

Planning for Hasty Shallow Water Fording Operations in the Operational Environment

Facts

1. A Water Crossing is a special operation in that it requires specific procedures for success because the water obstacle prevents normal ground maneuver. All water crossing missions should be treated as crossing a linear danger area. These operations demand more detailed planning and technical support than normal tactical operations. This obstacle may be a stream, river, lake or a canal. A detailed assessment is vital to mitigate risks associated with all water crossing operations. Fording sites may have already been established by other units operating in the area. This is critical information that should be obtained during the relief in place. Another technique is to observe the indigenous population. Observe where they cross water gaps.
2. The depth and width of the wet gap, bank conditions and the current velocity will determine if the maneuver force can cross by fording.
3. 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). Wheeled vehicles have different fording capabilities with respect to water depth. Technical manuals provide the specific fording depth capability and required vehicle preparations. Some bottoms are not firm and the vehicle will sink in a certain depth. That depth must be added to the water depth to determine fording depth. It is critical to ensure the near and far bank approaches do not exceed the slope and incline limits of your particular vehicle. Enter and exit the water perpendicular (90 degrees) to the bank. Do not enter/exit cross-slope on the bank. For additional planning considerations refer to FM 3-90.12, Appendix B, Crossing Site Selection.

4. Rivers/Streams may be subject to sudden floods due to heavy rain, thawing upstream or release of water from reservoirs'. This will cause bank overflow, higher currents, deeper water and significant floating debris. It is imperative that reconnaissance of a fording site be conducted during the planning stage. Weather conditions change. Ensure weather conditions during the reconnaissance are the same as when the fording operation will take place. A second "Reconnaissance on the March" effort may be required. In general, river/stream currents less than 1.5 meters per second (MPS) are desired. The quick time march rate of 120 steps per minute with a 30 inch step equates to 1.5 MPS. Other approximate correlations are:
 - 5 feet per second
 - 3.5 miles per hour
 - 5.5 kilometers per hour

5. Ford bottoms must be free from obstacles, firm and uniform.

Field Expedient Calculations

If the depth of the water cannot be determined, Soldiers with strong swimming skills will be required to cross the gap. In this case it is recommended that the Soldiers wear a life vest and tie in to a stationary item such as a vehicle. Use a pole (Mortar Aiming Stake, etc...) to identify depth and survey a crossing path of 3.5 meters wide for a uniform and firm bottom, and any obstacles (boulders, submerged tree snags, holes, etc.) across the path the vehicle will travel. Run a safety line 100 meters downstream, that will assist Soldiers crossing.

NEVER ATTEMPT TO CONDUCT FORDING OPERATIONS WITHOUT FULL KNOWLEDGE OF WATER DEPTH, WATER CURRENT AND COMPOSITION OF FORDING BOTTOM AND ENEMY ACTIVITY IN THE VICINITY

Near Side Actions

1. If operating in enemy terrain, over watching units must be in position to engage the most-likely enemy positions on the near and far side (cover by fire) of the fording site. **IMPORTANT:** sweep near side fording site for improvised explosive device(s) and land mines (5-25-200 meter checks).

2. Prepare Vehicle for fording:
 - Ensure Door Handles work (lubed and sand, grit free)
 - Unlock Combat Door Locks
 - Check security of load plan
 - Open top egress hatches
 - Turn on filtered dome lights
 - Based on the likelihood of enemy contact consider whether to remove and secure Outer Tactical Vest and Individual Personal Protective Equipment
 - Eliminate obstructions to escape routes where possible and ensure any obstructions remaining are adequately acknowledged by all crew members
 - Verify the water depth does not exceed the vehicles fording capability
 - Mark exterior of vehicle to depict the maximum water depth the vehicle can negotiate (chalk, paint, engineer tape, etc)
 - Test communication with secondary observer vehicle
 - Allow brakes to cool if time allows before fording to prevent possible damage to vehicle braking system

3. Send at least 3 designated Soldiers to walk across the gap, tied together with rope (2 Security/1 Ground Guide). If the Soldiers encounter water depth that exceeds the fording vehicle capability, or obstacles that will impede a safe crossing, the Soldiers will return to the near shore and a different fording site must be reconnoitered. If Soldiers determine that the

gap is trafficable, they cross and establish far side security. **IMPORTANT:** immediately upon emerging from the water; sweep far side fording site for improvised explosive device(s) and land mines (5-25-200 meter checks).

4. Connect winch (if equipped) from secondary vehicle to fording vehicle to assist in an emergency situation. This can also provide assistance for crossing of the second vehicle.

Fording

1. First vehicle enters water slowly to avoid creating a wake that can enter the engines intake system. Ground guide provides directions to keep the crossing vehicle on the same path as the Soldiers traveled.
2. Post Observers to actively watch from a secondary vehicle. If observers note that the fording vehicle has surpassed the maximum fording depth, the fording vehicle will be instructed to stop and reverse out of the fording site.

NOTE: If crossing vehicle is equipped with a Fan Ford switch, turn OFF radiator Fan by engaging Fan Ford switch prior to entering water. Check the vehicle -10 Technical Manual for additional fording preparation requirements.

3. Maintain a constant speed of no more than 5 miles per hour.

Far Side Actions

IMPORTANT: sweep far side fording site for improvised explosive device(s) and land mines (5-25-200 meter checks).

1. Upon exiting water, apply light pressure on the brakes to dry the brake linings.

NOTE: If crossing vehicle is equipped with a Fan Ford switch, turn ON radiator Fan by engaging Fan Ford switch upon exiting water. Check the vehicle -10 Technical Manual for additional post-fording requirements.

2. Exit water slowly and perpendicular to the bank. Avoid spinning wheels to prevent causing a rut for follow-on vehicles.
3. Establish secure far side marshalling area (or rally point) and establish overwatch for enemy activity.



Figure 1. Example of Fording Limit line painted on side of vehicle