

CHAPTER 6

DEFENSIVE OPERATIONS

During the next twenty-four hours I Corps slowly withdrew closer to Seoul. At noon on April 28 (1951) it began occupying Line Lincoln (or Golden). After weeks of engineering work, the line was very strong. It was comprised of a series of deep, interconnected trenches and sandbagged bunkers bristling with machine guns, 57- and 75-mm recoilless rifles, and flamethrowers. It was protected on the north side by half a dozen lines of coiled barbed wire. Beyond and inside the barbed wire were dense fields of antipersonnel mines, booby traps, and "thousands" of gasoline drums (fougasses) filled with napalm and white phosphorus to be exploded by trip wire or remotely activated thermite grenades...

That night--April 28--the enemy made two attempts to crack Line Lincoln (or Golden). The first was mounted by the NKPA 8th Division against the ROK 1st Division sector Supported by Patton tanks of Hannum's B Company, 73d Tank Battalion, the ROKs yielded a hill, but then counterattacked, killing 1,241 NKPA troops. The second was a CCF attack at Gerry Kelleher's 35th Infantry sector After Kelleher's men had decisively repulsed the attack, he reported they had inflicted "an estimated 1,000 dead and wounded" casualties on the CCF.

From the book, The Forgotten War. America in Korea 1950-1953, by Clay Blair.

PURPOSE OF THE DEFENSE

The corps conducts defensive operations to defeat enemy attacks and regain the initiative. While military operations focus on maintaining the initiative through offensive action, the defense is an inherent part of any offensive action. The defense is only a temporary state; its purpose is to facilitate an offensive action. The corps may have to defend when it is not able to attack. The defense cannot be purely passive; the corps must seize or create opportunities to attack the enemy throughout its AO. The corps may need in gain time to build combat power or to hold key terrain to facilitate other operations. It may have to defend for the sole purpose of engaging and defeating enemy

forces in order to erode their capabilities. During force-projection operations, the corps may have to defend the lodgment area until sufficient friendly forces have been deployed to assume the offense. Counterattacks and spoiling attacks are incorporated into the overall defensive plan. The plan should be flexible enough in terms of its concept and task organization to permit rapid changes. The corps fights a dynamic defense by continually attacking throughout the battle.

Corps engineers play a vital role in giving the corps a decisive edge while conducting the defense. Engineers understand the charac-

teristics of defensive operations and how they are applied. They also appreciate how engineer forces and missions integrate into the corps's defensive framework. The engineer-estimate

process remains as a base planning tool for integrating into corps defensive plans. While the process remains the same, each step is tailored to the needs for defensive planning.

CHARACTERISTICS OF DEFENSIVE OPERATIONS

The corps defense serves to defeat the attacking enemy and regain the initiative. It is an active, not passive, operation. It is characterized by flexibility and violence, attacking the enemy throughout the depth of his formations. Corps defensive operations include five distinct characteristics: preparation, security, disruption, mass and concentration of forces, and flexibility.

PREPARATION

Defensive operations have a distinct preparation phase that is vital to the corps's success. The defender arrives on the battlefield first and, as time allows, is afforded the opportunity to choose his ground in order to capitalize on the advantage of fighting from selected and prepared positions, and to set the conditions for the battle. The corps prepares for the defense by positioning forces, making use of and improving terrain, developing and war-gaming plans, organizing the force for movement and support, rehearsing, and conducting surveillance and reconnaissance forward of the defended area. During the course of the battle, the corps looks for opportunities to wrest the initiative from the attacker. The corps commander prepares for this by identifying counterattack forces and rehearsing counterattack plans for eventual transition to the offense.

Corps engineer functions and forces are a critical component in setting the conditions for combat and giving the corps an edge against an attacker. Corps engineers play a major role in defensive preparations, depending largely on their ability to conduct integrated planning with the corps staff and parallel planning with the corps engineer brigade staff. The corps engineer staff uses engineer channels to disseminate

the information and intent needed to foster early defensive planning at all levels. Corps-level engineer planning provides a centralized focus for the defense while allowing decentralized execution. The corps engineer staff uses the scheme of engineer operations, obstacle-emplacement capability and control, survivability guidance, and counterattack mobility requirements to focus the corps's subordinate unit engineer efforts. The corps engineer considers the full range of engineer requirements for the total defensive framework: deep, security close (MBA), rear, and reserve operations. Each element is considered during the engineer mission analysis and accounted for in the corps scheme of engineer operations. The corps engineer resources subordinate through task organization and the prioritization of Class IV obstacle materials and Class V mines and demolitions. This allows subordinates to anticipate limitations on their capabilities, to prioritize support, and to identify engineer asset shortfalls. Topographic engineers help prepare for defensive operations with detailed terrain-analysis products. Combat engineers perform engineer reconnaissance and intelligence collection support, the siting and preparation of fortifications and obstacles that exploit the defender's advantages, and rehearse breaching drills with counterattack forces. Wheeled combat engineer battalions, combat heavy engineer battalions, and CSE companies provide general engineering support by constructing, upgrading, and maintaining MSRs and logistics bases throughout the corps's defensive AO.

SECURITY

Defending forces provide security to conserve combat power for use elsewhere. The purpose

of security in the defense is to coordinate and synchronize the defense, to provide early warning, and to begin disrupting the integrity of the enemy attack early and continuously. The corps provides defensive security through force-protection measures, deception, and physical means in the defensive area. The corps normally provides a security area with a designated covering force.

Corps engineers assist in the defense's security in several areas. Corps engineer battalions attached to covering-force units emplace situational obstacles in the face of the enemy and conduct timely terrain and enemy reconnaissances. Corps engineers operating in the MBA emplace tactical obstacles that fix turn, disrupt or block enemy formations. They also provide force protection during survivability operations for corps C2, artillery, air defense, and logistics facilities. Corps engineers support deception operations as required.

DISRUPTION

Corps defensive forces disrupt the enemy attack throughout the depth of his formations by—

- Ž Destroying forces.
 - Spoiling the timing or synchronization of his attack.
- Ž Denying his freedom to maneuver.
 - Misleading enemy reconnaissance.
- Ž Breaking up formations.
 - Interrupting fire support, logistics support, and C2.
- Ž Seizing the initiative.

The corps defense includes a focused attempt to disrupt the enemy effort through deep, security, and deception operations. The attacker is

never allowed to get set. He is hit with spoiling attacks before he can focus his combat power, and he is counterattacked before he can consolidate any gains.

Corps engineers aid in the disruption of the enemy attack throughout the depth of the battlefield. The corps engineer and his staff work closely with the corps staff to ensure that engineer functions are integrated into deep operations. For example, the corps engineer staff nominates deep targets that directly attack the enemy's engineer capability to conduct mobility operations such as bridging and breaching assets. Based on terrain analysis and engineer intelligence, the staff also nominates deep targets for destruction or denial and designs obstacle systems that fix or disrupt enemy formations. The staff ensures that engineer aspects of deep and MBA operations are mutually supportive. Corps engineers provide the security force with the countermobility means needed to disrupt the enemy's attack early and the mobility means needed to fight a fluid battle. Obstacles are used in disruptive deception efforts in the MBA. This causes the enemy to commit combat power prematurely or against a strength perceived as a weakness. Corps engineer forces provide the mobility required of corps counterattacking forces that will complete the defeat of the enemy force and regain the initiative. Corps engineer units also provide survivability support to defending forces. This support allows the massing of effects of lethal firepower to disrupt an attack.

MASS AND CONCENTRATION

The corps commander will concentrate his forces swiftly and mass the effects of overwhelming combat power where he chooses. He shifts that mass repeatedly with his point of main effort during the period of the enemy attack. The corps concentrates forces to exploit or create an enemy weakness. The corps commander may be willing to economize and accept risk in some areas to create the effects required. Economy-of-force operations or de-

ception may be major factors in the corps's defensive plan. The corps retains and, when necessary, reconstitutes a reserve.

