u>	<u>MAINTENANCE CO</u>
Tank			• Tk Bn Spt Tm
Mech			• Mech Bn Spt Tm
Automotive/Armament		• Heavy Maint Co	• Auto/Armt Sec
Ground Spt Equip		• Lt & Hvy Maint Co	• Ground Spt Equip Plt
Missile		• Missile Spt Co	• Ground Spt Equip Plt
Comm/Electronic		• Lt Maint and Evac Co	• Ground Spt Equip Plt
Recovery/Evacuation		• Lt & Hvy Maint Co	• Svc/Recovery Sec
<u>MEDICAL SERVICES</u>		<u>MEDICAL BN</u>	<u>MEDICAL CO. BSB</u>
Treatment		• Div rear area personnel Med by Spt Co	• Treatment for Bde rear area units
Evacuation		• Evac to Corps or held in holding fac	• Evac to Div/Corps med facilities
CI VIII supply		• Forwarded thru medical channels	• Forwarded thru channels
Equip Repair		• Co Hq Sec, Med Spt Co (limited)	
<u>ADMINISTRATION/PERSONNEL</u>		<u>ADJUTANT GENERAL CO</u>	(Status reports to Bde S1)
Administrative		• Admin Services Div	
Postal		• Postal Div	
Recreational		• Recreational Svcs Div	
Personnel		• Personnel Svcs Div	
Band		• Band Det (Augmt)	
Replacement		• Replacement Det (Augmt)	

COMBAT SERVICE FOR MANEUVER BATTALIONS DIV 86 (cont'd)

BATTALION AREA OF OPERATIONS BN, HEADQUARTERS CO (HHC)	COMPANY AREA NO ORGANIC CSS	PLATOON AREA NO ORGANIC CSS
Bn S-4 Section • Coordinates requests and movement of supplies to all assigned and attached units • C1 V - 5T/10T Trucks for movement of ammo • POL - 2500 gal tankers • Move dead to BSA Collection/evacuation points • Rotate units thru CEB within BSA • Units move to BSA for decon • Centralized at Bn - Co teams available as required		
TRANS SEC, HHC Provides limited trans		
MAINTENANCE PLT, HHC • Bn maintenance provides across the board support, or evacuates to higher for repair/exchange. • DS maint support provided by the Bn Spt Teams operating out of the BSB. Missile maint available in the Mech Spt Teams		
MEDICAL PLAT - HHC Bn • Bn AID STATION • Evac by gd/air amb to Div/Corps • Forwarded thru med channels S-1 Sec, Bn HHC - Pers Adm Center - Bn Postal Clerk - Pers Adm Center - Pers Adm Center		
Co Hq • XO/1SG coordinate plt requests for all supplies with Co Sply Im at Co/Bn trains • Ammo moved by truck as far forward as possible • POL moved by tank truck • Move dead to rear area • Rotate by platoon/Co • Move by Bn/Co to BSA for decon • Mess teams available from Bn, situation permitting		
Co Hq • 3-5 days MCI carried on vehicle - supply requests given to XO/1SG • Policy is to rearm and refuel as far forward as possible • Co 1SG assumes greater responsibility for unit CSS • Rotate thru CEB within BSA • Move with Co for decon • Situation permitting, two hot meals provided on position		
COMPANY • C.O. responsible for unit maintenance. Establishes priority of effort for Co Spt Team. • Operator maintenance supervised by vehicle commander, platoon sgt and platoon leader. Fix as far forward as possible		
NOTE: • Chaplains/Religious support coordinated by Bn Chap. • Legal svc available at Div SJA • Finance provided by Corps unit which may be collocated with the Div AG Co.		

MANEUVER BATTALIONS - EMPLOYMENT DOCTRINE/PRINCIPLES

TANK BATTALION:

- Organized to fight sustained battles for days or weeks at a time.
- Defends against attacking enemy formations and attacks to disrupt enemy combat and support elements deep in the enemy rear.
- Integrates fire and maneuver and combat service support at battalion level.
- Cross attachments from the mechanized battalion to form Bn task forces which is its normal configuration - number of cross attachments may vary.
- Can conduct operations on two axes of advance.
- Operates under minimum controls/restrictions to exploit capabilities inherent in its firepower, maneuverability and shock effect.

MECHANIZED BATTALION:

- Organized to fight sustained battles for days or weeks at a time.
- Integrates the combined arms, fire support elements and combat service support elements to provide maximum combat effectiveness.
- Cross attachment with the tank battalion to form mech heavy, tank heavy or balanced TF.
- Company teams are formed by cross attachment of mech/tank platoons at company level.
- Operates under minimum control/restrictions to capitalize on its firepower, maneuverability and shock effect.

MANEUVER BATTALIONS EMPLOYMENT DOCTRINE/PRINCIPLES

"THE COMBINED ARMS TEAM IS A SYNERGISM WHERE THE SIMULTANEOUS ACTION OF
SEPARATE ELEMENTS, IN CONCERT, HAS A GREATER TOTAL EFFECT THAN THE SUM OF THEIR
INDIVIDUAL EFFORTS,"¹

THEREFORE,

"CROSS-ATTACHMENT OF TANKS AND MECHANIZED INFANTRY SHOULD, EXCEPT IN RARE
CASES, ALWAYS BE THE RULE."²

¹Division 86, Mechanized Infantry Battalion. Organizational and Operational Concepts p. 3

²IBID p. 3

EXTERNAL SUPPORT AVAILABLE TO THE MANEUVER BATTALIONS

COMBAT SUPPORT:

- Working through the various liaison/coordinating teams located at the battalion or brigade, combat support is available based on priorities established by commanders at higher level: attack helicopters, artillery, close air, naval gunfire, engineer, air defense and electronic warfare/intelligence.

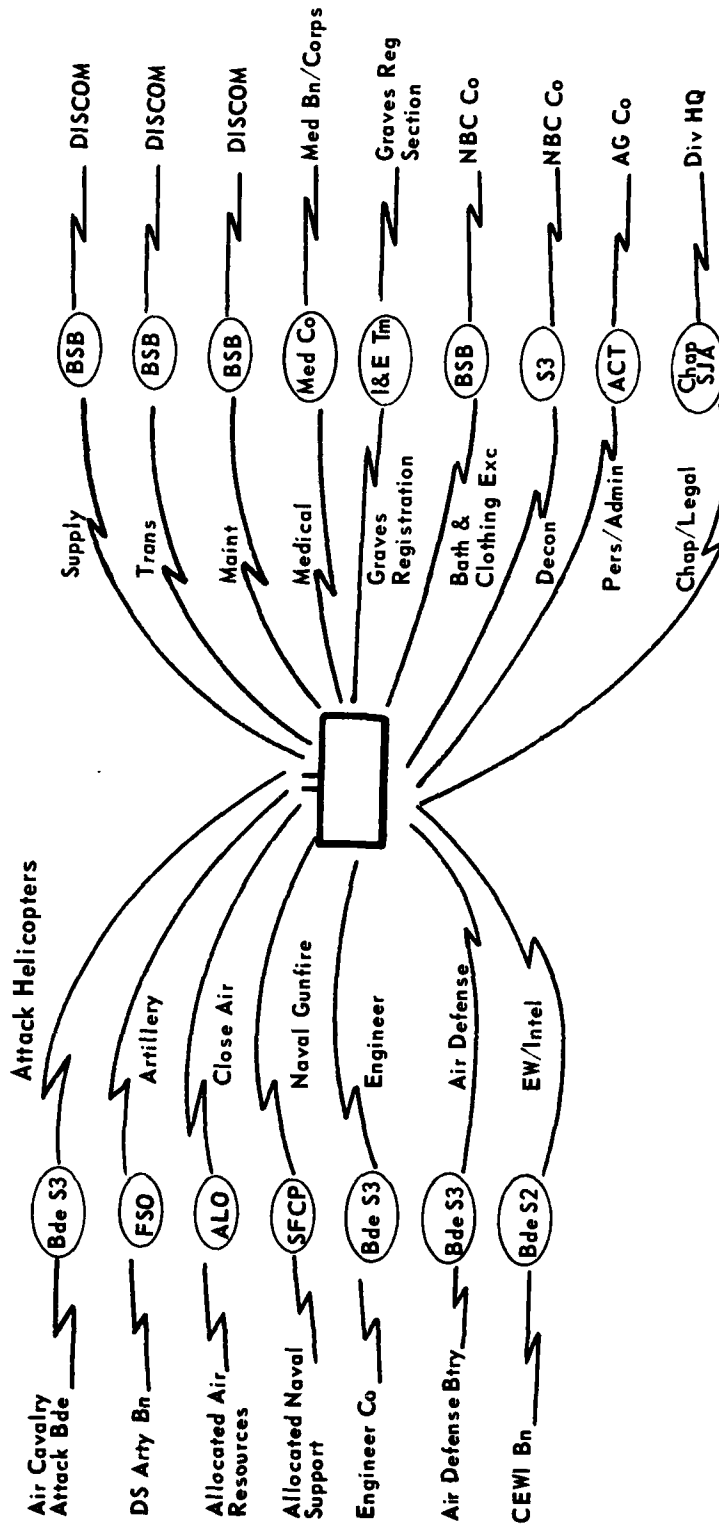
COMBAT SERVICE SUPPORT:

- As with combat support, combat service support is available, with priorities established by commanders at higher levels, to conform with tactical plans. Available support from or through the brigade support battalion (BSB) includes: supply, transportation, maintenance, medical, graves registration, bath and clothing exchange and decontamination. Personnel and administrative support is effected directly with the division AG Company. The battalion chaplain coordinates religious support through the brigade and division chaplain sections. Legal support is obtained directly from the SJA section in division headquarters.

MANEUVER BATTALION'S EXTERNAL SUPPORT

COMBAT SUPPORT

COMBAT SERVICE SUPPORT



TANK BATTALION

● COMBAT:

- Functions: Provides four tank companies to conduct combat operations to close with and destroy the enemy by fire, maneuver and shock effect.

- Technique: Conducts operations requiring a high degree of firepower, mobility, armor protection and shock effect.

Attacks or defends under hostile fire and various conditions of visibility to destroy enemy armor by fire.

Organizes, commands and controls combined arms task forces through cross-attachment with mechanized infantry, to engage the enemy in the conduct of mobile warfare.

Provides the mobility, armor protection, firepower, and flexible communications to successfully exploit the effects of nuclear and nonnuclear fire support.

● COMBAT SUPPORT:

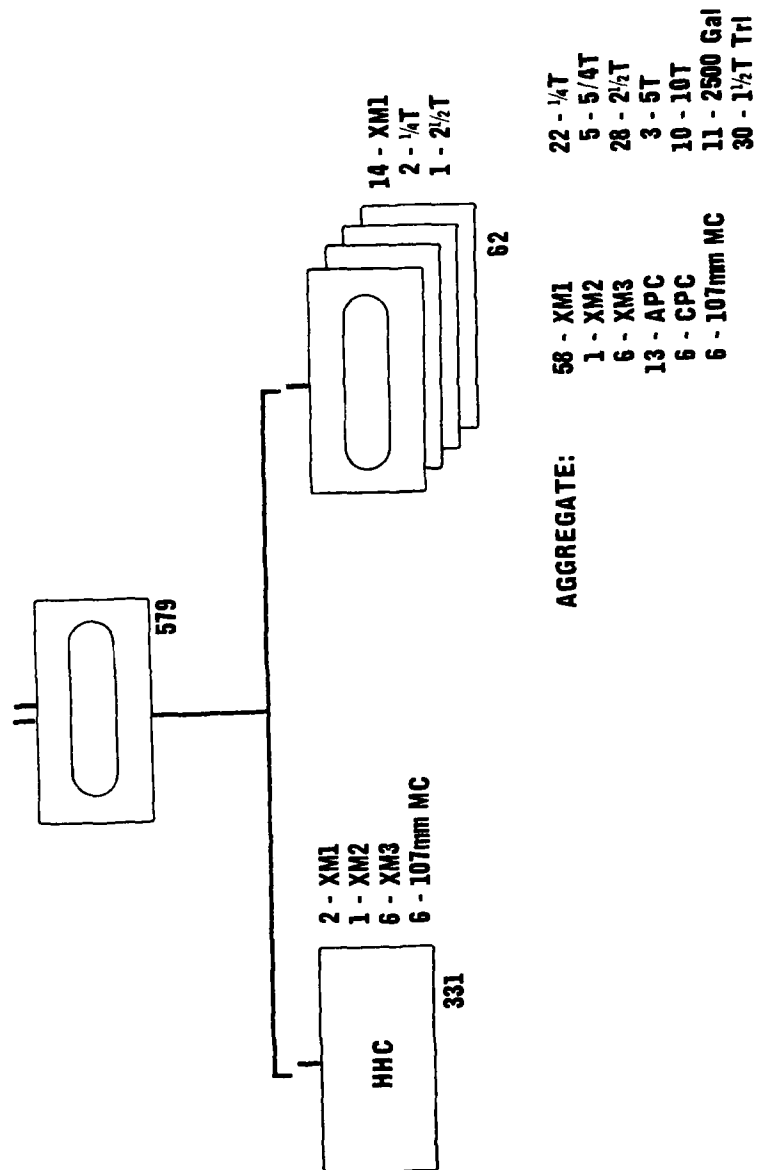
- Provides limited mortar indirect fire support for organic and attached units.

- Conducts reconnaissance and rear area security missions in support of the battalion.

● COMBAT SERVICE SUPPORT:

- Provides for supply, transportation, maintenance, medical and personnel/administrative support to its units.

TANK BATTALION



MISSION: CLOSE WITH AND DESTROY THE ENEMY BY FIRE,
MANEUVER AND SHOCK EFFECT.

HEADQUARTERS AND HEADQUARTERS COMPANY, TANK BATTALION

● COMBAT SUPPORT:

- Functions: Provides indirect fire support for battalion from its six 107mm mortars.

Provides reconnaissance and rear area security support from its scout platoon of six XM3s.

- Techniques: The mortars are normally positioned in proximity to maneuver units to provide highly responsive fire support. They are used primarily for smoke, also effective for antipersonnel and illumination missions. They can be used in general support, direct support, reinforcement, attachment or OPCON to maneuver units.

Reconnaissance unit employed forward, on flanks or provides support in rear area security.

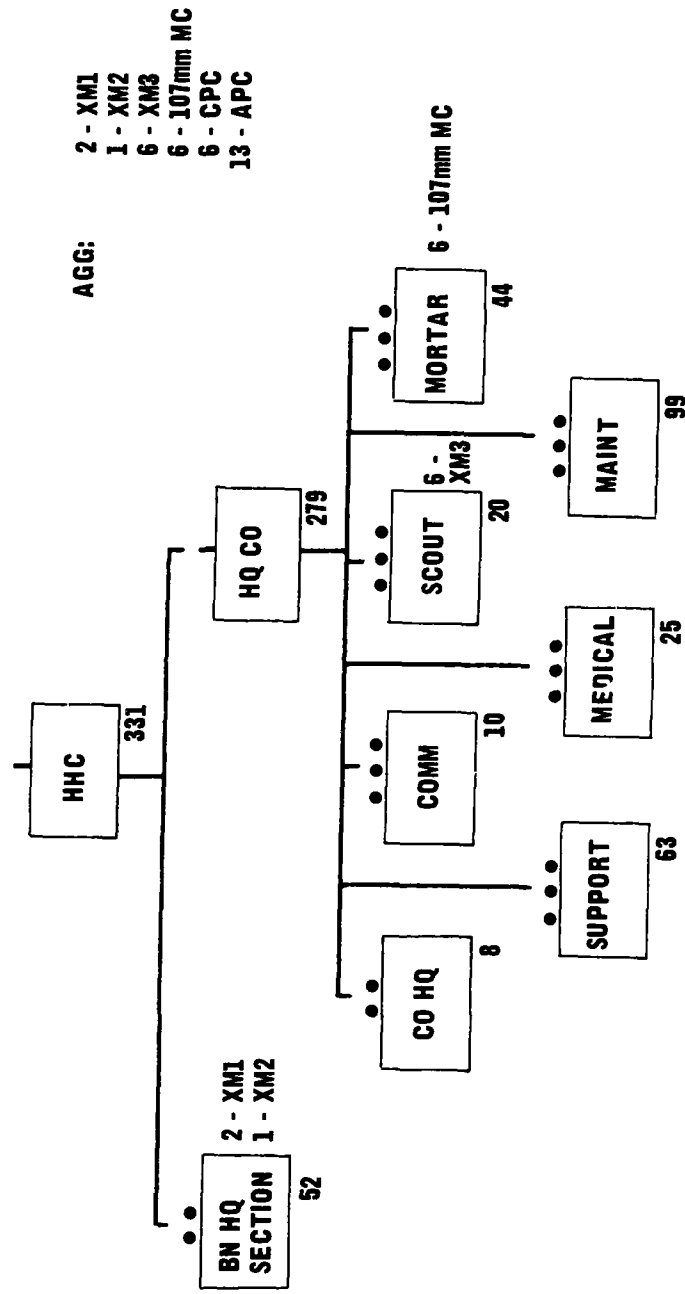
● COMBAT SERVICE SUPPORT:

- Provides supply, transportation and battalion level organizational maintenance support to assigned and attached units.
- Provides centralized battalion or decentralized company messing, as required.
- Provides medical support, to include emergency medical treatment, aid station operation, battlefield casualty evacuation and company aid men.
- Provides personnel and administrative support for assigned and attached units.

● COMMAND AND CONTROL:

- Provides command and control, staff planning and supervision of operations of assigned and attached units of the tank battalion.

HEADQUARTERS AND HEADQUARTERS COMPANY, TANK BATTALION



MISSION: TO PROVIDE COMMAND, STAFF, MAINTENANCE, ADMINISTRATION, INDIRECT FIRE, COMMUNICATIONS, RECONNAISSANCE, SUPPLY AND MEDICAL SUPPORT FOR THE TANK BATTALION.

TANK COMPANY, TANK BATTALION

● COMBAT:

- Functions: To close with and destroy enemy forces using fire, maneuver and shock effect.
- Techniques: Conducts operations requiring a high degree of firepower, mobility, armor protection and shock effect.
- Attacks or defends under hostile fire and various conditions of visibility to destroy enemy armor by fire.
- Provides the mobility, armor protection, firepower and flexible communications to successfully exploit the effects of nuclear and nonnuclear fire support.

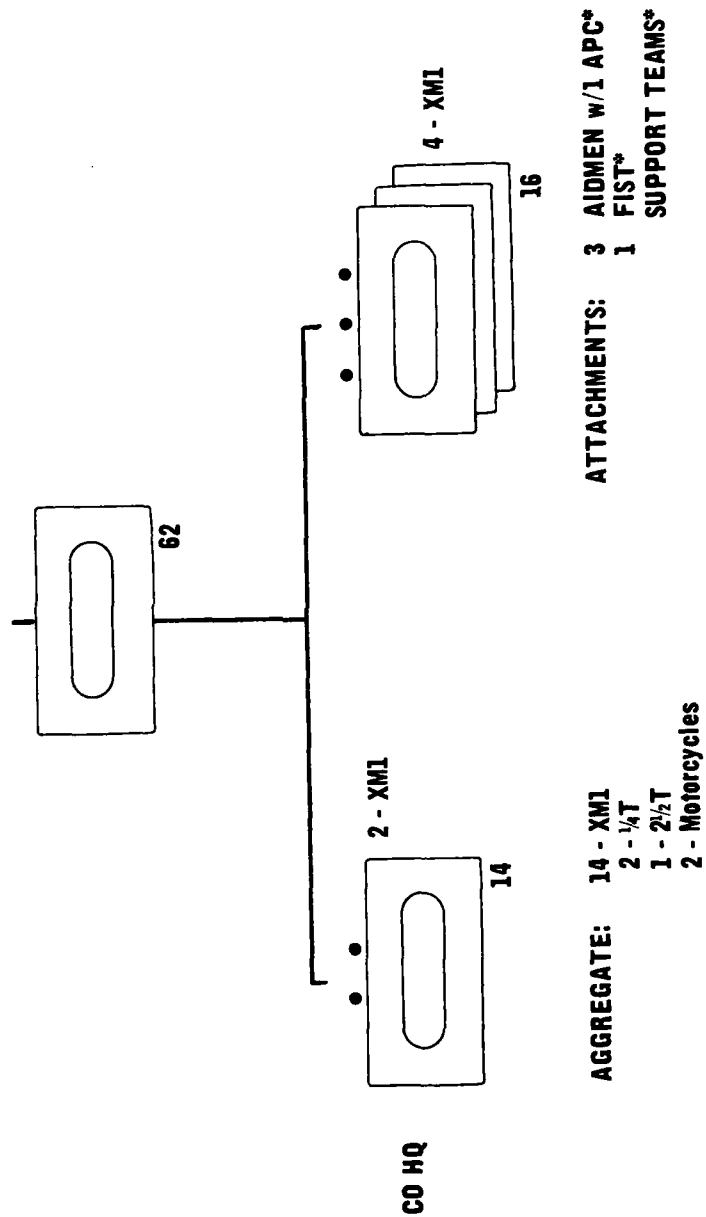
● COMBAT SUPPORT:

- Obtains and coordinates mortar and artillery fires through the FIST.
- Requests attack helicopter and close air support through the FIST or Bn tactical operations center.
- Obtains dedicated anti-tank (HAW) support through the Bn tactical operations center.
- Engineer support coordinated through the tactical operations center.

● COMBAT SERVICE SUPPORT:

- Each combat vehicle carries 3-5 days rations, full tank of fuel and basic load of ammo. Additional support available from battalion includes 2-10T ammo trucks and 2 2500-gal tank trucks.
- Maintenance repair and evacuation provided by company support team from the battalion maintenance platoon - Repair as far forward as possible.
- Medical aid station at battalion trains with an aid man and armored ambulance team provided to each company.
- Supply and services available through chain of command - XO/1SG, from battalion.
- Company mess team available from the battalion support platoon as required.

TANK COMPANY, TANK BATTALION



MISSION: TO CLOSE WITH AND DESTROY ENEMY FORCES USING FIRE, MANEUVER AND SHOCK EFFECT.

*As required.

TANK PLATOON, TANK COMPANY

● COMBAT:

- Functions: To close with and destroy enemy forces using fire, maneuver and shock effect.
- Techniques: Conducts operations requiring a high degree of firepower, mobility, armor protection and shock effect.

Attacks or defends under hostile fire and various conditions of visibility to destroy enemy armor under fire.

Provides the mobility, armor protection, firepower and flexible communications to successfully exploit the effects of nuclear and nonnuclear fire support.

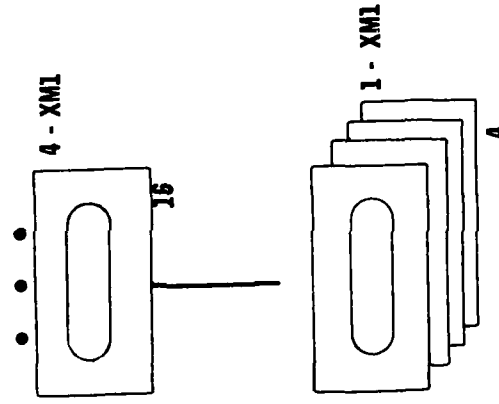
● COMBAT SUPPORT:

- Can coordinate and direct mortar and artillery fires as well as attack helicopters and close air support.

● COMBAT SERVICE SUPPORT:

- Each tank carries 3-5 days of rations, full tank of fuel plus basic load of ammo (57 rds).
- Performs operator maintenance under supervision of the platoon leader/platoon sergeant.
- Requests supply, services and other support through company XO/ISG.

TANK PLATOON, TANK COMPANY



NOTE: NO SEPARATE PLT HQ - PLT LDR OPERATES FROM HIS TANK

MISSION: TO CLOSE WITH AND DESTROY ENEMY FORCES USING FIRE, MANEUVER AND SHOCK EFFECT.

INFANTRY (MECHANIZED) BATTALION

● COMBAT:

- **Function:** Provides four rifle (mechanized) companies to conduct combat operations to close with the enemy by fire and maneuver to destroy or capture him or to repel his assault by fire, close combat and counter attack.
- **Techniques:** The battalion is capable of: providing a base of fire and maneuver; seizing and holding terrain; conducting independent operations on a limited scale.
Can participate in air mobile, amphibious operations and counter-insurgency operations.
Provides a force that complements and enhances the inherent capabilities of tank elements, when employed in tank/infantry teams.
The battalion's high degree of cross-country mobility can be used successfully to exploit the effects of nuclear and nonnuclear weapons.

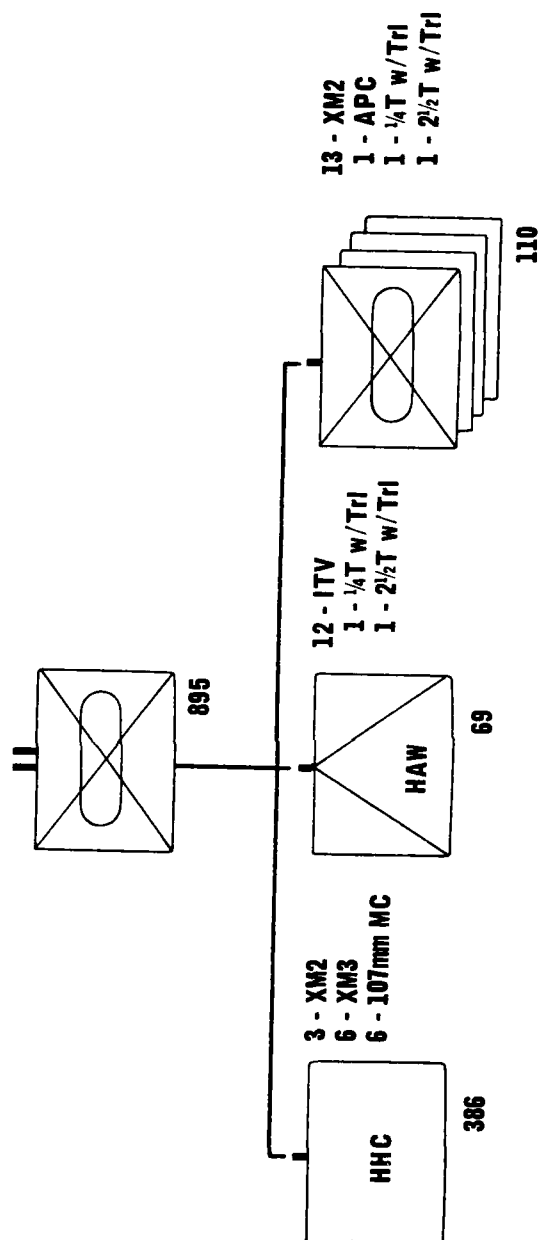
● COMBAT SUPPORT:

- Provides organic anti-tank protection and limited mortar indirect fire support for organic and attached units.
- Conducts reconnaissance missions and long range patrols when properly equipped.

● COMBAT SERVICE SUPPORT:

- Provides supply, transportation, maintenance, medical and personnel/administrative support for its units.

INFANTRY (MECHANIZED) BATTALION



AGGREGATE:

55 - XM2	18 - 1/4T
6 - XM3	7 - 5/4T
12 - ITV	28 - 2 1/2T
25 - APC	15 - 5T
8 - CPC	5 - 10T
6 - 107mm MC	5 - 2500 Gal
	29 - 1 1/2T Trl

MISSION: TO CLOSE WITH ENEMY BY MEANS OF FIRE AND MANEUVER IN ORDER TO DESTROY OR CAPTURE HIM OR TO REPEL HIS ASSAULT BY FIRE, CLOSE COMBAT AND COUNTER-ATTACK.

HEADQUARTERS & HEADQUARTERS COMPANY, INFANTRY (MECH) BATTALION

● COMBAT SUPPORT:

- Functions: Provides indirect fire support (107mm mortar).

Provides reconnaissance support for the battalion.

- Techniques: The mortars are normally positioned in proximity to maneuver units to provide highly responsive fire support. They are used primarily for smoke, also effective for antipersonnel and illumination missions. They can be utilized in general support, *direct support*, reinforcement, attachment or OPCON, maneuver commanders "personal artillery".

Reconnaissance units employed forward, on flanks or provide support in rear area security.

