

## Chapter 6

### Planning

#### GENERAL

Units plan river crossings the same as any tactical operation, with one major difference. Force allocation against threat units has an added dimension of time. Friendly forces can only arrive on the battlefield at the rate at which they can be brought across the river. This rate changes at different times throughout the operation. This chapter outlines the detailed planning necessary because of this difference.

Corps allocates support elements to the division and provides terrain and threat analysis. It assigns mission objectives to the division. For operations where the corps is crossing the river, it may assign the bridgehead line. Division assigns mission objectives to the brigades and specifies the bridgehead line. It may assign bridgehead objectives to brigades. It also allocates maneuver and support forces to the brigades and develops coordination measures, such as movement schedules, that apply to more than one brigade. It provides terrain and threat analysis to the brigades. The senior corps engineer headquarters allocated to the division for the crossing assists with detailed crossing planning. The lead brigades develop the tactical plans that they will execute. They develop the crossing objectives in order to attain its mission objective. The headquarters of the corps engineer battalion assigned to support each brigade crossing develops the detailed crossing plan. Battalions develop the tactical plan necessary to seize assigned objectives.

The actual planning process for a river crossing is the same as for any tactical operation. Differences occur primarily because of the complexity of crossing a river (which makes extensive calculation necessary) and the need to balance tactics with crossing rates.

Planners do crossing calculations twice. Crossing calculations are critical to course of action (COA) evaluation. They are required to ensure that force buildup supports the COA. Initial planning uses simple calculations and rules of thumb to produce quick force buildup information. Once a commander selects a specific COA, planners make detailed crossing calculations to produce the crossing plan.

#### THE PLANNING PROCESS

The staff planning process produces a best possible solution to accomplish the unit's mission. As river crossing is normally only one part of an operation on

the way to mission accomplishment, river crossing planning is part of a larger planning effort. This chapter discusses those parts of the planning process that are necessary for the river crossing. It does not attempt to discuss the larger planning process necessary for full mission accomplishment.

In order to simplify the explanation of a multistep, multiechelon, and somewhat repetitive planning process, the following section describes it in steps and in two echelons. The shadowed text in the figures shows the step in the planning process being discussed, with the battle staff and engineer planning requirements alongside. A detailed discussion follows, primarily aimed at the division and brigade echelons. In general, the corps identifies the crossing requirement and provides assets, the division does detailed terrain analysis and rough crossing planning, and the brigade does detailed crossing planning.

#### TASK IDENTIFICATION

The first step is to recognize that a river crossing is necessary (see *Figure 6-1*). Once the mission is received, the staff develops facts and assumptions and conducts a mission analysis. This is done to understand the purpose of the mission and the intent of the commander and the commander two levels up, to review the area of operations, and to identify tasks (both specified and implied), assets available, constraints, restraints, acceptable level of risk, and an initial time analysis.

PLANNING CYCLE	BATTLE STAFF
<b>Receive Mission</b>	Develops facts and assumptions
<b>Analyze Mission</b>	
<b>Issue Warning Order</b>	Conducts mission analysis
<b>Make Tentative Plan</b>	
Perform Situation Analysis	
Develop COAs	Identifies that a river crossing operation is necessary
Analyze COAs	
Compare COAs	
Select COA	Issues Warning Order
Initiate Movement	
Complete Reconnaissance	
Complete the Plan	
Issue the Order	
Supervise Activities	

Figure 6-1. Step 1-Receive mission

Mission analysis is conducted according to *FM 101-5*. Corps planners normally identify river crossing requirements when assigning division missions. The corps plan will then provide river crossing assets to the division and may specify crossing the river as one of the tasks assigned to the division. If the mission the corps is assigning does not require a division-level river crossing, it may not specify a crossing. The troop list includes necessary crossing assets, however.

**Corps.** Normally, if corps identifies the requirement for a river crossing, its warning order includes it. The topographic company supporting the corps provides detailed river data and crossing-area overlays. The topographic company automatically provides necessary topographic data to the division terrain team. See *FM 100-15* for more details of planning at the corps level.

**Division.** Division will learn that it must cross a river by receiving a specified task in the corps order or by developing an implied task during mission analysis. If the troop list includes bridging assets, the corps anticipates a division river crossing operation.

The division engineer section always examines all rivers in the division area of operations during the mission analysis process. The division terrain team maintains a terrain data base that includes river data and potential crossing sites for the division's area of operation.

