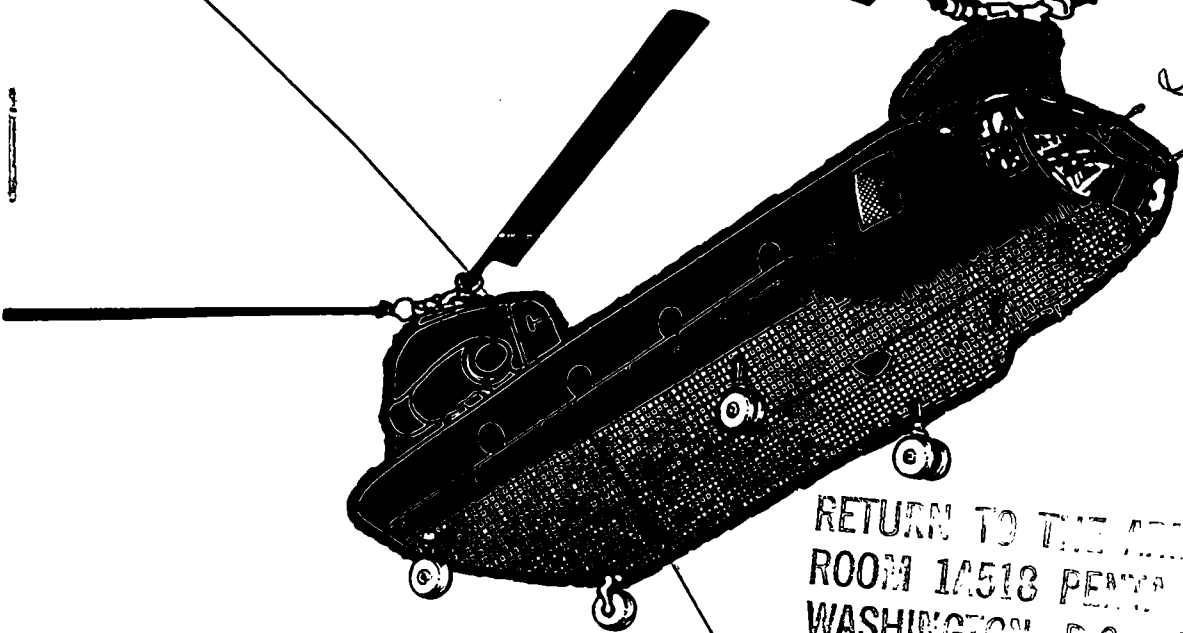


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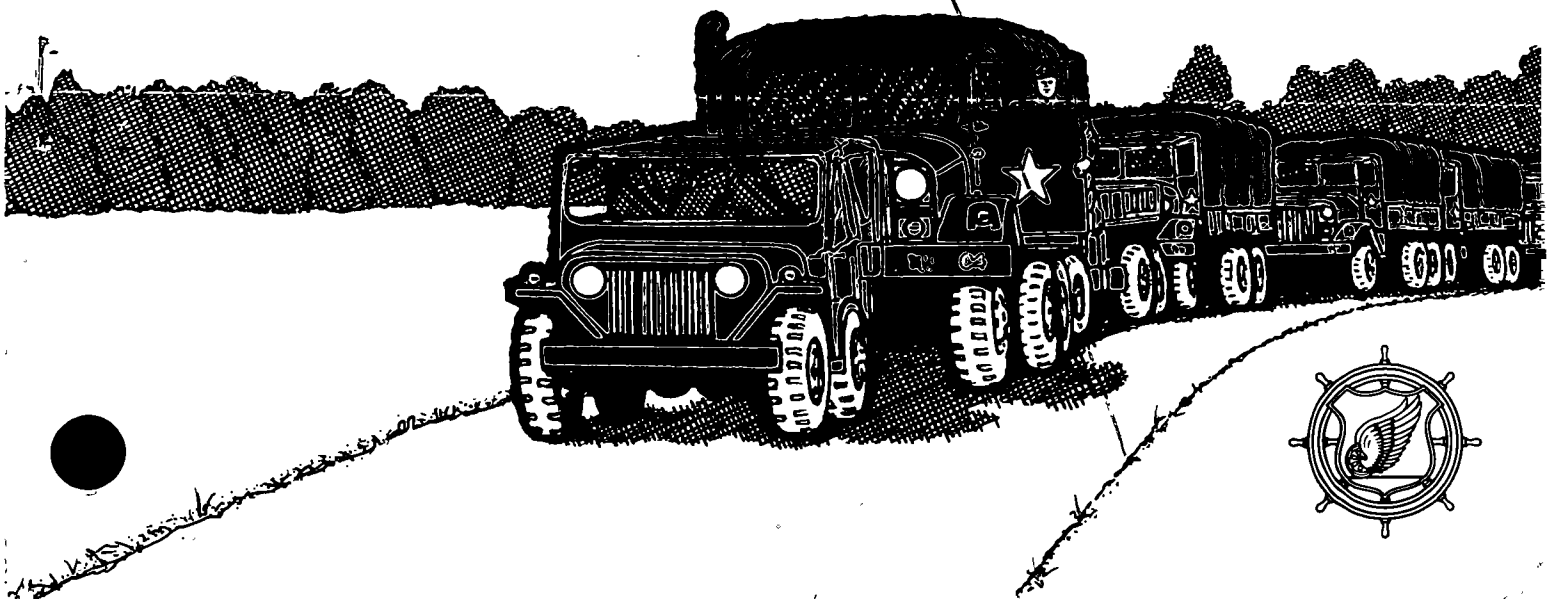
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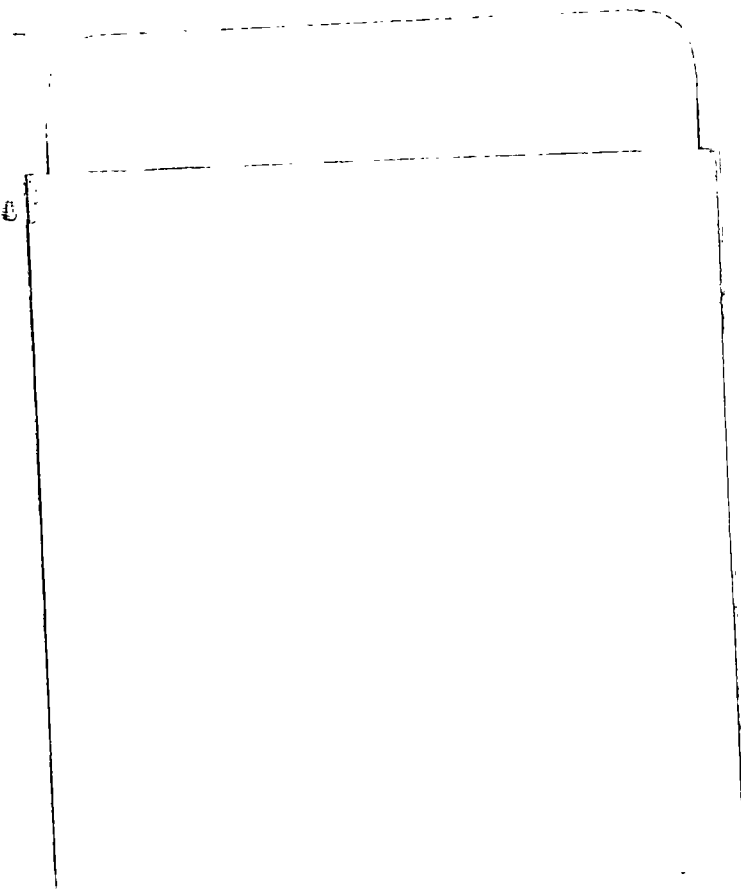


RETURN TO THE ARMY  
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WASHINGTON, D.C. 20310

# DIVISION TRANSPORTATION OPERATIONS



100-100000



HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 3 July 1980

S/S  
January 31, 1985

## **DIVISION TRANSPORTATION OPERATIONS**

### **PREFACE**

Transportation links the other logistics functions together into a system dedicated to supporting the division weapon systems. Transportation support is provided to the division by organic motor and air transport units, with backup support from the corps support command and theater Air Force airlift. The division transportation officer and the division support command movement control officer coordinate and control division transportation operations.

Organizational and functional concepts described herein are applicable to any type of US Army division operating in an overseas wartime environment. Concepts and procedures are flexible enough to permit the commander to organize and use his resources in the manner best suited to meet specific mission requirements.

Users of this manual are encouraged to recommend changes and submit comments for improving its clarity and accuracy. Comments should be keyed to the specific page, paragraph, and line of text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. DA Form 2028, Recommended Changes to Publications and Blank Forms, is the preferred format for submitting recommendations. Forward the form to Commandant, US Army Transportation School, ATTN: ATSP-CD-D, Fort Eustis, Virginia 23604.

NOTE: The words "he," "his," "man," and "men," refer to both the masculine and feminine genders unless otherwise specifically stated.



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## CHAPTER 1

# INTRODUCTION

The primary mission of logistics is to insure the operation of the weapon systems on the battlefield. Logistics includes a broad range of functions and responsibilities. Transportation, being that part of logistics that accomplishes the movement of people and things to meet the Army's requirements, is involved in all logistical functions. Without adequate transportation, successful accomplishment of the **arm it, fuel it, fix it, and man it** logistical objectives would be impossible. The support forward concept of logistics operations makes transportation even more vital to success on the battlefield.

This manual describes transportation operations in armored, infantry, mechanized, airborne, and air assault Army divisions.

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## PURPOSE

This manual provides doctrinal guidance concerning organization and functions of division transportation operations in all types of Army divisions operating in an oversea wartime environment. It is designed for use by commanders and their staffs at division, division support command, and other command levels who have responsibility for providing transportation support of division operations. It is also of interest to commanders and staffs of supported combat, combat support, and combat service support units of the division.

## MISSION OF COMBAT ARMS UNITS

The mission of the combat arms units is to meet the enemy and destroy his ability to wage warfare--to win the land battles, large or small. This is accomplished by employing the firepower and mobility of division armored, infantry, artillery, cavalry, and attack helicopter units in various combinations. The commander has a great deal of flexibility for tailoring his forces to best accomplish a given mission. The firepower and mobility employed will cause high rates of consumption of ammunition and fuel, thus placing a challenging demand on the combat service support system to provide the logistical support needed.

## MISSION OF TRANSPORTATION UNITS

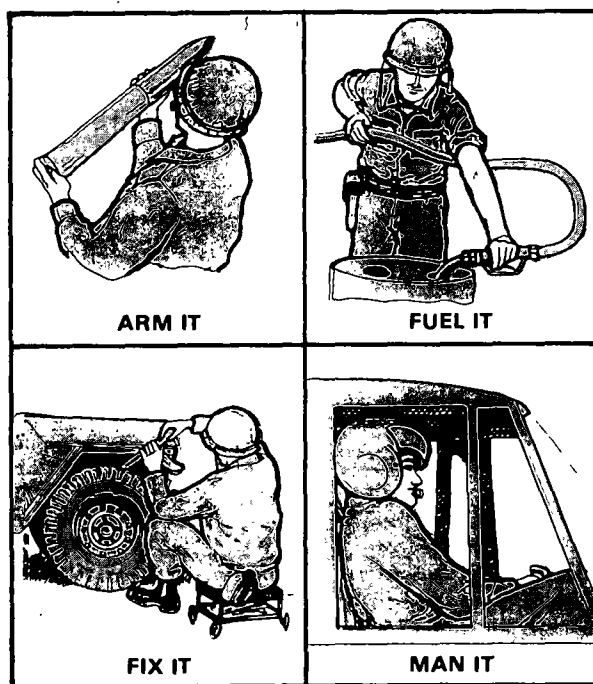
The overall mission of the transportation units in the division is to plan, coordinate, manage, command, and operate division transportation resources in support of the battlefield weapon systems. Individual units and their missions are as follows:

- The transportation motor transport company in the armored-infantry-mechanized (AIM) divisions is responsible for providing--
- Ground transportation for unit or supply point distribution of supplies.
  - Movement of personnel.
  - Displacement of division units.

- Displacement of division reserves of the classes of supply for which the division is responsible.

- The transportation light truck platoon in airborne and air assault divisions provides limited ground transportation for administrative and logistical support, primarily in the division support area.
- The three transportation medium helicopter companies in the air assault division provide air transportation for combat and combat service support functions similar to those of the transportation motor transport company in the AIM divisions.

The organizational structure of these units is discussed in chapter 3.



## SUMMARY

Transportation is vital to accomplishment of all the logistical functions involved in arming, fueling, fixing and manning the weapon systems in forward areas. The combat arms units must have adequate support in order to accomplish their mission to win the land battles. Transportation service is provided in the divisions by organic motor and air transport units.



## CHAPTER 2

# OPERATIONAL ENVIRONMENT

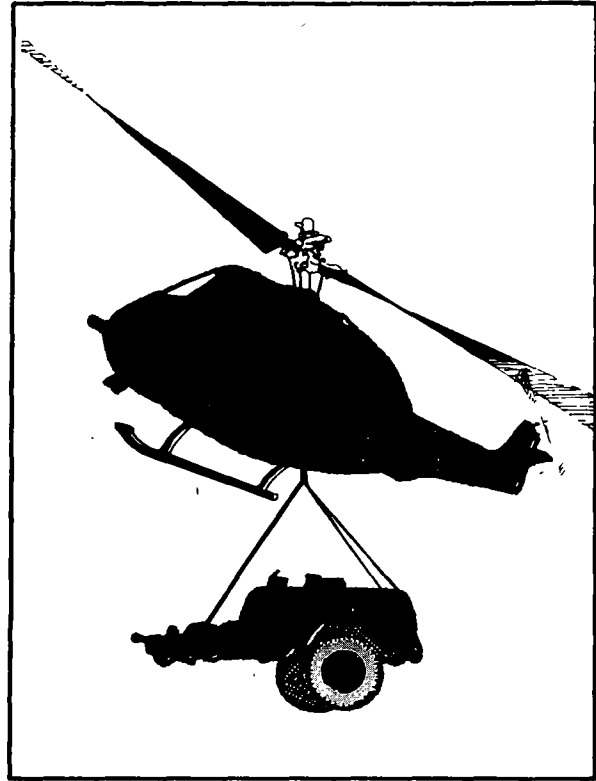
The environment of the battlefield has a direct influence on transportation operations. Some environmental factors can be controlled; others cannot. Controlling those that can be controlled and learning to cope with those that cannot be controlled will make the difference between success or failure of the transportation mission. Everything used in military operations must be transported somewhere, sometime, somehow. Transportation ties the other logistic services to the combat forces.

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## TACTICAL SITUATION

The type of tactical operation in which the division is engaged will directly influence transportation support requirements.

- During a fast-moving offensive operation, supply lines become much longer. Overcoming the problems of longer lines of communication requires detailed planning. Additional support may be required from corps support command (COSCOM) motor transport units and aerial resupply. Usually, ammunition expenditures are light and petroleum, oils and lubricants (POL) consumption is heavy especially in armored and mechanized divisions. As lines of communication become longer, protection for supply convoys must increase.
- In a slow-moving offensive, ammunition expenditures are high and POL consumption is low. In this situation, supply and transportation of ammunition must be emphasized.
- Defensive operations require transportation support that can be immediately shifted to an offensive operation. The defense is characterized by relatively heavy expenditures of ammunition and barrier materials and by reduced POL consumption. In an active defense the consumption of POL may become heavy. An active defense is unique in that the covering force may operate over a large area and is subject to being cut off by enemy action. Plans must be prepared for resupply of these forces by air should that happen. A significant battle may take place in the covering force area, and units there may require supply in the area even though they are not cut off from their support.
- Retrograde operations are characterized by heavy expenditures of POL, ammunition, and--in some operations--barrier material. To avoid detection by enemy forces, supply vehicles are usually moved during periods of reduced visibility. The amount of transportation support required during a retrograde operation will depend on whether or not the operation is conducted under enemy pressure.



## THREAT TO TRANSPORTATION

Threat forces constitute a modern, mobile, well armed fighting force trained to seize and maintain a high rate of offensive action. Using armor-heavy combined-arms teams, they can concentrate numerically superior firepower and forces for a combination of frontal attacks, envelopments, and deep penetrations into rear areas. Threat doctrine steadfastly adheres to certain basic principles to support the fast-moving offensive. Paramount among these are the following:

- Mass combat power at decisive points (breakthrough only).
- Bypass enemy strong points and move into the rear.
- Seek to surprise the enemy and deprive him of reaction time or the will to resist.
- Exploit breakthroughs to destroy enemy nuclear, air defense, antitank, command and control, and logistics systems.
- Employ electronic warfare as a combat multiplier.

No manual can begin to accurately define the threat against division transportation operations. Because the destructiveness of modern weapons and the totality of modern warfare do not permit stock solutions, different perceived threats are discussed here. These must be assessed to determine the probability of occurrence in a given situation.

Transportation personnel operating in the division and in forward areas of the corps must anticipate attack against logistical support bases. Threat success is based on defeat in depth, particularly in the rear areas which are less defended and therefore more vulnerable. Brigade and division support areas may be penetrated, and all personnel must be prepared, trained, and motivated to assist in active defense of support areas. This defense requires a special effort for transportation personnel, as their principal mission is to support rather than to fight.

Since the transportation soldier lacks the combat training of the tanker or infantry soldier, the first requirement is the ability to distinguish friend from foe. That is not as easy as it sounds. In a war in Europe, for example, a transportation soldier could be allied with several nations, most of which have their own distinct vehicles and weapons. It is often hard to distinguish among the many types of allied and threat aircraft. Friend and foe alike will use captured war material to augment their own, to replace combat losses, or to deceive the enemy. This is all compounded by the difficulty of identifying personnel, vehicles, and aircraft through the smoke, haze, dust, and confusion of battle. Vehicle and aircraft recognition training must be based on silhouettes without national markings.

In addition to recognition training, the transportation soldier must be qualified in use of the unit's individual and crew-served weapons. In the European battlefield highly mobile forces will be scattered over wide frontages where they will occupy only critical terrain and blocking positions. All units, **particularly logistics units**, will be responsible for their own perimeter defense and security. Training in use of automatic weapons and grenade launchers will give units a limited capability for self-defense and some potential for offense.

