Combined Arms team River Crossing Operations

Working under the cover of darkness and following the philosophy "if they can see you, they can kill you", engineers of the 7th Engineer Brigade and members of the VII Corps combined arms team learned that river crossing operations can be conducted successfully and without major difficulties.

In a series of exercises during April 1975, the 7th Engineer Brigade conducted river crossing training and four, 3 day combined arms retrograde river crossing FTXs on the Main River near Kitzingen, Germany. The exercises provided a unique opportunity for engineers and members of the combined arms team to practice and develop techniques for conducting night river crossing operations in hostile environment. While some new concepts resulted, many of the lessons reaffirmed established techniques and doctrine.

The objectives of the exercises were threefold; one, to allow the engineers to train with all the Corps' float bridge equipment; two, to exercise the combined arms team in a situation requiring limited daytime movement and a night retrograde river crossing; three, to develop experience and lessons learned to expand current retrograde river crossing doctrine.

The Admin Portion

In preparation for the FTX, each of the four combat engineer battalions of the 7th Engineer Brigade underwent three days of refresher training with river crossing equipment. The training days were long and allowed for both day and night training. To prepare for the FTX, each unit made maximum use of integrated training and devoted its major effort on the heavy bridging — CL 60, M4T6, and the M-2 Bailey Bridge.

Each unit realized early in its training cycle the importance of cooperation between "supporter and supported." The close coordination thus fostered during the training cycle helped each unit to accomplish its FTX missions with minimum delays.

The FTX Portion

The FTX was designed to force intense but realistic utilization of the entire spectrum of river crossing capabilities. The engineers were required to support combined arms tactical crossings in "real" time based on realistic enemy and friendly situations. The bridging and crossing sites available were matched to the actual number of vehicles and tactical plans of the crossing area commander. Controllers did, however, limit the bridging available to that which would normally be available to a crossing area in the Corps zone.

Each scenario was tailored to the specific tactical crossing unit. Because the crossing units varied from a Pershing artillery battalion, to a cavalry squadron, to mechanized infantry, each river crossing scenario was tailored to the crossing unit. Each scenario assumed the loss of air-superiority shortly after the outbreak of hostilities, and each involved a retrograde river crossing. Tactical commanders functioned as crossing area commanders (CACs) and were required to prepare crossing plans for bridging on the first night and rafting the second. The rafting operation was

forced through a withdrawal of heavy bridging to the rear plus the proximity of enemy forces. Every CAC was supported by a combat engineer battalion of the brigade plus float bridging from the 565th Engineer Battalion (Composite). In addition, each CAC had MP support for traffic control, ADA (Chapparal/Vulcans), and smoke from a section of a labor service smoke generator company. To realistically portray the lack of air superiority, the CAC was opposed by high performance aircraft and attack Cobras from the 3d Combat Assault Bridge.

Reaction to the Loss of Air Superiority

Of all the lessons learned, the reaction to the loss of air superiority was the most interesting. The initial reaction by the engineer units was to refrain from any movement or activity whatsoever during daylight hours for fear of enemy air attack. However, time restraints and pressure to accomplish the mission forced a re-evaluation. As a result, work proceeded by limiting vulnerability and presenting only small targets (targets which the enemy would not risk a million-dollar aircraft to destroy). Further, the effectiveness of the Chapparal/Vulcan battery against enemy air was sufficient to provide increased confidence to all the crossing elements and mission work progressed with few delays. After the bridge crossings were completed the first night, the engineers were required to remove the bridge completely or place it along the river bank. Each engineer unit elected to disperse the bridge; however, the dispersion undertaken was usually insufficient. Due to the large bomb load capability of enemy aircraft and their ability to bomb at set intervals, the bridge parts should have been spread at least 100 meters apart and at uneven intervals. Other options were to tie sections together and camouflage to represent an island or beached debris.

