The Battle of Leuktra
Organizational Revolution in Military Affairs in the Classical World

by Sergeant A. Majoor

INTRODUCTION

*I*f Canada is to continue to make meaningful military contributions to the Western Alliance, we must decide how to allocate our scarce resources for maximum effect. How doctrine is implemented and which view of the Revolution in Military Affairs (RMA) prevails have serious consequences for the Canadian Forces. A technology driven RMA, which depends on acquiring and integrating evermore sophisticated weaponry and equipment into the force structure, will require a large outlay in time and resources for purchase, training and upkeep. Under a technology driven RMA, doctrine will develop to support the use of high tech equipment, although the performance envelope of equipment will limit examination of possibilities[1]. Given Canada's historical record on military spending, large financial outlays to raise armies and purchase large quantities of equipment are only permissible in wartime, when time to train and integrate new equipment is at a premium. Under a technology driven RMA, the Canadian Forces will fall ever farther behind the United States and other sophisticated allies as we fail to incorporate advanced technology into our force structure.

An organizational RMA reduces resource constraints by using existing resources in new configurations. Flexible organizations are able to deal with unexpected circumstances and can adopt new technologies and techniques as resources become available, rather than having to start afresh whenever systems become obsolete. Keeping a supple organization allows us to continue to make meaningful military contributions to support government policy and Canadian values at home and abroad. The ancient Greeks offer an example of how changes to organization and novel use of resources can lead to victory *without* advanced weapons and technology.

THE HOPLITES IN BATTLE

*T*he equipment and organization of armies during the Classical era reflected both Greek culture and available technology. The hoplite and the phalanx defined Greek warfare throughout the period. Hoplite (from the Greek *hoplon* meaning weapon) warfare was a result of social changes brought on by the fall of the Mycenaean palace culture and the resulting dark ages in Greece. While pastoral kingdoms ruled the lowlands, small landholders who practiced intensive agriculture gradually settled the uplands and marginal agricultural areas. The farms were limited in size by the amount of labour an individual farmer and his family could provide, and these small plots brought a measure of self-sufficiency and a small surplus of wealth to the farmers. By the dawn of the Classical age, they were probably the most numerous propertied class in Greece.

Large numbers of farmers could muster in any district to defend their land, and each individual farmer had enough personal wealth to buy the protective arms and armour that marked the hoplite. Farmers fighting in massed formations could defeat aristocratic cavalry,[2] while the full panoply of bronze armour worn by hoplite heavy infantry provided protection against the light arms the poor could bring to battle.[3] Only a similarly massed and armed array of farmers could hope to challenge a phalanx in battle. Hoplite warfare sought to formalize the advantageous position farmers had created in Greek society, marginalizing the contributions of the poor (who could not afford the protective panoply), and the aristocracy.[4] Landholders earned their place as equals in the assembly by taking their place in the phalanx whenever called upon.

The panoply of equipment was similar throughout Greece during this period. Each man carried a 2.5 m thrusting spear and a short sword or dagger. For

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protection, a full-face bronze helmet covered the head; body protection was a bronze corset (later lightened to leather or quilted fabric), bronze leggings (known as *greaves*), and a massive round shield called the *aspis*.[5] The bowl shape of the shield reinforced the need for files of hoplites to stay close to each other for mutual protection, and provided a means for members in the back of the file to push the men in front, providing extra impetus to break into the enemy phalanx.[6]

The tight formations and heavy armour associated with hoplite warfare had several disadvantages: the weight of individual armour and weapons was about 30 kg, a considerable weight to carry in the hot Mediterranean sun, and an assembled phalanx could

only move over relatively flat ground, as obstacles would cause breaks in the formation. Thucydides noted the phalanx as a whole had a tendency to edge to the right, as each man sought the protection of the shield of the man to the right of him.[7] The bronze helmet covered the ears and most of the face, cutting off most of the sight and hearing of the wearer once it was seated on his head. Hoplites in the middle ranks of the phalanx would have no situational awareness once the ranks had closed and battle commenced, being trapped in a crowd of similarly equipped hoplites struggling to advance while blinded by clouds of dust and their own sweat. The lack of situational awareness could cause a phalanx to collapse if the hoplites trapped within began to panic.