Transportation personnel will require individual and small unit training to improve their battlefield survivability. Being employed randomly, singly, and in small groups throughout the division area of operations, transportation soldiers are particularly vulnerable to interdiction or attack in situations where they will not have the aid of their unit. Self-confidence, initiative, ingenuity, and the ability to quest for survival in chaotic situations must be ingrained in these soldiers. Drivers, cooks, crew chiefs, movement specialists, and mechanics must be familiar with basic patrolling and reconnaissance techniques so as to prevent being surprised either on the march or in the operational base. Transportation personnel may find themselves pressed into thickening up defenses or occupying blocking positions. They must know what to do in these contingencies. Direct supply operations up to brigade trains, whether by truck or helicopter, will expose transportation personnel to weapons and situations rarely experienced in previous wars. The distinction between combat troops, combat support troops, and combat service support troops will be of no significance to threat forces or weapon systems. In certain situations everyone will, of necessity, be a fighter. However, it must be clearly understood that support troops cannot provide logistical support while they are fighting. Transportation units do not have a built-in capability to fight. Threat tactics and techniques of employment are covered in much greater detail in a number of how-to-fight manuals. These should be consulted for information on specific tactical situations. Transportation units, when employed in squads or as reaction forces, would profit most by using FM 7-8, The Light Infantry Platoon and Squad, as a guide.

High among the variety of threats to transportation operations is that posed by high performance aircraft and attack helicopters. Aircraft, like missiles and rockets, can strike anywhere in the combat zone or the communications zone, particularly in the rear areas where defenses are limited. Defense against threat aircraft will be mostly passive but should at a minimum include **tactical dispersion, detection**

**avoidance, and returning fire** with all available systems. The aviation threat comes in four different categories:

**Reconnaissance.** Threat forces have deployed into space technically advanced electronic and optical surveillance systems that can detect virtually anything on the surface of the Earth and some things below the surface. Assuming that the enemy has both radar and infrared capability, it will be difficult to reduce or eliminate vehicles, aircraft, radio, and activity signatures that can be picked up by satellites. Threat forces also have a wide range of sonic and subsonic reconnaissance aircraft and remotely piloted vehicles, including the MIG-25.

**Strategic Bombers.** The probability of attack by strategic bombers increases significantly with proximity to special ammunition units or facilities, tactical missile and rocket sites, large troop concentrations, logistic complexes, forward airfields, and command and control centers. Present employment concepts do not envision bombers having much direct effect on tactical operations at division level if more lucrative targets exist.

**Tactical Aircraft.** Threat aircraft are handled by ground control intercept methods. This means that the likelihood of ground support missions as opposed to strategic or deep penetration raids is particularly high. Threat doctrine states that air attacks serve as an extension of field artillery and that new emphasis is being placed on improving the group support role. Threat air forces do not normally provide close air support to the line of contact when field artillery can be used. However, development of precision-guided munitions may change this. Threat air attacks are normally planned in advance against critical targets. However, known flight tactics and intelligence-gathering techniques of threat forces indicate that targets of opportunity must be anticipated. Armed reconnaissance flights, although preplanned, are primarily for searching out, attacking, and destroying targets of opportunity along designated air corridors or within certain geographical areas. Types of attack include bombing, rocket, and strafing. Napalm attacks are flown at low level (20-50

meters). Bombing and strafing attacks usually involve a low-level entry with a pop-up maneuver 3-5 kilometers from the target to altitudes of 500-2,000 meters depending on the type of ordnance used and the attack angle desired. Since high performance aircraft, once committed, are not particularly maneuverable, quick changes in direction or speed are the best means of survival. Threat aircraft are employed in basic flights of two; that is, in formations of two, four, etc. Avoidance must be maintained for additional aircraft following 30-60 seconds behind.

**Heliborne and Airborne Operations.** The presence of several threat airborne divisions and the capability to airlift up to two of them simultaneously constitute a great danger for the division. Threat airborne forces could be deployed in operations ranging in size from small teams up through regiment or division to fight a conventional battle until linkup with ground forces. At least one motorized rifle battalion in each motorized rifle division is specifically trained for heliborne operations. These forces could be employed in the tactical scenario to seize critical bridgeheads, airfields, key terrain, and communications centers or to block commitment of reserves. The Mi-8 (HIP-E) and Mi-24 (HIND) are the two most heavily armed helicopters in the world. Their precise roles as attack or assault aircraft are not quite clear, as threat doctrinal employment concepts are still evolving and airmobile assault tactics are receiving more emphasis. Airborne/heliborne operations pose great danger to transportation operations because of their speed and the difficulty of rallying combat forces against them in the lightly defended rear areas where the truck and aviation units are located.

The capability of threat forces to engage in electronic warfare is an area of recognized superiority. Electronic eavesdropping is employed to intercept, collect, analyze, and identify various communication signals and thus determine size, type, mission, and location of enemy forces. To deceive their enemy, threat forces will "accidentally" leak information about their operations or cause confusion by pretending to be friendly units in order to divert or stop ongoing operations. Jamming is an extremely effective way to

control a battle. At the outset of a battle or when air support or reserve forces are to be committed, nothing could be more damaging than to lose communication. Unit commanders and staffs must plan in advance the methods by which they will operate without radios which have been made ineffective by jamming or other interference. Threat forces using ground or airborne radio direction finders can establish a position when three or more bearings are taken on a signal and in just a few seconds fire an artillery barrage on the source of the signal. Sound sensing, range sensing, and emission detection devices are also employed along with long range artillery or aviation to neutralize or destroy targets.

The United States has renounced the use of biological warfare. However, threat forces are known to have large quantities of biological agents, as well as chemical and radiological weapons, and their forces are equipped and trained to function in a nuclear, biological, chemical (NBC) environment. A large percentage of their tanks, infantry combat vehicles, and self-propelled artillery are equipped with NBC overpressure systems, filtration devices, and/or detention systems to protect their crews. Threat troops routinely wear protective masks and clothing during field exercises, physical training, and garrison training. Threat forces used for employment or decontamination of NBC agents are fully integrated into the force structure down to regimental level. In a US Army division, transportation personnel will normally be dispersed and away from chemical and radiological monitoring equipment. Therefore, they can expect to be more severely affected and farther from medical support than combat troops. Use of chemical agents against logistics units and facilities would be particularly advantageous since it would effectively deny ammunition, pre-positioned war reserves, repair facilities, and portions of lines of communications for extended periods at minimum cost and tactical exposure.

Threat forces operate an extensive network of covert intelligence agents on a worldwide basis. The number of agents, native or alien, cannot be accurately gaged. A war in Europe will result in the creation of guerrilla forces up to company or even battalion size to conduct

raids, sabotage, and ambushes in order to disrupt operations and occupy territory. The number of troops necessary to conduct counter guerrilla warfare is very high compared to the number in the guerrilla force. This is one of the principal aims of the guerrilla force: diversion of combat strength from the main effort. Threat force sympathizers who have concealed their allegiance for years will suddenly pose a major obstacle to division operations. They may, for example, block roads with refugees, ambush trucks, sabotaging fuel supplies, change road direction signs, report aircraft and vehicle movements, and harass base camps with sniper fire. In addition, sympathizers could serve as guides or contacts for specially trained unconventional or conventional forces given rear area interdiction missions. Some threat forces trained to act, talk, think, and behave like Americans will be employed in critically damaging situations where they can disrupt tactical operations or combat support. This could include impersonating military policemen, air traffic controllers, helicopter pilots, high ranking officers, or civilian dependents caught in the chaos. Units must employ standard operations security measures to deny unauthorized personnel access to motor pools, shops, airfields, dining facilities, and any operational areas where intelligence could be gathered or tactical advantage gained. Personnel must employ strict discipline with regard to vehicle speeds, formations, routes, signals, lights, and communications to minimize threat opportunities. The control measures must never become stereotyped. If they do, they will attract the attention of threat forces.

The individual soldier can increase his chances of survival by taking the position of a threat soldier or agent and trying to visualize the various ways in which division transportation operations could be adversely affected. He can then plan actions to reduce or eliminate the chance of successful threat efforts. When in doubt about his unit's vulnerability assessment or defensive measures, he should seek advice from the intelligence professionals in the S2 or G2 section.

## TRAFFIC PROBLEMS

Military motor movements are affected by a variety of conditions over which planners and operators have little or no direct control. Since conditions can be anticipated to varying degrees, and provisions can be made for operations with these factors taken into consideration. All plans must be sufficiently flexible to meet unpredicted weather, terrain, road conditions, route restrictions on overhead clearances, bridge weight limitations, civilian controls, tactical operations, and enemy action.

Generally, motor movements made in the territory of a friendly nation are subject to civilian traffic regulations. Coordination with civil authorities may be necessary before motor moves are executed. Clearances will be obtained through transportation movements office channels as prescribed by local regulations. Civilian controls do not apply when operating in occupied or hostile territory where military operations have priority. In a theater of operations, particularly in the combat zone, tactical conditions must be given the highest consideration in planning motor and air transport movements. Tactical conditions include those imposed by--

- Hostile forces such as air, artillery, or nuclear, biological and chemical attack.

- Raids.
- Guerrilla action and sabotage.
- Conditions imposed by the operational plans of own or friendly forces.
- Refugee movements.

Plans and orders for movements under tactical conditions must include organization, command structure, and assignment of adequate security measures. Particular emphasis must be given to the defense of unescorted convoys and aircraft. The introduction of nuclear, biological, and chemical weapon systems to the battlefield and the threat imposed by hostile aircraft demand thorough training in defense of such forms of attack.

Normally, defense plans of North Atlantic Treaty Organization nations designate a basic military road network. This network includes routes selected to meet anticipated allied and national military transport requirements. Some areas may not have an established road net with highways and bridges suitable for all classes of military traffic. In such cases, a route reconnaissance must be made to designate a road net and determine what engineer construction work is needed to make the designated net suitable for the planned traffic requirements.



## CLIMATE AND WEATHER

Climate is the condition produced by temperature, humidity, precipitation, wind, and light in a given area over an extended period. Weather is the day-to-day condition of the atmosphere. Long range plans for a theater of operations are concerned with climate. Local daily operations are concerned with weather.

Extremes of climate influence transportation operations by affecting personnel and equipment. Cold climates reduce the efficiency of personnel. Bulky winter clothing restricts movement and makes the performance of operational and maintenance duties more difficult. Physical discomfort, bacterial disease, and sanitation problems reduce energy and efficiency in hot, humid climates.

Extremes of temperature affect operation and maintenance of vehicles and aircraft.

Low temperatures require protection of cooling systems to prevent freezing, fuel additives to prevent ice from forming in fuel lines, and modification or protection of engines to facilitate starting. Tire life may be reduced by continued exposure to low temperatures. Metals may become brittle and break under comparatively light shock or stress. Battery efficiency is greatly lowered, and care must be taken to prevent freezing and cracking. Where severe freezing occurs, extensive road maintenance may be required after each thaw, particularly in early spring.

Extremely high temperatures complicate problems of engine cooling, and breakdowns from overheating are common. Heat combined with high humidity reduces life expectancy of equipment and adds to maintenance, repair, and replacement problems. Rust and corrosion of metals is accelerated. Mildew and rot rapidly attack unprotected cloth and leather items.

Transportation operations will also be influenced by fog, rain, snow, ice, and high winds. Highway operations will be hampered by reduced highway speeds, reduced visibility, increased congestion on the road net, and an increase in vehicle accidents. Air operations can be drastically reduced or

halted by most of these weather conditions. Temperatures and altitudes which result in low density air can also have an adverse affect on air operation. Transportation managers and operators must consider climate and weather and act to overcome their effects.

## TERRAIN

The landforms, vegetation, soil, and drainage features in an area make up its terrain. The various combinations of these features are broadly classified as mountains, badlands, hills, and plains. Mountains present major all-weather obstacles to military motor and air operations--steep grades, sharp curves, defiles, high altitudes, air turbulence, and periods of poor visibility. Badlands are characterized by pinnacles, steep buttes, and sharply eroded ravines or canyons. Although elevations of badlands are less than those of mountains, off-road operation of motor vehicles is extremely difficult if not impossible. Hills may be considered as normal terrain in many sections of the world, particularly in the developed areas. Lower elevations, decreased steepness of grades, better alinement of roads and highways, and more moderate drainage reduce the difficulties of motor and air transport operations in hilly areas. The variety of elevation and presence of normally trafficable soils offer a choice of off-road routes and landing sites to give more flexibility in operations. Plains, covering the greater part of the land surface of the world, offer few obstacles to military motor and air operations under average conditions.

At division level, terrain is evaluated to select the most suitable routes or techniques of operation to solve a specific local problem. Evaluation is based on information gained from observation and ground reconnaissance and from maps, photos, and local intelligence.

## RELATIONSHIPS WITH OTHER ORGANIZATIONS

Coordination within a staff is essential for two reasons:

- To insure harmonious staff action in carrying out the commander's plans.
- To avoid conflicts and duplications by making necessary adjustments in plans and policies before their implementation.

It is equally important to establish a relationship that will permit close contacts and exchanges of information between transportation staffs and their counterparts at higher, lower, adjacent, and supporting headquarters. The division transportation officer (DTO) must know what support can be provided by the corps support command (COSCOM) and the division support command (DISCOM). The DISCOM movement control officer must have sound relationships with the DTO, the division materiel management center, and the operations officer of the supply and transport battalion. These are but a few examples. Within the scope of division and organization directives and procedures, each transportation staff member must know staff procedures and establish good working relationships with the appropriate higher, lower, adjacent and supporting headquarters. Detailed staff procedures may be found in FM 101-5, Staff Officers Field Manual: Staff Organization and Procedure.

## SUMMARY

Transportation operations are directly influenced by the battlefield environment in which they are conducted. The mission of the combat units is to meet the enemy and destroy his ability to wage war. The mission of the transportation services is to operate transportation resources in support of the battlefield weapon systems. The tactical situation will determine the type and amount of transportation support that will be needed. Division transportation resources will be unable to provide all the support needed. Assistance from corps assets will be necessary when supply lines become extended concurrently with high expenditures of ammunition and heavy consumption of POL. The enemy threat to the division will be instrumental in determining the methods of operating the transportation system. Problems with civilian traffic regulations in friendly nations, poor road conditions,

limited highway networks, and large volumes of traffic necessitate as much advance planning as the situation will permit. The effects of adverse weather and terrain must be taken into consideration in training personnel, planning operations, and executing operational plans.

This chapter is on the negative side and presents a grim picture. However, these adverse conditions will be encountered. They must be overcome to get to the positive side and accomplish the division transportation mission--support of the weapon systems.



## CHAPTER 3

# ORGANIZATION FOR TRANSPORTATION OPERATIONS

Control of transportation personnel, facilities, and equipment is a function of transportation management. Good management results in full use of available transportation capability. Personnel and equipment constitute the transportation capability. The personnel must be rested and the equipment maintained; prolonged overuse will degrade capability. Full support of the weapon systems on the battlefield is the only measure of effectiveness of the transportation service support. Transportation organizations and movement control are the primary tools for managing transportation resources. Transportation organizations are discussed in this chapter. Movement control is discussed in chapter 4.

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## **BATTALION/SQUADRON TRANSPORTATION ORGANIZATION**

Combat battalions/squadrons do not have a separate transportation staff. Transportation functions are normally performed by the S4, with the assistance of the support platoon leader. The support platoon, except in the air assault division, is equipped with cargo and fuel trucks to provide resupply support to the units of the battalion/squadron. Each company, troop, and battery has cargo trucks in its supply and/or ammunition section. Refer to the applicable table of organization and equipment for numbers and types of trucks.

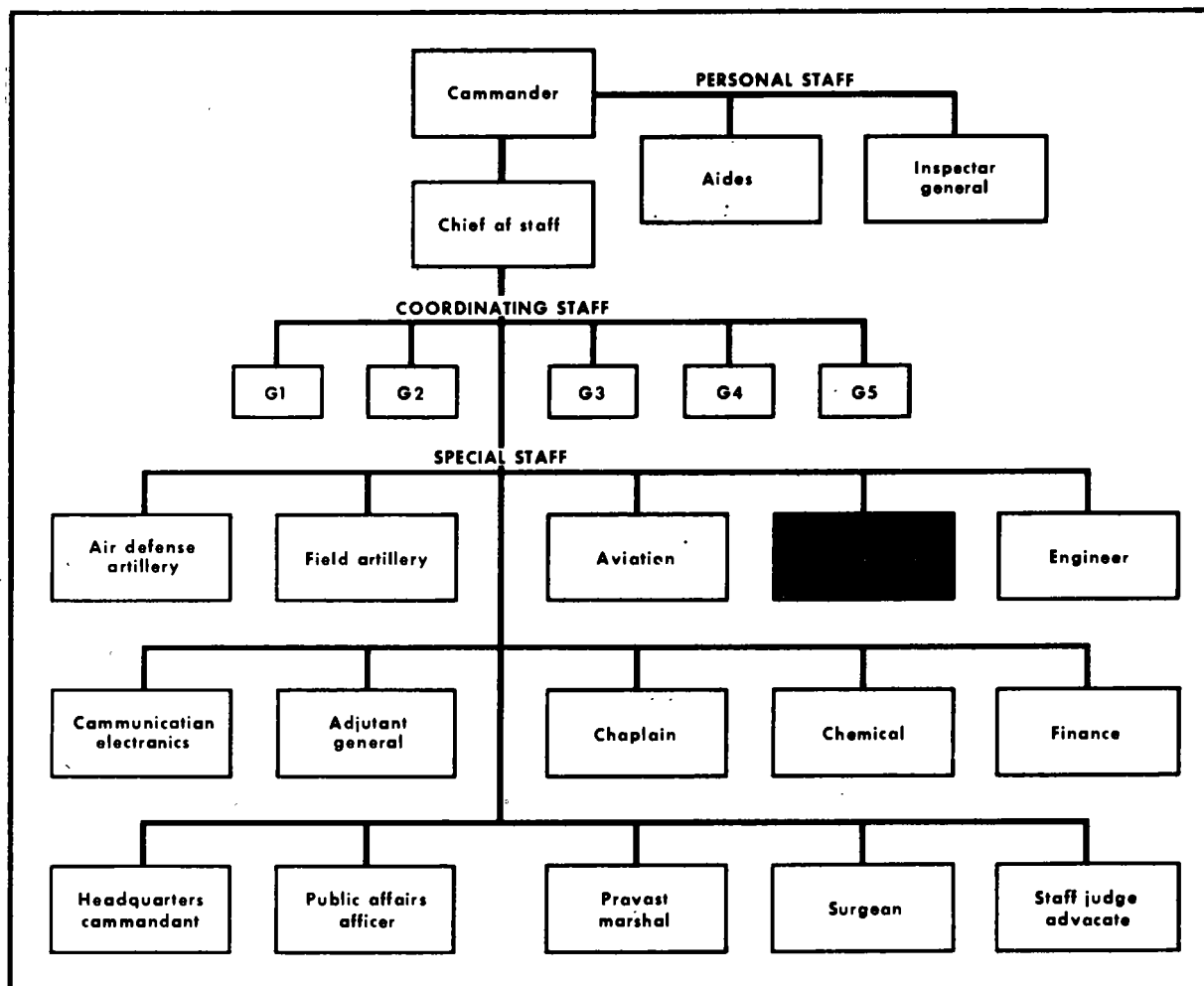
## **BRIGADE TRANSPORTATION ORGANIZATION**

The brigade headquarters is a command and control headquarters and has no transportation staff or common-user transportation assets. A forward area support coordinating officer (FASCO), who works for the division support command (DISCOM) commander, is in support of each brigade. The FASCO coordinates combat service support missions between the brigade executive officer (or the brigade S4) and the DISCOM elements operating in the brigade support area. Requests for transportation support from brigade units are channeled through the brigade S4 to the FASCO, who forwards them to the DISCOM movement control officer (MCO). The FASCO provides liaison between DISCOM elements and the brigade and maintains radio contact with the DISCOM headquarters to provide information on the logistical situation in the brigade.