● COMBAT SERVICE SUPPORT:

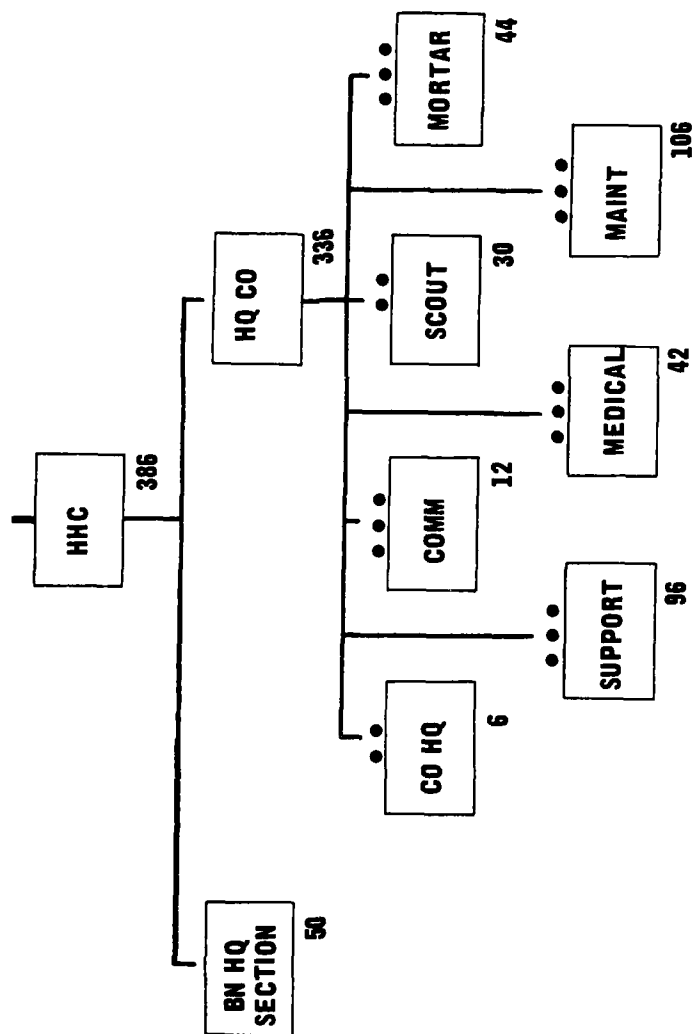
- Provides supply, transportation and battalion level organizational maintenance support for battalion units.
- Provides centralized battalion or decentralized company messing, as required.
- Provides unit level medical support, to include emergency medical treatment, aid station operation, battlefield casualty evacuation and company aid men.
- Provides personnel and administrative support for assigned and attached units.

● COMMAND AND CONTROL:

- Provides command, control, staff planning and supervision of operations of organic and attached elements of the Infantry (Mechanized) Battalion (Battalion Headquarters).

HEADQUARTERS & HEADQUARTERS COMPANY, INFANTRY (MECHANIZED) BATTALION

AGG: 3 - XM2
6 - XM3
6 - 107mm MC
5 - CPC
17 - APC



MISSION: TO PROVIDE COMMAND, CONTROL AND SUPERVISION OF THE OPERATIONS OF THE INFANTRY (MECHANIZED) BATTALION AND ATTACHED UNITS, AND TO PROVIDE ORGANIC INDIRECT MORTAR FIRE SUPPORT AND RECONNAISSANCE TO THE BATTALION AND ATTACHED UNITS.

ANTI-ARMOR COMPANY, INFANTRY (MECHANIZED) BATTALION

● COMBAT SUPPORT:

- Function: Provides dedicated anti-armor support to the battalion.
- Techniques: Maximizes the capability of the HAWs by engaging at the maximum ranges.

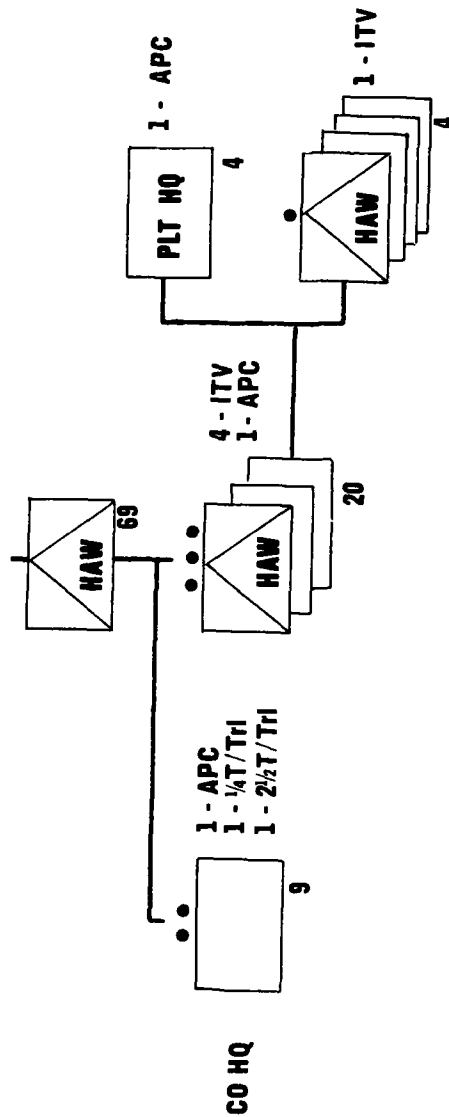
Concentrates fires at critical areas on the battlefield.

Can be employed in general support, direct support or reinforcing roles or attached to mechanized rifle companies.

● COMBAT SERVICE SUPPORT:

- Each combat vehicle carries 3-5 days supply of rations, tank full of fuel and basic load of ammo - rearming and refueling is accomplished as far forward as possible by ammo and POL trucks provided by the battalion support platoon.
- Maintenance and evacuation provided by company support team from battalion maintenance platoon - repair as far forward as possible.
- Medical aid station provided at battalion with aid men and armored ambulances available as required.
- Supply and services available from battalion through chain of command - XO/1SG.
- Company mess team available from battalion support platoon: as situation dictates.

ANTI-ARMOR COMPANY, INFANTRY (MECHANIZED) BATTALION



AGGREGATE: 12 - ITV
4 - A¹C
1 - 1/4 T/Trl
1 - 2 1/2 T/Trl

ATTACHMENTS: 4 AIDMEN w/1 APC*
SUPPORT TEAMS*

MISSION: PROVIDES DEDICATED ANTI-ARMOR FIRES AGAINST ENEMY ARMORED VEHICLES.

*As required.

RIFLE COMPANY, INFANTRY (MECHANIZED) BATTALION

● COMBAT:

- Functions: Close with and destroy or capture the enemy.
Seize and hold terrain.
- Techniques: Fire and maneuver - mounted or dismounted.
Fight mounted as long as possible.
Conduct counter-attacks.
Company and platoon leaders located where they can best control the action.
Command and control by visual signals, radio or wire.

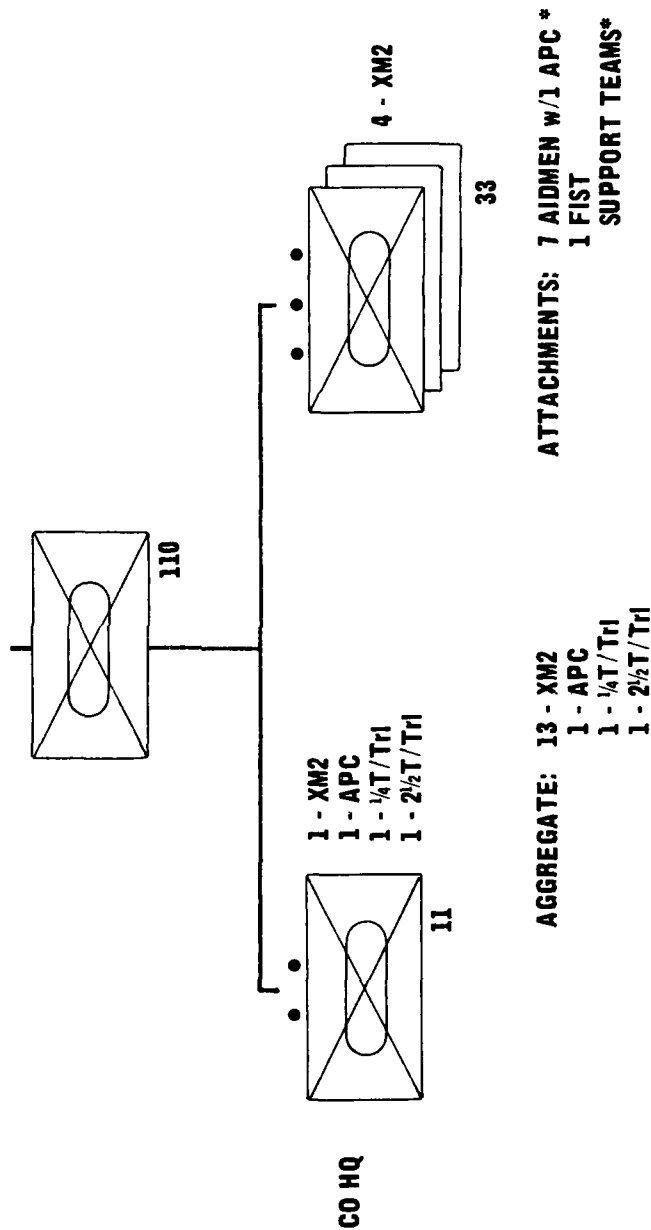
● COMBAT SUPPORT:

- Mortar and artillery fires coordinated through the FIST.
- Attack helicopter support and close air support obtained through the chain of command and coordinated with the FIST.
- Anti-tank (HAW) support obtained through the chain of command.
- Engineer support obtained through the chain of command.

● COMBAT SERVICE SUPPORT:

- Each combat vehicle carries 3-5 days of rations, full fuel tanks and basic load of ammo - support available from battalion includes 5T/10T ammunition trucks and 2500-gallon tank trucks.
- Maintenance repair and evacuation provided by company support team and battalion maintenance platoon - repair as far forward as possible.
- Medical aid station provided at battalion with aid men and armored ambulances provided for each company.
- Supply and services available through chain of command - XO/ISG from battalion.
- Company mess team available from battalion support platoon as situation dictates.

RIFLE COMPANY, INFANTRY (MECHANIZED) BATTALION



MISSION: TO CLOSE WITH THE ENEMY BY MEANS OF FIRE AND MANEUVER IN ORDER TO DESTROY OR CAPTURE HIM OR TO REPEL HIS ASSAULT BY FIRE AND CLOSE COMBAT AND COUNTER-ATTACK.

*As required.

RIFLE PLATOON, RIFLE COMPANY

● COMBAT:

- Functions: Close with and destroy or capture the enemy.

Seize and hold terrain.

- Techniques: Fire and maneuver - mounted or dismounted.

Fight mounted as long as possible.

Platoon and squad leaders located where they can best influence the action.

Command and control by visual signal, radio or wire.

● COMBAT SUPPORT:

- Mortar and artillery - FIST.

- Attack helicopter support - FIST or chain of command.

- Close air support - FIST or chain of command.

- Engineers - chain of command.

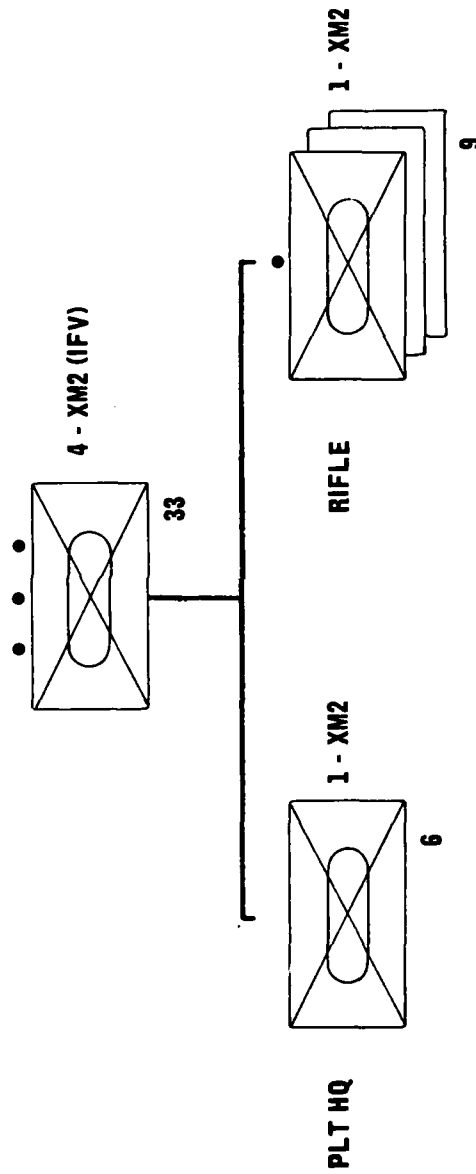
● COMBAT SERVICE SUPPORT:

- Carries on combat vehicles 3-5 days of rations plus tank full of fuel and basic load of ammo.

- Aid man attached - normally rides in platoon leader's vehicle.

- Resupply and services requested through chain of command - Co XO or 1SG.

RIFLE PLATOON, RIFLE COMPANY INFANTRY (MECHANIZED) BATTALION



ATTACHMENTS: 1 AIDMAN
FIST*

MISSION: TO CLOSE WITH THE ENEMY BY MEANS OF FIRE AND MANEUVER IN ORDER
TO DESTROY OR CAPTURE HIM OR TO REPEL HIS ASSAULT BY FIRE AND
CLOSE COMBAT.

*As Appropriate.

TANK PLATOON

- The members of the tank crew can concentrate their efforts toward obtaining the maximum potential from a single weapons system. However, the loss of even one man from a crew seriously degrades the combat effectiveness of that tank. Further, a tank platoon operating without infantry is vulnerable to enemy personnel employing shoulder-fired AT weapons.
- The tank platoon leader can obtain mortar, artillery and engineer support by requesting it from his company commander. Whether and how much depends on the priority accorded the request at the echelon controlling the support.
- Although self-sufficient from vehicular stocks of Class I, III and V for one or more days, the platoon must obtain medical support from the aidman at company level.
- Command and control is facilitated by a small span of control and a homogenous organization; however, except when visual signals or personal contact are feasible, radio is the primary means of communication within the platoon.

TANK PLATOON

FUNCTIONS

ADVANTAGES

DISADVANTAGES

COMBAT

- MOBILE ARMORED WEAPON SYSTEM
- CONCENTRATION OF EFFORT ON SINGLE WEAPON SYSTEM TO APPROACH SYSTEM POTENTIAL

- SENSITIVE TO PERSONNEL LOSSES
- WEAK IN CLOSE-IN SECURITY

COMBAT SUPPORT

ON CALL AS NEEDED

SUPPORT DEPENDS ON PRIORITY

COMBAT SERVICE SUPPORT

CARRIES LIMITED CL I, III & V

NO PROVISION FOR PLATOON MEDIC

COMMAND AND CONTROL

- SMALL SPAN OF CONTROL
- UNIFORM ORGANIZATION

GREAT RELIANCE ON RADIO

TANK COMPANY

- To simplify operations, the company normally fights pure unless the situation dictates cross-reinforcement. This deprives the company of the benefits of the infantry's contribution to the combined arms battle. On the other hand, the company can readily accept the attachment of a mech infantry platoon, particularly if one of its platoons is detached.
- Combat support is provided the company on a request basis, the commander is thus not burdened by having to control it. Conversely, its availability depends on the priorities of higher headquarters.
- In addition to supplies carried on the combat vehicles, the company is supported by a maintenance team, and a medical/evacuation team from Hq Co. Additionally, two 10-ton ammo trucks and two 2500-gallon POL tankers normally accompany the unit.
- Like the platoon leader, the tank company commander has a small span of control over a uniform organization with support provided as required, enabling him to focus on his combat mission. To a greater extent than the platoon, however, the company commander must depend on radio to control his unit.

TANK COMPANY

FUNCTIONS

COMBAT

- MOBILE ARMORED WEAPON SYSTEM
- PURE COMPANY PREFERRED TO CONCENTRATE ON SINGLE WEAPONS SYSTEM
- ADAPTABLE TO TANK/MECH COMPANY TEAM OPERATIONS

COMBAT SUPPORT

NO DIVERSION OF COMMANDER'S ATTENTION UNTIL NEEDED

COMBAT SERVICE SUPPORT

- CARRIES ON-BOARD COMBAT VEHICLES CL I, III & V
- CONCENTRATES ON TACTICAL OPERATIONS

COMMAND AND CONTROL

- SMALL SPAN OF CONTROL
- UNIFORM ORGANIZATION

DISADVANTAGES

- SENSITIVE TO PERSONNEL LOSSES
- LACKS BENEFIT OF TANK/MECH MUTUAL SUPPORT

AVAILABILITY DEPENDS ON PRIORITIES OF HIGHER HQ

LIMITED TO 3-5 DAYS

DEPENDENCE ON RADIO

TANK BATTALION

- Capable of sustained operations and limited independent operations, the tank battalion is well-suited to receive cross-attachment of mechanized infantry which in most cases is essential to permit the battalion to maximize the effectiveness of its mobile firepower.
- The battalion has its own heavy mortar and scout platoons. For other combat support it must depend on external resources whose priorities are established by brigade and division.
- Combat service support elements are centralized at battalion level which facilitates training and allows the tank company commanders to concentrate their efforts exclusively on combat-related functions. In combat, provision of CSS is decentralized. The battalion has the capability to resupply itself. However, a weakness exists in the lack of armored tracked vehicles to deliver supplies in the forward area. S4 has dual functions as trains commander and logistics officer. No dedicated trains security element.
- The battalion has a dedicated staff to assist the commander. However, the rapid transmission of orders in combat will in most cases be subject to the limitations of radio communication.

TANK BATTALION

FUNCTIONS

ADVANTAGES

DISADVANTAGES

COMBAT

- OPTIMUM LEVEL FOR CROSS ATTACHMENT
- SUSTAINED OPERATIONS
- CONDUCTS INDEPENDENT OPNS

NEEDS INF REINF FOR MAX EFFECTIVENESS

COMBAT SUPPORT

ORGANIC MORTARS & SCOUTS

DEPENDS ON FIST FROM DIVARTY

COMBAT SERVICE SUPPORT

- CENTRALIZED CONTROL AND TRAINING - DECENTRALIZED EXECUTION
- ORGANIC RESUPPLY

- NO ARMORED CSS VEHICLES
- S4 HAS DUAL FUNCTIONS
- NO TRAINS SECURITY ELEMENT

COMMAND AND CONTROL

DEDICATED STAFF

RADIO PRIMARY MEANS OF COMMUNICATION

COMMAND AND CONTROL FUNCTIONS OF MANEUVER BATTALION HEADQUARTERS COMPANIES

- Under current organizational concepts, the CO HQ Co is responsible for elements which perform three dissimilar functions and which are under the staff supervision of different members of the battalion staff.

Under Supervision of:

Function

- Bn CP management, messing and security

XO

- Combat support

- Scout platoon
- Mortar platoon
- Communications platoon

S2
S3
S3

- Combat service support

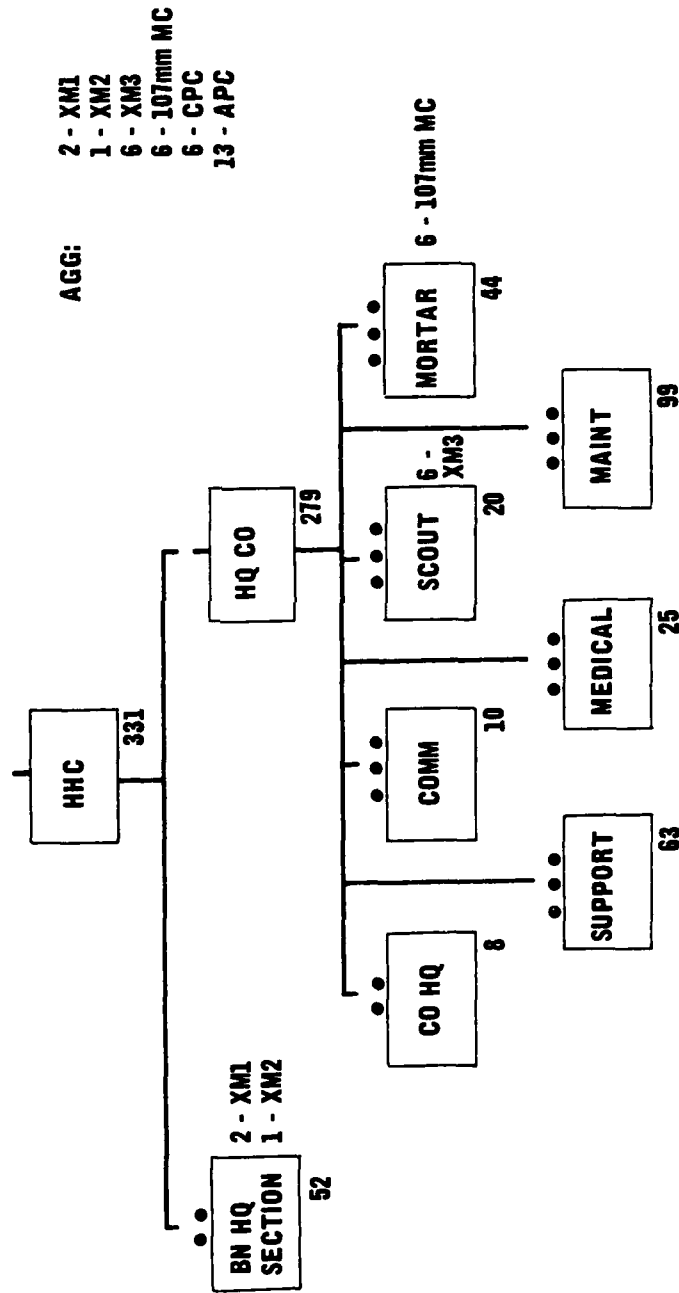
- Support platoon
- Maintenance platoon
- Medical platoon

S4
Bn Maint Officer
Bn Surgeon

- The S4 is normally located in the trains area and is responsible for the operations and the security of the trains while the CO HQ Co, normally located at the Bn CP, has responsibility for the welfare, administration and discipline of trains personnel.
- The S4, charged with the security of the trains, has no dedicated personnel to perform this function and thus must improvise, involving personnel whom he does not command.

HEADQUARTERS AND HEADQUARTERS COMPANY,

TANK BATTALION



MISSION: TO PROVIDE COMMAND, STAFF, MAINTENANCE, ADMINISTRATION, INDIRECT FIRE, COMMUNICATIONS, RECONNAISSANCE, SUPPLY AND MEDICAL SUPPORT FOR THE TANK BATTALION.

MANEUVER BATTALION HEADQUARTERS STAFF SECTIONS

- S1 and S4 are both responsible for administrative support functions which they carry out in the battalion (combat) trains area; each must have access to the other's data.
- S2 and S3 focus on tactical operations and normally operate from two locations, the main CP and the tactical CP; a continuous exchange of information between S2 and S3 is a must.
- Even at full strength, the sections are inadequately manned to provide for 24 hour operations on a continuing basis, particularly in the case of S2 and S3 who normally must function in two locations.
- Although current doctrine contemplates that S1 and S4, and S2 and S3, collocate, TOE separation into four different elements encourages compartmentalization and duplication of effort.
- Combining S1 and S4, and S2 and S3, into two integrated sections would have the following advantages:
 - Improve capability for 24 hour operations on a continuous basis by consolidating personnel assets and facilitating cross-training.
 - Improve staff coordination by consolidating related functions.
 - Reduce by two the number of possible message addressees at Bn level.

STAFF SECTIONS OF MANEUVER BATTALION HEADQUARTERS COMPANIES

<u>Section</u>	<u>Personnel Strengths</u>		<u>Characteristics</u>
	<u>Mech Bn</u>	<u>Tank Bn</u>	
S-1	11	12	● Both concerned with providing administrative support
S-4	$\frac{7}{18}$	$\frac{8}{20}$	● Normally function in Bn trains area
Total			
S-2	5	5	● Both focus on tactical operations
S-3	$\frac{16}{21}$	$\frac{15}{20}$	● Normally function in two locations (main and Fwd CPs)
Total			

- Each section austere manned for 24 hour operations.
- TOE separation encourages compartmentalization (despite doctrinal guidance).
- Integrating sections into combined S1/S4 and S2/S3 would:
 - Enhance capability for 24 hour operations.
 - Facilitate staff coordination.
 - Simplify addressing of messages.

MECHANIZED PLATOON

- With a highly mobile, armored carrier mounting multiple weapons systems, the platoon can operate either mounted or dismounted and in most cases provide mutual support between the carrier teams and maneuver teams. It is possible, however, that dismounted elements may become separated from the firepower of the carriers. Also, the platoon carries only a limited number of tank-defeating rounds which would quickly be expended against an attack by enemy armor. The variety of weapons in the platoon has the concomitant disadvantage of complexity in training.
- Combat support is available to the platoon leader on a request basis; it is provided according to the priorities of the company and higher commanders.
- The platoon carries its own, albeit limited, supplies of Class I, III and V and accommodates a medical aidman in the platoon leader's carrier.
- When the platoon is operating mounted, the platoon leader has a small span of control. He also has multiple means of communication; e.g., vehicular radios, squad radios, telephones and wire and personnel who can be used as messengers. In certain situations, control of fire and movement between mounted and dismounted elements may be difficult.

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JAYCOR ALEXANDRIA VA

F/G 15/7

INTEGRATED NUCLEAR CONSIDERATIONS. MANEUVER BATTALIONS (AND LOW--ETC(U)

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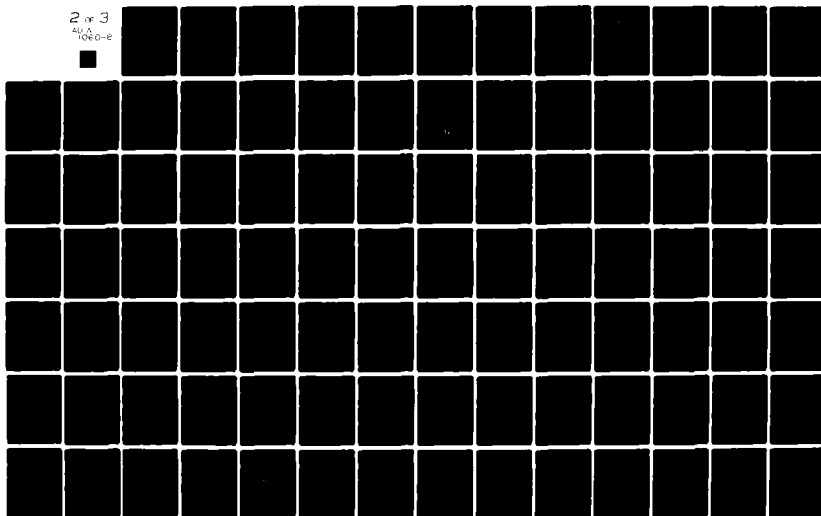
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MECHANIZED PLATOON

FUNCTIONS

COMBAT

ADVANTAGES

DISADVANTAGES

- HIGHLY MOBILE PROTECTED WEAPONS SYSTEM
- DUAL CAPABLE - MOUNTED/DISMOUNTED
- MUTUAL SUPPORT BETWEEN MOUNTED AND DISMOUNTED ELEMENTS
- MULTIPLE WEAPONS SYSTEMS AVAILABLE
- LIMITED AT ROUNDS
- WHEN DISMOUNTED COULD BE SEPARATED FROM PRIMARY WEAPONS
- TRAINING COMPLEXITY

COMBAT SUPPORT

AVAILABLE WHEN NEEDED

DEPENDS ON PRIORITIES OF HIGHER HQS

COMBAT SERVICE SUPPORT

● ACCOMMODATES PLT MEDIC

● CARRIES ON-BOARD COMBAT VEHICLES CL I, III & V

LIMITED TO 3-5 DAYS

COMMAND AND CONTROL

- SMALL SPAN OF CONTROL WHEN MOUNTED
- MULTIPLE MEANS OF COMMUNICATIONS

● PROBLEMS BETWEEN MOUNTED AND DISMOUNTED ELEMENTS

MECHANIZED COMPANY

- Although capable of fighting pure when required, the company needs tank reinforcement for maximum combat effectiveness. It is fully capable of controlling an attached tank platoon, especially if one of its platoons is detached.
- The company requests combat support from battalion; it is provided based on the priority accorded the request at battalion and higher headquarters.
- In addition to vehicular loads of Classes I, III and V, the company is supported by a mess team, a maintenance team, and an aidman/evacuation section. One or more ammunition trucks and POL tankers from the Bn support platoon will normally accompany the unit.
- The company's organization, comprising only elements with a fighting mission, with necessary support provided by battalion, permits the company commander to concentrate on tactical operations. Although the commander has multiple means of communication at his disposal, in offensive operations radio is the primary means for contact between company and platoon.

