CHAPTER 3
FORCE PROJECTION

The (7th Engineer) Brigade units occupied various locations in tactical assembly area (TAA) JUNO in advance of VII Corps. We immediately began sustainment operations which provided life support and protection for arriving units. These missions included constructing unit-sized protective berms, airfields, helipads, hospitals, roads, ammunition storage areas, and a petroleum storage area and applying dust palliative. The Brigade also executed projects in support of the corps train up for offensive operations. Several tank gunnery ranges were built in division areas and the 176th Engineer Group constructed a replica of the Iraqi barrier system to rehearse combined arms breaching operations. The engineers participated in this breach training as an integral part of the team, which culminated in a live-fire exercise using the mine-clearing line charge (MICLIC).

From the 7th Engineer Brigade Command Report-- Operations Desert Shield and Desert Storm, dated 9 April 1991, Colonel Samuel C. Raines, Commanding.

Force-projection operations usually begin as a contingency operation in response to a crisis involving imminent or actual military involvement during war or OOTW on a regional scale. These crises present a definite threat to US interests, but the situation, military mission, and military threat are often vague and uncertain. The objective area may be defended or it may be benign; the threat may be mobile and armored or it may be a light paramilitary force; the terrain could be steep jungles, wide open deserts, or high mountain valleys.

The corps will conduct force-projection operations as part of a joint and possibly multinational force under the OPCOM of a Commander in Chief (CINC) or joint force commander. The corps's mission could range from a simple show of force to providing a deterrent force against a major and immediate threat. The ability to project continental United States (CONUS)-based, ground combat power is critical as forward-presence US forces have declined over the years. Adherence to Army-operations tenets requires close cooperation with US Naval, Marine, and Air Forces. In addition, operations in foreign territory will require multinational efforts with host-nation and coalition military forces. Engineer support efforts require close coordination and cooperation with joint and coalition military engineer forces along with host-nation support agencies to meet force-projection mission requirements.

FORCE-PROJECTION CONSIDERATIONS

FM 100-5 describes several key considerations that apply to force-projection operations. The following describes corps engineer capabilities that should also be considered:

LETHALITY FOR THE DEPLOYING FORCE

In all contingencies, the early-entry force must possess the required lethality to accomplish the mission and protect the force the moment it arrives in theater. Corps engineers contribute to the lethality of the early-entry combat force through placing minefield and other obstacles, along with protecting the lodgment by constructing secure C2 nodes, logistics bases, and other needed fortifications and survivability positions. Corps engineer mobility, such as bridging, gap crossing, and obstacle breaching, enhances the lethality of combat forces securing operational objectives.

ANTICIPATION AND INTELLIGENCE

Force-projection anticipation is the expectation of being alerted and deployed. The rapid introduction of US forces requires accurate, detailed, continuous, and timely intelligence. Corps engineers anticipate and provide needed topographic terrain products of likely contingency areas in support of the ongoing IPB process. They assess available infrastructure for possible general engineering requirements, including airfields, MSRs, ports, utilities, and logistics facilities. They determine threat engineer capabilities in likely lodgment areas, including requirements for countermine and counterobstacle capabilities needed with the early-entry force. They also consider planning and support which may be available through the logistics civil augmentation program (LOGCAP) and USACE contracting capabilities.

FORCE TAILORING AND TEAMWORK

Force tailoring is the process of determining the right mix and sequence of units. Proper planning should give the operational commander the resources and dispositions to deal with any eventuality that might jeopardize either mission accomplishment or force protection. Commanders consider the factors of METT-T, strategic lift, pre-positioned assets, and host-nation support when they tailor forces. Deploying unite must be extremely flexible and versatile, placing a premium on early and continuous teamwork. Corps construction engineers may be the initial forces deployed during unopposed entry operations where limited host-nation support and infrastructure exist. Other corps combat engineer forces may flow with and closely support early-entry combat forces.

JOINT BATTLE COMMAND

Because of the joint and possibly multinational nature of force-projection operations, commanders must establish a battle-command system that can contend with the simultaneous challenges of deployment, entry, and combat while retaining the capability to adjust to the evolving conditions of each. Corps engineers are involved in each of these challenges--supporting deployments while also deploying themselves, supporting lodgments with construction, and supporting maneuver operations with combat engineering. This requires corps engineers to execute missions at the small-unit level while joint engineer battle-command echelons are separated in time and space.

A key battle-command consideration is the method in which joint and multinational engineer forces, including USACE civilian contractors, are commanded. When the corps is designated as a JTF or multinational headquarters, the engineer staff should be placed under the Operations Directorate (J3) staff or as a separate joint or multinational SES. When the corps serves as an ARFOR headquarters, the use of a standard corps SES (as described in Chapter 2) applies. Engineers should avoid being placed under the auspices of the joint or multinational Logistics Directorate (J4) staff. Lessons learned from force-projection operations show that when staff engineers are placed under the J4, engineers are prioritized to support logistics forces in theater at the expense of maneuver and other deployed units. In addition to ensuring proper engineer staffing at the JTF or ARFOR level, a separate engineer headquarters (such as the corps engineer brigade, an ENCOM, a TA engineer brigade, or an engineer group) should be identified to command and control the varied,

critical, and constrain operational engineer support required in the AO.

LOGISTICS

Successful force projection requires tailorable, flexible logistics. Existing theater infrastructure greatly affects logistics planning, including airfields, ports, roads, and other assets. Corps engineers support force-projection logistics operations by constructing forward-support bases, ISBs, and lodgments. Corps engineers work closely with host-nation and contracted logistics sources.

TRAINING AND MULTINATIONAL OPERATIONS

Demanding and relevant training helps focus missions and conditions expected to be found during force-projection operations. Corps engineers continually conduct peacetime overseas deployment training in support of nation-assistance, disaster-relief, peacekeeping, counterdrug, and humanitarian-assistance missions around the world. Normally, these missions are fully combined with host-nation forces, using local construction materials and equipment. These types of missions continually prepare corps engineers for future force-projection operations during war and OOTW.

MEDIA IMPACT

Force-projection operations are affected by visual media such as television. Corps engineers can have positive media impact during these operations, such as visually describing local civic-action construction projects that enhance goodwill both in the TO and in the US.

POSTCONFLICT

Issues related to the strategic end state, postconflict activities, and transition to peace are considered throughout force-projection operational planning and execution. Corps engineers play a significant role in supporting postconflict activities, including the construction of refugee and redeployment facilities; battlefield cleanup of mines, UXO, and hazardous waste; and the restoration of basic infrastructure utilities and services.

FORCE-PROJECTION OPERATIONS

Force projection will follow a general sequence. Normally force-projection operations fall into stages that begin with planning and preparation and end with redeployment and demobilization of the force-projection force. Activities of one stage may blend with another, be parallel to another, or not occur at all. The following eight stages provide the general structure for a force-projection operation with engineer considerations for each stage. They can be adjusted to fit the needs of a particular crisis response.

MOBILIZATION

Mobilization describes a process by which the armed forces reach a state of enhancd readiness in preparation for war or other national emergencies. It includes activating all or part of the reserve component as well as assembling and organizing personnel, supplies, and material prior to deployment.

Over three-fourths of the total engineer force structure is in the selective reserve components of the US Army Reserves (WAR) and the Army National Guard (ARNG). A large force-projection engineer capability also exists in USACE agencies throughout CONUS and overseas. Because of this, force-projection operations require the mobilization of reserve component corps engineer forces and USACE personnel. Activated engineer forces may include corps engineer brigades, groups, battalions, and companies; USACE agencies; elements of the ENCOM; other theater engineer units; and specialized engineer teams and personnel.

Activated reserve component engineer units and USACE agencies maintain a high state of personnel, equipment, and training readiness. These units and agencies continually demonstrate their mobilization proficiency during day-to-day operations, annual training deployments throughout CONUS and overseas, state emergency duty, and other support to domestic authorities.