All Greek city-states could field armies with similar arms and training. Most Greek city-states adopted auxiliary forces of light infantry and cavalry after exposure threat a large population of enslaved people posed to the Spartans, but it also gave the Spartan army skills beyond that of the hoplites of any other city-state. In addition to being able to deploy from marching columns to lines, the Spartans could undertake various other manoeuvres on the battlefield in order to deal with different situations. Such manoeuvres included sending the front ranks in a controlled charge to clear enemy light troops from the front of the phalanx, feigned retreats, wheeling to take an enemy phalanx in the flank, and various methods of countermarching and dressing of the ranks.[8] The evidence suggests that most of these manoeuvres were undertaken before contact, while the phalanx was still in open order, and most hoplites still had their helmets either pushed back on the top of their heads or carried by their personal servants.[9] Spartan military prowess was an organizational response to the reality of living in an apartheid society.

The Spartans and their allies outnumbered the Thebans, with the armies having the following compositions:

Thebans	
Cavalry	1000
Theban Hoplites	3200
"Sacred Band"	300
Other Boeotian Hoplites	1000
Boeotian Peltasts (light troops)	1000
Total	5500 infantry, 1000 cavalry

Spartans and Allies	
Spartan Cavalry	800
Allied Cavalry	200
Spartan "Similars"	700
Spartans (Lakedaimonians) [10]	1600
Allied Hoplites	6700
Allied Peltasts (light troops)	800
Total	9800 infantry, 1000 cavalry

The lack of situational awareness could cause a phalanx to collapse if the hoplites trapped within began to panic.

to foreign practices during the Persian wars. Communications between armies and their city-states was limited to the speed of runners, or ships for expeditionary forces, and communications within the phalanx were extremely limited, to say the least. There were no technological surprises that one city-state could bring to bear against the others.

The Spartans were an exception to the citizen soldiers of the other city-states. They had the same military technology as the other Greeks, but as Spartan society was based on Helot slaves working the estates, the Spartan peers were able to devote their time to practicing the arts of hoplite warfare. This was mostly in response to the constant

THE BATTLE OF LEUKTRA

One city-state, Thebes, had dared to challenge the Spartans to retain their freedom. The Spartans had subjugated the Thebans after the Peloponnesian wars, until a revolution deposed the pro Spartan aristocrats and liquidated the Spartan garrison in Thebes in 378 B.C. A series of invasions by the Spartans followed, but the Thebans and their Boeotian allies managed to hold the invaders at bay. The Peace of Callias in 371 B.C. was an attempt by Athens and Sparta to end or at least moderate the wars and invasions, but the Thebans rejected the Spartan terms, setting the stage for continued hostilities. The two sides met near the Boeotian city of Leuktra on 6 July 371 B.C.

The Spartan King Kleombrotos had led a previous invasion of Boeotia[11] to little effect. He was determined to clear his name by bringing the Thebans to battle, and the renewal of hostilities gave him the opportunity.[12] The Thebans were equally determined to prevent the Spartans from regaining control of their city or the Boeotian territory it depended on. The Theban general Epaminondas appears to have been confident as the moment of confrontation approached, although outnumbered and facing the most feared army in Greece.

The Spartans and allies were drawn up in a typical formation—a phalanx twelve ranks deep across their frontage, with the right of the line taken by the Spartan "Similars" and the allies arrayed on the left. The king himself would have been at

or near the front, with the royal guard of 300 *Hippeis*[13] between two of the *morai*[14] on the right. This formation would provide an anchor to limit the rightward drift of the phalanx, since the steadiest troops would be holding the right, and gave the king some flexibility to manoeuvre his best troops to outflank the Theban line. A cavalry screen covered the front of the formation to face the Theban cavalry.

