The Tactical Role of Rivers in Early Chinese Warfare

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Abstract

This article aims to study the tactical role of rivers in early Chinese warfare. Rivers or, broadly speaking, waterways served not only as defensive barriers and offensive weapons but also for logistical purposes, which was particularly crucial for military campaigns in the regions of Central and South China with their abundant river networks. Furthermore, this article also analyzes a few early Chinese cases of shore-based river-crossing campaigns, in which rivers functioned as barriers in land warfare. Some tactics were thus developed to overcome and even make use of the landscape to achieve victory in battles.

Keywords

riverine warfare – shore-based river-crossing campaign – river logistics – diversionary tactics – early China

During the civil war of the Jin 晉 state in north China in the mid-fifth century BC, the warlord Zhi Bo 智伯 (d. 453 BC) laid siege to the last stronghold of his rival and diverted a river nearby to flood it. Seeing the flooded city, Zhi Bo could not help but exclaim that “at first I did not know that rivers could destroy others’ states, and now I understand it!” (始吾不知水之可亡人之國也，乃今知之.)1 It is not easy to assess whether Zhi Bo made such a comment as is mentioned in the Zhanguo ce 戰國策,2 but the saying indeed summarizes a crucial military function of rivers in early China.

1 Zhanguo ce, 6: 230 and 18: 592. Translations throughout are the author’s unless otherwise noted.
2 For the nature of the Zhanguo ce as a collection of anecdotes that was compiled centuries later, see Tsien 1993, 1–11.
Rivers, in a broad sense including various forms of waterways, could be used for both offensive and defensive purposes in siege warfare. They also functioned logistically to deliver troops to the battlefields – sometimes even helping to extend their striking distance – and to transport military provisions in bulk in an efficient way. Moreover, rivers not only served as the battleground for fighting vessels in riverine warfare but also played the role of physical obstacles to the maneuvering forces in land warfare. Despite the significant role played by rivers in ancient Chinese warfare, a first glance at the extant classical military treatises would find only very brief mention of riverine warfare. This may well be due to the northern provenance of those classics, where fighting on boats assumed only a secondary role. With a close examination of the received texts, however, one can still find traces of the military use of rivers in early China. Based on the scattered sources, the first part of this article will elaborate the military functions of rivers. The second part will then examine the practices and tactics of a variant of riverine warfare, namely, the shore-based river-crossing campaign, a quite commonly seen military operation in early China but one seldom discussed in past scholarship.

1 Military Use of Rivers in Early China

As early as in prehistoric China, rivers had performed a protective function for the ancient communities. Fortified settlements were always located near rivers so as to ensure sufficient water supply to the inhabitants and to strengthen defense with relatively little manpower. Man-made channels like moats and ditches in various scales were commonly dug to extend the reach of the river and to surround the settlements with water. One of the earliest examples is a moat of about 61 meters wide and 6 meters deep found in the Neolithic site at Qujialing 屈家嶺 (ca. 3300–2600 BC) in Hunan province; it was connected to a river so as to take advantage of the water as part of the protective facilities. Rivers and moats continued to function defensively with the growth of early Chinese states; their military use was particularly salient in the Spring and

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3 For the military sense of riverine environment and its historical and modern implication, see Rowlands 2018, 1–17.
4 In fact, as Kevin Rowlands recently pointed out, riverine operations have generally received only scant attention from western military historians and modern military analysts. See Rowlands 2018, 1. Needless to say, such is also the case in Chinese military history. On the state of the field of studying ancient Chinese naval warfare, with riverine operations as a part of it, see Lorge 2012, 81–96. In addition, Sawyer 2004 provides a general history of naval, including riverine, warfare in ancient China.
Autumn (770–476 BC) and the Warring States periods (403–221 BC), when a cluster of states on the North China plain not only competed for survival but also tried to impose dominance over others.vised during the Warring States period, the incessant warfare fostered a movement of city building. An increasing number of fortified cities emerged, and their walls became thicker and taller, with moats connecting to rivers that completely or partially surrounded them to hinder assault from the outside.