PREDEPLOYMENT

Force-projection operations commence with crisis-action planning and predeployment activities. Using the corps crisis-action system, the corps seeks to determine the requisite military conditions for success, sequences activities to achieve these conditions, and applies resources accordingly. The objective in this phase is to select the proper force and to derive the correct operational concepts for subsequent phases of the campaign (see Figure 3-1). Decisions made in this phase determine the corps engineers' capabilities to support the entire force-projection operation. Engineers are integrated fully with corps planners as they identify the conditions for success. Engineer planners organize engineer forces to ensure that success (see Figure 3-2).

Corps engineer force support packages are formed according to the operational concept. This input is provided in a matter of hours, not days or weeks. As a hedge against unforeseen circumstances in the objective area, leading combat engineer elements of the crisis response force are tailored for forcible entry. This provides overwhelming combat power at the first point of decision—securing lodgments—and supports the additional conditions required for subsequent phases of the operation.

Robust initial combat engineer capability to open airfields and provide maneuver survivability and force protection is a critical forced-entry support consideration. Follow-on combat engineers are phased in for port-of-debarkation (POD) development, including the construction and repair of austere logistics bases, staging areas, and roads.

Timely topographic engineer support is critical to the corps commander's terrain assessment in order to determi ne where to conduct operations and to identiy host-nation infrastructure that may be available to sustain operations. Early deployment of USACE water-detection teams may be essential in ensuring the development of adequate resources. Accurate topographic imagery and map products are crucial to support operational IPB and follow-on C2 operations.

Requisite engineer capability may be required in force packaging for acquiring host-nation real estate and for planning the construction of contingency theater support facilities. This engineer support package is normally attached to the corps engineer brigade or JTF engineer staff until a theater engineer battle-command headquarters arrives. Initial engineer support capability may be available with USACE personnel already working in the force-projection theater.

Peacetime engineer overseas deployment training, the acquisition and construction of facilities, and the pre-positioning of engineer materials and equipment in possible force-projection theater locations may reduce initial requirements for engineer support forces. Forward-presence engineers engaged in humanitarian- assistance, nation-assistance, or disaster-relief operations in the force-projection theater also reduce initial engineer force structure requirements. Theater host-nation engineer support must be planned for and may augment initially deployed engineer forces.

DEPLOYMENT

Deployment of corps forces is dependent upon limited sealift and airlift assets. The primary consideration i n determining the composition of initial corps response forces will be METT-T factors, balanced against available airlift and