MECHANIZED COMPANY

<u>FUNCTIONS</u>	<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
COMBAT	● MOBILE ARMORED WEAPONS SYSTEM ● FIGHT MOUNTED OR DISMOUNTED - MUTUALLY SUPPORTING ● ADAPTABLE TO TANK/MECH COMPANY TEAM OPERATIONS ● MULTIPLE WEAPON SYSTEMS AVAILABLE	● LIMITED AT ROUNDS ● SEPARATION OF FIGHTING ELEMENTS ● NEEDS TANK REINF FOR MAX EFFECTIVENESS ● TRAINING COMPLEXITY
COMBAT SUPPORT	AVAILABLE WHEN NEEDED	DEPENDS ON PRIORITIES OF HIGHER HQS
COMBAT SERVICE SUPPORT	CARRIES ON-BOARD COMBAT VEHICLES CL I, III & V	LIMITED TO 3-5 DAYS
COMMAND AND CONTROL	● CONCENTRATION ON TACTICAL OPNS ● MULTIPLE MEANS FOR COMMUNICATION	

MECHANIZED BATTALION

- Capable of operating for a sustained period, conducting limited independent operations and capitalizing on all forms of mobility, the battalion can fight pure or, preferably, reinforced by tanks, which best exploits the capabilities of both arms. It possesses a variety of weapons systems enabling it to engage a diversity of targets; this capability, however, results in increasing the complexity of training.
- Organic scouts, heavy mortars and HAWs provide combat support to the battalion's fighting elements. Artillery, engineer and other forms of combat support are provided by higher echelon, whose priorities may differ from those of the battalion. The 107mm mortar is not man portable to support dismounted operations, some distance away from its carrier.
- The combat service support functions for the line companies are carried out by platoons organic to the battalion headquarters company which permits centralized training of these elements; in combat they can operate on a decentralized basis. The battalion has the requisite transportation and personnel to sustain itself with combat consumables. The S4 has a dual function, trains commander and battalion logistics officer. There is no dedicated security element for the trains complex.
- The battalion commander has a full-time staff of optimal size and composition to assist him in his exercise of command. The battalion possesses various means of communication; nevertheless, during offensive operations radio will be the primary system.

MECHANIZED BATTALION

FUNCTIONS

COMBAT

ADVANTAGES

- CAPITALIZES ON ALL FORMS OF MOBILITY
- VARIETY OF ORGANIC WEAPONS SYSTEMS
- TANK/MECH TASK FORCE FACILITATED
- SUSTAINED/INDEPENDENT OPERATIONS

DISADVANTAGES

- TRAINING COMPLEXITY
- NEEDS TANK REINF FOR MAX EFFECTIVENESS

COMBAT SUPPORT

ORGANIC MORTARS/SCOUTS/HAWS

- DEPENDS ON FIST FROM DIVARTY
- 107MM MORT NOT MAN PORTABLE

COMBAT SERVICE SUPPORT

- CENTRALIZED CONTROL AND TRAINING - DECENTRALIZED EXECUTION

- S4 HAS A DUAL FUNCTION
- NO DEDICATED SECURITY ELEMENT

COMMAND AND CONTROL

- ORGANIC RESUPPLY
- DEDICATED STAFF
- MULTIPLE COMMUNICATIONS

RELIES PRIMARILY ON RADIO

COMPANY TEAM CONCEPT

- The integration of tanks and infantry, because of the unique and mutually supporting capabilities of each, produces a fighting capability markedly greater than the sum of their individual combat power. However, the combination of two arms into one team does present a more complex situation with regard to fire and maneuver. Current doctrine indicates that the Infantry prefers the team concept.
- As with the pure tank and infantry companies, combat support is furnished to the company team based on its requirements as assessed by higher tactical headquarters.
- The company team carries with it, or is furnished the same combat service support as the pure tank or infantry company. However, the differences in equipment, personnel strength, weapons and ammunition between a tank platoon and a mechanized platoon will make determination of requirements and provision of timely resupply somewhat more difficult.
- The company team also has multiple means of communication; the commander can also concentrate on tactical operations with the knowledge that necessary support will be provided to him. However, he does not command a homogenous unit; the leader of the attached tank or mech platoon may be a complete stranger to the team commander; variances may exist in unit SOPs and result in confusion in the stress of combat; a shakedown period of several days may be required before the desired degree of cohesiveness is attained.

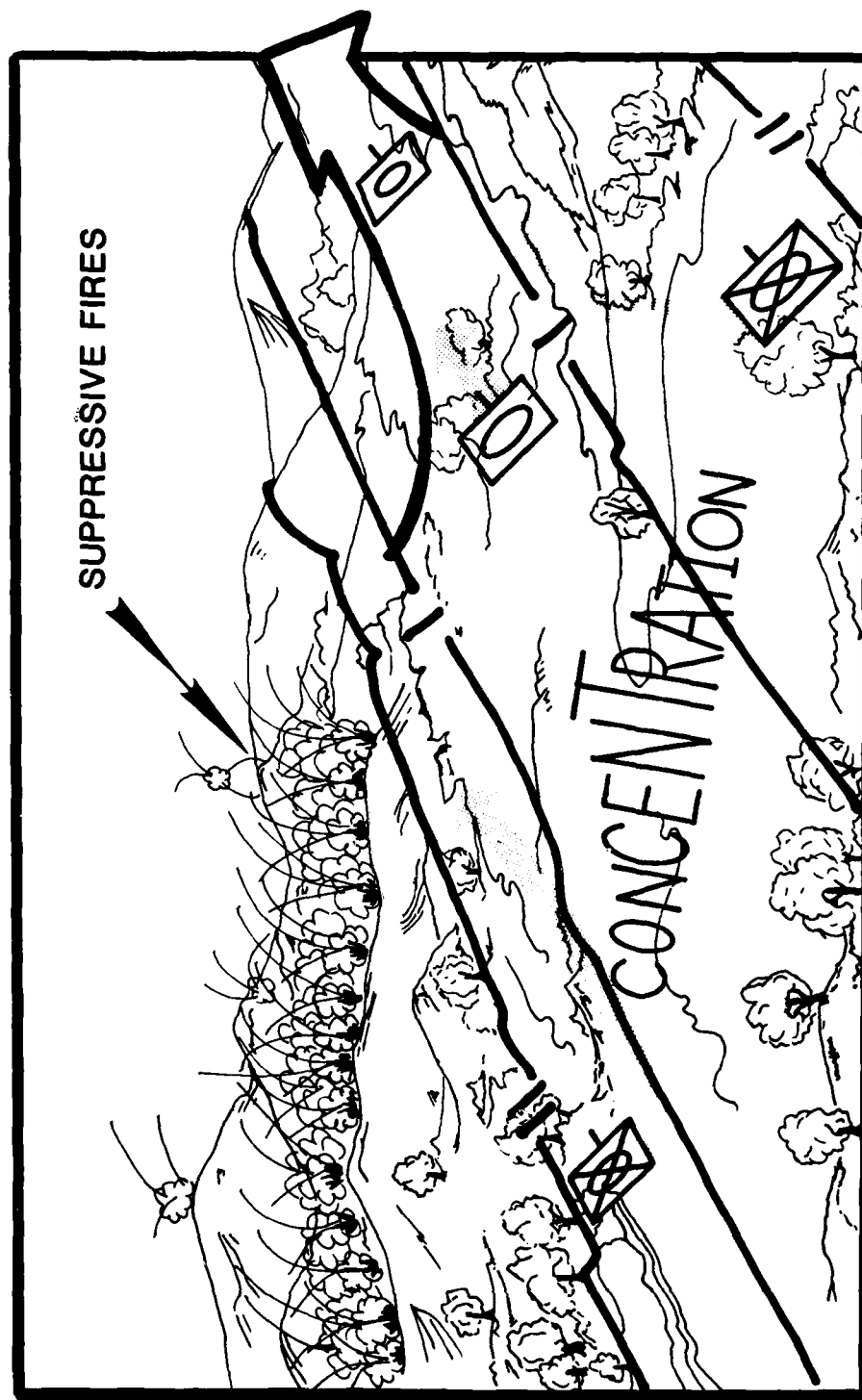
COMPANY TEAM CONCEPT

<u>FUNCTIONS</u>	<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
COMBAT	● MUTUAL SUPPORT TANK/MECH (SYNERGISM) ● PREFERRED ORGANIZATION BY INFANTRY	● INCREASED COMPLEXITY ● DOCTRINE: "PURE AT COMPANY LEVEL"
COMBAT SUPPORT	AVAILABLE WHEN NEEDED	DEPENDS ON PRIORITIES OF HIGHER HQS
COMBAT SERVICE SUPPORT	CARRIES LIMITED CL I, III & V	SUPPORT COMPLEXITY
COMMAND AND CONTROL	● MULTIPLE MEANS OF COMMUNICATIONS ● CONCENTRATE ON TACTICAL OPERATIONS	● UNITY OF COMMAND/ LEADERSHIP INTERFACE ● SOP DIFFERENCES

COMPANY TEAM OPERATIONAL CONCEPT

- "In an attack, mobility enables the task force commander to concentrate forces against enemy weak points, penetrating the enemy defensive system" (P. 1-10, FM 71-2).
- Looking at the accompanying sketch, where the tank and mechanized companies are operating as pure companies, one can visualize the lack of mutual support between the tanks and infantry fighting vehicles as the task force concentrates for the attack, and communications between the battalion commander and his subordinate company commanders is intermittent at best.
- On the integrated nuclear and nonnuclear battlefield, are the tactics going to be the same or will they change when the battalion transitions into a nuclear environment? How will this affect combat effectiveness?
- Unit SOP can reduce some of the problems associated with transition between nonnuclear and nuclear operations, however, with the temporary nature of provisional task force organizations at battalion level, all battalions would have to operate under the same SOP. This may be good for the task force concept and reduce confusion at company team level; however, it may also have an adverse effect on the combat effectiveness of battalions concerned.

BALANCED TASK FORCE IN THE ATTACK*



* P 1-10 FM 71-2

BATTALION TASK FORCE CONCEPT

- The synergistic effect of the mutual support provided by the tank/infantry combination is best realized at battalion TF level; also the task force is the lowest level at which a force of the combined arms can carry out sustained operations as well as limited independent operations. Integration of tank and mechanized units at this level is the normal organization for combat. However, the differences in organization, equipment and tactics between the tank and infantry companies make for increasing the complexity of training a combined arms team as well as maneuvering it in combat.

- Organic combat support is provided in the form of scouts, mortars and HAWs (from the mech Bn). Other combat support is provided as required and available, from brigade and division. 107mm Mortars cannot accompany dismounted troops at any great distance from their carriers.

- Combat service support for the company teams is tailored to correspond to the organization of each team. This will inevitably complicate resupply as support personnel must now deal with attached units as well as assigned units. The S4's responsibility for managing the internal operations of the battalion trains as well as supervising the logistics operation becomes more complex. There is no dedicated security element for trains/rear area security control.

- The battalion TF provides unity of command of the combined arms. However, it experiences the difficulties which result from provisional organization for combat: interface between leaders at the various levels who have not trained together, and differences, however minor, in unit SOPs. A shakedown period of several days will be required before a task force approaches full combat potential.

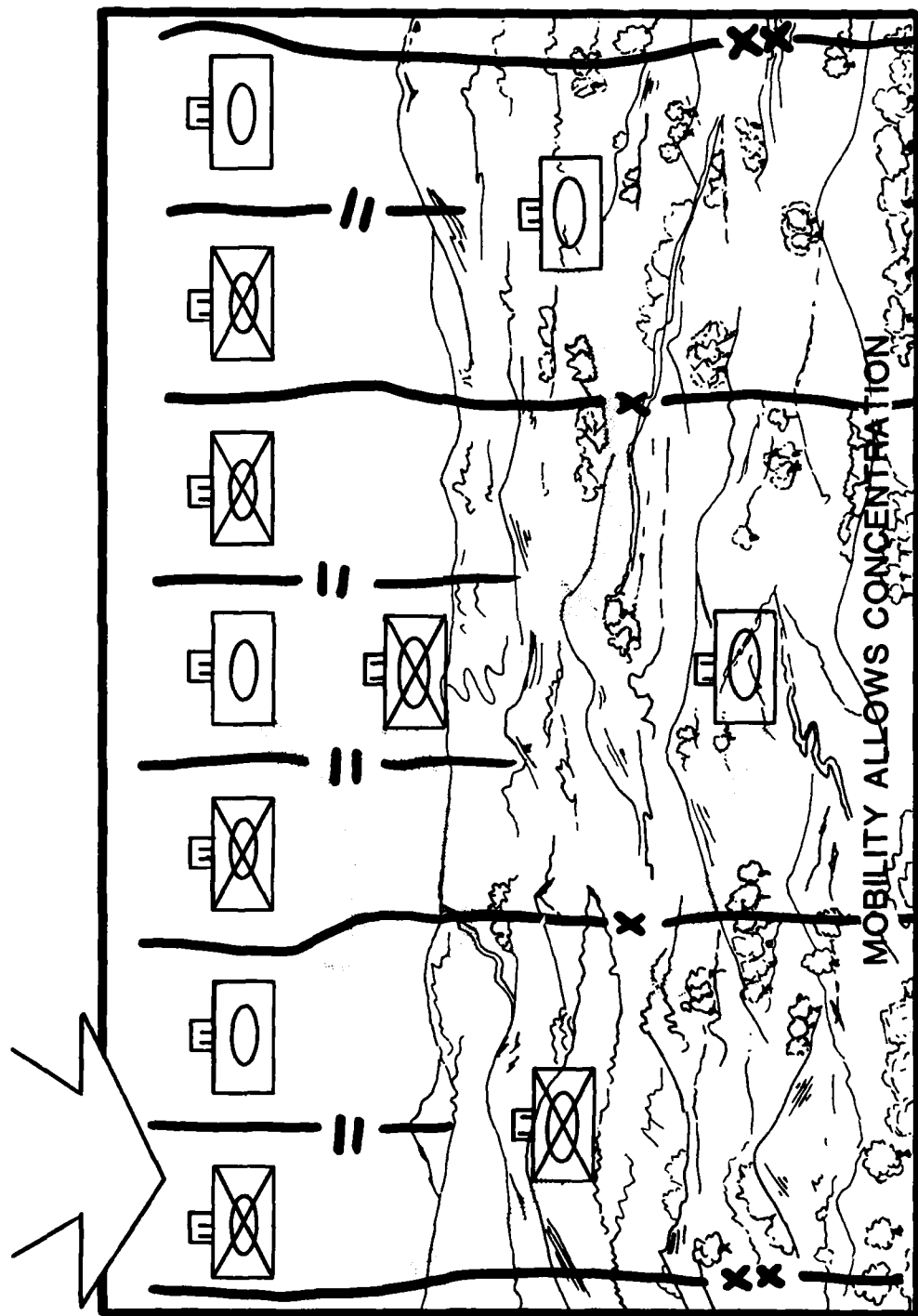
BATTALION TASK FORCE CONCEPT

<u>FUNCTIONS</u>	<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
COMBAT	● MUTUAL SUPPORT TANK/MECH (SYNERGISM) ● LOWEST LEVEL FOR SUSTAINED/INDEPENDENT OPERATIONS ● NORMAL COMBAT ORGANIZATION	INCREASED TRAINING AND TACTICAL COMPLEXITY
COMBAT SUPPORT	SCOUTS, MORTARS AND HAWS	● DEPENDS ON FIST FROM DIVARTY ● 107MM MORT NOT MAN PORTABLE
COMBAT SERVICE SUPPORT	TAILORABLE	● SUPPORT COMPLEXITY ● TRAINS OPERATION MORE COMPLEX FOR THE BN S4 ● NO DEDICATED SECURITY ELEMENT
COMMAND AND CONTROL	UNITY OF COMMAND OF COMBINED ARMS	● PROVISIONAL ORGANIZATION ● SOP DIFFERENCES ● UNITY OF COMMAND/LEADERSHIP INTERFACE

BATTALION TASK FORCE OPERATIONAL CONCEPT

- "Whether in the attack or defense, mobility allows the task force commander to concentrate his forces, facilitating the full integration of all elements of his combat power. In the defense, the concentration of force is essential to winning. To win outnumbered, concentration at the critical time and place is even more important." (FM 71-2, p. 1-10)
- "In some cases, the task force may be required to make long moves. As an example, during the conduct of the active defense a battalion on the right flank of the division may be required to reinforce a battalion task force operating on the left flank of the division. In this case, the task force may be required to move long distances very rapidly." (FM 71-2, p. 1-10)
- During continuous combat when task forces are attached and detached from their brigades support bases, logistics support essential for sustainability is severely strained. Demand-based logistic support becomes extremely difficult and conservation of critical resources fast becomes unmanageable. The accompanying sketch from FM 71-2 illustrates the movement envisioned in the active defense, with the situation subject to change at any time.

BATTALION TASK FORCES IN THE DEFENSE



* P 1-10 FM 71-2

ESSENTIAL ELEMENTS OF ANALYSIS

1. a. In the absence of continuous command and control, are the maneuver battalions organized to effectively and efficiently conduct combat missions on the integrated battlefield?
- b. Discussion:
 - Division 86 Principles of Force Design called for combined arms integration at battalion and brigade level.
 - Current doctrine emphasizes the requirement for habitual cross-attachment of tanks and mechanized infantry at battalion level in order to optimize the unique and mutually supporting characteristics of each.
 - Despite the above, pure mechanized infantry and tank battalion TOEs have been developed for Division 86, resulting in units which are not organized as they will fight, thus requiring provisional task organization to integrate the combined arms.
 - The consequences which stem from this system of task organizing are:
 - Lack of continuity in command relationships within the cross-reinforced battalion.
 - Platoon leaders/company commanders must adjust to inevitable variations in unit SOPs.
 - Platoon leaders/company commanders frequently work for strange superiors.
 - Platoons and companies will not have had the opportunity to develop teamwork within the organization in which they will fight.
- c. Conclusion: Provisional organization for combat will prevent the achievement of the full potential of the combat effectiveness of the combined arms team.

ESSENTIAL ELEMENTS OF ANALYSIS

2. a. What are the maneuver battalions/task forces capabilities to conduct combat service support on the integrated battlefield in the absence of continuous command and control?

b. Discussion :

- The tank and mechanized infantry battalions are properly organized with the requisite personnel and equipment to conduct CSS operations. Although the provision of forward logistical support in combat is difficult, it can be accomplished.
- The temporary organization for combat of battalion task forces introduces complications into the provision of forward support:
 - The reinforced battalion (tank or mech) gains one or more companies for which Class IX supplies are not provided in the unit PLL.
 - Battalion-level maintenance support cannot be expected to have the same expertise in repairing the different equipment of attached units as it has in fixing its organic weapons and equipment.
 - Maintenance follow-up, e.g., returning a repaired vehicle from battalion maintenance to its company, will be more difficult since the company may have been attached to a battalion in another brigade or division.
 - Reporting of personnel losses and providing for their replacement will become more complicated when companies are detached from their parent battalions and attached to other battalions.
- c. Conclusion: Provisional organization for combat will make more complex the already difficult task of conducting CSS operations in combat and will be compounded without continuous, responsive communications.

ESSENTIAL ELEMENTS OF ANALYSIS

3. a. What is the appropriateness of large battalion/task force trains vis-a-vis fragmentation of support into smaller, dispersed teams?
- b. Discussion: Composition, disposition and area coverage of the trains of a tank-heavy TF are shown on the accompanying sketch.
 - Areas depicted allow for approximately 100 meters between vehicles.
 - Radii of moderate damage for a 20 KT weapon against unprotected equipment and personnel:

● Wheeled vehicles	1050 meters
● APC	720 meters
● Tanks	600 meters
● Personnel (in forest)	1270 meters
 - To provide responsive, one-stop CSS, support teams should be unit rather than functionally oriented. However, as the situation dictates greater centralization, the CSS elements become more functional, e.g., centralized preparation of meals rather than unit messes.
 - Teams (trains) should be centrally located to the rear of their parent unit to provide a degree of protection with distances between elements approximating those on the sketch and with due regard to cover, concealment and trafficability. Access by road to the supported unit and to the next higher echelon of CSS must also be considered.
- c. Conclusion: It is considered that echelonment of support elements into company trains and battalion combat and field trains, whose composition may be adjusted as required, provides more responsive forward support along with the necessary degree of dispersion than does fragmentation into smaller, more dispersed teams. However, this does not preclude prepositioning of packages of essential consumables.

ESSENTIAL ELEMENTS OF ANALYSIS

4. a. What are the advantages and disadvantages of a demand-supported resupply system vis-a-vis a push-system of prepackaged supplies for company/battalion?

b. Discussion:

- The prepackaged concept visualized is the capability to tailor a support package, based on the most recent unit experience data, that can be sent forward in the absence of a formal request.
- The demand-supported system relies on responsive communications as well as transportation assets to provide the support requested. This is the most efficient system, since excesses are continuously adjusted prior to subsequent requests. In the absence of continuous communications coupled with the provisional task organization concept, the support requested may no longer be needed.
- With five different battalion configurations available under the temporary task organization concept, a prepackaged push-system could satisfy general needs; however, specific items required for repairs would be difficult to forecast by type and quantity. Scarce resources could be lost to the units needing them while surpluses of unneeded items would accumulate and adversely affect the unit's mobility.
- The main draw-back in either system is the instability of the unit's support under the temporary task organization concept which attaches and detaches units with frequent randomness that includes attachment to battalions temporarily attached from another division.

c. Conclusion: Either system will work; however, neither is efficient under the temporary task organization concept in the absence of continuous communications between supported and supporting units.

ESSENTIAL ELEMENTS OF ANALYSIS

5. a. What is the impact on companies/battalions if capacity is increased to transport larger volumes of combat consumables?

b. Discussion:

- Class I 3-5 days carried on each combat vehicle - no serious impact on either company or battalion.
- Class III
 - Total daily requirement of fuel for the armored vehicles of the 10 maneuver battalions under heavy combat is approximately 159,000 gallons. Organic capability for the 10 battalions in a single lift is 215,000 gallons.
 - In a worst case situation there appears to be an excess fuel transportation capability.
- Class V
 - Under intense combat conditions the combat vehicles carry about 2 days supply of ammo and another 2 days are carried on dedicated ammo vehicles. The adjoining figure shows that as the intense combat continues and based on each combat vehicle expending half of its on-board ammo, the reserve capacity to transport ammo increases so that by the 15th day, it is about 2 times the daily consumption rate when compared against the 5 percent combat vehicle loss curve (B) and about 4 days when compared against the 10 percent loss curve (C).
 - An inefficient use of ammo trucks (single daily lift) detracts from combat effectiveness as non-essential vehicles must be manned and maintained.

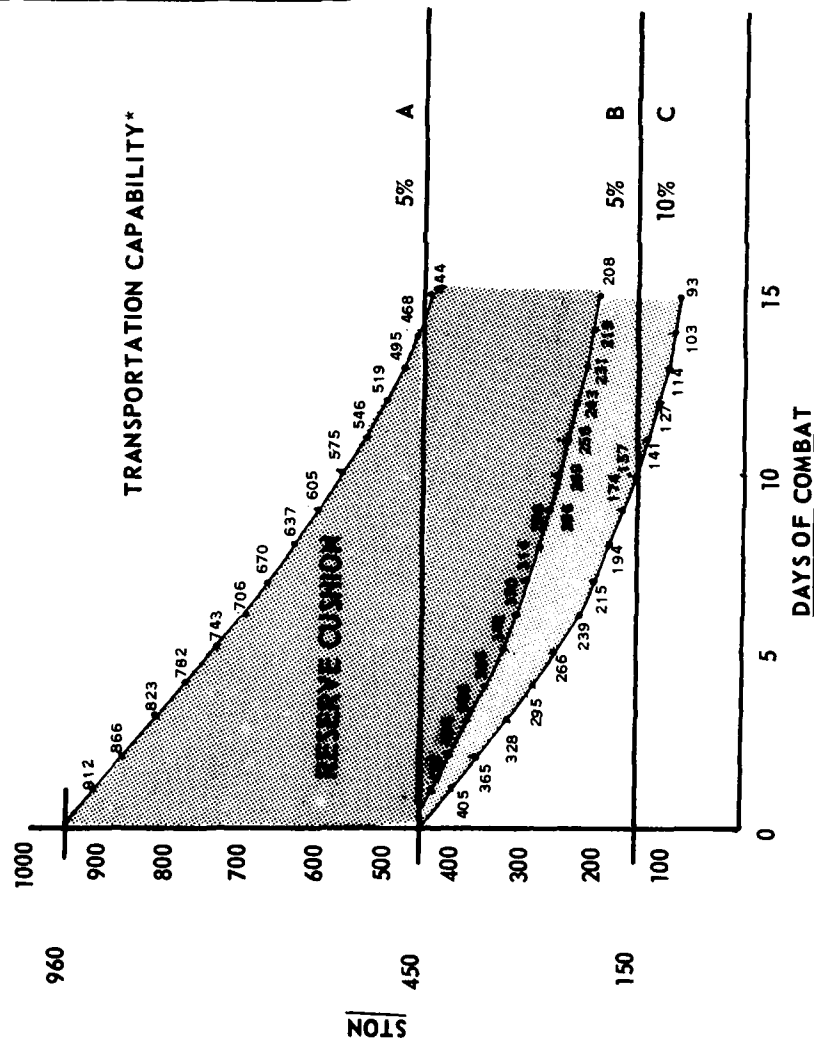
c. Conclusion:

- There appears to be an excess POL/ammo transportation capability.

NOTE: A more detailed study on transportation requirements for AMMO/POL is covered in Section III.

MANEUVER BATTALIONS AMMUNITION CONSUMPTION VS. TRANSPORTATION CAPABILITY - RESERVE CUSHION

ON BOARD AMMO					
TK BN (6)			MECH BN (4)		
Type	Wt	No.	STON	No.	STON
105mm	69	3306	114	660	13
107mm	40	660	13	486	21
TOW	87	42	2	352	12
DRAGON	67	24	1	5	5
Misc			13		
BN Total (6x)			143	(4x)	51
10 BNs			858 + 204 =	1062	



*Initial Availability of Vehicles 100 Percent.

- A - Transportation capability degraded 5% per day - losses of vehicles.
- B - Consumption capability (firepower) reduced 5% per day, combat vehicles.
- C - Consumption capability (firepower) reduced 10% per day, combat vehicles.