The disadvantage of locating near a river, however, was the threat of natural or man-made floods that would destroy the defensive facilities and even the city itself. “Water” (shuǐ 水), by means of using the river as a tool, was listed in the arsenal of attack in the operational manual of siege warfare in the Mozi 墨子, which summarized an array of siege techniques, tactics, and countermeasures practiced in the Spring and Autumn and Warring States periods. A section named Bei shuǐ 備水 (“Preparing against water”) instructs, albeit briefly, the besieged defenders about two ways of coping with flooding launched by the enemy. The first one is to dig channels and wells inside the lowest part of the city to drain the flood water away,

Within the wall, but outside the trench, make an encircling road 8 bu wide. In preparing against water (flooding), make a careful estimation of the height of the ground at all points. Where the ground within the wall is sloping down (low), [create] a tile-lined channel within it extending to low ground. Wells should be dug at the deepest places in the ground and a measuring tile placed within each well. When the depth of the water outside exceeds 1 zhang, water channels are dug within the wall.

城内塹外，周道廣八步。備水謹度四旁高下。城里中偏下，令渠其內。及下地，地深穿之，令漏泉。置則瓦井中，視外水深丈以上，鑿城內水渠。

6 For a general survey on the use of water in military operations during the Spring and Autumn and Warring States periods, see Cui 2012, 79–85.
7 For the emergence of new walled cities in the Warring States era, see Tu 1992, 567–71 and 703–19. For a summary of the militaristic nature of the Warring States period, see Lewis 2008, 587–650.
8 A modern annotated version of the manual is Mozi chengshou gepian jianzhu. For the English translation, see Johnston 2010, 731–921. For a general overview of the techniques and counter-techniques of siege warfare in ancient China, see Yates 1994. For a summary of the theory and application specifically on the use of water and its countermeasures, see Zhong, Li, and Zou 2000, 128–35. In addition, water was treated as a tool not only in warfare but also in political and philosophical discourses by the Mozi and other pre-Qin classics, see Hachiya 2022.
9 *Mozi chengshou gepian jianzhu*, 49; Johnston 2010, 793.
These were passive measures to create a buffer zone and channels to let the water flow away rapidly and thus reduce the power of the flooding. On the other hand, the second method was to take the initiative to send troops out by special vessels and equipped with weapons, under the cover of arrows, probably fired by crossbows from the wall, to breach the enemy’s dikes before they could produce massive flooding.

Boats are joined together [in pairs] to make 10 approachers (*lin*),\(^\text{10}\) each approacher having thirty men. Each man is in charge of a crossbow and four of every ten men have a *youfang*.\(^\text{11}\) It is necessary for those skilled in boats to make *fenwen* (tank vessels). Twenty such craft constitute a “squadron.” Thirty men, capable and strong, are chosen for each craft. Of these, twelve men wield a *youfang* and wear armour and leather helmets whilst the other eighteen men have a *miao*.\(^\text{12}\) Before training these capable soldiers, their parents, wives, and children are held as hostages at a different place and provided for. When it is seen that the waters (dikes) can be breached, use the approachers and tank vessels to breach the outside (enemy) dikes, assisting them with rapid fire from the “shooting machines” on the wall.

By taking the boats as the platform instead of fighting on land, the combatants were basically using the weapons employed in contemporary land warfare and practiced in the same way, first trying to assault the enemy at a distance with shooting, and then engaging in close combat with spears and halberds.\(^\text{14}\) To sabotage the enemy’s plan of producing a flood was an essential defensive

\(^{10}\) According to Yates 1994, 457, a *lin* 臨 was a type of catamaran that was made by linking two boats together.

\(^{11}\) By examining the past scholarship and archaeological evidence, Robin Yates suggested that *youfang* was a handheld long weapon combining the shapes of both hook and halberd, which was used to fend off enemies from approaching the vessel below the waterline. See Yates 1994, 457–58.

\(^{12}\) *Miao* might be a kind of spear or anchor. See Yates 1994, 458.

\(^{13}\) *Mozi chengshou gepian jianzhu*, 49; Johnston 2010, 793 and 795.

\(^{14}\) Yates 1994, 460.
tactic of siege warfare. In the extant records, however, there are relatively more entries of the successful use of flooding in overcoming the defensive side.

