NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

SWARM TACTICS AND THE DOCTRINAL VOID:
LESSONS FROM THE CHECHEN WARS

by

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June 2008

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REPORT DOCUMENTATION PAGE		*Form Approved OMB No. 0704-0188*

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.

1. AGENCY USE ONLY *(Leave blank)*	**2. REPORT DATE** June 2008	**3. REPORT TYPE AND DATES COVERED** Master's Thesis	
4. TITLE AND SUBTITLE Swarm Tactics and the Doctrinal Void: Lessons from the Chechen Wars		**5. FUNDING NUMBERS**	
6. AUTHOR(S) William D. Shannon			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000		**8. PERFORMING ORGANIZATION REPORT NUMBER**	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A		**10. SPONSORING/MONITORING AGENCY REPORT NUMBER**	

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited.	**12b. DISTRIBUTION CODE** UU

13. ABSTRACT (maximum 200 words)

Swarming concepts and swarm tactics have been used for centuries. Swarming is essentially a convergent attack on an adversary from multiple axes. Swarming attacks are usually conducted either by force or fire, or a combination of both. Swarming is not new to military scholars and historians, but the idea of formally incorporating swarming concepts into military doctrine and tactics by the Marine Corps and other U.S. armed forces has never been given serious thought beyond limited experimentation. The most recent and relevant use of swarm tactics occurred during the Chechen Wars against the Russians, which have proved a serious challenge to the Russians. When one examines Marine Corps doctrine, warfighting concepts and experiments, a doctrinal void emerges that should truly be addressed. The Marine Corps distributed operations (DO) concept is reviewed with the idea of contributing toward a future swarming doctrine. While we watched the Chechen Wars unfold, even writing articles and books about all the lessons we should have learned, none of those lessons related to swarming ever translated into real doctrinal changes, embracing both offense and defense. This thesis asks if there is potential to develop doctrinal swarming concepts, while bringing forth additional lessons learned from the Chechen Wars and highlighting gaps and weaknesses in warfighting doctrinal publications and warfighting experiments.

14. SUBJECT TERMS Swarming, Warfighting, Concepts, Swarm, Tactics, Chechnya, Chechen Wars, Russia, Russian, Military, Doctrine, Experiments, Experimentation, Distributed Operations, OEF, OIF, GWOT, Terrorism, Iraq, Marine Corps		**15. NUMBER OF PAGES** 105	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	**18. SECURITY CLASSIFICATION OF THIS PAGE** Unclassified	**19. SECURITY CLASSIFICATION OF ABSTRACT** Unclassified	**20. LIMITATION OF ABSTRACT** UU

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**SWARM TACTICS AND THE DOCTRINAL VOID:
LESSONS FROM THE CHECHEN WARS**

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN SECURITY STUDIES (EUROPE AND EURASIA)

from the

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ABSTRACT

Swarming concepts and swarm tactics have been used for centuries. Swarming is essentially a convergent attack on an adversary from multiple axes. Swarming attacks are usually conducted either by force or fire, or a combination of both. Swarming is not new to military scholars and historians, but the idea of formally incorporating swarming concepts into military doctrine and tactics by the Marine Corps and other U.S. armed forces has never been given serious thought beyond limited experimentation. The most recent and relevant use of swarm tactics occurred during the Chechen Wars against the Russians, which have proved a serious challenge to the Russians. When one examines Marine Corps doctrine, warfighting concepts and experiments, a doctrinal void emerges that should truly be addressed. The Marine Corps distributed operations (DO) concept is reviewed with the idea of contributing toward a future swarming doctrine. While we watched the Chechen Wars unfold, even writing articles and books about all the lessons we should have learned, none of those lessons related to swarming ever translated into real doctrinal changes, embracing both offense and defense. This thesis asks if there is potential to develop doctrinal swarming concepts, while bringing forth additional lessons learned from the Chechen Wars and highlighting gaps and weaknesses in warfighting doctrinal publications and warfighting experiments.

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I.   INTRODUCTION

> I think that the American people need to understand that, and that we as a nation need to understand that as we look at what are our vital interests and what aren't our vital interests, and understanding that whatever our interests are going to be, it is going to eventually lead us into what we call the three- block war. Why? Because they've watched CNN, the enemy has. They've seen the might of our technology. They're not going to fight us straight up. We're not going to see the son of Desert Storm anymore. You're going to see the stepchild of Chechnya.
>
> --Gen. Charles Krulak, USMC[1]

A.   PURPOSE

In the Global War on Terror (GWOT), U.S. forces are aggressively seeking new ways to increase our effectiveness against insurgents, terror networks and other unconventional adversaries. All this while striving to retain a superior conventional armed force. Despite the renewed emphasis on counterinsurgency, our conventional forces are still using doctrine and tactics based on conventional maneuver warfare, not much on irregular or guerrilla warfare, and this may be giving our enemies some distinct tactical and operational advantages. We are using to a great extent our special operations forces (SOF) in both traditional and non-traditional ways, but in combat zones dominated by indigenous and conventional U.S. forces, there are limited opportunities for strategic impact using the typical environment SOF are used to operating in. As the services search for ways to give our forces asymmetrical advantages against our enemies, the adoption of swarming concepts by ground forces[2] may be another way our forces can become more lethal to our enemies while providing protection when swarming tactics are used upon us. Swarming was briefly looked at for use by ground forces in late 1990s

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[1] General Charles Krulak, interview by Jim Lehrer, *Online Newshour: Gen. Krulak -- 25 June 1999*, PBS, Located at http://www.pbs.org/newshour/bb/military/jan-june99/krulak_6-25.html. Retrieved on 28 April 2008. The "three-block war" notion above was coined by Gen. Krulak. At the time, Gen. Krulak was the Commandant of the Marine Corps. It means that in today's urban battle, we could conceivably be providing humanitarian assistance on one block, peacekeeping or peace enforcement on the next, and combat operations on the next block.

[2] Ground forces who might conceivably use swarm tactics may be supported by air and naval fires.

during Marine Corps warfighting experiments[3]; and the purpose of this thesis is to examine whether there is potential to formalize concepts of swarming into doctrine for use by special and/or conventional operations forces. Numerous authors over the years have documented historical examples of belligerents utilizing swarm tactics, and several authors have recently pointed to the need to evolve concepts of swarming into formal doctrine.

To examine the concept in greater detail, this thesis will take an in-depth look at the use of swarming during the Chechen Wars. Additionally, this thesis will examine current and emerging doctrine and warfighting concepts to assess their effectiveness in countering swarm tactics, and the gaps this doctrinal void leaves, while evaluating the potential for our forces to use swarming offensively. It will identify variables which contributed to swarming's success or failure, both offensively and defensively, over the course of the Chechen Wars. Ultimately, this thesis will evaluate the potential for incorporating swarming concepts into doctrine for use by ground forces, both conventional and special operations types. History has shown that swarming has been employed by many types of forces, often achieving tactical and operational victories for those forces that have used them. If it can be shown that there is potential to develop a swarming doctrine by our forces, it will improve the effectiveness of U.S. forces engaged in both conventional and irregular wars, and thus perhaps fill a doctrinal void.

B.   THE RESEARCH QUESTIONS

Is there potential to turn swarming concepts into doctrine for U.S. forces? In order to answer this question, this thesis will ask the following questions:

- Are there relevant historical precedents that provide sufficient analysis to explore development of swarming concepts?
- Does the concept of swarming address any gaps in military doctrine?

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[3] Especially the Hunter Warrior advanced warfighting experiment and the Project Metropolis series of advanced warfighting experiments. These experiments will be covered more in Chapter III .

- Can we [U.S. forces, and more specifically, Marines] incorporate swarm tactics into our doctrine for use in the offense and defense without drastic changes to organization, command, control and communications (C3), training, and logistics?

The methodology for this study is discussed later in this chapter, but it will follow the basic organizational construct by answering the three questions above. But before we dive into the Chechen Wars, swarming needs to be defined and differentiated from other seemingly similar types of warfare.

C.   WHAT IS SWARMING?

While there are historical cases of swarm tactics used by militaries of the past, swarming is first and foremost associated with bees, wasps and other flying insects. John Arquilla and David Ronfeldt defined military swarming as "the systematic pulsing of force and/or fire by dispersed, internetted units, so as to strike the adversary from all directions simultaneously."[4] They differentiate swarms from the other traditional forms of battle, such as mass and maneuver, by focusing on what the information age has enabled us to do with our forces.[5] Sean Edwards in his doctoral dissertation states that "Swarming occurs when several units conduct a convergent attack on a target from multiple axes. Attacks can either be long range fires or close range fire and hit-and-run attacks."[6] According to Arquilla and Ronfeldt, swarming has two fundamental requirements, namely the ability to strike the enemy from multiple directions and that the swarming force be "part of a 'sensory organization'", providing intelligence to other members of the force and the higher echelon units.[7] History is replete with examples of forces using swarm tactics against their adversaries, so for one to think that swarming is a completely new concept is not altogether true.

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[4] John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict*. Santa Monica, CA: RAND, 2000), 8.

[5] Ibid., 8-9.

[6] Sean J.A. Edwards, *Swarming and the Future of Warfare*. (Santa Monica, CA: RAND, 2005), xvii.

[7] John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict*, (Santa Monica, CA: RAND, 2000), 22.

D.   SWARMING EXAMPLES IN HISTORY

For hundreds of years, various military, insurgent, and guerrilla forces have used swarming tactics with both success and failure against their adversaries. While this thesis devotes an entire chapter looking at the swarm during the First and Second Chechen Wars, below are a few examples of times when forces have used the swarm to their advantage.

1.   The Mongol Swarm

There have been few historical military forces so menacing to their enemies as were the Mongols under Genghis Khan. The Mongols' superior weaponry and mobility, combined with a decentralized command and control, were key enablers to swarming.[8] The Mongols' doctrine and training espoused the concept of swarming and it became a signature tactic of the Mongol attack that few adversaries could defend against or repel.[9] Edwards points out that "Mongol success depended on having terrain on which to maneuver. Generally, when the horsemen could swarm around the enemy, they won; when they could be channeled, they lost."[10]

One of the signature swarm tactics used by the Mongols was "the *mangudai*, or "feigned withdrawal" ruse.[11] In this tactic, the Mongols would use light cavalry in a fake attack directly at the enemy's front. Then, the Mongol light cavalry would halt and run away, misleading the enemy into thinking the Mongols were retreating when in fact they would be leading their pursuers into an trap. Sometimes they would retreat for days, until they got to the right terrain to swarm their adversary. Typically, the light cavalry would

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[8] Sean J. A. Edwards, *Swarming on the Battlefield: Past, Present, and Future*, (RAND, Santa Monica: 2000), 28-29.

[9] Ibid., 28-31.

[10] Ibid., 30.

[11] Ibid., 29.

lead the enemies into a draw of some sort in which the light cavalry would suddenly turn around and the heavy cavalry, waiting above on all sides, would swarm the enemy with fire and force.[12]

Jack Weatherford describes another Mongol tactic, called the "Crow Swarm or Falling Stars attack."[13] In this swarm attack, the Mongols would, "At the signal of a drum, or by fire at night, the horsemen came galloping from all directions at once."[14] As to the effects of the Crow Swarm on the Mongol's enemies, Weatherford states

> The enemy was shaken and unnerved by the sudden assault and equally sudden disappearance, the roaring wave of noise followed by a greater silence. Before they would respond properly to the attack, the Mongols were gone and left the enemy bleeding and confused.[15]

From one empire that used the swarm to conquer the modern world, to one that was forced to retreat in fear, next we'll see how the great Emperor Napoleon was forced to ever watch from all directions as he retreated from Russia.

2.   Napoleon's Retreat from Russia

When Napoleon entered the uninhabited and burning Russian capital of Moscow after the Battle of Borodino, it marked the beginning of the end for one of the greatest military commanders of all time. The Russian peasants and Cossacks, led by men such as Lieutenant Colonel Denis Davydov, used swarming tactics to harass, terrorize, and wear down Napoleon's forces, logistics trains, and rear guards.[16] Eugene Tarle provides a great account of how a Cossack swarm almost cost Napoleon his life:

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[12] This paragraph is fused from two sources. See Sean J.A. Edwards's two works: *Swarming on the Battlefield: Past, Present, and Future,* (Santa Monica: RAND, 2000) pp 28-31 and "Swarming and the Future of Warfare", PhD diss., Pardee RAND Graduate School, 2004, 214.

[13] Jack Weatherford, *Genghis Khan and the Making of the Modern World*, (New York: Three Rivers Press, 2004), 94.

[14] Ibid., 94.

[15] Ibid., 94.

[16] Eugene Tarle, *Napoleon's Invasion of Russia: 1812*, (New York: Octagon Books, 1971), 268, 346, 350.

On 25 October, at daybreak, the Emperor rode to Maloyaroslavets. With him a small retinue: Marshal Berthier, General Rapp, and a number of officers. Suddenly a detachment of Cossacks came galloping with their pikes atilt, heading straight for Napoleon and his retinue. With shouts of 'Hurrah!' they charged in the small group of mounted men. Their shouts saved Napoleon from death or capture: his retinue had not recognized the horsemen in the distance and took the Cossacks for a squadron of French cavalry. But on hearing the characteristic 'hurrah,' the retinue of about 25 officers clustered around the Emperor. One Cossack managed to swoop down on General Rapp, piercing his horse with his pike, but two French squadrons arrived in time to throw back the Cossacks, who quickly vanished in the woods taking with them a few French artillery horses and disorganizing a part of the French camp along the way.[17]

3.   The Winter War

In another, more modern instance of swarming, the Finns under the command of Marshal Mannerheim utilized swarming tactics at the initial stages of the Soviet invasion, much to the Soviets' dismay. While the Soviet propaganda machine was proclaiming Red Army successes from the onset of hostilities[18], Mannerheim's numerically inferior forces did enjoy limited success against the Soviets, using swarming tactics against the Red Army's conventional forces. One example of swarming tactics was in the Finnish *motti*.[19] William Trotter, in his book *A Frozen Hell*, provides examples of swarm tactics used against Soviet forces. Trotter states: "A textbook *motti* had three phases:

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[17] Eugene Tarle, *Napoleon's Invasion of Russia: 1812*, (New York: Octagon Books, 1971),, 338.

[18] See James Venceslav Anzulovic, "The Russian Record of the Winter War, 193901940: An Analytical Study of Soviet Records of the War with Finland from 30 November 1939 to 12 March 1940", PhD Dissertation, University of Maryland, 1968. In his dissertation, it is replete with Soviet propaganda about their success in the first push into Finland. The truth, however, was very different, especially for the Soviet troops in the north.

[19] While not widely studied today, the *motti* was in-effect swarming the enemy by force and/or fires, but usually both. The website www.winterwar.com by Sami H.E. Korhonen provides abundant information about the Winter War. Sami uses original Finnish journals and texts, as well as a few translated books. It is an excellent way to gain an understanding of various parts of the battle very quickly. Sami defines *motti* as "a surrounded/encircled military unit or a place, where that unit is surrounded/encircled." (found on http://www.winterwar.com/Tactics/mottis.htm). Sami also describes in detail the Finnish Anti-tank teams that attained operational level effects against the Soviet armor.

1. Reconnaissance…and encirclement…to pin the enemy…

2. Quick, sharp attacks, using concentration of force…delivered at vulnerable points along the entire length of the column…isolated fragments.

3. Detailed destruction of each pocket…"[20]

Finnish tactics could be described by "Individual and small-unit initiative, expert camouflage…quick concentration and quick dispersal, the technique of large-scale as well as small-unit ambushes," all of which facilitated the Finns' ability to swarm Soviet forces, which were doctrinally deployed to fight a conventional battle. One of many examples at the Battle of Suomussalmi exemplifies the Finnish use of swarming when, after the initial *motti*; the Finnish forces exploited the breach in the Soviet column by immediately swarming the Soviets from the tree line and widening the gap by fire and force.[21]

The Finns fiercely resisted the Soviet advance, and historians have recognized the asymmetrical advantage the guerrilla units enjoyed against their bulky and slow moving adversary. Engle and Paananen note that "Guerrilla fighting began in earnest almost from the moment of the Russian onslaught as white-clad ski patrols raced up and down the tracks harassing the enemy columns."[22] Similar to what Edwards might classify as a vapor swarm, the Finnish guerrillas "Using their quick-firing Suomi submachine guns, the skiers appeared out of nowhere, poured a deluge of bullets into the Russian masses, and then disappeared into the whiteness again."[23] Mannerheim obviously saw the value that these guerrillas and their swarm tactics bore on their Soviet enemy. He dispatched units throughout the north, harassing the Soviets from the flanks and rear, with complete autonomy to develop the situation as they saw fitting.[24] They almost always attacked

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[20] William Trotter, *A Frozen Hell: The Russo-Finnish Winter War of 1939-1940*, (Chappell Hill: Algonquin Books, 1991), 131.