Epaminondas departed from traditional practice by forming the Thebans in massed formation "not less than fifty shields deep"[15] on the left of his line, facing the Spartan "Similars." The remaining Boeotian contingents formed up to the right of the Thebans, possibly four and no more than eight deep, extending their frontage to match that of the Spartans and allies. The three-hundred man "Sacred Band," a local corps d'elite under the general Pelopidas, formed with the massed Thebans, but their exact position is unknown.[16] The Thebans placed a cavalry screen in front of the formation, possibly to raise a dust screen, and the entire front rank of Epaminondas' army may have been dressed off to disguise their true disposition from the Spartans.

make changes to their own formation...they started to fold back their right and lead it round so as to wheel and envelop Epaminondas in depth."[18] What Kleombrotos intended by these manoeuvres is unknown, since they were never completed. Pelopidas, seeing the Spartans in confusion from the cavalry and attempting some form of manoeuvre, led the Sacred Band forward in a charge, fixing the Spartans in place until the Thebans struck the enemy phalanx.[19] The Spartan line managed to hold for a short while, but the sheer mass of the Theban advance collapsed the Spartan phalanx, killing many high-ranking Spartans, including the king, the *polemarch* Deinon and many of the *Hippeis* fighting to save the king. The Spartan right wing fell back, and the allies, who had yet to contact the Boeotians, retreated with the Spartans. The battle ended when the surviving Spartans sent a herald to offer a truce to recover their dead, the conventional signal of surrender.

The Thebans had defeated the feared Spartan army in a massed hoplite battle. Epaminondas had no advanced technology to overcome the manpower advantage of the

chose their time to advance. The Sacred Band also made their charge without direction from Epaminondas. Pelopidas and Epaminondas could not send or receive signals to each other once the phalanx began the advance, so Pelopidas can only have commenced the charge on his own initiative, trusting the Sacred Band to follow his lead, and Epaminondas to arrive in time to exploit the opportunity.

Epaminondas used his forces in a novel way to maximize his strengths and neutralize the Spartan advantages of numbers, training and reputation. He changed the standard formation of hoplites arranged in a phalanx four to eight deep to concentrate the fighting power of the Theban contingent in an irresistible mass. Epaminondas arranged or allowed his separate contingents freedom of action, changing his phalanx from a solid block of spearmen into an articulated formation, allowing the Boeotian army to concentrate its power against the most dangerous part of the enemy line rather than attempt to engage the entire force at once. The freedom of command also allowed the Sacred Band to

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The battle opened after Epaminondas declared whoever wanted to avoid the fight could leave the battlefield. Some of the Boeotians on the right of the line attempted to leave, triggering an attack by allied light troops from the left of the Spartan line. The two cavalry screens clashed, and the Thebans drove the inferior Spartan cavalry onto their own troops.[17] As the Spartan cavalry and infantry struggled to untangle themselves, the Theban phalanx began its advance, with the other Boeotian contingents trailing, until the line was advancing in oblique order echeloned left.

The Spartans, realizing something unusual was happening, "began to

Spartans. While his cavalry had superior mounts and training, the Theban hoplites who decided the battle were in no way superior, or even equal, to the Spartan "Similars" in terms of experience or skill at arms. The various contingents of the forces had no way of communicating with each other once the battle was joined, and. except for some general instructions, it is quite possible no detailed orders in our sense of the word were developed by Epaminondas for his subordinate commanders to follow. Only the Spartan army is known to have advanced in time to music,[20] so we can only speculate on how the subordinate Boeotian formations

charge out and engage the Spartans independently, fixing them in place until the Theban contingent could deliver the hammer blow. The battle broke Spartan power, and Epaminondas was able to invade Laconia the next winter with a huge Boeotian army, shattering Spartan society and preventing a Spartan resurgence. .