In warfare, the offensive side usually used rivers as a weapon in two ways. The first was building a dam (having the dual function of preventing and producing flooding) or another kind of blockade to hold up the flow of water in the upper course and then breaking it to release a flood. In fact, given the devastating impact of man-made flooding on the city-wall and the lives within, some Spring and Autumn states took preemptive measures by making covenants on certain occasions to prohibit the obstruction of the upper river course against one’s neighbors, though their fulfillment was in doubt.\(^\text{15}\) The second way involved diverting the course of a river to flood the enemy. Furthermore, either the obstruction or diversion of a river would deny the enemy access to river-borne supply lines.

The earliest literary mention of using flood water in siege warfare presumably dates to 512 BC when the kingdom of Wu 吳 constructed dams along the upper course of a river on higher ground and then released a flood on the city-state of Xu 徐.\(^\text{16}\) Located along the southeast coast and holding territories covered with abundant water networks, the Wu kingdom was good at water-borne operations. While expanding its power, Wu frequently engaged in riverine warfare with its neighboring rivals such as the Chu 楚 and Yue 越 kingdoms. During the reign of an ambitious king, the Wu state further constructed two canals to ensure the smooth transportation of food provisions and other material for northern expeditions between 506 and 495 BC. In 485 BC, the Wu king even made an attempt to invade the state of Qi 齊 in modern Shandong province via the sea route; albeit ending in failure, the expedition still bore witness to the sophisticated technology and skill of Wu’s naval force.\(^\text{17}\) Furthermore, there was a lost manual of aquatic warfare attributed to Wu Zixu 伍子胥 (d. 484 BC), a Chu fugitive who became a leading military figure in Wu.\(^\text{18}\) Although its authorship is open to doubt, the attribution to Wu Zixu accords with the conventional image of the naval expertise of the Wu military elites.

An even more well-known example of using a river to assault the enemy was in the late Spring and Autumn era when Zhi Bo laid siege to the walled

\(^{15}\) Xinyi Chunqiu Guliang zhuan, Xi 9.4: 366.

\(^{16}\) Chunqiu Zuozhuan zhu, Zhao 30.3: 1508.

\(^{17}\) Chunqiu Zuozhuan zhu, Ai 10.3: 1656.

\(^{18}\) The manual was entitled Wu Zixu shuizhan bingfa 伍子胥水戰兵法 or Wu Zixu shuizhan fa 伍子胥水戰法, and only a few entries about the design of fighting vessels and the organization of fighters and their weapons on board were preserved in literary collections and encyclopedias edited by much later generations. For examples, see Wen xuan, 22: 1054 and Taiping yulan, 315: 1450.
city of Jinyang 晉陽 held by the Zhao 趙 clan, and diverted the nearby Jin 晉 River to flood it. As mentioned at the beginning of this article, Zhi Bo was excited to witness the massive power of the river in siege warfare. The result of the campaign, however, was dramatic and unexpected. On the verge of overcoming Jinyang, the leaders of the Wei 魏 and Han 韓 clans, two of Zhi Bo’s allies, chose to betray Zhi Bo and collaborated with the Zhao clan. According to the *Zhangguo ce*, it was Zhi Bo’s comment on using the river to destroy his rival that alerted the leaders of Wei and Han to a possible strike in the same way since their own strongholds were also next to rivers. Finally, the clans of Zhao, Wei, and Han worked together and broke the dikes to devour the camp of Zhi Bo’s army.19

In the ensuing Warring States period, using the river to flood the enemy was still commonly seen in siege warfare. For instance, in 358 BC, the Chu forces attacked the Han territory of Changyuan 長垣 and breached the course of the Yellow River to flood it.20 Later, in 332 BC, in a confrontation between the kingdoms of Zhao and Zhongshan 中山, the latter diverted the Huai 槐 river so as to attack the besieged city of Gao 郞.21 In 279 BC the renowned general Bai Qi 白起 of Qin 秦 built dams to obstruct the upper course of the Yi 夷 River and then channeled it to flood the Chu city of Yan 郢; the destructive power of the water broke the northeastern corner of city wall and caused massive casualties, which finally led to Bai Qi’s capture of the city.22