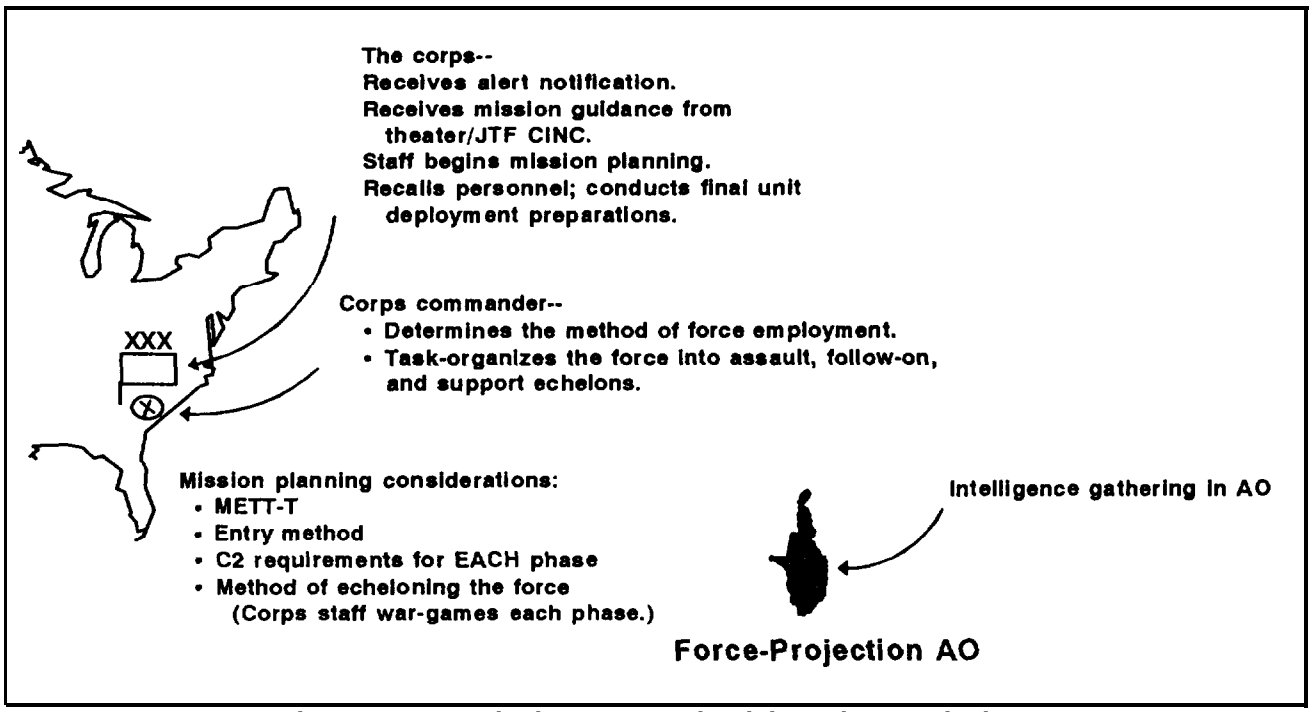

Figure 3-1. Predeployment and crisis-action analysis

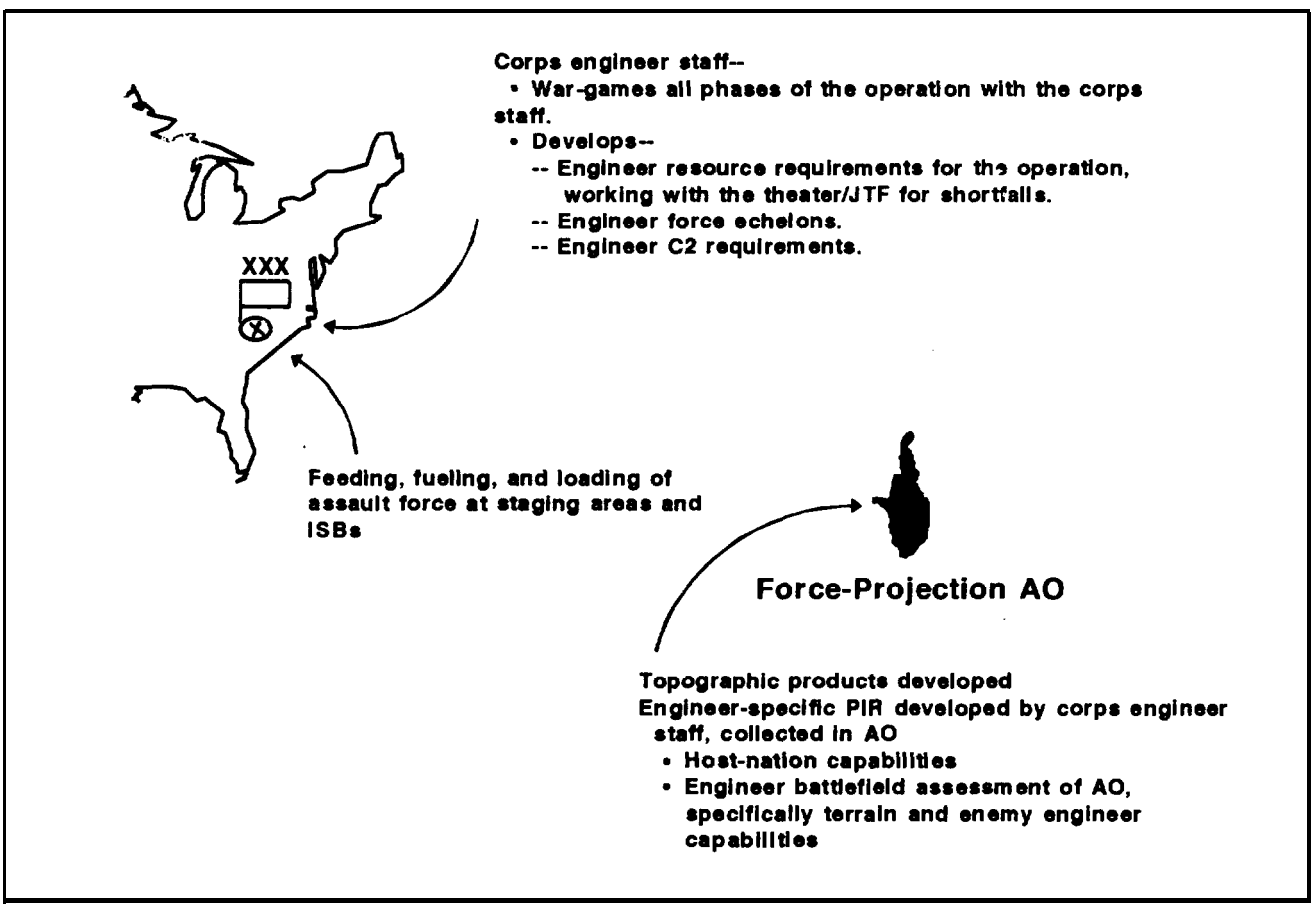

Figure 3-2. Predeployment and crisis-action engineer functions

sealift assets (see Figure 3-3). In a time-critical situation, light corps forces will be deployed initially. Corps armored forces, if required, will simultaneously up load for deployment by sea. Each crisis will have unique demands, causing commanders to balance the speed of deployment with the protection of the deploying force.

Corps engineers are fully integrated into the light and heavy mix of deploying forces (see Figure 3-4). At the same time, other engineers will support installation railheads and staging-area operation requirements. Corps engineers may also be involved with port and airhead deployment operations. Engineer deployment tasks include constructing or upgrading deployment facilities; providing heavy equipment and trucks to assist in moving to and loading railcars, aircraft, and ships; marking and maintaining deployment routes from the installation to the port or airhead; and providing laborers to assist in the deployment process.

ENTRY OPERATIONS

This principal focus of the entry phase is to build up combat power as quickly as possible while concurrently conducting combat opera-

