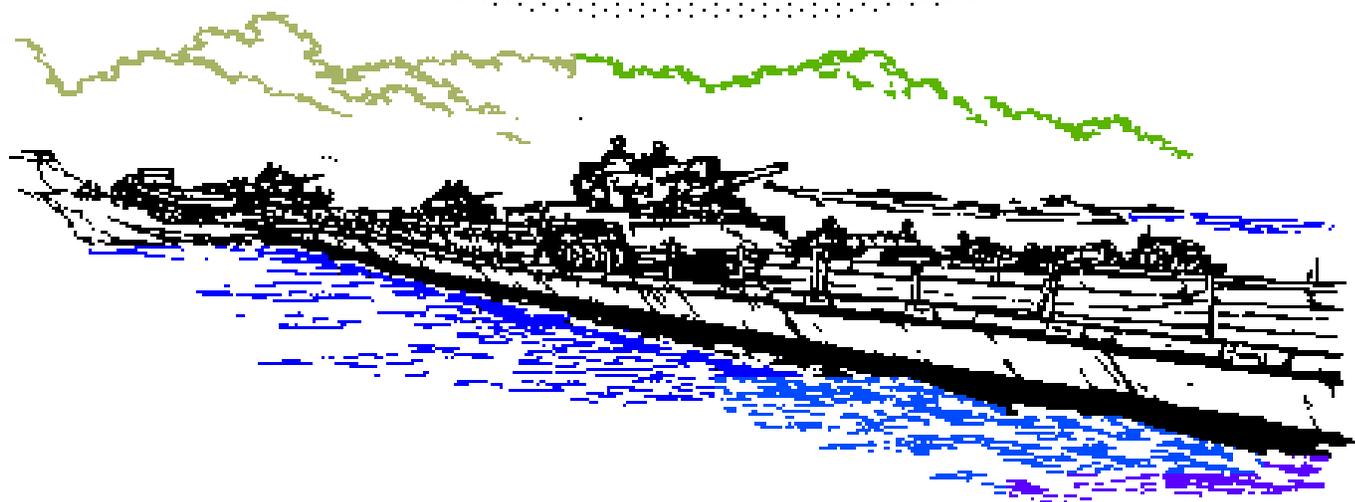


FM 90-13 / MCWP 3-17.1

River-Crossing Operations



HEADQUARTERS, DEPARTMENT OF THE ARMY
US MARINE CORPS

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River-Crossing Operations

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PREFACE

Field Manual (FM) 90-13 describes how divisions and brigades conduct river crossings. It shows the relationship to corps operations, where appropriate, and includes details for lower echelons to support the brigades. It provides doctrine, tactics, techniques, and procedures (TTP) in one reference to accomplish this special operation.

The corps assigns missions and provides the necessary support and equipment. The divisions normally assign bridgehead objectives and control movement across the river. The brigades are the bridgehead forces that execute the crossings, either independently or as elements of a larger force.

River-crossing skills and knowledge are highly perishable. As with many other tactical operations, they require constant practice in planning and execution. There are relatively few opportunities to train with the frequency needed to keep a high degree of proficiency in this tough operation. For that reason, this manual includes considerable detail on techniques and procedures.

A river crossing is a special operation in that it requires specific procedures for success because the water obstacle prevents normal ground maneuver. It demands more detailed planning and technical support than normal tactical operations. It also features specific control measures to move the force across a water obstacle. This obstacle may be a river, a lake, or a canal. Unlike other obstacle types, the water obstacle remains effective during and after the crossing operation. See *FM 90-13-1* for other counterobstacle operations.

As in the past, the United States (US) Army conducts river crossings within the context of its basic doctrine. This manual applies the current Army-operations doctrine described in *FM 100-5* to river crossings. It incorporates recent developments in command and control (C²) for command-post (CP) facilities and the military decision-making process. It also aligns US doctrine more closely with ongoing standardization efforts in the North Atlantic Treaty Organization (NATO).

Appendix A contains an English to metric measurement conversion chart.

The proponent of this publication is HQ TRADOC. Send comments and recommendations on *Department of the Army (DA) Form 2028* directly to Commander, US Army Engineer School, ATTN: ATSE-TD-D-WC, Fort Leonard Wood, MO 65473-6650.

This publication implements the following international agreement: *Standardization Agreement (STANAG) 2395, Edition 1, Opposed Water Crossing Procedures*.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

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CHAPTER 1

Concepts

GENERAL

The purpose of any river crossing is to project combat power across a water obstacle to accomplish a mission. A river crossing is a unique operation. It requires specific procedures for success because the water obstacle prevents normal ground maneuver. It also requires detailed planning and control measures and different technical support than other tactical operations require. The nature and size of the obstacle, the enemy situation, and available crossing assets limit the tactical commander's options.