Corps engineers support the massing of forces and the concentration of effects through mobility. This allows rapid movement of forces and survivability to maximize protection of both fighting and support systems. Engineers support corps deception operations through a variety of tactical engineering missions or by providing forces. Corps engineers contribute significantly to economy-of-force operations by emplacing dense obstacle zones, enhancing survivability of massed firepower and C2, and constructing strong points. Engineers also provide mobility for the rapid movement of corps counterattack forces and reserves to allow the corps to take offensive action and exploit a broken enemy attack.

FLEXIBILITY

Corps defensive plans are flexible to allow agile execution. Corps defensive operations counter

the enemy's blows, seize the initiative from the enemy force, and set the conditions for regaining the initiative. Agility requires the corps staff to read the battle, plan branches and sequels, organize the battlefield in depth, retain reserves, plan counterattacks, and have the ability to shift the main effort.

Corps engineers support the corps's flexibility and agility with all available units. Corps topographic engineers contribute to the corps commander's ability to see and read the battle by providing timely terrain analysis and special topographic products. Corps combat engineers provide tactical mobility to counterattack and reserve forces. Corps construction engineer forces provide general engineering that allows the corps commander to react quickly by building and maintaining routes that allow rapid shifts of combat and support forces. They also establish forward logistics bases. Engineer success is directly dependent on the ability of all engineer staffs within the corps to anticipate requirements and take actions to provide timely engineer support to the corps.

DEFENSIVE PATTERNS

Corps defensive operations generally take one of two patterns: a mobile defense or an area defense. The fundamental difference between these patterns is their focus-and-defeat mechanism. The scheme of engineer operations to support corps defensive operations is tailored to the type of defense and its focus-and-defeat mechanism. Mobile defenses focus on the destruction of the attacking force by permitting the enemy to advance into a position that exposes him to counterattack by a mobile reserve force. Area defenses focus on the retention of terrain by absorbing the enemy in an interlocking series of positions and destroying him largely by fires. Both forms of the defense employ static and dynamic elements. Defending corps commanders combine both patterns, using static elements to delay, canalize, and ultimately halt the attacker and using dynamic elements (spoiling attacks and counterattacks)

to strike and destroy enemy forces. The balance among these elements depends on METT-T but generally involves a combination of both. Regardless of the pattern selected, success depends on the employment of both static and dynamic elements to defeat an attacking enemy.

MOBILE DEFENSE

The focus of the corps's mobile defense is the destruction of the enemy attacker. The mobile defense is organized to permit the enemy to advance into a position that exposes him to counterattack and envelopment by a mobile striking force. Therefore, the mobile defense trades space for time to achieve a decisive advantage against the enemy. The defeat mechanism is a large, mobile striking force that has combat power and mobility greater than the targeted enemy force. Corps defenders place

minimum forces forward, forming powerful forces with which to strike the enemy at his most vulnerable time and place.

Corps engineer forces support the mobile defense with mobility assets, decentralized engineer command relationships, and dedicated engineer forces committed to the maneuver mobile striking force. The mobility of the defending force is key to the success of a mobile defense. Engineers provide rapid breaching and mobility assistance through all encountered obstacles. A decentralized engineer force distributed among maneuver elements in command

relationships allows maneuver commanders the flexibility necessary to execute a mobile defense. The maneuver force reserve normally has a dedicated engineer force assigned to it in a command relationship to ensure synchronized and responsive support. While engineer forces are not held in reserve, engineer support to the mobile striking force is a critical mission. The successful mobile defense depends on the synchronized integration of maneuver, fires, and obstacles to seize the initiative from the attacker within the defended area. Figure 6-1 shows an example of the framework of a corps mobile defense.