Besides their destructive power being used in siege warfare, rivers also served as the most efficient and cost-saving means of transporting men and the bulk of supplies for military campaigns. A Warring States anecdote in the *Zhangguo ce* gives a vivid account of the use of rivers in military transportation. Zhang Yi 張儀 (373–310 BC), a Qin diplomat, once threatened the king of Chu by saying that,

Qin controls [the region of] Ba and Shu in the west. A cargo ship full of grain can start from the Min Mountains, floating down the Yangzi River and traveling over three thousand li to [the Chu capital of] Ying. A vessel can carry fifty soldiers and provisions for three months, sailing on the river and traveling over three hundred li in a day. Though it is a long way, it does not require the effort of pack animals; in less than ten days, they will

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19 *Zhangguo ce*, 6: 230 and 18: 592. On the technical analysis of diverting the Jin River in this campaign, see Zhong, Li, and Zou 2000, 131–32.
20 *Shuijingzhu jiaozheng*, 134.
22 *Shuijingzhu jiaozheng*, 667. Also, see Zhong, Li, and Zou 2000, 132–33.
arrive at Han Pass. When Han Pass sounds the alarm, from east of Jingling all cities will put up their defense, Qianzhong and Wu Commandery will no longer be in the possession of Your Majesty.

秦西有巴蜀，方船積粟，起於汶山，循江而下，至郢三千餘里。舫船載卒，一舫載五十人，與三月之糧，下水而浮，一日行三百餘里；里數雖多，不費馬汗之勞，不至十日而距扞關；扞關驚，則從竟陵已東，盡城守矣。黔中、巫郡非王之有已。\(^{23}\)

Despite its rhetorical overstatement, Zhang Yi’s warning reveals that by controlling the upper course of the Yangzi River, the Qin kingdom could send down a large army smoothly with sufficient military logistics to attack the Chu territories. In another entry of the Zhanguo ce, a Qin envoy also menaced the king of Wei by saying that the Qin troops could easily move downstream to reach Daliang 大梁, the capital city of Wei that was surrounded by a wide moat, via the river of Xia 夏, and they could furthermore breach the river at three spots in Wei territory so as to destroy Daliang and other important cities.\(^{24}\) In fact, in 225 BC, after a long and futile siege of Daliang, the Qin general Wang Ben 王賁 finally turned to flooding as the last resort. Wang ordered the diversion of the courses of the Yellow River and a canal known as Honggou 鴻溝 to flood the city, which forced the Wei king to surrender and thereby marked the end of the kingdom.\(^{25}\)

After conquering the rival states and establishing the first empire in Chinese history, the Qin dynasty (221–207 BC) further extended its use of waterways for military logistics on an empire-wide scale.\(^{26}\) Shipping grains and other food provisions via rivers and canals was an essential item of corvée labor in the Qin times.\(^{27}\) It was particularly salient when the Qin state used the canal networks to ship resources from the southeastern regions to the imperial capital located in the northwest and to send troops and necessary materials to the newly conquered far south – indeed the Qin state had mobilized an enormous number of laborers to construct the canal of Lingqu 靈渠 in modern Guangxi province to facilitate its southward expansionist campaign in the 210s BC.\(^{28}\) In addition,

\(^{23}\) Zhanguo ce, 14: 506.
\(^{24}\) Zhanguo ce, 30: 1079.
\(^{25}\) Shiji, 44: 1864.
\(^{26}\) On Qin’s use of waterways for military logistics, see Shen 2000, 114–19 and 155; Cai 2001, 65–70.
\(^{27}\) Tu 1990, 30.
\(^{28}\) Shen 2000, 117 and Cai 2001, 68.
a series of depots was installed along certain waterways to connect with the transportation networks.29

Furthermore, the Qin slips recently excavated at Liye 里耶 prefecture in western Hunan province, comprising mainly the official documents of Qianling 遷陵 County under the Qin dynasty, provide a concrete case of water transportation of weapons in 220 BC. According to the documents, the staff managing the local armory made a request for four large ships to deliver the weapons in large amounts from the depository in Erchun 贰春 district, located upstream along the You 酉 River in Qianling County, to the imperial capital.30 There was also evidence that such transportation of weapons back and forth in the same regions had been carried out repeatedly and for quite a long period.31