## **DIVISION TRANSPORTATION ORGANIZATION**

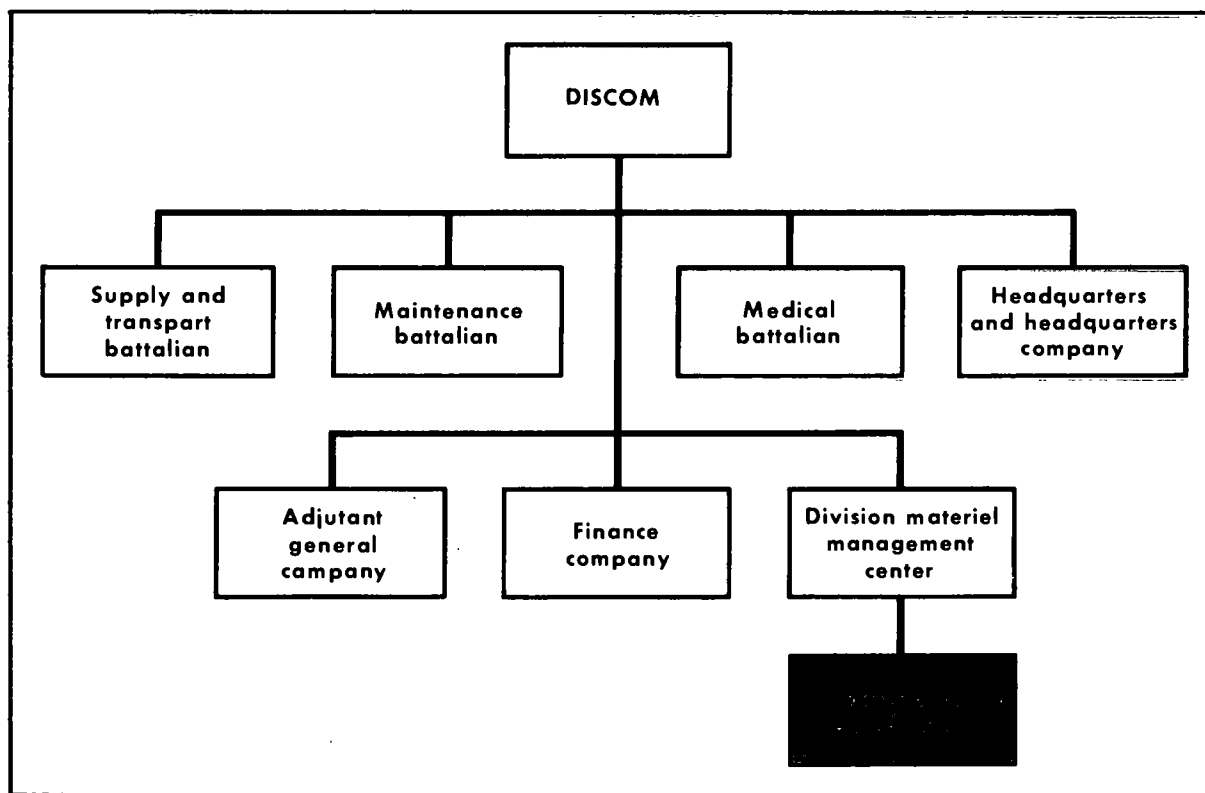
The armored-infantry-mechanized (AIM) divisions and the air assault division have a transportation staff consisting of a division transportation officer (DTO), a movement control officer and two movement specialists. The airborne division transportation staff differs only in that there are six movement

specialists. The DTO is a staff planner who normally works under the staff supervision of the division G4. The functions of the DTO are discussed in detail in chapter 5.



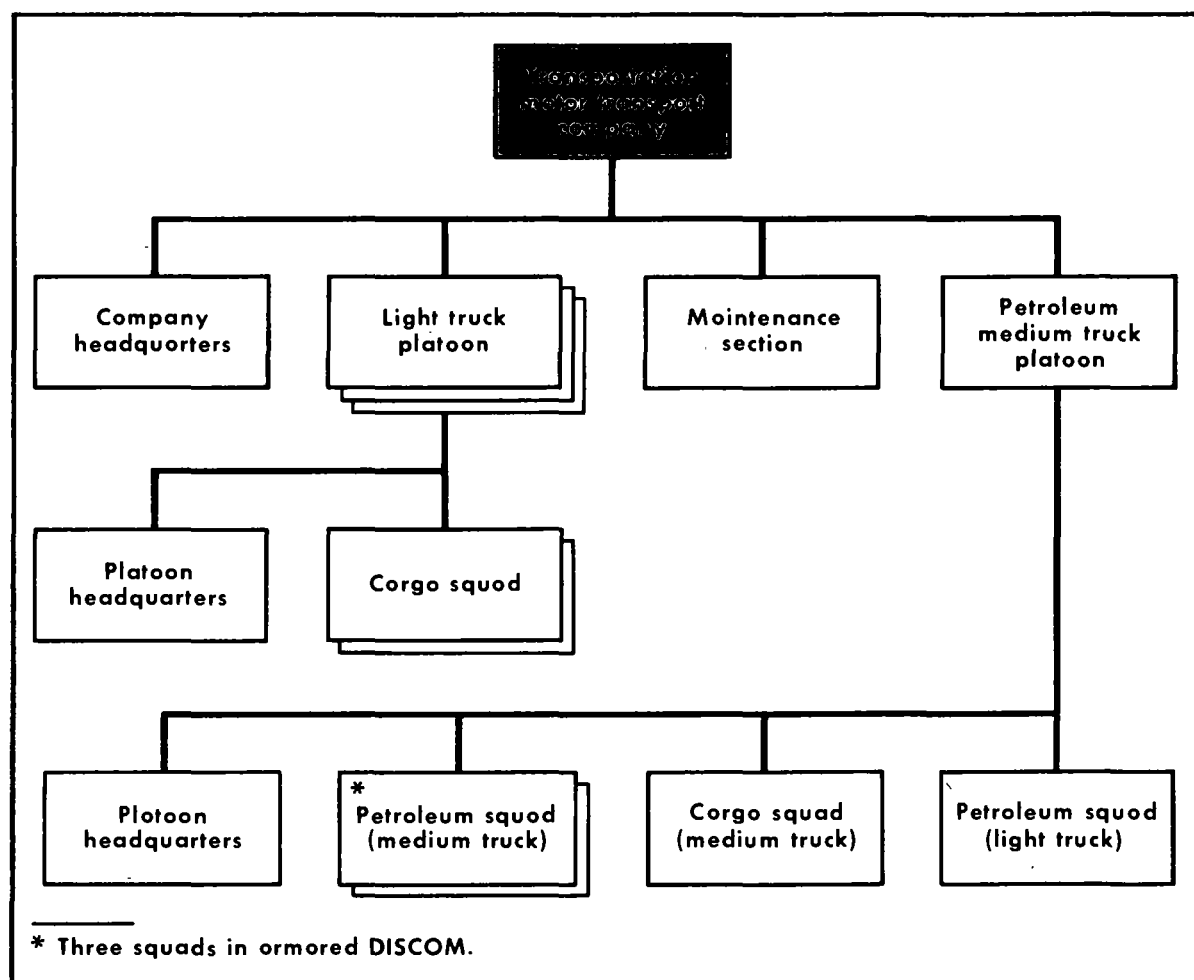
**DIVISION TRANSPORTATION ORGANIZATION**

The DISCOM also has a transportation staff. In the AIM divisions, there are an MCO and three movement specialists. The airborne DISCOM has an MCO and two movement specialists. The DISCOM transportation staffs are planners and operators. They control the use of the motor transport company and those division aircraft allocated to the DISCOM for logistical support. The MCO is an element of the division materiel management center (DMMC). Normally, the MCO is collocated with the DMMC, which generates the majority of the transportation requirements in the division. The functions of the DISCOM MCO are discussed in detail in chapter 5.

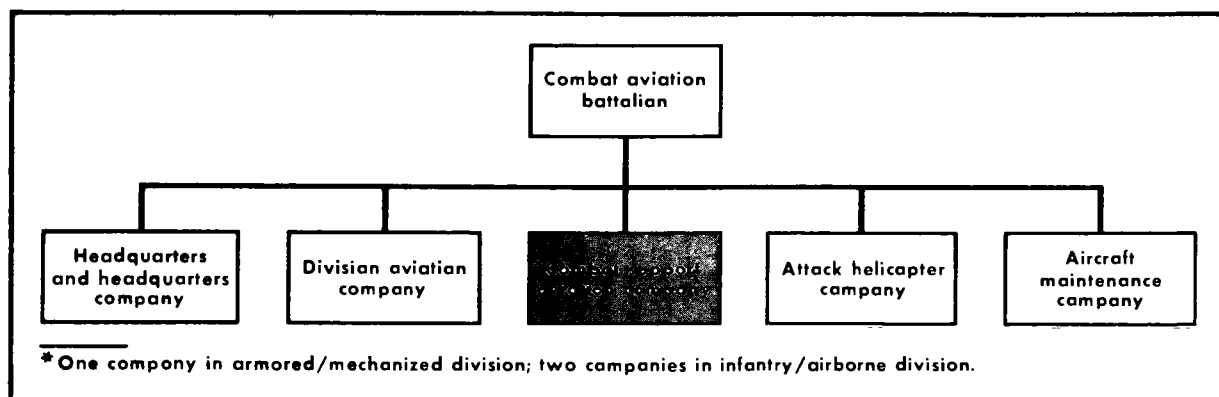


**DIVISION SUPPORT COMMAND ORGANIZATION**

AIM division transportation assets for providing combat service support to the division consist of a transportation motor transport company in the supply and transport battalion and a combat support aviation company in the combat aviation battalion.



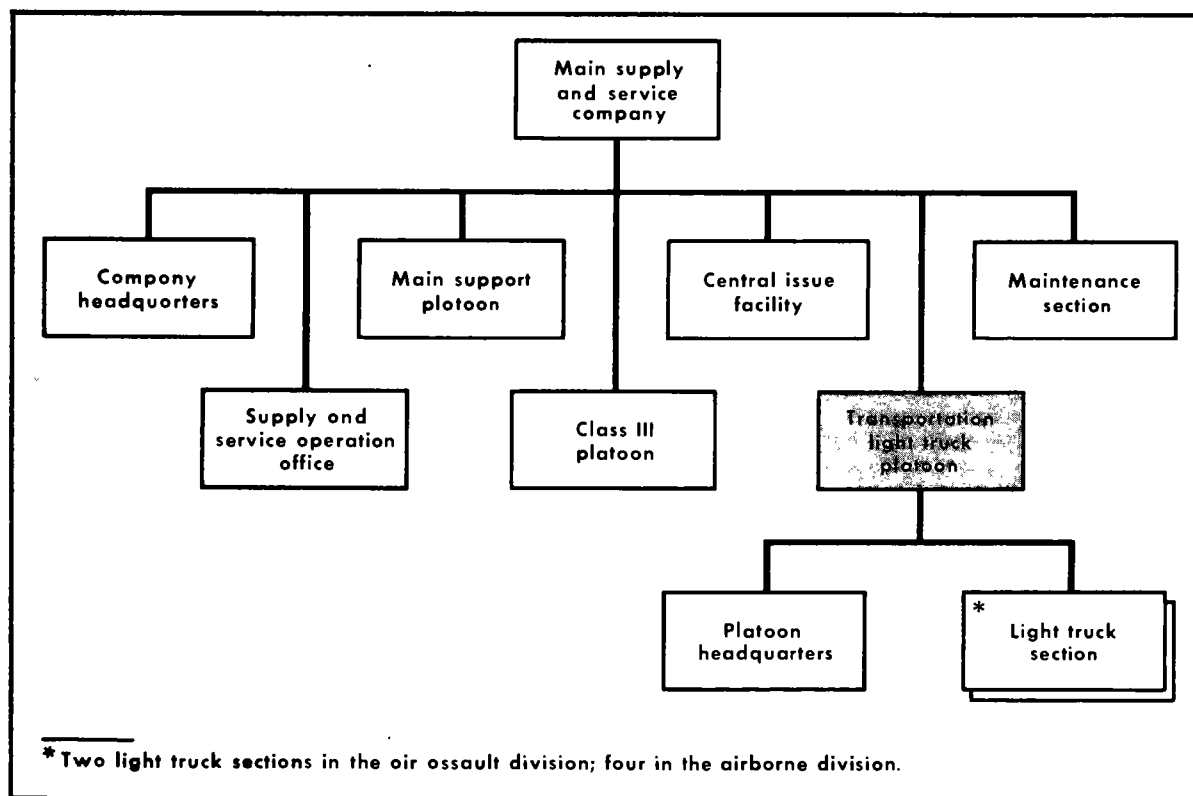
**TRANSPORTATION MOTOR TRANSPORT COMPANY,  
SUPPLY AND TRANSPORT BATTALION, AIM DIVISION**



### COMBAT AVIATION BATTALION, AIM DIVISIONS

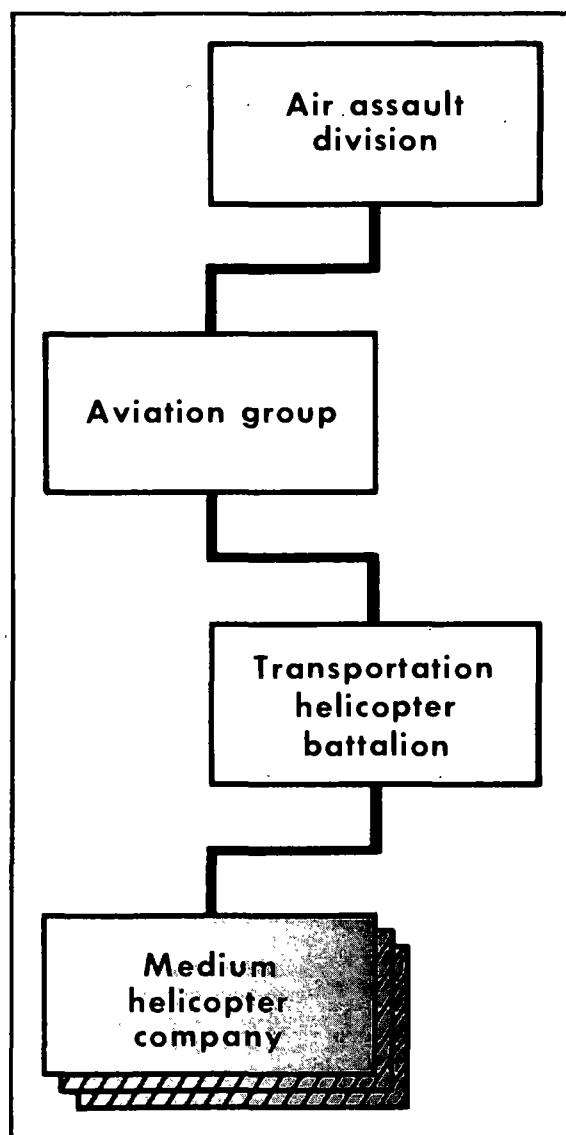
The motor transport company is equipped with cargo and petroleum trucks. The combat aviation company is equipped with utility helicopters.

The airborne division has a light truck platoon equipped with cargo trucks in the main supply and service (S&S) company of the S&S battalion and two combat support aviation companies equipped with utility helicopters in the combat aviation battalion.



### MAIN SUPPLY AND SERVICE COMPANY, SUPPLY AND SERVICE BATTALION, AIRBORNE AND AIR ASSAULT DIVISION

The air assault division has a light truck platoon in the S&S company, S&S battalion, and three medium helicopter companies in the aviation group. Refer to the applicable TOE for the number and types of equipment.