ORGANIZATIONAL CHANGE VERSUS TECHNICAL CHANGE

*C*anada's military history is replete with examples of our troops overcoming obstacles that the better-trained and better-equipped allies were unable to overcome. Very rarely did Canadian soldiers have the

technological superiority to overwhelm their enemies. Enemy forces with superior mobility (Boer commandos), deep defenses manned by veteran troops (World War One German troops on the Western Front), veteran troops with superior equipment (Second World War German troops) or overwhelming numbers (Chinese "volunteers" during the Korean War) were quickly sized up and overcome through combinations of individual daring, local initiatives and quick adaptations to the new situation. Canadian citizen-soldiers of the past did not have the rigid mind-sets of their "professional" British counterparts and were more willing to experiment, adapt and share their experiences with others. Compare the rigid command and control

though the Germans had virtually no tanks and the infantry were "judged by peacetime standards, little better than a disordered militia"[22]—using innovative organizations and lowered decision-making thresholds so that local commanders could exploit success to support the overall goal.[23]

The modern Canadian Forces are evolving in a very different direction. Decades of neglect and under funding have created an environment where resource management is paramount, leading to centralization of power and the raising of decision-making thresholds. Staffs expend great effort to wring the maximum benefit from every dollar. While this is a laudable goal, the result is often micro-management and the smothering of initiative by subordinate units and

soldiers to directly access resources when needed can allow small, self-contained units to engage opponents in a timely manner and generate results out of all proportion to their numbers. In the modern security environment with its widely expanded range of threats, the soldier on the ground needs to have specialized resources on call, from air support for conventional operations to police officers to assist in aid-to-civil-power operations.[27] Organizational models exist which promise the ability to rapidly deliver resources to the end user. In the civilian world, Wal-Mart uses a sophisticated information system to manage logistics, correlating data from point of sale terminals, store inventories and customer habits to provide the proper goods to their stores at high speed and low cost. The US Navy's "network centric" concept

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measures imposed by General Haig and his staff for the battle of the Somme[21] with the more flexible Canadian planning for the battle of Vimy Ridge one year later. Although the two armies used almost identical formations, training and equipment, the results could not be more different. The British army lost 60,000 men, including 20,000 dead on the first day of the Somme, with little to show for their sacrifice; the Canadian Corps overran the bulk of Vimy ridge, the strongest position on the Western Front, in a single day.

Later success by the British during the First World War was often a result of throwing resources into technological solutions, ranging from poison gas to tanks. The battle of Cambrai succeeded using massed tanks to surprise and overrun the defenders, but the Germans overcame their initial shock and succeeded in mounting successful anti-tank actions with field guns by the end of that very day. The German offensive of 1918 almost succeeded in breaking the British line—even

formations. Attempts to achieve close control also consume a great deal of time, energy and resources in themselves, defeating the very goals they are supposed to achieve.[24]

To use the resources we have to their best effect, we need to adopt streamlined organizations very different from the highly centralized structures we are building today. The American experience in Afghanistan during the 2003 campaign is illuminating. A cadre of about two hundred and fifty special forces operators had direct lines of communications to aircraft, allowing them to call and direct strikes within minutes of detecting targets.[25] The result was to "…Napsteriz [e] the battle by cutting out the middlemen (much of the military's command and control) and working directly with the real players (the pilots and their immediate support teams)…By the end of the campaign, that lethal collaboration was so smooth that Special Forces could vector a bomber within minutes of their call, as opposed to the several hours it took in Kosovo and in the Gulf War."[26] Clearly, there are lessons to learn here. Creating organizations that allow

of warfare, which ties sensors, weapons and commanders together regardless of the platforms they inhabit, is one military model to investigate.[28] Replacing or supplementing command hierarchies with a functional matrix organization is another possible means of achieving the fast and flexible responses needed in today's security environment.

CONCLUSION

The organizational component of doctrine is the critical element for utilizing resources in the most effective manner. Reliance on new military technology to achieve mission goals is expensive and fraught with danger. The weaponry may not work as advertised, be unsuitable for particular missions (e.g., high performance fighters attempting close air support) or quickly defeated by countermeasures such as German artillerymen using field guns against tanks on the first day of the battle of Cambrai. Novel organization of existing resources can overcome limitations of platforms and technology and provide quick responses to possible enemy countermeasures.

