

Chapter 9

Engineer Logistics

Engineer units are unable to perform their war-time missions without adequate logistical support. If they are to be successful on the battlefield, engineer commanders must understand the combat service support system and know where to go for required logistical support. Massive requirements for Class IV construction materials distinguish engineer requirements from those of other units in the COMMZ.

Adequate Class IV supplies are central to the ability of EAC engineer units to construct and maintain facilities to support the sustainment base. For this reason, the ENCOM usually plays a key role in managing the allocation of construction materials in theater. Selected critical Class IV construction items are often controlled directly by the ENCOM rather than the theater Army materiel management center (TAMMC),

CONSTRUCTION MATERIALS

In the theater of operations, construction materials may be difficult to obtain. Required construction materials might be supplied from CONUS through the supply system, obtained from local suppliers, extracted from local natural sources, or produced by engineer units. Ideally, construction materials should be procured from sources close to the construction site. But this is often not possible. Because of the time and cost involved in moving construction materials, facility designs should be adapted to make maximum use of locally available materials.

PLANNING CONSIDERATIONS

One of the primary responsibilities of the ENCOM staff is to forecast the types and quantities of engineer materials required for the theater. The CESP is usually used to establish the initial requirements during preconflict planning. Planning during the conflict requires good intelligence as to damage caused by enemy action and a good listing of additional facilities needed. The

AFCS can be used as a guide in determining material requirements for needed facilities. In some cases, existing facilities can be modified to meet military requirements. In these cases, material requirements must be estimated,

The ENCOM staff must also determine what materials are available from local sources. These may be from local manufacturers, commercial stockpiles, or host nation government assets. Materials not locally available must either be procured out of theater or produced in theater by engineer units. Materials that fall in the latter category include aggregate, concrete, construction water, asphalt, and lumber. A local procurement system must be established to expedite the procurement of local materials. Procurement of local materials may be restricted in some theaters to avoid inflating the cost of construction materials in the host nation.

DESIGN CONSIDERATIONS

Designers must consider the availability of construction materials when designing projects for the theater of operations. Many designs may not be practical because of logistical considerations. For example, although AFCS designs are adjusted for various climates (temperate, desert, tropic, and arctic), they may be difficult to construct because of the unavailability of required construction materials in the region. Military designers must be knowledgeable of local construction standards and materials commonly used in the particular region. Designs must include the use of local materials or provide flexibility for use of substitute materials.

The construction standard for the theater of operations will be one of the following:

- . *Initial Standard* (up to 6 months expected use).
- . *Temporary Standard* (up to 24 months expected use).

Since the design life is short, only essential utilities, heating, and cooling will be provided.

This will also reduce engineer material requirements.

CONSTRUCTION CONSIDERATIONS

In the material estimation process, 10 percent is usually added to the estimated quantity as a waste factor. Such a waste factor is already included in the AFCS BOMs. Although this waste may seem minor, the combined effect of material waste will have a significant impact on the supply system. Thus, all involved with actual construction must take steps to limit the waste of construction materials by—

- ordering and using optimum lengths;
- providing for the proper storage, security, and handling of construction materials;
- providing proper worker training to limit waste; and
- reusing materials.

TRANSITION TO WAR

Unlike other classes of supply, Class IV construction materials are not provided based on documented consumption rates, and there are no anticipated surge rates. It may take several months between the initiation of the requisition and the arrival in theater of the material. For this reason, it is crucial that EAC engineers estimate their requirements as soon as possible and initiate requisitions in advance of deployment or operations, if possible. Initial material forecasts are usually submitted by the ENCOM using the AFCS data, the CESP data, and base development plans.

Successful execution of the theater construction program depends on an adequate supply of materials as well as construction capability. Typically, during the early stages of a conflict, war damage repair and construction of mission-essential facilities will dominate engineer construction activities. As the theater matures, more substantial facilities will be required and more construction forces will be available. The ENCOM must ensure that adequate construction materials are forecast to meet anticipated construction requirements. These materials must be flexible enough to meet a

variety of construction requirements as engineers respond to changing conditions.