The challenge is to minimize the river's impact on the commander's ability to maneuver. The force is vulnerable while

crossing, as it must break its movement formations, concentrate at crossing points, and reform on the far shore before continuing to maneuver. The tactical commander cannot effectively fight his force while it is split by a river. He must reduce this vulnerability by decreasing his force's exposure time. The best method is to cross rivers in stride as a continuation of the tactical operation, whether in the offense or retrograde. Only as a last resort should the force pause to build up combat power or crossing means before crossing. This chapter introduces river-crossing operations by discussing the characteristics of this special, difficult, and dangerous task.

TYPES OF CROSSINGS

Units expected to conduct a river crossing anticipate and plan for it in advance. All river crossings require detailed planning. The planning requirements and engineer technical support are similar, whether the crossing is hasty, deliberate, or retrograde.

HASTY

A hasty river crossing is a continuation of an attack across the river with no intentional pause at the water to prepare, so that there is no loss of momentum. This is possible when enemy resistance is weak and the river is not a severe obstacle.

A hasty river crossing is preferable to a deliberate crossing. A hasty river crossing features decentralized control at the brigade level. The brigade may use organic, existing, or expedient crossing means, but additional support from the division or corps is often necessary due to the bridge

companies being controlled at corps level. That support is only available when those headquarters have taken purposeful action to position the assets at the right time and place to make a brigade hasty crossing feasible. Coordination for support must be made early in the planning process.

Small gaps that prohibit vehicles from self-bridging are encountered more frequently than large gaps that require extensive bridging. Each maneuver force should task-organize itself with organic mobile crossing assets that enable it to install bridges quickly, cross small gaps, and recover the bridges for future crossings. Follow-on bridges, such as the medium-girder bridge (MGB), may need to be positioned before assault bridges are removed at these minor gaps. The two types of hasty crossings are the dry- and wet-gap crossings.

Hasty Dry-Gap Crossing

Antitank (AT) ditches and craters are normally what maneuver forces encounter as a dry-gap-crossing obstacle. Dry riverbeds may also present a crossing problem. Maneuver forces can use the M9 armored combat earthmover (ACE) to push down the sides of ditches or to fill in craters. Substantial fill material placed in the dry gaps allows the passage of combat tracked vehicles. The crossing site can be improved and maintained for wheeled-traffic use by follow-on forces.

The armored vehicle-launched bridge (AVLB) is particularly suited for spanning streambeds, AT ditches, craters, canals, partially blown bridges, and similar obstacles. It can be launched and recovered in less than 5 minutes. The AVLB, like the M9 ACE, is organic to combat engineer companies for use in hasty crossings of short gaps. The AVLB should be left in place across the gap only as long as it takes to cross the maneuver unit it is traveling with, then replaced with other fixed bridging, if necessary.

Hasty Wet-Gap Crossing

The depth and width of the wet gap, bank conditions, and the current's velocity will determine if the maneuver force can cross by fording, swimming, or employing the AVLB or if other bridging assets are required. Identifying wet gaps early and deploying the required resources allow hasty crossings of known or anticipated gaps to occur. Two factors should be considered when swimming vehicles through wet gaps—the current's velocity and the bank conditions.

Because vehicles drain rapidly when exiting, initially firm banks tend to deteriorate rapidly from multiple uses of the same exit point. The existence of mud or surface irregularities further degrades the percent of the

slope that the swimming vehicle can overcome. When selecting a fording site in a wet-gap crossing, the depth of the water is the most significant factor. The depth of the water in one crossing area may change due to bottom surface mud or irregularities (boulders or pot holes). The AVLB is ideally suited to allow hasty wet-gap crossings, requiring only that the supported maneuver force eliminate enemy direct and observed indirect fires. The crossing means will need to be replaced by other bridging assets as soon as possible to allow the AVLB to remain with its supported unit.

If possible, the force crosses the water obstacle at multiple points across a broad front. It makes the crossing as soon as its elements reach the obstacle, whether by day or night. As the bulk of the force crosses the water, minimum forces remain to secure the crossing sites.

Expedient crossing means may be used if readily available and can be transported to the crossing site. The reconnaissance party should note material or existing features that could be used as expedient crossing devices. These include culvert pipe, lumber or cut timber, or war-damaged equipment. The pipe fascines system (PFS), which consists of bundles of 8-inch, high-density, plastic pipes chained together, can fill gaps up to 9 meters deep and support up to 70 tons. The PFS is transported by an AVLB after the bridge is downloaded and emplaced into the gap.

A well-practiced standing operating procedure (SOP) reduces the necessary planning and preparation time. A concise order, clearly articulating the commander's intent, allows exploitation wherever subordinate units successfully force a crossing. When possible, advance elements seize existing crossing means intact and ahead of the main body.