Rivers provided the founding emperor of the Western Han dynasty (202 BC–9 AD) an effective means for sending food provisions to his troops during the civil war that ensued after the downfall of the Qin empire. Later, with the consolidation and expansion of the Han dynasty, riverine transportation served as an important means of shipping materials from the depots in the east to the northern and western parts of the empire for large-scale military expeditions. The “Treatise of Rivers and Canals” (Hequ shu 河渠書) of the Shiji 史記 records the massive projects of waterway management during the reign of Emperor Wu 武 (r. 141–87 BC), and some of them were beneficial to military operations.32

Besides the large-scale river management project recorded in the official history, thanks to the newly unearthed documents of Han times there is also evidence that casts light on the use of water transport for military purposes at the local level. A set of bamboo slips dating to the mid-Eastern Han dynasty (25–220 AD) discovered at the city of Changsha 長沙, Hunan province, tells of a vivid legal case over the river-borne shipment of military provisions. Based on the fragmentary information, one can reconstruct the story of a commoner named Wang Pi 王皮 who was hired by the military to dispatch 4,500 斛 (about 27,000 kg) of grain by boat to the Fubo 伏波 camp (probably named after the General of Fubo) at Wuling 武陵 county. However, Wang Pi was arrested by the police officers of Linxiang 臨湘 county since the widow of his creditor had filed a lawsuit against him for failing to pay the debt. As Wang had spent the money on buying the cargo vessel, his boat was therefore detained. The detention subsequently halted the shipment, which worried the military

30 Liye Qin jiandu jiaoshi, vol. 1, 8,150: 341.
31 For the Qin military arrangements in the Qianling region, see Kiyoshi 2022, 73–105.
staff at the receiving end. A military officer of the Fubo camp named Zhu Ying 朱郢 thus sent a complaint to the office of Changsha 長沙 commandery, which supervised both Linxiang and Wuling counties, and asked the higher authorities to order the staff of Linxiang to arrange a replacement for Wang Pi so as to complete the shipment as soon as possible. But the issue was more complicated than Zhu Ying had anticipated, so he had to visit the Linxiang county office personally in the hope of solving it. The outcome, unfortunately, is not mentioned in the fragments.33

Although Wang Pi’s story is not complete, such transportation of provisions by waterways to the military garrisons located in the southern part of the Eastern Han empire was presumably a routine practice. In general, there are examples of the robust water transportation of trade in Linxiang county and nearby from the excavated documents found at Changsha.34 Furthermore, given Wang Pi’s status as a commoner, it is highly likely that the military usually asked private contractors to provide the water-borne delivery service.

The above examples, albeit scattered, demonstrate that in pre- and early imperial China rivers were commonly used for logistical purposes. Whether the regional kingdoms or the unified empire, all initiated riverine projects to facilitate military transportation. On the other hand, the destructive power of water was usually translated into a weapon in siege warfare when the landscape allowed. Meanwhile, rivers also worked as barriers hindering the maneuvering of land armies. The use of rivers in such a way and certain tactics employed for that purpose can be seen in some decisive battles in the historical records, which is the focus of the following section.

2 Shore-Based River-Crossing Campaigns in Early China

The term riverine warfare commonly refers to the floating and maneuvering of battle vessels on the water and using them as stable platforms for the combatants to fight from, which would in turn lead to a discussion of the types of boats used in such warfare and other relevant technological topics.35 Ancient warships, however, could not operate for long independent of land due to

33 For the analysis of the case of Wang Pi, see Liu 2013, 41–43 and Liu 2015, 250–53.
34 On the water transportation in the Linxiang region during Eastern Han times, see Lai 2019, 11–32.
35 For a general account of the science of sailing in Chinese history, see Needham 1971, 379–699, although this focuses more on late imperial China than the earlier period. For a recent case study on the use of warships in early and early medieval naval warfare, see Chittick 2010, 128–49.
limitations of technology and design. The vessels usually engaged within sight of the shore and constituted a part of related land campaigns. Even in combat on board the ships, it was quite common for the fighters to cross gangways and conduct hand-to-hand combat, thus making riverine warfare sometimes seem like an extension of land warfare on a floating platform.