[21] William Trotter, *A Frozen Hell: The Russo-Finnish Winter War of 1939-1940*, (Chappell Hill: Algonquin Books, 1991), 156.

[22] Eloise Engle & Lauri Paananen, *The Winter War: The Soviet Attack on Finland 1939-1940*, (Mechanicsburg, PA: Stackpole Books, 1973), 16-18.

[23] Ibid., 18.

[24] Ibid., 36.

with surprise, as they did not have the artillery preparatory fires, and would "strike in the dark or during snowstorms and fog."[25] Engle and Paananen note that the Finns had two organized guerrilla battalions, but the command and control was such that the guerrillas deployed as small groups and even solo if the situation demanded.[26] These small groups, using techniques like the *motti* and the other swarm tactics, didn't defeat the Soviet invaders, but cost them dearly. But the Winter War wasn't the last time the Soviets would face swarms.

4. The Soviet Afghan War

While not before documented in previous literature on swarming, there seems to be more evidence that the mujahideen may have used swarm tactics to repel the Soviets during the Soviet Afghan War. For instance, when the mujahideen attacked convoys, they used tactics similar to the *motti* used by the Finns in the Winter War. H. John Poole states,

> To maximize surprise, the mujahideen would often attack a whole convoy at once. Sometimes that meant spreading tiny teams over a distance of 5-7 kilometers…Picture RPG teams digging spider holes beside a road at the same interval that trucks doctrinally maintain. By popping up at once, those two-man teams could have done some real damage.[27]

Poole notes that after this 360-degree ambush, the mujahideen would withdraw, but could reuse those same positions time and time again.[28] A successful 'swarm by fire' ambush was executed in October 1980 against an entire Soviet convoy near Abdullah-E Burj, as the convoy crossed the bridge.[29] By coordinated signal, the mujahideen simultaneously launched rocket fires on the convoy, then as the convoy went into chaos,

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[25] Eloise Engle & Lauri Paananen, *The Winter War: The Soviet Attack on Finland 1939-1940*, (Mechanicsburg, PA: Stackpole Books, 1973), 36.

[26]Ibid., 86, 108, 110.

[27] H. John Poole, *Tactics of the Crescent Moon: Militant Muslim Combat Methods* (Emerald Isle, NC: Posterity Press, 2004), 99.

[28] Ibid., 99-100.

[29] Ali Ahmad Jalali and Lester W. Grau, Eds. *The Other Side of the Mountain: Mujahideen Tactics in the Soviet-Afghan War* (Fort Leavenworth: Foreign Military Studies Office, 1995) in an article by Haji Abdul Qader and Haji Qasab, "Ambush Near Abdullah-E Burj", 30-33.

they continued rocket fire and added medium and small arms fires.[30] Shortly thereafter, the mujahideen were able to withdraw safely with negligible losses.

These examples provide a brief description of swarm tactics that have been employed. While not always used by guerrilla forces, these irregular tactics; employed as an evolution from maneuver warfare, share some common traits with guerrilla-type warfare and emerging concepts such as Distributed Operations, yet it is different.

E. WHAT DIFFERENTIATES SWARMING FROM GUERRILLA WARFARE AND EMERGING DOCTRINE IN DISTRIBUTED OPERATIONS?

With respect to guerrilla warfare, swarming may at first seem very similar. However, there are some distinct differences between the two. First, guerrilla warfare is typically conducted as a means to a political/revolutionary end, usually by an inferior force.[31] Second, guerrilla warfare ambushes and hit-and-run tactics are usually executed by one or two small units, who quickly disperse because they lack the fires and/or forces necessary to close with and destroy the enemy.[32] In swarming, one relies on multiple small, highly mobile, and networked forces, which can attack, withdraw, and re-attack (pulsing) if required or desired by the commander.[33] In swarming, the swarm force does not necessarily have to be the weaker force as typified by guerrilla warfare. But, even if weaker it can rely on larger aggregate attack fires than in guerrilla warfare. Thus, there are distinct differences between a swarm force and that of guerrilla forces, yet guerrilla forces have and will continue to use swarming tactics against their adversaries. The latest warfighting concept to emerge of late is the Marine Corps' notion of distributed operations (DO).

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[30]Ali Ahmad Jalali and Lester W. Grau, Eds. *The Other Side of the Mountain: Mujahideen Tactics in the Soviet-Afghan War* (Fort Leavenworth: Foreign Military Studies Office, 1995) in an article by Haji Abdul Qader and Haji Qasab, "Ambush Near Abdullah-E Burj", 30-33

[31] Sean J.A. Edwards, *Swarming and the Future of Warfare*. (Santa Monica, CA: RAND, 2005), 63-65, 68.

[32] Ibid., 63-65, 68.

[33] John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict*. (Santa Monica, CA: RAND, 2000), 46.

Distributed operations though, as we'll discuss in here, are not swarming in the sense described here or anywhere else, but rather an extension of maneuver warfare and will be an organic capability to the infantry battalions once implementation is complete. The Marine Corps' defines DO as "a technique applied to an appropriate situation wherein units are separated beyond the limits of mutual support."[34] BGen Robert Schmidle defined DO as:

> Distributed Operations are characterized by the physical dispersion of networked units over an extended battlespace. Battalion to squad-sized formations can conduct such operations. These operations avoid linear, sequential, and predictable operations. They afford the commander a means for addressing ambiguity and uncertainty in the battlespace environment. Distributed forces present a complex puzzle to the adversary.[35]

The basic premise of DO is to extend the battlespace through dispersed units of smaller than battalion size. To affect this, the Corps is training and equipping companies and platoons to operate in areas of operation that would have normally been assigned to higher echelons such as battalions. This isn't really anything above what the Corps thinks every infantry battalion needs. In fact, by the time predeployment workups are complete, every infantry battalion should have the tools required to conduct DO. But in relation to swarming or other new warfighting concepts, the tactics are still based on conventional operations, grounded in maneuver warfare and utilizing both established and new combat-tested[36] tactics, techniques and procedures (TTPs). Swarming of forces at the operational or tactical level is not part of the plan in DO.

Retired Marine Colonel Vincent Goulding is one of the originators of the DO concept. In personal interviews with the author and in publications, Col. Goulding asserts that DO is "an additive capability,"[37] and that "DO is maneuver warfare."[38] He

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[34] U.S. Marine Corps, *Marine Corps Operating Concepts for a Changing Security Environment*. (Washington, D.C: Headquarters, U.S. Marine Corps, 2007), 106.

[35] Robert E. Schmidle, "Distributed Operations: From the Sea," *Marine Corps Gazette*, 88, 7, July 2004, 37-38.

[36] From lessons learned coming out of combat and DO experiments.

[37] Vincent J. Goulding Jr., "DO: More than Two Words," *Marine Corps Gazette*, 91, 2, February 2007, 51. Col. Goulding and the author met in October 2007 to discuss DO and swarming.

[38] Vincent J. Goulding Jr., "DO: More than Two Words," *Marine Corps Gazette*, 91, 2, February 2007, 51.

insists that DO "would not compromise the fundamental ability of Marine infantry units to accomplish traditional missions."[39]   Indeed, despite the all the rhetoric that has surrounded DO for several years, it has really come down to manpower, training and education, and equipment.[40] So regardless of the hoopla surrounding any new whiz-bang or swarming forces under the mask of DO, it really comes down to proper staffing, education, training and fielding of the right equipment to enable infantry battalions to employ across a much larger battlespace.[41] Col. Goulding writes:

> These training and equipment initiatives will significantly increase overall combat effectiveness and, as a result, *enable tactical formations to decentralize their operations more effectively*. In a nutshell, DO is the product of scrupulously close attention to "brilliance in the basics," which then opens the door for higher level of ground combat excellence. DO is squarely aimed at aligning the Corps' conventional capabilities closer to the realities of current and future military operations.[42]

The confusion from many warfighters when it comes to DO, I think, stems from BGen. Schmidle's article. While the published information and articles on DO from Col. Goulding remain focused on manning, training, and equipping the infantry battalion, one gets the impression that DO is an altogether new warfighting concept not unlike swarming from the general's article. To make this point, the following excerpts are from BGen. Schmidle's article:

- "By increasing the ability to simultaneously attack in many directions with all forms of fires and maneuver, distributed operations create continuous pressure on the opponent and lead to his psychological dislocation rather than physical destruction and attrition."[43]

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[39] Vincent J. Goulding Jr., "DO: More than Two Words," *Marine Corps Gazette*, 91, 2, February 2007, 51.

[40] Ibid., 51-53.

[41] The author reviewed over 20 *Marine Corps Gazette* and *Leatherneck* articles in researching this thesis and the topic of DO. They will be listed in the bibliography.

[42] Vincent J. Goulding, "Distributed Operations: What's not to Like," *Marine Corps Gazette*, 91, 2, February 2007, 51.

[43] Robert E. Schmidle, "Distributed Operations: From the Sea," *Marine Corps Gazette*, 88, 7, July 2004, 38.

- "Distributed operations…are used to accomplish three basic tasks:"[44]

    1. "persistent and actionable intelligence by maintaining observation over designated objectives or personnel."[45]

    2. "used for battlespace shaping or as a screening force."[46]

    3. "used to call precise fires on targets."[47]

- "Distributed operations…capability… [for the teams to] disperse and reaggregate seamlessly based on the tactical situation and nature of the terrain."[48]

- "Swarming across the dispersed battlefield may trigger the opponent to try to mass his defensive forces.'[49]

It may be for these vary reasons that some students of Marine Corps warfighting concepts may confuse DO with something it is not. If one were to only take DO in the framework above, there is very little to differentiate it from swarming concepts as we know them. The direction for DO that is currently being disseminated around the Marine Corps is that which has been published by Col. Goulding. This is not to say that by manning, training, and equipping the Corps' infantry battalions that they cannot do those tasks listed above, as they in fact can, and in operations in Iraq and Afghanistan, have. Therefore, it is imperative for this research here that we remain attentive to those tenets of swarming promulgated by Arquilla, Ronfeldt, and Edwards, but keep in the back of our minds this short discussion on DO.

F.   IMPORTANCE

During Operation Enduring Freedom (2001-2) in Afghanistan, 11 SOF Operational Detachment Alpha (ODA) teams working with the indigenous population and other existing anti-Taliban insurgents, (such as the Northern Alliance), enjoyed great

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[44] Robert E. Schmidle, "Distributed Operations: From the Sea," *Marine Corps Gazette*, 88, 7, July 2004, 38.

[45] Ibid., 38.

[46] Ibid., 38.

[47] Ibid., 38.

[48] Ibid., 38-39.

[49] Ibid., 39.

success. However, in operations since in both Iraq and Afghanistan, conventional forces are still all too often using conventional maneuver warfare to engage insurgents and guerrilla fighters who have become familiar with our doctrine and tactics (similar to what happened to the Soviets in the Soviet-Afghan War).[50] In tactical engagements, we routinely have the upper hand with firepower and force, however, we are not defeating the enemy in such a way that he is deterred from engaging U.S. forces again or placed in the horns of a dilemma...the operational and strategic victory is out of our grasp. Meanwhile, recent examples of swarming tactics against conventional military forces have often proven successful. More recently, the use of swarming tactics has occurred during tactical engagements in both Iraq and Afghanistan, pitting the swarm against both sides, suggesting that it has been used by and against conventional U.S. forces. This trend should be of importance to service doctrinal advocates, operational commanders and the training establishment.

Swarming tactics are not new to scholars of warfare, but the employment of swarming tactics under specific conditions has proven extremely successful, with the end result sometimes being second and third order effects on strategy and policy. The U.S. military's current doctrine for fighting both conventional and unconventional adversaries does have gaps that, if filled, could increase the lethality and overall effectiveness of our ground forces. Despite a few historical precedents and experimentation, the use of swarm tactics by ground forces has generally been avoided, while there has been considerable excitement over the use of swarming with Unmanned Aerial Vehicles (UAVs). By limiting swarm tactics to UAVs and other airborne Intelligence, Surveillance, and Reconnaissance (ISR) assets, we are not fully exploiting tactics that might present an edge to our forces under certain conditions. While there is evidence that both insurgent and U.S. forces have used swarm tactics, swarming concepts and swarm tactics have failed to take hold at the service level or to be embraced as a doctrinal concept. This problem is partially centered in doctrine and training, as our stove-piped hierarchical structure is resistant to change.

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[50] Discussions with Prof. John Arquilla revealed that "while the campaign in Afghanistan has waxed and waned, with swarming sometimes coming to the fore, sometimes receding."

On the battlefield, our Marines and soldiers are producing significantly favorable exchange ratios and achieving tactical victories, but doctrinal tactics are still grounded in conventional warfare when we have the resources (manpower, technologies) to exploit swarming concepts. Some may say that conventional forces are ill-prepared to fight irregular warfare, especially using tactics such as the swarm. We lack a doctrinal based defense against the swarm when it is used against us, nor do we have any formal school that teaches swarming tactics to our infantry, yet there is testimony that our conventional and special forces using swarming tactics and defending against (or repelling) the swarm.[51] U.S. SOF are the only U.S. forces trained to conduct irregular warfare, but swarm tactics present new challenges even for those trained in asymmetrical warfare. There is no better time to add new capabilities to our conventional forces and SOFs than the present. Steven Metz notes "the U.S. effort in Iraq has had a number of problems. We used flawed strategic assumptions, did not plan adequately, and had a doctrinal void."[52] This doctrinal void has been partially addressed with updated field manuals, new doctrinal publications and advanced warfighting concepts. However, training conventional forces to use unconventional tactics has not been seriously considered. Yet in reality, this is already happening on the battlefield. Fighting insurgencies and guerrilla wars with conventional forces has never been easy, but not impossible. The U.S.'s track record from Vietnam, Somalia, and the Iraq clearly shows that we have had difficulties in fighting insurgencies, even with SOF augmentation to those conventional forces.

The importance of all this is two-fold. First, we must learn and study swarm tactics so that we are better able to defend against the swarm and concurrently turn the swarm to our advantage and use it on the offensive. Second, by studying swarming concepts, we can apply the concepts to our SOF and conventional forces evaluating the potential to formally adopt these concepts for use against both our conventional and

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[51] There are several reports of the use of swarm tactics by U.S. forces and by U.S. forces in Operations Iraqi Freedom and Enduring Freedom. The author spoke with one U.S. Army infantry officer and two Special Forces (SF) officers (one Army SF and one Navy Sea, Air and Land (SEAL) team commanders) who all employed swarm type tactics in combat. Sean Edwards, in his doctoral dissertation previously cited, also mentions the use of swarm tactics. For more, see Sean J.A. Edwards, *Swarming and the Future of Warfare*, (Santa Monica: RAND, 2005), 280-285.

[52] Steven Metz, . *Learning from Iraq: Counterinsurgency in American Strategy*. (Carlisle, PA: Strategic Studies Institute, 2007), vii.

unconventional enemies. I believe the uses of swarm tactics by the Chechens is an extremely relevant example. Furthermore, the fact that the Russians were able to eventually cope with the swarm during the 2nd Chechen War makes the study of both Chechen Wars extremely important to this argument. We will discuss the Chechen Wars in depth in Chapter two.

G. LITERATURE REVIEW

The literature associated with the topic is separated into three areas. These three areas are 1) swarming literature and historical examples, 2) literature on the Chechen Wars, and 3) military doctrine, concepts and warfighting experiments. The literature review will identify if there are gaps in our knowledge that we hope to answer, provide a departure point for further existing work, and set the foundation for analysis and validation of the argument.