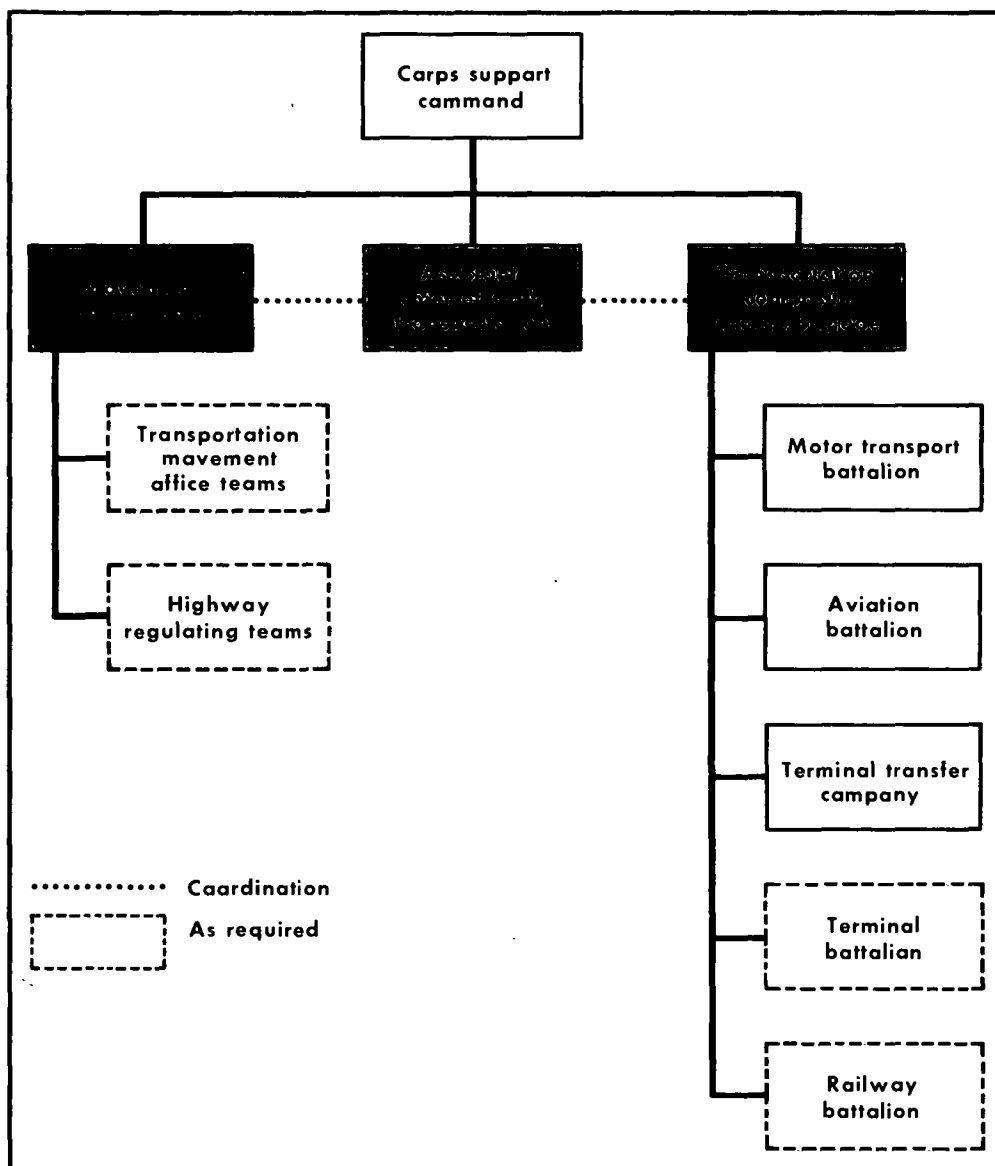
**MEDIUM HELICOPTER COMPANY, AIR ASSAULT DIVISION**

When the division requirements for transportation support exceed capabilities, the DISCOM MCO goes through the DTO to the corps movement control center (MCC) for additional support.

## CORPS TRANSPORTATION ORGANIZATION

The COSCOM transportation staff functions under the COSCOM assistant chief of staff for transportation. Movement control activities are accomplished by the MCC, which is assigned directly to the COSCOM. Transport mode operations--motor transport

and Army combat service support air transport--are provided by units attached to a transportation group or brigade. If required, terminal and rail battalions may be attached. Motor transport capability is a mix of light, medium, petroleum, and heavy-lift truck companies. Army air transport is provided by utility and medium cargo helicopters. The number and type of divisions and non-divisional units in the corps and geographical area will determine the composition of the transportation group/brigade in the COSCOM.



ORGANIZATION FOR TRANSPORTATION SERVICE IN THE CORPS



## SUMMARY

Each division is provided organizations with which to control and manage transportation resources for accomplishment of the combat service support mission. There is a DTO with a small section in the division headquarters to plan and provide guidance for overall transportation operations. In the DISCOM an MCO implements plans and provides guidance and control in use of the transportation assets. The motor transport company or the light truck platoon provides motor transport service. The aviation battalion or group provides air transport service. When division assets become fully committed and additional requirements remain, assistance is requested from corps transportation organizations.

Each mode of transport has distinct characteristics, advantages, and disadvantages. Of the modes available for transportation in any situation, select the mode that will most effectively accomplish the mission.



## CHAPTER 4

# PRINCIPLES AND FUNCTIONS

The division transportation system exists to support the fighting forces. The principles to be observed and the functions to be performed in accomplishing this mission are set forth in this chapter.

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## PRINCIPLES OF TRANSPORTATION

The transportation service is guided by a set of principles that apply to all modes of transport at all levels of the command structure. If the division transport capability is to be used to the maximum, these principles must be employed as a basis for all transportation operations:

- **Centralized Control of Assets.** Control of assets must be centralized under the commander charged with providing integrated logistical support to the division. The division support command (DISCOM) movement control officer (MCO) performs this function for the DISCOM commander.
- **Fluid and Flexible Movements.** The division system must be able to provide an uninterrupted flow of traffic and to adjust to changing situations. Effective use of all transport capability is impossible unless the capability exists to divert, reroute, or insure continuous movement of supplies to assigned units.
- **Maximum Use of Carrying Capacity.** This involves more than just loading each transport vehicle to its maximum carrying capacity. Transport capability that is not used one day cannot be stored to provide an increase in capability for subsequent days. Similarly, fully loaded transport equipment sitting idle is just as much a loss of carrying capacity as is a partially loaded vehicle moving through the system. Allowing for adequate maintenance and personnel rest, "keep them loaded and keep them moving."

Tactical situations may not always permit complete adherence to this principle. For example, vehicles or aircraft may be held for special missions or movement of special weapons. Such use, when directed by the commander, is considered an appropriate use of the vehicles or aircraft.

- **Regulated Movements.** Maintaining and supporting highly mobile forces greatly increases the requirement to

regulate movements as the volume of logistical and tactical traffic increases. Regulation and coordination are required to prevent congestion and conflict of movements. It is probable that in future wars US forces will have to share the available airfield, road, rail, and inland waterway capabilities with allied forces and civil commerce.

## PRINCIPLES OF MOTOR TRANSPORTATION OPERATIONS

Successful motor transport operations require adaptation of personnel and equipment to circumstances. Regardless of the size of the unit involved or the mission to be accomplished, certain fundamental principles must be followed in all motor transport operations.

Motor transport operations must be carefully planned and supervised to insure that all vehicles committed to a mission are used to their fullest extent. This eliminates unnecessary vehicle idleness.

The principle of economy requires analysis of the assigned mission and selection of the proper number and types of vehicles most suitable for accomplishment of that mission.

Standardization of methods of operation and use of personnel and equipment promote efficiency and economy in operation, maintenance, supply, and training. Each unit must follow standing operating procedures (SOP) prescribed by higher headquarters and institute unit SOP's when practical.

Minimum deadline time is achieved only through thorough training in and continuous supervision of vehicle operations and maintenance procedures at all levels. Commitment of the normally accepted 75 percent of assigned task vehicles will reduce the deadline-for-maintenance rate. This insures adequate time for organizational maintenance and repairs, as well as for normal operator and scheduled maintenance services.

Motor transport units are not directly responsible for loading and unloading vehicles. They can, however, advise motor transport users, thus helping to reduce loading and unloading times--and ultimately vehicle turnaround time. Close supervision of operations and liaison with supported units will aid in detecting and correcting improper loading and unloading procedures and/or developing improved methods of loading and unloading. This will promote greater efficiency in the transport operations.

## PRINCIPLES OF AIR TRANSPORT OPERATIONS

In the armored-infantry-mechanized (AIM) and airborne divisions, aircraft are generally used in combat service support only for tasks for which they are uniquely suited and are employed in accordance with the division commander's priorities and policies. In the air assault division, aircraft are the primary means of transport for tactical and combat service support. Generally, the principles of motor transport operations apply to air transport operations in addition to those listed below:

Army helicopters are employed in conjunction with surface transportation. They are used in situations where time and/or terrain may preclude surface modes from accomplishing a logistical mission.

Employment of Army helicopters in the transportation service is not intended to diminish Air Force responsibility in providing intratheater airlift for combat forces. Helicopters complement Air Force aircraft by operating in areas not accessible to fixed-wing aircraft. They also provide an extension to Air Force air line of communications by airlifting cargo or personnel from air terminals to final destination.



Air movements may be either scheduled or nonscheduled. Scheduled movements are usually accomplished when it is most efficient to airlift cargo on a repetitive basis. Nonscheduled air movements are generated by daily events that cannot be determined in advance. Unexpected resupply requirements, movement of replacements, or diversion of other transportation modes are typical of such situations.

## PLANNING FUNCTIONS

The division transportation officer (DTO) is a staff planner. He coordinates with the division G3 on tactical troop moves and operations and with the G4 on logistical and administrative matters. The DTO gives the DISCOM MCO broad policy guidance, basic plans and policies, staff guidance, and assistance in all transportation matters. Advance planning and continuing coordination with the general staff, brigades, combat support units, and DISCOM elements is essential. The DTO, in conjunction with the division G3 and G4, establishes transportation priorities and provides them to the DISCOM. Comprehensive SOP's are necessary to insure efficient use of transportation capabilities. The DTO's SOP should include guidance to users of transportation on what information they must provide when requesting transportation services.

## COORDINATION FUNCTIONS

Transportation operations require continuous coordination on the part of the DTO and the DISCOM MCO. The DTO must coordinate plans and actions with division general staff elements, the provost marshal, the division engineer, and others as required. Some functions that must be coordinated are selection of supply routes, transportation priorities, highway regulation, and transportation support from nondivisional sources. The DISCOM MCO must coordinate with users of transportation and transportation mode operators to insure that transport equipment is provided as required and is properly used. Coordination with forward battalions and brigades to which shipments are being made is necessary to insure delivery to the right location, to insure movement of retrograde equipment and deceased personnel, and to avoid congestion at the delivery site. The DISCOM MCO must coordinate with the S3 of the supply and transport battalion/supply and service battalion, for use of the motor transport assets.

## MOVEMENT MANAGEMENT FUNCTIONS

Effective movement management will achieve maximum use of a given resource with a minimum expenditure of that resource. Movement management in the division as performed by the DTO and the DISCOM MCO is discussed in detail in chapter 5.

## MODE OPERATION FUNCTIONS

The motor transport and aviation units organic to the division provide common-user transportation support to division units for tactical and logistical operations. Motor transport and aviation unit commanders control their vehicles and aircraft by organizing their operations to attain maximum efficiency from personnel and equipment. They insure that equipment is operated and maintained so as to provide the fullest support to using units.

## HIGHWAY REGULATION FUNCTIONS

The division commander is responsible for highway regulation within his division's area of operations. Regulation is carried out by planning, routing, and scheduling movements on the available road network in accordance with priorities established by the commander. The DTO accomplishes the highway regulation functions through informal meetings, as required, with representatives from the division G3, provost marshal, engineer, DISCOM MCO, and corps movement control center (MCC). Other division organizations and activities attend on an as-needed basis. Since the DTO performs highway regulation in the name of the commander, direct coordination with adjacent DTO's and MCC's should be authorized in the interests of time.

The DTO depends on information, recommendations, and services from other agencies. Information and recommended actions pertaining to personnel, intelligence,

tactical and logistical plans, and civil affairs comes from the appropriate general staff section. The overall plan for highway regulation is developed and coordinated with brigade commanders and staff agencies as appropriate. The extent of regulation depends on how much movement is expected and on the capacity of the road network. If little movement is anticipated, organizational level control may be enough. If heavy movement is anticipated, the DTO must prepare movement instructions. Types of movement normally scheduled by movement instructions include convoys, tactical and logistical moves, oversize or overweight vehicle movements, road movement of troops on foot, and movements over controlled routes. The purpose of highway regulation is to achieve maximum use of the available road network in support of the division.

## COMBINING TRANSPORTATION FUNCTIONS

An operational transportation system is the result of a combination of planning, coordination, management, transportation mode operation, and highway regulation. This combination of transportation functions provides the means to move--

- Ammunition to arm the weapon systems.
- Petroleum to fuel the weapon systems.
- Repair parts to fix the weapon systems.
- Troops to man the weapon systems.

Full support of the weapon systems on the battlefield is the only measure of effectiveness of transportation support.

## SUMMARY

If transportation capability and time are wasted, they are lost forever. Neither can be saved for use at a later day. The division transportation system must be under centralized control. Movements must be fluid and flexible to provide an uninterrupted flow of traffic. Maximum use of carrying capacity must be achieved, and movements must be regulated to prevent congestion and conflicts

on the road network. The DTO and the DISCOM MCO are responsible for advance planning and continuing coordination with the general staff, brigades, and DISCOM units. Available transportation modes are combined into a total system taking advantage of the best characteristics of each. Good management must be exercised by the DTO and DISCOM MCO in allocating transport capability by mode operators in employment of personnel and equipment, and by users of transportation in proper loading, unloading, and release of equipment upon completion of a mission. Use of the available highway network must be regulated to facilitate accomplishment of the division mission, but overregulation should be avoided.





# CHAPTER 5 **DIVISION TRANSPORTATION STAFF**

The transportation staff in all divisions consists of the division transportation officer and the division support command movement control officer. Transportation movement specialists assist these officers in carrying out their staff responsibilities.

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## DIVISION TRANSPORTATION OFFICER

The division transportation officer (DTO) is a member of the division commander's special staff. He may work for the chief of staff or under the administrative supervision of the division G4. However, he must have a degree of independence since he provides guidance on transportation matters to all other staff sections and commanders of the division and the division support command (DISCOM). He also provides the link between the division and the corps movement control center (MCC). In carrying out his planning and coordinating responsibilities, the DTO performs the functions detailed below:

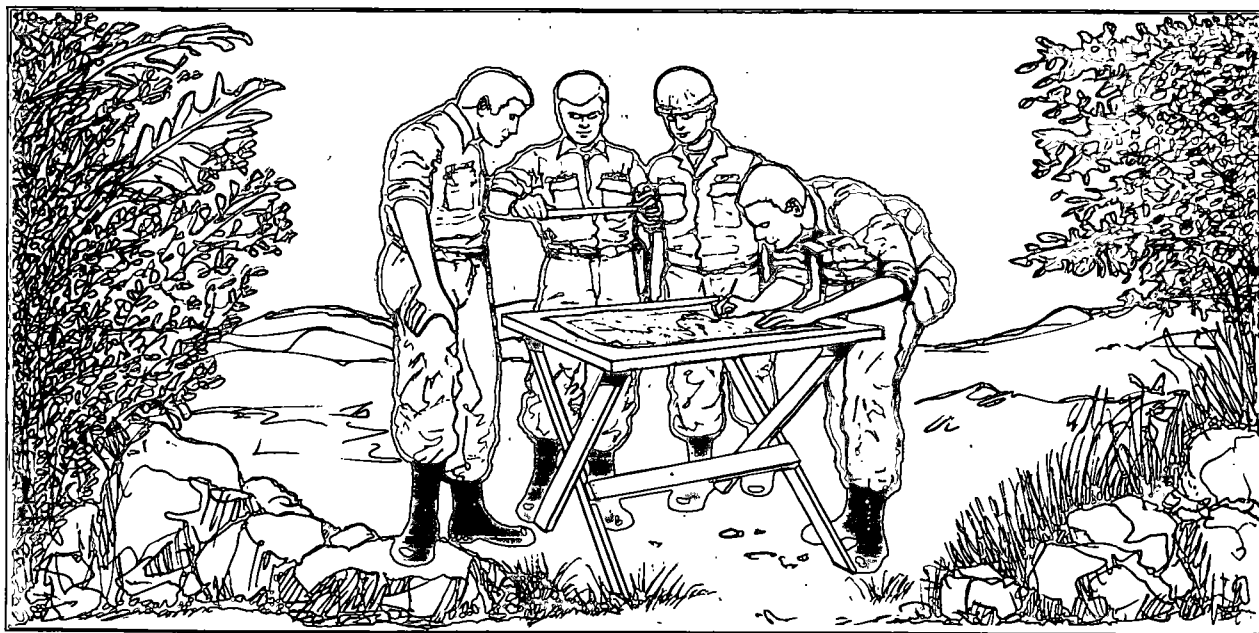
### ADVISES COMMANDER AND STAFF

The DTO is a staff planner and adviser. He advises the commander and the staff on transportation matters. One of his most important functions is recognizing potential problems and acting to prevent them. He must be prepared to recommend the use of division transportation capabilities. The DTO coordinates with the division G3 on tactical troop moves and operations and with the G4 on logistical operations. He provides the DISCOM movement control officer (MCO) with policy guidance, basic plans and policies, staff guidance, and assistance in transportation matters.

Advance planning is essential. The DTO maintains continuing coordination with the general staff, brigades, combat support units, and DISCOM elements. In conjunction with the division G3 and G4, he establishes transportation priorities and, upon approval by the commander, provides them to the DISCOM. Comprehensive standing operating procedures (SOP's) are necessary to insure efficient use of transportation capabilities. The DTO SOP should include guidance to users of transportation on the type of information needed and the format required when they request transportation services.

### PROVIDES TECHNICAL ASSISTANCE

The DTO is the focal point for transportation technical guidance and assistance to the division. He provides technical assistance to the G3 for planning tactical motor marches and for preparing movement orders and march tables used for motor marches. Since road space is usually limited in the division area, its use has to be carefully planned and controlled. Congestion on the road network presents good targets to hostile weapons and prevents efficient use of the road network. The DTO should help the division staff in planning for strategic deployment of the division. This relates directly to contingency planning and unit movement planning.



Planning should provide for movement of the division by various combinations of air, rail, highway, and water transport. Technical assistance should be given to divisional units for the transportation portion of unit movement training. This training should include preparing vehicles for transport, loading and securing unit cargo and equipment in the cargo space of unit vehicles, and loading and securing vehicles on railcars and in Air Force aircraft. The DTO should provide technical assistance to the division G3 and G4 for selection of main and alternate supply routes in the division area. This requires close coordination between the division and corps transportation officers to avoid conflicts with the traffic circulation plans of both headquarters.

### REGULATES HIGHWAY TRAFFIC

Before the DTO can begin regulating traffic, he must prepare a highway regulation plan for the road network of the division area. This is a written staff plan concerning the capabilities of the existing road network to handle the traffic that must move over it. The plan is started well in advance of actual operations. The size of the command, the road network, the logistical situation, the mission, and the disposition of tactical units must be taken into account in its development. Planning is fully coordinated with other staff agencies and among all echelons of commands concerned (corps and brigades).

Highway regulation planning is based on several factors as follows:

- Information on operational plans for the command (including civil affairs officers' plans); policies, priorities, and restrictions imposed by higher headquarters; and plans for logistical support of the command.
- General route information such as surface or pavement type, alignment, surface and width of shoulders, location and characteristics of bypasses or detours around limiting physical features and potential hazards, highway network distances, driving times, and highway capabilities. Alternate routes are considered, as well as critical points along routes where ambush or other enemy action might be encountered.
- Traffic information such as traffic density and anticipated volume by vehicle type, variations in traffic flow over sections of routes during specific periods, need for traffic patrols, and location of sensitive areas such as potential bottlenecks, intersections requiring control, or railroad crossings requiring guards.
- Availability of communications equipment.