Furthermore, besides the set battles between ships on large waterways like the Yellow River and the Yangzi River, it was not uncommon to see river-crossing campaigns conducted with or without the use of vessels. River crossing in essence is to deliver forces across the water obstacle when two opposing armies come face-to-face along a river. To help land forces cross riverine obstacles, especially when they were wide and deep, ships could be converted into troop carriers to convey military personnel to fight on another shore in amphibious operations, which would involve a complicated coordination of land and waterborne forces. Laying pontoon bridges over the rivers was another method of crossing.\textsuperscript{36} Meanwhile, land forces could also cross some narrow and shallow rivers or fords on foot, on horseback, or by simple devices without necessarily using ships. This article will call these kind of operations “shore-based river-crossing campaigns.”

Since riverine obstacles hindered normal ground maneuver and made the advancing force vulnerable while crossing the river or reforming its ranks on the far shore, the basic tactics for such an operation involve exploiting the enemy’s vulnerability. For instance, when Xiang Yu 項羽 (232–202 BC) led his men to strike and defeat the Han troops at the outskirts of the city of Peng 彭 in 205 BC, the Han troops fell into panic and routed to the Sui 睢 River. Xiang Yu chased and pressed the disorderly Han troops into the river; it is said that tens of thousands who crowded into the river were killed or drowned.\textsuperscript{37} Disorderly crossing of a river would be a disaster. Therefore, good order on the march across the river is important. In addition, it is usually taken as a sign that presages the potential success of the operation and is used as a textbook case to remind the commander when facing a similar tactical situation. For example, the \textit{Zuozhuan} 左傳 criticizes the Chu army’s marching across a river without proper formation during a campaign in 699 BC as an augury of their military failure.\textsuperscript{38} This was, of course, an after-the-fact summary of the experience rather than an actual forecast.

\textsuperscript{36} Huang and Luo 2013, 75–83 summarizes some cases of fighting over the pontoon bridges from the first to the sixth centuries AD.

\textsuperscript{37} Shiji, 7: 322.

\textsuperscript{38} Chunqiu Zuozhuan zhu 左傳, Huan 13.1: 137.
On the contrary, an uninterrupted crossing and reformation on the far shore would usually ensure a military success. An oft-quoted example, though always used as an illustration of the wrong action to take, was the battle of Hong between the states of Song and Chu in 638 BC. The two sides confronted each other at the Hong River. When the Song troops had formed their ranks, a military official named Ziyu advised Duke Xiang of Song (d. 637 BC) to seize the chance and attack the mighty enemy who was still in the middle of crossing the river. The duke, however, did not agree. Once the Chu army had completed the crossing but had not yet formed their ranks, Ziyu again urged the duke to launch an attack immediately. But the duke insisted on engaging the Chu forces in battle only after the latter were ready. As a result, the Song troops were defeated, the guards of the duke were decimated, and the duke himself was wounded and died later from the resulting infection. To explain the rationale behind his decision, Duke Xiang told Ziyu that he was trying to uphold the proper norms of engagement without adopting any cunning manipulations or taking unfair advantage of the enemy. Ziyu, however, rebuked his lord for not knowing the way of warfare but only following outdated beliefs. To be pragmatic, Ziyu pointed out that it was essential to strike the enemy in the middle of crossing a river when they were slowed down by the water, making it difficult to advance or retreat, and were not yet fully deployed in a battle formation. If the Song army had attacked their foes by following Ziyu’s suggestions, the result of the battle might have been different.

As crossing the water was a critical moment, some commanders would try to do it stealthily so as to surprise the enemy. A well-known example from the late Spring and Autumn period is the battle of Lize, regarded as a decisive battle that tipped the balance between the southeastern kingdoms of Wu and Yue. In 478 BC, King Goujian of Yue launched a revenge expedition against Wu and came face to face with King Fuchai and his troops at the river of Lize. Goujian adopted a diversionary tactic by deploying two divisions to the upper and lower courses of the river under cover of darkness. When night fell, the two teams beat their drums and made the war cry, pretending they were advancing to cross the river. Fuchai believed that the Yue armies were going to encircle him from the two wings and therefore divided most of his troops and dispatched them to face the enemy. Seizing the opportunity, Goujian quickly concentrated his main forces on crossing the middle course of the river quietly and attacking Wu’s weakened central army.