ESSENTIAL ELEMENTS OF ANALYSIS

6. a. What command and staff functions (if applicable) should be changed at battalion and subordinate formations to conform with integrated battlefield operations?

b. Discussion:

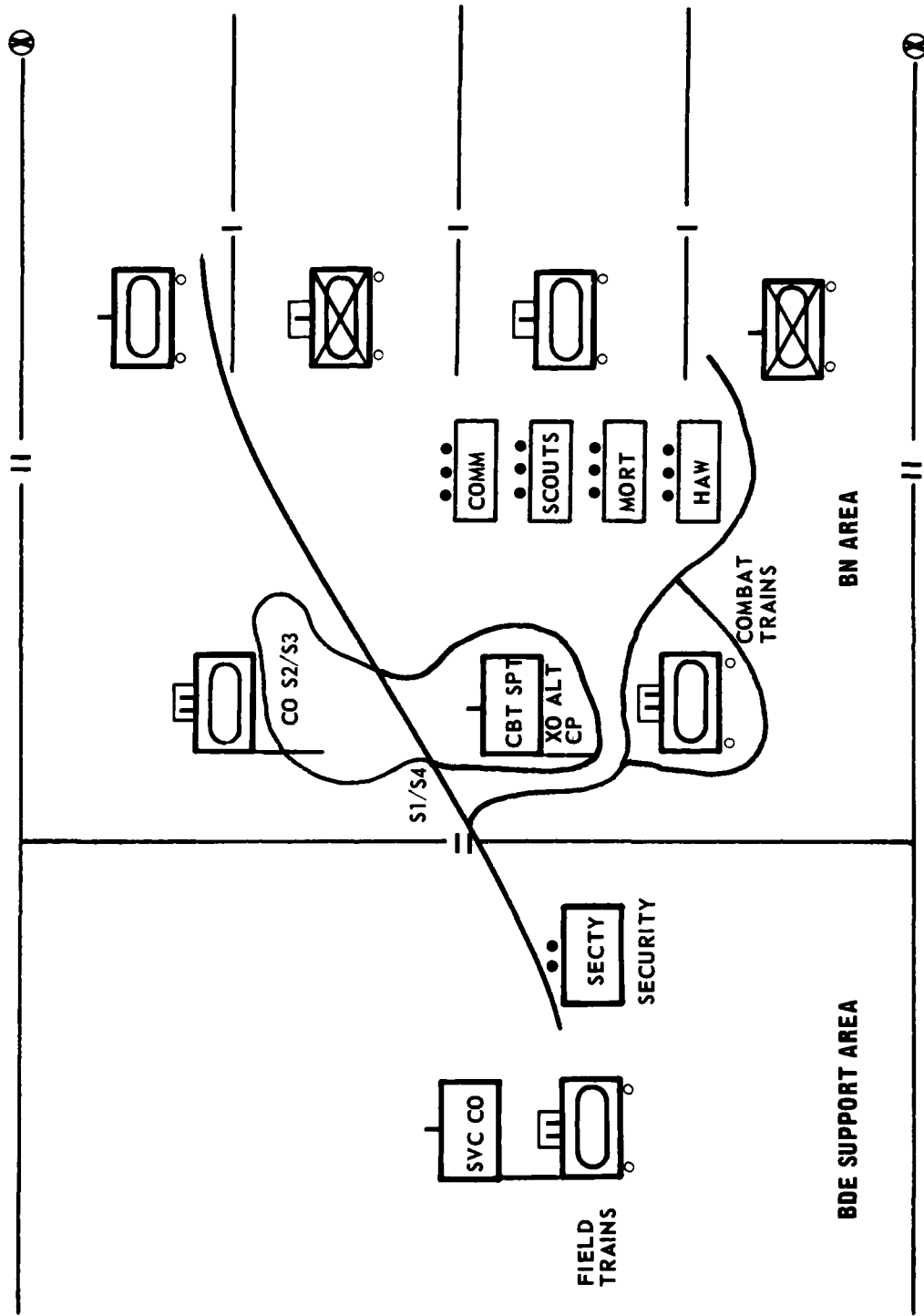
- In order to enhance responsiveness, the number of staff actions should be reduced to a minimum. Reports to the S1 and S4 and to the S2 and S3 could be combined into a S1/S4 and an S2/S3 addressee. These two combined sections habitually work in the same proximity and should be combined at the staff level. This will facilitate status reporting, relocation and continuity of effort for sustained operations.
- The HQ Company commander has responsibility for 3 functional areas, Bn CP management and security, combat support associated with the scout, mortar and commo platoons and combat service support provided by the support, maintenance and medical platoons. His physical presence is usually with the Bn CP group, while the S4 is in charge of the Bn trains, the S2 has control of the scouts, and the S3 directs the mortars and HAWs. Unity of command and staff supervision should provide the basis for organizational design. All units under control of the S4 and normally located in the Bn trains should be in one unit, while the combat support elements should be in a separate unit. Bn HQ along with the communications could be in a third unit or associated with either the combat service support or the combat support element. Physical locations favor a HQ and Combat Support company with a separate service company.

- Although the S4 has responsibility for trains security, he has no dedicated security element, thus must rely on temporarily detailing personnel to perform security duties.

c. Conclusion:

- The S1/S4 and the S2/S3 staff elements within the Bn CP should be organized and operated as integrated sections.
- The Bn HQ section should be combined with elements related with missions and physical locations.
- The Bn trains should consist of the logistics and administrative elements of the Bn under a single commander.
- The Bn trains should be provided with a dedicated security element.

COMMAND AND STAFF FUNCTION CHANGES



SUMMARY OF ANALYSIS

1. RESULTS:

The tank and mechanized battalion organizations are designed to fight effectively as pure organizations rather than organized as they would normally fight, in an integrated combined arms configuration. The latter permits the greatest flexibility in continuous, sustained combat against an ill-defined, well equipped threat, under varying environmental conditions in a nuclear and nonnuclear conflict under non-continuous command and control. This is how synergism is achieved.

2. IMPLICATION:

COMBAT

Mutual support provided by the tank/mech combination is not measured solely by the physical presence of their weapon systems on the battlefield. The intangibles of leadership, morale, training, discipline, esprit de corps and camaraderie gained by a unit being organized and trained as it normally fights, may be equal to or of greater importance than the physical combination of their weapon systems.

COMBAT SUPPORT

Familiarity with the capability of units, their personnel and equipment, habitually available to provide combat support, increases the likelihood of obtaining support more nearly matching the systems capability of the integrated units' combat effectiveness.

COMBAT SERVICE SUPPORT

Projection of logistics support is more reliable and efficient when the number of support variables is reduced to a minimum. Skills and services of combat service support troops approach peaks of efficiency when the troops are highly motivated to produce the utmost within their capability. This does not just happen. It comes about primarily by men being concerned enough about the well-being of their comrades to give forth the extra effort that makes the difference between success and failure.

3. CONCLUSION:

A combat battalion organized and trained as if it were to go into combat tomorrow, i.e., as a mutually supporting integrated tank and mechanized unit, will be a more effective and cohesive fighting force and will still retain the flexibility to be tailored to accomplish varying missions if the situation so dictates.

ALTERNATIVE ORGANIZATIONAL DESIGN CONSIDERATIONS AND CRITERIA

CONSIDERATIONS

- There is a consensus that whatever the shape of the battlefield of the future, it will most certainly impose extraordinary demands upon the soldiers and their leaders, far more so than in any previous conflict. There will be, as always, the danger, the confusion and chaos, the sounds, smells and sights of the battlefield psycho-drama. War, as it always has, will demand both psychological stability as well as physical stamina and endurance. As precision demands psychic empathy in the man-machine/weapon effectiveness relationships, unit success in combat demands team and organizational stability. Without stability there is little base upon which leaders can build a fighting force and mold esprit de corps.
- The modern battlefield will reflect continuous and sustained operations of a violent, lethal, dynamic and ill-defined nature, where command and control is *discontinuous and independent* battles, consisting mostly of meeting engagements, are fought at company and battalion levels. Combat and combat service support will be frequently interrupted or non-existent due to lack of communications or destruction in position or enroute. On the integrated battlefield, leadership will be strained to maintain cohesiveness of battle formations and familiarity with subordinate units capability, status and leadership will be essential to success.
- Advances made in the threat's capability to fight, as well as our own capability, must be examined. This analysis must proceed rearward from the far edge of conflict, and include the best combination of weapon systems to defeat/neutralize the threat over a series of scenarios, the teams, platoon and company organizations to capitalize on the capability of our own systems, the combat and combat service support to achieve the fighting capability, and the command and control apparatus to ensure that results more nearly match systems capability.

ALTERNATIVE ORGANIZATIONAL DESIGN CONSIDERATIONS AND CRITERIA

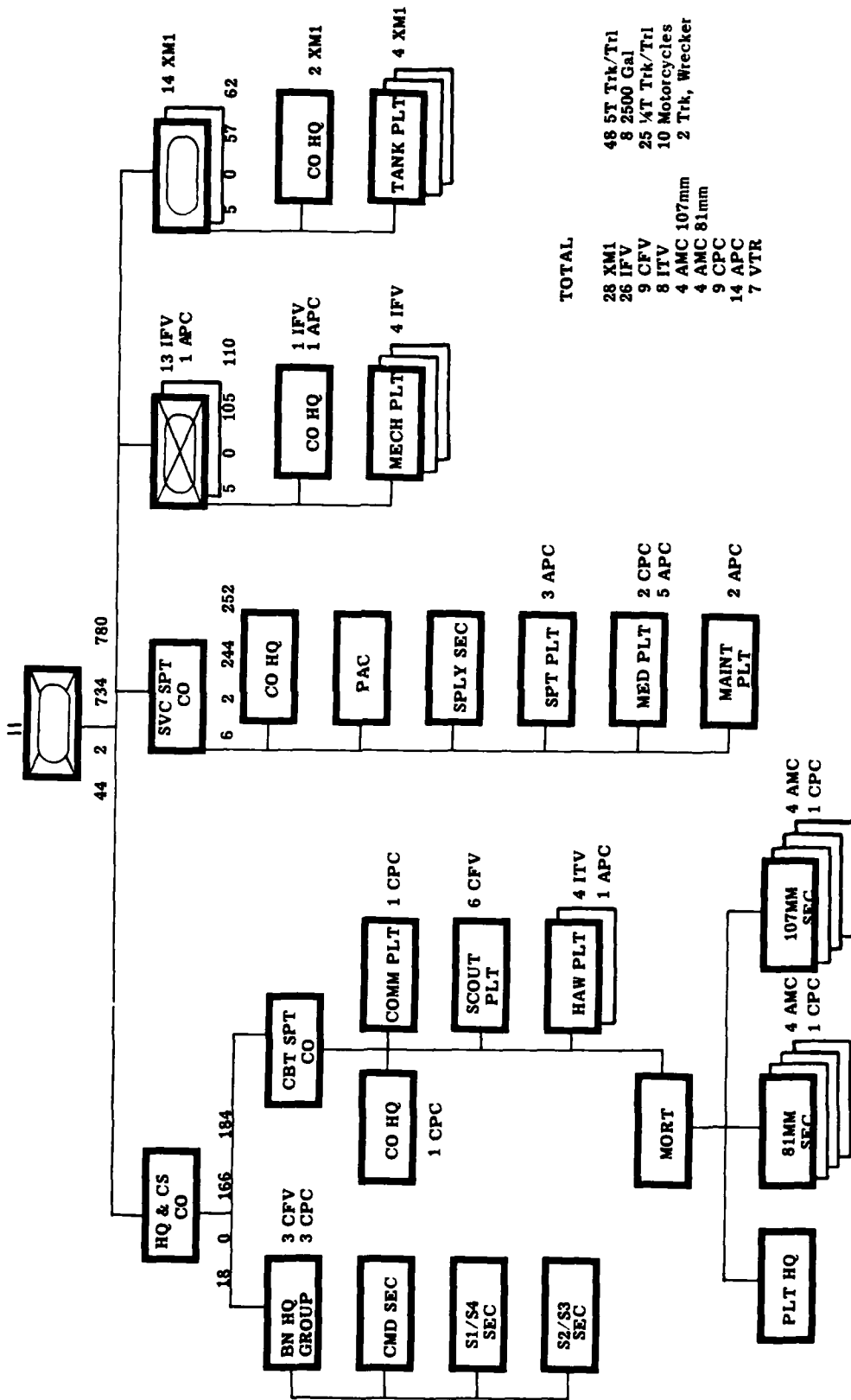
CRITERIA

- Requirement within Division 86 is to have the combat battalions organized to take advantage of the increased capability of weapon systems to be introduced into the division by 1986. These battalions must be capable of effective combat on the integrated battlefield immediately upon introduction into the conflict and in the absence of continuous command and control. The battalion design criteria, therefore, must include:
 - Units organized and trained in their functional and mutually supporting roles on the integrated battlefield with no visible organizational difference between nuclear and nonnuclear operations.
 - Retention of organizational flexibility that permits commanders to tailor a force to perform temporary missions requiring varying mixes of tank and mechanized infantry units.
 - Both simplified staff procedures and sufficient redundancy in staff personnel to permit continuous operations of the main CP as well as a nucleus for the alternate CP.
 - The capability to provide logistics support to sustain combat operations over a period of time by a more accurate projection of unit requirements for combat consumables.
 - A nucleus of trained personnel where dedicated security is required on a continuous basis and where combat trained troops are not normally available, e.g., field trains.
 - An organizational capability that can gracefully accept a degradation of C3 I by the addition of minimum equipment redundancy.
 - Considerations of enhanced combat capability of smaller units to adequately control the battle area by denying the enemy freedom of movement of tactical formations.
- Combat power of the division should not be degraded.
- Division personnel strength should not exceed 20,000.

ALTERNATIVE DESIGN #1 - ARMORED COMBAT BATTALION ORGANIZATIONAL CONCEPT

- The Armored Combat battalion's area of operations is divided into three distinctive areas from front to rear. These are the combat maneuver area which includes that area occupied by the maneuver companies; combat support area immediately behind the combat maneuver area and includes the location of the battalion main and alternate CPs as well as positions for scout, mortar and HAW platoons/squads when not located in the combat maneuver area; and the combat service area where the combat trains are normally located and where the field trains may be located.
- Company teams are organized within the combat maneuver area to take advantage of the terrain and mutual support provided by the close teamwork of the tank and mech platoons to meet the threat.
- The battalion headquarters and combat support company is located within the combat support area. The battalion CP is maintained as small as possible and includes the Bn CO, S2/S3 sections, artillery and Air Force liaison teams, and representatives from the S1/S4 sections. The alternate CP is the headquarters section of the Combat Support Company. The Bn XO and off-duty personnel from the main CP normally remain near the alternate CP. The combat support company commander provides for the support of his platoons which are OPCON to the S2/S3 sections. He is also responsible for CP management which includes the physical displacement of CP's under direction of the S3.
- In the combat service support area, the combat service support company commander is also commander of the battalion trains and is under the staff supervision of the S4. The S4, a major, devotes his full effort to the logistics support supervision while the company commander conducts the day to day operations, to include rear area security, trains displacement and other service functions, such as mess management, as directed by the S4.

ARMORED COMBAT BATTALION



CONCEPT OF OPERATIONS, MECHANIZED PLATOON, MECHANIZED COMPANY, ARMORED COMBAT BATTALION

FUNCTIONS:

- Close with the enemy to destroy or capture him using fire and maneuver, mounted or dismounted.

- Seize and hold terrain.

ORGANIZATION:

- 32 personnel and four IFVs (XM2).

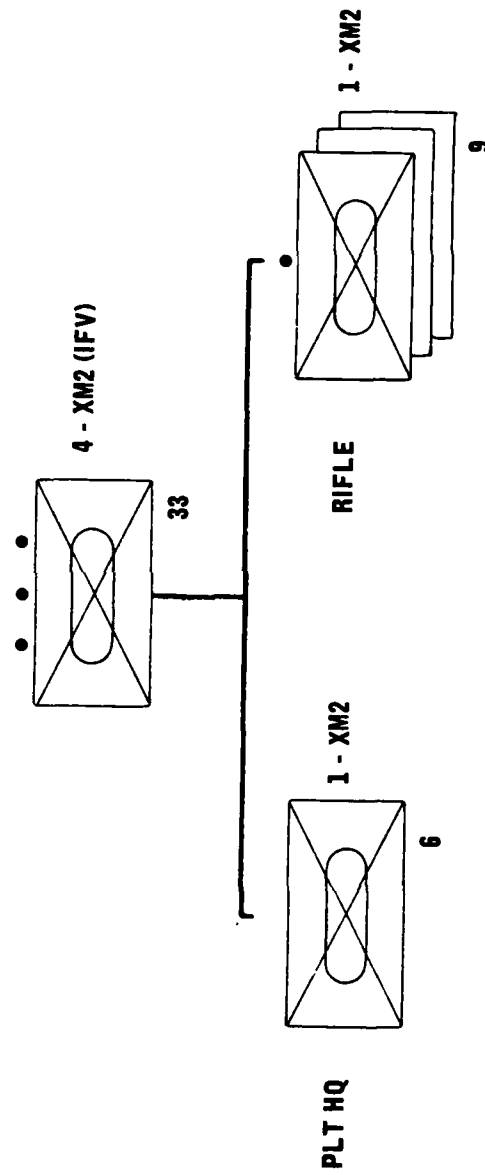
- Three nine-man rifle squads, each mounted in an IFV.

- Platoon headquarters - Platoon leader, platoon sergeant, assistant platoon sgt, driver and radio-telephone operator (five persons). (The attached medical aidman and a forward observer, when provided from the FIST, also ride in the platoon leader's IFV.)

TECHNIQUE:

The platoon fights either mounted or dismounted. As a rule, it fights from its carriers as long as possible, dismounting when required. Each squad consists of two elements; a carrier team (2-3 men) and a dismount team. The squad leader may remain with the IFV, particularly in rapidly changing situations. In cases where the vehicles support function is limited in action that is primarily dismounted the squad leader goes with the dismounted element. When a decision is made to dismount, the platoon leader must decide whether he can best influence the action by dismounting or remaining in his IFV. Normally he will accompany the dismounted element but in certain instances it may be advantageous for him to stay mounted. When the platoon leader leads the dismounted elements the platoon sergeant (or asst plat sgt) stays with the IFVs to direct their fire and maneuver in support of the platoon. Whether fighting mounted or dismounted, the platoon leader controls the maneuver of his squads by visual signals and/or radio.

MECHANIZED PLATOON, MECHANIZED COMPANY, ARMORED COMBAT BATTALION



ATTACHMENTS: 1 AIDMAN
FIST*

MISSION: TO CLOSE WITH THE ENEMY BY MEANS OF FIRE AND MANEUVER IN ORDER
TO DESTROY OR CAPTURE HIM OR TO REPEL HIS ASSAULT BY FIRE AND
CLOSE COMBAT.

*As Appropriate.

CONCEPT OF OPERATIONS, MECHANIZED COMPANY, ARMORED COMBAT BATTALION

FUNCTIONS:

- Provides a base of fire and maneuver.
- Closes with the enemy in order to destroy or capture him.
- Repels enemy assault by fire, close combat and counterattack.
- Seizes and holds terrain.
- Maneuvers in all types of terrain and under all climatic conditions.
- Capitalizes on all forms of mobility.
- Provides limited antitank protection.
- Conducts combat operations under limited visibility conditions employing night viewing devices and surveillance equipment when provided.

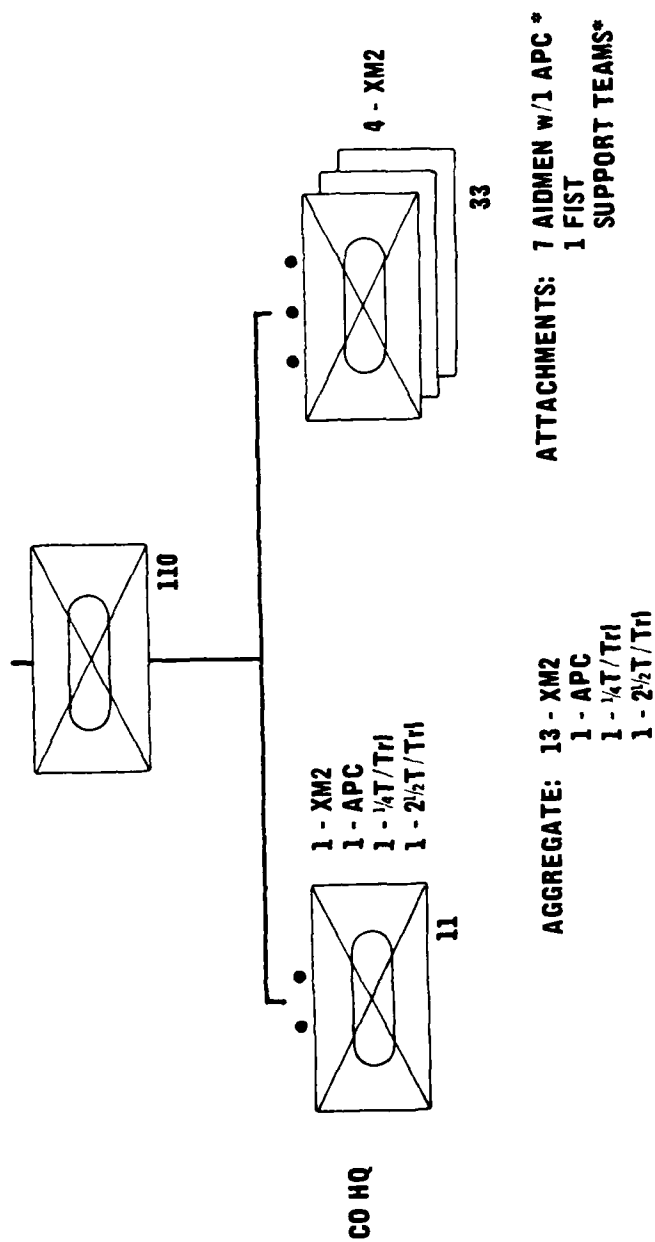
ORGANIZATION:

- Three platoons, each with one officer, 31 EM and four IFVs.
- Company headquarters:
 - Eleven personnel: CO and XO, 1SG, Sup Sgt, NBC NCO, Commo chief, Gen supply man, 2 IFV drivers, one gunner and one RTO.
 - Four vehicles: One IFV, one M113, one 5 ton truck with trailer, one 1/4 ton truck.
- Normal organization for combat will be: two organic mech platoons; one tank platoon attached from one of the Bn's two tank companies.
(The Mech Co's third platoon will be attached to one of the tank companies.)

TECHNIQUE:

The Co CO, in his IFV, is located well forward where he can see the battle and direct the actions of his platoons by visual signals and radio and integrate the elements of combat power available to him. He employs the attached tank platoon in close coordination with his mech platoons so as to maximize the unique and complementary capabilities of the tank-mech team. He requests additional combat support through the FIST and through the Bn CP. The XO, in an M113, plans and coordinates the CSS needed by the company and stays abreast of the tactical situation to be prepared to replace the CO should he become a casualty. He also assists in maintaining contact with higher and lateral headquarters and insures the commander receives all pertinent messages from higher headquarters. The 1SG also assists in the CSS operations of the company. He monitors the company nets and responds to calls from the CO and XO for support. He coordinates resupply between the battalion trains and the company and assures that supplies are moved forward to the proper locations in a timely manner.

MECHANIZED COMPANY, ARMORED COMBAT BATTALION



MISSION: TO CLOSE WITH THE ENEMY BY MEANS OF FIRE AND MANEUVER IN ORDER TO DESTROY OR CAPTURE HIM OR TO REPEL HIS ASSAULT BY FIRE AND CLOSE COMBAT AND COUNTER-ATTACK.

* As required.

CONCEPT OF OPERATIONS, TANK PLATOON, TANK COMPANY, ARMORED COMBAT BATTALION

FUNCTION:

- Destroy enemy personnel and equipment by means of mobile, armor-protected, heavy fire power in a nuclear or nonnuclear environment.
- Conduct combat operations under limited visibility conditions employing night viewing devices.

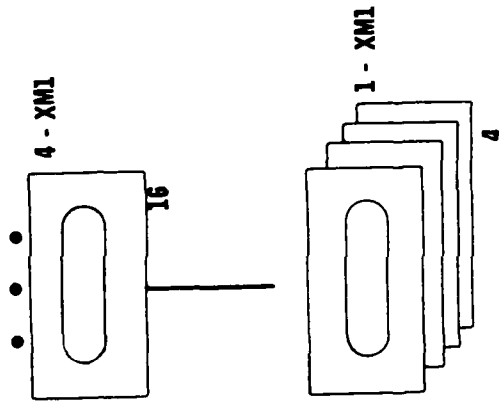
ORGANIZATION:

Four tanks, each manned by a crew of four: tank commander, gunner, driver and loader (one officer and 15 men). The platoon leader and platoon sergeant each serve as the tank commander in the tank in which they ride.

TECHNIQUE:

Under the command control of the platoon leader, exercised by means of radio or visual signals, the four tanks, in mutually supporting distance of each other and using cover offered by the terrain, maneuver to bring their main guns to bear on enemy armored vehicles and employ their machine guns against enemy personnel and other soft targets.

TANK PLATOON, TANK COMPANY, ARMORED COMBAT BATTALION



NOTE: NO SEPARATE PLT HQ - PLT LDR OPERATES FROM HIS TANK

MISSION: TO CLOSE WITH AND DESTROY ENEMY FORCES USING FIRE, MANEUVER AND SHOCK EFFECT.

CONCEPT OF OPERATIONS, TANK COMPANY, ARMORED COMBAT BATTALION

FUNCTIONS:

- Attacks or defends under hostile fire.
- Destroys enemy armor by fire.
- Supports mechanized infantry, reconnaissance units or other tank units by fire, maneuver and shock effect.
- Provides the mobility, armor protection and firepower to successfully exploit the effects of nuclear and nonnuclear fire support.
- Conducts combat operations under limited visibility conditions employing night viewing devices.

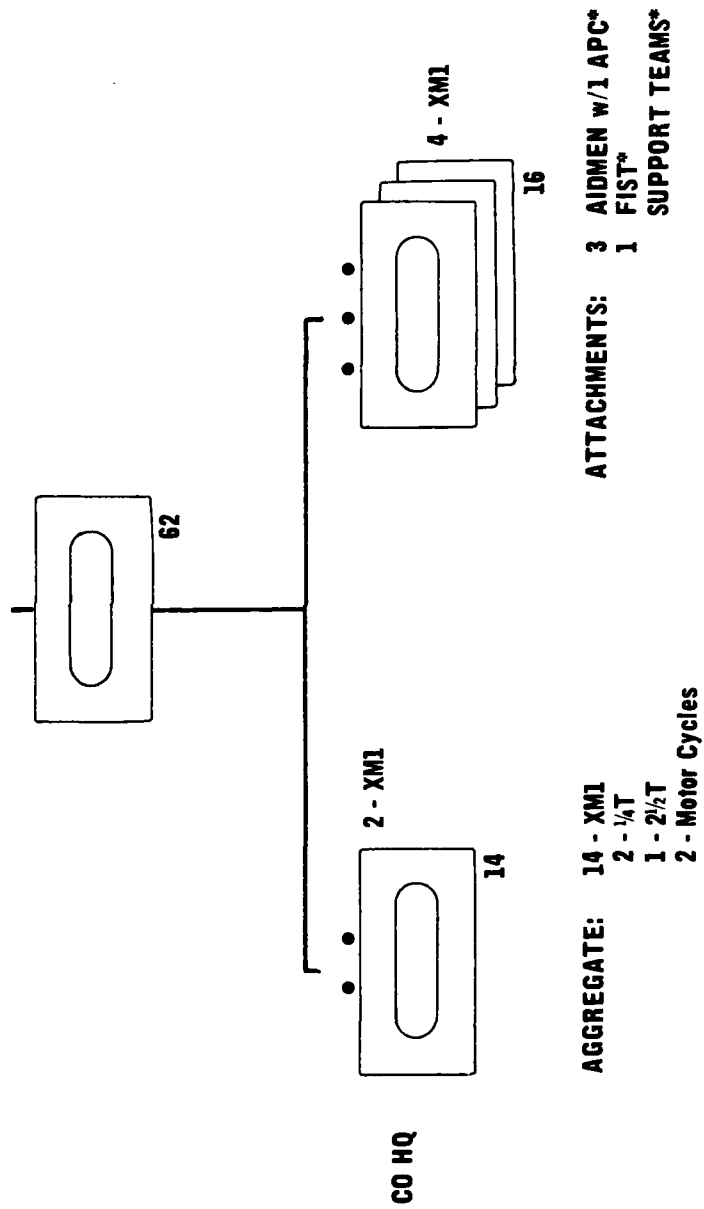
ORGANIZATION:

- Three tank platoons each with one officer, 15 men and four XM-1 tanks. (Co total 62 pers, 14 tanks.)
- Company headquarters:
 - oo 14 personnel: CO and XO, 1SG, Sup Sgt, armor, senior gunner, and two each tk comdrs, gunners, drivers and loaders.
 - oo Two XM-1 tanks, one 5-ton truck w/trailer, one 1/4-ton truck and two motorcycles.
- Normal organization for combat: Co HQ with two organic platoons plus one mech platoon attached from one of the Bn's two mech companies. (The tank Co's third platoon is attached to one of the mech companies.)

TECHNIQUE:

Mounted in a tank, the Co CO directs the actions of his platoons in combat using radio and visual signals. He employs the attached mech platoon in close coordination with the two tank platoons in order to exploit the unique and mutually supporting capabilities of the tank-mech team. The Co CO requests additional combat support either thru the company FIST or by radio contact with the Bn CP. The XO, also tank-mounted, keeps in radio contact with higher and lateral HQ and stays abreast of the tactical situation. He also insures the provision of CSS for the company. The 1SG is the principal CSS operator for the company, under the supervision of the XO.

TANK COMPANY, ARMORED COMBAT BATTALION



MISSION: TO CLOSE WITH AND DESTROY ENEMY FORCES USING FIRE, MANEUVER AND SHOCK EFFECT.

*As required.