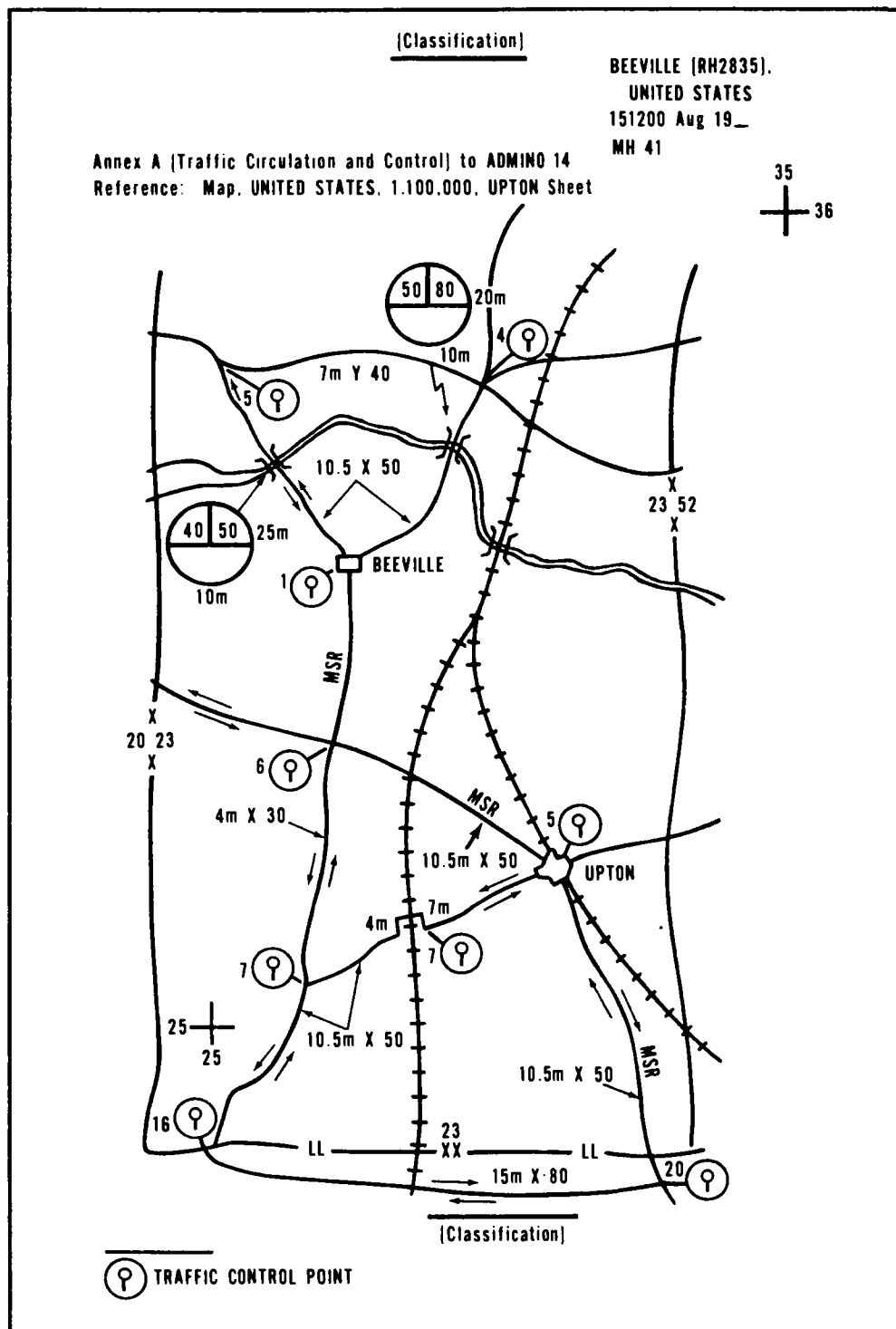
Information required for planning is derived essentially from the following sources:

- The assigned mission, which may be a separate logistics mission or an extension of the tactical mission.
- Current estimates, the administrative order, and administrative plans.
- Reconnaissance as thorough as the situation and time permit. Preliminary information on the road network is generally obtained from maps, aerial photographs, local traffic authorities, intelligence reports, and transportation intelligence studies. This information is verified and supplemented by ground reconnaissance and, when practical, by aerial reconnaissance. Ground reconnaissance parties may be composed of engineer and/or transportation personnel. The route reconnaissance overlay furnished by the engineer officer provides detailed information on characteristics of the road network.

The traffic circulation plan is prepared by the DTO. Normally prepared in the form of an overlay, it provides highway regulation information to highway users. The traffic circulation plan includes the following information:

- The most restrictive route features and route designations.
- Direction of movement over each route.
- Location of boundaries, units, highway regulating points, traffic control points, and principal supply points.
- Major geographic features and light lines, if applicable.

The accompanying sketch graphically portrays such a plan. FM 5-36 gives detailed instructions for preparing a traffic circulation plan.



EXAMPLE TRAFFIC CIRCULATION PLAN

A traffic control plan which implements the traffic circulation plan is prepared by the division provost marshal, normally in the form of an overlay. It provides for enforcement by the military police of the provisions of the traffic circulation plan, traffic rules, and traffic regulations.

## **ANALYZES PLANS AND ORDERS**

Almost all operational and logistical plans and orders will have some impact on division transportation resources. Plans from division headquarters and from higher and lower headquarters should be analyzed to insure that they can be supported. If after careful analysis it is determined that there is a transportation shortfall, the DTO must try to resolve the problem if he can. If he cannot do this, he must recommend to the commander and staff the action required to support the plan.

## **OTHER RESPONSIBILITIES**

There are many other functions that a DTO may be called on to perform depending on the division's mission, its location, its SOP, and requirements of the commander. These functions, some of which are listed below, may not apply to every DTO.

- Determine quantitative transportation requirements for movement of personnel and cargo when other than routine moves are requested. This is done so that the commander can be informed of adverse effects that might occur as a result of such requirements.
- Prepare the transportation portion of logistics plans and orders and the logistics annex to operations plans and orders.
- Establish movement control procedures and provide guidance to the DISCOM MCO for managing the division transport capability. This must be closely coordinated with DISCOM. Movement control means planning, routing, scheduling, and controlling personnel, equipment, and supply movements over lines of communications.
- Prepare the transportation portion of division contingency plans. Mission and location will make the scope of these plans different for each division. However, all divisions will require transportation in support of tactical and logistical operations.
- Review unit movement load plans and provide guidance and assistance in their preparation. Division SOP's may vary, but they usually contain load plans for movement by rail, air, and ocean transport.
- Establish marshaling areas and procedures for unit movements by each mode of transport available to the division which is likely to be used to deploy the division or elements of the division.
- Establish liaison with transportation management and operating activities such as the corps MCC, Transport Movement office (TMO), Air Force airlift control element, and others as appropriate.
- Review, analyze, and interpret transportation intelligence data, coordinating closely with the division G2. Update transportation plans based on current intelligence data.
- Establish control procedures for monitoring implementation of transportation plans and directives. Maintain data on the status of division transportation assets. The degree of detail depends on the division SOP but, as a minimum, the DTO should know what capability is available for use. There has to be continuous coordination and cooperation between the DTO and the DISCOM MCO. The accompanying chart exemplifies the type of information needed to provide vehicle status.

[illegible]

### SUGGESTED FORMAT FOR MAINTAINING VEHICLE STATUS INFORMATION

- Approve or disapprove convoy clearances within the division area. Submit requests for convoy clearances outside the division area to the appropriate approving authority (corps MCC or TMO). Coordinate with higher, lower, and adjacent headquarters for--
  - Convoy movements coming into or leaving the division area.
  - Airlift support.
  - Transportation support from corps.
  - All other transportation matters as required.

The charts shown here give the type of information needed to record highway convoy clearances and air resupply missions. The format may be modified to meet local requirements.

HIGHWAY CLEARANCE								
MOVEMENT NUMBER	DATE	UNIT	NUMBER OF VEHICLES	FROM	TO	ROUTE NUMBER AND START POINT TIME	RELEASE FROM ROUTE AND RELEASE POINT TIME	REMARKS
							SAMPLE	

**SUGGESTED FORMAT FOR MAINTAINING HIGHWAY CLEARANCE INFORMATION**

AIR RESUPPLY							
AIRCRAFT	MISSION NUMBER	TAIL NUMBER	ORIGIN	DESTINATION	ESTIMATED TIME OF ARRIVAL	CARGO	WEIGHT
					SAMPLE		

**SUGGESTED FORMAT FOR MAINTAINING AIR RESUPPLY DATA  
ON AIR RESUPPLY MISSIONS**

- Provide highway regulation in conjunction with representatives of the host nation, corps MCC, division engineer, provost marshal, and G3. Once planning is completed, the following functions are performed:

- Maintain a situation map of the military road network showing current data on restrictions, obstructions, detours, defiles, capacities, and surface conditions. Enemy activities affecting the highway network are also depicted.
- Implement established priorities for highway movements in accordance with the commander's instructions.
- Receive and act on requests for highway routing and schedules of movements from units within the division area.
- Prepare and issue traffic circulation maps.
- Make necessary changes in routings, schedules, and priorities, as dictated by the tactical and intelligence situation. Inform appropriate activities of changes.
- Select and identify evacuation routes for rearward movement out of the division area.
- Receive, record, and disseminate, as required, information from other traffic headquarters on highway movements into or out of the division area.
- Coordinate with other traffic headquarters for movements terminating outside the division area.

- In coordination with the division engineer, develop repair priorities for the road network in the division area.

## DISCOM MOVEMENT CONTROL OFFICER

DISCOM MCO is a member of the DISCOM commander's staff and is assigned to the division materiel management center (DMMC). The MCO provides movement management support through control of employment of the division's motor transport assets for combat service support. Movement management is planning, coordinating, and controlling the allocation and use of available transportation resources in accomplishing the commander's movement requirements. The commander charged with providing combat service support exercises centralized control of assets. In the divisions, the DISCOM commander exercises this control through the MCO.

There must be close and continuous coordination among the MCO; the DISCOM security, plans, and operations officer; the DTO; the DMMC; and the S3 of the supply and transport battalion in the AIM divisions, of the supply and service battalion in the airborne division, and of the airborne division, aviation group in the air assault division. The MCO is the link between the division transportation mode operators and the division users of transportation. Because of the coordination requirements, the MCO must have a degree of independence from the DMMC in performing his transportation functions. The MCO's functions include the following:

- Advising the DISCOM commander and staff on transportation matters.
- Controlling commitment of the supply and transport (S&T) battalion's transportation motor transport company task vehicles for combat service support within the division. This requires close coordination with the S&T battalion S3, who receives commitments from the MCO and passes them to the motor transport company.



- Maintaining data on the current status of available and the committed division transportation assets. The MCO and the S&T battalion S3 must agree on a simple procedure that will provide data to the

MCO for this purpose. The vehicle commitment chart shown here, as well as the charts shown earlier in this chapter, exemplify the type of information needed.

VEHICLE COMMITMENT											AS OF _____
COMMITMENT NUMBER	DATE	PRIORITY	ORIGIN		DESTINATION		CARGO	TYPE	VEHICLES		REMARKS
			LOCATION	REPORT TO	LOCATION	REPORT TO			UNIT	NUMBER	

#### SUGGESTED FORMAT FOR MAINTAINING VEHICLE COMMITMENT DATA

- Insuring that established movement priorities are followed. When transportation requirements exceed capabilities, the MCO submits a request to the DTO for additional capability. The DTO requests additional capability from the corps MCC. If the corps cannot provide the required support, the MCO may request a reevaluation of priorities by the division DTO, G3 and G4. It may become necessary to adjust priorities until the transportation capability shortfall is overcome.
- Coordinating with the division air traffic coordinator for combat service support aircraft flights in the division support area and to and from the brigade areas. Flights going into brigade areas

should be coordinated with the appropriate forward area support coordinating officer (FASCO) or the brigade S4 where there is no FASCO.

- Coordinating arrival of personnel replacements and resupply movements with the FASCO in the receiving brigade and with the receiving supply and personnel activities in the division support area. This will insure that the receiving activity can handle the movement and will avoid congestion from transport equipment accumulating in the delivery area.
- Monitoring the status of containers and MILVAN's in the division area to insure their rapid return to the transportation

system. Containers and MILVAN's should not be sent to units that do not have the capability to unstuff them. Inability to unstuff containers is usually due to a lack of materials handling equipment (MHE) in the forward service elements and combat units. In some situations it may be more advantageous to send loaded containers to forward units along with the necessary MHE and operators to unstuff the containers. Normally containers should go no farther forward than the DISCOM area.

- Providing mobility intelligence data to DISCOM security, plans, and operations and to the DTO. These data are usually obtained through contact with transport mode operators, dispatchers, truck drivers, pilots, and users of surface and air transportation facilities. Mobility intelligence data describe limitations, if any, on the use of the transportation systems.

The DMMC manages all materiel for which the DISCOM is responsible, with the exception of class VII (medical) supplies. The DMMC places requirements on the DISCOM MCO for transportation required to support the DISCOM materiel mission. Required transportation will usually be provided from division assets and sometimes from corps assets. The DISCOM MCO provides interface between the DMMC (user of transportation) and the corps MCC (supporter of transportation) through the DTO. Systematic and detailed coordination is required to assure that the transport equipment needed for a given mission is in place on time and in the correct location. This prior coordination will reduce transportation delays, thus increasing use of transport assets. The DMMC and the corps MCC coordinate through the DISCOM MCO the receipt of shipments by consignees in the division and corps areas for forward and retrograde movements. This insures that receiving and unloading capabilities of consignees are not exceeded. For example, a DISCOM could receive shipments by intratheater Air Force aircraft, by theater army and corps aircraft, and by motor transport. Simultaneous, uncoordinated arrival of shipments by these mode combinations could

have undesirable results. The corps MCC also coordinates with the DTO for divisional transportation policies and requirements for movements from corps area into division areas.

## SUMMARY

The functions of a DTO are many and varied and are directly influenced by the division location, the mission, and the commander's requirements. All functions discussed in this chapter will not necessarily apply to all divisions. The reader must determine which functions apply to a given situation. The DTO is a planner, coordinator, and adviser for transportation operations in the division and provides interface with the corps MCC. The DTO provides policy guidance, basic policies, staff guidance, and assistance to the DISCOM MCO. Almost everything the division does involves transportation to some degree. The DTO is the transportation technical guidance and assistance focal point in the division. Use of the highway network in the division area must be regulated to achieve maximum use of the network. A highway regulation plan is prepared by the DTO. The DTO must be aware of what support is available and how to get the support. Nondivisional transportation support is normally obtained by submitting the requirement to the corps MCC or the designated TMO. Operational and logistical plans and order are analyzed by the DTO for impact on the transportation capability of the division and as a source of information for planning purposes. An efficient and effective transportation system does not just happen. Good planning must be done in advance, and operations must be conducted according to that plan.

The DISCOM MCO, asset manager for the DISCOM commander, is responsible for providing combat service support to the division. The MCO is the link between the transportation operator and user. The MCO is the transportation adviser to the DISCOM commander and staff.

Coordination and a good working relationship among all who provide input to the transportation effort are essential if the transportation mission is to be fulfilled in a timely and effective manner.

## CHAPTER 6

# HOW TO SUPPORT

The purpose of the logistics system is to support the weapon systems and the soldiers that operate them. Transportation is the means of distribution within the logistics system. Normally the divisions do not carry a large reserve of supplies. It is thus vital that the transportation and distribution operations be responsive to the demands placed on them. Distribution patterns vary, depending on class of supply and method of delivery. The division materiel management center (DMMC) directs receipt, storage, and distribution of supplies and equipment within the division. The division support command (DISCOM) movement control officer (MCO) works in close coordination with the DMMC in carrying out the transportation mission. Supplies are distributed by a combination of supply point and unit distribution operations. In supply point operations the user goes to an established supply point and picks up supplies with user transportation. In unit distribution operations supplies are delivered to a unit by transportation belonging to the DISCOM, the corps support command (COSCOM), or some other outside source.

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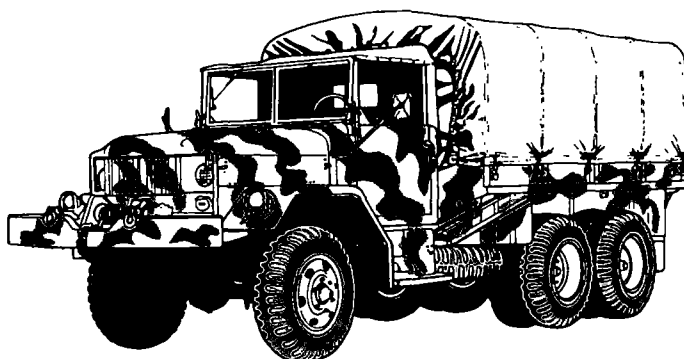
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## MOTOR TRANSPORT RESOURCES

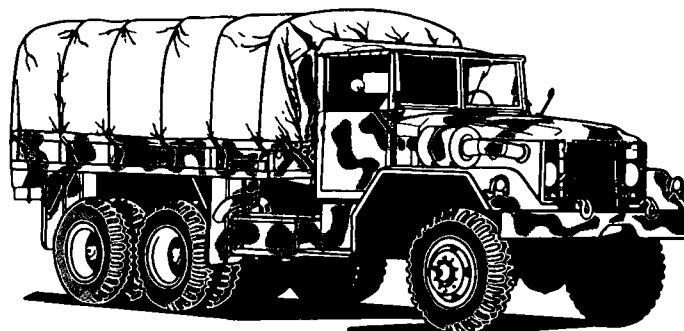
In the armored-infantry-mechanized (AIM) divisions, motor transport is provided by the transportation motor transport company of the supply and transport (S&T) battalion, DISCOM. In the airborne and air assault divisions, limited motor transport can be provided by the light truck platoon, main supply and service (S&S) company, S&S battalion, DISCOM. The transportation motor transport company is equipped with 2½-ton cargo trucks, 1½-ton cargo trailers, 5-ton truck tractors, 12-ton stake and platform cargo semitrailers, and 5,000-gallon tanker semitrailers. The light truck platoon is equipped with 2½-ton and 5-ton cargo trucks and 1½-ton trailers. The number of trucks and trailers varies depending on the type of

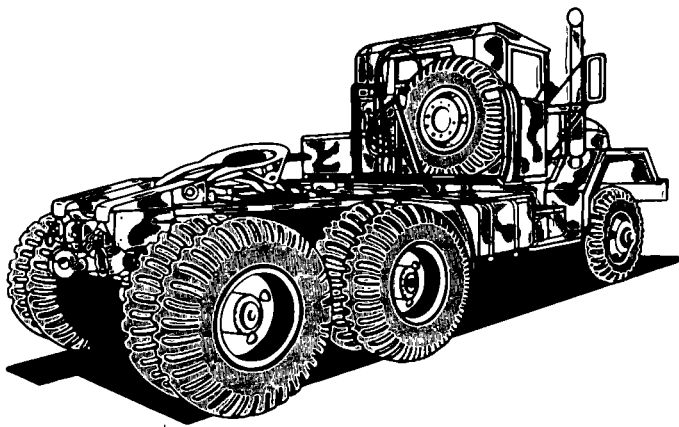
division. Refer to the applicable table of organization and equipment (TOE) for specific numbers and types. Another source of motor transport in the division not to be overlooked is the cargo and ammunition trucks of each company, troop, and battery and of the battalion and squadron support platoons. Since these trucks are unit vehicles engaged in day-to-day support of the units, their use for any tasks should be considered only under extreme circumstances. Such use must be approved by the division commander or his designated representative. Motor transport resources available from COSCOM depend on the composition of the COSCOM transportation group or brigade. Normally, COSCOM will be able to provide trucks of the type organic to the division plus heavy lift truck support.