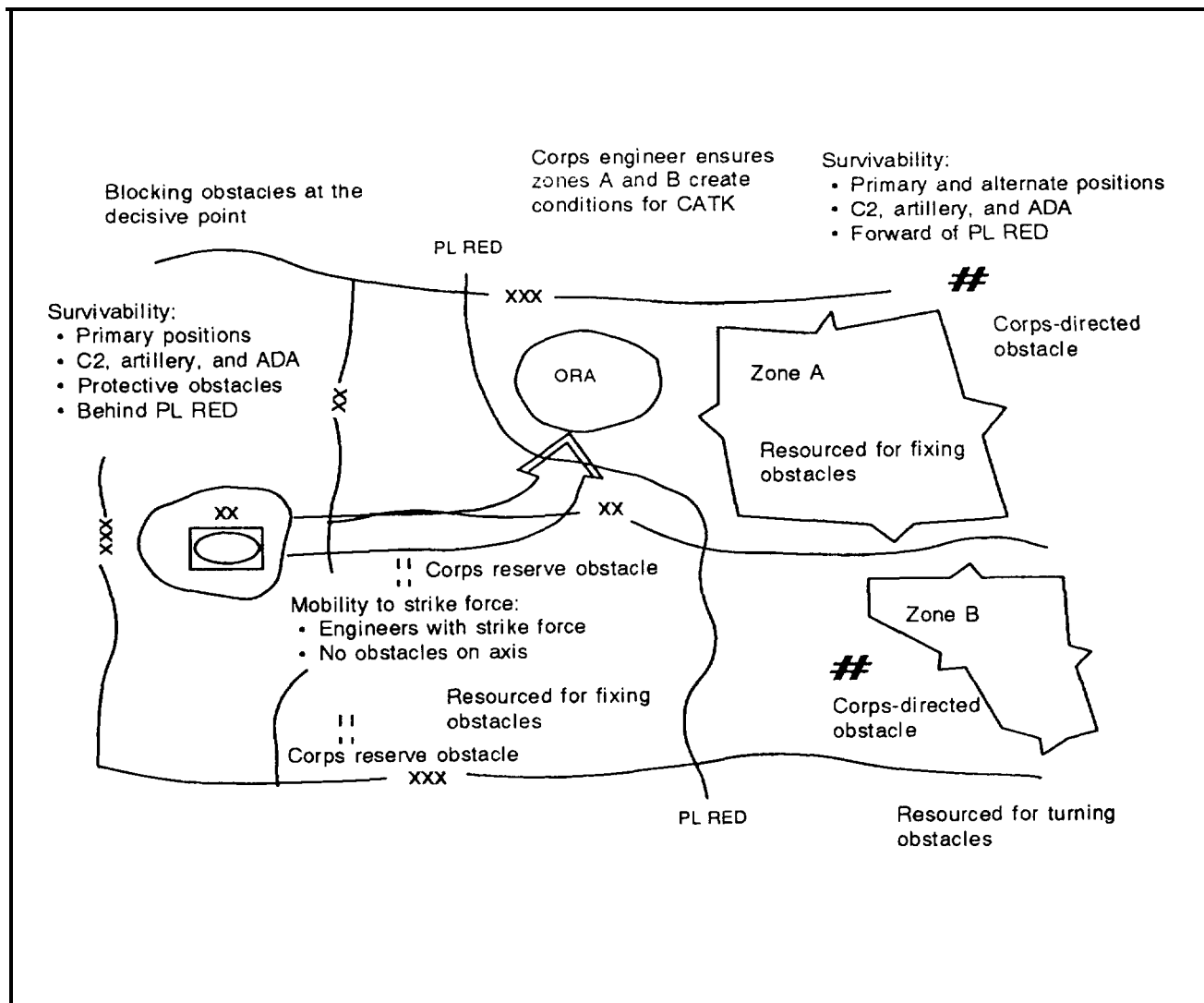


Figure 6-1. Mobile-defense framework

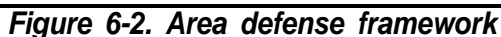
Countermobility support to the mobile defense concentrates on using obstacles to attack the enemy's ability to maneuver and preserves the mobility of the friendly force. Obstacle planning during the mobile defense is closely linked to the enemy's most probable maneuver course of action rather than terrain. Corps terrain analysis and topographic products assist the obstacle planning effort by identifying likely obstacle-emplacement areas used for attacking the enemy's maneuver in a way that supports his destruction by friendly counterattack. Corps obstacle planning during the mobile defense is usually more restrictive than permissive and reduces the flexibility of the divisions. Directed corps obstacle zones, reserve demolition obstacles, and ORAs will be the norm. This serves to mass division obstacle effort at critical areas and to preserve the mobility of the corps counterattack force into the MBA. Survivability effort trades space for time to create an enemy weakness to exploit by counterattack. To create the conditions for a counterattack, the divisions fight the depth of their sectors. Corps engineers provide survivability support to the divisions primarily by constructing alternate and supplementary fighting positions in depth. The nature of the mobile defense fight reduces the need for protective obstacles throughout the defense. Protective obstacle effort is concentrated in the final subsequent positions where the penetration must be blunted to allow counterattack to support the mobility of the mobile striking force. The staff first delineates obstacle control measures to ensure division obstacle efforts do not limit the mobile striking force's freedom to maneuver. Then, they ensure that the mobile striking force has the necessary dedicated engineer support to maintain its mobility during the counterattack. It must be able to reduce enemy or friendly obstacles found in its path. The counterattack cannot be stalled by lack of mobility. The corps engineer staff weighs the trade-offs between dedicating corps engineer forces to the mobile striking force or the obstacle emplacement and survivability requirements in the MBA. General engineering sup-

port to corps logistics agencies focuses on constructing and maintaining numerous MSRs and logistics bases that shift continuously during the mobile defensive fight.

AREA DEFENSE

The corps commander conducts an area defense to deny the enemy access to terrain or facilities for a specified time. The corps may conduct an area defense as part of a larger theater mobile defense. The bulk of defending forces deploys to retain ground, using a defeat mechanism that is a combination of defensive positions with interlocking fires and a small mobile reserve to defeat local penetrations. The area defense is organized to absorb the enemy into an interlocked series of positions from which he can be destroyed. A security area or covering force is also part of an area defense, METT-T drives the tasks to be done and determines priority. The maximum use of obstacles, flame weapons, engagement areas, and control and distribution of fires is key to successful area defense. The area defense does not promise outright destruction of the attacker; and it may require other simultaneous or subsequent operations to achieve a decisive defeat of the enemy. Figure 6-2 shows an example of the framework of a corps area defense.

Corps engineer forces support the area defense based on detailed corps plans and synchronization of all operational and tactical warfare components. Timely corps topographic and terrain-analysis products assist in the identification of key and decisive terrain. They also play a major role in organizing an area defense and become the focus of obstacle emplacement and survivability effort. Preparation of the area defense is important and engineer effort is extensive, particularly in that area designated as the corps's main effort. Retaining centralized control of corps engineer units and their resources is the most efficient method of preparing the area defense, so engineers are generally employed under their own commanders in a support relationship to maneuver com-



tions. The corps engineer staff is sensitive to the division's increased fortification needs in a corps area defense. The increased requirement for survivability also entails heavier employment of protective obstacles to break the attacker's assault. This increased need for division primary alternate, and supplementary fighting positions and protective obstacles requires more corps engineers to support the divisions. Once the battle is joined, a minimal number of corps engineers remain with committed forces in a command relationship. This allows for rapid repair of obstacles and fighting positions and provides mobility support for lo-

cal counterattacks. The bulk of the corps engineer force withdraws to continue to work on defenses in depth. General engineering support to corps logistics agencies focuses on con-

structing, maintaining, and protecting critical MSRs and logistics bases that are normally limited in number due to terrain constraints during the area defensive fight.

OPERATIONS IN DEPTH

In the defense, the corps seeks to maximize its firepower, mobility and shock effect to defeat the enemy's attack and transition early to the offense. Regardless of whether the mission calls for a mobile or area defense, the corps uses the following six elements of the defensive framework to plan the synchronization of its simultaneous deep, close, and rear operations as one battle:

Ž Deep operations in the area well beyond the forward line of own troops (FLOT).

- Security-force operations forward and to the flanks of the defending forces.

Ž Defensive operations in an MBA.

- Reserve operations in support of the main defensive effort.

Ž Rear operations to retain freedom of action in the rear area.

Ž Deception operations to reinforce the enemy's perception of his success and to delude him as to the true location and intended use of the corps's reserve forces.

DEEP OPERATIONS

Corps engineer operations in support of the deep defensive fight emphasize topographic support and countermobility. The corps topographic company supports the corps IPB process with terrain analyses and special products. This support is used to plan deep fires and deep obstacles in and beyond the corps covering-force area. The corps engineer and his staff at the corps main CP provide nominations for

deep targeting (including corps-directed obstacle zones using air- and artillery-delivered scatterable mines and bridge destruction) along major enemy avenues of approach. Emplaced deep obstacles are covered by aircraft or artillery fire for full effectiveness. The corps engineer staff, along with the G3, G2, and other corps staff officers, identifies obstacle zone intent (normally fix or disrupt), obstacle locations, covering-fire support and timing in relation to execution criteria and decision points.

SECURITY OPERATIONS

The corps engineer anticipates the very decentralized execution of the screen cover, or guard mission by allowing maximum flexibility to employ tactical obstacles by the cavalry regiment through the use of corps-directed obstacle zones across the corps front or along a flank (see Figure 6-3 and Figure 6-4, page 6-10). The obstacle zone rear limit is normally a battle handover line (BHL). The security-force engineer has obstacle responsibility forward of the BHL. The MBA engineer has obstacle employment responsibility up the BHL. The MBA engineer is precluded from employing obstacles forward of the BHL. The corps engineer ensures effective coordination between the security force and MBA engineers which supports battle handoff and passage of the security force. The corps engineer considers scatterable mines to assist the cavalry regiment's disengagement. The regiment can be reinforced with modular pack mine systems (MOPMS), the air or ground Volcano, and artillery-delivered mines through coordination with the corps fire-support coordination officer (FSCOORD). Mobility and hasty survivability are critical to the cavalry regiment. Assault bridging augmentation may be required from the corps. Marking lanes