COMBAT SUPPORT FOR THE ARMORED COMBAT BATTALION

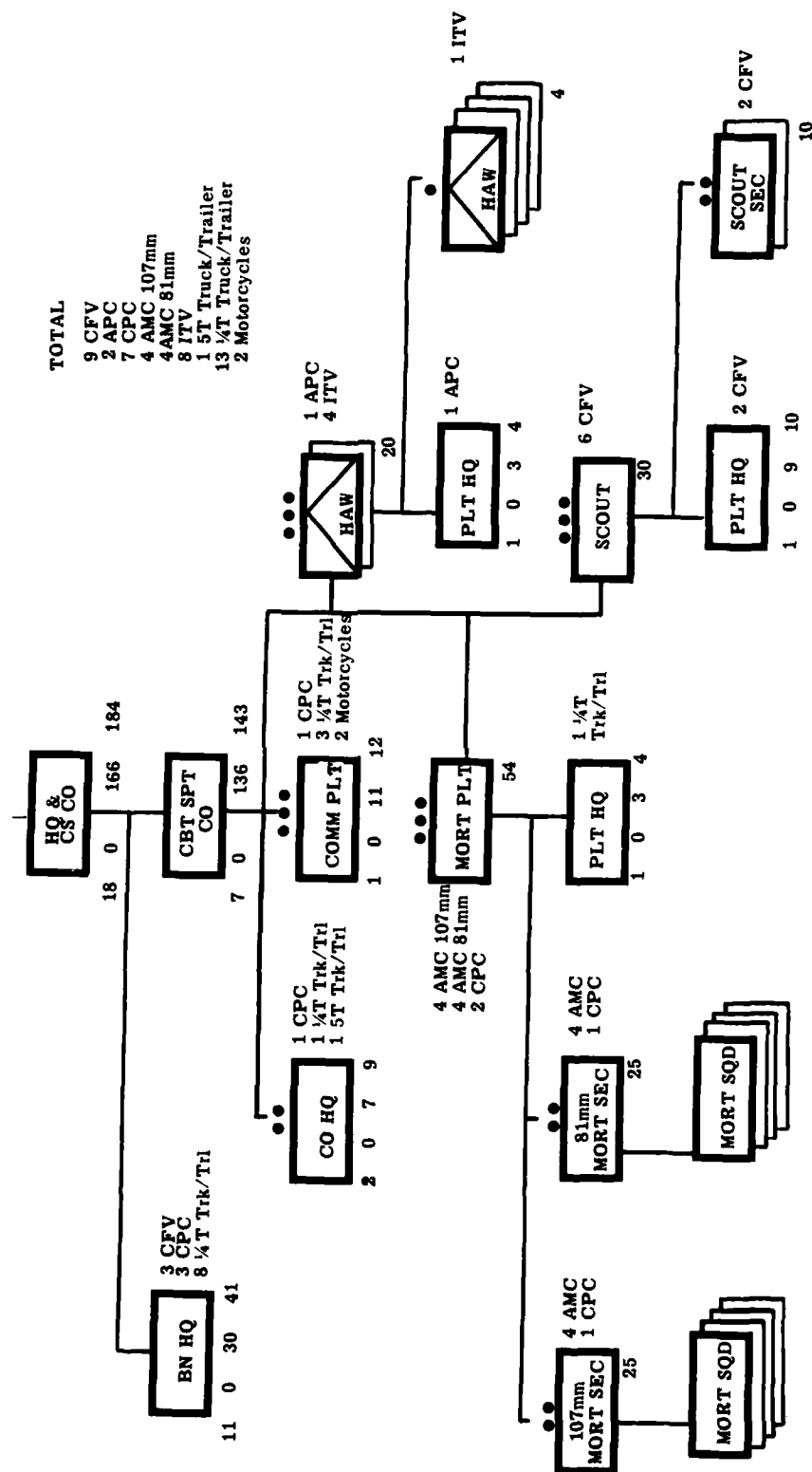
Organic (to HQ & CS Company):

- Comm Platoon: 12 personnel; primarily supports Bn CP.
- Scout Platoon: 30 personnel, six XM3s. Performs recon, assists in movement control and in positioning ground surveillance radars.
- HAW Platoon: 20 personnel, one APC (platoon headquarters) and four squads each consisting of four men mounted in an ITV. May be employed as a platoon at the critical point in offense or defense or attached by sections (two squads) to companies and positioned to take advantage of their long-range antiarmor capability.
- Mortar Platoon: 54 personnel, one APC (platoon headquarters) and four 81mm mortar and four 107mm mortar squads (6 men) each mounted in a mortar carrier. Used primarily for smoke, the mortars can also effectively provide HE fires. The platoon is employed in a CS role, or with sections in DS of a specific element; also, sections may be attached to a maneuver company when appropriate.

Additional combat support available to the battalion:

- Artillery - from Arty Bn in DS of Bde, which furnishes an FSO to the supported maneuver Bn and a FIST to each line company.
- Engr - from the Engr Co in support of the Bde.
- CAS - through the TACP which normally supports each maneuver Bn.
- Army Avn - from the ACAB; scout and attack helicopter support requested through Bde.
- Air Defense - furnished to the Bn by the DIVAD Btry which the ADA Bn positions to support the Bde.
- EW & Intel - EW, SOTAS, GSR, OPSEC, CI and PW interrogation spt provided by the division's CEWI Bn through Bde. Aerial reconnaissance is requested through S2-G2 channels.
- Naval Gunfire - if near a coastline and gunfire support ships are available, a shore fire control party may be attached to the Bn to call for and adjust fire in coordination with the FSO.

HEADQUARTERS AND COMBAT SUPPORT COMPANY, ARMORED COMBAT BATTALION



COMBAT SERVICE SUPPORT FOR THE ARMORED COMBAT BATTALION

ORGANIZATION:

- The CSS elements of the battalion are found in the service support company which, in addition to its 13-man Co HQ, consists of:

- Support Platoon with 77 personnel comprised of:

- Transportation Section equipped with cargo and POL trucks.
- Mess Section, with six company mess teams, each with a 5-ton truck and water trailer.

- Medical Platoon of 33 personnel:

- Aid Station Section.
- Aidman/Evacuation Section.

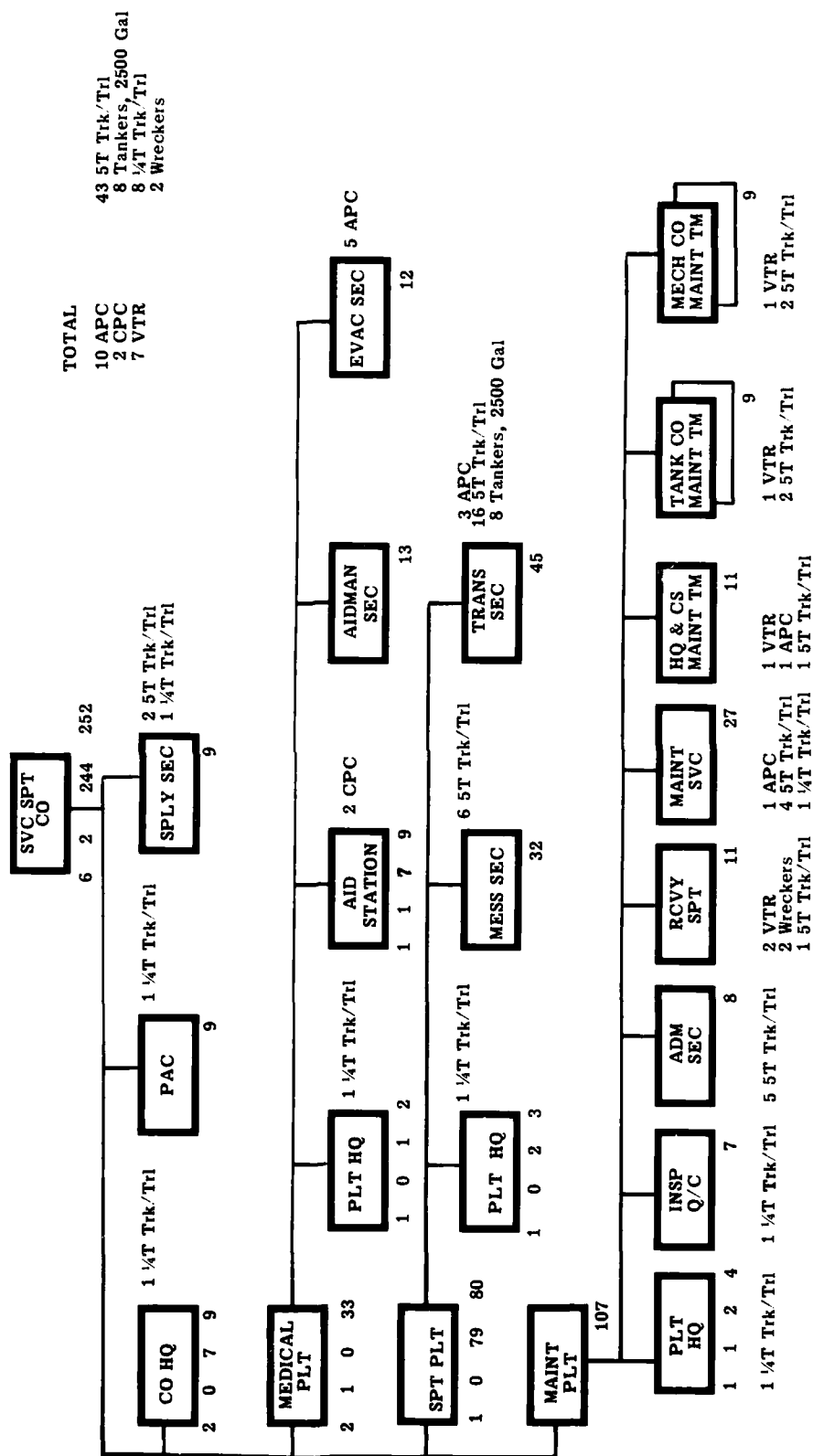
- Maintenance Platoon with 104 personnel:

- Inspection/Quality Control Section.
- Maintenance Administration Section.
- Recovery Support Section.
- Company maintenance teams to support the four line companies and the HQ & CS Company.

Concept of CSS Operations:

The S4 (04) directs CSS operations for the battalion, less medical activities which are normally under the S1. Resupply, maintenance, mess and aid station/evacuation operations are conducted from the battalion trains area, with emphasis on accomplishing these functions as far forward as possible. One or more cargo (ammunition) and POL trucks are normally in support of each line company, as is the company mess team, unless the situation dictates that the mess team remain in the trains area. In this case, rations will be brought forward to the companies. An aidman/evacuation team is with each line company. In the case of the two mech Cos, an aidman accompanies each platoon. A company maintenance team, "task organized" with the requisite skills and equipment is placed in support of each company/company team. The service support company commander commands the battalion trains and is responsible for security, discipline and movement. When a combat trains is formed, the service support company XO commands this element; the Asst S4 supervises the logistical operations.

SERVICE SUPPORT COMPANY, ARMORED COMBAT BATTALION



COMMAND AND CONTROL IN THE ARMORED COMBAT BATTALION

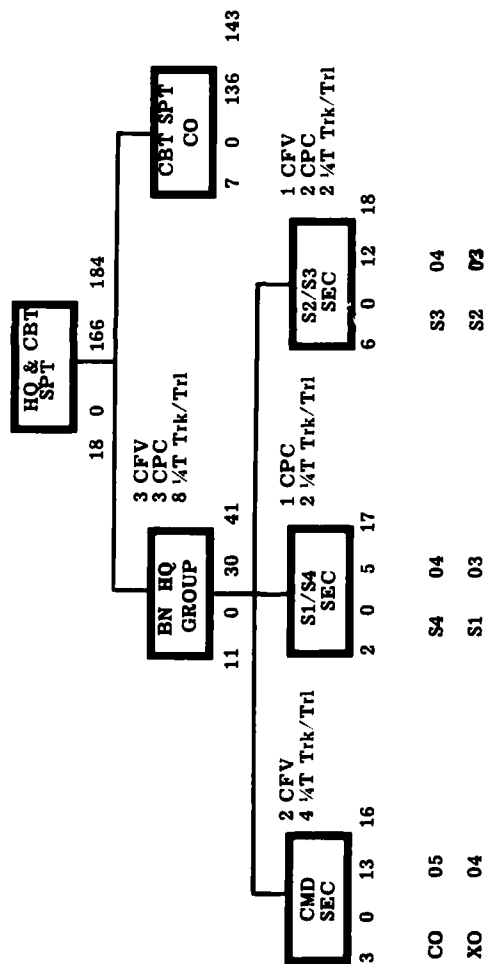
ORGANIZATIONAL FEATURES:

- HQ & SS Company
 - Integrated S2-S3 and SI-S4 Sections combine related functions consistent with their physical locations in Bn CP and Bn trains respectively. Elements of S2-S3 are in Fwd CP when established.
 - Scouts, mortars and HAWs operate forward of the Bn CP under supervision of S2-S3.
 - CO HQ & CS Co focuses on security and management of CP.
- Service Support Company
 - Provides for unity of command in trains area.
 - CO Svc Spt Co responsible for security, administration and discipline.
 - S4 concentrates on CSS operations.
 - Administrative elements are organized, trained and equipped prior to entering combat to provide CSS and personnel support to the tank-mech team.
- Combat elements
 - Organized in peacetime as they will normally be employed in combat.
 - Largely obviates the need for temporarily reorganizing battalions for combat.
 - Enhances teamwork, cohesiveness and esprit.
 - Chain of command between companies and battalions remains relatively constant; commanders have worked together.
 - Have developed SOPs with which all are familiar.
 - May be formed into pure battalions when necessary by attachment/detachment of companies between two armored combat battalions.

SUMMARY:

The above described organizational changes will enhance unity of command, provide a better alignment of authority with responsibility and more continuity in leadership interfaces. These improvements will enable the armored combat battalion to operate more effectively than the current tank or mechanized battalion on the integrated battlefield in the absence of continuous command and control.

BATTALION HEADQUARTERS GROUP, ARMORED COMBAT BATTALION



ARMORED COMBAT BATTALION COMPARISON WITH DIVISION 86 MANEUVER BATTALIONS

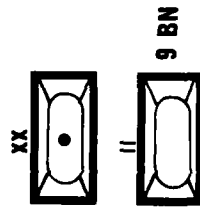
COMBAT/COMBAT SUPPORT:

Although the personnel strengths of the 9 armored combat battalions are about equal to the 10 maneuver battalions in Div 86, there are fewer officers. The total force is a balance of tanks and infantry fighting vehicles and the fire power of the 96 fewer tanks is compensated by the addition of 53 TOW carrying armored vehicles, each having two TOW launchers. To support the infantry in dismounted missions where track mobility is restricted, 81mm mortars have replaced half the 107mm in each of the battalions. The benefit accrues in the new organization of being organized and trained as if to fight tomorrow. This is a highly flexible organization readily adaptable to be temporarily organized pure tank or pure mech task forces.

COMBAT SERVICE SUPPORT:

Except for replacing all 2½-ton and 10-ton cargo trucks with 5-ton cargo trucks, the same combat service support is available to both organizations. Again a primary benefit of the armored combat battalions is the stability of the battalion organization, with internal team organizations having minimum impact on logistics support. In the absence of communications, battalion push packages can be sent forward, based on data maintained in the battalion S4 section. Exact numbers of personnel within the various support skills will have to be adjusted based on new densities of equipment where appropriate.

ARMD CBT DIV

AC BN
780

7020

28	252
26	234
9	81
8	72
4	36
4	36
9	81
14	126
7	63

DIFFERENCE

+

1

PERS

XM1
IFV
CFV
ITV
AMC (107mm)
AMC (81mm)
CPC
APC
VTR

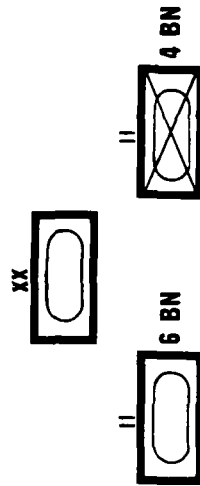
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7054

TK BN
579

**MECH BN
895**

DIV 86



THE DAY

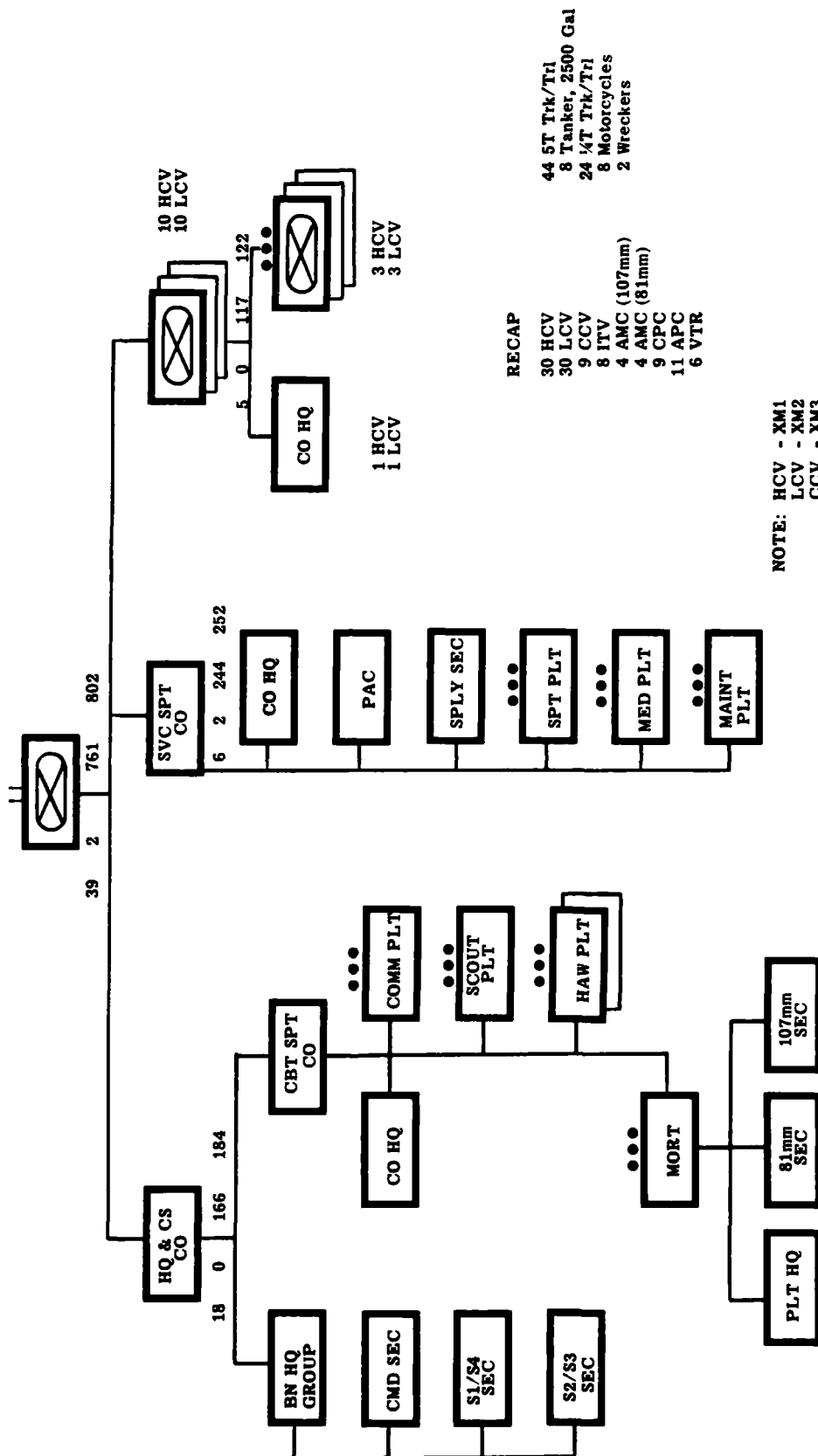
MECH 211

ALTERNATIVE #2 - COMBAT ARMS BATTALION ORGANIZATIONAL CONCEPT

- The combat arms battalion's area of operation consists of the combat maneuver area which is normally occupied by the maneuver companies; the combat support area immediately behind the maneuver area and just in front of the combat service support area. Located within the combat support area in addition to the base of operation for the scout, mortar and HAW platoons are the main and alternate command posts which provide the battalion command and control facilities. The battalion combat trains and on occasion the field trains operate out of the combat service support area.
- The maneuver company's balanced platoons of tanks and mechanized infantry provide a well organized and trained unit capable of using its weapon systems in mutually supporting roles, therefore achieving the synergistic effects of a cohesive fighting force.
- Assets of the combat support company and the headquarters and headquarters company elements normally located within the battalion's central sector are combined into a headquarters and combat support company. The commander, HQ and Cbt Spt company is responsible for the establishment and management of the main and alternate CPs under supervision of the S3. He also provides for the base of operations for the scout, mortar, HAW as well as the comm platoons.
- The service support company commander, under supervision of the S4, is also the trains commander. The S4, a major, devotes his full effort to logistics support management and supervision while the service support company commander conducts the day-to-day operations of rear area security, trains displacement and other service functions, such as mess management, as directed by the S4.

COMBAT ARMS BATTALION

ALTERNATIVE #2 - DIV 86 MANEUVER BATTALION



CONCEPT OF OPERATIONS, COMBAT ARMS PLATOON

FUNCTIONS:

- Close with the enemy to destroy or capture him by means of mobile, armor-protected, heavy firepower in a nuclear or nonnuclear environment.

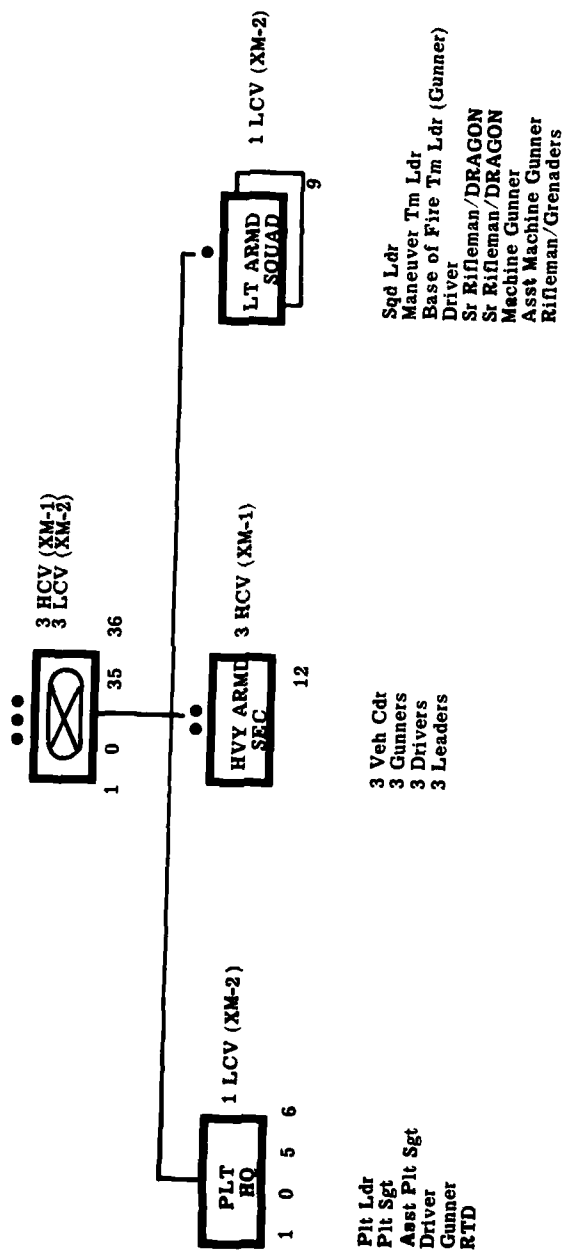
ORGANIZATION:

- 36 personnel, three heavy combat vehicles (XM-1) and three light combat vehicles (XM-2).
- Heavy armored section, with 3 XM-1s, each with a crew of 4 (12 personnel).
- Two light armored squads each with one XM-2 and a 9-man rifle squad.
- Platoon headquarters - Platoon leader, platoon sergeant, assistant platoon sergeant, gunner, driver and radio-telephone operator (six persons) mounted in an XM-2. The attached medical airman and a forward observer, when provided from the FIST, also ride in the platoon leader's XM-2.

TECHNIQUE:

In combat the platoon employs its heavy and light elements in close coordination with each other in order to take advantage of the mutually supporting characteristics of each. The two rifle squads will fight from their carriers as long as possible, dismounting only when required by the nature of the terrain or the enemy resistance. The platoon leader, in his XM-2, controls the fire and maneuver of his heavy and light elements by radio and/or visual signal. The senior XM-1 commander commands the heavy section. When the rifle squads are required to dismount, the platoon leader must decide whether he can best influence the action in a dismounted or mounted role. If he dismounts, he controls the fire and maneuver of his XM-1s and XM-2s through the Platoon Sgt, who remains in the platoon headquarters XM-2.

COMBAT ARMS PLATOON, COMBAT ARMS COMPANY



CONCEPT OF OPERATIONS, COMBAT ARMS COMPANY

FUNCTIONS:

- Attacks or defends under hostile fire.
- Closes with the enemy to destroy or capture him.
- Destroys enemy armor by fire employing organic tank cannon, HAW and MAW and non-organic PGMs.
- Repels enemy assault by fire, close combat and counterattack.
- Defends, delays or, when resistance is light, attacks over wide frontages employing the latest battlefield technology to detect and deny freedom of movement to enemy tactical forces.
- Conducts limited independent operations.
- Provides the mobility, armor protection and firepower to successfully exploit the effects of nuclear and nonnuclear fire support.

ORGANIZATION:

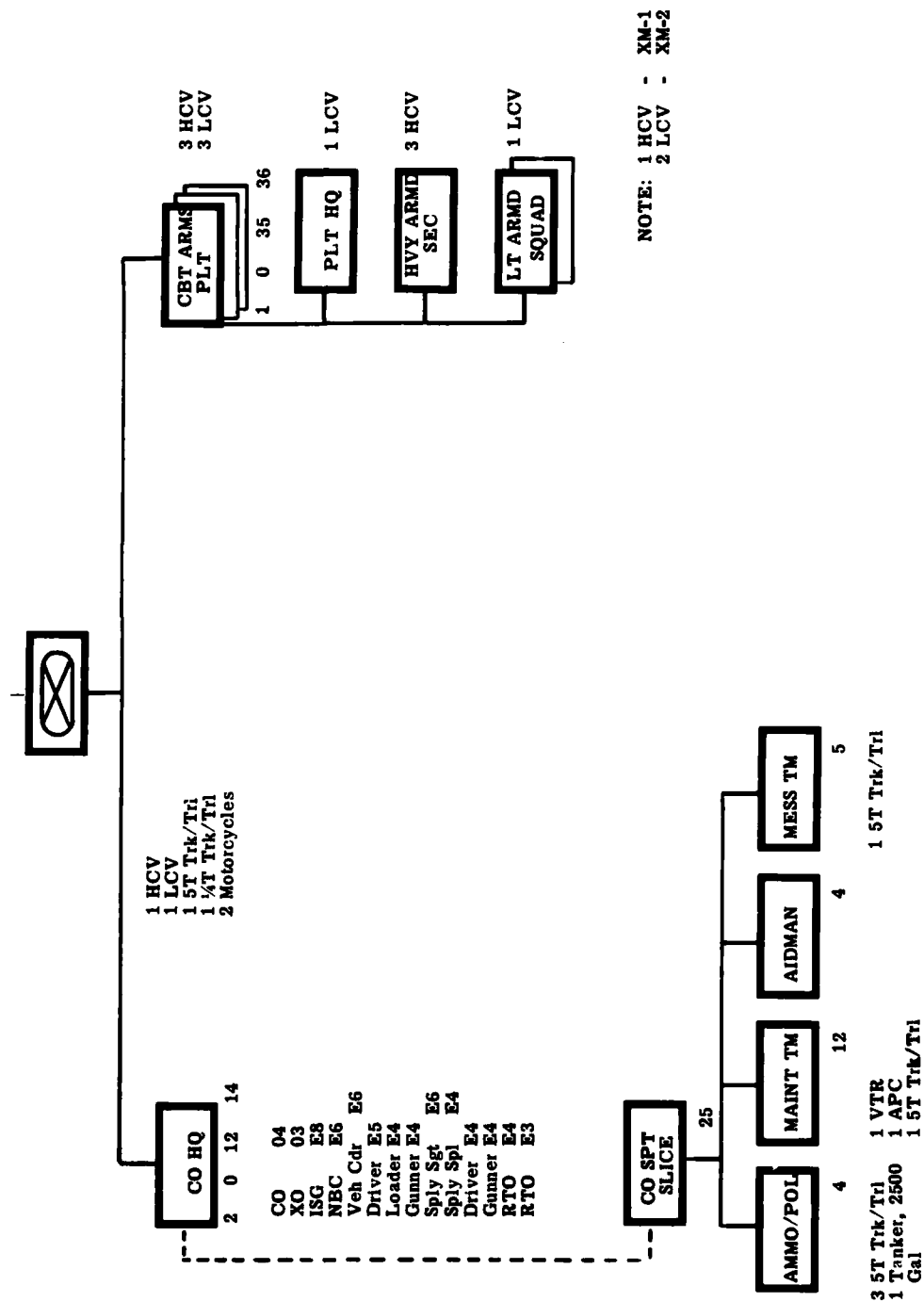
- Three armored combat platoons, each with 36 personnel, 3 heavy combat and 3 light combat vehicles (Co total: 122 personnel, 10 XM-1s, 10 XM-2s).
- Company headquarters:

- 14 personnel: CO (Maj), XO (Cpt), 1SG, NBC NCO, Sup Sgt, clerk, and 2 each drivers, gunners, loaders and RTOs.
- Four vehicles: one XM-1, one XM-2, one 5-ton truck w/trailer, one 1½-ton high mobility vehicle and two motor cycles.