**CARGO TRUCK,  
2½-TON, M35A2**

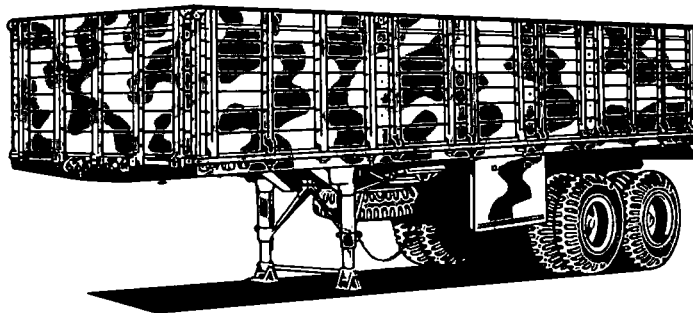


**CARGO TRUCK,  
5-TON, M814**

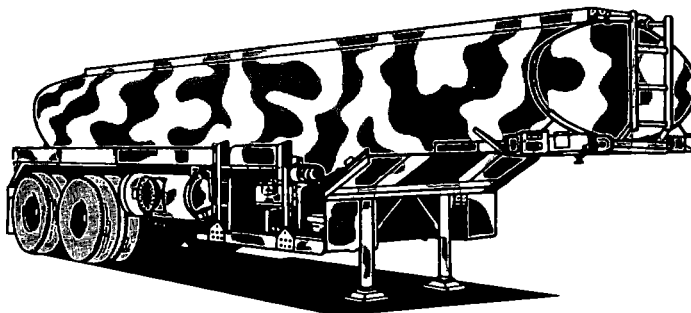




**TRUCK TRACTOR,  
5-TON, M818**



**SEMITRAILER, STAKE,  
12-TON, M127A2**



**FUEL TANK SEMITRAILER,  
5,000-GALLON, M131A4C**

## COMBAT SERVICE SUPPORT TASKS FOR MOTOR TRANSPORT

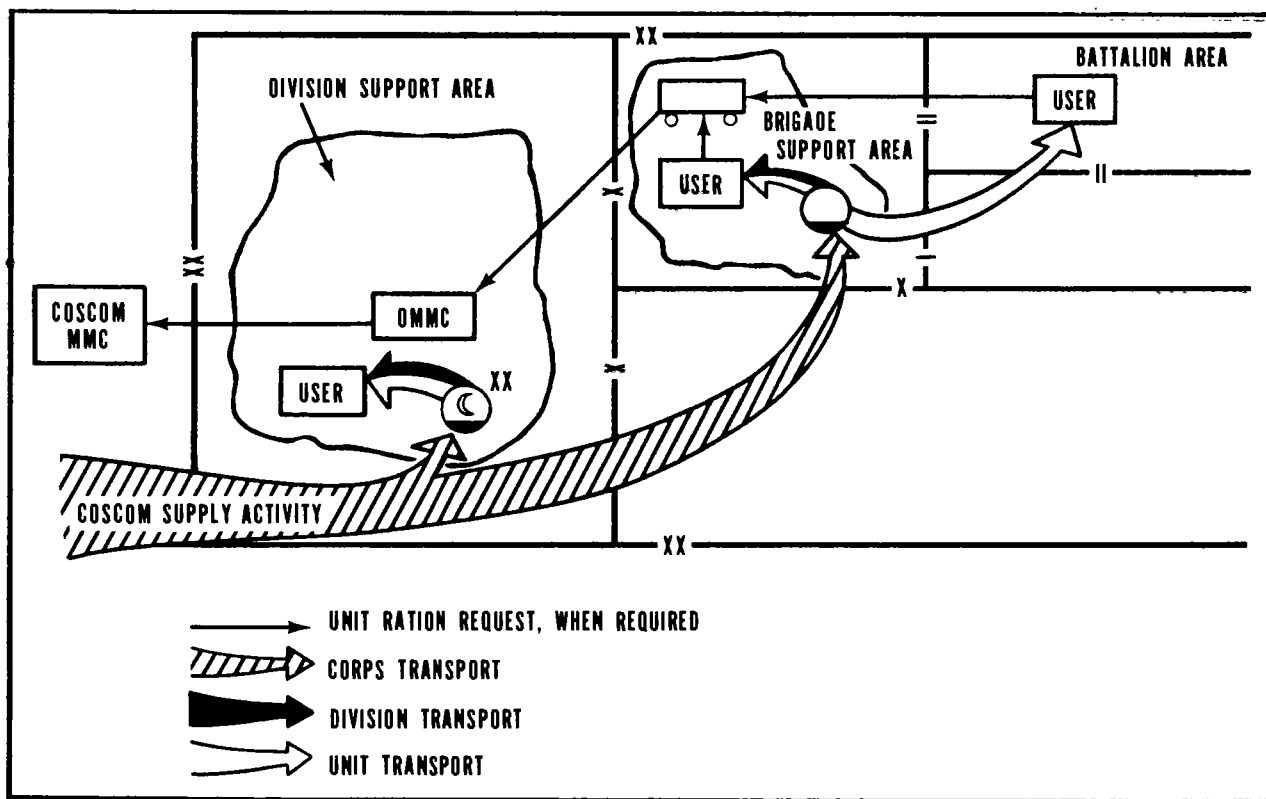
The DISCOM transportation motor transport company provides motor transport to meet most division requirements for transporting supplies and equipment. These requirements include the following:

- Distribution of all classes of supplies except class V (ammunition) and class VIII (medical). During emergencies when no other transport is available, class V may be distributed.
- Transport of division reserve supplies.
- Displacement of division headquarters.

- Relocation of the forward supply platoons of the S&S company.
- Support of mobile distribution points.

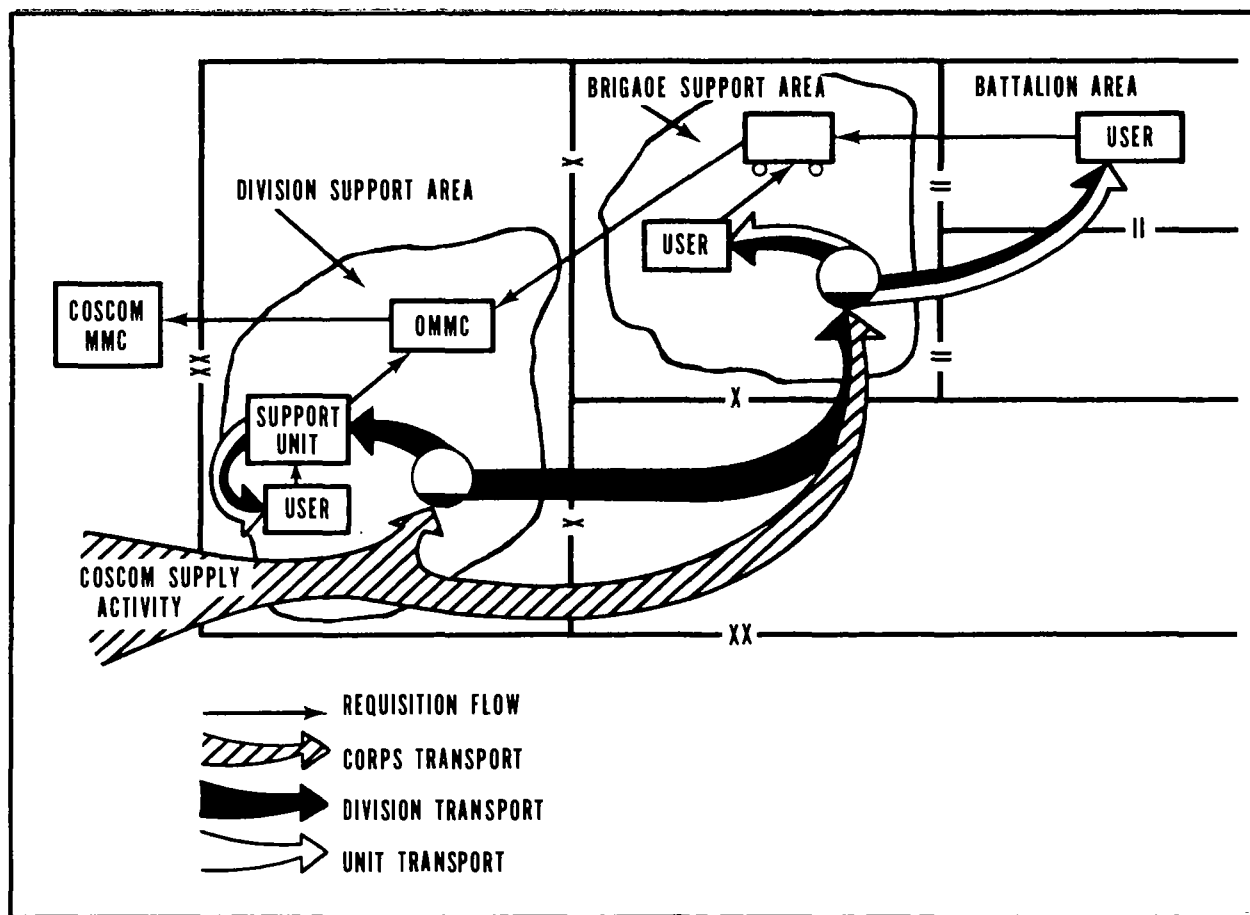
The primary mission of the motor transport company will usually be distribution of supplies and equipment:

Class I (subsistence) supplies are normally transported by COSCOM to forward class I distribution points where they are picked up by units (battalions) with organic transportation. When the tactical situation permits, delivery may be made directly to using units by DISCOM transportation. This method of supply distribution, as well as all other methods, is subject to the SOP's established by COSCOM and the divisions being supported.



**FLOW DIAGRAM FOR REQUESTS AND DELIVERY OF CLASS I SUPPLIES, ALL DIVISIONS**

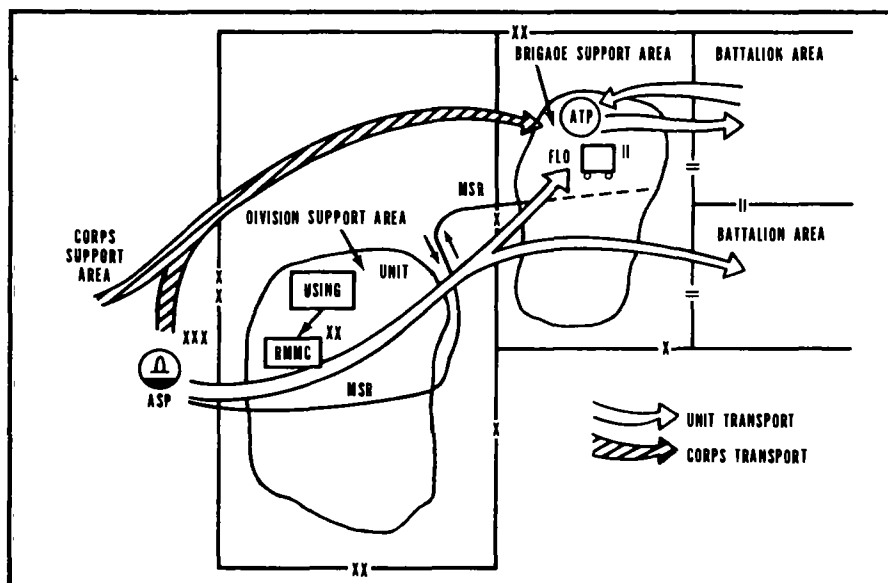
Class II (general supplies and equipment), IV (construction materials), VI (personal demand items), VII (major end items), and X (nonmilitary support items) supplies are transported by COSCOM to the division support point in the division support area. Large end items (tanks, artillery, trucks, etc.) are delivered by COSCOM to specific destinations within the division as requested by the DMMC. Class III (bulk fuel) is normally transported by COSCOM to AIM division distribution points in the division and brigade support areas, where the fuel is transferred to division equipment. A combination of unit and supply point distribution is used to support the forward units. Class III supply in the airborne and air assault divisions is delivered by airdrop or air landing using COSCOM and division helicopters.



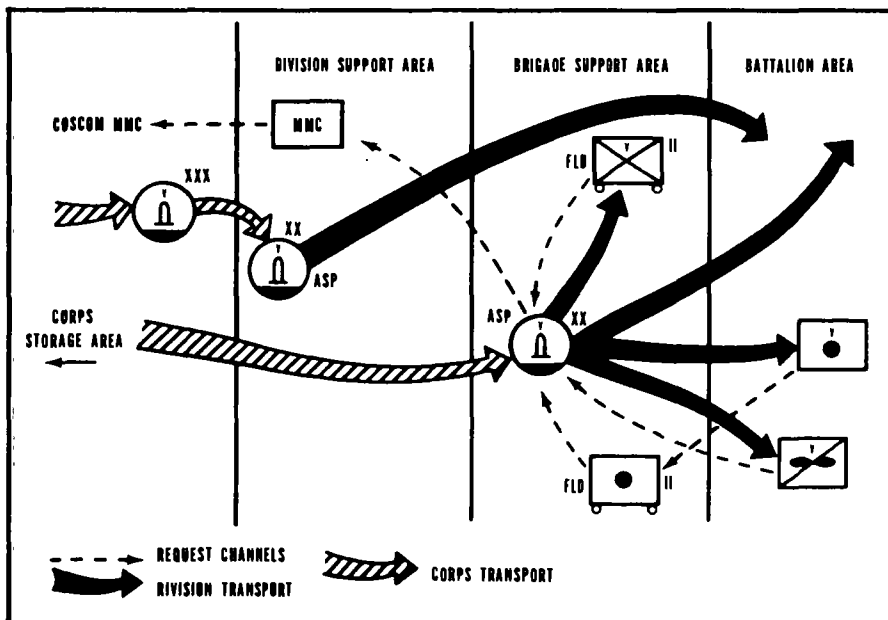
FLOW DIAGRAM FOR ALL CLASSES OF SUPPLIES (EXCEPT I, V, AND VIII) ALL DIVISIONS

In the AIM divisions, class V (ammunition) supply is normally a supply point operation. Ammunition vehicles of the using units go to the COSCOM ammunition supply points (ASP's). During offensive operations COSCOM ASP's may be established in the division support area. COSCOM transportation may deliver selected items direct to using units. It may sometimes become necessary to commit DISCOM transportation to support class V requirements. Ammunition transfer points (ATP's) may be established in the

brigade rear area to reduce travel distances of using unit resupply vehicles. Selected high usage items will be transported to an ATP on corps transport equipment, where they will be transferred to the user's resupply vehicles. In airborne division, ASP's are established in the DISCOM area. In the air assault division, ASP's are located in the division and brigade support areas where COSCOM transport makes delivery. Division aircraft deliver class V from these ASP's to using units.



**FLOW DIAGRAM FOR CLASS V SUPPLIES IN AIM DIVISIONS**



**FLOW DIAGRAM FOR CLASS V SUPPLIES IN THE ASSAULT DIVISION**



Class VIII (medical) supplies are distributed through medical channels. Battalion aid stations send requests to their supporting medical company by ambulances evacuating patients to the rear. Returning ambulances deliver supplies.

Class IX (repair parts) supplies are managed by the DMMC class IX supply section. The maintenance battalion (aviation battalion for aircraft parts) receives and distributes repair parts required by its maintenance activities.

Evacuation of unserviceable equipment is also a mission of the DISCOM motor transport company. Heavy equipment such as tanks is evacuated from the division area by COSCOM heavy equipment transporters.

Although not a part of the distribution system, the transportation system provides transport for evacuating deceased personnel. Trucks and aircraft returning to the rear are normally used for this requirement.

## AIR TRANSPORT RESOURCES

Air transport, including limited combat service support airlift, is provided by the combat aviation battalion in the AIM and airborne divisions. The air assault division has an organic aviation group that provides combat service support airlift. The combat aviation battalion in the armored and mechanized divisions have a combat support aviation company equipped with utility helicopters of the UH-1 series. The combat aviation battalion in the infantry and airborne divisions have two combat support aviation companies equipped with the UH-1 series helicopters. The aviation group in the air assault division has three medium helicopter companies equipped with CH-47 series cargo helicopters. Refer to the applicable TOE for specific numbers and types of helicopters in these units. Air transport resources available from the corps depend on the composition of assigned or attached aviation organizations. The corps will usually be able to provide aircraft of the same type as that organic to the divisions.

Another source of air transport is the cargo aircraft of the US Air Force element assigned to provide intratheater airlift support. Tactical airlift can provide airdrop and airland supply missions using C-130 and C-141 aircraft. DTO's, MCO's, and their staffs should be familiar with the major items of the Air Force cargo handling system used with their cargo aircraft. These items are the 25K and 40K loaders (K = thousand), the 88 — 108-inches cargo pallet, and cargo nets used to secure cargo to the pallets. The total system is commonly referred to as the 463L cargo handling system. Division elements must handle cargo pallets and nets carefully and return them to Air Force control as rapidly as practical.