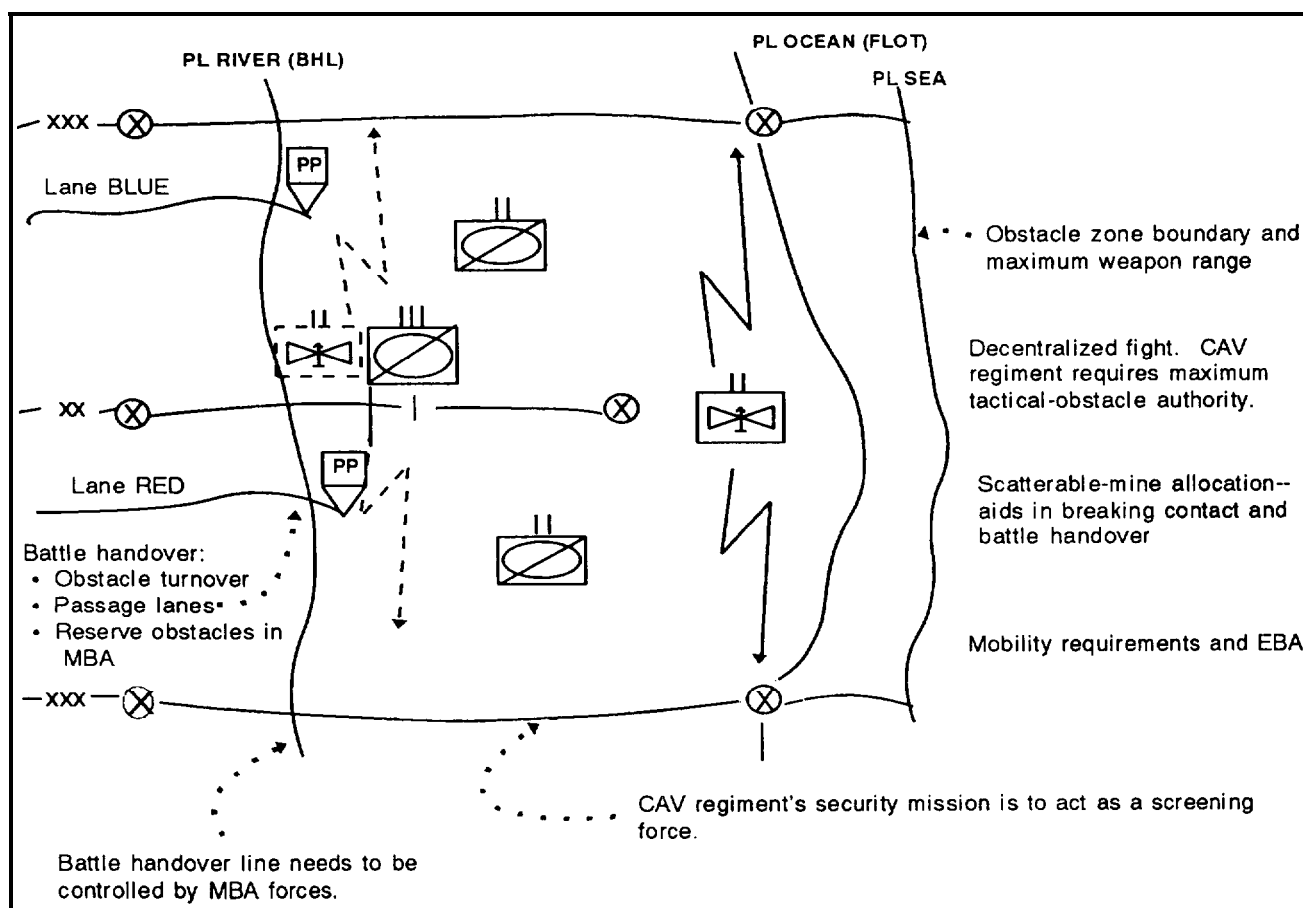


Figure 6-3. Security operations maneuver laydown

through obstacles and identifying fords and combat trails for egress routes are other needed mobility tasks. The cavalry regiment also requires numerous hull-defilade positions in depth in the covering-force area. Normally, corps engineers providing support to security forces will be placed in a command relationship to maximize responsiveness, such as attaching corps engineers to the cavalry regiment.

MAIN-BATTLE-AREA OPERATIONS

Corps engineer support to the MBA is extensive and involves the engineer functions of topographic engineering, countermobility, mobility and survivability support throughout the defensive structure (see Figures 6-5 and 6-6, pages 6-11 and 6-12). Division engineer units normally require significant augmentation from corps engineer forces during the defense,

due to limited organic digging and obstacle-emplacement capability. Corps engineer units working in the MBA will normally be in a support relationship in order to maximize flexibility to the corps. In the end, however, METT-T will determine the engineer organization for combat.

Corps topographic engineering provides needed terrain products to support the IPB process and to identify engagement areas. Specific terrain-analysis products assist in the designation of corps-directed obstacle zones, reserve demolition targets, and ORAs. Accurate topographic surveying ensures that the corps fire-support systems are operating on a common grid during the defense.

Countermobility support is usually the primary focus of engineer support to the MBA. The

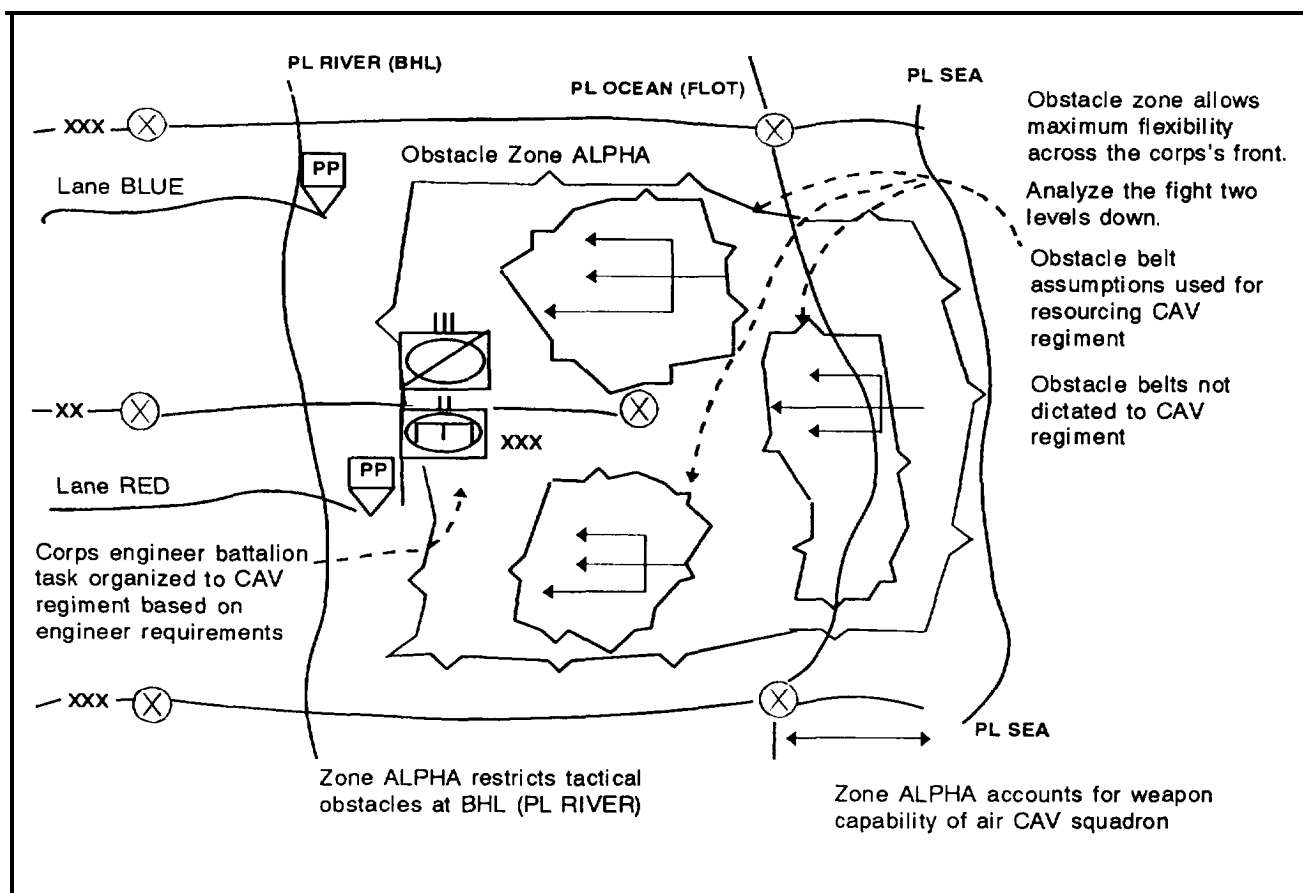


Figure 6-4. Security operations engineer laydown

primary intent of countermobility operations is to attack the enemy's ability to execute his plan by disrupting his combat formations, interfering with his C2, and creating confusion among his commanders that can be exploited by friendly forces. Corps engineer forces contribute to division countermobility by assisting the employment of tactical obstacles that are employed to reduce the enemy's ability to maneuver, mass, and reinforce and to increase his vulnerability to fires. Obstacle intent should be given for corps-directed obstacle zones. Reserve corps demolition obstacles should also be given an obstacle intent. They are designed to produce one of four primary obstacle functions:

• **Disrupt.** These obstacles disrupt march formations, break up operational timing, exhaust breaching assets, and cause separation between forward combat ele-

ments and their support units. Obstacles are also used to disrupt assault formations, attacking the low-level C2 while the attacker is under direct fire.