TECHNIQUE:

The Co CO, a major, mounted in an XM-1 (or XM-2 should this better serve the purpose), directs the operations of his platoons from a forward position where he can see the battle. He requests additional combat support through the FIST (artillery and mortar) or from the Bn CP. Because of the combat power of his unit, it will usually be deployed over a wider frontage than has heretofore been the norm for a company. He employs the sophisticated surveillance devices and firepower systems available to fill gaps, but also ensures that his platoons remain within mutually supporting distance of each other. The XO, a captain, mounted in the other company headquarters combat vehicle, stays abreast of the tactical situation and is prepared to replace the Co CO should he become a casualty. The XO, assisted by the 1SG, also insures the company receives the required CSS. The company XO provides the continuity in command and control for continuous combat for extended periods of time and maintains liaison with the battalion CP.

COMBAT ARMS COMPANY, COMBAT ARMS BATTALION



COMBAT SUPPORT FOR THE COMBAT ARMS BATTALION

Organic (to HQ & CS Company):

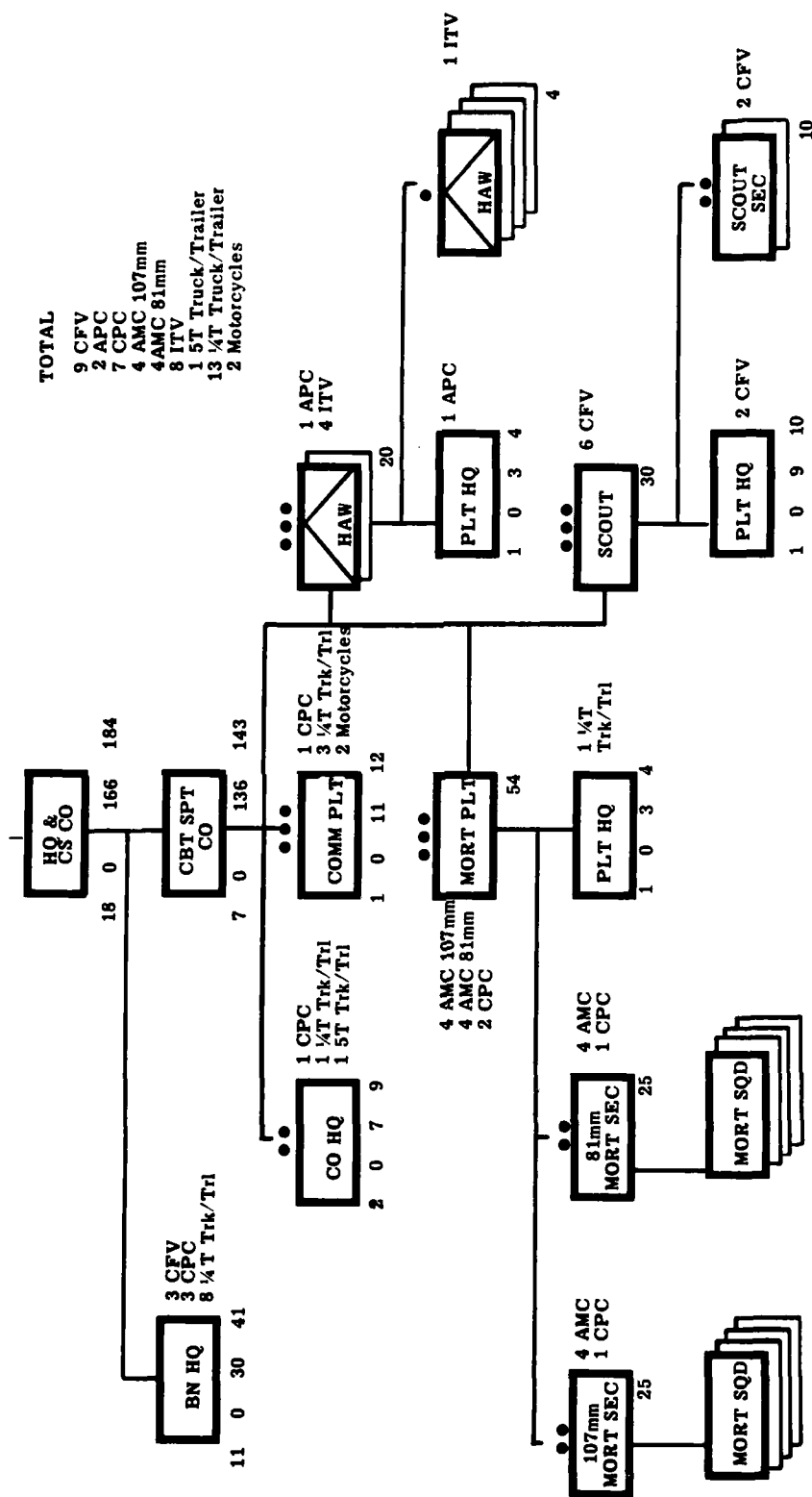
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Additional combat support available to the battalion:

- Artillery - from Arty Bn in DS of Bde, which furnishes a FSO to the supported maneuver Bn and a FIST to each line company.
- Engr - from the Engr Co in support of the Bde.
- CAS - through the TACP which normally supports each maneuver Bn.
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- EW & Intel - EW, SOTAS, GSR, OPSEC, CI and PW interrogation spt provided by the division's CEWI Bn through Bde. Aerial reconnaissance is requested through S2-G2 channels.
- Naval Gunfire - if near a coastline and gunfire support ships are available, a shore fire control party may be attached to the Bn to call for and adjust fire in coordination with the FSO.

HEADQUARTERS AND COMBAT SUPPORT COMPANY,

COMBAT ARMS BATTALION



COMBAT SERVICE SUPPORT FOR THE COMBAT ARMS BATTALION

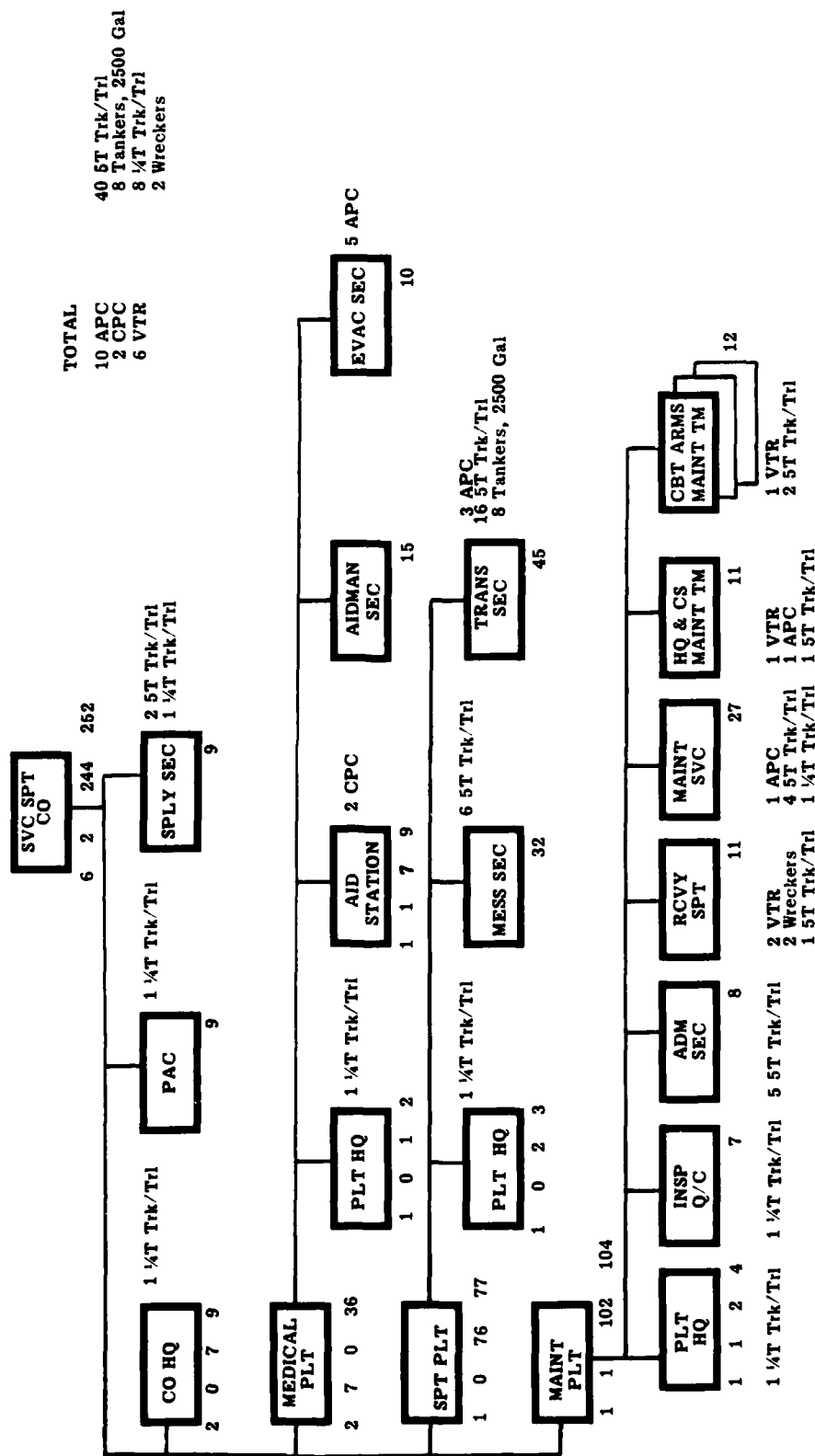
ORGANIZATION:

- The CSS elements of the battalion are found in the service support company, which, in addition to its 13-man Co HQ, consists of:
 - oo Support Platoon with 77 personnel comprised of:
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 - Aid Station Section.
 - Aidman/Evacuation Section.
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The S4 directs CSS operations for the battalion, less medical activities which are normally under the S1. Resupply, maintenance, mess, and aid station/evacuation operations are conducted from the battalion trains area, with emphasis on accomplishing these functions as far forward as possible. One or more cargo (ammunition) and POL trucks are normally in support of each line company, as is the company mess team, unless the situation dictates that the mess team remain in the trains area. In this case, rations will be brought forward to the companies. An aidman/evacuation team is with each line company and an aidman accompanies each platoon. A company maintenance team, "task organized" with the requisite skills and equipment is placed in support of each company/company team. The service company commander commands the battalion trains and is responsible for security, discipline and movement. When a combat trains is formed, the service support company XO commands this element, while the Asst S4 supervises the logistical operations.

SERVICE SUPPORT COMPANY, COMBAT ARMS BATTALION



COMMAND AND CONTROL IN THE COMBAT ARMS BATTALION

ORGANIZATIONAL FEATURES:

● HQ & CS Company

- Integrated S2-S3 and S1-S4 Sections combine related functions consistent with their physical locations in Bn CP and Bn trains, respectively. Elements of S2-S3 are in Fwd CP when established.
- Scouts, mortars and HAWs operate forward of the Bn CP under supervision of S2-S3.
- CO HQ & CS Co focuses on security and management of CP.

● Service Support Company

- Provides for unity of command in trains area.
- CO Svc Spt Co responsible for security, administration and discipline.
- S4 concentrates on CSS operations.
- Administrative elements are organized, trained and equipped prior to entering combat to provide CSS and personnel support to the tank-mech team.

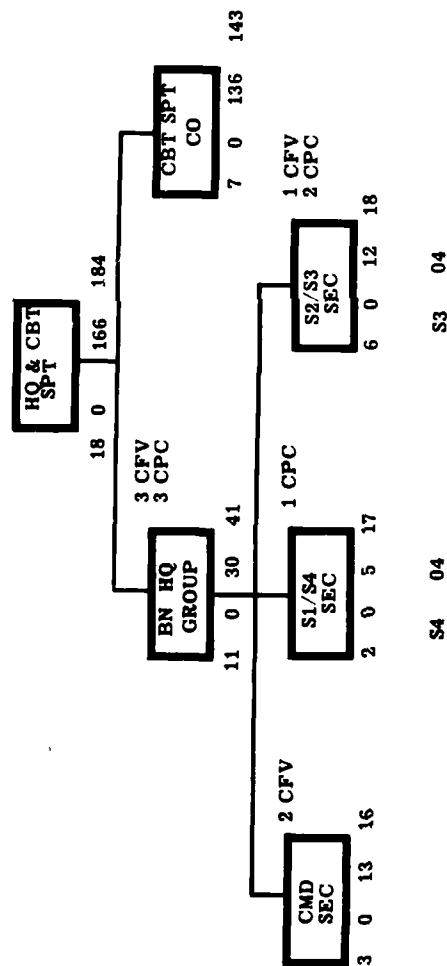
● Combat Elements

- Organized in peacetime as they will normally be employed in combat.
- Largely obviates the need for temporarily reorganizing battalions for combat.
- Enhances teamwork, cohesiveness and esprit.
- Chain of command between companies and battalions remains relatively constant; commanders have worked together.
- Have developed SOPs with which all are familiar.

SUMMARY:

The above described organizational changes will enhance unity of command, provide a better alignment of authority with responsibility and more continuity in leadership interfaces. These improvements will enable the combat arms battalion to operate more effectively than the current tank or mechanized battalion on the integrated battlefield in the absence of continuous command and control.

BATTALION HEADQUARTERS GROUP, COMBAT ARMS BATTALION



COMBAT ARMS BATTALIONS COMPARISON WITH DIVISION 86 MANEUVER BATTALIONS

COMBAT/COMBAT SUPPORT:

This alternative has slightly more personnel than either alternative 1 or Division 86 maneuver battalions. The 78 fewer tanks are offset by the 89 additional armored TOW carriers. The mortar platoon within each battalion has a 81mm mortar section of 4 tubes plus a 107mm mortar section of 4 tubes. Combat effectiveness is based on a day-to-day relationship between the tank and mech teams as they live and train together as a unit, similar in all respect to the quality exhibited by the present day cavalry units. This unit is not as adaptable to provide pure tank and pure mech units should the situation dictate.

COMBAT SERVICE SUPPORT:

As with alternative 1, 5-ton cargo trucks have replaced the existing 2½-ton and the future 10-ton cargo trucks. This simplifies planning and provides emergency carrying capability without unnecessarily providing excess transport capability. Exact numbers of personnel within the combat service support area would be based on new densities of equipment within each of the new organizations.

COMBAT ARMS BATTALIONS

COMBAT ARMS DIV

DIV 86

9 BN

6 BN

4 BN

CA BN

802

7218

30

270

30

270

9

81

8

72

4

36

4

36

9

81

11

99

6

54

DIFFERENCE

+

164

PERS

XM1

IFV

CFV

ITV

AMC (107mm)

AMC (81mm)

CPC

APC

VTR

-

78

24

55

16

TK BN

7054

895

58

1

6

0

6

0

6

9

7

MECH BN

348

0

226

55

60

6

48

12

60

6

0

0

60

8

154

25

70

7

COMMAND POST CONFIGURATIONS - ALTERNATIVE MANEUVER BATTALIONS

● TACTICAL COMMAND POST:

When deemed necessary, the battalion commander establishes a mobile tactical command post (TAC CP) that moves about the battlefield to direct or influence the battle. The TAC CP is kept small and may consist of the Bn CO in a CFV, a TACP in a CFV assigned to the operations center, and the Fire Support Officer (FSO) in a FOV or CFV. The S2 and/or S3 may be either with the Bn CO in the TAC CP or with the main CP. The trained recon personnel in the CFV crew provide necessary operational support for the primary occupant.

● MAIN COMMAND POST:

Small in number and consisting primarily of armored vehicles, the main command post is located generally between the maneuver companies and the battalion support area. CP management, to include security and displacement, is the responsibility of the commanding officer, HQ & Cmbt Spt company, under staff supervision of the S3. The main CP normally will consist of the S2/S3 combined operations center, using 2 command post carriers (CPC), a communications center in a CPC and a personnel and logistics team in a CPC. Although the S1 or S4 may be in the main CP area, their normal base of operation is in the trains area. A minimum number of wheeled vehicles are available to provide basic transportation as required.

● ALTERNATE COMMAND POST:

Staffed by a minimum number of personnel under the battalion executive officer, the Alternate CP is colocated with the service support company's headquarters element. A 3-man communications team from the comm platoon is normally with the alternate CP. The alternate CP may be in the battalion displacement scheme as the advanced element in order to establish the new CP.

DOCTRINAL IMPLICATIONS

- Since it is difficult to measure the contribution to the success of battle when a tank company is exchanged for a mechanized company, commanders should not consider any unit smaller than a battalion/task force to weight the outcome of battle. Establishment of priorities for combat support to include close air support and nuclear weapons are additional means to weight the outcome of battle. The following statements, therefore, *should be doctrine*:
 - A battalion/task force is the smallest maneuver unit to be considered for attachment to a brigade to influence the outcome of battle.
 - Maneuver companies will normally remain with their parent battalion where tank-mech company teams can readily be organized to carry out the missions. Cross attachment to form pure battalions, or tank or mech heavy task forces will be limited to an exchange between two battalions within the same brigade. (Forming a pure tank battalion automatically results in a pure mech battalion.)

CONCLUSIONS

1. The current system of organizing separate tank and mechanized infantry battalions to be formed into temporary combined arms task forces on the integrated battlefield, in the absence of continuous command and control:
 - Inhibits the combined arms team from achieving its full combat potential.
 - Makes more difficult the provision of combat service support.
2. Structuring a maneuver battalion with two mechanized and two tank companies, to train in peacetime as it will fight, will obviate the disadvantages of the current system yet retain the flexibility to cross-attach companies between battalions when required. It will also facilitate development of common maintenance and logistics push-package concepts, since all battalions will have the same basic organization.
3. The command and staff functions in the current tank and mechanized infantry battalions are not organized to provide optimum unity of command by either function or geographical location within the battalion area of operations.
4. Organization of a HQ & CS Co and a service support company, and combining the S1-S4 and the S2-S3, sections will enhance unity of command and combine related missions/functions consistent with their locations in the battalion CP and trains area.

RECOMMENDATION

RECOMMEND THAT CACDA EXAMINE THE ALTERNATIVE ORGANIZATIONS PROPOSED IN THIS STUDY WITH A VIEW TO RECOMMENDING TO HQ TRADOC THAT THEY BE SUBJECTED TO FORCE DEVELOPMENT TESTING AND EXPERIMENTATION.

SECTION III

ANALYSIS OF DIVISION 86 TANK/MECH BATTALIONS AMMO/POL CARRYING CAPACITY REQUIREMENTS

PURPOSE

EXAMINE DIVISION 86 TO DETERMINE IF UNIT CARRYING CAPACITY SHOULD BE INCREASED TO HAUL GREATER VOLUMES OF MATERIEL. IF GREATER CARRYING CAPACITY IS REQUIRED OR DESIRED, ARE TRAILERS ATTACHED TO COMBAT VEHICLES A VIABLE MEANS OF HAULING VOLUME LOGISTIC ITEMS, SUCH AS POL AND AMMUNITION.

OBJECTIVE

- TO ANALYZE THE AMMUNITION AND POL CONSUMPTION DATA THAT DRIVES THE REQUIREMENT FOR MOVEMENT OF THESE COMMODITIES AND ASSESS THE CAPABILITY TO MEET THESE REQUIREMENTS WITH CURRENT ASSETS.

- IF ADDITIONAL TRANSPORTATION IS REQUIRED, ANALYZE THE USE OF ATTACHING TRAILERS TO COMBAT VEHICLES TO MEET THE ADDITIONAL MOVEMENT CAPACITY.

APPROACH

- Using the data available in FM 101-10-1, compute ammunition and POL consumption in a worst case situation.
- Compare the consumption data obtained with that data used in Division 86 organizational development.
- Analyze validity of using worst case situation to drive requirement for ammunition and POL transportation requirements.
- Examine alternative means available to battalion commanders to satisfy their ammunition and POL transportation requirements.
- Determine if there is need for additional transportation; if so, is attaching 1½-ton trailers to combat vehicles desirable?

AMMUNITION AND POL MOBILITY ANALYSIS - PLANNING FACTORS

- Ammunition and POL consumption factors and vehicle use criteria are the primary factors in computation of mobility requirements. Ammunition consumption considers levels of operation/intensity of combat and percentage of time unit may be expected to be in certain combat postures. Using ammunition consumption factors based on operations/intensity and time, total number of rounds per day required can be computed. Based on number of rounds per day, days of Ammo to be available within each unit and percent of mobility required, transportation factors are then computed.
- Research reveals that there is disagreement in the following areas:
 - ● Ammo consumption rates used during the various levels of operations and intensities of combat.
 - ● Amount of time a unit is in a particular combat posture.
 - ● Operational availability of combat vehicles - use of war game loss data or assume 100 percent availability.
 - ● Amount of ammunition required to be available in a unit on a daily basis - basic load.
 - ● Carrying capacity of tactical wheeled vehicles for planning purposes - on-off highway the same.
 - ● Number of daily round trips to be considered for Ammo/POL vehicles - one or two trips.
 - ● Kilometers per day movement upon which to base POL consumption or hours of operation under various types of situations.
 - ● How to meet surge/emergency requirements? Can this be accommodated by increasing the capacity of dedicated vehicles with more round trips? Increase carrying capacity of Ammo vehicles? Use other cargo trucks and/or trailers? Provide trailers for combat vehicles?

AMMO/POL MOBILITY REQUIREMENT FACTORS TO BE CONSIDERED

● Levels of Operations/Intensity of Combat	Heavy / All Out Moderate/Continuous Light/Sporadic
● Combat Situations	Defense of Position Attack of Position
● Vehicle Availability	Use War Game Loss Data or Some Percentage of TOE
● Vehicle Use Criteria	Unit Mobility Requirement - Percent Capacity of Vehicle - 5-Ton On-Off Road Number of Round Trips per Day - One or Two Daily Movement in Kilometers
● Surge Requirements	Accommodated by Dedicated Vehicles Increase Carrying Capacity of Tactical Vehicles Use of Alternative Vehicles Use of Trailers - on Wheeled/Cargo Vehicles on Combat Vehicles

AMMUNITION CONSUMPTION - TANK BATTALION

● TANKS

- During heavy combat such as in defense of a position, tanks surviving for 24 hours could be expected to have expended 78 rounds of main gun ammunition. 57 rounds are carried on-board the XM-1 tank and an additional 21 rounds would have been provided by an ammo carrier, either on position or by the tank moving into defilade for resupply. If all tanks survived the day, a total of 156 STON of main gun ammunition could have been expended. Daily combat losses plus non-operational vehicles, however, reduce this expenditure considerably.
- During each succeeding 3 days, surviving tanks could be expected to expend on the average 44 rounds per day. STON requirements per day are dependent on the number of tanks operational at any given day. The maximum could be 88 STON with 100 percent of vehicles operational. Operational availability of combat vehicles must consider losses of the previous days plus any replacements obtained by the units.

● IFV/CFV

- The IFV/CFV, under the same combat conditions, could expend up to 1000 rds of 25mm plus 9 TOW and 3 DRAGON missiles per vehicle. Six TOW and four DRAGON missiles are normally carried on-board these combat vehicles. Resupply tonnage of approximately 7 STON is insignificant when compared to the tonnage for the XM-1 105mm main gun ammo. Operational availability reduces the unit consumption accordingly.

● 107MM MORTAR

- A basic load for the 107mm mortar is 184 rounds with 83 carried on-board the mortar carrier and the remaining 101 rounds bulk loaded on ammo carriers. During each day of intense combat in defense of a position, 15-20 STON of mortar ammunition can be expended. The adequacy of this expenditure rate is dependent on the nature of the targets plus the amount of smoke required in any given situation.

- MISC MUNITIONS - Small arms, grenades, etc. is estimated at 20% of daily consumption of the primary weapon systems.
- Assuming all lost systems are replaced, the total ammunition consumption for a tank battalion can vary from 219 STON the first day and up to 133 STON for each of the next succeeding 3 days in the same combat situation.

AMMO CONSUMPTION - TANK BATTALION

(Defense of Position - Heavy Combat)

COMBAT VEHICLES	CONSUMPTION ¹			
	FIRST DAY		SUCCEEDING DAYS ³	
	RDS/WPN	STON	RDS/WPN	STON
58 XM-1 Tanks ²				
105mm	78	156	44	88
7 XM-2/3 IFV/CFV				
25mm	1000	3.5	1000	3.5
TOW	9	2.7	7	2.1
DRAGON	3	.7	2	.5
6 107mm MORT	163	19.6	136	16.3
		182.5		110.4
MISC MUNITIONS (20% of above)		36.5		22.1
TOTAL		219.0		132.5

- 1 - FM 101-10-1
- 2 - Using same data as M60A1
- 3 - During each of the next 3 succeeding days

AMMO CARRYING CAPACITY - TANK BATTALION

- Assuming all combat vehicles and tactical vehicles are operational, the tank battalion ammunition carrying capacity provides a:
 - Combat vehicle on-board equivalent of 156 STON.
 - Dedicated ammo carrying capacity of 100 STON per daily round trip or 180 STON for two trips.
 - Surge/emergency capability of up to 391.5 STON by pressing into service any combination of trucks/trailers capable of hauling ammunition. (Based on 100% availability of 10-ton cargo carriers and 50% of the other vehicles.)
- Although neither 100 percent availability of support vehicles nor operational combat vehicles is likely, a capability currently exists within battalion assets to meet surge/emergency requirements without adding additional trailers to be moved by combat vehicles. The ATP within each brigade support area for 105mm and TOW missiles reduces turn-around time for ammo trucks so that 3 round trips in an emergency could be accomplished.
- In many instances, such as during movement to the GDP or on road marches, combat vehicles could be used to move ammunition on trailers which could be dropped off at any number of places. These drop off points could be at an established ATP, bn field trains or combat trains.
- Success in battle is directly related to the commander's ability to employ or utilize all assets both combat and logistics as effectively as possible by establishing priorities based on the situation at any given time.