*Note: Upon identifying a river crossing task, the division engineer and terrain team immediately determine potential crossing sites.*

The echelon that first identifies a crossing requirement issues a warning order. This initiates early analysis, troop preparation, and rehearsal.

### SITUATION ANALYSIS

The battle staff, including the staff engineer, analyzes the existing situation (see *Figure 6-2*). This analysis includes the threat, friendly troops, terrain, and time available for the mission. This step is primarily designed to acquire the data necessary for the following planning steps, but some early analysis is necessary to generate critical information. The engineer staff officer must very quickly convert raw terrain data and friendly information into crossing rates. This allows the planners to make intelligent decisions about supportable schemes of maneuver.

**Division.** As a part of the IPB process, the G2 leads the staff development of a defensive situational template along the entire river that the division must cross. The template focuses attention on possible areas of weakness, counterattack forces, and artillery.

The G2, with the division engineer, develops obstacle templates from the line of contact through to the division's objectives. He provides the templates to the brigade intelligence sections for their planning and analysis. The division engineer provides threat obstacle information (particularly along the river) to the brigade engineers.

**Brigade.** The brigade staff refines the templates provided by division and develops them for a lower level of threat force. The intelligence officer (US Army) (S2) develops intelligence requirements and a detailed intelligence collection plan, with specific emphasis on the far shore. Reconnaissance teams seek information to fill requirements. Obstacle templates are verified by active air and ground reconnaissance as discussed in Chapter 2.

### Friendly Troops

**Division.** The division engineer coordinates for corps engineer units to cross the force, using the simple rule of thumb that every forward brigade requires two bridges. Insufficient bridging assets limit possible COAs.

**Brigade.** The brigade engineer identifies the crossing sites required for the brigade and for each battalion, based on the number of vehicles. This calculation uses simple assumptions. From it, the brigade engineer determines the approximate time necessary to cross the entire brigade. The crossings required will be important during COA development. The brigade engineer

PLANNING CYCLE	BATTLE STAFF
Receive Mission	Conducts terrain analysis to identify key terrain affecting crossing
Analyze Mission	
Issue Warning Order	
Make Tentative Plan	Templates enemy river defenses
<b>Perform Situation Analysis</b>	<b>ENGINEER</b>
Develop COAs	From terrain data and available crossing means, estimates crossing capability of crossing areas
Analyze COAs	
Compare COAs	From troop list, calculates force crossing rates for each crossing area
Select COA	Templates enemy obstacle systems
Initiate Movement	
Complete Reconnaissance	
Complete the Plan	
Issue the Order	
Supervise Activities	

Figure 6-2. Step 2-Perform situation analysis

also determines the amount of bridging available, the number of possible heavy rafts, and the number of assault boats. This information is passed to the CA HQ (BMAIN CP) who is responsible for the control of all crossing means.

### Terrain

**Division.** The division engineer ensures that adequate information is in the crossing-site data base for planning at brigade level. The division terrain team generates crossing-site overlays, site data files, and road and cross-country movement overlays for the crossing areas.

The division engineer determines that sufficient assault, raft, and bridge sites are available within each brigade's area. Generally, a main attack brigade requires assault sites for two dismounted battalions and at least two raft or bridge sites.

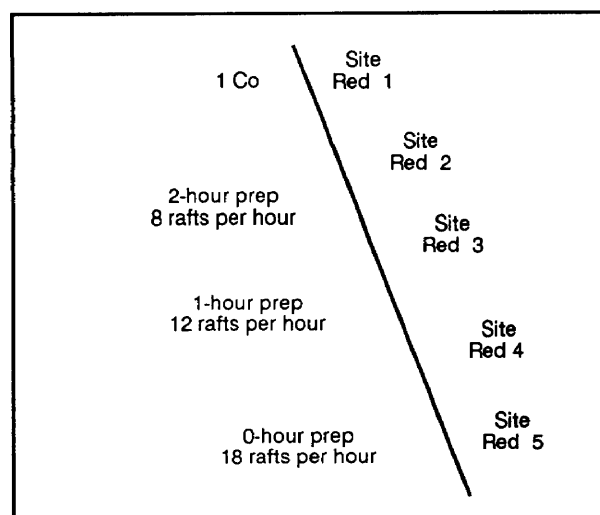
**Brigade.** The brigade engineer, in coordination with the CAE, evaluates all potential crossing sites from both technical and tactical considerations, including –

- Entry and exit road net.
- Cross-country movement.
- River width.
- River velocity.
- River depth.
- Bank conditions.
- Vegetation along shore.
- Obstacles in or along the river.
- Possible attack positions and routes to the river.
- Possible call-forward areas.

