CHAPTER FIVE

RECOVERY AND EVACUATION

5-1. SUPPORT

When equipment cannot be repaired on site, it must be brought to the maintenance activity best suited to do the repairs. This is done by recovery and evacuation.

Using units recover equipment to their supporting maintenance activity. The maintenance activity either repairs the item or evacuates it to another activity for repair. When transportation requirements exceed the maintenance unit capability, the unit requests transportation support from the Transportation Motor Transport Company, MSB, through the DISCOM movements officer of the Security, Plans, and Operations Office.

5-2. RECOVERY

Recovery is the process of retr ieving or freeing immobile, inoperative, or abandoned materiel from where it was disabled or abandoned and returning it to operation or to a place where it can be repaired, evacuated, or otherwise disposed. Recovery is performed to--

- Return immobilized equipment to operation.
- Retrieve equipment for repair and/or return to user.
- Prevent enemy capture of equipment.
- Use enemy equipment for intelligence purposes or for US or allied forces.

5-3. ORGANIZATION FOR SUPPORT

Recovery is a using unit's responsibility. Using units are organized, staffed, and equipped to recover their own equipment. Recovery operations in armor and mechanized infantry battalions are centrally managed at battalion level, usually by the BMO. The battalion maintenance platoon has recovery vehicles to provide recovery support. The platoon has company maintenance teams, each of which has an organic recovery vehicle. The BMO is usually in charge of recovery operations. In other units, the motor sergeant, motor officer, or other designated individual performs this function. Maintenance units are responsible for recovering their own organic equipment and providing backup support when requirements exceed the unit maintenance capability. They may also be tasked to provide recovery support on an area basis to units without a recovery capability.

5-4. RECOVERY PRINCIPLES

The following general principles apply to conduct of recovery operations:

- Using units recover their own disabled equipment. The unit should secure the equipment, attempt repair using local support, and arrange for unit maintenance support when required.
- Recovery priorities must be established. Convoy movements may need recovery vehicle support. Units may need additional recovery vehicles based upon assigned weapon systems or who has the main effort.

- A 24-hour capability is required. All operations require continuous, responsive, recovery support. Roadside recovery may be rotated among maintenance units to provide limited backup support.

- All other options should be tried before using a recovery vehicle. Field quick-fix repair permits the equipment to complete the mission before more permanent repairs are performed. Self-recovery and like-vehicle recovery may get the equipment operating or bring it to a repair point.

- Towing more than one disabled vehicle is limited by the capability of the recovery vehicle. The combined load may exceed the recovery vehicle's braking power on a steep grade.

- Wreckers normally recover wheel vehicles, but may also recover light track vehicles. Track recovery vehicles recover track equipment. Select the proper recovery vehicle when supporting an increased work load with only a few recovery vehicles. The recovery manager may adjust these guidelines based on the need set by the commander.

- When recovery vehicles are limited, the commander must determine the need for the item. Combat vehicles should generally be recovered before tactical vehicles. The type of disabled vehicle also affects the need when recovering two or more like items. The following priorities will usually give the highest return for the effort expended:

  - Vehicles that are stuck.
  - Items with failed or damaged components needing little repair.
  - Damaged items needing major recovery and repair efforts to return them to service.
  - Contaminated items. (Recovery should only be attempted if a like item is not available.)
  - Items damaged beyond repair.
  - Enemy materiel. (Intelligence requirements may raise the priority for recovery of enemy materiel.)

- To keep recovery vehicles available in the forward areas, do not use them to return equipment any farther to the rear than necessary.

- Recovery managers must have correct location information to give to the recovery crews. Ground guides from the supported unit may be required when specific location information is to be given to the recovery crews. Ground guides from the supported unit may be required when specific location information is not available or where friendly lines are not well defined.

- Recovery operations should be coordinated with the maintenance effort. Commanders set guidelines for the maximum time to be spent on repair at various locations. These provide maintenance and recovery managers a basis for the repair or recover or evacuate decision for each inoperable item. The estimated repair time may also indicate the best repair point for the item. Maintenance time guidelines maybe set by unit SOP or for specific operations.

- Recovery operations must not interfere with the tactical plan.

- Recovery missions requiring more than a 3:1 mechanical advantage may need more time to perform. The recovery decision must consider the importance of the item, tactical situation, and time recovery equipment will be unavailable.

- During tactical operations, recovery vehicles are exposed to enemy fire. The commander must decide if the value of recovering a disabled vehicle near enemy forces outweighs the possibility of losing a recovery vehicle and/or crew.