AMMO CARRYING CAPACITY - TANK BATTALION

COMBAT VEHICLES - ON VEH CAPACITY

STONS

58	XM-1 Tanks	(58 Tks x 57 Rds/Tk x 69 Lbs/2000)	114
7	XM-2/3 IFV/CFV		
	TOW (6 each)	(7 x 6 x 87/2000)	2
	DRAGON (4 each)	(7 x 4 x 67/2000)	1
6	107mm MORT	(6 x 110 x 40/2000)	13
	Misc Munitions	(20% of above total)	26
			<u>156</u>

TACTICAL AMMO CARRIERS - DEDICATED

<u>Rd Trips Daily</u>
<u>1</u>
<u>2</u>
100 180

10 Truck, Cargo 10-Ton

SURGE/EMERGENCY CARRYING CAPACITY

30	Trailer, Cargo 1½-Ton	(@ 50% availability rate)	22.5	40.5
28	Truck, Cargo 2½-Ton	(@ 50% availability rate)	35	63
10	Truck, Cargo 10-Ton	(@ 100% availability rate + 50% overload)	150	270
3	Truck, Cargo 5-Ton	(@ 50% availability rate)	10	18
			<u>217.5</u>	<u>391.5</u>

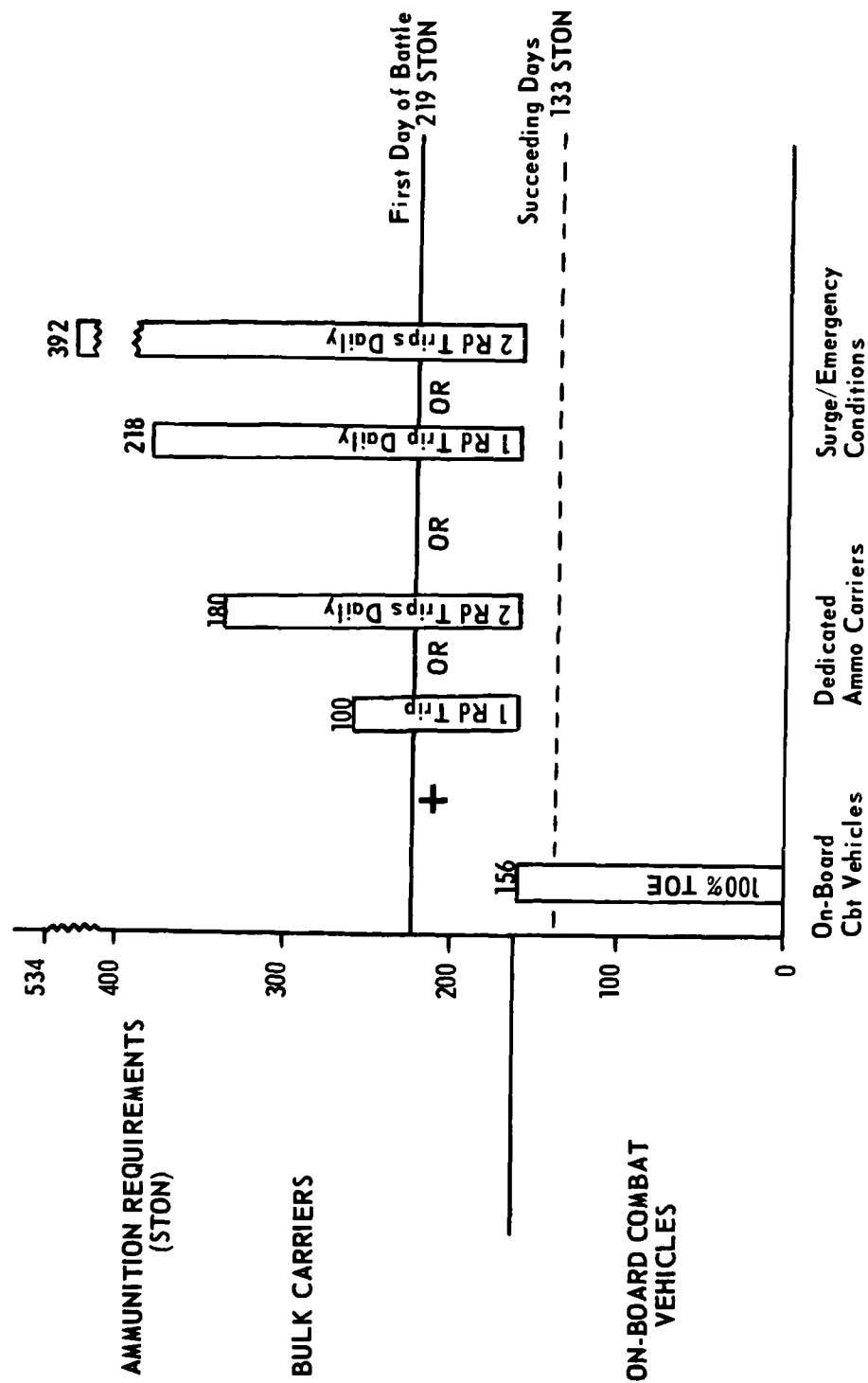
ADDITIONAL CAPABILITY BY ADDING 1½-T TRLS FOR COMBAT VEH

71	Trailer, Cargo 1½-Ton		106.5
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AMMO CONSUMPTION VS CARRYING CAPACITY - TANK BATTALION

- A comparison of the ammunition consumption for the tank Bn in defense of position (heavy combat) with its organic transportation carrying capacity indicates that the battalion has adequate dedicated capacity. The adjoining figure reflects the ammunition requirement for the first day of combat plus each of the next three succeeding days.
- The solid line represents the consumption of ammunition based on 100 percent of TOE combat vehicles available to fire during the first day of heavy combat. The dashed lines represents ammo consumption during each of the next three succeeding days.
- Under dedicated ammo vehicles, the 10 10-ton trucks are assumed to be available each carrying its normal limit of 10 STON on one round trip daily for a total of 100 STON. In making a second round trip 80 percent are assumed to be available for a daily total of 180 STON. Using MHE and organic personnel, the ATP located in the BSA can handle 500 STON daily.
- In a surge or emergency situation as represented by heavy combat, a do or die situation, the commander can establish priorities for other organic transportation to be used to haul ammo. It is assumed that 50 percent of the 1 1/2-ton trailers, 2 1/2-ton and 5-ton trucks would be available to haul their normal limit, while 100 percent of the 10-ton cargo trucks would operate at 50 percent overweight. This would provide a capacity to haul 218 STON on one round trip daily. Assuming an 80 percent availability for a second round trip provides a daily total of 392 STON.
- Under these conditions and assumptions, the tank battalion commander has adequate transportation assets available without considering the use of 1 1/2-ton trailer to haul ammo behind each of his combat vehicles.
- Even using Div 86 consumption data, location of an ATP in the BSA and two round trips daily, the number of dedicated ammunition trucks could be reduced by at least 2 10-ton cargo trucks.

TANK BN - AMMUNITION CONSUMPTION VS CARRYING CAPACITY (Consumption based on Defense of Position - Heavy Combat)



ALTERNATIVE CARRYING CAPACITY

TANK BATTALION POL TRANSPORT CAPACITY VS CONSUMPTION ANALYSIS

- Organic to the tank Bn are 93 tracked and 84 wheeled vehicles which have an on-board fuel carrying capacity of 43,467 gallons of diesel fuel plus 1,614 gallons of MOGAS. Also available within the battalion are 11 2,500-gallon tank trucks with a hauling capacity of 27,500 gallons.
- In computing a 150 KM movement which is one half on-highway and one half off-highway, approximately 20,265 gallons of fuel are consumed by the vehicles. Due to the different cruising ranges of the vehicles, the 24,816 gallons of fuel remaining on-board vehicles will not permit the battalion to move much beyond a total of 200 KM without a major refueling stop. Off-highway movement consumes more than three times the on-highway movement rate. For a day's operation additional factors such as service usage and wastage must be considered to determine the total consumption for the battalion.
- Considering a refueling stop after 150 KM of combined on-off highway movement the jag in the adjoining figure represents the transfer of about 20,000 gallons of fuel from the bulk carriers to the individual vehicles. After refueling, two tankers with 5,000 gallons of diesel and one tanker with 1,500 gallons of MOGAS continue on with the battalion, while eight tankers return to the CI III SP in the BSA to get another load of diesel. The reserve capacity or bulk carriers may vary from 5,000 to 6,500 gallons during the period the empty tankers are reloading POL. In an emergency, 5,000-gallon tankers are also available for unit distribution from the division's Supply and Trans Battalion.
- Although these computations are based on an unrealistic 100 percent availability of all vehicles, there appears to be more than ample POL carrying capacity with the existing vehicles without adding trailers to the combat vehicles.
- With the availability of 35 5,000 tankers in the division Supply and Trans Bn, the turn-around time for the battalion's fuel trucks to reload could support a reduction of two of the battalions organic 2,500 gallon tank trucks.
- Division 86 under intense combat uses consumption factors that show the division tank battalion moving about 200 KM per day off-highway or farther using a combination of on-off highway. At the same time, the battalion consumes 219 STON of ammo.

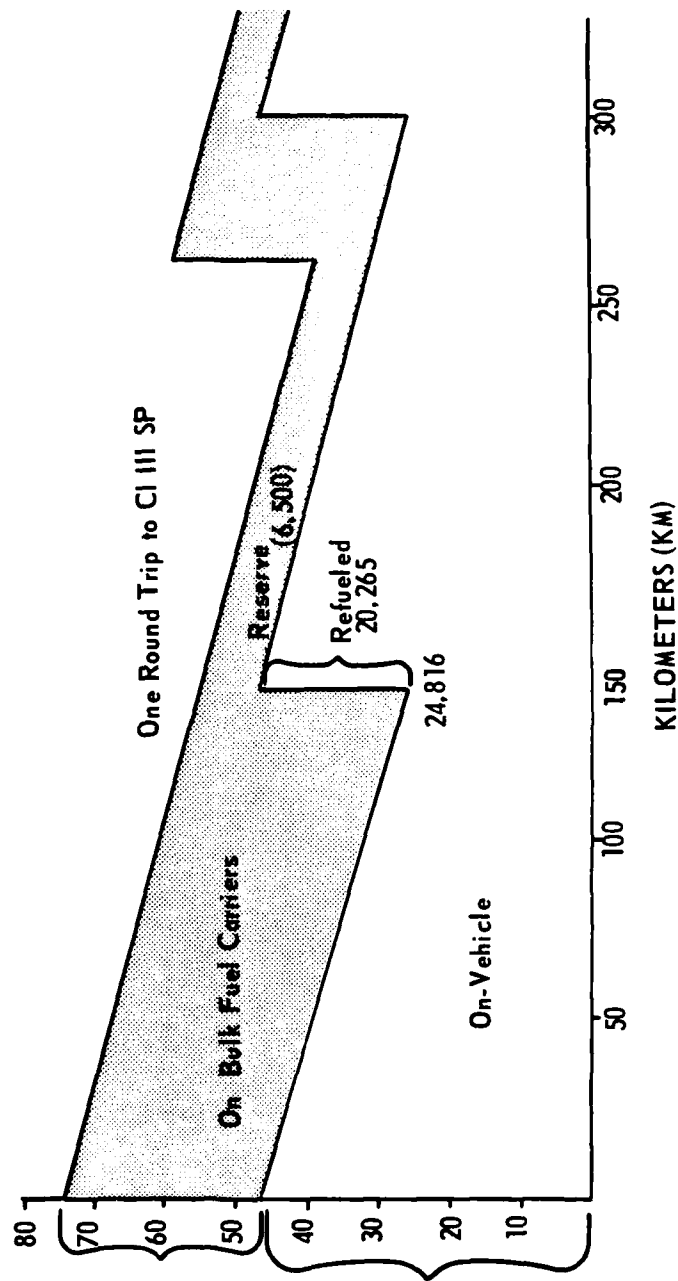
TANK BN POL TRANSPORT CAPACITY VS CONSUMPTION (50% On-Highway, 50% Off-Highway)

POL TRANSPORT
CAPACITY
(GALLONS)

Total 72,581

Bulk Fuel Tankers
27,500

On-Board 45,081



Top-off or Refuel at 150 KM Increments.

AMMUNITION CONSUMPTION - MECH BATTALION

● IFV/CFV

● In a heavy combat situation similar to that for the tank battalion, IFV/CFV surviving for 24 hours could be expected to have consumed 1,000 rounds of 25mm ammunition plus 9 TOW and 3 DRAGON missiles. Except for 3 TOW missiles, all other ammunition was from on-board supplies. If all IFV/CFV survived the first day, the 61 combat vehicles could have consumed approximately 101.8 STON of ammo. It is recognized, however, that operational non-availability due to mechanical breakdown and combat losses reduces the ammunition consumption accordingly. Thus, succeeding days consumption should be lower than indicated.

● On each of the succeeding 3 days, consumption based on 100 percent of vehicles being operational would be approximately 87.7 STON. This is, however, a high consumption figure based on unrealistic availability factors.

● ITV - Under the same combat conditions the ITV could expend 9 out of the 10 TOW missiles carried on-board during the first day. After resupply, the rate of fire for succeeding days for available systems would be 7 missiles.

● 107MM MORTAR - Smoke, anti-personnel and suppression missions consume on an average 163 mixed types of rounds during the first day of this battle plus 136 rounds during each of the succeeding three days. This amounts to about 20 STON for the first day and 16 STON on succeeding days.

● MISC MUNITIONS - Small arms, grenades, etc. are estimated at 20% of daily consumption of primary weapon systems - mines for large scale mine fields not included.

● Total ammunition consumption for a Mech battalion with all combat systems available and operational can approximate 100 STON the first day and 88 STON the succeeding three days.

AMMO CONSUMPTION - MECH BATTALION

(Defense of Position - Heavy Combat)

COMBAT VEHICLES	CONSUMPTION ¹			
	FIRST DAY		SUCCEEDING DAYS ²	
	RDS/WPN	STON	RDS/WPN	STON
61 IFV/CFV (Packaged WT)				
25mm (1)	1000 (Est)	30.5	1000 (Est)	30.5
TOW (87)	9	23.9	7	18.6
DRAGON (67)	3	6.1	2	4
12 ITV - TOW (87)	9	4.7	7	3.7
6 107mm MORT (40)	163	19.6	136	16.3
		84.8		73.1
MISC MUNITIONS (20% of above)		17		14.6
TOTAL		101.8		87.7

1 - FM 101-10-1

2 - For each of the succeeding 3 days

AMMUNITION CARRYING CAPACITY - MECH BATTALION

- Assuming all combat and support vehicles operational, the Mech Bn ammo carrying capacity provides a:
 - Combat vehicle on-board equivalent of 87.6 STON.
 - Dedicated ammo carrying capacity of 110 STON per round trip daily or 198 STON for two trips.
 - Surge/emergency, do or die, capability in excess of 184 STON for one daily round trip or 332 STON for 2 trips by using a combination of trucks and trailers available within the battalion.
- Daily ammunition consumption is about equal to on-board ammo plus the requirement for 4 5-ton truck loads during the first day of heavy combat in defense of a position. Neither combat vehicles nor support vehicles can be expected to be at 100 percent of authorization; however, there appears to be an excess carrying capacity within the battalion transportation section which has authorized and can be used primarily for ammunition hauling 5 APC, 14 5-ton and 4 10-ton cargo trucks. Using only 1 round trip daily, the cargo trucks can haul up to 110 STON, while with 2 trips they can go up to 198 STON.
- In a surge or emergency situation, using a combination of trucks and trailers available within the battalion upwards of 332 STON can be hauled daily.
- An additional 118 STON can be hauled by trailers behind combat vehicles, however, this option should not be pursued because of other alternatives mentioned above and the unnecessary limitations this would impose on the mobility/agility of the combat vehicles.

AMMO CARRYING CAPACITY - MECH BATTALION

COMBAT VEHICLES - ON VEH CAPACITY

		<u>STON</u>
61	IFV/CFV XM2/XM3 - 25mm TOW	30.5
		15.9
	DRAGON	8.2
12	ITV - TOW	5.2
6	107mm MORT	13.2
		73
		14.6
		87.6

MISC AMMO

(20% of above)

TACTICAL AMMO CARRIERS - DEDICATED

(5 APC (2 Ton) Local Hual Only)

14 Truck, Cargo 5-Ton
4 Truck, Cargo 10-Ton

<u>RD TRIPS DAILY</u>	
1	2
70	126
40	72
110	198

SURGE/EMERGENCY CARRYING CAPACITY

15 Trailer, Cargo 1½-Ton
34 Truck, Cargo 2½-Ton
14 Truck, Cargo 5-Ton
4 Truck, Cargo 15-Ton

12	22
42	76
70	126
60	108
184	332

(10-T @ 50% overload)

ADDITIONAL CAPABILITY BY ADDING 1½-T TRLS FOR COMBAT VEH

79 Trailer, Cargo 1½-Ton

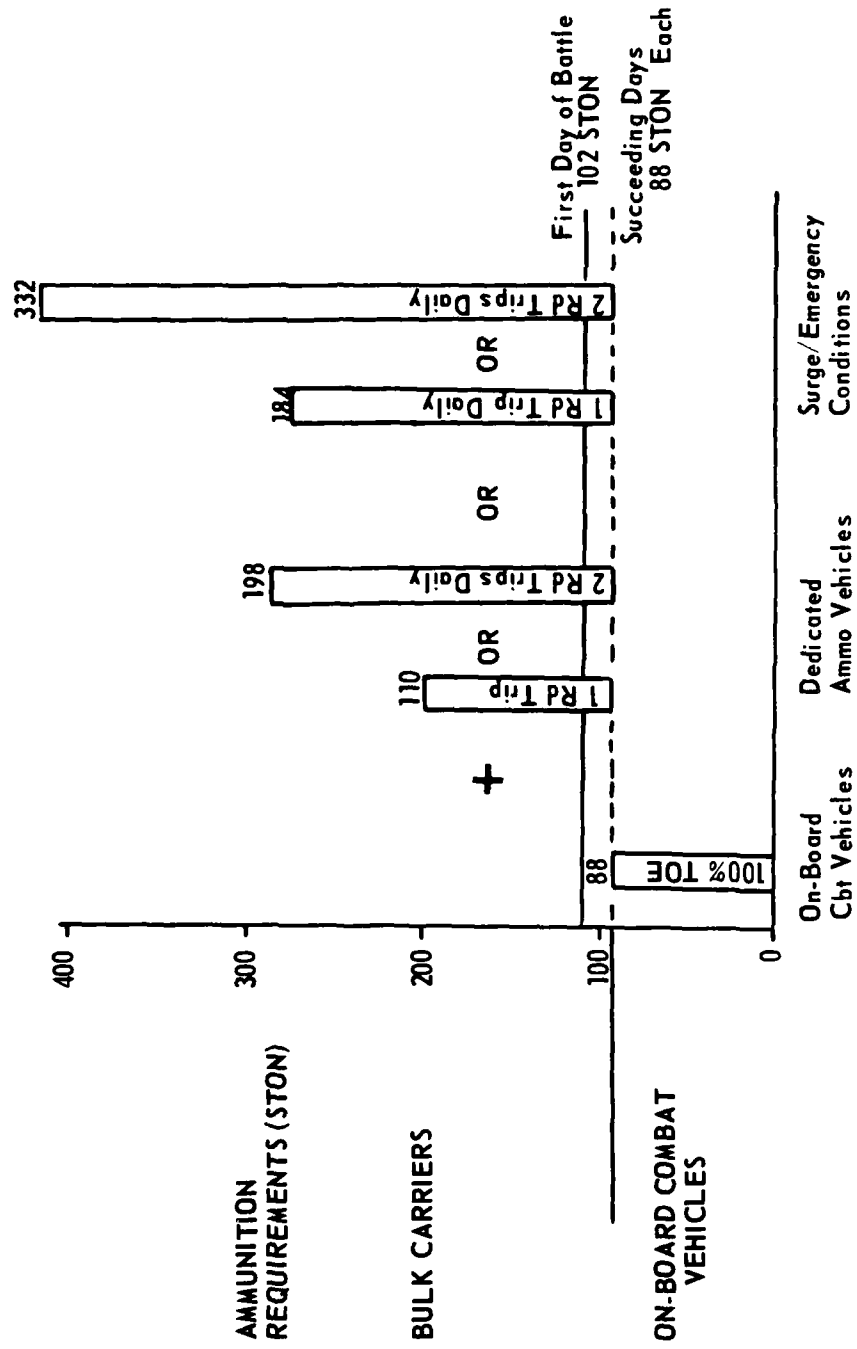
118.5

AMMUNITION CONSUMPTION VS CARRYING CAPACITY - MECH BATTALION

- A comparison of the ammunition consumption for the mech Bn in defense of position (heavy combat) with its organic transportation carrying capacity indicates that the battalion probably has an excess dedicated capacity. The adjoining figure reflects the ammunition requirement for the first day of combat plus each of the next three succeeding days.
- The solid line represents the consumption of ammunition based on 100 percent of TOE available to fire throughout the first day, and the dashed line for each of the next three succeeding days.
- Under dedicated ammo vehicles, only the 14 5-ton and 4 10-ton trucks are considered, since the APC will be limited to local shuttle in emergency situations. Using one lift daily, 110 STON can be carried assuming 100 percent availability of vehicles. For 2 round trips daily, 80 percent of the authorized vehicles are assumed to be available for the second trip, for a total of 198 STON. This is about twice the daily consumption for the battalion in heavy combat.
- During a surge or emergency situation such as represented by heavy combat, in a do or die situation, the commander can establish priorities for use of all available transportation plus increase their pay load. In this analysis, it was assumed that 50 percent of the 1 1/2-ton trailers and 2 1/2-ton/5-ton trucks could be used to haul 12, 42 and 70 STON respectively, during one round trip. The capacity of the 4 10-ton trucks was increased to 15-ton. This combination could move 184 STON on one trip daily. Assuming 80% availability for a second round trip, a total of 332 STON could be hauled daily.
- The battalion commander has sufficient organic transportation assets available so that he does not have to consider requesting 1 1/2-ton trailers to be hauled by his combat vehicles.
- Even using Div 86 consumption data, availability of an ATP in the BSA and making two round trips daily with dedicated ammo vehicles 10 5-ton trucks should be adequate and more effective than the combination of 14 5-ton and 4 10-ton cargo trucks.

MECH BN - AMMUNITION CONSUMPTION VS CARRYING CAPACITY

(Consumption based on Defense of Position - Heavy Combat)

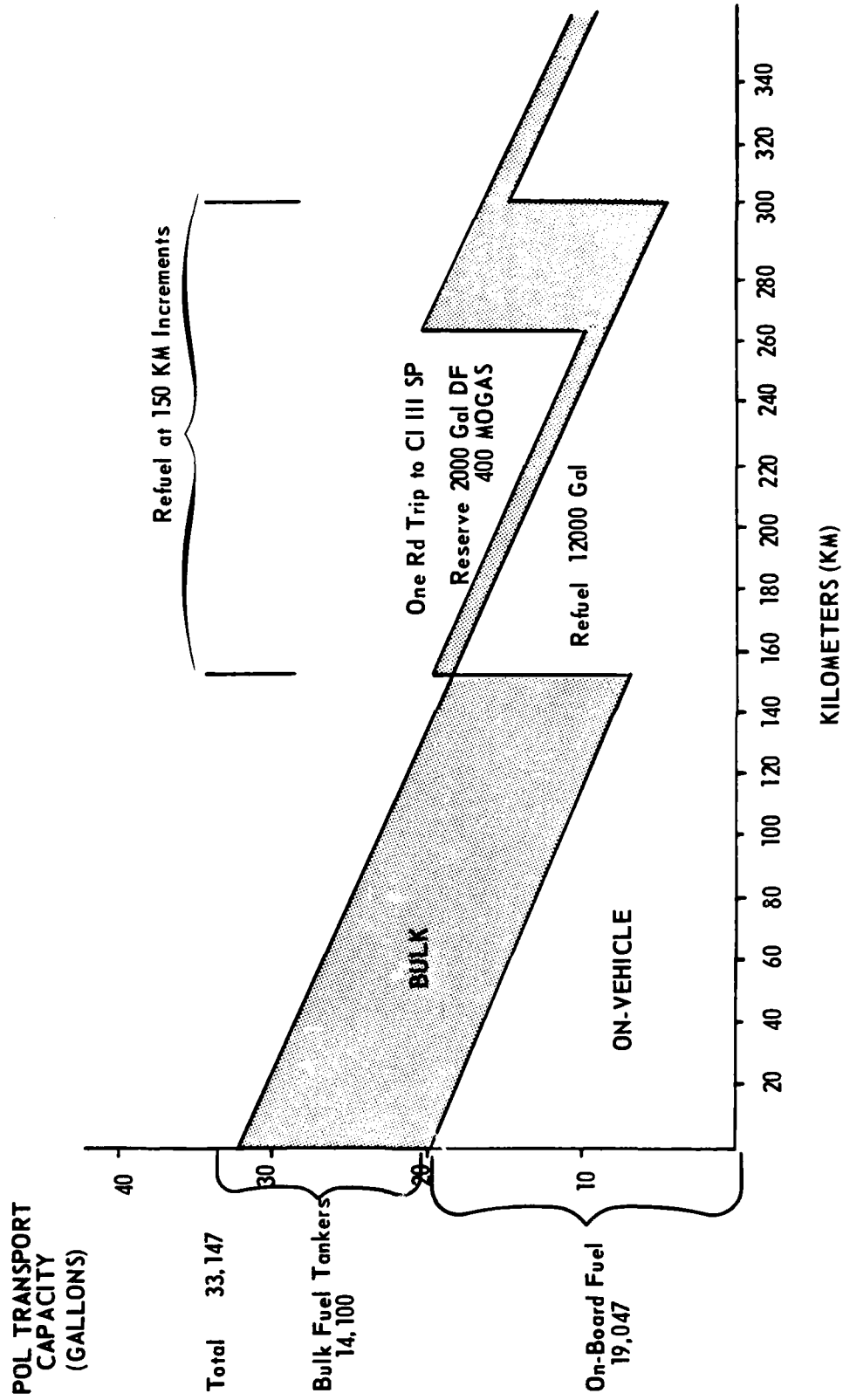


ALTERNATIVE CARRYING CAPACITY

MECH BATTALION POL TRANSPORT CAPACITY VS CONSUMPTION ANALYSIS

- The Mech Bn has organic 119 tracked and 80 wheeled vehicles which have an on-board fuel carrying capacity for 17,881 gallons of diesel and 1,165 gallons of MOGAS. Bulk fuel is carried by the 5 2,500-gallon tank trucks to haul 12,500 gallons of diesel plus a truck and trailer mounted tank and pump unit for 1,600 gallons of MOGAS.
- In computing a 150 KM movement which is one half off-highway and one half on-highway, the battalion consumes approximately 12,000 gallons of fuel. Off-highway movement consumes more than three times the fuel for the same distance on-highway.
- At the end of a 150 KM movement approximately 7,000 gallons remain on-board vehicles and 12,000 gallons from the tankers is used to top-off all the vehicles. This leaves a reserve of 2,000 gallons of diesel and 400 gallons of MOGAS.
- The four empty tank trucks and the truck mounted tank and pump unit section return to the POL SP for refill, while one tanker and a trailer of MOGAS is available as a reserve. If the movement is continued, the tank trucks will join the unit after their tanks are refilled. The availability of 5,000-gallon tankers in the BSA reduces the turn around time for the fuel trucks.
- The POL carrying capacity is sufficient not to warrant consideration of providing trailers for combat vehicles to haul POL. This is always an option using any number of the 30 1½-ton trailers, each capable of carrying 440 gallons (8 55-gallon drums) of fuel.

MECH BN POL TRANSPORT CAPACITY VS CONSUMPTION (50% On-Highway - 50% Off-Highway)



TARGET DENSITY ANALYSIS

- Opposing a Division 86 deployed in a defensive position could conceivably be a Warsaw Pact 1st Echelon Army, consisting of 2 tank and 2 motorized rifle divisions with divisional personnel and major combat systems as shown in adjoining figure.
- A comparison of divisional personnel only, indicates a 1:2 ratio with Division 86 having approximately 20,000 personnel versus 43,204 personnel for the 4 WP divisions.
- Division 86 with about 709 105mm tank guns and vehicle mounted TOW systems defend against 2,504 combat systems for a 1:3.5 ratio of shooters to targets, while the WP attackers have about 1,236 tank guns and missiles employable against 975 combat systems within Division 86 for a ratio of 1:0.8 attacker versus defender.
- Due to tactical deployment, defend versus attack, and the time/space factors of not all attackers meeting all defenders at the same time, the primary combatant targets are grouped under armored vehicles, thus the defenders 975 tank/mech systems are opposed by somewhat less than the 2,504 tank/MR systems at any given time or place.