39 Chunqiu Zuozhuan zhu, Xi 22.8: 396–397.
40 On the revenge of Goujian and its cultural significance in Chinese history, see Cohen 2009.
The Wu people collapsed and retreated. The Yue forces then chased those of Wu and defeated them in two successive battles, which dealt a great blow to Fuchai and led to the final destruction of the Wu kingdom five years later.

Another famous example of crossing a river in a secret manner comes from the military genius Han Xin 韓信 (d. 196 BC) in the late third century BC, during the civil war following the collapse of the Qin dynasty. In 205 BC, Han Xin led the Han troops to attack Wei Bao 魏豹 (d. 204 BC), a turncoat who had deserted the Han and joined the rival side. Wei Bao concentrated his forces at Puban 蒲坂 and tried to hinder the Han armies from crossing the Yellow River at the ford of Linjin 臨晉. To deceive his enemy, Han Xin pretended that he was going to cross the river at Linjin but in fact dispatched his main forces to Xiayang 夏陽, where they made rafts by gathering and binding wooden jars together and stealthily crossed the river. Han’s troops finally turned up in the back of the Wei army, then defeated and captured Wei Bao who had rushed back from Puban.

On another occasion, the same Han Xin lured his enemy into a river crossing and took advantage of their resulting vulnerability. In 203 BC, when Han Xin advanced to the Shandong region, he encountered the rival general Long Ju 龍且 at the Wei River 濰水. Facing the huge rival army on the opposite shore, it is said that Han Xin dispatched ten thousand men to the upper course at night and used sandbags to block the river. At dawn, Han Xin led his men across the river but then played a feigned retreat to lure the enemy to pursue them. When Long Ju’s troops were chasing in the middle of the river, Han Xin ordered that the water be released from the upper course to flood them on the riverbed. The flood threw Long’s armies into total panic and cut off the contingents led by Long Ju himself, who just landed in front of Han Xin, from the remainder of his troops. Han seized the opportunity to kill Long and defeated the enemy.

The above cases of shore-based river-crossing campaigns, though only with scant details, nevertheless demonstrate some salient features of such kinds of operations. First of all, when using the river as an obstacle, an essential tactic was to lure the enemy to advance and to attack them while they were crossing, since it was a critical moment when the formation of the enemy would fall apart easily and their defense capability would be compromised. It was what Ziyu believed to be the pragmatic way of doing battle and what Han Xin did to defeat his foe. The early Chinese military treatises have already summed

41 Chunqiu Zuozhuan zhu, Ai 17.2: 1707.
43 Shiji, 92: 2620–21. On another occasion, the Han army led by another general also defeated the Chu men by luring and attacking them while crossing a river. See Shiji, 7: 330.
up this point. The *Sunzi* 孫子 says, “If the enemy is fording a river to advance, do not confront them in the water. When half their forces have crossed, it will be advantageous to strike them.” (客絕水而來，勿迎之於水內，令半濟而擊之，利。)\(^\text{44}\) The *Wuzi* 吳子 also teaches its readers that when the enemy are “fording rivers and only half of them have crossed, they can be attacked” (涉水半渡，可擊),\(^\text{45}\) and “if the enemy begins crossing the water, press them when half have crossed” (敵若絕水，半渡而薄之）。\(^\text{46}\) The terms *banji* 半濟 and *bandu* 半渡 may indicate allowing half of the enemy forces to cross the river or allowing the enemy to cross half the river. In order to give the most devastating blow to the enemy, it is more advantageous to attack when the former half of the enemy have just landed and still need time to reform their battle formation while the latter half are still in the middle of the river. To press the enemy at that moment, the former half would be trapped between the attackers and the river, and the second half would lack the flexibility to support the front line and might even retreat to the opposite bank of the river. Otherwise, if one side launches an attack when the enemy have only crossed half the river, they may still be some distance away from the enemy and may need to go into the water; meanwhile, the enemy who are already in the river may retreat and those still on the opposite bank may hold their position intact.