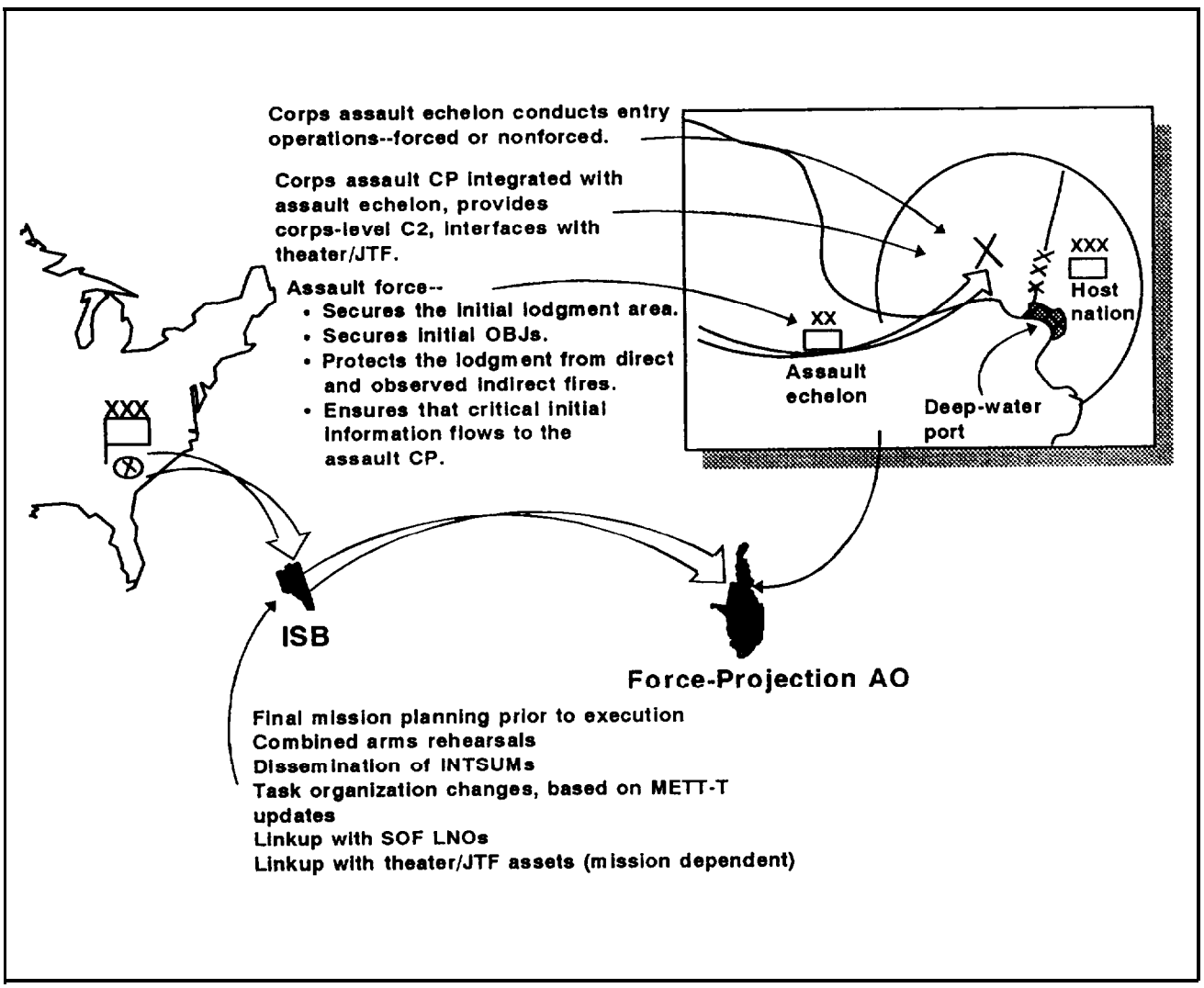

Figure 3-3. Deployment analysis

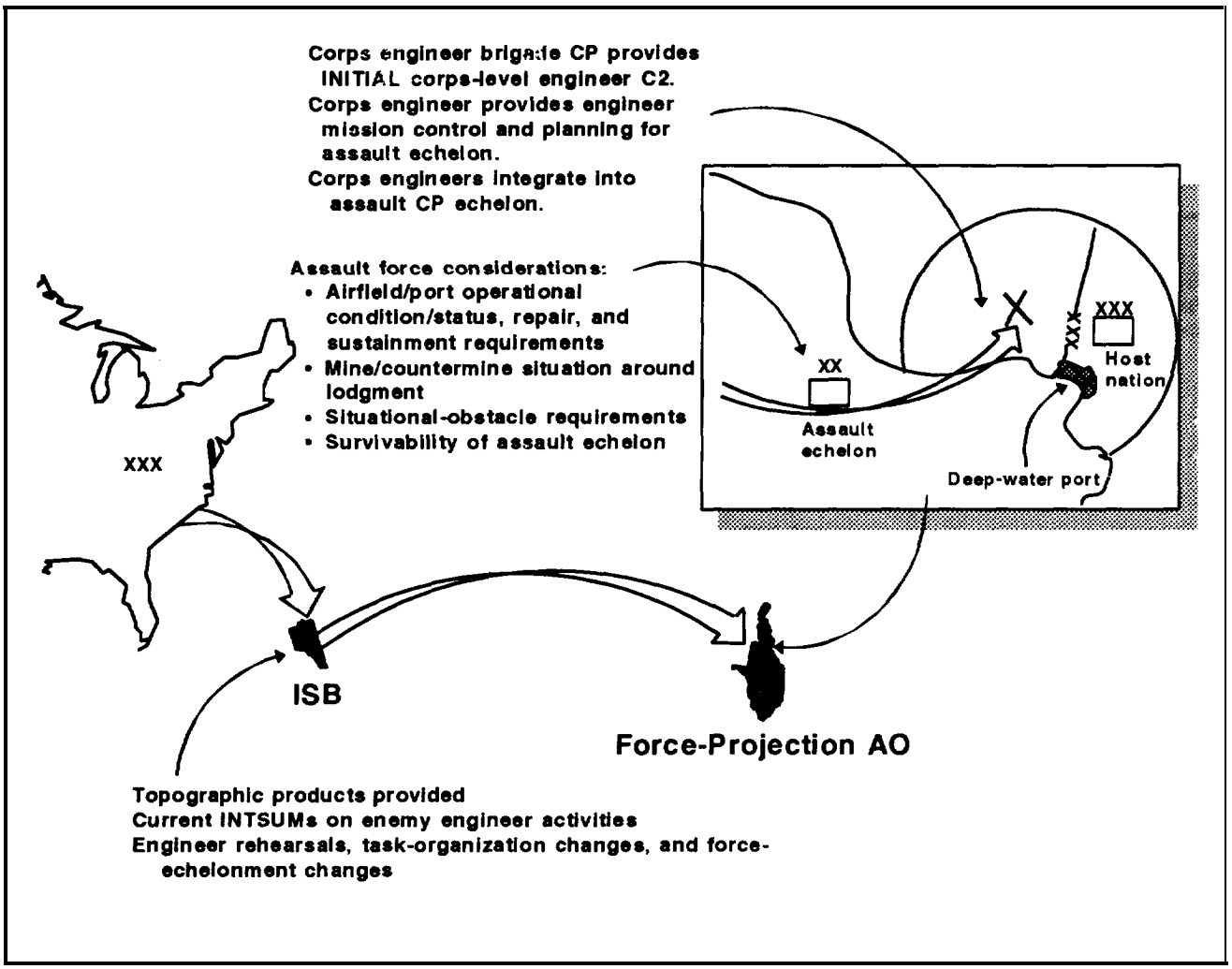

Figure 3-4. Deployment engineer functions

tions (see Figure 3-5, page 3-8). Speed in closing the force and in achieving the desired conditions in the contingency theater is critical. The success of follow-on decisive operations to restore the political and military end state hinges on the corps's ability to build combat power without losing the initiative. The coordinated use of joint, coalition, and host-nation forces continues to be paramount while building combat power. This phase is quite transitive in nature, as the corps commander accepts reasonable risks in using available forces to exploit favorable conditions. This key execution phase encompasses the critical seizure of unopposed or opposed lodgments in the objective area. Tailored assault packages, echeloned battle command, and the careful synchronization of air and sea power are essential. Forced-entry action by airborne, air assault, or amphibious forces initiates this phase by seizing airfields and establishing airheads. Follow-on corps echelons of the crisis-response force must be prepared to close into the objective areas and to reinforce the assault. This normally requires the formation of a JTF to shape future operations even as it focuses on the crucial joint fight to establish a lodgment. Available coalition and foreign/host-nation forces prove critical in this phase to provide the bulk of combat power in theater as US forces arrive.

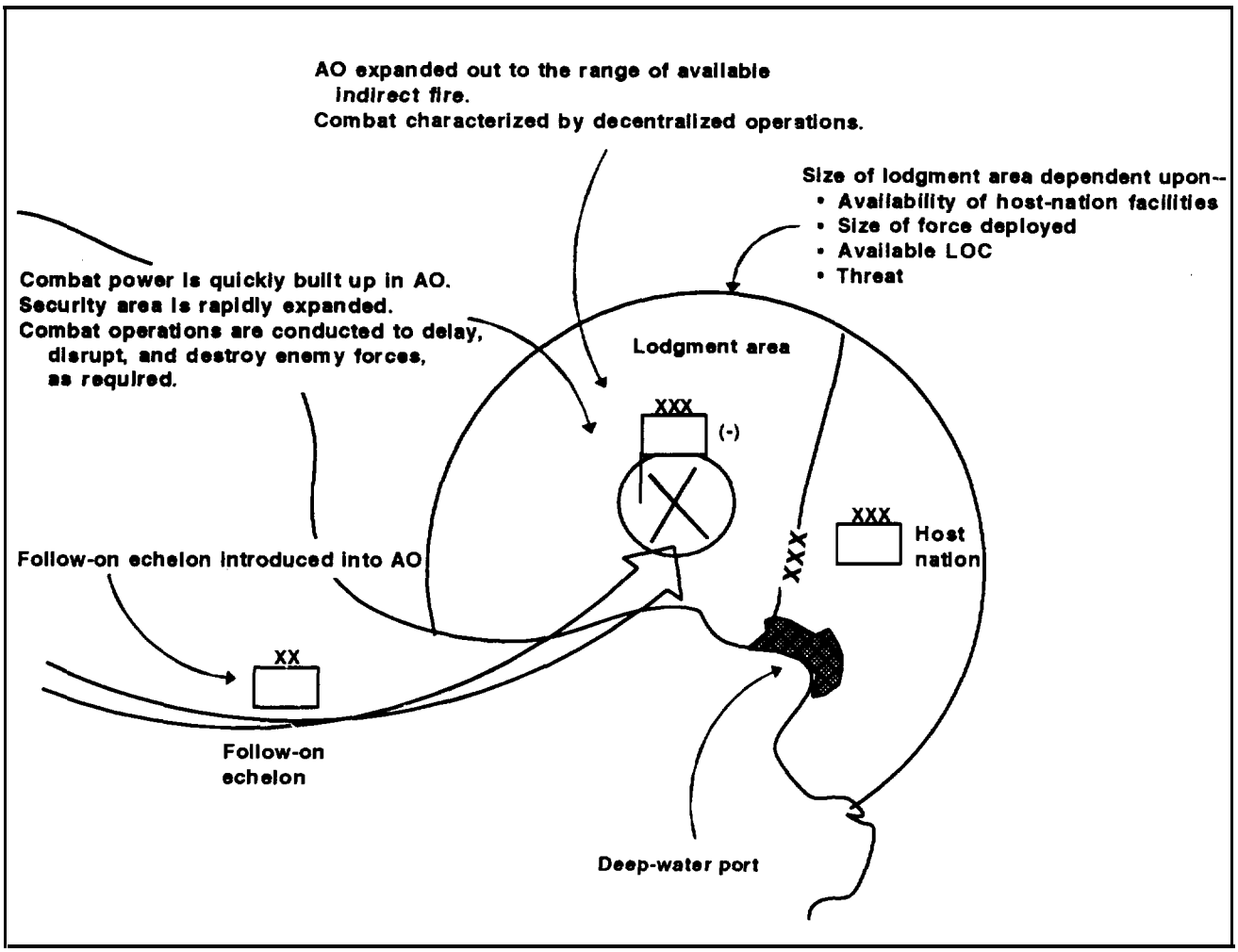

Figure 3-5. Entry operations analysis

Corps engineer forces are organized to support these combat operations simultaneously (see Figure 3-6). This situation could require commitment of both corps and division engineers early in the deployment sequence. Division engineers will focus on close combat requirements, including mobility, survivability, and force-protection support. Corps engineers repair runways, establish or improve existing LAPES and forward landing strips (FLSs), repair airports and seaports, construct and repair roads, support corps defensive operations with countermobility and survivability operations, construct ADA firing points, build corps battle-command facilities, and develop other sustainment infrastructure in the initial lodgment area and ISBs. Early deployment of corps topographic engineer imagery capability is critical to support the shaping of future operations in the force-projection theater. Follow-on corps topographic survey teams will be needed in the lodgment area to establish accurate survey control points for fire-support operations and positive navigation systems. Corps engineer battle-command elements are deployed with the assault and follow-on force packages to maximize engineer work on time-sensitive tasks and to coordinate engineer activities with host-nation and coalition forces. The corps engineer brigade may become the RCEM.