The engineer units soon learned the value of clearing the bridge construction site of all unnecessary vehicles. Besides presenting a much smaller target, operations were greatly improved by reduced congestion. In most cases, vehicles returned to the bridge park. An alternate course, suggested by the Air Force participants, was to park the vehicles in geometric patterns next to a village. Infared detection devices would easily spot the hot exhausts against the cool background of woods, but the image would be indistinquishable from the village itself. However, such vehicles had to be moved or well camouflaged before daylight.

Constructing the bridge and conducting the crossing under blackout conditions disturbed several commanders from a safety and operational point of view. Their fears were unfounded as all four crossings were successfully conducted with little lighting. Crane lights and hand-held flashlights were the only lights used to construct the heavy bridge and rafts. Light tactical raft and footbridges were installed using only covered flashlights. As a illustration of the light discipline achieved, aggressors who were less than one kilometer away were unaware of the light tactical raft and footbridge construction. While some crane lights were visible from that distance, the type activity remained unclear.

With a smoke generating capability available, each unit was quick to request its maximum utilization. Unfortunately, administrative restrictions limited the use to one or two hours during the morning and evening. The smoke generating units capability to "haze" an area proved as effective as dense smoke and created better construction working conditions within. Smoke, in general, has an adverse effect on the Vulcan/Chapparal unit which is dependent on visual observation for target detection. Lastly, an interesting observation was made by Air Force representatives concerning the use of smoke and terrain analysis. As the valley utilized for the crossing was very similar to an adjacent valley, smoke could have been used solely in the unused valley as a deception. Such a deception would have allowed the ADA to operate with unlimited visibility as a bonus to the ruse.

Retrograde River Crossing Doctrine

The exercise clearly demonstrated that a retrograde river crossing is NOT simply a hasty or deliberate assault river crossing in reverse. A noticeable distinction arises in the area of command and control, since the crossing area commander (CAC) will change depending on the location of the crossing area on the battlefield. A few items should be highlighted:

- Crossing area forward of the brigade rear boundary. Uncertainty as to the specific identity of the CAC in a retrograde is thus introduced by enemy action and friendly response through maneuver, an element missing in the assault river crossing. This situation more closely represents the current doctrinal approach where the senior tactical commander is the logical person to control the crossing. To prevent his tactical plan from being subordinate to the crossing plan of another commander, he must be the CAC. Considering the nearness of enemy action, the crossing plan must be closely integrated with the tactical plan and the placement of crossing area control under one commander is paramount. The CAC retains this control until the area is cleared of friendly troops and removal or destruction of the bridges/rafts is complete. Support elements (engineers, MPs, ADA, smoke) are in direct support of or attached to the CAC during the crossing.
- Crossing behind the brigade rear boundary.

Unlike the situation described above, these areas will probably undergo several changes in crossing units throughout their existance. Furthermore, there may be numerous units crossing in both directions which may or may not belong to the local senior tactical commander. Therefore, it seems that the local senior engineer should be the CAC for the duration of the crossing or until the crossing area falls within the brigade rear boundary. Support elements should thus be attached (MPs, smoke) or in direct support (arty, ADA) for the life of the crossing area. This degree of permanency allows the CAC to establish a crossing area to accommodate multi-sized units crossing in both directions. The tactical commander then merely communicates with the engineer CAC when he wants to cross. The actual movement must be cleared with the Corps MCC (Movement Control Center), but the specific crossing time should remain the preogative of the engineer CAC. Location of CAC headquarters and radio frequencies must be given wide dissemination to units expected to cross.

• Location of the CAC. Proper location of the CAC and the support element commander, to include the engineers, is important for the overall control of the crossing area. In general, all CACs involved in this series of exercises located their CPs at the staging area or near the crossing site. During the crossing, most moved to a location directly on the river. Since most crossings occurred at one site, this was best. However, this would have been unadvisable had more than one site been operational. The support commanders tended to stay too near their headquarters and allow liaison officers to effect the close coordination. In only one case did an engineer commander elect to move a jump CP to the same area as the CAC. Coordination would have improved had the unit possessed sufficient communications equipment to remain in close contact with its own subordinate elements. As it was, the overall effect was disruptive to control. Therefore, unless the engineer is the CAC, movement of the engineer and support CPs to the vicinity of the CAC is not recommended.