1. Swarming Literature

Most literature on swarming is focused in four areas: anthropology (human social swarming); entomology (insect swarms), technology and advanced research (computers, modeling and simulation, robotics, and reconnaissance and surveillance); and military applications of swarming concepts with ground forces. While all three areas can contribute to this research question, the battlefield swarming concepts are most relevant to the question we are trying to answer here. There are three publications that provide the most important literature for framing the concept of swarming.

Edwards's study titled *Swarming on the Battlefield: Past, Present, and Future* (RAND, 2000) provides a brief examination of ten battles/campaigns conducted over the last two thousand years. In doing so, Edwards gives us a good starting point for more rigorous research into swarm tactics. He provides evidentiary conclusions on conditions for success and failure of swarming forces upon which to start further analytical research. Sean Edwards framed the conditions for victory and defeat for those battles he studied. Edwards broaches the subject of doctrinal swarming, briefly examining tactics, logistics, command and organization, and technology, and helping frame those as variables in other

works and this thesis' deeper analysis of the Chechen Wars. The second work on swarming tactics takes this study into full account, compliments it, and introduces the notional concept of 'battleswarm'.

Authors John Arquilla and David Ronfeldt, who originated the concept of swarming in 21st century conflict in the publication titled *Swarming & the Future of Conflict* (RAND, 2000), provide an introduction to the concept of swarming. This document's underlying theme is that swarming is the fourth basic form of warfare[53] and adopting a swarming doctrine would require changes across all the military services. Their main argument is that "the rise of advanced information operations will bring swarming to the forefront, establishing a new pattern in conflict."[54] This concept paper is truly insightful in its thinking. Not meant to be a comprehensive document, but more of an "ice breaker" on the concept, there are many points of departure that the authors identify as yet to be fully explored.

The focus of the paper is the means of delivering swarm tactics, which they ground in the transformation of conventional military forces and reliance on joint task forces in execution. Arquilla and Ronfeldt highlight several areas in which further research and experimentation would need to be done. These areas are:

- "Building a fully integrated surveillance and communication system in support of swarm forces
- Command and Control
- Logistics
- Organizational Structure
- Doctrine & Training
- Manpower and Equipment
- Residual effects to remainder of the force."[55]

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[53] Arquilla and Ronfeldt make the case that swarming is the next evolution in warfare, moving beyond the confines of maneuver. They state that historically there are four types of warfare: melee, mass, maneuver, and swarming. See John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict.* (Santa Monica, CA: RAND, 2000), 7-9.

[54] Ibid., vii.

[55] John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict.* (Santa Monica, CA: RAND, 2000), 45-74.

Arquilla and Ronfeldt have no illusions that creating swarm forces will be easy, and they provide many considerations military planners must remember if doctrinal proponency is advanced beyond the scholarly literature. Taking these two works as his departure point, Sean Edwards returns with a more in-depth examination of swarming in his doctoral dissertation.

Titled *Swarming and the Future of Warfare*, Sean Edwards dives deeper into swarming, producing a "theory that explains the phenomenology of swarming."[56] Edwards expands his case studies from his previous work from 10 to 23 in his dissertation, expanding the number of variables, to provide a more in-depth understanding of swarming concepts and swarm tactics have been used both successfully and unsuccessfully. Taking the five variables he considers most important to swarming success (based on his case studies), he creates a model that "predicts swarming outcomes based on his theory."[57]

Edwards's theory comes down to "when the key components of swarming are present – simultaneity and encirclement – and the swarm possesses specific combinations of three enablers – elusiveness, standoff capability, superior situational awareness – then the swarm stands a good chance of winning."[58] Chapters 1-7 and Appendix A provide excellent supporting material and departure points for numerous sections of this thesis in defining swarming and nonlinear dispersed (NLD) forces and their tactics and doctrinal considerations, and what differentiates swarming from other types of warfare.[59] Chapter 8 is of special interest to this thesis, as Edwards lays the groundwork for asking how our forces can defend against enemy swarms and how our forces can use the swarm.[60] Dr. Edwards generates additional ideas about how swarm forces may be employed, organized, trained, equipped, and logistically supported.[61] Reinforcements and other

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[56] Sean J.A. Edwards, *Swarming and the Future of Warfare*, (Santa Monica: RAND, 2005), xvii.

[57] Ibid., xvii.

[58] Ibid., 131.

[59] Ibid., 1-147, and 269-280.

[60] Sean J.A. Edwards, *Swarming and the Future of Warfare*, (Santa Monica: RAND, 2005), 149-176.

[61] Ibid., 149-176.

considerations that a swarm force would need to be planned for are also considered.[62] With the brief survey of swarming literature complete, we will examine select historical works for swarm-related themes and historical documentation of the use of swarm tactics.

2. Historical Survey

Relying on many of the same resources as Arquilla, Ronfeldt, and Edwards did in their works,[63] this thesis will dive into a more detailed analysis of those battles with a few additional sources. While literature on the Chechen War is in abundance, there is a finite amount of credible, scholarly literature that provides the information required to frame this analysis properly. An allusion must be made to that literature that was used in the swarming examples discussed earlier in this chapter. Omitting works highly referenced by Arquilla, Ronfeldt, and Edwards in the battles they documented, a few remarks will be made relative to the Winter War and the Soviet-Afghan War.

The Winter War between Finland and Russia (1939-40) is a truly unique example of a conventional army using what Edwards would classify as both linear and nonlinear dispersed forces against a superior conventional army. Three books in particular provided valuable information critical to the short synopsis provided earlier, but also provide the most relevant scholarly literature in regard to the swarm tactics used by the Finns. *A Frozen Hell: The Russo-Finnish Winter War of 1939-1940* (Algonquin, 1991) by William R. Trotter, *The Winter War: The Soviet Attack on Finland 1939-1940* (Stackpole, 1973) by Eloise Engle & Lauri Paananen, and *The White Death: The Epic of the Soviet-Finnish Winter War* (Michigan State, 1971) provide 'Pro-Finnish' accounts of the war that Finnish use of swarm tactics. The 'Pro-Soviet' text read in preparation for this thesis reads almost like Soviet propaganda, and discounts the tremendous valor and ingenuity of the Finns in developing guerrilla-like swarming tactics. While the Finns ultimately lost the war against the Soviets, the two books cited above add depth to our literature that can be associated with swarming. The Soviet-Afghan War surprisingly

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[62] Sean J.A. Edwards, *Swarming and the Future of Warfare*, (Santa Monica: RAND, 2005), 149-176.

[63] See John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict*. (Santa Monica, CA: RAND, 2000), and Sean J.A. Edwards, *Swarming and the Future of Warfare*, (Santa Monica: RAND, 2005), and *Swarming on the Battlefield*. Santa Monica, CA: RAND, 2000.

provides additional evidence of late 20th century swarming tactics that are nearly as relevant as the Chechen Wars due to its similarity between our current fight in Iraq.

While there is a plethora of books and other military and scholarly literature on the Soviet Afghan War, three works stand out as contributing to our body of knowledge on swarming. *Tactics of the Crescent Moon* by H. John Poole, *The Other Side of the Mountain* by Ali Ahmad Jalali and Lester W. Grau, and *The Soviet-Afghan War: How a Superpower Fought and Lost: The Russian General Staff* edited by Lester W. Grau and Michael A. Gress not only provide extremely critical reviews of the war, they highlight the swarm tactics and nonlinear dispersed (NLD) nature of the mujahideen. *The Other Side of the Mountain* was actually written for the Marine Corps Combat Development Command, so its analysis of tactics and individual battles is insightful and relevant to any student of counterinsurgency. Similarly, *The Soviet-Afghan War* provides extremely valuable information.

Grau and Gress provide a literary masterpiece of the war. Their documentation of tactics describes several of our swarming examples from other works - without Grau and Gress having an explicit swarming or NLD perspective. For example, they document that the mujahideen "Often, they would use a phony withdrawal to draw their enemy into a prepared fire sack."[64] This is very similar to the Mongol *mangudai*.[65] The last book that was helpful actually is a book about militant Muslims.

Tactics of the Crescent Moon is a valuable tool that provides a broad look at various battles from Gallipoli to the Soviet-Afghan War. As such, it is also valuable for our case study of the Chechen Wars. But more than this, the book hopes to make the reader understand that fighting militant Muslims is not like fighting any conventional force. Poole highlights that their tactics are unconventional and foes must be prepared to fight a guerrilla war. Additionally, Poole adds to our ever-expanding examples of swarming by documenting that ""The Turks…[liked] ambushes and stratagems of every

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[64] Lester W. Grau & Michael A. Gress, Eds. *The Soviet-Afghan War: How a Superpower Fought and Lost: The Russian General Staff*, (Lawrence, KS: University Press of Kansas, 2002), 63.

[65] Sean J.A. Edwards, . *Swarming on the Battlefield: Past, Present, and Future*. (Santa Monica, CA: RAND, 2000), 29.

sort…[I]n battle they advanced not in one mass, but in small scattered bands, which swept along the enemy's front and around his flanks, pouring in flights of arrows…'"[66] The regret is that Poole has chosen such a broad spectrum of examples that he cannot dive into more details of the additional factors surrounding the success of the Muslim militants. Now our sights must turn the literature specific to the Chechen Wars. A general understanding of what these works contribute is better suited to our efforts here.

When one looks at Chechnya, there is an overabundance of literature on almost every facet of the war there. *Chechnya: Calamity in the Caucasus* by Carlotta Gall & Thomas de Waal, Anatol Lieven's *Chechnya: Tombstone of Russian Power*, Olga Oliker's *Russia's Chechen War: 1994-2000*, Trenin's & Malashenko's *Russia's Restless Frontier: The Chechnya Factor in Post-Soviet Russia* and Aldis's and McDermontt's *Russian Military Reform: 1992-2002* all provide depth in historical detail of the Chechen and Russian sides to the Chechen Wars. Additionally, *Mars Unmasked: The Changing Face of Urban Operations* by Sean Edwards discusses how things are changing on the urban battlefield and is relevant to answering the research questions. We are unable to gain a full appreciation for the Chechen and Russia sides pertinent to our study from each individual work. But taken together, they provide a fairly complete picture. The RAND studies (Oliker and Edwards) are short and to the point, providing immediate answers to many questions. The other works must be used in a selective and integrated way in order to examine issues and answer specific questions. For the purposes of this thesis, the literature focus is on those writings that analyze lessons learned on both sides, as it is important for us to look at the offensive and defensive side of swarming. The fact that the Chechens have been oppressed by the Russians for decades, motivated fighters to a higher degree of resolve and created a society familiar with combat as chapter two will reveal. However, the fact that the use of swarm tactics demoralized and broke the Russian soldiers' will to fight in the 1994-96 war is an important focus for further analysis. When the Second Chechen War began in 1999, the Russian forces returned

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[66] H. John Poole, *Tactics of the Crescent Moon: Militant Muslim Combat Methods* (Emerald Isle, NC: Posterity Press, 2004), 4. He is citing Robert B. Asprey, *War in the Shadows*, (Garden City, NY: Doubleday & Co., 1975), 49.

with a vengeance and resolve not to be humiliated again. U.S. Army Field Manual (FM) 3-06.11's Appendix H covers lessons learned from modern urban combat, including Chechnya.

In FM 3-06.11 after a very brief synopsis of the events leading to conflict and the aftermath of the war, general and specific lessons are covered in detail. Like many other works it remains focused on bulletized lists and short narratives to name the lessons from Chechnya. FM 3-06.11 and others recognize the Chechen tactics, but no time is spent analyzing the swarming doctrine that provided the foundation for such an overwhelming Chechen tactical and operational victory in Grozny in 1996. This thesis will attempt to coherently and succinctly capture the organizational, command, control and communications (C3), doctrine and training, and logistics factors for the Chechens and Russian forces. Additionally, this thesis will extract Russian counters to the swarm tactics that enabled Russian forces to decisively retake Grozny in the Second Chechen War. It seems apparent from the literature that the combination of the swarm tactics in urban environments and the use of terrorism are the two main factors achieving no less than a Chechen victory during the First Chechen War. The final component of the literature review is that of military doctrine and emerging concepts.

3. Emerging Concepts and Issues

Swarming concepts and tactics are not foreign to military experiments, but swarm tactics have not been generally embraced by the military leadership. There has been some interest at the Marine Corps Warfighting Lab (MCWL). However, that interest subsided in 1999. While there still appears to be some interest in swarming of intelligence, surveillance, and reconnaissance (ISR) assets, swarming as a tactic of ground forces has been more or less passed by for more emerging concepts, such as distributed operations. The MCWL briefly looked at swarming tactics during the *Hunter Warrior* warfighting experiment a decade ago, however, the Marine Corps' focus has moved on to DO and developing Counterinsurgency (COIN) Doctrine[67] with the Army.

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[67] U.S. Marine Corps, *Counterinsurgency* MCWP 3-33.5, (Washington, D.C.: Headquarters, U.S. Marine Corps, 2006).

The use of swarm tactics sparks debate among those working concepts, especially when posed against the latest dollar fetching concepts such as DO.

A student of swarming concepts may be able to visualize how the DO concept could be applied to swarming, but MCWL staff makes it perfectly clear that swarming and the urban swarm techniques ended with the *Project Metropolis* Advanced Warfighting Experiment (AWE). Regardless, it is extremely important for this thesis to keep ever in mind our preceding discussion of DO concept for its ability to fill doctrinal voids and enhance warfighting capabilities in relation to swarming concepts. For this thesis, while there will be parallels to swarming and other NLD force concepts in guerrilla warfare, the focus remains the potential for swarming to develop into a doctrinal concept that fills a void from both current and that emerging doctrinal concepts like DO. In my review of the AWE after actions, doctrinal pubs, and concept brief, the author was left many questions and concerns. Accordingly, the publications reviewed for this study will only take us so far, as the author has learned that DO is hindered by many of the same variables we will look at during our case study and final analysis of a potential swarming doctrine. With the literature review complete, the next section will discuss the methodology for this thesis.

H. METHODOLOGY AND SOURCES

1. Methodology

The methodology to be used in this thesis is the case study method. In using this method, the author will look at two battles in which one side's forces employed swarming tactics. Stepping forward from the work previous authors of swarming and literature on the Chechen Wars, the author intends to develop the independent variables, such as organization, logistics, and communications, into workable information we can apply through the remainder of this thesis. By examining swarming tactics used during the Chechen Wars (1994-1996 & 1999-present), we can see changes that occurred among both forces over time in key areas such as organization, C3, doctrine and tactics, and logistics.

This analysis by case study will use the following variables throughout this text. The dependent variable in this case study is the outcome of battles between a swarming force and a more traditional adversary. The independent variables in this study are the organization, C3, doctrine and training, and logistics. Intervening variables are identified as terrain, and whether swarming forces are on the offensive or defensive. By setting up the historical context of the use of swarming tactics, it can be applied to our current SOF and conventional forces in battles we are engaged in at the present. The same independent variables can be applied to insurgent or guerrilla forces in an effort to better understand the enemy. The variable relationship will look as depicted in Figure 1.

Independent Variables

Organization

Command, Control and Communications (C3)

Doctrine & Training

Logistics

Intervening Variables

Terrain

Swarming Force In Off/Def Role

Dependent Variable

Outcome of Battle Between Swarming Force & Traditional Adversary
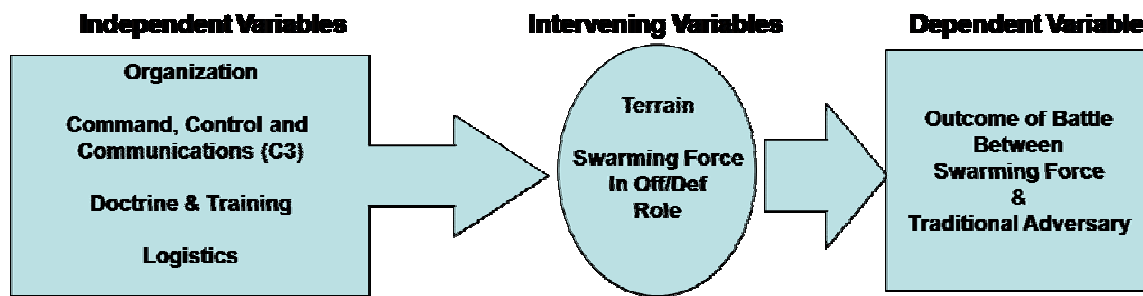
Figure 1.   Thesis Variables

The variables were chosen for these reasons. In both Arquilla's and Ronfeldt's, and Edwards's texts, they identify numerous variables in their analyses, yet they all come back to addressing a swarming doctrine potential in several problem areas, identified above as the independent variables.[68] Through the independent application of the variables above to the previous studies and historical literature on the Chechen Wars, additional lessons learned should emerge that will deepen our understanding of these conflicts and how those variables impact the tactics of swarming relative to doctrinal gaps and the potential of developing swarming doctrinal concepts.