## COMBAT SERVICE SUPPORT TASKS FOR AIR TRANSPORT

Combat service support tasks for air transport are similar to those for motor transport. In the AIM and airborne divisions, most of the airlift capability allocated for combat service support will be used to transport ammunition and fuel. In the air assault division, air is the primary means of transport for all requirements except when nondivisional transportation support is provided. The US Air Force element that provides intratheater support may also be tasked to provide airdrop and airland resupply mission support.

## FORWARD ARMING AND REFUELING POINT (FARP)

The FARP is established to provide fuel and ammunition in support of the division's attack helicopter maneuver units engaged in combat. The FARP increase the helicopter's time in the target area and reduces turnaround time for refueling and rearming. The FARP is a temporary facility established for specific missions. Ideally, it is located 17 to 25 kilometers to the rear of the line of contact or forward edge of the battle area. Organized to support one air cavalry troop or one attack helicopter company, the FARP will normally be under control of the troop or company commander. However, tactical situations may require additional class III and V support from the parent battalion, the DISCOM, or the COSCOM.

## RAIL AND WATER TRANSPORT

Although not organic to the division, rail and water transport must not be overlooked. Rail and water transport is operated by US, allied, or host nation units. These modes are best used to move large quantities of bulk cargo such as ammunition and fuel. If rail or waterways extend from the rear forward to the division area, supplies will probably be shipped to the division by these modes. Returning rail or water transport could transport unserviceable equipment to the rear. Where these modes are available, they should be used to the maximum extent practical to augment the division's organic motor and air transport capability.

### SUMMARY

It has been said that transportation is the spearhead of logistics. Another way of saying this might be: getting the right things to the right place at the right time in a usable condition is what transportation is all about. Motor transport is the primary means of supply distribution in the AIM division. The helicopter is the primary means in the airborne and air assault divisions. Additional motor and air transportation support is provided by COSCOM units. Successful transportation operations, by whatever mode, require that personnel and equipment adapt to the circumstances. Certain fundamental principles must be followed:

- Operations must be planned and supervised.
- Plans must be simple and easy to understand.
- The most suitable equipment available for a task is the type to use.
- Operations should be standardized to the extent practical.
- Deadline and idle time of transport equipment must be minimized.

- Rail and water when available is operated by US, allied, or host nation units. Regardless of the methods of distribution or the transport modes used, the ultimate goal is responsive and continuous support of the weapon systems on the battlefield.

## CHAPTER 7

# HOW TO GET TRANSPORTATION SUPPORT

Requirements for transportation support can originate at any level within the division. Requests for support must provide all the information necessary to allow the transportation manager and operator to determine the best way to provide support.

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## REQUEST FOR SUPPORT

### GENERAL

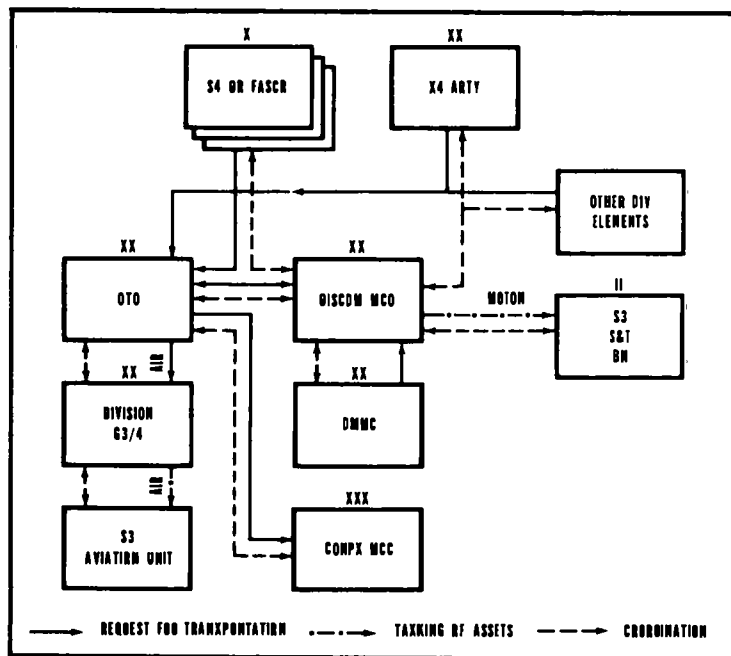
As a minimum, a request for transportation must include the following information about the cargo to be transported:

- Origin--location of cargo.
- Destination--where cargo is to be delivered.
- Weight of cargo--expressed in pounds.
- Dimensions--length, width, height expressed in inches.
- Description--what is to be transported.
- Unusual characteristics, if any.
- Dangerous characteristics--flammable, explosive, etc.
- Required time and date of delivery.
- Any other information that will assist in providing the required service.

Requests for transportation support are processed through support channels to the division transportation officer (DTO). The mode of transport to be used determines the routing of the request from the DTO onward.

### MOTOR TRANSPORT

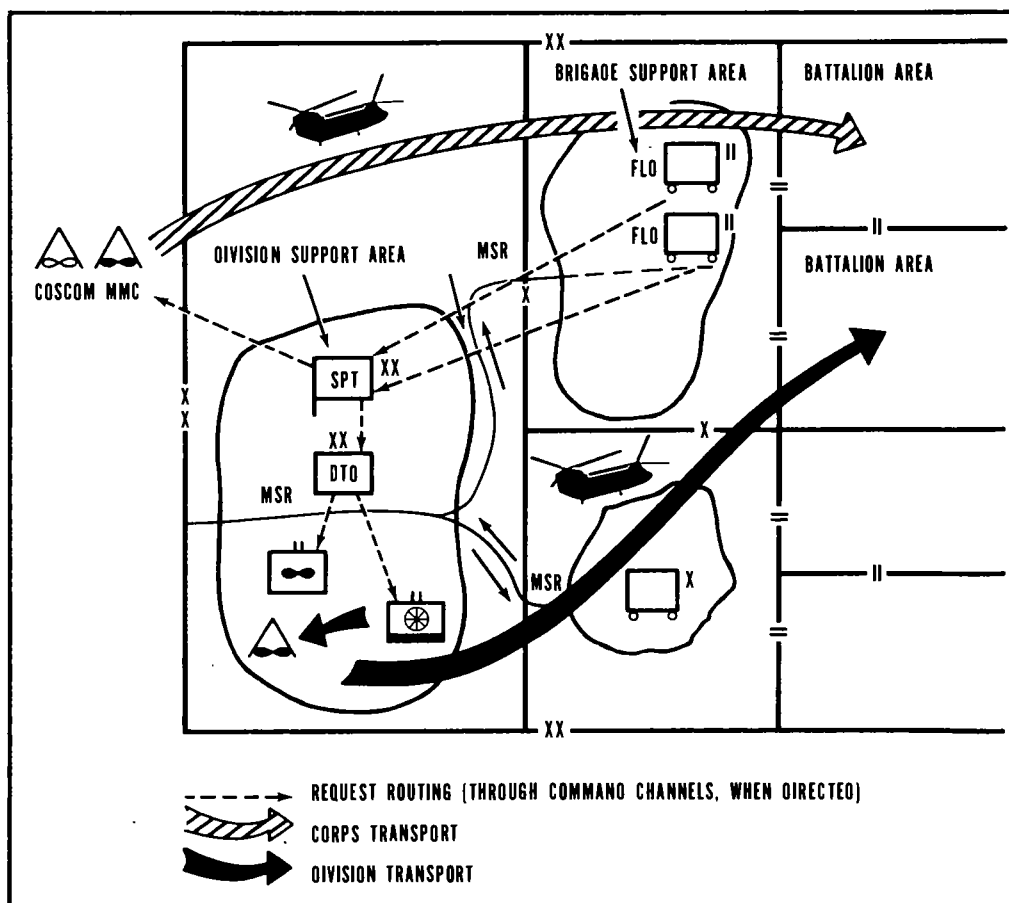
Requests for motor transport from brigade units are processed through the brigade S4 to the forward area support coordination officer (FASCO) operating in the brigade area. The FASCO consolidates requirements and forwards them to the DTO. The DMMC gives requests for transportation support direct to the MCO. Other divisional units request support through their parent battalion. The DTO balances motor transport capabilities against requirements and division priorities. Based on these priorities, he passes the requirements to the division support command (DISCOM) MCO. The available or required motor transport is committed by the DISCOM MCO through the supply and transport battalion (S&T) S3. If necessary, the MCO can coordinate between user and operating unit, or user and operator can coordinate directly with each other. These procedures may be modified as required to meet specific division requirements. Procedures should be included in SOP's.



REQUEST AND TASKING CHANNELS FOR TRANSPORTATION

## AIR TRANSPORT

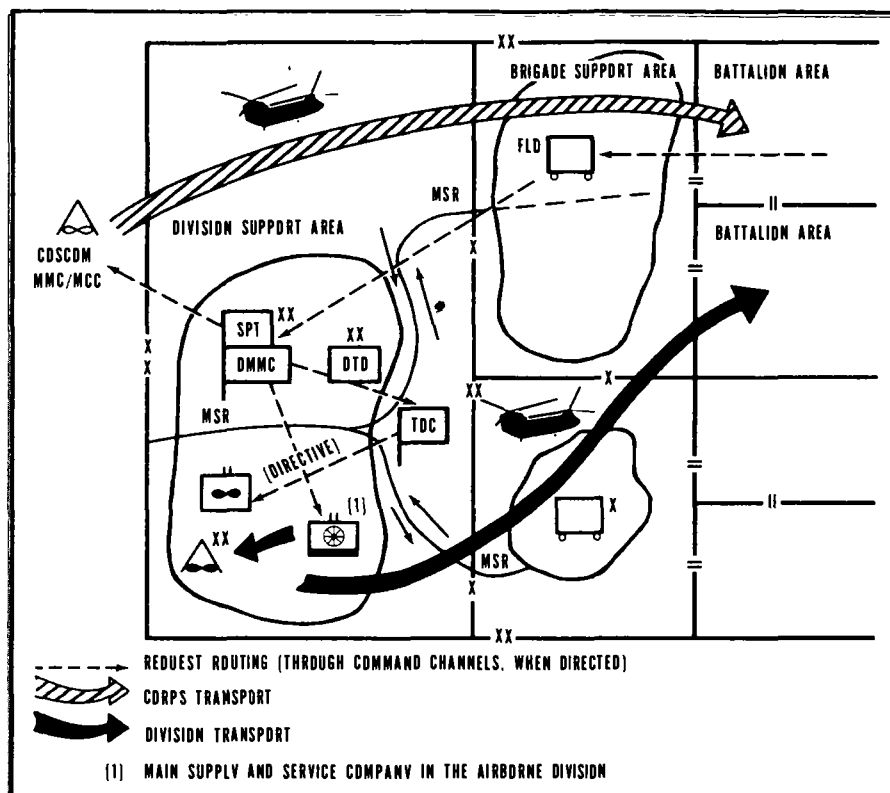
In the armored-infantry-mechanized (AIM) and airborne divisions, requests for allocated or planned logistical airlift sorties are passed through support channels from the requestor to the DTO. The DTO coordinates with the DMMC which instructs the supply and transport battalion or the supply and service battalion to prepare the supplies for airlift and deliver them to the designated pickup point. The DTO contacts the division G3 air and requests that the mission be flown. When allocated or planned airlift sorties provided by corps aviation units are used, the request for the airlift mission is sent to the corps movement control center (MCC) by the division DTO. If the supplies to be airlifted by corps aircraft are to be picked up in the COSCOM area, the DMMC coordinates the pickup with the corps support command (COSCOM) MMC and the DISCOM MCO.



**FLOW DIAGRAM FOR AIR SUPPLY, ALLOCATED SORTIES,  
AIM AND AIRBORNE DIVISIONS**

In the AIM and airborne division, requests for nonallocated or unplanned logistical airlift sorties are passed through support channels from the requestor to the DISCOM MCO and the DMMC. Through a coordinated action, the DMMC has the requested supplies prepared and delivered to the designated pickup point. The MCO contacts the division

tactical operation center (TOC) through the DTO and requests aircraft for the mission. The TOC then directs the aviation unit to fly the mission if aircraft are available. If the aircraft cannot be provided from division assets, the DTO requests support from the corps MCC.



**FLOW DIAGRAM FOR AIR SUPPLY, NONALLOCATED SORTIES,  
AIM AND AIRBORNE DIVISIONS**

In the air assault division, aircraft are the primary means of transport for tactical and combat service support. Aircraft are provided for combat service support missions under coordinated general staff supervision of the division G3 and G4. Movement control personnel in the division support area and in each brigade support area, in coordination with supported tactical and combat service support units, establish anticipated air transportation requirements for combat service support operations. The DISCOM MCO consolidates these requirements and submits them through the DTO to the division G4. The G3 and G4 coordinate their efforts with the division operation plan to balance aircraft requirements against aircraft availability. The G3 allocates aircraft to the G4 for combat

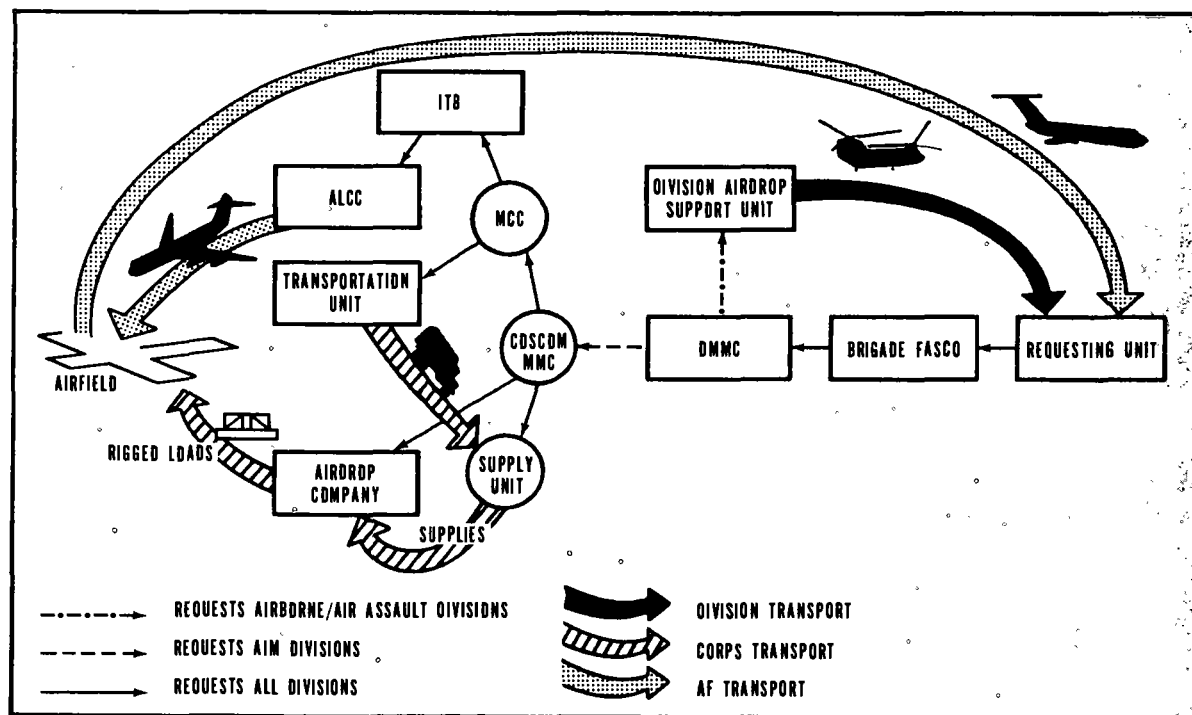
service support operations by numbers and types of aircraft, by aircraft sorties, or for specific periods of time. The G4 suballocates aircraft and assigns priorities for their use. With the exception of aeromedical evacuation, aircraft performing combat service support tasks are under operational control of the DISCOM MCO.

Airdrop is a method of delivering supplies and equipment to ground forces. Airdrop support units are organic to airborne and air assault divisions because these divisions rely heavily on air lines of communication (ALOC's). The AIM divisions have no organic airdrop support and must rely on corps airdrop units or teams for air resupply. Normally, Air Force cargo aircraft are used for airdrop resupply missions; however,

supplies may be dropped from Army aircraft. Supplies and equipment to be airdropped, the ground transportation to move them, parachutes, rigging of supplies to be dropped, and providing ground personnel to support the operation are Army responsibilities. When Air Force aircraft are used in an airdrop resupply mission, airdrop resupply becomes a joint operation involving Army and Air Force units. Airlift support is usually controlled centrally by the Air Force component commander through the airlift commander and his airlift control center (ALCC). Requirements for airlift support are consolidated at the senior transportation agency of each service component (for example, theater army MCC in a multicorps operation, corps MCC in an independent corps operation, or DTO in an independent division operation). The requirements are forwarded to the joint force designated agent--the joint transportation board (JTB)--for validation and assignment of priority. The JTB forwards the requirements to the ALCC for execution on call. All units from company to division should be familiar with airdrop request channels.