- Recovery must not cause further damage to equipment. Crews must be skilled in correct rigging techniques and safety requirements.

5-5. RECOVERY OPERATIONS

Recovery is initiated by the operator/crew of the disabled vehicle. Before requesting recovery support, the operator/crew should attempt repairs and self- or like-vehicle recovery using their own resources as well as those of nearby unit elements. When the tactical situation makes this impossible, assis-

tance is requested from unit maintenance. The BMO evaluates the request for assistance based on command guidance and the overall tactical and maintenance situation and then develops a recovery plan. The recovery mission is assigned to a recovery team, which accomplishes the recovery according to unit SOP. Equipment is recovered either to the battalion UMCP or to a designated MCP. Details of recovery operations are found in FM 20-22 and FM 43-5.

5-6. SPECIAL CONSIDERATIONS

Operations in an NBC Environment. Recovery and maintenance personnel must be alert to the possibility that recovered equipment may be contaminated. Recovery teams must be capable of testing equipment for chemical and radiological contamination. Chapter 3 discusses details of NBC defense in support of maintenance operations. Working in MOPP 4 has a drastic affect on the length of time needed to accomplish recovery and maintenance operations.

Offensive Operations. When offensive operations have been successful, combat and support units move in a forward direction. Lines of support are extended. In this situation, recovery procedures may need to be modified. Instead of recovering items to established MCPs, equipment may be recovered to the MSR servicing the area and left there with appropriate security to await the arrival of support elements. The maintenance unit commander must plan for offensive operations and recommend locations of proposed future collecting points along the MSR. While the combat operation is underway, good communications with the supported unit BMOs are essential in order to pinpoint location of disabled equipment. Since the maintenance unit may also be involved in a unit move, special attention must be given to continuous support.

Defensive Operations. Defense may be static or dynamic in nature, involving either little or substantial movement. During static operations, emphasis should be placed on alternate routes of approach and recovery. Recovery personnel should be able to estimate the resistance of vehicles disabled by terrain, as well as determine which terrain will allow for fastest routes of approach and recovery. During a retrograde operation, the recovery and maintenance assets of the supported battalions will be heavily used. Nonmission capable but mobile equipment should be used to recover like equipment to the maximum extent possible.

Night Operations. Night recovery operations are, in general, conducted the same as during the day. Recovery elements may need additional night vision devices and assistance from the supported unit by way of guides and security. Light and noise discipline is important, and if the recovery operation requires that either be broken, approval must be obtained from the tactical unit commander concerned. When tactical elements are conducting night operations, maintenance units should anticipate an increase in work load due to an increase in accidents and numbers of mired vehicles.

Foreign Materiel. Technical recovery of foreign materiel is the same as for US materiel. Special attention must be given to the possibility of booby traps.

Disposition instructions for foreign materiel are provided through intelligence channels. Division SOP and/or disposition instructions may route some or all of these items through the supporting maintenance units.

COMSEC. Maintenance units must be on the alert that COMSEC is not compromised in the coordination for recovery support. Also, recovered equipment should be inspected for the possibility that controlled cryptographic items (CCI) may have been left in the equipment. All CCI must be zeroed prior to turn-in.

5-7. EVACUATION

Evacuation moves materiel from a support MCP or activity to another CSS activity for repair, cannibalization, or further disposition. Evacuation is a logistics function and provides a flow of disabled equipment into the logistics support system. Evacuation is performed to--

- Reduce the maintenance backlog at a certain location.
- Move damaged equipment to a maintenance activity that can do the repair.
- Make equipment available for cannibalization.
- Make use of critical supplies and equipment.
- Match the maintenance work load with maintenance resources.

5-8. ORGANIZATION FOR SUPPORT

The Assistant Chief of Staff (ACofS), G4 sets the overall division evacuation policy in coordination with the DISCOM commander. The DISCOM commander has overall evacuation control that is exercised through the DMMC. The physical movement of equipment is done by the maintenance, supply, and transportation units of the DISCOM, according to set procedures or in response to disposition instructions from the DMMC. Backup evacuation support may be provided by the COSCOM. Division maintenance units have a limited capability for evacuation of heavy equipment. Support for this is provided by the Transportation Motor Transport Company of the division MSB.