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[68] See, John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict*. (Santa Monica, CA: RAND, 2000), 55-74 & Sean Edwards. *Swarming on the Battlefield: Past, Present, and Future*. (Santa Monica, CA: RAND, 2000), 65-76.

2. Primary, Secondary and Other Sources

The author utilized the following primary sources in this research, and is grateful for their cooperation and support: Dr. John Arquilla of the Naval Postgraduate School, Dr. Sean Edwards of the National Ground Intelligence Center and Dr. Russell Richards, Manager, Office of Research and Technology Applications at U.S. Joint Forces Command and the staff of the Marine Corps Warfighting Laboratory. Additional primary source material includes exercise after action reports consolidated at the Marine Corps Warfighting Laboratory. Secondary source material includes scholarly and historical literature, and official Marine Corps and Army publications on counterinsurgency, insurgency, guerrilla warfare, warfighting concepts and doctrine.

II. THE CHECHEN WARS & SWARMING

A. INTRODUCTION

Prior to September 11, 2001, the First (1994-1996) and Second (1999-present) wars in Chechnya are arguably the most significant conflicts between a conventional military against a guerrilla force waging a counterinsurgency since the Vietnam War. There are many lessons to be drawn from the First and Second Chechen Wars. Many of the lessons have been focused on more or less what the Russians did wrong and right and how it should apply to U.S. military counterinsurgency doctrine, force organization, command and control, communications, training and tactics. To date, limited analytical rigor has been specifically applied to lessons from this conflict to see if there is potential to develop swarming concepts for inclusion in U.S. military doctrine.

Swarm tactics employed by the Chechens devastated Russian forces during the First and well into the Second Chechen Wars before the swarm was countered. We are interested in the additional lessons from these Wars related to swarming's effectiveness and ineffectiveness in the context of our independent variables. Are the still additional lessons to be learned from the Chechen Wars? Did the independent variables establish the conditions which led to swarm success by the Chechens? Did the changes in the independent variables by the Russians in-between the wars lead to any ability to defeat or mitigate the Chechen swarm. To answer these questions, this chapter includes a thorough analysis of the Chechen and Russian forces, but through a lens specifically focused toward swarming. This chapter will examine the organizational structure, command, control and communications (C3), doctrine and training, and logistics of Chechen and Russian forces in relation to the offensive use of swarm tactics and defensive tactics to counter it. Furthermore, since the Chechen Wars span a period in excess of 13 years (technically the Second War is still unresolved), it is important to see whether each side changed with the variables over time. In order to frame the conditions favorable to swarming in these wars, this chapter will also identify key factors that enabled the swarm force success, as well as factors which led to the swarm force defeat, or at a minimum,

the reduction of its effectiveness on the Russians. This chapter's hypothesis is that there is much more for U.S. forces to learn from the Chechen Wars thru the above analysis which will expose additional lessons learned and ultimately aid in answering the question of whether or not swarming concepts should be added to our doctrine.

B.   CHECHEN FORCES

This section will look at the following variables for the Chechen forces: organizational structure, command, control and communications (C3), doctrine and training, and logistics. The intent is to see how they structured each to enable their forces to use swarming concepts and swarm tactics against a conventional military superpower. Specifically, we look at each variable in the context of both Chechen Wars which encompassed the three battles for Grozny. For example, what aspects of the organization and C3 of the Chechen forces become key enablers that allowed them to swarm Russian forces in the battles for Grozny?

The organization for this section is straightforward. It is organized in the context of how each variable affected Chechen forces' performance in battle, most notably their ability to swarm. First, the chapter will look at the organization of Chechen forces. Next, Chechen C3 will be examined to see if their use of C3 was a key enabler for swarming success, including a look at the Chechen use of technology, mainly in communications equipment and how it affected their ability to swarm. This will be followed by a sub-section on doctrine, training and logistics. This chapter is important because we need to see what critical capabilities enabled swarm force's success, not only for our own use of swarming as a tactic, but to counter the swarm when it is used against U.S. forces**.**

1.   Organization

When Olga Oliker wrote "The enemies that U.S. forces will face in the future are far more likely to resemble the Chechen rebels than the Russian Army,"[69] she couldn't have been closer to the truth in light of the Global War on Terror (GWOT), and more

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[69] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 2.

specifically, Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF). When the Russian forces (both civilian and military) entered Grozny for the first time in 1994, they did not face a disorganized, band of rebels.[70] What the Russians encountered was a highly prepared and organized insurgent force capable of putting up a fight.[71] One of the defining features of the Chechen insurgents was their ability to task organized units of various sizes and capabilities to fight the Russians. Oliker cites that "Russians and Chechen sources agree that nonstandard squads were the basis of the rebel force."[72]

The Chechens were not just a bunch of tribal Neanderthals. Many of the Chechens had prior experience in the Soviet and/or Russian military, and in fact, had many of the weapons systems their Russian counterparts would bring to the fight. The Chechens had several types of units employed during the battles for Grozny. Sean Edwards highlights one Chechen organized unit specifically tasked with swarming against the Russians. The unit was composed of "Roving bands of 10-15 men [who could further subdivide into 3- to 4-man cells] would swarm toward the sound of Russian engines and volley fire RPG-7 and RPG-18 antitank missiles from upper-floor window."[73] Another element of the Chechen insurgency was the sniper.

Chechen snipers were arguably the most psychologically debilitating weapon that the Chechens had. Oliker writes "Chechen snipers, whether operating alone or as part of an ambush group, nightly terrified Russian soldiers, who dubbed them "ghosts"....They were no less deadly in daylight."[74] The Chechens were not simply a band of rebels armed with AK-47s and RPGs. Embedding the feared Chechen sniper, or even multiple sniper teams within these "small roving bands", produced a lethal swarming force that man for man decimated the Russian military and civilian forces. The Chechens

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[70] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 16.

[71] Ibid., 16.

[72] Ibid., 19.

[73] Sean J.A. Edwards, *Mars Unmasked: The Changing Face of Urban Operations*, (Santa Monica: RAND, 2000), 29.

[74] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 21.

organizational flexibility lent itself to form other units, as required, that were effective against the Russians. Just prior to the Second Chechen War, Chechen leader Shamil Basayev divided his forces into groups during the fighting in Dagestan.[75] Oliker describes the groups as "subdivided into "battalions" of 50-70 people, "companies" of 15-20, and "platoons" of 5-7."[76] This is not something one would typically see in Western armed forces.

There are other examples of how the Chechen task-organized units mostly built around the ability to ambush or swarm their Russian adversary.[77] Clearly, the Chechen forces were nonlinear dispersed (NLD) forces, using conventional military weapons, often in unconventional ways which created an asymmetrical enemy that proved difficult for the Russian forces to defeat throughout the three battles for Grozny. Now that we have an idea of the Chechen structure, just how were they commanded and controlled, and by what means?

2. Command, Control, and Communications

The Chechens used a decentralized command and control (C2) network. While they did identify a leader, first under General Dudayev, then under Shamil Basayev, these leaders did not have the rigid centralized command and control one might expect. Oliker notes that during the preparation for battle in Grozny in 1994, the Chechens "developed war plans, divided up zones of responsibility…and set up effective communications,"[78] yet it seems clear that the tactical fight was left to the small unit leaders operating under a common commander's intent.

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[75] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 41.

[76] Ibid., 41.

[77] In Olga Oliker's book referenced above, she cites several more units that were task-organized for combat against the Russians. See pages 16-28 in her book for more examples of how organizational decisions affected battlefield tactics.

[78] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 16.

Sean Edwards notes "At the tactical level, the loose organization and command of most of the Chechen volunteer force had both positive and negative aspects."[79] He continues that "independent groups of autonomous units could operate efficiently in the fluid, nonlinear, urban battlefield, helping to alleviate the complex command and control [C2] problem."[80] Edwards reports that the negative side of this loose command and control network when working with a volunteer force was "a lack of discipline and responsibility," or just leaving assigned posts "when they got bored."[81] A key enabler for the Chechen decentralized C2 structure during the Chechen Wars was their communications systems and use of technology.

During the First Chechen War, Russians communicated *én clair*, which allowed the Chechens to intercept communications from the Chechen's Russian radios.[82] Because the Chechens could speak both Chechen and Russian, it permitted them "to transmit disinformation over Russian radio channels to draw Russian forces into harm's way."[83] It wasn't until the Second Chechen War and prior to the third battle for Grozny that the Russian's would upgrade to secure communications equipment.[84] The Chechen's communications managed to outpace the Russians through the first war, but still managed to hold their own during the second war despite Russian advances.

The Chechens, during the First Chechen War, primarily used tactical radios and Motorola and Nokia handhelds.[85] While some authors assert there were cellular networks operating in Grozny, others state that it was not possible during the first two

[79] Sean J.A. Edwards, *Mars Unmasked: The Changing Face of Urban Operations*, (Santa Monica: RAND, 2000), 29.

[80] Ibid., 29.

[81] Ibid., 29.

[82] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 18.

[83] Ibid., 19.

[84] Anne C. Aldis & Roger N. McDermott, Eds., *Russian Military Reform: 1992-2002*, (Portland, OR: Frank Cass Publishers, 2003), 213.

[85] This was a common theme among all resources cited in this chapter. Oliker, Edwards and Aldis & McDermott all cite the use of tactical and commercial handheld radios.

battles for Grozny due to the amount of infrastructure destroyed by the Russians.[86] Despite this, the handhelds were in plentiful supply and the Chechens were able to distribute them to very low levels, facilitating small, independent autonomous units who were still highly networked via secure communications by using the Chechen language, which few Russian troops spoke.[87] This type of communications structure facilitated swarming by Chechen forces during the First Chechen War. When the Russians improved their communications systems between the wars, so did the Chechens.

Oliker states that "the Chechen communications infrastructure improved significantly over five years….The Chechens had an NMT-450 analog cellular network with two base stations, including one in Grozny."[88] This allowed Chechen field commanders "to have 20-60 'correspondents' in their radio network, and 60-80 'correspondents' in the reconnaissance information network of short-wave range."[89] The Chechens also added "Mobile INMARSAT and Iridium terminals"[90] to their existing complement of handheld and tactical radios. Furthermore, Oliker reports that "Leading (Chechen) field commanders also had television transmitters…sufficient to transmit within a given commanders territory."[91] This goes to show that the Chechen leaders worked diligently between the wars to improve communications across the board. Clearly, the more empowered ability to communicate allowed the Chechens to continue using swarming tactics despite the Russian's increased capabilities, because communications assets were available to even the smallest Chechen unit.

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[86] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 18.

[87] Ibid., 20. Olga Oliker cites that they were able to push handheld assets down to each six- or seven-man team.

[88] Ibid., 69.

[89] Anne C. Aldis & Roger N. McDermott, *Russian Military Reform: 1992-2002*, (Portland, OR: Frank Cass Publishers, 2003), 213. For the most detailed analysis of Chechen communication advances, see all of page 213 in this text, as they are too numerous to mention in this paper.

[90] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 70.

[91] Ibid., 70.

3. Doctrine, Training & Logistics

Having established already that many of the Chechens had served in the Soviet military and had Soviet/Russian weapons and equipment, it is logical to assume that their doctrine and training was a mirror image of the Russians. This assumption would be wrong. Almost every single source on lessons learned on the Chechen Wars cite the "hit and run" and swam tactics employed by the Chechens. Most authors label the Chechens as guerrillas, but yet they never developed or adhered to classic guerrilla doctrine as promulgated by Mao Tse-Tung, where guerrilla operations eventually turn to force-on-force conventional battles against state forces.[92] To date, the Chechens are still using the same guerrilla and swarm tactics against the Russians, which mainly consist of several types of ambushes, mine warfare, and the swarm tactics described in the first chapter.[93] They attacked with surprise. Later in this chapter we'll see just how devastating these tactics were to the Russians. So, with no formal doctrine, one might suppose that there would be no training for Chechen fighters. This would be a wrong assumption.

The Chechens trained everyone, and they trained to a much higher level of proficiency than that of their Russian adversaries. Even from a young age, everyone, especially the men, was taught how to use weapons.[94] Tribal and clan-based in nature, the Chechens would unite to fight adversaries, with the potential for a majority of the population to be trained in weapons employment.[95] Lessons learned and successful tactics could quickly be spread to all the Chechen fighters. Arquilla and Karasik write:

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[92] John Arquilla & Theodore Karasik, "Chechnya: A Glimpse of Future Conflict?" *Studies in Conflict & Terrorism*, 22, (1999), 209.

[93] See Sean Edwards, *Swarming and the Future of War*, (Santa Monica, CA: RAND, 2005), 273, and Mark Kramer, "The Perils of Counterinsurgency: Russia's War in Chechnya," *International Security*, 29:3 (Winter 2004.05), 23-25.

[94] Anatol Lieven, *Chechnya: Tombstone of Russian Power*, (New Haven: Yale University Press, 1998), 117-9.

[95] John Arquilla & Theodore Karasik, "Chechnya: A Glimpse of Future Conflict?" *Studies in Conflict & Terrorism*, 22, (1999), 209-10.

These groups "commuted" from their homes to the field of battle. While home, they would share, through story-telling sessions, their latest experiences with other units of the *taip*, offering advice about how to fight the Russians, as well as technical tips about such matters as how to alter grenade launchers with saws to provide them with more velocity.[96]

This, combined with the numerous fighters who were former Soviet soldiers, established a foundation in training. But familiarity with weapons was only one aspect.

The Chechens had some of the best snipers, which compared to their Russian counterparts, gave distinct advantages to the Chechens. Additionally, many of the Chechens who were former Soviet soldiers were trained in "mountain guerrilla fighting," most likely from the Soviet-Afghan War, to which most Russian units had no equal.[97] The Chechens were trained and often conducted operations at night, to which the Russians had no answer. Even though the Chechens had similar night vision equipment to the Russians, the accounts don't mention that night vision equipment had anything to do with the Chechen forces' ability to carry out devastating night attacks.[98] The Chechen's mine warfare was equally menacing to the Russians.

The Chechens used mines and improvised explosive devices (IEDs) extensively, and they became very good at mine and IED employment. Mines and IEDs "caused roughly 40 percent of the casualties."[99] Col. Gen Serdstev (Commander, Russian Engineer Forces) stated that the intensity of mine warfare, to include use of IEDs and booby-trap mines, greatly escalated from the First to the Second Chechen War.[100] Furthermore, the Chechens were continually training and experimenting, exceeding the level of expertise on the Russian side. Kramer noted that "Chechen bomb makers…built devices that incorporate military plastic explosives, with yields roughly five to ten times

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[96] John Arquilla & Theodore Karasik, "Chechnya: A Glimpse of Future Conflict?" *Studies in Conflict & Terrorism*, 22, (1999), 210.

[97] Ibid., 211.

[98] Mark Kramer, "The Perils of Counterinsurgency: Russia's War in Chechnya," *International Security*, 29:3 (Winter 2004/05), 23-24. The Chechen's either had the night vision equipment from left over Soviet stocks, or received them in the lucrative trading between the Chechen fighters and the Russian soldiers.

[99] Ibid., 25.

[100] Ibid., 25-26.

greater than that of regular dynamite," and that "the increasing number and sophistication of the explosives have often stymied Russian bomb-disposal engineers."[101] With this, it is clear that the Chechen forces were tactically proficient, well-trained, and more advanced than their Russian counterparts. So how did the Chechen swarm units logistically support themselves?

The answer is quite simple and common to most guerrilla wars or insurgencies. Especially during the First Chechen War, the Chechens had many old left-over Soviet/Russian weapons taken from the southern military district.[102] These weapons included tanks, anti-aircraft guns, and a large supply of RPGs.[103] The Chechens also were able to buy weapons and ammunition from underpaid and demoralized Russian troops.[104] Since the Chechens were employing the swarm tactics in "friendly" cities and their own terrain, the logistics required to support the swarm was ideal. Pitting the tribal "commute" together with a supportive population would mean that swarm units had no logistics tail hampering their freedom of movement, yet had enough supplies to fight effectively. This brings us to our conclusion for the Chechen force analysis.