Secondly, to capitalize on the river for one’s benefit, one must access the upper course so as to control the current and produce a flood as Han Xin did to intersect Long Ju’s armies. Accessing the upper course would also give one’s troops an easier ford to cross over the river and provide a way for a surprise attack on the opposite shore as shown by Han Xin’s campaign against Wei Bao. In fact, the *Sunzi* alerts its readers to avoid placing themselves downstream: “If you want to engage the enemy in battle, do not array your forces near the river to confront the invader but look for tenable ground and occupy the heights. Do not confront the current’s flow.” (欲戰者，無附於水而迎客; 視生處高，無迎水流。)\(^\text{47}\) We are also told, “when it rains upstream, foam appears. If you want to cross over, wait until it settles.” (上雨，水沫至，欲涉者，待其定也。)\(^\text{48}\) These are warnings to generals to avoid natural or man-made flooding that comes from upstream. Furthermore, the upper course of a river

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44 *Shiyijiazhu Sunzi jiaoli*, 185. For English translation, see Sawyer 1993, 172.
45 *Wuzi* 吳子, 139. For English translation, see Sawyer 1993, 213.
46 *Wuzi*, 153; Sawyer 1993, 222.
47 *Shiyijiazhu Sunzi jiaoli*, 185–86; Sawyer 1993, 172.
48 *Shiyijiazhu Sunzi jiaoli*, 190; Sawyer 1993, 173.
also provides an ideal spot for poisoning the water on which the enemy along the lower course depend.49

Thirdly, by making use of the different courses of a river, one could employ a diversionary tactic to divert the enemy’s attention and divide their forces. Both King Guojian and Han Xin successfully adopted such a deceptive tactic to create chaos among their enemies. Although the historical records are brief, it is conceivable that carrying out the diversionary tactic required detailed local knowledge of the crossing sites for the armies and also sophisticated coordination between the diversionary forces to launch the attack.

Therefore, in order to make tactical use of the river, having sound geographical knowledge of the watercourse and the surrounding area became a prerequisite for the commander. He had to have at his command such topographical information as the river’s width and the number of crossing sites to decide the bridgehead location for an offensive river crossing or for luring the enemy to cross, since rivers limit the movement of troops and the points that can be traversed. The Wuzi reminds its readers that to prepare for riverine warfare, one must “mount some nearby height and look about, so as to ascertain the water’s condition, know its expanse, and fathom its depth.” (登高四望，必得水情。知其廣狹，盡其淺深.)50 Likewise, the Sunzi always emphasizes the value of geographical knowledge and detailed local information obtained from spies and local guides. Presumably, maps would be a necessary element in laying out the tactics of shore-based river-crossing campaigns.51

3 Concluding Remarks

Through the above analysis of a few cases of riverine operations in early China, this article demonstrates that rivers could be used for both defensive and offensive military purposes. The Yi Zhoushu 逸周書 states that water could be used in an offensive way by “blocking the river to flood downstream” (障水下) and in a defensive way by “blocking the river to fend off the enemy” (障水以禦寇).52 Large armies relied on the rivers for logistical purposes while the waters could also be drawn off to flood the opposing troops, camps, or

49 For an example of the Qin army using an upstream position to poison the enemy downstream during the Spring and Autumn period, see Chunqiu Zuozhuan zh u, Xiang 14.3: 1009.
50 Wuzi, 153; Sawyer 1993, 222.
51 For the increasing role of maps in formulating new battle tactics in early China, see Tse 2017, 150.
52 Xinyi Yi Zhoushu, 133 and 502.
cities and to ruin the enemy’s riverine supply lines. As the Sunzi says, “Using water to assist an attack is powerful” (以水佐攻者強).\textsuperscript{53} Besides naval vessels fighting on the rivers, shore-based river-crossing campaigns conducted by the infantry and cavalry were commonly seen in ancient Chinese warfare, usually as an extension of land warfare. Attacking the enemy while they were crossing, controlling the upper course of the river, and adopting diversionary tactics were common ways of weaponizing China’s rivers in shore-based river-crossing campaigns.

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\textsuperscript{53} Shiyijiazhu Sunzi jiaoli, 281; Sawyer 1993, 184.


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