The brigade engineer, in coordination with the CAE, then analyzes each site to arrive at a rough crossing-rate capability and the effort necessary to open the site. Operations planners use this information to develop possible COAs. One method to display this data is in chart form (see *Figure 6-3*), while another, preferred method is with a crossing-site overlay (see *Figure 6-4*). The division engineer, in coordination with the CFC (corps engineer group commander), ensures that the

Site Red #1	Site Red #2	Site Red #3
Bank Prep Time	Bank Prep Time	Bank Prep Time
River Conditions	River Conditions	River Conditions
Vegetation	Vegetation	Vegetation
Full Crossing Rate	Full Crossing Rate	Full Crossing Rate
Remarks	Remarks	Remarks

*Figure 6-3. Site comparison chart*



*Figure 6-4. Site overlay*

crossing requirements of the lead brigades and breakout force are adequately resourced to satisfy each COA.

The crossing-site overlay is more useful to planners developing potential COAs, because it allows them to see crossing sites in relation to the other terrain features. This overlay shows potential site locations, maximum crossing rate for tanks and other fighting vehicles, and an estimate of the time required to put each crossing site into operation.

The BMAIN CP (CA HQs) evaluates the terrain along the river in terms of OCOKA. The intent is to understand the terrain along the river so that potential COAs can be devised with crossing objectives. The operations planners combine this knowledge with the crossing-site comparisons and threat templates to develop possible COAs.

### COA DEVELOPMENT

**Division.** The G3, along with key members of the battle staff, sketches out possible COAs to accomplish the division mission (see *Figure 6-5*, page 6-5). COAs must include assigned crossing areas for each brigade, as well as brigade boundaries that include terrain necessary to defend the bridgehead against threat counterattacks.

Looking two levels down, the division staff plans an assault crossing site for each anticipated assaulting battalion in a brigade area. A brigade should also have two bridge or raft sites within its boundaries.

**Brigade.** The S3 looks closely at the avenues leading to brigade mission objectives, particularly at crossing sites feeding the avenues. Developing practicable COAs is normally an iterative process. They first develop a scheme of maneuver to take the final objective, then verify that the force buildup rate across the river is adequate for the scheme of maneuver. If so, the S3

PLANNING CYCLE	BATTLE STAFF
Receive Mission	With commander, sketches out several COAs to develop
Analyze Mission	
Issue Warning Order	
<b>Make Tentative Plan</b>	Develops scheme of maneuver, fire plan, and support for each COA, considering crossing capability and the order of crossing
Perform Situation Analysis	
<b>Develop COAs</b>	
Analyze COAs	
Compare COAs	
Select COA	<b>ENGINEER</b>
Initiate Movement	For each COA, selects sites, determines raft and bridge configuration and bank prep, and task-organizes the engineers
Complete Reconnaissance	
Complete the Plan	
Issue the Order	
Supervise Activities	

Figure 6-5. Step 3-Develop COAs

expands the COA to include the tactics required for the crossing.

Tactics required for the crossing consider threat defenses near the crossing sites, threat reaction forces and earliest employment times, and crossing rates at each site. The COA must include exit-bank, intermediate, and bridgehead objectives.

The S3, working with the brigade engineer and CAE, develops the control measures, crossing graphics, and crossing timeline for each COA (see Figure 6-6).

### COA Analysis

The staff at both division and brigade war-game each COA against likely threat reactions (see Figure 6-7). They then attempt to counter each threat response.

The engineer war-games against other variables outside his control, such as terrain difficulties and crossing-equipment losses. He considers what will happen if it takes longer to open a crossing site, if damage slows

progress over entrance and exit routes, or if river conditions change. He also considers what will happen if threat action shuts down a crossing site or forces its relocation. He must consider the consequences of equipment failure or loss to threat action. He evaluates the most likely of these against all COAs and develops, within his means, necessary counters (to include alternate sites and routes).

### COA Comparison

**Division.** The division staff examines each COA against both the immediate and follow-on missions (see Figure 6-8). Division is particularly concerned with movement of reserve and support forces and compares COAs against these requirements.