4.   Summary

Given this almost one-sided support for swarm forces, are there lessons we can pull that will set some foundations for employing and defending against swarm tactics and swarming concepts? Using the Chechen model, we can note several things required for effective swarm forces.

- Decentralized command and control
- Clearly understood commander's intent

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[101] Mark Kramer, "The Perils of Counterinsurgency: Russia's War in Chechnya," *International Security*, 29:3 (Winter 2004/05), 28-30.

[102] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica: RAND, 2001), 17.

[103] Sean J.A. Edwards, *Mars Unmasked: The Changing Face of Urban Operations*, (Santa Monica: RAND, 2000), 23-24.

[104] "Urban Warfare: Lessons From the Russian Experience in Chechnya – 1994-1995", *The MOUT Homepage*, nd . Retrieved from http://www.specialoperations.com/mout/chechnyaA.html. on June 1 2007(see lesson 10, page 3)

- Highly capable small unit leaders
- Fluid organizational structure that facilitates task-organization
- Secure communications
- Networked forces, with communications assets pushed to the smallest unit levels
- Training & proficiency in weapons & tactics
- Fluid tactical doctrine based in swarming concepts and guerrilla warfare.
- Small logistical footprint – live off population and only carry what you need.

These requirements may not seem significant, but were essential to the Chechen forces success at the tactical level against Russian forces. Even in OIF and OEF, denying enemy forces any of the above tenants reduces their ability to effectively employ forces against ours. This shows that we can learn more from these wars than just from existing literature. It is time to now transition to the analysis of the Russian forces, with a reciprocal analysis of the same variables.

C.   RUSSIAN ARMED FORCES

It is well established from the literature review and the analysis of the Chechen forces that an abundance of scholarly and military literature has examined the First and Second Chechen Wars since 1994. The preponderance of existing literature critiquing the Chechen Wars focused on the bad tactics and lack of training of the Russian forces poised against a capable and unconstrained guerrilla insurgency. This section's intent is to take those same variables analyzed during the Chechen section and apply them to the Russian forces, in the context of gaining additional lessons in respect to what not to do and what not to do when facing enemy swarm tactics. Those variables again are the organization, command, control and communications (C3), doctrine and training, and logistics of the Russian forces.

Since there were three battles for Grozny, it is important to see how changes to our variables such as organization and C3, improved or diminished the Russian forces' effectiveness as the war(s) progressed. This section will argue that we still have must to

learn from the Russian's performance in the Chechen Wars, especially when focusing on swarming concepts and swarm tactics as used by the Chechen insurgents. All of our variables seemed submerged in the abysmal performance of the Russians during the First Chechen War. For instance, C3 and organizational factors were significant problems, if not the defining problems of the Chechen Wars. However, upon review of existing research, we'll see that Russian doctrine, training and logistics were also severely deficient in preparing the forces and executing a counterinsurgency campaign. Furthermore, this section will offer additional lessons learned specific to all the variables that may have been missed by previous authors on the subject. Armed with this knowledge, we'll be one step closer to answering questions related to our ability to introduce swarming concepts and swarm tactics into U.S. military doctrine.

1. What We Know – Setting the Stage

The Russian forces at this time in history were still in many ways the same old Soviet military, except less well-trained, worse equipped, and still underpaid, sometimes not paid at all. When diplomacy failed to resolve the problem in Chechnya, the Kremlin did what Russian leaders have done for centuries against internal opposition; they called in the military or security forces to put down the opposition.[105] President Yeltsin ordered the Ministry of Defense as well as other Russian security forces to put down the insurgency and restore order to Chechnya.[106] Most of the Chechen insurgent forces were centered on the town of Grozny, which was of vital economic importance to Russia. Grozny was a major thoroughfare for petroleum products for Russia, and the Kremlin

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[105] From the collapse of the Soviet Union to the decision to use force in Chechnya, the bigger picture of what was occurring in Russian politics was Russian President Yeltsin's consolidation of power, rewriting the constitution (not literally), and removing anyone or anything that threatened his power or the solidarity of the Russian Federation. In my opinion, when a political solution could not be reached with Chechen officials, namely Chechen President Dudayev, President Yeltsin saw it as an attack on his power, and the solidarity and sovereignty of the Russian state that could not be tolerated.

[106] Anatoly Kulikov, "The First Battle of Grozny", *Capital Preservation: Preparing for Urban Operations in the 21st Century*, 22 Mar 2000. Retrieved from www.rand.org/pubs/conf_proceedings/CF162/ on 14 Oct 2007, 17.

could not afford to have this strategic area go independent.[107] The first battle for Grozny (1994-95) was an eventual Russian win. The second battle for Grozny (1996) was a Chechen victory which left peace in Chechnya for three years. The third battle for Grozny (1999) during the Second Chechen War was a clear Russian victory, but the war in Chechnya is still far from over.

Whereas the Chechen force analysis took each variable in a separate analysis, this section groups the variables in the context of the First and Second Chechen Wars. As previously mentioned, it is important to gain the perspective of what changes occurred between the wars which ultimately resulted in a Russian victory and gave them a firm hold on the capital of Grozny. The Chechen's improvements between the two wars were not as substantial as the Russians, so we gain more information from treating the insurgent and the counterinsurgent differently. To start this first subsection, we will identify the significant lessons documented from the First Chechen War, which encompass the first two battles for Grozny. This will be followed by the Second Chechen War and a brief conclusion.

2.   The First Chechen War 1994-1996

Sean Edwards, General Anatoly Sergeevich Kulikov, Olga Oliker and many others have compiled well-thought lists of observations, lessons and reflections on the Russian forces' organizational constructs and C3 in the battles for Grozny and the greater Chechen Wars as a whole. Oliker finds the following lessons from the first two battles for Grozny:

> - "The wide range of ministries and organizations with troops deployed to Chechnya each had its own competing command structures."[108]

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[107] The Kremlin was so worried about damage and sabotage to the petroleum industry in Grozny, that in the first battle they sent "detachments of the 76th and 106th Paratrooper Divisions were to block off the Zavod and the Katoyama regions" of Grozny, which held the "chemical and petroleum processing complexes." From Anatoly Kulikov, "The First Battle of Grozny", *Capital Preservation: Preparing for Urban Operations in the 21st Century*, 22 Mar 2000., Retrieved from www.rand.org/pubs/conf_proceedings/CF162/ on 14 Oct 2007, 43.

[108] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), xi.

- "Coordination between Ministry of Defense (MoD) and Ministry of Internal Affairs (MVD) units, between ground and air forces, and among troops on the ground was abysmal."[109]
- "They (the forces) had incompatible communications equipment and protocols."[110]

When the Chechens attacked Russian forces garrisoned in Grozny for the second battle, the Russians had incorporated some lessons from the first battle, but sufficient problems remained that allowed the numerically superior Russian force to be picked apart by the Chechens. Sean Edwards highlights C2 and organizational issues continued to haunt Russian forces throughout the entire First Chechen War, to include problems coordinating actions "between air and ground forces."[111]

Edwards also identifies the fact that Russia has never had a professional Non-Commissioned Officer (NCO) corps.[112] With Russian forces having to break down into platoons and squads, the leadership deficit impacted nearly every unit that engaged in combat operations in Grozny. Edwards notes, "Raymond Finch argues that poor leadership was the main reason why the Russians failed. The issue of absurd orders, the casual disregard for the fate of soldiers, the abysmal conditions of the common soldier, and general corruption were the main leadership failures."[113] Anne Aldis and Roger McDermott highlighted several issues relevant to this discussion, reinforcing the importance of C2 and organizational factors.

Aldis and McDermott found that C2 at the most senior levels resulted in "the division of responsibility remained haphazard, while various units were controlled and

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[109] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), xi.

[110] Ibid., xi.

[111] Sean Edwards, *Mars Unmasked: The Changing Face of Urban Operations*, (Santa Monica, CA: RAND, 2000), xvii.

[112] Sean Edwards, *Mars Unmasked: The Changing Face of Urban Operations*, (Santa Monica, CA: RAND, 2000), 33. Also, Prof. John Arquilla (Naval Postgraduate School, Monterey, CA) notes that prior to the collapse of the Soviet Union, Ukrainians made up most of the NCO Corps. William Odom in his book, *The Collapse of the Soviet Military*, (New Haven, CT: Yale University Press, 1998), 43-47 notes that the conscription changes made in 1967, thus reducing terms of service, also had noticeable effects on enlisted soldiers and the inability to keep soldiers in long enough to make them professionally trained NCOs.

[113] Sean Edwards, *Swarming and the Future of War*, (Santa Monica, CA: RAND, 2005) 274.

supplied by their respective bureaucracies."[114] Organization for battle was a tremendous problem for Russian forces. "An army with over 70 divisions in its notional order of battle struggled to raise a handful of deployable units," resulting in "Officers and men who had never served together before were sent into battle in 'composite regiments'."[115] But who better to comment on Russian C2 and organizational problems than the man sent in to rescue the First Chechen War?

General Kulikov notes that Moscow had never tried to put all the agencies and MoD separate service units under a "single joint command."[116] Kulikov states that the appointed joint commander was to "have full command and decision authority…including those of non-MoD ministries involved in the operation."[117] The most compelling of Kulikov's comments comes in his conclusion, when he states "the need for a joint command, unity of command for all forces…particularly the need to form and deploy forces" was the first and one of his "key" lessons for how the Russians had misjudged the impacts to force operations in Chechnya.[118] He continues with "One of our most significant problems turned out to be the organization of a single unified command for the forces."[119] The C3 and organizational problems were complicated by doctrine, training and logistics deficiencies.

Standing from the sidelines and watching the Russians enter Grozny in December 1994; one might ask if there was the existence of a military doctrine for fighting in urban terrain or against insurgencies and guerrilla forces. In all three, the answer is yes. However, even with the fresh lessons from Afghanistan, the Russians enter Grozny ready to give battle to a conventional enemy. Michael Orr writes "The Soviet ground forces therefore were designed to wage a high-intensity, high-technology war…The experience

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[114] Anne Aldis & Roger McDermott, *Russian Military Reform: 1992-2002*, (Portland, OR: Frank Cass Publishers, 2003) 195.

[115] Ibid., 130.

[116] Anatoly Kulikov, "The First Battle of Grozny", *Capital Preservation: Preparing for Urban Operations in the 21st Century*, 22 Mar 2000, retrieved from www.rand.org/pubs/conf_proceedings/CF162/ on 14 Oct 2007, 21.

[117] Ibid., 37.

[118] Ibid., 50.

[119] Ibid., 50.

of the Afghan War (1979-89) did not alter the Soviet ground forces' preoccupation with large-scale conventional or tactical nuclear warfare."[120] And one cannot turn to current and previous versions of the Russian military doctrine for guidance in operational or tactical employment of forces. The Russian military doctrine is more equivalent to the U.S.'s National Military Strategy than a doctrinal publication such as Marine Corps Doctrinal Publication (MCDP) 1-0 *Operations*.[121] This ambivalence to unconventional warfare on the part of the larger Russian Army was not without criticism. Officers did advocate modifying doctrine and tactics to fight other non-conventional wars, but this fell on deaf ears.[122] So, one has to ask how the Russian tactics fared against the swarm tactics?

During the First Chechen War, despite whatever doctrine or tactics the Russian forces used; doctrinal publications, formal schools and training ranges are irrelevant if your soldiers are not prepared for combat. Sean Edwards notes that "The problem was that urban operations skills were a lost art among most active duty soldiers because military operations in urban terrain (MOUT) training was almost nonexistent.   In *Chechnya: Calamity in the Caucasus*, Gall and de Waal show a weak, scared and broken Russian combined force that was completely ineffective against the Chechen fighters during the second battle for Grozny.[123] A stark reality emerges that the only units that had training in urban operations were the Russian naval infantry and *Spetnaz* (Special Forces).[124]

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[120] Michael Orr, "Reform and the Russian Ground Forces, 1992-2002," in Anne C. Aldis & Roger N. McDermott, Eds., *Russian Military Reform: 1992-2002*, (Portland, OR: CASS, 2003), 125.

[121] See Arms Control Association. "Russia's Military Doctrine." Arms Control Association: Arms Control Today: Russia's Military Doctrine. May 2000. Retrieved at http://www.armscontrol.org/act/2000_5/dc3ma00.asp. on March 27, 2008. and U.S. Marine Corps, *Marine Corps Operations* MCDP 1-0, (Washington, D.C.: Headquarters, U.S. Marine Corps, 2001)

[122] Michael Orr, "Reform and the Russian Ground Forces, 1992-2002," in Anne C. Aldis & Roger N. McDermott, Eds., *Russian Military Reform: 1992-2002*, (Portland, OR: CASS, 2003), 126-7.

[123] Carlotta Gall & Thomas de Waal, *Chechnya: Calamity in the Caucasus*, (New York: New York University Press: 1998), 331-361.

[124] See Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), where she states that not only were elite units assigned to Chechnya, that many of those soldiers and marines were the only units to have any urban combat training.

Teaming the Special Forces units with the conventional units did prove effective. Eventually they did manage to relearn the tactics, techniques and procedures (TTPs) involved in isolating a city…"[125]   Against the swarm, their tactics were still mostly ineffective unless they could pin down or isolate the swarm units. Once pinned down, the Russians would hammer the Chechens with fires or assault forces.[126] The Russians "began establishing ambushes on approach routes into selected areas, and then running vehicles in these areas as bait to lure Chechen hunter-killer teams to their destruction."[127] Additionally, the Russians did manage to learn how to use anti-aircraft artillery and the RPO-A *Shmel* flamethrowers to great effect in Grozny, especially against snipers.[128] Thus, these examples did show that the Russian's got better at fighting the Chechen swarm as the war continued, but it was tossed aside with a Russian withdraw from Grozny at the end of the second battle for Grozny. Logistical support for Russian forces started out bad, and just seemed to get worse as the war continued.

The logistics units of Russian forces were even more vulnerable to Chechen swarm tactics. Russian logistics was already fragile before the war, and was quickly overwhelmed by the war in Chechnya.[129] The Army Field Manual (FM) for *Combined Arms Operations in Urban Terrain* dedicates an entire appendix to the lessons from the First Chechen War.[130] Almost a dozen lessons alone are logistically oriented. As abysmal as the infantry did at first against the Chechen swarm, one can only imagine how bad it was for the logistics troops. Indeed, the FM documents "The logistical unit soldiers were hopelessly inept at basic military skills, such as perimeter defense, establishing security overwatch, and so forth, and thereby fell easy prey to the

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[125] Sean Edwards, *Mars Unmasked: The Changing Face of Urban Operations*, (Santa Monica, CA: RAND, 2000) 27.

[126] Sean Edwards, *Swarming and the Future of War*, (Santa Monica, CA: RAND, 2005), 278-279.

[127] John Arquilla & Theodore Karasik, "Chechnya: A Glimpse of Future Conflict?" *Studies in Conflict & Terrorism*, 22, (1999), 213.

[128] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001) 25-26.

[129] Department of the Army, *Combined Arms Operations in Urban Terrain* Field Manual (FM) 3-06.11, (Washington, DC: Headquarters, Department of the Army, 28 February 2002), H-3.

[130] Ibid., H-1 – H-13.

Chechens."[131] As a result, the Russians had to pull infantryman back to aid logistics operations.[132] At the conclusion of the First Chechen War, two battles for Grozny had been waged, with each side claiming one victory, but leaving the Chechen's in charge and the Russians pulling out. Three years would pass before Russian troops would be reintroduced into Chechnya, hoping to not repeat their previous mistakes.