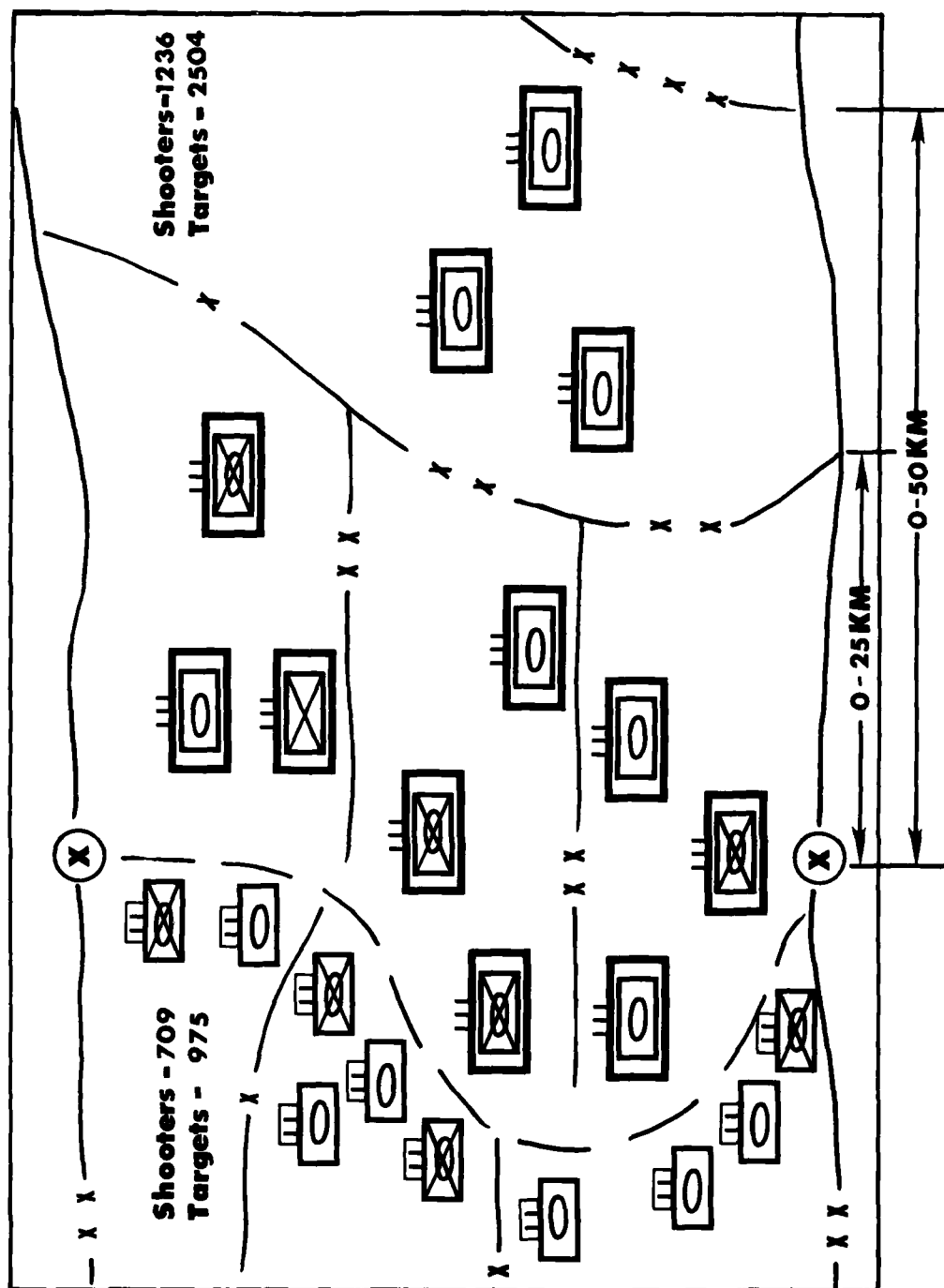
DIV 86 TARGET DENSITY COMPARISON TO A WP 1ST ECHELON ARMY

CATEGORY	DIV 86 (6 TK + 4 MECH BN)	VERSUS	1st ECHELON ARMY (2 TK + 2 MR DIVISIONS)
● PERSONNEL	20,000		43,000 (Div Str Only)
● COMBAT SYSTEMS			
●● ARMORED VEH			
MED TANK	975		2,396
FIGHTING VEH	(336)		{ (1,160)
ITV	(325)		{ (76)
APC/RECON	(48)		(1,160)
	(266)		
●● ANTI-TANK (GUNS/MISSILES)			
	709	Shooters	1,236
		VERSUS	VERSUS
	975	Total Targets	108
			2,504

TANK/TOW AMMO CONSUMPTION VS TARGET DENSITY ANALYSIS

- Division 86 ammunition consumption factors for heavy combat in defense of position provide for a total consumption within the first day of battle of about 27,144 rounds (78 per tank) of 105mm tank ammo plus 3,466 TOW missiles. Since the consumption factors are based on no losses in combat systems, the tank rounds available per each WP tank/MR battalion combat system is 27,144 versus 2,504 or about 10.8 to 1.
- Under the same situation, 3,466 TOW missiles are available to employ against these same targets for a 1.4 to 1 against the tank/MR battalion combat systems within the 4 divisions of the 1st Echelon Army.
- Although the tank/mechanized task forces form the primary defensive structure for the division, other contributors include close air support sorties by the Allied Tactical Air Forces, attack helicopters, artillery delivered scatterable mines and precision guided missiles, and other counter-mobility assets, such as mines, and barriers plus the contributions of the DRAGON and VIPER anti-armor systems.
- The ammunition consumption as factored by the Division 86 organizational developers not only is the driving force for increased ammunition carrying vehicles but could ripple back through the ammunition supply system and create unrealistic demand factors for both ammunition and transportation assets.

**TANK/TOW AMMO CONSUMPTION VS TARGET DENSITY
OR SHOOTERS VS TARGETS SPATIAL RELATIONSHIPS
(First Day of Battle)**



CONCLUSIONS

- The surge rate of ammo expenditure computed at 100 percent of combat systems is used to support ammo transport requirements on a daily basis.
- One round trip per day for ammo trucks is used as the planning figure. This does not consider the mobility capability of the vehicles nor the proximity of the newly established ammo transfer points in each brigade support area.
- The use of three different types of cargo trucks, 2½-ton, 5-ton and 10-ton, within each of the battalions complicates planning, manning, supply and maintenance.
- Establishing priorities for the use of tactical wheeled vehicles in surge situations could reduce the number of dedicated ammo hauling vehicles. Also, consideration of the 5,000-gallon tank trucks available in the division could reduce the number of POL tankers authorized in the battalions, especially the tank battalions.
- In any event, trailers attached to combat vehicles to haul either ammo or POL are neither necessary nor desirable. The capability does exist, however, to haul 3,000 lbs of ammo or 440 gallons (8 55-gallon drums) per 1½-ton trailer at any time the Bn commander decides to do so.
- Austerity criteria appears to have carried little weight by the battalion organization developers in striving for battalion independence.

RECOMMENDATIONS

- Ammo/POL carrying capacity should be based on realistic consumption factors, not on a worst case situation. Availability of weapon systems on a day-to-day basis plus the threat target exposure rate must be considered.
- Ammo/POL trucks should be expected to make at least two round trips daily to reload from ATP or CI III supply points in the brigade support area. The ATP can handle 500 STON per day and the CI III SP can provide 5,000-gallon tankers for unit distribution in an emergency.
- The number of types of cargo trucks should be reduced to a minimum - preferably all 5-ton configurations. The 5-ton truck provides 15 percent more space than a 2½-ton cargo truck and can be used for both POL and ammo hauling.
- Commanders must establish priorities for use of vehicles to haul Ammo/POL during surge/emergency situations. The Unit SOP should reflect vehicle use priorities.
- Trailers should not be considered for combat vehicles. There are better alternatives open to the commander, rather than having trailers available which inhibit mobility of combat vehicles.
- Supply discipline as discussed in paragraph 7-3, FM 101-10-1, should be adhered to by the TOE developers and reinforced by the reviewers at all levels. The battalion must be considered as part of the division, not an independent entity. The most effective system should include a combination of battalion/division support effort not an addition to each others system.

SECTION IV

INDIVIDUAL VS UNIT REPLACEMENT
SYSTEMS & UNIT RECONSTITUTION

PURPOSE

TO ANALYZE THE PRESENT INDIVIDUAL REPLACEMENT SYSTEM VIS-A-VIS A UNIT/TEAM REPLACEMENT SYSTEM; DETAIL THE ADVANTAGES/DISADVANTAGES OF EACH SYSTEM; AND IDENTIFY ADVANCE PROVISIONS NECESSARY TO SUPPORT RECONSTITUTION.

OBJECTIVE

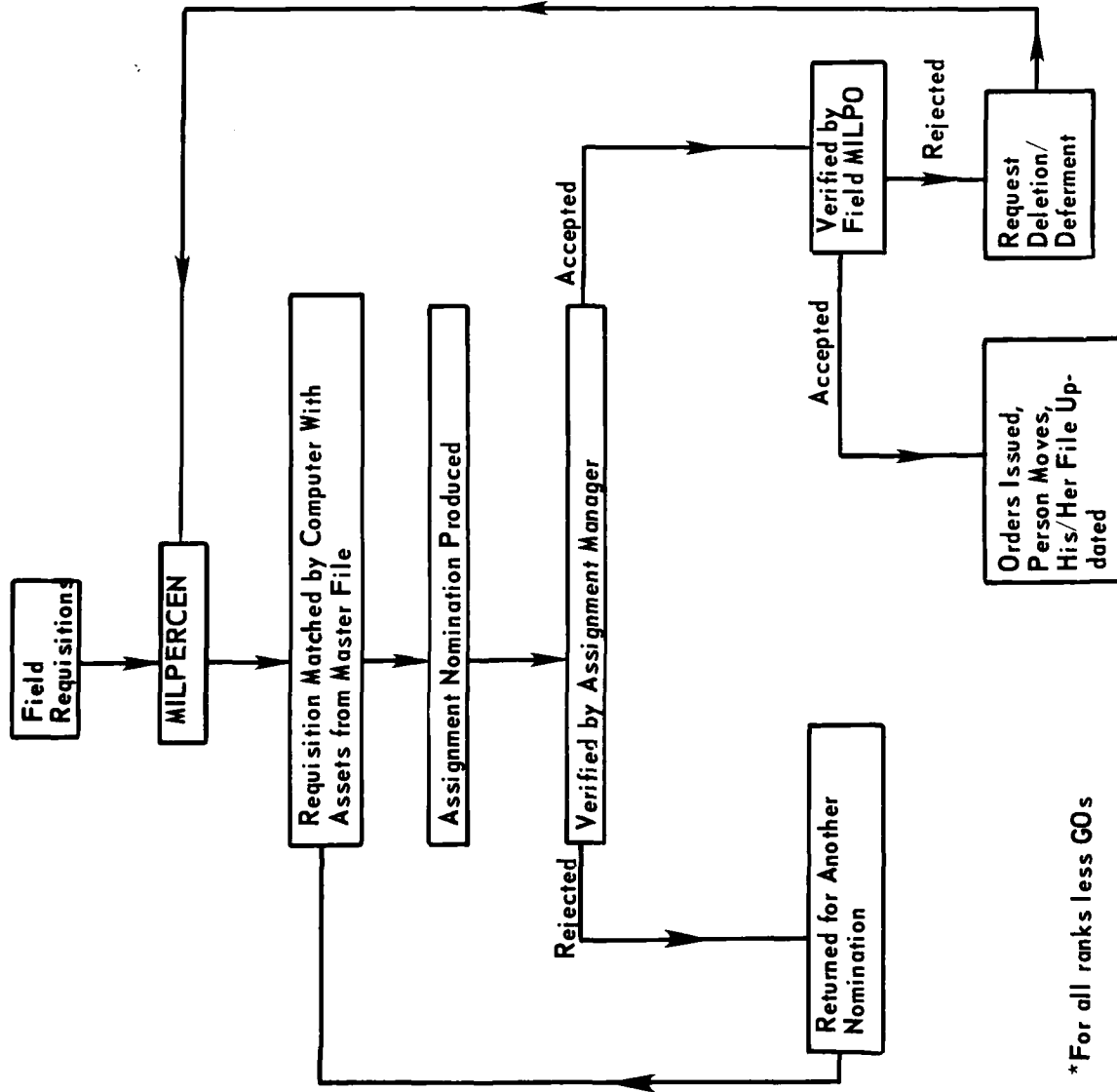
TO DESCRIBE THE CURRENT REPLACEMENT SYSTEM AND ASSESS ITS VIABILITY UNDER CONDITIONS OF GENERAL WAR; TO ASSESS THE MERITS OF INDIVIDUAL VERSUS UNIT REPLACEMENT; AND TO IDENTIFY METHODS OF RECONSTITUTING SEVERELY DAMAGED UNITS AND INFORMATION REQUIRED FOR THE RECONSTITUTION PROCESS.

DEFINITIONS

For the purpose of this study, the terms shown on the accompanying chart will have the meanings indicated:

- **UNIT**
Any military element of squad size or larger.
- **TEAM**
A group of soldiers, of less than squad size (11 men), which normally operates together; for example, an infantry fire team, a tank crew, an artillery section, a transportation section, etc.
- **INDIVIDUAL REPLACEMENT SYSTEM**
Where personnel are assigned as individuals to fill vacant TOE or TDA positions. (If personnel move from their former station as members of a unit, but are assigned as individuals to fill vacancies, this is an individual, not unit replacement system.)
- **UNIT/TEAM REPLACEMENT SYSTEM**
Where a unit or team is assigned to a parent organization and takes the place of a like element which has been rendered combat ineffective.
- **UNIT RECONSTITUTION**
To provide personnel, equipment and training to restore to a combat effective status a unit which has suffered such severe losses in personnel and equipment as to make it incapable of any form of combat.
- **ROTATION**
To relieve from combat an individual or unit that has been in action for a prolonged period of time. (In peacetime, rotation usually means return of the person or unit to CONUS from an overseas station.)

THE PRESENT INDIVIDUAL REPLACEMENT SYSTEM *



*For all ranks less GOs

Requisitions Direct to MILPERCEN from 150 Installations.

Lead Time (months)
 • CONUS - 5
 • Overseas - 9
 • Emergency - 3

All Assignments by Name

Qualifications
 • Grade/MOS
 • Sex
 • Preference
 • ETS
 • Months Since Last PCS
 • Months Since Last Overseas

Requisitions for Deploying Units
 • Submit Within 21 Days
 • Allow 3 Months for Fill

This System
 • Designed for Peace
 • Has No Automatic or "Push-Package" Provisions
 • Would Require Drastic Simplification in War

THE US ARMY REPLACEMENT SYSTEM IN PREVIOUS CONFLICTS

● World War I

- Each corps organized with four combat and two replacement divisions.

One replacement division functioned as a replacement depot, the other as a training division. Initially replacement divisions filled demands from their original strength, then trained and processed replacements from CONUS, who often had little or no training.

- Men shipped in casual companies, assigned as individuals.
- System worked poorly; in October 1918 combat divisions short over 80,000 men.

● World War II

- Replacement and School Command in ZI, Replacement Command overseas; depot supported an army, battalion supported a corps and company a division.
- Typical infantry replacement (62% of total) went through eight "way stations" from induction to a combat unit.
- Many deficiencies: diversion into provisional Comm Z units, men too long in pipeline - training and morale suffered; system not responsive - combat divisions in ETO short 22% of their riflemen in December 1944.
- Essentially an individual system, although men were organized for movement in companies, platoons and squads. In 1945, an effort was made to keep men intact in four man groups into combat.
- Stilwell Plan: CG AGF proposed that training centers train men in units for specific divisions overseas. Plan not accepted because of its inflexibility; no way men arriving at a training center could be earmarked for divisions in proportion to casualties division would suffer 6-12 months in future.

● Korea and Vietnam

- Individual systems, although platoon package was used extensively for Korea.
- Officers and WO assigned by name at DA level; EM by levy (grade and MOS) on CONUS installations; by name selection at unit level to fill the levy.
- In both conflicts the system worked satisfactorily. Personnel moved faster through the pipeline; thus, there was less opportunity for proficiency and morale to suffer. (During the Vietnam conflict, replacements were moved almost exclusively by air from CONUS to RVN.)

CONSIDERATIONS INVOLVING UNIT VS INDIVIDUAL REPLACEMENT

- The Army has not used a unit replacement system in any previous conflict.
- Closely related to unit/individual replacement is unit/individual rotation. Rotation of units which had been in continuous combat for long periods was considered but not practiced in WW II because it was believed that relief of entire divisions:
 - Would be a time-consuming process causing loss of momentum.
 - Would have nullified the priceless asset of using combat experienced soldiers.
- Instead of unit rotation, a limited program of individual rotation was instituted late in WW II. Soldiers who had been in combat 250 days were eligible.
- The likelihood in any future general war that entire units will be rendered combat-ineffective by enemy use of mass destruction weapons dictates planning for a unit replacement system.
- In assessing the desirability of employing a unit/team replacement process versus an individual replacement system the following factors should be considered:
 - The size of the unit(s) affected.
 - The number of survivors in each unit capable of further combat.
 - The availability and location of replacement units.
 - The availability of replacement personnel in theater and in CONUS.
 - Status of equipment in theater to refit the unit(s).
 - The tactical situation; e.g., urgency of need for a new or reconstituted unit.
 - The need to impart combat "know-how" to a new unit.

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INTEGRATED NUCLEAR CONSIDERATIONS. MANEUVER BATTALIONS (AND LOW--ETC(U)
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ADVANTAGES AND DISADVANTAGES OF EACH SYSTEM

● Unit Replacement System - The advantages of a unit replacement system versus an individual system are:

- It is better suited to meet the requirements of the integrated battlefield, where company, battalion and division sized units may be put out of action by a nuclear or chemical strike.
- Ensure better morale and esprit de corps.
- Facilitate command and control during deployment - provides cohesive units which have trained and deployed together, as compared to a group of casualties temporarily organized for movement.

The disadvantages are perceived to be:

- Relative inflexibility - except in those instances where entire units are destroyed, the qualifications (MOS and grade) as well as the number of personnel in the replacement unit will not coincide with the requirements. (This disadvantage can be overcome by employing a team system, with teams composed of four to ten men; on the other hand, this approach negates to a considerable degree the advantages of the unit method.)
- Lack of combat experience, resulting in reduced combat effectiveness until the unit has been in battle for a time. (This drawback can be at least partially offset by a "fusion scheme" wherein a number of combat veterans from a like unit "changes places" with a corresponding number of personnel from the new unit. However, this process will result in a period of turbulence, however brief, and will probably require, in the case of maneuver units, that the incoming element and the unit with which it is exchanging personnel be placed in reserve for a time.)

● Individual Replacement System - The advantages of an individual system as opposed to a unit method are:

- Flexibility and economy - increments of replacement personnel can be tailored to meet requirements.
- Enables a unit to be rebuilt and take advantage of the combat experience of the survivors if there are any.

The disadvantages of the individual method of replacement are:

- As a collection of individuals who have not trained together as a team, it does not provide a satisfactory means of rebuilding a unit which has been destroyed.
- Morale, discipline and training proficiency are likely to suffer when personnel do not deploy as part of an established, cohesive unit.

UNIT RECONSTITUTION

- The likelihood that nuclear weapons will be employed in any future war dictates that plans be made to replace and reconstitute units up to division size. Planning must be based on the assumption that requirements for combat-ready units and trained replacements will greatly exceed assets. Given the short warning time expected and the requirement to reinforce NATO (and other areas) there is a relatively small number of Army combat units of the active and reserve forces available in CONUS:

	Active ¹	Guard & Reserve	Notes
Armored Divisions	22	2	1. Includes REFORGER, 2 + 10 & RDF.
Mech Divisions	43	1	2. Each has a Bde deployed in Europe.
Infantry Divisions	24	5	3. 5th & 24th Divs have 2 Bdes; 1st Div
Airborne Division	1	0	has a Bde deployed in Europe.
Air Assault Division	1	0	4. 7th Inf Div has 2 Bdes.
Totals	10	+ 8 = 18	
Air Cav Combat Bde	1	0	
Armored Brigades	1	3	
Mech Brigades	0	10	
Infantry Brigades	1	11	
Totals	3	+ 24 = 27	
Armd Cav Regts	1	+ 3 = 4	
Non-Divisional Arty Bns			
155mm (towed)	4	15	
155mm (SP)	5	16	
8-inch (SP)	3	34	
Totals	12	+ 65 = 77	
Lance	2	0	
Persting	1	0	

- Although the time required to prepare each of the above units for overseas movement is classified, it can be assumed that it will range from a few days for the high-priority active units to as much as 6 months in the case of the lower priority reserve component divisions. Thus, after mobilization has commenced, a variety of organizations will be available to be earmarked as a source of unit, team or individual replacements to employ to reconstitute decimated combat units. (The above type units are selected as examples; approximately the same situation exists for combat support and CSS units.)

UNIT RECONSTITUTION (Continued)

- An initial source of individual replacements is the individual ready reserve (IRR) which had a strength of about 396,000 men as of end FY 1979, plus the relatively small number of personnel currently in the training centers. After these sources are exhausted, the Army will have to turn to units in the CONUS for individual replacements until the training centers (operated by the 12 USAR training divisions in the force structure) start turning out trained personnel. (A training period for a newly-inducted soldier of approximately three months must be assumed; Section 671, Title 10, US Code requires 12 weeks training for such personnel.)
- It is unlikely that all units of a division would be destroyed by a nuclear strike. Likewise, there probably will be some survivors and serviceable equipment from battalions and larger formations. Some elements of the division, including those on the FEBA, may suffer little or no damage. Further, the damage radii of the weapons will not coincide with division boundaries. What can be expected is the destruction of a number of units of various types of one or more divisions, including supporting corps units, particularly artillery and engineers. Conceivably, damage to a division might result in the following type units being combat ineffective:

2 mech battalions
 2 tank battalions
 3 artillery battalions (including 1 corps bn)
 3 engineer companies (including 1 corps co)
 2 brigade HQ
 2 Bde Spt Bns
 1 DISCOM HQ
 1 Div Main HQ
 1 Sig Co, Comd Operations
 1 Div Arty HQ
 1 Chaparral Btry
 1 each heavy maint, trans and Med Spt Co
 1 Attack helicopter Co
 1 HQ Troop Cav Squadron
 1 Recon troop

UNIT RECONSTITUTION (Continued)

- Sources of the replacement units and personnel to reconstitute this division may include:
 - oo Units from theater assets. For example, a tank battalion and a mechanized battalion from two neighboring divisions could be permanently reassigned to the damaged division. (These in turn could be replaced by CONUS units.)
 - oo Units from CONUS - If time permits, or the status of theater forces dictates, divisions and separate brigades at an appropriate stage of training could be tapped for a tank and a mech battalion, a brigade HQ, a brigade support battalion, a Chaparral battery and one or more engineer companies. Replacement artillery battalions could similarly be furnished from a CONUS artillery brigade or group.
 - oo Replacement personnel from the theater Army replacement command, organized into teams and platoons, along with survivors from the original units, should be used to fill the majority of the remaining requirements. (If the division has been in combat for a time, hospital returnees will furnish a number of replacements. For example, experience in WW II indicated that a division (with a strength of some 15,000) would lose 3,700 men in the first month, but that during the second month the net loss would drop to 2,500 because 1,200 men would return from hospitals.)
 - oo Key positions in the division, division artillery, brigade and DISCOM HQ should be filled by levy on other theater Army units, as should battalion command positions.
 - oo The remaining unfilled personnel requirements should be furnished from the CONUS replacement system.
- A replacement division, if available, should be promptly deployed to the theater to fill the gap left by the original division while it is being reconstituted.
- Replacement equipment should be furnished from CONUS and theater war reserve stocks, depending of course on stock levels. Whether replacement units from the CONUS bring their equipment with them and travel by surface means (or a combination of surface and air) or travel by air with only minimum essential equipment (NEE) must be determined by the urgency of need for the unit coupled with the availability of equipment in theater war reserve stocks.

UNIT RECONSTITUTION (Continued)

- Advance provisions necessary to support unit reconstitution must include:
 - oo An estimate of the number and type of units which may have to be reconstituted. Such estimate should be related to the number of units by type in the theater and their relative vulnerability.
 - oo Data on the composition of each type unit in the theater by grade and MOS.
 - oo A system for earmarking CONUS units for potential employment as replacement elements. This will require "tracking" the readiness condition of each unit as it proceeds through its training cycle and a substitution process as the earmarked unit itself deploys overseas.
 - oo Monthly forecasts of the number of individual replacements to be produced by the CONUS training centers and schools.
 - oo Current data on the casualty rate in the theater by grade and MOS.
 - oo Periodic estimates of the number of hospitalized personnel in the theater who are expected to return to duty, by units.
 - oo A plan for an "infusion program" for replacement units arriving from CONUS whereby a number of combat-experienced personnel from "old" units would trade places with officers and soldiers from the newly arrived unit.
 - oo Information on which to base a decision as to whether a CONUS-based replacement unit should be accompanied by its TOE equipment or travel with MEE only, for example:
 - Urgency of need for the unit (based on assumptions prior to fact).
 - Status of theater war reserve stocks.
 - Status of equipment in hands of unit.
 - Availability of air and sea transportation from CONUS overseas.
 - Status of theater lines of communication.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

- The present centralized, by name, individual replacement system will not work in the event of general war.
- Required is a decentralized system wherein MILPERCEN levies requirements for individual replacements on Army commands/installations/activities, in accordance with DA - established priorities, based on the number of POR - qualified personnel reported available by the command/installation.
- A unit/team and an individual replacement system each has advantages and disadvantages; the advantages of one generally offset the disadvantages of the other. Both systems will be required to support Army forces on the integrated battlefield.
- Most important among the advance provisions necessary to support unit reconstitution are:
 - oo An estimate on the number and type units which may have to be reconstituted.
 - oo Data on the composition of each type unit in theater.
 - oo A system of earmarking CONUS units in training for potential employment as unit replacements.

RECOMMENDATIONS

- Develop, and prepare plans and supporting doctrine for a replacement system encompassing both individuals and units/teams under conditions of general war.
- Prepare plans and supporting doctrine addressing the reconstitution of combat units from battalion through division-size, and of CS and CSS units of battalion and group size.

APPENDIX A
GENERAL OFFICER'S COMMENTS

1. During the course of the study, the views of General Bruce C. Clarke, USA Retired, were sought on the desirability of the Army's adopting the combined arms battalion organization in lieu of the present system of separate tank and mechanized infantry battalions. General Clarke's informal comments on this proposal are quoted below:

"If you create a fixed combined arms battalion you do this:

"1. Do away with flexibility for particular missions.

"2. Complicate maintenance.

"3. Expect the battalion commander and staff to be able to handle and train two or more branches. Few in wartime can do this or even in peacetime.

"4. Complicate company competition between unlike companies in the battalion.

"5. Harm the morale of one or more of the branches involved.

"6. Complicate personnel replacements.

"The best is to train by one-branch battalions and form combined arms tactical battalions to fight."

2. The following comments are made on Items 1 through 6:

a. Flexibility will not be lost. Tank-heavy and mech-heavy teams can be formed within the battalion. One company of each may remain "pure" if desired. A combined arms battalion may be reinforced by tank or mech companies detached from another battalion, and pure battalions may be formed by, for example, detaching two tank companies from a battalion and attaching to it two mech companies.

b. Maintenance would be more complicated in the combined arms battalion than in the present mechanized battalion (of Division 86) in that the former would have XM-1 tanks (plus tools, test equipment and repair parts) not currently possessed by the latter.

• In the case of the combined arms battalion vis-a-vis the tank battalion, there would be little change in the maintenance situation since the

Division 86 tank battalion has six CVFs (XM-3) and one IFV (XM-2). The difference would simply be a greater density of XM-2s and a lesser number of XM-1s. (It is noted that the same MOS's are found in the maintenance platoons of both the tank and mechanized battalions. Nevertheless, a turret mechanic accustomed to working on XM-1 turrets cannot be expected to have equivalent proficiency on XM-2 turrets despite the fact that the same MOS (45N10) is associated with both systems.)

- On the other hand, in a combat situation, there will be fewer changes in organization for combat of the combined arms battalion. Maintenance personnel will be working on equipment which they have learned to repair in peacetime, and battalion PLLs will be made up of repair parts tailored to support the type, and in most cases the density, of equipment with which the battalion will fight.

- In the final analysis, it is considered that there would be fewer opportunities for "glitches" in the maintenance system under the combined arms battalion organization than is currently the case.

3. Most maneuver battalion commanders now must train at least two branches since tank and mechanized battalions have scout and mortar platoons, and commanders of armored cavalry units are responsible for tank, infantry, mortar and scout training. Further, in any future conflict, it can be expected that a large proportion of the battalion commanders will have "grown up" in mechanized or armored divisions.

4. Competition between unlike companies exists at present; i.e., between the headquarters, combat support and line companies. There would of course be two tank companies and two mech companies to compete against one another in their branch-peculiar fields, with further competition between like companies in each brigade.

5. It is considered that inasmuch as both armor and infantry branches would have approximately equal representation in a combined arms battalion, the battalion commander could be expected to be sufficiently perceptive as to give due attention to the morale of both branches. Further, since the battalion is

a combined arms organization by TOE, attachments and detachments will be less frequent than is now the case. Accordingly, there should be fewer instances of the neglect which sometimes occurs to attached units.

6. With regard to complicating the personnel replacement situation: there will be only one more MOS (either MOS 11 (infantryman) or MOS 19 (tanker) in a combined arms battalion than there currently is in a mech or tank battalion. This should not present a serious problem in providing replacements to a battalion in combat. On the other hand, since there should be fewer instances of companies being attached to or detached from a combined arms organization the provision of replacements to the line companies would be simplified.

APPENDIX B
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