**Brigade.** The brigade staff considers the ability of each COA to handle threat responses, support follow-on

PLANNING CYCLE	BATTLE STAFF
Receive Mission	War-games each COA against possible enemy responses
Analyze Mission	
Issue Warning Order	
<b>Make Tentative plan</b>	<b>ENGINEER</b>
Perform Situation Analysis	War-games each COA against terrain changes and equipment loss
Develop COAs	
<b>Analyze COAs</b>	
Compare COAs	
Select COA	
Initiate Movement	
Complete Reconnaissance	
Complete the Plan	
Issue the Order	
Supervise Activities	

Figure 6-7. Step 4-Analyze COAs

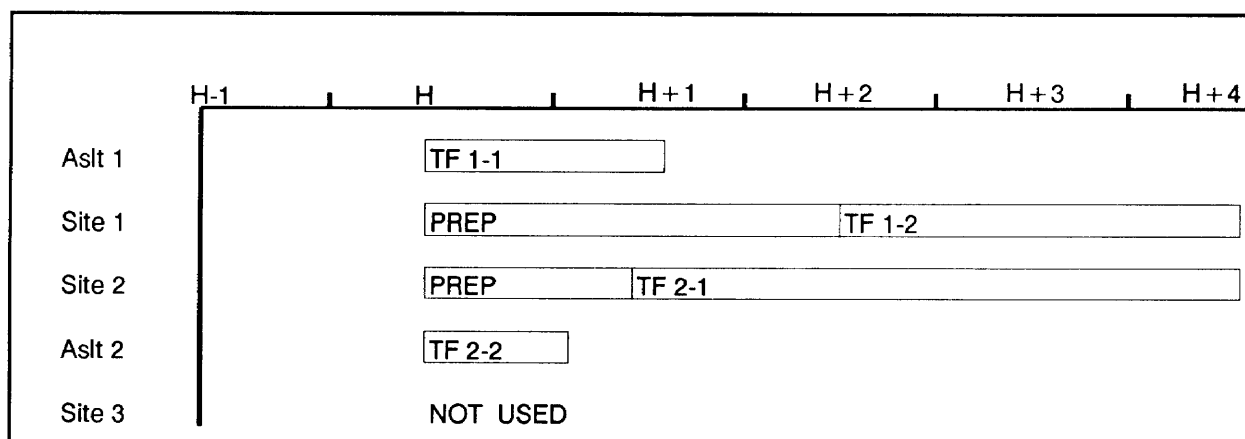


Figure 6-6. Crossing timeline

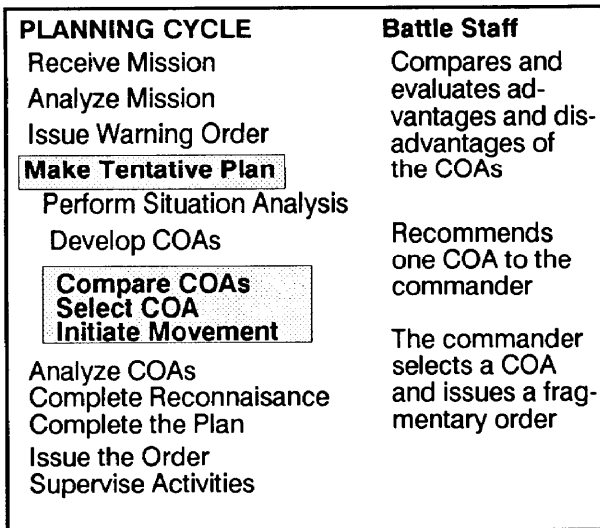


Figure 6-8. Step 5-Compare COAs

missions, provide brigade flexibility, and allow for crossing redundancy.

### FORCE MOVEMENT INITIATION

**Division.** The division staff provides movement orders and route priorities to establish early linkup of support forces with the brigades. They plan and execute deceptive movement of forces to hinder threat identification of the crossing areas.

**Brigade.** The brigade staff begins moving forces into assembly areas, starts training and rehearsals, and moves necessary corps combat engineer and bridge

companies up early to provide equipment and instructors.