3. The Second Chechen War 1999 – Present

After three years, one might not expect similar mistakes to be made, but yet some did remain. For the Russians, they consider the Second Chechen War a success. Compared to their performance during the First Chechen War, it was. The Russians were able to retake Grozny and still hold the city to this day. Two factors weigh significantly more than others. First, the Russians encircled the city and almost leveled it with air, artillery and missiles before entering.[133] Second, the Russians brought overwhelming force and have since maintained a large occupation force in Grozny. Whereas they Russians brought 25,000 troops to the first battle for Grozny, the Russians had over 95,000 when they returned for a third time in the Second Chechen War.[134] Despite this 'victory', the Russian performance still left much to be desired. While it may have appeared that they blanketed the city with troops, the Chechen fighters were still able to enter and leave the city almost at will.[135] Oliker notes the following successes and failures of organization and C3 when the Russians came back for the third battle for Grozny:

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[131] Department of the Army, *Combined Arms Operations in Urban Terrain* Field Manual (FM) 3-06.11, (Washington, DC: Headquarters, Department of the Army, 28 February 2002), H-5.

[132] Ibid., H-5.

[133] See Sean Edwards, *Swarming and the Future of War*, (Santa Monica, CA: RAND, 2005), 277, and Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), 41-42.

[134] Sean Edwards, *Swarming and the Future of War*, (Santa Monica, CA: RAND, 2005), 274, 279.

[135] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), 65-6

- "A single hierarchy under MoD command simplified and improved command and control."[136]

- "Force coordination and synchronization of air and land operations improved vastly."[137]

- "The improved force coordination often broke down, leading to problems and recriminations particularly among MoD forces, MVD forces, and Chechen loyalists' forces."[138]

So Oliker identifies that the Russians did try and fix mistakes of the First Chechen War, but it appears that C3 problems still plagued commanders at all levels once operations commenced.   Aldis and McDermott support Oliker's observations, and add that communications technologies acquired in the interwar period (1996-1999) did improve the Russian forces capability to command and control.[139]   Specifically, they state that while Putin's leadership guidance in the Second Chechen War was aimed at unifying the C2 under a single commander, other ministries still would not play nice and continued to exacerbate the C2 problems that had existed during the First Chechen War.[140]   Aldis and McDermott did find that improvements were made to spread combat experience around and not create ad-hoc units just prior to combat operations.[141]   So the Russians were left with improved tactical-level organizational practices, but were still plagued by C2 problems from the tactical to the strategic levels, to include interagency organizational difficulties.   Of special note are the changes in how Russia handled information operations in the second war.

During the First Chechen War, the press was allowed to go anywhere they wanted and allowed to speak to anyone.   The Chechen's capitalized on the press and made the war extremely unpopular in Russia and elsewhere.   In this second campaign, Russian leaders were determined that that a proper "spin" would be applied to what the media portrayed.

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[136] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), 65-6, xii.

[137] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), xii.

[138] Ibid., xiii.

[139] Anne Aldis & Roger McDermott, *Russian Military Reform: 1992-2002*, (Portland, OR: Frank Cass Publishers, 2003), 213.

[140] Ibid., 195-6.

[141] Ibid., 199.

Branching off how the U.S. and NATO handled the press during the war in Kosovo, the Russian put "tight control" over all media during the Second Chechen War.[142] Oliker notes that "At times there was a complete ban on reporters in Grozny or anywhere near Russian military forces."[143] By tightly controlling the press, "Russian commanders and soldiers told what was a largely a positive story of their success against a "terrorist" enemy."[144] Despite the positive spin, most Russian's support for the war waned over time and public opinion of Russia's "success" has declined.[145] In doctrine, tactics and logistics, one would hope improvements would be made over the three year reprieve from combat.

Olga Oliker states that while the Russians spent considerable resources to identify the lessons learned from the first war in Chechnya, little of that translated into improvements in urban combat.[146] While there were some marginal improvements in logistics, equipment still antiquated and broke down frequently, leaving the Russians vulnerable to Chechen ambushes and swarms.[147] Kramer notes that logistics units were habitually ambushed which left troops inadequately supported to "counter the insurgents" and "Without adequate supplies of basic equipment, Russian soldiers inevitably are more vulnerable when confronted by surprise attacks."[148] While there were improvements in many areas, the Russians were once again deployed their basic infantrymen with inadequate training in urban warfare tactics.[149] As late as 2005, Russian officers were still trying to formalize counter-ambush tactics in order to turn the tide of the Chechen

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[142] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001), 62-3.

[143] Ibid., 63. Also found in *Izvestiya*, cited by Paul Goble in "A Real Battle on the Virtual Front," *RFE/RL Newsline*, Vol. 3, No. 199, part 1, October 12, 1999.

[144] Ibid., 63.

[145] Ibid., 64-5.

[146] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001) xi.

[147] Ibid., xii-xiii.

[148] Mark Kramer, "The Perils of Counterinsurgency: Russia's War in Chechnya," *International Security*, 29:3 (Winter 2004.05), 23-24.

[149] Olga Oliker, *Russia's Chechen Wars 1994-2000: Lessons from Urban Combat*, (Santa Monica, CA: RAND, 2001) xiii.

swarm, but even these techniques produced mixed results.[150]   So, even though the Russian victory in Grozny was praised as a success, seven years later they are still no closer to achieving complete victory against the Chechens.

4.   Summary

Even though the Second Chechen War led to an apparent Russian victory (that resembles more of an occupation than a clear win over the enemy) in the city of Grozny, a final peace has never been achieved, nor have many of the problems that lingered over the course of seven years been solved. While it appears that the Russian forces did a much better job at organizational issues at the onset of the Second Chechen War and the third battle for Grozny, fixes for C2 that looked promising did not survive contact with the enemy. While sources point to increased efforts to improve training and logistics, these improvements still left the Russians vulnerable to the swarm. Nonetheless, the following lessons from the two wars in Chechnya serve to highlight several lessons which surprisingly have not been brought to the surface in existing literature.

- Joint or Unified Commanders must have the authority not only to command and control assigned forces, but have the necessary authority and access to enforce compliance from agency and ministry officials who attempt to subvert the commanders' legitimate command authority.

- If operations are to be conducted that include forces from external agencies, then those external force agencies or ministries must be included in work-ups, exercises and training evolutions on a regular basis. Training forces jointly before operations can allow local commanders to work together even if higher echelon officials are in disagreement with one another.

- It is imperative that command and control relationships be solidified prior to commencement of operations through meetings and agreements at the highest levels.   If agency ministers/chiefs can agree beforehand on relationships and type of command authority (administrative, tactical, combatant), C2 debacles such as the Chechen Wars can be worked out well in advance.

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[150] Mark Kramer, "The Perils of Counterinsurgency: Russia's War in Chechnya," *International Security*, 29:3 (Winter 2004/05), 20.

- If the enemy is using tactics and concepts that decimate your forces, you must dedicate time and resources to train and equip your forces to counter those tactics or the enemy will continue to use them with great effectiveness.

- The swarm can be defeated, but learning how takes lives. There is no textbook answer, as each adversary may employ swarm tactics and swarming concepts differently. The Russians were eventually able to develop tactics that could defeat swarm units. The most effective tactics were denying key terrain and the employment of Special Forces with conventional units.

- Your logistics system and combat service support troops must be able to provide efficient and effective support. That means that those soldiers must learn infantry tactics, weapons systems, and how to fight and defend themselves.

Leadership of armed forces and other agencies/ministries which normally deploy in support of military operations should take note of the above lessons, which would help alleviate the problems that Russians have yet to demonstrate they have learned. These lessons are also relevant for any military force engaged in fighting non-conventional wars.

D.   CONCLUSION

This chapter has conducted an analysis of both the Russian and Chechen forces over the course of the two Chechen Wars. Since peace eludes this conflict, there are still more lessons to be learned. This analysis reviewed both Russian and Chechen variables of organization, C3, doctrine, training and logistics with a focus on the use of swarming concepts and swarm tactics and additional lessons which could be learned from the Russian faults. The result of this analysis is some valuable lessons learned which have not been documented before in any literature that this author reviewed. First, by looking at the Chechens, we can now apply those principles and enablers to swarming concepts and see if they can be applied to our combat forces for use offensively. Second, with those same principles and enablers, we should seek to deny or marginalize the ability of our adversaries to use those methods. Third, by looking at the Russian mistakes, it provides tremendous insight of what not to do in conducting counterinsurgency operations. Fourth, though subtle in it appearance, one cannot dismiss the force ratio

effects on the battle outcomes. The Russians always had the larger force, but only in the first and third battles for Grozny was it significant enough to remove the Chechen insurgents from the city. Finally, it shows us principles and lessons learned in which we can evaluate our existing military doctrine to see if swarming concepts and swarm tactics expose gaps in our own doctrine and warfighting concepts.

Taking the lessons of the Chechen Wars prepares us to examine U.S. warfighting doctrine. Putting a finger on Russian doctrine is difficult, and finding anything on written Chechen doctrine is even more elusive. But through each side's actions, we begin to formulate a picture of what doctrinal principles and concepts must be included in order for us to analyze it for gaps in relation to swarm tactics. It is this very next chapter where we will do these things.

III.   CURRENT DOCTRINE AND EMERGING CONCEPTS

> *Victory smiles upon those who anticipate the changes in*
> *the character of war, not upon those who wait to adapt*
> *themselves after the changes occur. — Giulio Douhet*[151]

A.   INTRODUCTION

In the previous chapter analyzing swarming in the Chechen Wars, we were able to gain a foundation of additional lessons learned from the Russian forces and what principles and enablers allowed the Chechens to employ swarm tactics. Taking our new knowledge, and combining it with the existing body of lessons learned from the Chechen Wars, we now have a starting point to review our own doctrine with respect to swarming concepts and swarm tactics. In exploring whether or not there is potential to develop doctrinal swarming concepts and their residual swarm tactics, this doctrinal review is the next logical step.

So what is doctrine, why is it important, and why must it be framed in the context of our research questions? Barry Posen defines military doctrine as a part of overall military strategy, telling "*What* means shall be employed? and *How* shall they be employed?"[152] Posen writes "Military doctrine includes the preferred mode of a group of services, a single service, or a subservice for fighting wars."[153] He states that doctrine is important for two reasons.

> First, the doctrines held by the states within a system affect the quality of international political life. By their *offensive, defensive, or deterrent* character, doctrines affect the probability and intensity of arms races and of wars. Second, by both the political and military appropriateness of the means employed, a military doctrine affects the security of the state that holds it. A military doctrine may harm the security interests of the state if it is not *integrated* with the political objectives of the state's grand

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[151] U.S. Marine Corps, *Tactics*, MCDP 1-3, (Washington, DC: Headquarters, U.S. Marine Corps, 30 July 1997), 79 as taken from Peter G. Tsouras, *Warrior's Words: A Quotation Book: From Sesostris III to Schwarzkopf, 1871 B.C. to A.D. 1991* (London: Cassell Arms and Armour, 1992), 434.

[152] Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars*, (Ithaca: Cornell University Press, 1984), 13.

[153] Ibid., 14.

strategy…A military doctrine may also harm the security interests of the state if it fails to respond to changes in political circumstances, adversary capabilities, or available military technology – if it is insufficiently *innovative* for the competitive and dynamic environment of international politics. If war comes, such a doctrine may lead to defeat.[154]

It is from doctrine that we formulate operational plans, develop training programs and tactics, techniques and procedures (TTPs). In fact, one could say that doctrine drives almost everything we do. The Joint Staff writes:

> Military doctrine presents fundamental principles that guide the employment of forces…It incorporates time-tested principles for successful military action as well as contemporary lessons which together guide aggressive exploitation of US advantages against adversary vulnerabilities.[155]

Doctrine's ultimate goal is to enable us to train and employ forces that will be successful in combat or other missions assigned to the armed forces. The Joint Staff even relates new concepts and doctrine to military transformation.

The Joint Staff writes, "Transformation efforts put a premium on exploring and "validating" concepts through joint experimentation and assessment. Validated, value added concepts can impact favorably on doctrine, training, and education."[156] Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 5120.02 provides a base for the relationship between doctrine and concepts. The instruction describes the relationship as "a close and complementary relationship…In general terms, a concept contains a notion or statement that expresses how something might be done."[157] If concepts are found to improve the effectiveness of our armed forces, they can be developed into doctrine which

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[154] Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars*, (Ithaca: Cornell University Press, 1984), 15-6.

[155] Chairman, U.S. Joint Chiefs of Staff, *Joint Doctrine Capstone and Keystone Primer*, (Washington, DC: CJCS, 10 September 2001), 2.

[156] Chairman, U.S. Joint Chiefs of Staff, "Joint Doctrine Development System," CJCSI 5120.02, (Washington, DC: CJCS, 30 November 2004), A-7.

[157] Ibid., A-6.

is authoritative in nature. So, this is why this type of approach to swarming concepts is important. If there is a gap because of swarming, then it must be asked whether or not it presents problems that need to be addressed.

For hundreds of years, various military, insurgent, and guerrilla forces have used swarming tactics with both success and failure against their adversaries. On the battlefield, our Marines and soldiers are producing significant kill ratios and achieving tactical victories, but doctrinal tactics are still grounded in conventional warfare when we have the resources (manpower, technologies) to exploit swarming concepts. Some may say that conventional forces are ill-prepared to fight irregular warfare, especially using tactics such as the swarm. We lack a doctrinal based defense against the swarm when it is used against us, nor do we have any formal school that teaches swarming tactics to our infantry, yet there is evidence of our conventional forces using swarming tactics and defending against (or repelling) the swarm.[158]

In the next section, we will evaluate our existing military doctrine for gaps identified by swarming concepts. This doctrinal review will focus on several areas of interest to swarming. In reviewing our doctrinal publications and the after action reports from select warfighting experiments, the following questions are asked:

- Does the doctrine/experiment discuss the use of swarm or "swarm-like" tactics?

- Does the doctrine/experiment discuss defensive measures that might prove effective against swarm tactics?

- Can some aspects of existing offensive or defensive doctrine or TTPs be applied or related to swarm tactics?

- Does the doctrine/experiment recognize nonlinear operations, the non-contiguous battlespace and dispersed operations?

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[158] I have spoken with Prof. John Arquilla, who has second-hand knowledge of swarm tactics being used by Marine forces in Afghanistan. Additionally, I had a couple of conversations with CPT Chris Lheureux, an Army infantry officer, who used the swarm successfully in operations in Iraq. There is also documentation of our forces using swarm tactics in Iraq in Sean Edwards's doctrinal thesis, which was cited earlier.

What is hypothesized is that some doctrinal publications are oblivious to swarm tactics, while some doctrine does recognize either the environment conducive to swarming or key tactical enablers to the use of swarm tactics.

B.   CURRENT DOCTRINE

The primary way a Marine leader becomes an able tactician is through training and education, both of which are firmly rooted in doctrine. Doctrine establishes the philosophy and practical framework for how we fight.[159]   -MCDP 1-3: Tactics

Remembering that swarming is "the systematic pulsing of force and/or fire by dispersed, internetted units, so as to strike the adversary from all directions simultaneously,"[160] we must look for gaps in both offensive and defensive doctrine, for both conventional and unconventional operations. To accomplish this review, this thesis will look at the following published Marine Corps doctrinal publications:

- **Doctrinal Capstone Publications**

  - Marine Corps Doctrinal Publication (MCDP) 1-0 *Marine Corps Operations*

  - MCDP 1-3 *Tactics*

  - MCDP 6 *Command and Control*

- **Doctrinal Warfighting/Reference Publications**

  - Marine Corps Warfighting Publication (MCWP) 3-11.2 *Marine Rifle Squad*

  - MCWP 3-35.3 *Military Operations on Urban Terrain (MOUT)*

  - FM 90-8/Marine Corps Reference Publication (MCRP) 3-33A *Counterguerrilla Operations*

  - Fleet Marine Field Manual (FMFM) 6-4 *Marine Rifle Company*

We'll begin with what the author found as positive elements of current doctrine.

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[159] U.S. Marine Corps, *Tactics*, MCDP 1-3, (Washington, DC: Headquarters, U.S. Marine Corps, 30 July 1997), 113.

[160] John Arquilla and David Ronfeldt. *Swarming & the Future of Conflict*. Santa Monica, CA: RAND, 2000, 8.