- **Turn.** Turning obstacles move and manipulate the enemy to the force's advantage by enticing or forcing him to move in a desired direction by splitting his formation, by canalizing him, or by exposing his flank.
- **Fix.** Fixing obstacles are used to slow and hold the enemy in a specific area so that he can be destroyed with fires or to generate the time necessary for the force to break contact and disengage.
- **Block.** Obstacles never serve to block an enemy force by themselves. Blocking



FM 90-7 describes obstacle emplacement and control in greater detail. Obstacle planning develops a coordinated, synchronized obstacle system that supports the corps commander's mission and intent. The corps commander places the fewest possible restrictions on subordinate unit freedom to employ tactical obstacles. However, he may elect to direct tactical obstacle emplacement which is critical to the corps's defensive plan, including reserve demo-

Defensive Operations 6-11

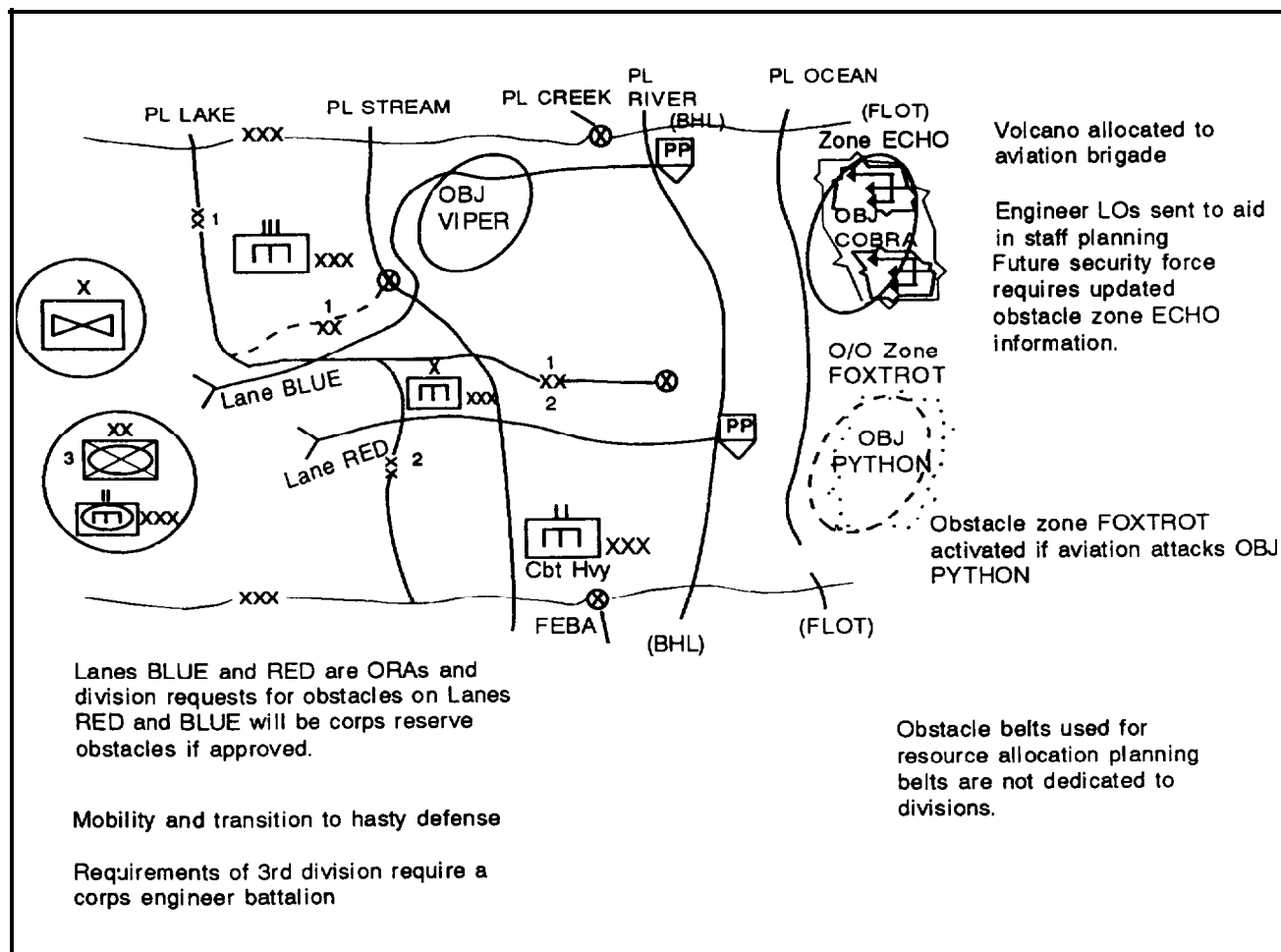


Figure 6-6. Main battle area engineer laydown

obstacle zones and brigade obstacle belts (two levels down).

Mobility requirements are preplanned in the defense. Corps engineers anticipate the corps commander's mobility requirements, with particular emphasis on counterattack routes and axes. Synchronization of these routes is particularly difficult when the counterattack is force oriented and the actual route and objective is not precisely known in advance. Mobility operations in support of the corps defense are conducted to shift the main defensive effort, to conduct withdrawals, or to conduct a relief in place. Corps reserve forces normally require augmentation with corps engineer forces and mobility assets, usually in a command relationship.

Survivability of corps forces is critical to the success of close operations in the MBA. METT-T will determine the level of survivability required with all operational and tactical warfare components. The corps engineer and his staff are particularly concerned with protecting corps artillery, air defense, and critical C2 and logistics facilities in the MBA. This may include the preparation of multiple positions in depth.

RESERVE OPERATIONS

Corps engineer support to the corps reserve force is identified early during the defensive planning process (see Figure 6-7). The reserve force normally receives additional engineer assets to primarily assist in its mobility to get to