CONSTRUCTION MATERIAL PROCEDURES AT UNIT LEVEL

Construction materials at battalion level are managed by the S4. After the S3 approves project BOMs, they are passed to the S4 for material requisitioning. The S4 orders the construction materials through the ASG general supply company. Selected critical items may require release through the engineer group if they are managed by the ENCOM. Once the required materials are obtained, they are issued to the companies using the approved BOMs. Final BOMs for each project are provided by the S4 to the S3 for inclusion in the project files.

Battalion S4s usually establish a construction materials storage facility and maintain a stockage of common construction items such as lumber, electrical wire and fixtures, nails, and cement. Project materials are stored in this storage area until drawn for use by the companies. Transportation support for the S4 is provided by the S3 tasking subordinate companies to provide haul assets, normally tractors and semitrailers, to support the S4 material haul mission. The S4 is responsible only for moving the materials from the supply point to the battalion storage facility. Companies must transport their own materials from the S4 storage site to the project location.

Separate engineer companies requiring construction materials use similar procedures in obtaining the needed materials through the group S4. An example would be a construction support company requiring asphalt, which may be an ENCOM controlled item. If asphalt is a controlled item, the group S4 must first obtain a release through the engineer brigade before ordering the material through the ASG general supply company.

When working on an airbase, the engineer unit obtains most construction materials through the base civil engineer. If an entire engineer battalion is working on the airbase, the battalion S4 obtains the materials from the Air Force. If a single engineer company is working on an airbase, the

company construction officer coordinates with the base civil engineer for the required materials,

The S4 at battalion, group, and brigade level maintains a listing of construction materials that are available in theater for use by project designers. This procedure ensures that designs incorporate materials that are readily available and ultimately results in rapid completion of construction projects. Construction materials required from host nation sources are requested through the group S4, who coordinates with the civil affairs team at the ASG for the requested support.

MAINTENANCE SUPPORT

An effective maintenance program is essential if EAC engineer units are to provide continuous, responsive support to the COMMZ sustainment base. The performance of effective maintenance will be limited by the extent of NBC contamination encountered and the requirement for maintenance personnel to work in protective clothing. Maintenance supervisors must ensure that preventive maintenance services are performed to ensure equipment remains operational when most needed. Controlled substitution may be required to keep critical equipment operational,

Vehicle repair should be accomplished as far forward as possible, often with the use of contact teams from battalion and company maintenance sections. Equipment in the combat heavy battalion requiring support level maintenance is evacuated to the headquarters and support company (HSC) maintenance platoon. If general support level repairs are required, guidance is obtained from the TAMMC. Usually, the HSC evacuates the equipment to the TAACOM maintenance battalion. Separate engineer companies authorized a direct support maintenance capability execute maintenance operations similar to the combat heavy battalion. Separate engineer companies not authorized a direct support capability evacuate equipment requiring support maintenance to the ASG maintenance battalion,

Class IX repair parts support for the combat heavy battalion and separate engineer companies authorized a direct support capability is from the

TAACOM repair parts company. Companies organic to the combat heavy battalion requisition needed repair parts through the HSC. Separate engineer units not authorized a direct support capability order repair parts from the ASG maintenance battalion. Engineer units working on an airbase may obtain limited repairs parts support from the Air Force civil engineering units,

OTHER LOGISTICAL SUPPORT

The EAC engineer units obtain personnel and administrative support from the supporting personnel services company of the TAACOM personnel and administration battalion. Finance support is provided by the TAACOM area finance support center. Medical support, to include medical supplies, is provided by the nearest medical facility. EOD support is provided by TAACOM EOD detachments.

Class I supplies (rations) are provided by Class I supply points operated by the ASG supply and service battalion. Rations are obtained based on unit strength reports that are prepared by the battalion S1. When working on an airbase, engineer units obtain Class I support from the Air Force.

Class II and VH supplies are requisitioned from the ASG supply company by the property book officer at battalion or in the separate companies. Requisitions for regulated or command controlled items are processed through command channels.

Class III supplies (POL) are provided by the Class III supply points operated by the ASG supply and service battalion. This is true for both bulk and packaged products. Requisitions from the property book officer are required to obtain the needed supplies. When working on an airbase, engineer units obtain Class III support from the Air Force.

Class V supplies (ammunition) are obtained from the nearest ammunition supply point operated by the TAACOM ammunition battalion. Requisitions must be processed by the property book officer.