5-9. EVACUATION PRINCIPLES

The evacuation process must be managed to result in the eventual return of the maximum number of serviceable items to using units or to the supply system. This requires close coordination of recovery, repair, and transportation. The following principles apply:

- The CSS system evacuates equipment to proper destinations, after it is recovered, to support activities by using units.
- Evacuation is accomplished by the fastest means available.
- Evacuation priorities are like those for recovery. Items most critical for the battle are evacuated first.
- Intermediate handling must be avoided. The evacuation channel should be as streamlined as possible. Disposition instructions should ensure evacuation to the maintenance activity best suited for repair.
- Maximum use is made of available transportation. Evacuation vehicles may backhaul unserviceable assemblies and end items on the return trip. Vehicles delivering supplies in the forward areas may be used to evacuate items to the rear.
- Further damage of equipment must be prevented. Packaging, bracing, and preservation materials should be used to protect the items from the elements and from damage while in transit.

5-10. EVACUATION OPERATIONS

Evacuation is done under the overall management of the Division Movement and Control officer.

MCPs of maintenance units serve to collect unserviceable equipment. The location of these points should support later evacuation. The MCP should support the tactical operation, be on or near the MSR, and on a road network that can support HET operations.

Items for evacuation are identified at the maintenance company level. These consist of unserviceable equipment beyond the repair capability of the unit, unserviceable assemblies from the repair process, and serviceable and unserviceable abandoned items found on the battlefield.

The DMMC provides overall management for the evacuation effort. It acts as the interface between the maintenance companies of the FSBs and other CSS elements to the rear of the brigade boundary. Evacuation policies and procedures are set as a matter of SOP. Automatic disposition instructions for certain items prevent undue delay in moving equipment from the brigade to the DSA.

Maintenance units request disposition instructions from the DMMC through the battalion support operations section for items not covered by automatic disposition lists.

Transportation for equipment to be evacuated is provided by maintenance unit assets, resupply vehicles returning to the rear, or vehicles provided in response to unit transportation support requests. For heavy equipment transportation, the maintenance units depend on the HETs of the transportation motor transport (TMT) company.

Evacuation vehicles transport unserviceable assemblies and major end items according to disposition instructions from the DMMC. They also may backhaul serviceable assemblies and end items from rear repair activities to the forward maintenance or supply elements. HETs and other cargo vehicles bring major replacement items forward. Their operations are closely coordinated at the DMMC with the division WSRO.

5-11. SPECIAL CONSIDERATIONS

Fast-Moving Operations. The evacuation work load may be expected to increase during fast-moving operations. The opportunity for repair at the forward locations is limited since maintenance elements are on the move. Only relatively simple repairs are

done. More complex jobs are recovered to the MSR to wait for evacuation to a repair activity.

Bridge Capacity. The weight of the loaded HET makes the load-bearing capacity of bridging, to include tactical bridging, critical. The weight of the M1 tank/HET combination will severely restrict available routes. This places a premium on route planning and traffic control,

5-12. TRANSPORTATION

Maintenance units make frequent use of transportation service support as part of normal maintenance operations. An understanding of the capabilities of divisional transportation units and the procedures for obtaining their support is, therefore, important. Ground and air transportation units may provide--

- Transportation of maintenance personnel and repair parts to expedite maintenance operations.
- Evacuation of unserviceable items and components.
- Delivery of serviceable parts, assemblies, and supplies.
- Assistance in unit moves.

5-13. ORGANIZATION FOR TRANSPORTATION OPERATIONS

Transportation operations in the heavy division fall under CS and CSS.

Ground Transportation. The TMT company of the DISCOM provides CSS transportation to all combat elements of the division. The support provided includes--

- Motor transport for unit distribution of Classes I, 11,111 (packaged), IV, VII, IX, and emergency Class V.
- Movement of personnel.
- Displacement of division units with less than 100-percent organic mobility,
- Displacement of division reserves for which the TMT company is responsible.
- The TMT company provides for transport of tanks, armored vehicles, heavy track and/or wheel vehicles, and heavy or outsize cargo, The unit is equipped with 24 HETs, and based on 75-percent availability, can make a one-time lift of 18 tanks or tank equivalents. The unit has the capability to--
  - Evacuate heavy and outsized vehicles to maintenance facilities.
  - Displace armored elements within the division.

  Displace division reserve supplies.

  Transport heavy equipment within the division area of operations.

Air Transportation. Tactical air movement of troops, supplies, and equipment is provided by the combat support aviation company (CSAC) when that unit is used to support the combat support aviation battalion (CSAB) of the combat aviation brigade (CAB). Medium lift helicopter (MLH) transport is provided by the medium helicopter battalion of the corps, The CSS tasks for air transport are similar to those for more transport. Air transportation tasks include transport of maintenance personnel and repair parts when needed to do critical repairs. Air transportation may also be used to evacuate critical items.