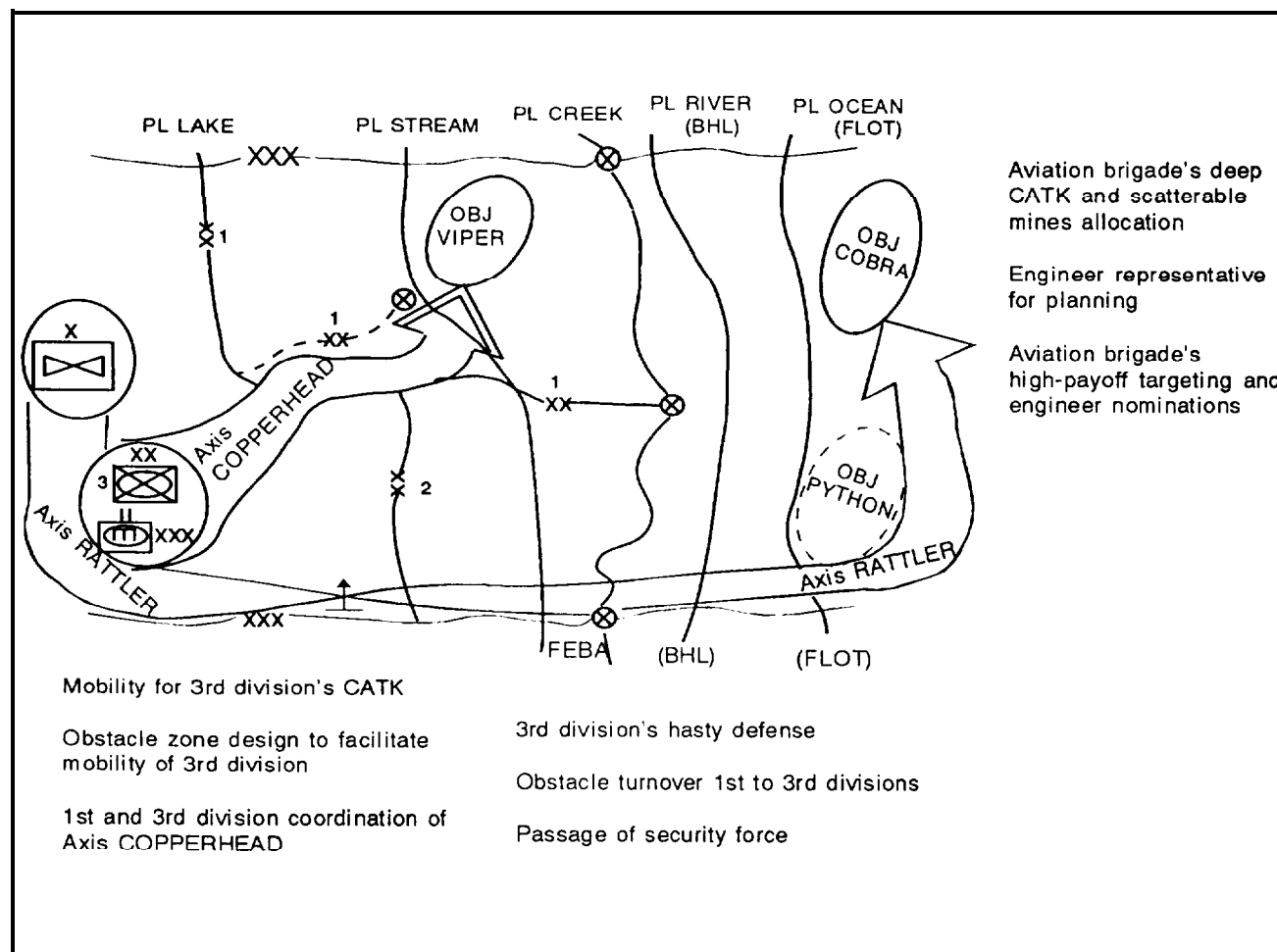


Figure 6-7. Reserve-operations framework

the point of commitment. These corps engineer units are normally placed in a command relationship to the reserve force to allow immediate responsiveness when committed. These engineer forces are not considered in reserve but are fully engaged in synchronizing their support to the reserve force through timely stall' integration and combined arms rehearsals. The corps engineer force remains with the reserve force when it becomes the corps main effort, avoiding confusing task-organization changes during the heat of battle.

REAR OPERATIONS

Corps engineer support to rear operations focuses on survivability and general engineering for units in the corps rear area and on main-

taining mobility along corps LOC (see Figures 6-8 and 6-9, pages 6-14 and 6-15). Mobility and survivability support to corps rear-area base clusters is normally limited to C2 nodes, key logistics facilities, EW nodes, ADA sites, and corps aviation units and facilities. Engineer support to survivability includes the digging in of high-value systems and supplies, the construction of field fortifications, assistance in camouflage, the digging of sumps for thorough decontamination operations, and assistance to deception operations. The keys to successful employment of general engineering in the corps rear area are prioritization for engineer effort by the corps commander (in conjunction with his G3/G4), anticipation of requirements through all phases of the battle, and task organization of engineer forces in the corps rear

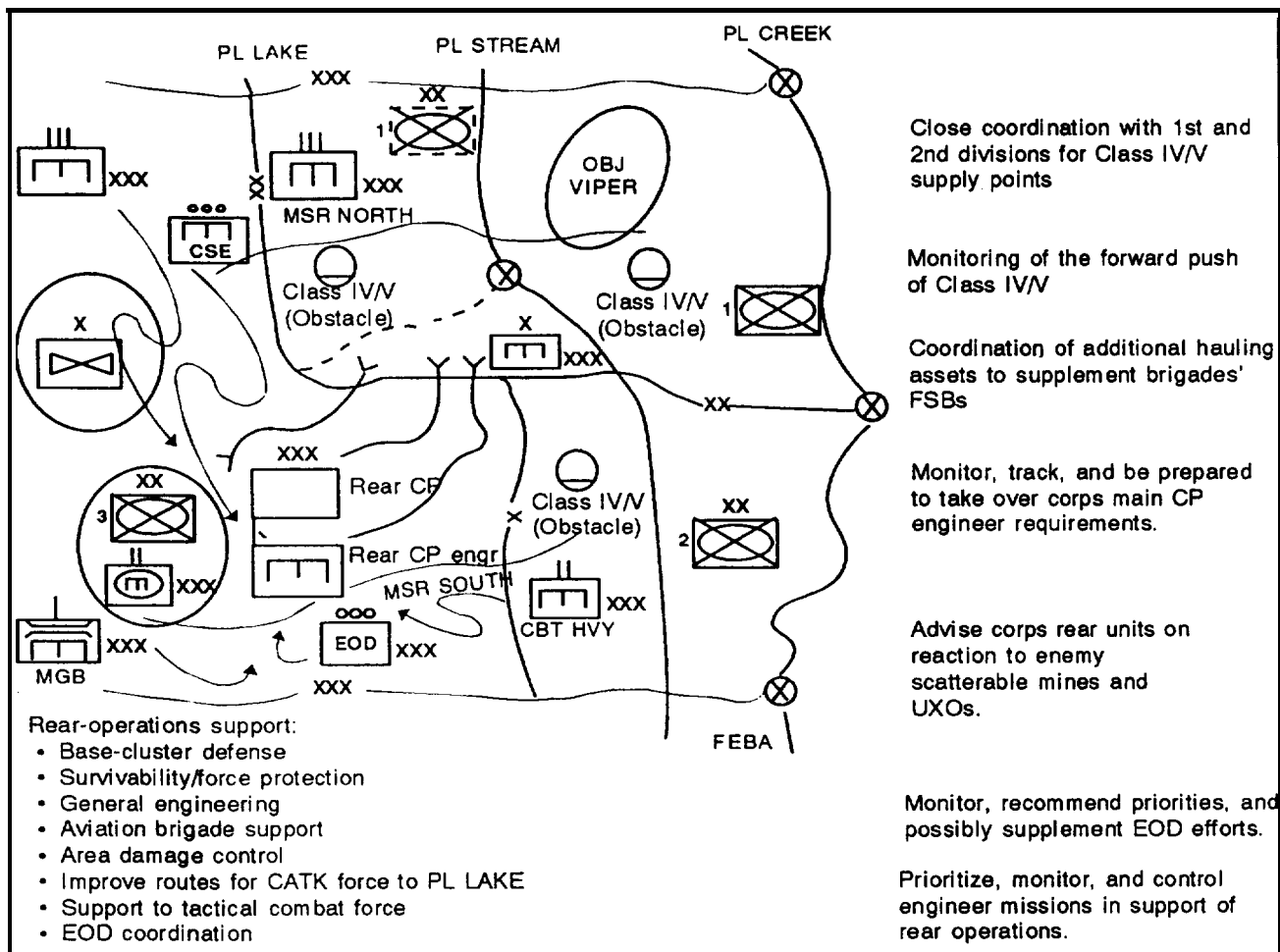


Figure 6-8. Rear-operations engineer laydown

area that clearly define command or support relationships. Defensive operations lend themselves particularly well to general-engineering support provided on an area basis. When this method is employed, corps engineer groups may be used to direct general-engineering effort in the corps rear area. Limited countermobility support may be provided by emplacing protective obstacles that protect key C2 and logistics facilities as well as corps flanks. A serious threat to the corps rear area may require the establishment of a TCF using corps engineer units when properly trained and augmented with free-support, logistics, medical, transportation, and C2 assets. The use of engineers as a TCF must be carefully evaluated by the corps commander as the reduction of criti-

cal engineer support could jeopardize other corps missions.

DECEPTION OPERATIONS

Observed engineer activity, since it is a scarce battlefield asset, is effective in painting a false picture. Dummy obstacles, phony minefield, shallow ditches, and weapon positions can all be used to deceive and aid force survivability. Most deception operations will be guarded information with only selected corps personnel knowing the full scale of the deception operation. In order to ensure OPSEC as it relates to the deception plan, corps engineer units supporting deception should be given mission-type orders that do not reveal their direct participation in a deception operation.



ENGINEER DEFENSIVE PLANNING

The engineer-estimate process provides the planning framework for the corps engineer to integrate into the corps command-estimate process (see Figure 6-10, page 6-16). It provides a systematic procedure for developing the engineer task organization and scheme of engineer operations to support the corps in defensive operations. The basic engineer-estimate process is found in Appendix B.