### DETAILED PLAN

The battle staff converts the selected COA into a plan with sufficient detail for synchronized execution (see Figure 6-9). The staff engineer does extensive analysis to develop a unit-by-unit crossing plan and movement schedule. From this analysis, he develops the crossing -capability chart and the crossing overlay (see Figure 6-10). These are his primary execution tools. He develops the crossing synchronization matrix as a

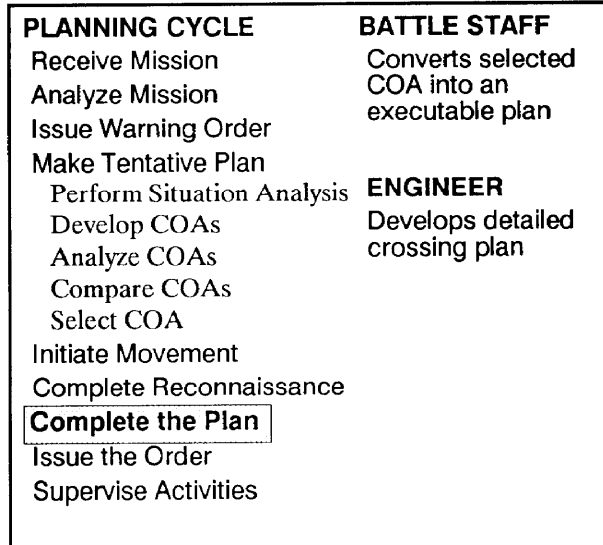


Figure 6-9. Step 6-Complete the plan

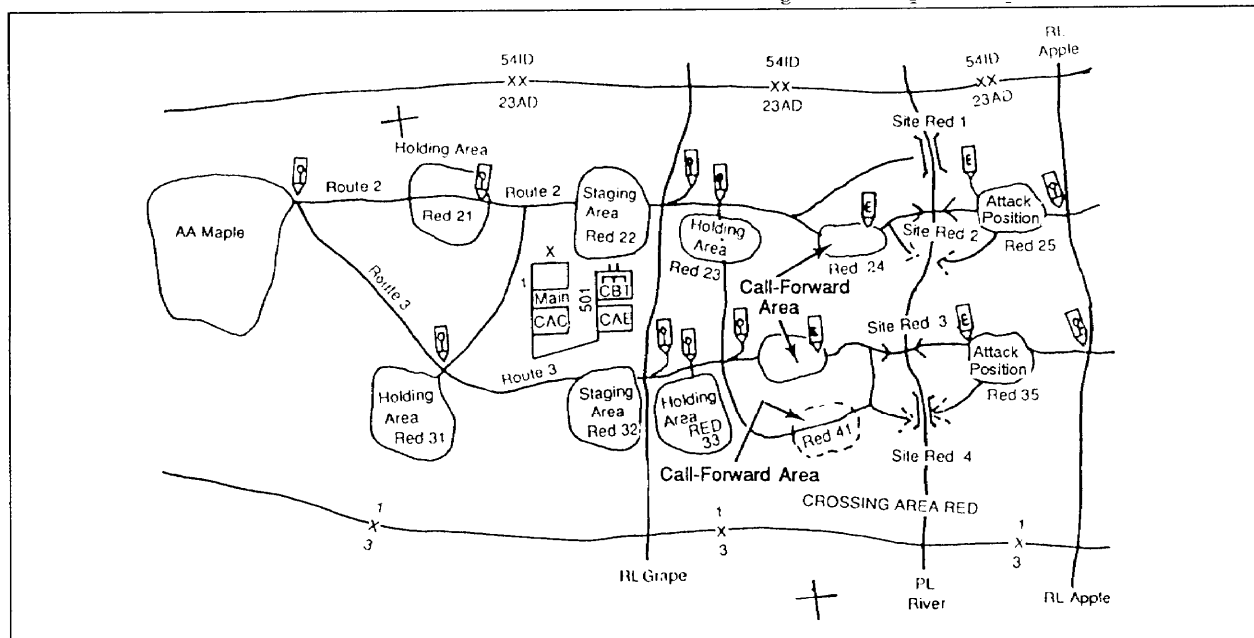


Figure 6-10. Crossing overlay

primary execution tool for the S3. He also helps the traffic-control cell work out the traffic-circulation plan.

While detailed planning is underway, the CAE initiates far- and near-shore reconnaissance to develop

sufficient detail for battalion-level planning. He converts this planning into a detailed engineer task list and develops an engineer execution matrix to synchronize it (see Appendix A).