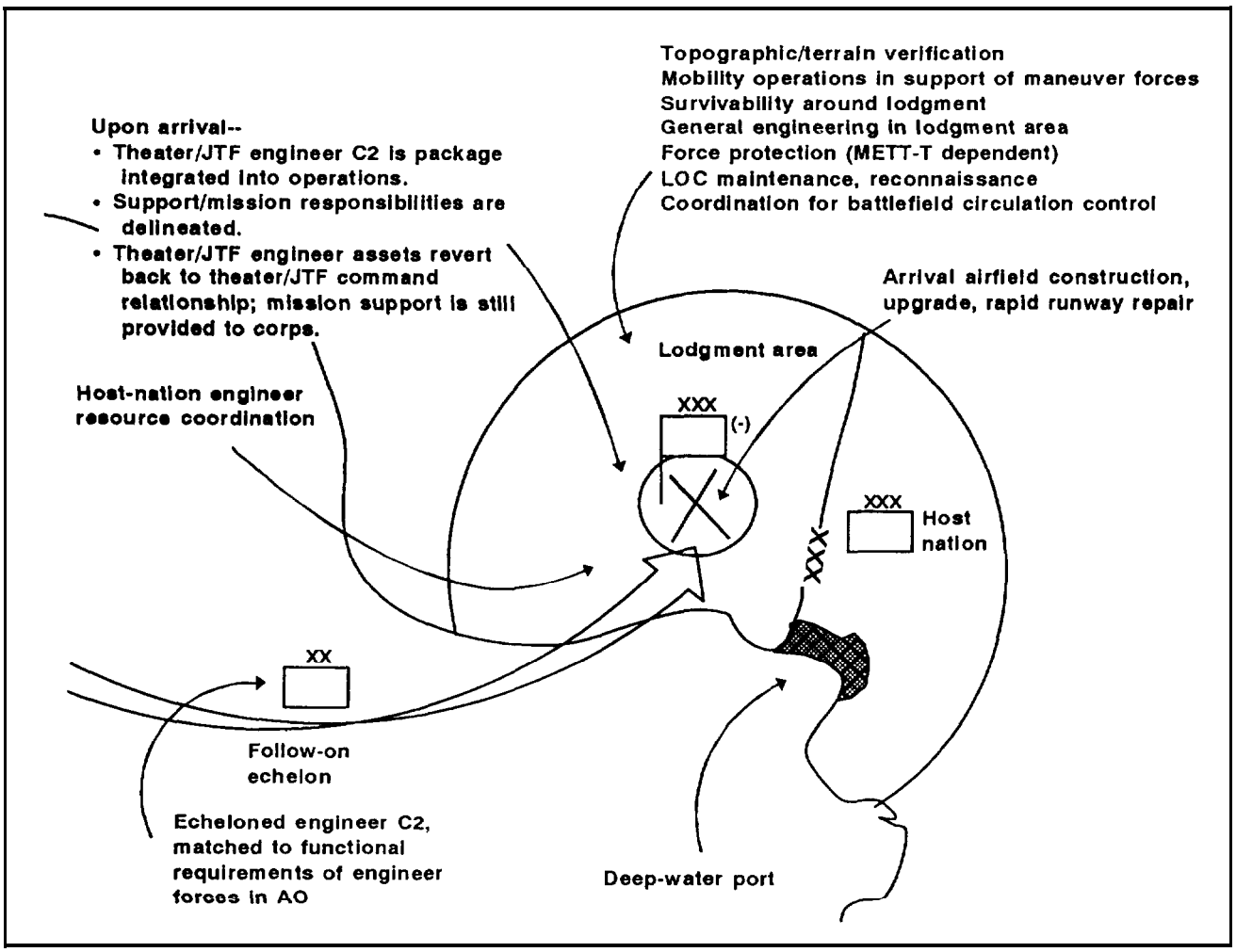

Figure 3-6. Entry operations engineer functions

COMBAT OPERATIONS

It is through decisive combat operations that the corps will achieve those operational objectives that will attain the strategic purpose of the campaign (see Figure 3-7, page 3-10). The corps operational method is characterized by the use of overwhel mi ng force, maneuver warfare, and simple battle-command design that exploit subordinates' initiatives through decentralized execution. The corps seeks to achieve the desired end state as soon as possible by winning the war with quick, aggressive operations. The previously described phases set the conditions for decisive combat operations. Speed and high tempo in planning and execution are essential qualities of the corps's warfighting style. The corps destroys or neutralizes the threat's center of gravity in this phase by maneuvering and orienting combat power against the enemy's flanks and rear.

During this phase, corps engineers are fully engaged in all of the battlefield operating systems (BOSs) as described throughout this manual, supporting the numerous tasks required during decisive combat operations (see Figure 3-8, page 3-11). These include—

- Protecting the arriving force with engineer survivability and countermobility operations.

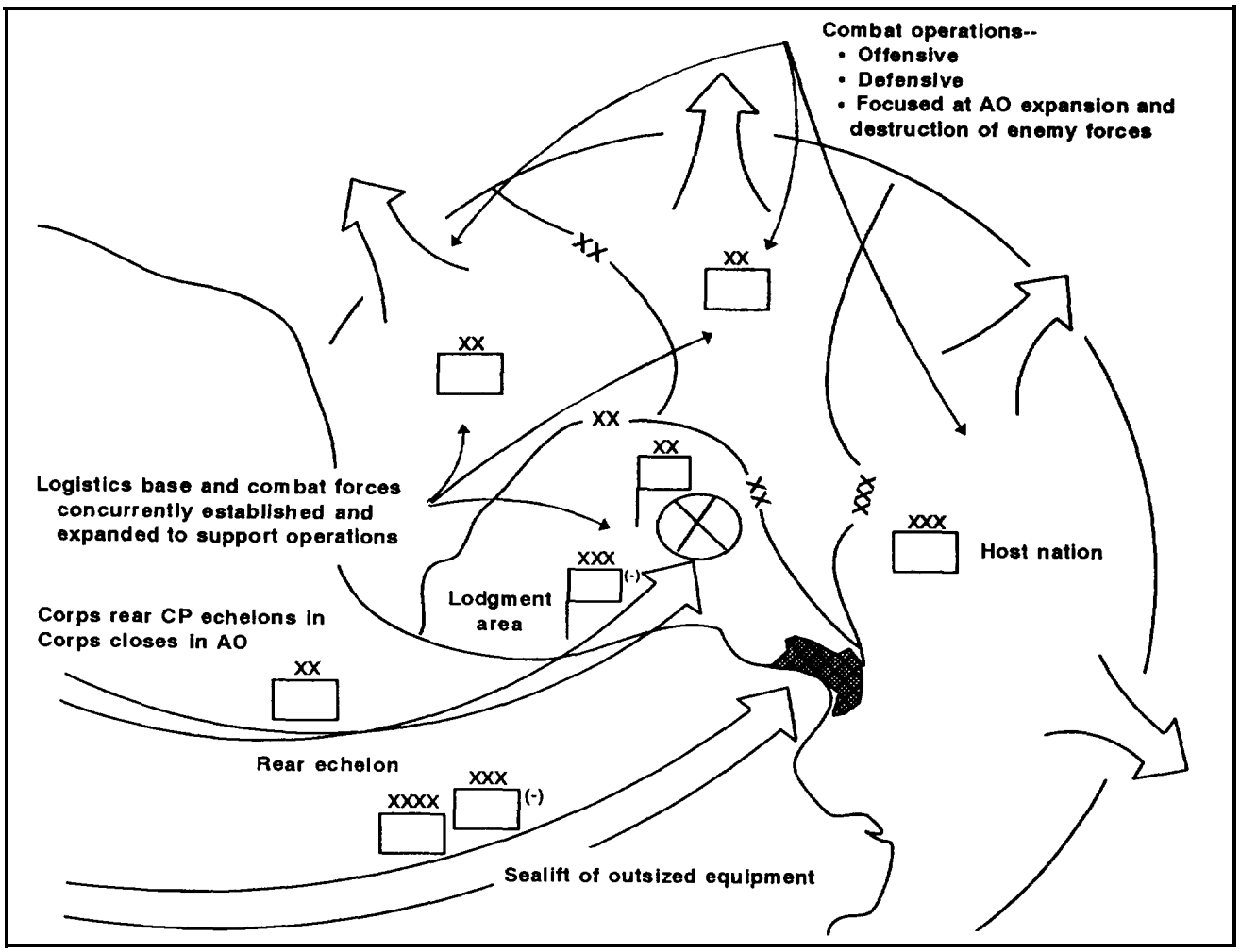

Figure 3-7. Combat operations analysis

- Constructing forward operating bases, FLSs, and supply routes.
- Expanding the lodgment area through combat engineer mobility operations.
- Providing arriving forces with topographic engineering support.
- Assisting reception, staging, and onward-movement operations with general engineering support, including the erection of portable structures and the construction of aircraft bed-down facilities, training facilities, EPW camps, and refugee facilities.
- Locating construction materials and equipment through engineer reconnaissance operations.
- Facilitating linkup operations with other forces, both joint and unconventional.
- Performing other needed force-projection theater engineer missions until the arrival of theater engineers under the control of an ENCOM or TA brigade (such as real estate acquisition, host-nation construction contracting support, well drilling, diving, fire fighting, pipeline construction, hazardous waste cleanup, and prime-power supply).