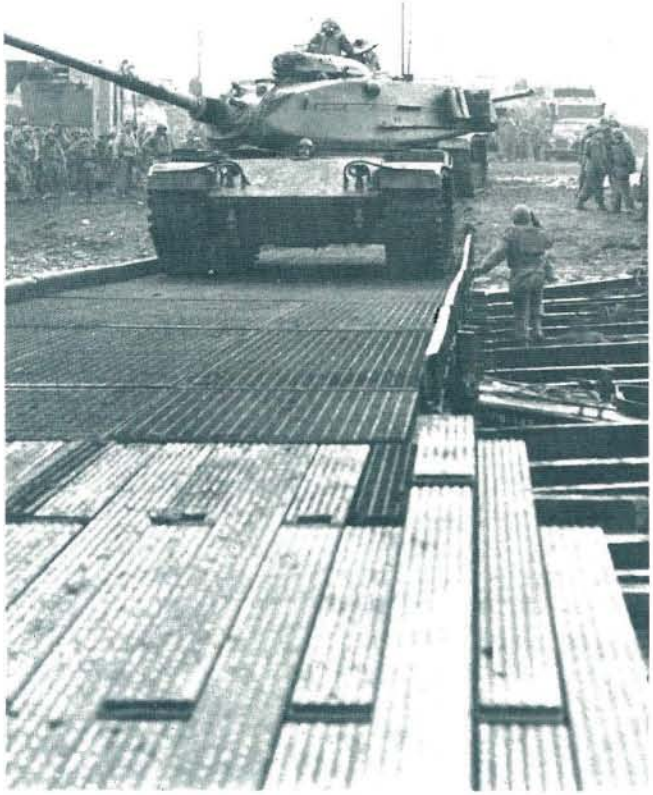
• Artillery support. Artillery support was included in the exercise, but crossing commanders failed to include the integration of artillery support in their crossing plans. Artillery support in a retrograde crossing is essential, particularly during the latter phases of the crossing in the brigade sector. Artillery and ground dispensed scatterable mines could assist considerably the last elements in crossings and could delay the enemy while engineers move tactical bridging or destroy the remaining bridging and equipment.

• Communications and electronic warfare (EW)

During the administrative phase, engineer troops integrated CBR with Bailey Bridge construction.

The exercises proved several firsts, including the first Pershing Missle erector-launcher to cross a tactical bridge (7 April 1975.)

The first M-60 Tank crosses a combination M4T6-Class 60 bridge during the pre-dawn hours.



Class 60 Raft still plays and important role in vehicular movement.

considerations. The high number of radios utilized during the crossing caused a definite EW problem which was never solved during the exercise. The concentration and frequency of use was controlled somewhat, but not to any large degree. However, several actions taken by the units in an attempt to reduce emissions were significant. In one case, a separate and specific CEOI (communications-electronics operating instructions) was prepared and insured the assignment of all call signs and frequencies to all assigned or attached or DS elements. Another approach was to utilize listening silence during the crossing. The tactical units conceivably could comply with this arrangement, but the military police had to sacrifice traffic control for fewer emissions. As a result, the MPs disregarded the direction and accomplished their traffic control mission. A third approach is to direct radios to low power sufficient to cover only the area of operations. Low powered radios were also needed at the raft sites during the hours of extreme darkness, as traffic tended to be unevenly distributed. A low powered radio at each site, controlled centrally by the engineer-in-charge, would have contributed significantly to even traffic flow. Lastly, the use of wire and field phones was never considered due to the large number of tracked vehicles and the administrative problems of laying wire. The use of wire remains a reasonable solution to the problem, particulary at rear area crossing sites.

The exercise was instrumental in emphasing the role of the engineer on the combat combined arms team in VII Corps. It forced the combined arms objective and provided realistic bridge/rafting construction and crossing experience for a large number of units, including the "first" Pershing missile erector-launcher to cross a tactical bridge. The April Bridge Training Exercise was indeed river training — European style, a style to be repeated often with new and better equipment and concepts.

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