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In our history, the Canadian Forces have been a low priority in government planning and spending until the actual outbreak of hostilities. The means to purchase new technology, train in its use and incorporate it has been lacking, and when the funding taps do open, the time to incorporate new equipment and technology is at a premium. Without the means to incorporate high tech equipment, the Canadian Forces can only be successful if organizational change emphasizing flexibility, and speed of action at all levels is the key component of change. As the ancient Greek general Epaminondas demonstrated, armies that organize and use their existing resources in novel and flexible ways can increase their effectiveness to overcome superior enemy forces and achieve victory.

ABOUT THE AUTHOR...

Sergeant Arthur Majoor holds a Business Finance Diploma from Fanshawe College and is currently enrolled in the Microsoft Certified Systems Engineer course. He joined the Canadian Forces in 1981 and served in the regular army until 1986, before transferring to the Reserve Force. His operational service includes a tour in Cyprus and disaster assistance during the Ice Storm in 1998. Sergeant Majoor is currently employed as a section commander as part of the CRC (Composite Reserve Company) for Operation PALLADIUM Roto 13 and is a regular contributor to this journal.

ENDNOTES

1. For example, air forces are highly constrained by the performance envelopes of their platforms. Close air support is no longer possible for most armed forces, since air forces preferentially purchase high performance fighters rather than armoured "tank busters" like the A-10. Air doctrine therefore emphasizes air superiority and the "interdiction" roles high performance fighters can perform.

2. Massed infantry formations have always been able to resist cavalry, for example, Harold's "shield wall" holding off William the Conqueror's cavalry in 1066 (until they were induced to break formation by a feigned retreat), the Swiss pike phalanx of the Middle Ages or British infantry "squares" of the Napoleonic wars.

3. Victor Davis Hanson, *The Other Greeks* (N.p.: Free Press, 1995). Hansen develops this argument from page 231 to 235.

4. Missile armed cavalry could make little impression on a formed body of men, and shock cavalry tactics would come a thousand years in the future, when stirrups were adopted by European cavalry.

5. J.F. Lazenby, *The Spartan Army* (N.p.: Bolchazy-Carducci Publishers, 1985), p. 30.

6. Victor Davis Hanson, *The Western Way of War* (N.p.: Alfred A Knopf, 1989). Chapter 15, "The Push and Collapse," discusses this in some detail.

7. Thucydides, *History of the Peloponnesian War*, 5.71.1, translation by Rex Warner (N.p.: Penguin Classics, 1972), p. 392.

8. J.F. Lazenby, *The Spartan Army* (N.p.: Bolchazy-Carducci Publishers, 1985), p. 4. Detailed descriptions of specific manoeuvres can be found throughout this work.

9. J.F. Lazenby, *The Spartan Army*. Spartan "drill" was based on the manoeuvring of files, rather than ranks as is our modern practice. The phalanx would be in the "open order" with alternating files one behind the other until the last moment, when personal servants would finish arming their masters and depart. Skirmishers could retreat through the openings, then the rear files would move forward and fall in beside the front files, filling the gaps and presenting the solid front of shields and spears to the enemy. See also Victor Davis Hanson, *The Western Way of War* as well as John Warry, *Warfare in the Classical World* (N.p.: Salamander Books, 1980), p. 34 for a diagram. Most Greeks of the landholding class could afford one or more slaves to assist with farm workand act as batman during wartime. See Victor Davis Hanson, *The Other Greeks*, p. 69.

10. Many subordinate classes of Spartans existed, from the "Similars," who had full rights, to *Helots*, who had none. Subordinate classes of Spartans (*perioikoi* or the "dwellers around") who had fallen out of favour for various reasons still had obligations to the state, especially their military obligations.

11. Boeotia is the plain where the city of Thebes is situated. The Thebans proper are the inhabitants of the polis, while the Boeotians are the farmers and villagers from the surrounding territory.