1. *Marine Corps Operations* MCDP 1

While MCDP 1's focus is on conventional operations, as it applies to the Marine Corps as a whole, there are several items mentioned in this capstone publication that are of interest. The publication does not outright mention swarm tactics, yet it does recognize that Marine forces may be encircled by enemy forces which put Marine forces in a dire situation, similar to what forces may be exposed to if swarmed by the enemy.[161] The Marine Corps has adopted the Single Battle concept, but doesn't restrict this concept to linear operations in the contiguous battlespace.[162] Indeed, in MCDP 1, the Marine Corps recognizes nonlinear in addition to linear operations, such as depicted in Figure 2. In Figure 2, the "single" battlefield is shown first in the traditional linear operation, where there is a distinct deep, close and rear battle areas.
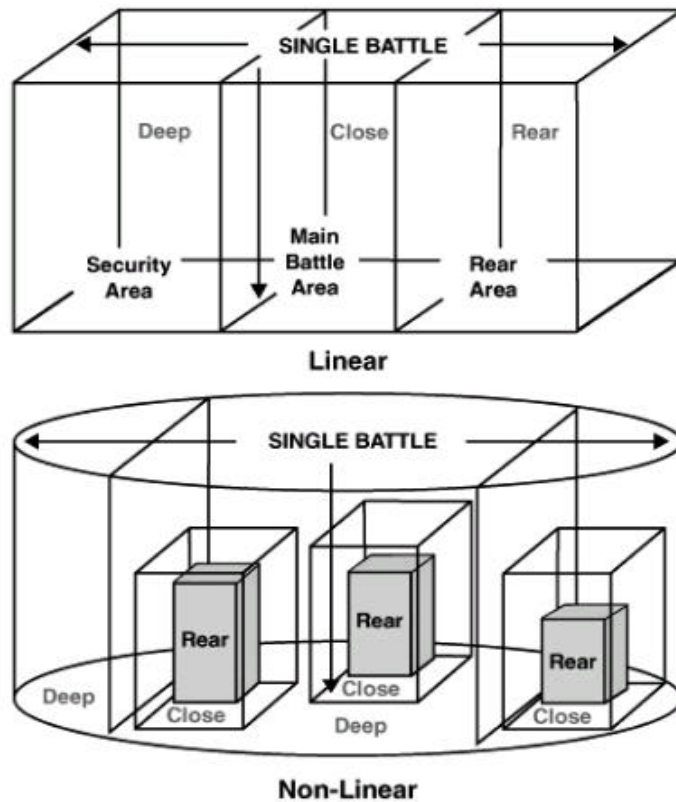

Figure 2. U.S. Marine Corps Single Battle Concept. Source: MCDP 1, 6-21.

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[161] U.S. Marine Corps, *Marine Corps Operations*, MCDP 1-0 (Washington, DC: Headquarters, U.S. Marine Corps, 2001), 9-9, 9-10.

[162] Ibid., 6-23.

Additionally, Figure 2 shows how complex the "single" battle can be in nonlinear operations in a non-contiguous battlespace. In nonlinear operations, the deep, close and rear battle areas are dispersed across the battlespace, requiring a revision of our doctrine, tactics and how we address the warfighting functions of fires, command and control, intelligence, logistics, maneuver and force protection. This is an important tenant to swarming concepts, as nonlinear operations in the non-contiguous battlespace are where swarm tactics thrive.[163] Furthermore, the Marine Corps sees that the non-contiguous battlespace and nonlinear operations are what the Corps must prepare for in the future.

MCDP 1-0 authors write "A more likely situation is one where the MAGTF conducts nonlinear operations within a non-contiguous battlespace and within an operational framework with non-contiguous deep, close, and rear areas."[164] Indeed, most conflicts since the end of World War II have been irregular wars vice conventional state-to-state wars.[165] This keeps the door open for a future inclusion of swarming concepts and doctrinal TTPs, but the fact that swarming concepts or "swarm-like" tactics are not specifically mentioned leads one to see a doctrinal gap in this capstone publication. The use of swarm tactics by Marine forces and a more pronounced preparation to defend against and repel the swarm is a clear doctrinal void. Next, MCDP 1-3 *Tactics* is examined to see if any of the tenants of MCDP 1-0 passes down, or if additional doctrinal voids appear.

2.   *Tactics* MCDP 1-3

Focusing down at the tactical level of war, nonlinear operations and the non-contiguous battlespace are not resident in MCDP 1-3. Several sections within this publication do present 'enablers' for nonlinear operation and more importantly,

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[163] The author's assertion is based on extensive study of scholarly works on swarming, namely by Arquilla, Ronfeldt and Edwards and on other published and non-published literature.

[164] U.S. Marine Corps, *Marine Corps Operations*, MCDP 1-0 (Washington, DC: Headquarters, U.S. Marine Corps, 2001), 6-23.

[165] Gordon H. McCormick, Steven B. Horton & Lauren A. Harrison, "Things Fall Apart: the endgame dynamics of internal wars," *Third World Quarterly*, 28, 2, 2007, 324. In this article, McCormick et all document that there have been 278 insurgent dyads, with over 44 of them still ongoing in 2007. Since 1945, there have been relatively few conventional state to state wars. A few of these include the Arab-Israeli War, the Six Day War, the First Gulf War, and the Falkland's War.

swarming. Specifically, the sections on "Surprise," "Trapping the Enemy", "Ambush Mentality," and "Asymmetry" are important elements to swarm tactics.[166] The important take away from this publication is the fact that the Corps does recognize some critical enablers to swarming in its existing doctrine and TTPs. MCDP 1-3 does not specifically describe swarm tactics for offensive operations nor go into any detail on defending or repelling enemy swarm tactics. These first two publications are broad enough that swarming concepts could be developed and incorporated. Since the absence of swarming concepts creates this doctrinal void, then it should be addressed. Another critical factor in the success of the swarm is the type of command and control. Thus, it is appropriate for this analysis to see if Marine Corps command and control doctrine could be accommodating to swarming concepts.

3. *Command and Control* MCDP 6

MCDP 6 states that "No single activity in war is more important than command and control."[167] With that in mind, it is imperative that the theory, tenets, and principles of MCDP 6 support nonlinear dispersed operations occurring in non-contiguous battlefields. The Corps' capstone publication on command and control does set conditions that are conducive to swarming concepts. Specifically, MCDP 6 advocates *mission* type command and control and *mission orders*.[168] *Mission* type command and control sets the correct venue for swarming concepts and swarm tactics by:

- Using technology to your advantage, but not becoming so reliant on it that you are unable to execute the mission should your technology fail.[169]

- Recognizing that command is the exercise of authority and see control as a feedback loop between the commander and his subordinates in a fluid, ever-changing environment; not as something where the commander controls every action in a rigid system.[170]

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[166] U.S. Marine Corps, *Tactics*, MCDP 1-3, (Washington, DC: Headquarters, U.S. Marine Corps, 30 July 1997), 47-56.

[167] U.S. Marine Corps, *Command and Control*, MCDP 6, (Washington, DC: Headquarters, U.S. Marine Corps, 4 October 1996), 35.

[168] Ibid., 79.

[169] Ibid., 59.

[170] Ibid., 46-7.

- Trusting and fostering low-level initiative in subordinates, by giving *mission orders* which give the subordinate the task to be accomplished and the commander's intent (purpose of the operation, method of accomplishing the mission and the desired end state).[171]

By promulgating a command and control philosophy and doctrine in this fashion, the Marine Corps has established a foundation for which swarming concepts and swarm tactics can be used successfully.

4.   *Marine Rifle Company* FMFM 6-4 and *Marine Rifle Squad* MCWP 3-11.2

In these two tactical level warfighting publications, patrolling seems to be the most common operation that one could build upon to use swarm tactics. [172] In their descriptions of different patrol types and patrolling TTPs, swarming concept enablers such as terrain, surprise, ambush mentality, and entrapment are given as points to consider when planning and executing patrols in both offense and defensive operations. Additionally, both publications do recognize the asymmetrical threat that guerrillas present over that of conventional military forces. So, while not explicitly linking the guerrilla to nonlinear operations in a non-contiguous battlespace, it is implied. This implication is critical for establishing the mentality to conduct nonlinear dispersed operations that are essential for swarm tactics. Still, the only tangible link to swarm tactics in either publication is the perimeter defense mentioned in FMFM 6-4, as depicted in Figure 3. Figure 3 shows a notional diagram of a company level perimeter defense, offering all around protection, interlocking fields of fire, and the unit reserve which can be employed at any point of the defense or be used to exploit opportunities. Each of the formations represents a platoon, with the headquarters and reserve platoon in the center. If the enemy swarms this company, they are well prepared to defend against and repulse the attack.

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[171] U.S. Marine Corps, *Command and Control*, MCDP 6, (Washington, DC: Headquarters, U.S. Marine Corps, 4 October 1996), 79, 109-115.

[172] U.S. Marine Corps, *Marine Rifle Company*, FMFM 6-4, (Washington, DC: Headquarters, U.S. Marine Corps, 1978), 248-269 & U.S. Marine Corps, *Marine Rifle Squad*, MCWP 3-11.2, (Washington, DC: Headquarters, U.S. Marine Corps, 2002), 8-1 – 8-44.
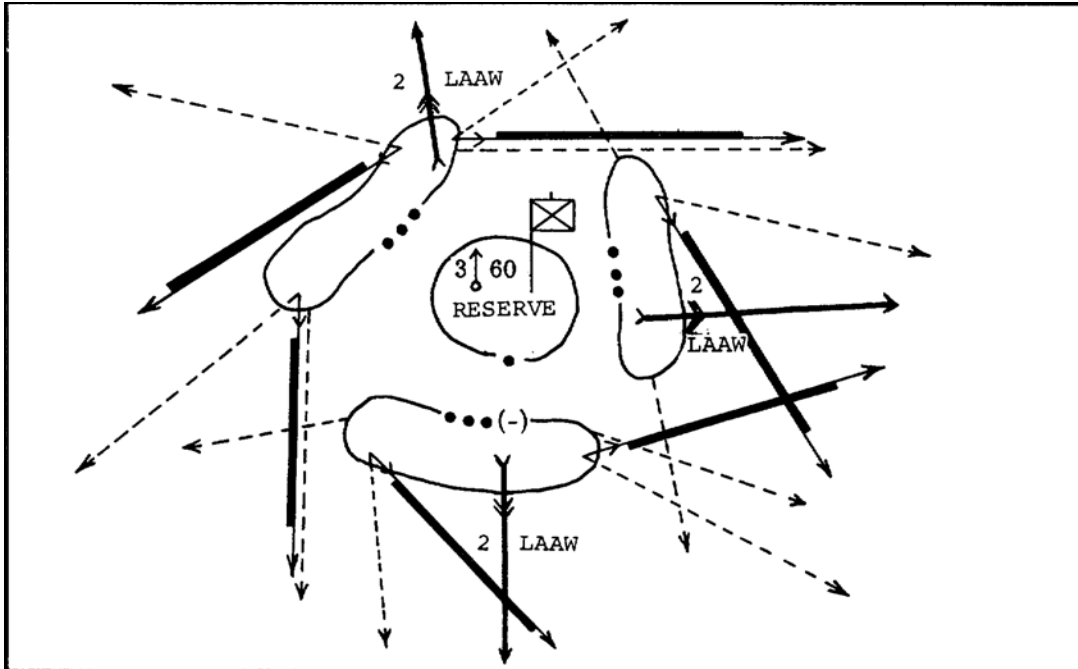
Figure 3.   Company Perimeter Defense. Source FMFM 6-4, 234.

The perimeter defense offers the defender adequate protection against the swarm from 360 degrees. Unlike more linear defenses, the perimeter defense's reserve force can counterattack or reinforce as the situation unfolds. By taking the company perimeter defense and associating it with swarming concepts and TTPs does help address a small part of our doctrinal gap. Significant modifications and work on the patrolling TTPs in these publications can also add to our ability to exploit swarming concepts during offensive and defensive patrolling. How patrols move from dispersed positions to come together for a convergent attack from multiple axes will be discussed in the next chapter. The next publication that will be discussed is warfighting doctrine for fighting in the urban terrain.

5.   Military Operations on Urban Terrain (MOUT) MCWP 3-35.3

Published in 1998, the Marine Corps publication for MOUT is one of the more critical publications that must be scrutinized for its relevancy in our current wars in Iraq and Afghanistan, as well as against swarming concepts and swarm tactics. There are several sections of this publication that are relevant to swarming, but the majority of this

doctrinal publication is void of swarm tactics or other TTPs that either aid in swarming or help defend against its use. As in other Marine Corps doctrinal publications, patrolling begins to emerge as a common foundation upon which to build swarming concepts.

In the chapter on patrolling, there are a few techniques which can be applied defensively against the swarm. The first technique is the 'double column' in platoon and squad operations.[173] The double column provides near 360 degree protection in its doctrinal context, as shown in Figure 4. In Figure 4, the mutual support afforded by the deployment of the formation (foot mobile) and its front and rear security elements, allows the platoon or squad to engage the enemy swarm with effective fire by a number of Marines.[174] Taking this tactic and adapting it with swarming concepts might yield the potential for small swarm teams to take an offensive while the larger force is defensively postured in the city. These swarm teams (such as the fire team) deploy from firm bases into ambush positions. After the initial ambush, they would take cover, disengage from contact (disperse) and eliminate the enemy by seeking their positions (re-attack) or intercepting the enemy during dispersal and before reengagement. This is not too different from what Chechen hunter-killer teams did during the Chechen Wars.

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[173] U.S. Marine Corps, *Military Operations on Urban Terrain (MOUT)*, MCWP 3-35.3, (Washington, DC: Headquarters, U.S. Marine Corps, 26 April 1998), A-57.

[174] Ibid., A-58.
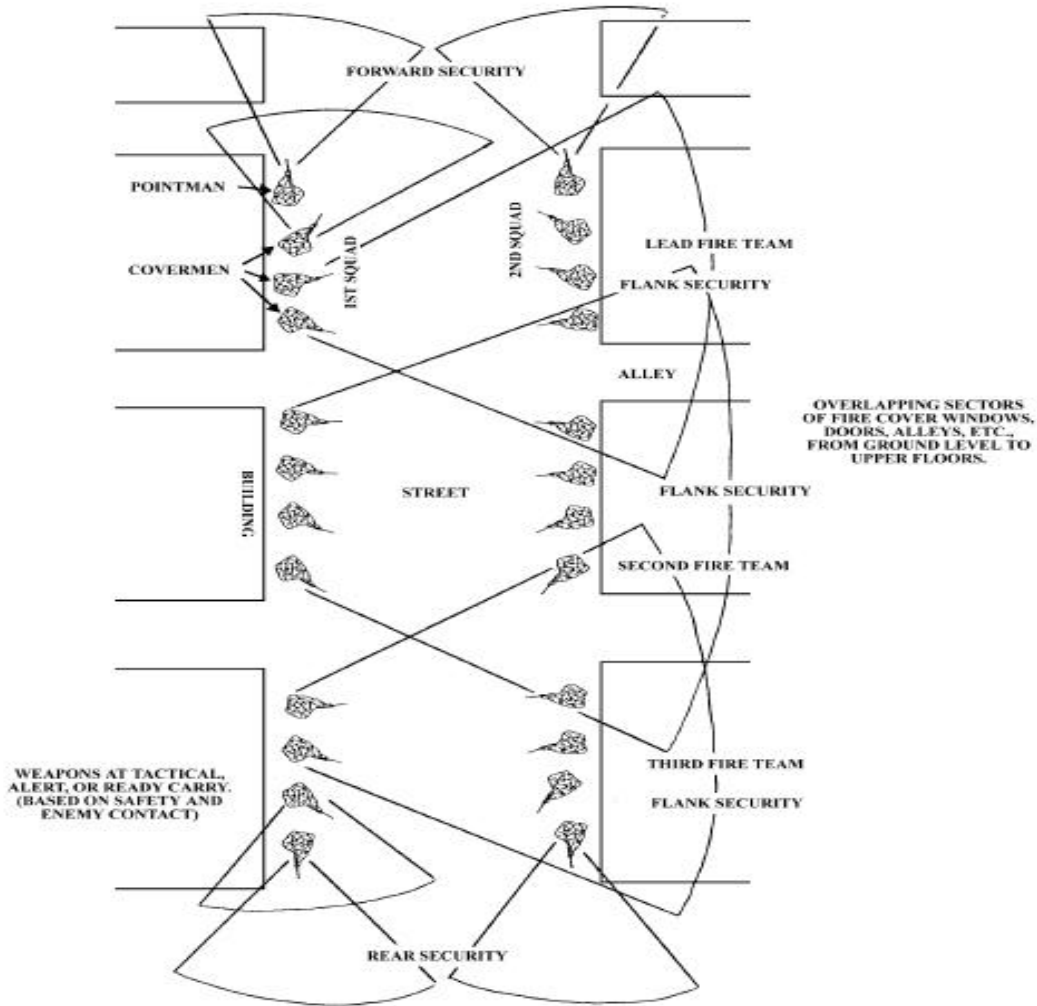
Figure 4.   Platoon Double Column. Source: MCWP 3.35.3, A-58

The TTPs described in the publication for crossing intersections also incorporates 360 degree security, but the squad's limited size leaves it vulnerable to the swarm.[175] Most other techniques presented in this publication leave the platoon or squad exposed to a decisive kill by an experienced enemy swarm force in an urban area.[176] In keeping with the Corps' mantra that the defense is a mere pause in our ability to conduct the offensive, defense of an urban area is out of character for Marine Corps doctrine. The

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[175] U.S. Marine Corps, *Military Operations on Urban Terrain (MOUT)*, MCWP 3-35.3, (Washington, DC: Headquarters, U.S. Marine Corps, 26 April 1998), A-61 – A-65.