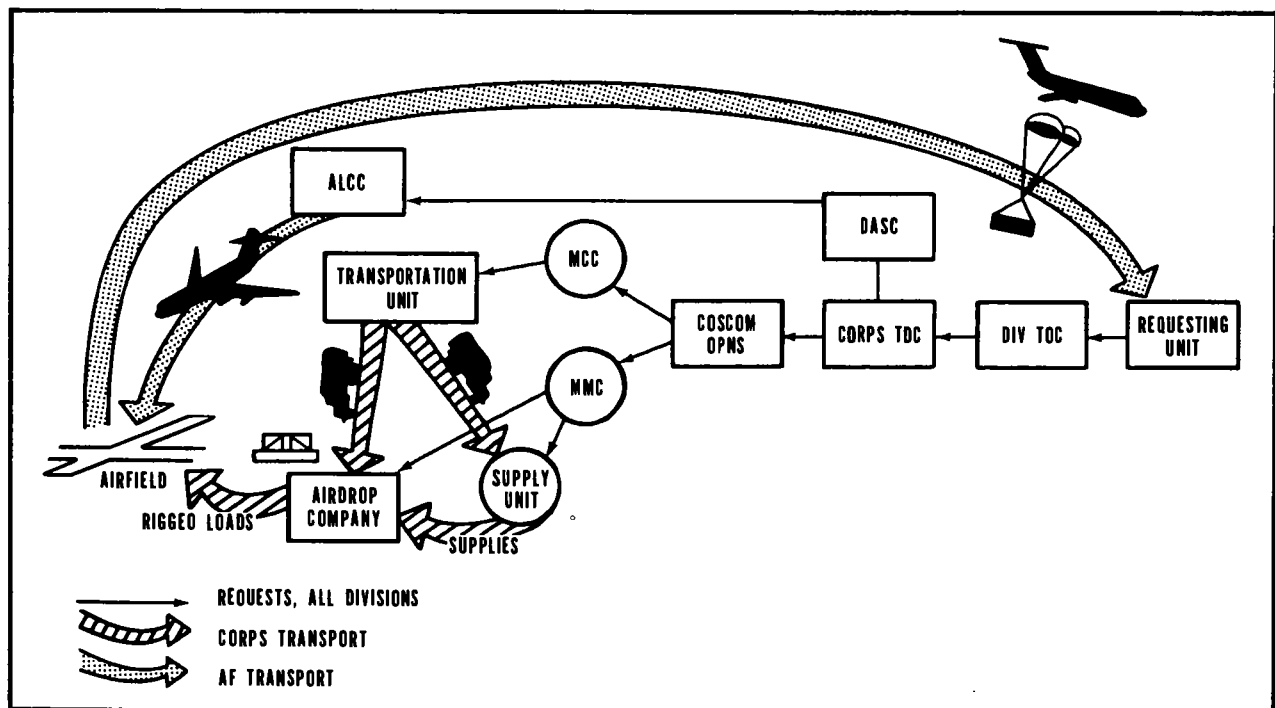
As in any other preplanned resupply requirement, a request for airdrop is sent

through normal logistics channels. Using units request supplies from their battalion S4 who goes to the brigade S4 through the FASCO, who sends the request to the DMMC. In airborne and air assault divisions, the DMMC coordinates with division support activities (supply and transportation) for movement of supplies to the division airdrop support unit. In the AIM divisions (and in the airborne and air assault divisions when requirements exceed the capability of the division airdrop support units), the DMMC sends the request to the COSCOM MMC. The COSCOM MMC coordinates with the corps MCC and, jointly, they direct the actions of the supply and transportation elements. The MCC forwards the request to the JTB for validation and assignment of priority. Then the JTB forwards the request to the ALCC for execution. If the supplies and equipment requested are not on hand in the airdrop company, the MMC directs the appropriate supply activities to prepare the items for delivery to the airdrop units and coordinates with the MCC to make the shipment. The airdrop unit prepares the supplies for airdrop and, in coordination with the MCC, makes sure that they are delivered to the air terminal.



**AIRDROPS OF SUPPLIES, PREPLANNED REQUESTS**

A request for emergency airdrop goes through command channels by the quickest means consistent with security. The requesting unit sends its request to the division TOC. The request is passed to the command level for approval authority, which is usually the corps TOC. If the division is operating as a separate task force, the division is the approving authority. The Air Force airlift officer at the direct air support center (DASC), in coordination with the G3 at the TOC, determines whether airlift resources can be used efficiently to accomplish the mission. When approved at corps, the request is sent from the corps TOC to the COSCOM MMC and MCC. The MMC and MCC jointly direct the actions of the supply and transport units delivering the requested supplies to the airfield ready for loading aboard the aircraft. At the same time, the DASC sends a request for the airlift to the ALCC for execution.



**AIRDROPS OF SUPPLIES, EMERGENCY REQUESTS**



The unit requesting an air supply mission, preplanned or emergency, is responsible for selecting, preparing, and marking the drop/landing area and for providing qualified ground movement guides and unloading teams to expedite aircraft turnaround. The supported unit also recommends approach and departure routes for the aircraft when the enemy situation or terrain warrants and is responsible for security of the delivery/landing area. Units receiving airdrop supplies are responsible for recovering and returning to supporting units all nonexpendable materials used to unitize or rig the supplies for delivery.

Suggested procedures and formats for requesting and for followup reporting are provided in the accompanying examples. These may be modified to conform with local SOP's.

1: Call sign of requesting organization:	_____
2: Type and quantity of supplies:	_____
a. Rations (quantity):	_____
b. Ammunition (Department of Defense ammunition code and number of rounds):	_____
c. POL (index number and quantity):	_____
d. Other (item and quantity):	_____
3: Date and time required:	_____
4: Drop zone/landing zone (DZ/LZ) information:	_____
a. Location of DZ/LZ (coordinates, encoded):	_____
b. Description and location of prominent landmarks 5 miles from DZ/LZ (coordinates, encoded):	_____
c. Recommended direction of approach (magnetic azimuth from a landmark to DZ/LZ):	_____
5: Air-ground radio (FM/UHF/VHF) with frequency and call sign:	_____
	_____

#### **SUGGESTED FORMAT FOR REQUESTING AERIAL RESUPPLY**

**1. Procedures:**

a. Request for aerial resupply will be initiated by the unit requiring resupply by air. Request will be transmitted to FASCO/DISCOM security, plans, and operation (SPO) officer. An information copy will go to G4.

b. Normal requests are those requiring delivery within 24-72 hours. Intermediate headquarters will evaluate requests and establish priorities.

c. Emergency requests are those requiring delivery within 24 hours. They will be sent through channels on a priority basis.

d. G4 assumes action if DISCOM cannot be contacted. G4 will:

Notify aviation in support unit or G3 as required. If division headquarters cannot be contacted, corps G4 will be notified through admin/log net, relaying as necessary.

Information will be provided FASCO/DISCOM SPO as soon as communications are restored.

**2. Special Instructions:**

a. The FASCO/DISCOM SPO will advise the requesting unit, through channels of--

- (1) Estimated time of arrival of aircraft over drop zone (DZ) or landing zone (LZ).
- (2) Number of sorties in mission.
- (3) Shortage of any requested supplies.
- (4) Turn-in point for recoverable air delivery items.

b. Requesting unit has following responsibilities.

(1) For airdrop.

(a) Mark DZ/LZ as follows:

1. On the approach side, display a large T formed from panels faced to represent the aircraft flying into the wind.
2. Day: discharge smoke as prescribed by aircraft commanders or as specified in the operation order.
3. Night, illuminate the T.

(b) Establish air-ground radio communications, using radio frequency and call sign indicated in requests.

(c) Provide personnel and transportation to recover supplies and air items from the DZ.

(d) Return air items as specified.

(2) For airlanding:

(a) Subparagraph (1) above applies

(b) Provide aircraft unloading details and transportation for removal of supplies from the LZ.

c. Cancellation of missions will be accomplished as follows:

- (1) Prior to takeoff: by most expeditious means, requesting acknowledgement.
- (2) En route: by radio to the aircraft.
- (3) Cover the DZ/LZ:
  - (a) Day: display red smoke and advise the aircraft by radio.
  - (b) Night: distinguish lights and advise aircraft by radio.

**SUGGESTED PROCEDURES FOR REQUESTING AERIAL RESUPPLY**

1. Aerial resupply followup is required of units receiving aerial resupply.
2. Required information will be submitted to FASCO/DISCOM security, plans, and operation officer (SPO) with information copy to G4, no later than 6 hours after delivery
3. A followup on turn-in of aerial resupply items is required by DISCOM.
4. Reports will be submitted by the most expeditious means
5. Receiving unit is responsible for evacuation of recoverable air delivery items to supporting direct support unit
6. DISCOM is responsible for evacuation to supporting logistical units; the suggested format for requesting aerial resupply follows.

1. Time flight arrived: \_\_\_\_\_

2. Time flight departed: \_\_\_\_\_

3. Status of supplies:

	Quantity received	%Serviceable
a. Class I	_____	_____
b. Class III	_____	_____
c. Class V	_____	_____
d. Other	_____	_____

4. Type and quantity of air delivery items recovered \_\_\_\_\_

5. Number of parachute malfunctions: \_\_\_\_\_

(unit)

6. Special instructions The FASCO/DISCOM SPO will advise the requesting unit through channels of:

- a. Estimated time of arrival of aircraft over drop zone or landing zone.
- b. Number of sorties in mission
- c. Shortage of any requested supplies
- d. Turn-in point for recoverable air delivery items.

### **SUGGESTED PROCEDURES FOR AERIAL RESUPPLY FOLLOWUP**

## COSCOM ASSISTANCE

When all transportation assets of the division have been committed and additional transport is needed, the DTO requests assistance from the corps MCC. The COSCOM will normally have motor transport and aviation units engaged in support of the divisions. Other transportation assets may be available, depending on the COSCOM mission, organization, and location. COSCOM may also be requested to take one or more of the following actions:

- Provide throughput of supplies farther forward into the division area.
- Move COSCOM supply points farther forward.
- Make unit distribution of selected items of supply for which supply point distribution is normally prescribed.

Any of the above actions would provide transportation assistance by shortening division supply lines and reducing the division transportation requirements.

## SUMMARY

Requirements for transportation can originate at any level within the division. The requestor must furnish an adequate description of the requirement so that the transportation manager and operator can provide suitable services. Requests for planned or routine transportation support are normally sent through logistics channels. Requests for unplanned or emergency transportation support are sent through operational channels for approval and are then routed through logistical channels for execution. This is done because of priorities and operational considerations. Some other requirements may be delayed or rescheduled in order to meet emergency requirements. The procedures given in this chapter for getting transportation support have proven successful over a period of years. They may be modified to fit specific requirements not falling within the normal pattern of events.

# APPENDIX A

## REFERENCES

### ARMY REGULATIONS (AR)

- 55-1 CONEX/MILVAN Equipment Control, Utilization, and Reporting (AFR 71-10).
- 59-8 Military Airlift Command--Requirement Submissions, Space Assignments and Allocations, and Priorities (AFR 76-38; OPNAVINST 4630.18D; MCO 4630.6C; DSAR 4500.9).
- 220-10 Preparation for Oversea Movement of Units (POM).
- 310-25 Dictionary of United States Army Terms (Short Title: AD).

### FIELD MANUALS (FM)

- 5-36 Route Reconnaissance and Classification.
- 7-8 Infantry Platoon/Squad.\*
- 8-35 Evacuation of the Sick and Wounded.
- 10-8 Airdrop of Supplies and Equipment in the Theater of Operations.
- 11-50(HTF) Combat Communications Within the Division (How to Fight).
- 19-1 Military Police Support Divisions and Separate Brigades.
- 19-25 Military Police Traffic Operations.
- 21-30 Military Symbols.
- 29-50 Direct Support Supply and Field Services.
- 30-16 Technical Intelligence.
- 54-2 The Division Support Command and Separate Brigade Support Battalion.
- 54-9 The Corps Support Command: Part One; Support of a Corps.
- 55-1 Army Transportation Services in a Theater of Operations.
- 55-10 Army Movement Management Units and Procedures.
- 55-12 Movement of Army Units in Air Force Aircraft (AFM 76-6).
- 55-15 Transportation Reference Data.
- 55-30 Army Motor Transport Operations.
- 55-40 Army Combat Service Support Air Transport Operations.
- 55-65 Preparation for Unit Movement Overseas by Surface Transportation.
- 55-70 Army Transportation Container Operations.
- 55-413 Aerial Recovery of US Army and Air Force Aircraft (TO 00-80C-3).
- 57-1 US Army/US Air Force Doctrine for Airborne Operations (AFM 2-51).
- 57-35 Airmobile Operations.

\*To be published.

71-100	Armored and Mechanized Division Operations.
100-5(HTF)	Operations (How to Fight).
100-10	Combat Service Support.
101-5	Staff Officer's Field Manual: Staff Organization and Procedure.
101-10-1	Staff Officer's Field Manual: Organizational, Technical and Logistical Data; Unclassified Data.

#### **TABLES OF ORGANIZATION AND EQUIPMENT**

55-84H0	Transportation Motor Transport Company, Supply and Transport Battalion, Infantry Division (Mechanized).
55-87H0	Transportation Motor Transport Company, Supply and Transport Battalion, Armored Division.
55-88H0	Transportation Motor Transport Company, Supply and Transport Battalion, Infantry Division.
55-167H7	Transportation Medium Helicopter Company, Transportation Medium Helicopter Battalion.
57-57H3	Combat Support Aviation Company, Combat Aviation Battalion, Airborne Division, or Combat Support Aviation Company, Combat Aviation Battalion, Infantry Division, or Combat Support Aviation Company, Infantry Division, Mechanized, or Combat Support Aviation Company, Combat Aviation Battalion, Armored Division.

#### **TECHNICAL BULLETINS (TB)**

55-46	Certification of Military Equipment for Transport in Air Force Aircraft (AFP 76-19) (microfiche only).
55-46-1	Standard Characteristics (Dimensions, Weight, and Cube) for Transportability of Military Vehicles and other Out-size/Overweight Equipment (in TOE Line Item Number Sequence).
55-46-2	Standard Transportability Characteristics (Dimensions, Weight and Cube) for Military Vehicles and Equipment (in National Stock Number Sequence) (microfiche only).

#### **DEPARTMENT OF THE ARMY PAMPHLET (DA PAM)**

310-3	Index of Doctrinal, Training, and Organization Publications (Field Manuals, Reserve Officers' Training Corps Manuals, Training Circulars, Army Training Programs, Army Subject Schedules, Army Training Tests, Army Training and Evaluation Programs, Firing Tables and Trajectory Charts, Tables of Organization and Equipment, Common Tables of Allowances, Joint Tables of Allowances, and TRADOC Bulletins).
310-35	Index of International Standardization Agreements.

#### **RELEVANT STANAGS\***

2010	Bridge Classification Markings.
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2014	Operation Orders, Annexes to Operation Orders, and Administrative and Logistic Orders.
2019	Military Symbols.
2021	Computation of Bridge, Raft, and Vehicle Classification.
2023	Marking of Military Cargo for International Movement by All International Means of Transport.
2024	Military Vehicle Lighting.
2025	Basic Military Road Traffic Regulations.
2027	Marking of Military Vehicles.
2041	Operation Orders, Tables and Graphs for Road Movement.
2085	NATO Combined Military Police.
2154	Regulations for Military Motor Vehicle Movements by Road.
2155	Road Movement Documents.
2156	Surface Transport Request and Reply to Surface Transport Request.
2158	Identification of Military Trains.
2159	Identification of Movement Control and Traffic Control Personnel and Agencies.
2163	Vehicle Weight and Dimension Card.
2171	Procedures for Military Trains Crossing Frontiers.
2173	Regulations for the Securing of Military Tracked and Wheeled Vehicles on Railway Wagons.
2174	Military Routes and Route/Road Networks.
2175	Classification and Designation of Flat Wagons Suitable for Transporting Military Vehicles and Equipment.
2351	Procedures for Marshaling Helicopters in Airmobile Operations.
2861	Procedures for the Recovery of Downed Aircraft/Helicopters While Engaged in Airmobile Operations.
3093	NATO Air Transport Request and Answer to Air Transport Request.
3327	Air Transport of Dangerous Cargo.
3328	NATO Standard Conversion Tables for Metric, American, and British Units of Measurement, AAP-9.
3345	Forms for Planning Air Movement.
3400	Restraint of Cargo in Fixed Wing Aircraft.
3463	Planning Procedures for Tactical Air Transport Operations for Fixed Wing Aircraft.
3464	Procedures for Aircrew and Airlifted Personnel in Tactical Air Transport Operations.
3466	Responsibilities of Air Transport Units and User Units in the Loading and Unloading of Transport Aircraft in Tactical Air Transport Operations.
3468	General Rules Covering the Transport of Loads by Helicopters.
3532	Transport of Troops by Helicopter.

- 3548 Tie-down Fittings on Air-Transported Cargo and Air-Dropped Equipment and Cargo carried Internally or Externally by Fixed or Rotary Wing Aircraft.
- 3570 Drop Zones and Extraction Zones--Criteria and Markings.
- 3571 Classification, Certification, and Labelling of Dangerous Cargo.
- 3597 Helicopter Tactical or Non-Permanent Landing Sites.
- 3617 Planning Procedures for Small Scale Tactical Air Transport Operations.
- 3619 Helipad Marking.
- 3652 Helipad Lighting (VMC).
- 3680 NATO Glossary of Terms and Definitions for Military Use (AAP-6).
- 3758 Signals Used by Air Traffic Service Units for Control of Pedestrian and Vehicular Traffic in the Maneuvering Area of Airfields.
- 4062 Attachment for Lifting Vehicles and Heavy Military Equipment by Land and by Sea.

\*Available to DOD users from the Naval Publications and Forms Center (NPFC), 5801 Tabor Avenue, Philadelphia 19120. DD Form 1425 can be utilized to requisition the documents.



# GLOSSARY OF TERMS AND ABBREVIATIONS

AACG	Arrival airfield control group.
AIM divisions	Armored-infantry-mechanized divisions.
ALCC	Airlift control center.
ALCE	Airlift control element.
ALOC	Air line of communications.
ASP	Ammunition supply point.
ATP	Ammunition transfer point.
COSCOM	Corps support command.
DAFCG	Departure airfield control group.
Dangerous cargo	Includes, but is not limited to, flammable substances, oxidizing materials, corrosive material, compressed gases, and poisonous substances.
DASC	Direct air support center.
DISCOM	Division support command.
DMMC	Division materiel management center.
DTO	Division transportation officer.
FASCO	Forward area support coordination officer.
Hazardous cargo	Those articles not necessarily identified as dangerous but which would become dangerous if handled improperly or mixed with other noncompatible types of cargo.
MCC	Movement control center.
MCO	Movement control officer.
MILVAN	Military van, Army-owned, 8by 8by 20-foot container.
MMC	Materiel management center.
MSR	Main supply route.
NEO	Noncombatant evacuation order.
SASP	Special ammunition supply point.
S&S bn/co	Supply and service battalion/company.
S&T bn	Supply and transport battalion.
Supply classes:	
Class I	Subsistence.
Class II	General supplies and equipment.
Class III	Petroleum and solid fuels.
Class IV	Construction materials.
Class V	Ammunition.
Class VI	Personal demand items.
Class VII	Major end items.
Class VIII	Medical materiel.
Class IX	Repair parts.

Class X	Nonmilitary support materiel.
TMT Co	Transportation motor transport company.
TOC	Tactical operations center.
TOE	Table of organization and equipment.
TRANSCOM	Transportation command.
Vehicle characteristics	The measurements, capabilities, and specifications which distinguish one vehicle from another.
Vehicle fuel tanks	Fuel tanks which are factory installed in a vehicle for the specific purpose of supplying fuel to the vehicle engine.

**FM 55-2**

**3 JULY 1980**

By Order of the Secretary of the Army:

**E. C. MEYER**  
*General, United States Army*  
*Chief of Staff*

Official:

**J. C. PENNINGTON**  
*Major General, United States Army*  
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