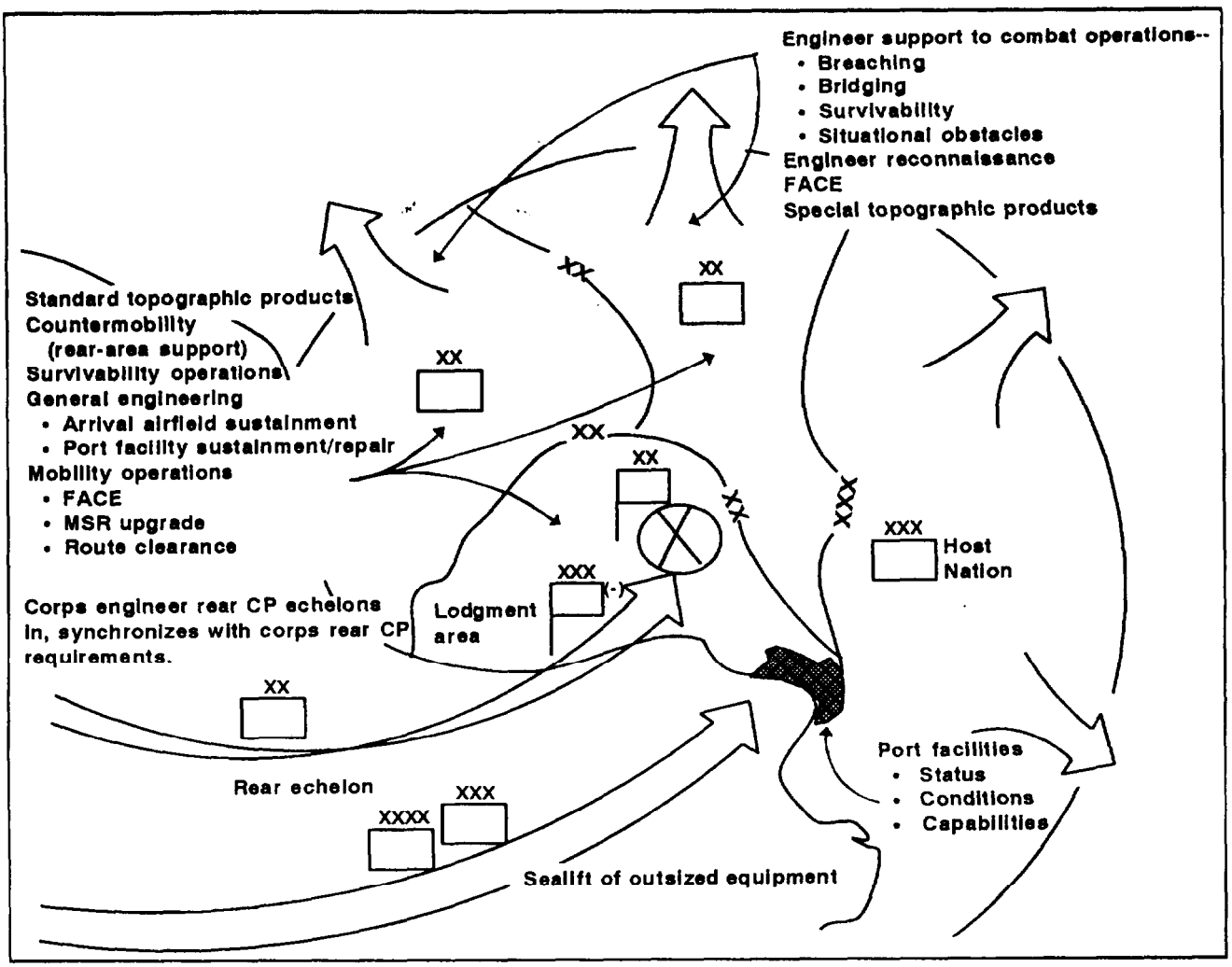

Figure 3-8. Combat operations engineer functions

Several tasks may be conducted exclusively by corps engineers, including—

- Constructing corps defensive positions, EPW camps, refugee facilities, and logistics bases.
- Providing combat engineer support to the corps reserve, cavalry regiments, separate maneuver brigades, corps RAOCs, TCFs, and corps aviation units.
- Performing deliberate river crossings.
- Augmenting corps force-protection and survivability.
- Relieving/reconstituting expended division engineer units.
- Performing corps camouflage and deception operations.
- Breaching bypassed obstacles, widening assault lanes, and limited clearing of minefield and UXO.
- Constructing, improving, and maintaining supply routes.
- Erecting permanent route signs.
- Performing equipment and munition deni al operations.

- Producing and distributing nonstandard topographic imagery products.

CONFLICT TERMINATION AND POSTCONFLICT OPERATIONS

Successful combat operations are designed to bring an end to the conflict.When a cessation of hostilities or a truce is called, deployed corps forces transition to a period of postconflict operations. This transition can occur even if residual combat operations are still underway in other parts of the force-projection theater (see Figure 3-9).

Corps engineers are especially suited to assist in restoring order, reestablishing the foreign/host-nation infrastructure, preparing forces for redeployment, and providing a contínting presence in theater (see Figure 3-10). Corps engineers support various postconflict missions such as constructing tent cities for refugees, constructing EPW camps, developing potable water supplies, restoring utilities, rebuilding roads and bridges, and marking and limited clearing of minefield and UXO.