MISSION RECEIPT

The engineer-estimate and defensive-planning process begin with the corps engineer receiving his mission. This mission is extracted from the TA JTF, or other higher headquarters OPORD,

the engineer annex; graphics; and the corps WARNORD. Based on the identified mission the corps engineer staff (the engineer brigade commander, the brigade staff, and the SES) participates in the corps mission analysis process by developing facts and assumptions. Working simultaneously with the G2 and G3, the corps engineer staff conducts an EBA. The EBA consists of analyzing the terrain and assessing the enemy and friendly engineer capabilities. A thorough, in-depth understanding of the commander's intent leads to a corps defensive obstacle plan that not only attacks the enemy where desired, but also assists counterattacks and facilitates future operations.

Mission

Corps's mission and theater/JTF commander's intent
Corps's allocation and plan for Class IV/V supplies
Corps's obstacle restrictions
Theater/JTF requirements for future mobility impacting on corps

IPB and EBA

Terrain:

- No-go terrain and obstacle effort
- Key or decisive terrain to focus countermobility effort

Enemy engineer capability and missions:

- Enemy mobility capability at regimental through corps
- Enemy corps and division countermobility capability for flank protection and transition to hasty defense

Friendly engineer capability:

- Countermobility capability by battalion
- Survivability by battalion
- Capability of theater engineer units
- Haul assets or support

Engineer Mission Analysis

Specified tasks - corps-directed obstacles
Implied tasks - mobility requirements for a passage of lines
Assets available - host-nation support
Time analysis - repositioning of the CATK force
Limitations - defeat mechanism
Risk - engineer's participation in deception
Essential tasks - engineer functions tied to defeat mechanism

Scheme of Engineer Operations

Engineer task organization and resource allocation supports corps's main effort
Obstacle control tied to maneuver-control graphics and force allocation

Figure 6-10. Engineer estimate in the defense

TERRAIN ANALYSIS

Terrain analysis is conducted by the corps engineer staff with the corps G2, corps terrain-analysis teams, and the corps topographic company using the OCOKA framework. The terrain analysis is then used to develop the enemy situation template, corresponding scheme of maneuver, and corps obstacle plan. For the defense, the terrain analysis focuses on where the enemy will attack and where the corps can defend and move to conduct counterattacks.

ENEMY ENGINEER CAPABILITY

The corps engineer staff works with the G2 in identifying the engineer capability of both the enemy maneuver and engineer forces. Based on the knowledge of how enemy engineers support offensive operations and the specific enemy engineer capability to support the offense, the staff plots locations of enemy obstacle breaching and bridging assets, along with deep obstacle-emplacement capability on the enemy situation template. Based on this situation template, the staff develops specific engineer intelligence requirements and nominates NAIs to incorporate in the corps R&S plan.

FRIENDLY ENGINEER CAPABILITY

Working with the corps G3, the corps engineer staff analyzes the friendly engineer capability based on the available engineer force to the corps, including organic division separate brigade, cavalry regiment, and theater engineers working in the corps area. The staff accounts for all available and mission-capable engineer assets that support the corps. Additionally, the staff accounts for corps countermobility and survivability assets, including specific digging, scatterable mine, and other obstacle-emplacement equipment. Defensive operations consume large amounts of Class IV obstacle material and Class V mines and demolitions that require time and transport to move forward. Early coordination with corps logistics planners is mandatory.

ENGINEER TASKS

The corps engineer staff continues the mission analysis by conducting complete review of the higher command OPLAN or OPORD, including operational graphics. The staff focuses on identifying specified and implied tasks, additional engineer assets available in the task organization, the specified acceptable risk and the time available to conduct the missions. Based on this analysis, the staff determines what engineer tasks are essential to the mission and provides this information to the G3 for inclusion in the restated mission.

CORPS COMMANDER'S INTENT

The corps commander issues his guidance and intent following the development and approval of the restated mission. Based on his guidance and intent the corps engineer staff identifies the pattern of defense and the defensive framework the corps will employ. The engineer staff confirms the specified, implied, and essential engineer tasks and prepares to support COA development by the corps staff.

COURSE-OF-ACTION ANALYSIS

Based on each COA proposed, the corps engineer staff looks two levels down at the maneuver-brigade level and develops a scheme of engineer support operations, focusing on essential engineer tasks. The staff uses the corps commander's intent the terrain analysis, and the enemy situation template to identify the required countermobility and survivability tasks and the engineer assets needed to perform them. Next the staff looks at mobility tasks, including those required to support counterattacks by reserve forces. Planned obstacles allow spoiling attacks and counterattacks to succeed. The staff identifies assets required to accomplish those missions and conducts the same analyses for general engineering missions.

ENGINEER MAIN EFFORT

Having identified the tasks and assets required for each COA, the corps engineer and his staff establish where the engineer main effort must be. The staff reviews the engineer and maneuver assets available, allocates engineer assets and recommends the allocation of maneuver assets, and identifies any shortfalls. If shortfalls exist the staff confirms them by verifying available assets and requesting additional assets, including host-nation assets, from the higher headquarters command through the G3. If additional assets are not available, the corps engineer focuses on the main-effort tasks and reallocates assets to compensate for the shortfall. Any risk associated with the shortfall of engineer assets is identified and addressed during war gaming and COA comparison. Terrain preparation for the defense requires time for completion. Engineers cannot remain idle while final planning is in progress. Early parallel planning at all echelons helps buy time for the engineer. Operations requiring transfer of responsibility for in-place obstacles require detailed planning and coordination. This may include coordination with allied forces or other services. Also, detailed coordination with adjacent units identifies locations of obstacles in the vicinity of the corps boundaries. The engineer organization for combat allows rapid transition to the offense, including designating an engineer force to be with the reserve force. Organization of corps engineers for combat through command or support relationships must be the result of a deliberate planning process. Reorganization of the corps engineer force upon execution of the defense will take time—time to convey orders, time to disengage engineers from current missions, time to move engineers from one part of the battlefield to another, and time to reorganize for new missions.

ENGINEER COMMAND AND CONTROL

Following the allocation of engineer assets, the corps engineer staff focuses on the centralized engineer C2 requirements needed during the

defense. The staff ensures that assets assigned to each subordinate engineer headquarters do not exceed their span-of-control capability. If a shortfall exists, the staff analyzes all available C2 headquarters and upgrades the C2 structure. As a rule of thumb, engineer C2 headquarters can effectively control five to seven subordinate units. Engineer communications capability is also identified, ensuring that the corps engineer C2 headquarters can be adequately supported by the corps area information network. If the engineer C2 capability cannot be upgraded, this shortfall is identified during war gaming and COA comparison. Engineer defensive battle-command requirements should also address task organization, changes of engineer effort and essential tasks.

ENGINEER LOGISTICS SUPPORT

The corps engineer staff reviews the supplies, personnel, maintenance, and transportation capabilities available to engineers for each COA. They recommend the allocation of each and identify any shortfalls, especially in the areas of obstacle emplacement equipment digging assets, Class IV obstacle supplies, Class V demolitions and mines, haul capability and critical engineer personnel shortages (see Figure 6-11). If shortfalls exist the staff verifies them and requests additional logistics capability from higher headquarters command through the G3. If additional logistics capability is not available, the corps engineer focuses on supporting main effort tasks and reallocates logistics assets to compensate for the shortfall. Any risk associated with this shortfall is identified and addressed during war gaming and COA comparison.