12. Xenophon, *Hellencica*, VI, 4.5, *History of My Times*, translated by Rex Warner (N.p.: Penguin Classics, 1987), p. 325.

13. J.F. Lazenby, *The Spartan Army*, p. 156. A discussion of the origins and use of the *Hippeis* occurs pp. 9-13.

14. J.F. Lazenby, *The Spartan Army*, pp. 5-10. A *Mora* (plural *morai*) at full strength was a "battalion" of 1280 men, subdivided into 2 *lochoi* of 640 men, 8 *pentekostys* (companies) of 160 men, and 32 *enomotarchai* (platoons) of 40 men. The *Polemarch* (battalion commander) and other senior leaders would be Spartan "Similars," with the remainder drawn from the inferior Spartan classes.

15. Xenophon, *Hellencica*, VI, 4.12, *History of My Times*, translated by Rex Warner, p. 327.

16. Various commentators have placed the Sacred Band in front of, behind and to the side of the 50 deep Theban phalanx, as well as incorporating it as part of the giant formation. In order to see the disordered Spartans and have freedom of action to make their climactic charge at the right time, they must have been detached from the main formation, either at the front of the Theban phalanx, or formed up on the left of the line.

17. Xenophon, *Hellencica*, VI, 4.13, *History of My Times*, translated by Rex Warner, p. 327. Xenophon is very dismissive of Spartan cavalry.

18. According to Plutarch, J.F. Lazenby, *The Spartan Army*, p. 158.

19. Again, it is unclear just where the Sacred Band struck the Spartans, but a reasonable assumption is they wheeled out to their left and then wheeled right to catch the enemy formation in the flank.

20. "… It was a sight equally terrifying when they marched in step / with the rhythm of the flute, without any gap in their line of battle, / and with no confusion in their souls, but calmly and cheerfully moving / with the strains of their hymn to their deadly fight." (Plutarch, Lycurgus 22.2-3, available at http://www.e-classics.com/lycurgus.htm).

21. Martin Van Crevald, *Command in War* (N.p.: Harvard University Press, 1985), pp. 155-168. Since the planning was based on the artillery program, lines of advance were selected to conform to the artillery observer's limits of visibility. In many areas, the second line of defences was not included in the bombardment, while in areas where objectives were quickly gained, such as the 18th and 30th divisions near Montauban Abbey, permission to exploit beyond the objective were refused since the day's artillery schedule was complete.

22. Martin Van Crevald, *Command in War*, p. 173.

23. Martin Van Crevald, *Command in War*, p. 168.

24. This example is from a single brigade-level computer assisted exercise in Kingston. While preparing for Exercise TRILLIUM SCEPTRE 2003 (25-26 Jan 2003), the 31 Brigade G6 branch was involved in collating and distributing the exercise instruction. The size and complexity of the exercise instruction (387 Mb of data.) consumed large amounts of resources to view over a network connection, through burning large quantities of CDs for distribution or potentially printing a 1000 page binder of information. (Theoretically, if the instructions were all word documents with an average of 15 Kb/page, this would equal a 20,000-page word document). The amount of time required for the end user to read and process this amount of information would also preclude timely action.

25. Michael Kelly, "The Air Power Revolution," *Atlantic Monthly* April 2002, available at http://www.theatlantic.com/issues/2002/04/kelly.htm, viewed May 2003. Also Ned Desmond, "Broadband's New Killer App," *Business* 2.0, October 2002, available at http://www.business2.com/articles/mag/0,1640,43546,00.html, viewed May 2003.

26. Ned Desmond, "Broadband's New Killer App."

27. This range of resources needs to be available concurrently in a "three-block war" scenario.

28. Vice-Admiral Arthur K. Cebrowski (USN) and John J. Garstka, "Network Centric Warfare: Its Origin and Future," *U.S. Naval Institute Proceedings*, January 1998, available at http://www.usni.org/Proceedings/Articles98/PROcebrowski.htm, viewed May 2003.