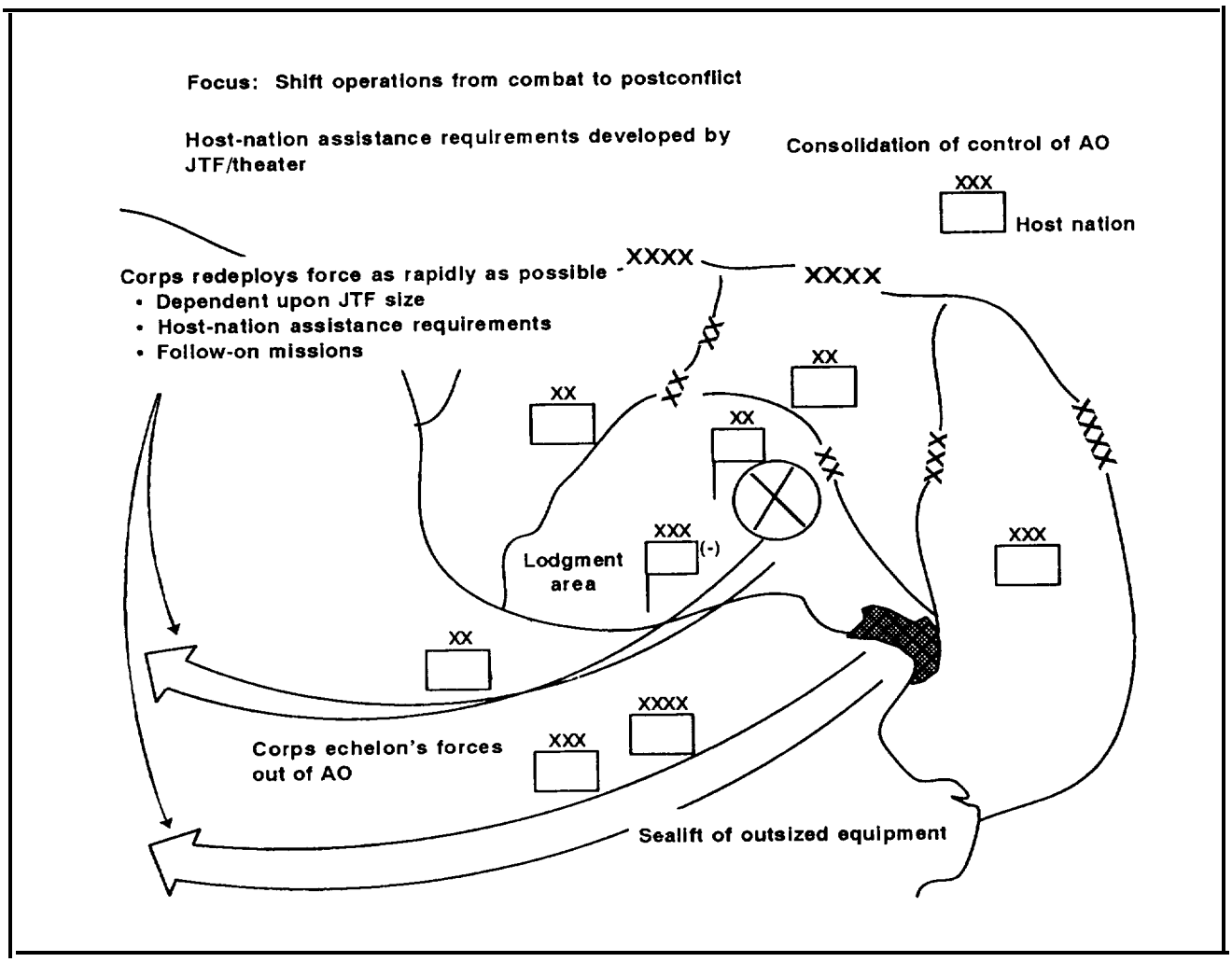

Figure 3-9. Conflict termination postconflict operations redeployment, and reconstitution operations

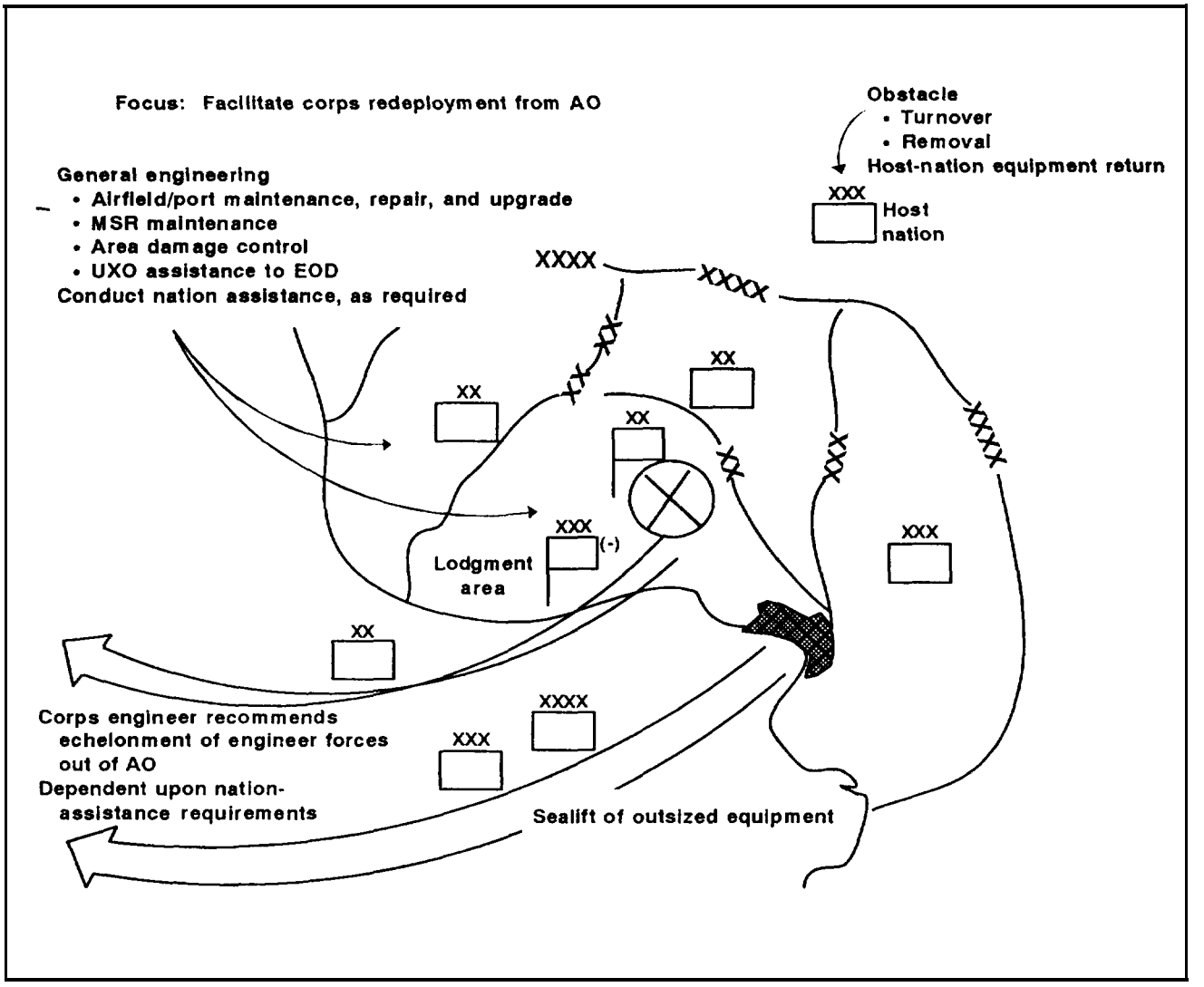

Figure 3-10. Conflict termination, postconflict operations, redeployment, and engineer functions

REDEPLOYMENT AND RECONSTITUTION

The objectives in this final phase are to redeploy assets that are no longer needed as rapidly as possible to CONUS, to an ISB, or to another TO. Postconflict activities have a di - rect impact on the redeployment flow. In conjunction with this effort, the corps must be reconstituted for other force- projection missions. At the same time, CS and CSS elements often remain in theater to support forward-presence peacekeeping or nation-assistance efforts. Echeloning the corps battle command while retaining flexibility and security continue to be essential.

During this phase, corps engineers are focused on the construction or repair of redeployment facilities and staging areas, including wash racks, equipment holding, and sterile customs inspection facilities. In addition, corps engineers will support—

- Force protection of deployi ng forces.
- Port operations and maintenance.

- Battlefield and hazardous-waste cleanup.

Ž Supply-route and facility maintenance.

Ž Other needed general engineering and life-support engineering tasks.

DEMOBILIZATION

Demobilization is the process by which units, individuals, and material transfer from active duty back to a reserve status. Demobilization of logistics requires significant resources such as supplies, material, and support activities.

Corps engineers may demobilize themselves or be involved with the handling, storage, and accountability of demobilized equipment and supplies. Typical engineer demobilization missions include the construction, upgrade, or removal of logistics facilities; the cleanup and removal of hazardous waste, the repair of in-

JOINT OPERATIONS

Operation RESTORE HOPE demonstrated how well joint engineer capabilities can be used to meet theater requirements. Early planning identified a large military engineer requirement for both combat and construction support missions. Planners decided to use a mixture of engineering capability from the US Army, Navy, Air Force, and Marine Corps. Time phasing of this support was well orchestrated, based on available lift and mission requinements.

US Air Force RED HORSE airfield repair teams had been maintaining airfields throughout Somalia in support of Operation PROVIDE RELIEF since 16 August 1993.