ORDERS DEVELOPMENT

Once COAs have been war-gamed, compared, and recommended to the corps commander, he decides how the defensive mission will be conducted and gives his intent and concept of the operation. Based on this, the SES refines the corps engineers' missions and develops a scheme of engineer operations that integrates

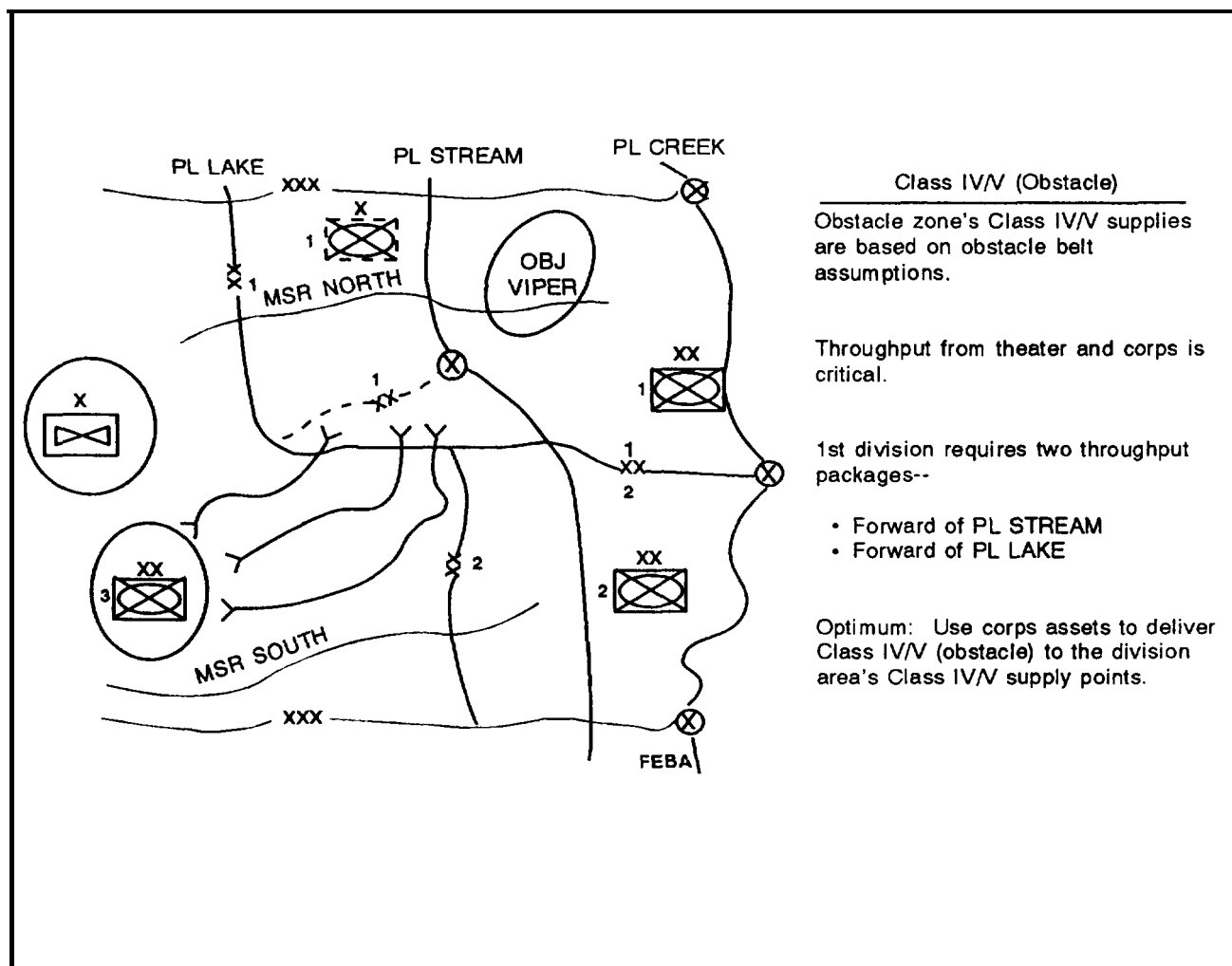


Figure 6-11. Class IV/V obstacle support planning

engineers into the corps's total defensive scheme of maneuver. This scheme is included in the execution paragraph of the corps basic OPLAN or OPORD. To accomplish these tasks, the staff finalizes the engineer task organization and command or support relationships, assigns engineer tasks to the corps's subordinate units (divisions, separate brigades, and cavalry regiment) in subunit paragraphs and the coordinating instructions, provides en-

gineer-specific input into the service and support paragraph and develops the engineer annex (including obstacle and denial appendices) to the OPLAN or OPORD. The staff then briefs the corps's engineer plan to the corps's subordinate commanders during the corps's orders brief. Simultaneously the corps engineer brigade staff develops the engineer OPLAN or OPORD. It ensures complete dissemination to all engineer units working for the corps.

PREPARING, CONDUCTING, AND TERMINATING THE DEFENSE

PREPARING THE DEFENSE

During defensive operations, corps engineer commanders maximize time available for plan-

ning and issuing orders. Corps engineer preparation of the battlefield occurs simultaneously at all echelons throughout the corps's AO. En-

gineer preparations for the defense can occur early without the presence of maneuver and support forces in the area, therefore, adequate engineer planning is essential. The corps engineer brigade staff produces an engineer DST and a synchronization matrix that fully supports corps defensive plans. Both are updated and modified as the defensive battle progresses. The DST and the synchronization matrix could highlight specific engineer support activities such as the following:

- Corps topographic engineer units providing detailed terrain analyses of enemy attack routes and friendly counter-attack routes that assist corps planners in the IPB process. These products, especially the MCOO, help identify any corps-directed obstacle zones, reserve demolition obstacles, or ORASs
- Deconfliction of division, separate brigade, and cavalry regiment obstacle plans to ensure mutual support and access for corps reserve counterattack forces.
- Ž Forward staging of needed Class IV obstacle materials and Class V mines and demolitions.
- Ž Engineer participation with security forces verifying enemy engineer breaching and bridging capabilities and ensuring that MBA engineers are prepared to counter advancing enemy formations with obstacles.
- Ž Completion of corps-directed obstacle zones and reserve demolition obstacles.
- Ž Construction of forward logistics bases and MSRs that support the corps defense.
- Engineer force integration with corps reserve forces, including rehearsals for counterattack missions.

CONDUCTING THE DEFENSE

During the defense, corps engineer commanders are physically and mentally agile. Corps engineers must understand the corps commander's intent for the defense and his critical items of information in order to properly advise maneuver and logistics commanders. Engineer units are prepared to move around the battlefield to reinforce successor to support a shift in the main effort. Engineers are proactive in ensuring that obstacles are continually maintained and covered by fires. Obstacle zone, obstacle belt and corps-directed tactical obstacle emplacement efforts are tracked by the corps engineer staff. Decision criteria outlined in the DST to execute corps reserve demolition obstacles are clearly followed by the corp engineer and his staff. Mobility along counterattack axes is continually monitored. At the commencement of the defense, selected corps engineers are normally withdrawn from division AOs to continue defensive preparations in depth. The status of engineer personnel, equipment, and critical Class IV obstacle supplies and Class V mines and demolitions is monitored closely by the corps engineer staff. Throughout the conduct of the battle, general engineering tasks, including construction and repair of MSRs and logistics bases, continue and are closely monitored.

TERMINATING THE DEFENSE

The corps engineer anticipates the end state of defensive operations by planning for and prepositioning needed obstacle breaching and bridging assets where they can be passed quickly to attacking forces. Corps engineer forces remain flexible throughout the defense, being ready to transition to support the offense at a moment's notice. The corps engineer maintains an up-to-date status of the terrain, including emplaced and planned obstacle belts, corps-directed obstacles, and any reports of any concentrations of UXO from the artillery and Air Force that may impede future corps attacks. This updated status is crucial for the corps G2 and G3 to affect future offensive operations.

TRANSITION TO OFFENSIVE OPERATIONS

Engineers at all levels of command within the corps plan for the transition from the defense to the offense. The corps engineer ensures that the corps engineer structure is designed to provide the necessary physical agility for the transition. Prior to assuming the offense, corps engineer units are positioned well forward along with other maneuver and logistics support elements critical to rapid exploitation of success. Engineer forces are task-organized throughout the corps to assist rapid movement out of defenses and through hasty obstacles

where the enemy attack has reached its culminating point. Rapid conversion to mobility missions, including obstacle breaching and bridging operations, is critical to success. Corps topographic engineer units provide timely terrain analysis to enable the commander to see the current corps battlefield and AO. Employment of ORAs permits free maneuver and allows offensive transitions to occur rapidly. General engineering units are poised to continue to construct and repair forward MSRs and logistics bases.