The brigade headquarters is a command and control headquarters and has no transportation staff or assets. The assigned DISCOM FSB support operations section coordinates CSS missions between the brigade S4 (or XO) and the DISCOM elements operating in the BSA.

The division staff has a transportation management element consisting of division transportation officer (DTO), DISCOM movement control officer, and movement specialist. The DTO is a staff planner who works under the staff supervision of the ACofS, G4. DTO coordinates with the ACofS, G3 on tactical troop moves and operations and with the ACofS, G4 on logistical and administrative matters. The DTO provides the DISCOM MCO with policy guidance, plans, and assistance in all transportation matters. The ACofS, G3; ACofS, G4; and DTO et transportation priorities and provide them to the DISCOM movement control officer.

The DISCOM movement control officer heads the DISCOM transportation staff. The staff are primarily operators, but must also plan for use of transportation assets. They control the use of the DISCOM motor transport assets and division aircraft allocated to the DISCOM for logistical support, The DISCOM

movement control officer must coordinate with users, transportation units, and transportation mode operators to ensure that transport equipment is provided as required and is properly used. The DISCOM movement control officer coordinates with the support operations section of the MSB for use of the DISCOM motor transport assets. The DISCOM movement control officer coordinates with the DTO to obtain transportation resources from other than DISCOM units. These resources maybe provided by other division units or by the COSCOM MCC.

5-14. PRINCIPLES OF TRANSPORTATION

Transportation managers apply basic principles of transportation to obtain the maximum benefit from the transportation capability. These principles apply to all modes of transport, at all levels of command. They include--

Centralized Control of Assets. Control of assets must be centralized under the commander charged with providing integrated logistical support to the division. The DISCOM movement control officer performs this function for the DISCOM commander,

Fluid and Flexible Movements. The division transportation system must be able to provide an uninterrupted flow of traffic and adjust to changing situations. Effective use of all transport capabilities must provide means to divert, reroute, or ensure continuous movement of supplies to supported units.

Maximum Use of Carrying Capacity. This involves more than just loading each transport vehicle to its maximum carrying capacity. Transport used one day cannot be stored to provide an increased capability later. Similarly, fully loaded transport equipment sitting idle is just as much a loss of carrying capability as a partially loaded vehicle moving through the system. Tactical situations, however, may not always permit complete adherence to this principle. For example, vehicles or aircraft may be held for special missions or projects. Such use, when directed by the commander, is considered proper use of the vehicles or aircraft.

Regulated Movements. Maintaining and supporting highly mobile forces greatly increases the need to regulate movements as the volume or logistical and tactical traffic increases. Regulation and coordination are required to prevent congestion and conflict of movements. It is likely that US forces will have to share available airfield, road, rail, and inland waterway capabilities with allied forces and civil commerce.

5-15. HOW TO GET TRANSPORTATION SUPPORT

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

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

- Origin - location of cargo.
- Destination - where cargo is to be delivered.
- Weight - cargo in pounds.
- Dimensions - length, width, and height in inches.
- Description - what is to be transported.
- Unusual characteristics - if any.
- Dangerous characteristics - flammable, explosive, and so forth.
- Delivery - required time and date.
- Information- any other data that will assist in providing the required service.

Requests for transportation support are processed through support channels. The mode of transport to be used is determined by priorities set by the division staff.

Motor Transport. The division staff provides the DISCOM priorities for the use of division motor transport resources. At the DISCOM, motor transport assets are matched against transport requirements in support of maintenance operations versus other requirements and priorities are established. Based on these actions, the DISCOM movement control officer directs the TMT company to provide assets to meet given requirements. When division requirements for motor transport exceed the available capability, the DTO requests additional support from the COSCOM movement control officer.

Air Transport. Request for airlift sorties in support of maintenance operations are passed through support channels from the requester to the DTO. The DTO coordinates with the DMMC, which instructs the MSB to prepare supplies for airlift and deliver them to the designated pickup point. The DTO contacts the G3 air and requests that the mission be flown. When allocated or planned airlift sorties by corps aviation units are used, the DTO sends the request for the airlift mission to the corps movement control center (MCC). If supplies to be airlifted by corps aircraft are to be picked up in the COSCOM area, the DMMC coordinates the pickup with the COSCOM MMC and the DISCOM MCO.