A small portion of the JTF engineer staff arrived on D-Day to assess theater requirements. Of immediate concern was power generation and potable water for the impending force.

On D+1, a vertical construction detachment from the 40th Naval Mobile Construction Battalion (NMCB 40) (Seabee) opened up the Mogadishu airfield, and constructed troop beddown and logistics support facilities throughout Mogadishu.

On D+5, a company of combat engineers from the 1st Marine Combat Engineer Battalion (1 CEB), 1st Marine Division, supported the expansion of Marine operations in Mogadishu by clearing obstacles and sweeping for mines. The battalion then supported Marine lodgment efforts in Baidoa, Balidogie, and Kismayo. They also began upgrading the road from Baidoa to Bardera.

Elements of the Marine 7th Engineer Support Battalion (7 ESB) arrived offshore on D+5. The battalion augmented Seabee horizontal construction capability and constructed and operated redeployment facilities. Horizontal construction equipment from the 1st Naval Mobile Construction Battalion (NMCB 1) arrived on D+7 along with command and control elements from the 30th Naval Construction Regiment (30 NCR). NMCB 1 repaired airfields and constructed base camp facilities at outlying humanitarian relief centers and opened up MSRs out of Mogadishu.

On D+7, a company of the Army's 41st Engineer Battalion, 10th Mountain Division, arrived and supported the lodgment of Army infantry forces at Balidogle and Marka with minesweeping operations, engineer reconnaissance, force protection, and limited base-camp construction

support. The remainder of the battalion (-) flowed into theater and constructed two Bailey bridges, repaired one Bailey bridge, and cleared mines along the Kismayo-to-Bardera MSR.

On D+10, a DMA map depot was *established at the Mogadishu airfield.*

On D+22, the JTF dropped the requirement for one additional Army combat heavy battalion, a port construction company, a prime-power detachment, and several fire-fighting units. The decision not to bring forward additional engineer forces was based on capabilities available in theater with deployed or deploying US and coalition engineer forces.

On D+24, elements of the Army's 36th Engineer Group, along with the 43rd Combat Heavy Engineer Battalion and the 63rd and 642nd Engineer Combat Support Equipment Companies, arrived to open MSRs and build base camps in the western sector Remaining elements of NMCB 40 and NMCB 1 also arrived on D+24 and continued working on MSR and base camps in the eastern sector All engineer personnel and equipment were in theater by D+50.

From the Center for Army Lessons Learned (CALL) "After-Action Report on Operation Restore Hope in Somalia", March 1993.

The Army will not operate alone. Force-projection operations involving Army forces will always be joint under the responsibility of a unified combat commander. Joint forces include unified and specified commands and JTFs. Armies normally design the major ground operations of a campaign, while corps and divisions usually fight battles and engagements. A corps commander may be a JTF commander in certain circumstances, planning and executing a campaign that achieves strategic objectives. A JTF will normally draw units from various components: TA, naval fleet, fleet marine force, or theater air force, Joint forces operate with two distinct chains of command--one for operations and another for administrative and logistical matters. A JTF may be formed to perform OOTW missions such as support to insurgency and counteri nsurgency, peace operations, Department of Defense (DOD) support to counterdrug operations, antiterrorism operations, and contingency OOTW.

Corps engineer support to a JTF, unified, or specified command uses both chains of command to accomplish required tasks. The operational chain of command delineates missions, task organ izations, and geographic areas of responsibilities for corps engineer forces. The corps engineer brigade SES may form the nucleus of the JTF engineer staff section, with additional staffing provided from each service component in the JTF. An understanding of other component engineer capabilities is essential for understanding the joint commander's intent. Appendix E lists some of these joint capabilities that corps engineer forces should be familiar with.

When corps engineer forces are identified to support a JTF, a thorough joint engineer METT-T analysis is made to identify all engineer requirements. This critical front-end analysis drives the entire engineer support operation, ensuring success. The corps engineer force uses the Army administrative and logistical chain of command for support. Engineer requirements are extensively planned with the corps logistics staff, ensuring that adequate support exists over extended joint operations distances. Limited common-type engineer logistical support (such as fuel, demolitions, construction materials, and construction equipment repair parts) may be available from other

components. However, most corps engineer administrative and logistical support must come exclusively from Army sources. Corps engineer LO requirements during joint operations will also be extensive.

AIR FORCE SUPPORT

Army corps engineer support to the Air Force falls into three broad categories: input to Air Force interdiction missions, requests for terrain imagery products from Air Force air- and space-based surveillance and reconnaissance assets, and airfield construction support in the corps area.

Interdiction Missions

Army corps engineers will nominate situational obstacle locations in support of deep operations through the corps G2/G3 targeting element to the corps air support operations center (ASOC) located in the CDOCC of the corps main CP. Deep situational obstacles may include strategic bridge demolitions and Air Force-delivered scatterable minefield. Approved deep-operations situational obstacle locations with specific obstacle effects on HVTs will be described in the engineer annex to the corps order and supported by the DST. Obstacles that are emplaced during deep operations will be reported by the ASOC to the G3 and tracked by the engineer staff in the corps main CP current-operations cell.

Surveillance and Reconnaissance Missions

Army corps engineer requests for specific terrain imagery products from Air Force surveillance and reconnaissance assets will be made through the corps G2 to the ASOC.

Construction Support

Army corps engineers directly interface with Air Force agencies, as required, in support of major airfield construction operations in the corps's force-projection area. These missions are normally beyond the scope of organic Air Force engineer capability (such as the Prime Base Engineer Emergency Force (Prime BEEF) and the Rapid Engineer Deployable Heavy Operational Repair Squadron, Engineer (RED HORSE)) and require extensive liaison between the corps engineer brigade and the Air Force customer. Host-nation airfield facility leasing and contracting support may be required from the USACE or an ENCOM. The corps engineer brigade may be required to provide fire-fighting and crash-rescue support to Air Force airfields. The engineer annex to the corps OPORD/OPLAN describes specific procedures to be used.

NAVY AND MARINE CORPS SUPPORT

Army corps engineer support to the Navy and Marine Corps primarily deals with the support of amphibious operations on a mission basis. Corps engineer input into the CDOCC targeting cell may eventually lead to naval or marine corps forces emplacing approved corps deep obstacle groups. In addition, naval and marine corps imagery support may be available through the corps G2. Corps engineer construction interface with NMCBs (Seabees) may occur in special circumstances, with extensive liaison support required from the corps engineer brigade, the USACE, and the ENCOM. This support may include Army diving and well-drilling support for joint port facilities.

Army corps engineers may assist Navy amphibious operations by clearing deep-water mines using Army divers. They may also assist Marine Corps amphibious operations with shallow-water, beach obstacle breaching and clearing.

MULTINATIONAL OPERATIONS

Force-projection operations inherently imply that they will be multinational, varying in duration, formality and purpose. These include the temporary alignment of countries for narrowly focused objectives, informal coalitions to provide for common action in accomplishing limited objectives, and long-standing alliances. The longer the coalition is sustained, the more opportunities exist to standardize and integrate tactics, techniques, and procedures between nations.

Some considerations that corps engineer forces should address while supporting multinational operations include—

- What are the capabilities and any limitations of coalition engineer forces?
- What topographic capabilities and products can be shared between coalition partners?
- Can construction services and materials be provided by the host nation? What common engineer items can be shared between coalition partners such as construction equipment repair parts and obstacle materials?
- What engineer liaison requirements exist? Are LOs provided with adequate transportation and communications equipment? What language skills are needed?

OPERATIONS OTHER THAN WAR

Corps engineers are key players during unopposed force-projection operations into theaters with little or no infrastructure support. Corps engineers can effectively support complex and sensitive situations in a variety of OOTW, to include support to insurgency and counterinsurgency, humanitarian assistance and disaster relief, peace operations, DOD support to counterdrug operations, nation assistance, antiterrorism operations, and contingency OOTW. All of these situations relate directly to wartime engineer missions and tasks. Corps engineer LO requirements during OOTW can be extensive, Chapter 8 and FM 5-114 describe in detail how corps engineers support OOTW.