[176] Ibid., A-61.

discussion about defense of a city is disturbing in its lack of detail and creative thought in taking the fight to the enemy. The next two paragraphs typify why this is "disturbing."

The only close mention of any TTP or doctrinal consideration that is offensive in nature is found in the very brief section on ambushes and entrapment. It states "Ambush planning in an urban environment does not differ significantly from planning in other environments,"[177] which is not entirely true. Fighting in urban terrain is much more difficult than jungle or deserts, and usually introduces non-combatants to the tactical scenario. Additionally, when you are fighting in the city, you exercise a higher level of scrutiny for what explosive collateral effects will be. If defending an urban area, using swarm tactics against the attacking forces may give our forces an asymmetrical advantage, similar to what the Chechens achieved during the first battle of Grozny during the First Chechen War (1994-1995). The next area of this doctrinal publication incompatible with swarming concepts is on command and control.

In the section that covers the warfighting functions in urban combat, it advocates centralized command and control, not the centralized command and decentralized control that is required for effective maneuver warfare and swarm tactics. Under "Command and Control in the Urban Terrain," the publication states "The commander positions himself so that he can control the action."[178] The publication states that this can be difficult because of the nature of the urban terrain and the effects it has on visibility and communications. To complicate command and control further, the writers even suggest that the commander could position himself underground.

MCWP 3-35.3 MOUT's doctrinal void actually goes beyond the omission of swarming concepts (with exceptions noted above). It does not advocate the use of any tactics related to swarming concepts in the offense. Aside from a brief appendix of the warfighting functions applied to lessons from the First Chechen War, those lessons never transfer to any new TTPs for Marine forces to use.[179] Furthermore, they only mention a

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[177] U.S. Marine Corps, *Military Operations on Urban Terrain (MOUT)*, MCWP 3-35.3, (Washington, DC: Headquarters, U.S. Marine Corps, 26 April 1998), 3-11.

[178] Ibid., 3-14.

[179] Ibid., J-1 – J-8.

few of the Chechen TTPs, failing to recognize the swarm tactics that devastated the Russian forces during the battles for Grozny. After MOUT, the next publication to examine is Counterguerrilla Operations.

6. Counterguerrilla Operations MCRP 3-33A

First published in 1986, MCRP 3-33A is in dire need of an update. It does not mention many of the lessons and principles of counterinsurgency that we have had to relearn in our current wars in Iraq and Afghanistan. MCRP 3-33A does not provide insight into enemy tactics, such as swarming. It does not advocate taking asymmetrical warfare approaches to fight the guerrillas nor does it recognize the nonlinear operations that will occur in the non-contiguous battlespace that counterguerrilla operations take place. Like other doctrinal publications in offensive and defensive warfare, patrolling and raids appear to be the mainstay of tactical operations against the guerrilla forces. The only defensive tactics that provide some protection against enemy swarm tactics seem to be identical to the perimeter defense described in FMFM 6-4, briefly mentioned during the section on ambushes. Its sole focus on killing the guerrilla could be its greatest shortfall, as most now accept the notion that the population is the center of gravity in any insurgency or violent revolution that involves guerrilla opposition forces.

In MCRP 3-33A's appendix on ambushes, one does manage to find doctrine somewhat compatible with swarming concepts. The writers focused on the triangle and box platoon formations, for ambushes against the guerrilla forces. While the closed triangle defense offers 360 degree protection and interlocking fields of fire, it possesses no ability to exploit any success against the guerrilla force upon contact. It is more akin to a situation where you hope that he is sufficiently weaker in force and fires, that you kill all the enemy force in the initial ambush, and that you do not need to pursue him.[180] In Figure 4, we find a company level ambush. Each unit is representative of a platoon. This particular ambush relies on stealth, surprise, and a high level of coordination from each element in order to catch the enemy in the box and reduce the chance of fratricide

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[180] U.S. Marine Corps, *Counterguerrilla Operations*, MCRP 3-33A, (Washington, DC: Headquarters, U.S. Marine Corps, 1986), C-14.

between friendly units. The problems with ambushes such as depicted in Figures 4 are numerous. The guerrilla force enters a kill zone between the unit positions, but the lack of simultaneity between units is a large tactical error which allows the guerilla time and space to escape.
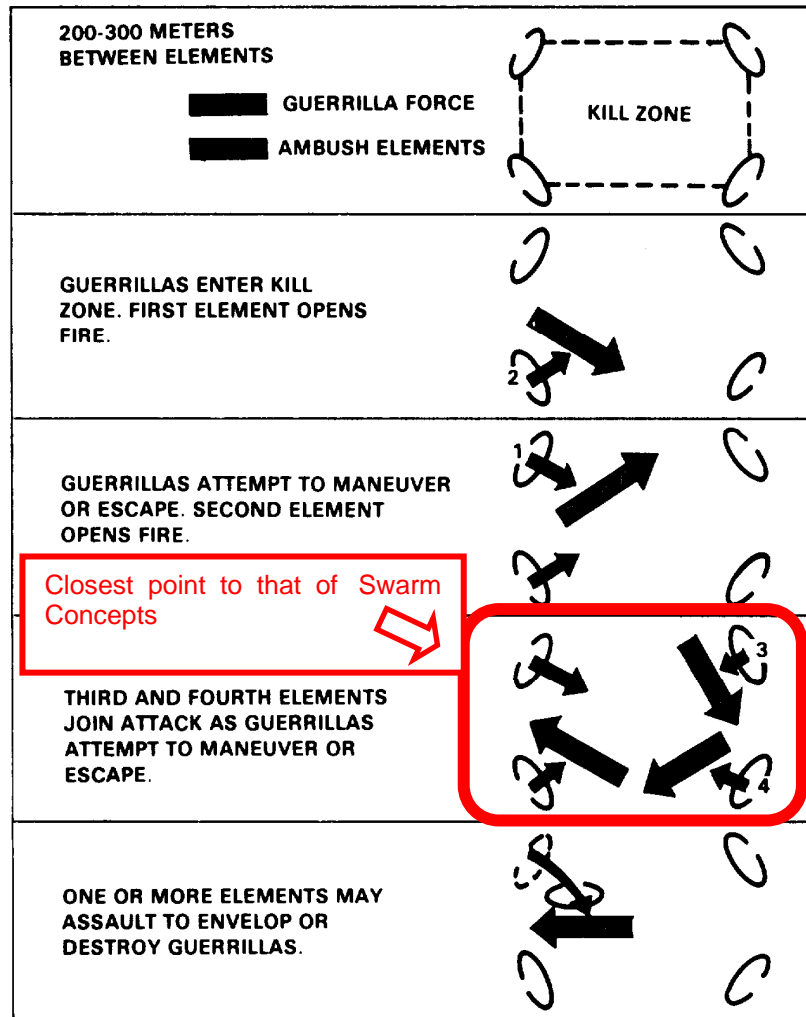
Figure 5.   Box Formation Destruction Ambush. Source: MCRP 3-33A, C-18.

Given that this doctrinal publication is over twenty years old, it is not surprising that there is difficulty piecing together significant answers; thus forcing us to rely on other, more current doctrine as our starting point for further development of swarming concepts. With this publication, this concludes the doctrinal publications reviewed for this paper. In brief, our capstone doctrinal publications set the right environment to

develop swarming concepts and swarm tactics. Our current warfighting and reference publications fall far short with few exceptions on providing swarm tactics for the offense and defense. As we transition to the warfighting experiments, one would hope that these evolutions in advanced warfighting TTPs will help validate the requirement for swarming concepts to fill the doctrinal void.

7. Doctrinal Summary

The preceding review of relevant doctrinal publications reveals an overall void in the doctrinal foundation for training, educating, equipping and employing our forces against adversaries that may employ swarm tactics. Furthermore, while the doctrine does provide some relevant TTPs which may prove effective in defending our forces against the swarm, the doctrinal writers have largely ignored the tremendous asymmetrical advantage that swarm tactics can give the trained and equipped force that uses them. This doctrinal review has shown that links to swarming concepts and swarm tactics can be drawn from certain aspects of patrolling and defensive formations presented in several of the publications. This review has also identified numerous problems with the doctrinal publications that go beyond the scope of this study, such as excessive age and divergence from maneuver warfare. By taking a critical look at this doctrine, it clearly identifies many outdated TTPs that are irrelevant in today's combat operations and incompatible with the Corps warfighting philosophy. With so many doctrinal deficiencies, the Marine Corps should look at concepts and TTPs that are relevant to the modern battlespace and take into account swarming concepts? The next section on warfighting experiments looks at the Corps' progress in this, by conducting advanced warfighting experiments.

C. WARFIGHTING EXPERIMENTS

The Marine Corps Warfighting Lab (MCWL) is the Corps' future concept experimentation organization. Since its creation in the late 1990s, the MCWL has conducted experiments which have looked at future warfighting concepts as well as swarming concepts and TTPs. The latest concept, distributed operations (DOs), has become one of the MCWL's most significant focus areas. Since the Marine Corps has

asserted that DO is not swarming, which we discussed briefly in Chapter One, specific DO experiments are omitted from this chapter even though they add depth and effectiveness to the DO concept during implementation. [181] DO will be discussed again briefly in the final chapter of this thesis. The focus of this section remains to look at swarm-like concepts and TTPs that were part of the *Hunter Warrior* Advanced Warfighting Experiment (AWE), *Urban Warrior* AWE and *Project Metropolis* Battalion Level Experiment (BLE). We'll first examine the *Hunter Warrior* AWE. Since it is a known fact that the MCWL has abandoned the experimentation of swarming concepts, our concern is not why, but which swarm tactics and concepts were successful and if they could fill in our doctrinal voids.

1. Hunter Warrior

The *Hunter Warrior* AWE took place from 1-12 March 1997 at the Marine Air-Ground Task Force (MAGTF) Training Center at 29 Palms, California, with forces located also at the Marine Corps Base at Camp Pendleton and Marine Corps Air Station in Yuma, Arizona.[182] The experiment's hypothesis was "Can we significantly extend the area of influence of a modest forward afloat expeditionary force, and also significantly increase its effectiveness within that expanded area of influence?"[183] The AWE had three objective areas. They were:

- "Dispersed, non-contiguous battlespace operations: operations by dispersed air, ground, and naval forces in which there is no traditional front line of troops. In particular, forces on the ground were not contiguous, but were dispersed throughout the battlefield.

- Command, control, communications, computers, and intelligence (C4I) in a single battle.

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[181] Interview with Mr. Goulding from the Marine Corps Warfighting Lab on October 18, 2007.

[182] Dwight Lyons and others, "Hunter Warrior Advanced Warfighting Experiment Reconstruction and Operations/Training Analysis Report", (Quantico, VA: Commandants Warfighting Laboratory, 1 August 1997), A-3 – A-4.

[183] Ibid., A-2.

- Enhanced fires and targeting, to enable combat power to be brought to bear on the enemy quickly and effectively."[184]

One of the concepts evaluated during *Hunter Warrior* was the concept of using Long Range Contact Patrols (LRCPs) to find enemy forces, and direct fires upon the targets without the compromise of their position or engaging in direct action with the enemy.[185] These LRCPs were controlled by a simulated MAGTF afloat using advanced technology. The important point here is not to rehash the successes and disappointments resulting from the experiment, but to try and grasp some concepts relevant to swarming and see if they help us fill some doctrinal void.

Despite the negative rhetoric from numerous individuals I interviewed concerning *Hunter Warrior*, I think that this LOE did show several important points related to our ability to swarm the enemy by fires. The following observations and conclusions bolster this position:

- Command and Control
    - "The operations center was able to keep track of the multiple LRCPs across the nonlinear battlefield.
    - The combination of sensors, from the use of unmanned aerial vehicles (UAVs) to the Marines in the LRCPs, kept the enemy under constant observation.
    - LRCPs were an important part of the Special MAGTF (SPMAGTF) reconnaissance, surveillance, and target acquisition.
    - LRCPs submitted more detection-related messages than any other single source.
    - LRCP detection messages correlated to fire missions about as often as any other source.
    - LRCP-initiated tracks, that when fired on, were hit as often as any source except air.

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[184] Dwight Lyons and others, "Hunter Warrior Advanced Warfighting Experiment Reconstruction and Operations/Training Analysis Report", (Quantico, VA: Commandants Warfighting Laboratory, 1 August 1997), A-2.

[185] Ibid., A-2.

- Maneuver and Fires

  - Basic Marines (not "hand-picked") were trained to accomplish LRCP missions beyond "normal" infantry capabilities.

  - Squads operated autonomously.

  - They were able to operate without being detected.

  - They contributed significantly to the SPMAGTF picture.

  - Once on the ground, most LRCPs were able to survive while accomplishing their missions (Opposing Force (OpFor) found only 1).

  - SPMAGTF was able to coordinate combined fires attacks, using several different combinations of sequential and massed fires, and dissimilar, dispersed fires assets.

- Logistics

  - Logistics caches were critical to supporting small dispersed units across a large nonlinear battlefield."[186]

In the end, the MCWL staff agreed that they "could extend the area of influence of a forward afloat expeditionary force and increase its effectiveness within that enlarged area of influence using the technologies, training and TTPs"[187] used in the experiment. It is ironic that a well-networked force of little more than 50 Marines from a battalion landing team (BLT) held off a reinforced regimental combat team (RCT), yet most of the personnel at the MCWL want everyone to forget about *Hunter Warrior*. I believe this experiment validated that if properly trained and equipped, Marines assigned to infantry battalions can conduct offensive swarm by fire operations against conventionally armed and organized adversaries. Additionally, the experiment showed that through a combined approach (sensors, UAVs and LRCPs), that the enemy was swarmed by friendly 'eyes' (sensors) and had to adapt in order to not be targeted.[188]

The Marines in the LRCPs and the operations center demonstrated that relatively junior Marines (noncommissioned officers (NCOs)) can lead autonomous teams in

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[186] Dwight Lyons and others, "Hunter Warrior Advanced Warfighting Experiment Reconstruction and Operations/Training Analysis Report", (Quantico, VA: Commandants Warfighting Laboratory, 1 August 1997), B-2 – B-11.

[187] Ibid, B-13.

[188] Ibid., M-3.

nonlinear operations across a non-contiguous battlespace. While this might sound strangely like DO, the MCWL would assert it is not. However, this experiment did more to advance swarm tactics and swarming concepts than any other military warfighting exercise up to that time. The *Urban Warrior* AWE and *Project Metropolis* BLE were to build upon the lessons of *Hunter Warrior*, but did they further progress in the swarming concepts which would lead us to doctrinal solutions?

2.   *Urban Warrior* and *Project Metropolis*

The *Urban Warrior* AWE and subsequent *Project Metropolis* BLE took place over several years, starting in January 1999. These experiments did build upon lessons learned from *Hunter Warrior*, while evaluating and experimenting with new TTPs and technologies to improve the ability of the MAGTF to fight more effectively and efficiently in the urban battlespace. Of all the experiments conducted after *Hunter Warrior*, the *Urban Warrior* AWE and the *Project Metropolis* BLE subtitle "The Combined Arms Team in MOUT"[189] are the most relevant to swarming concepts. The *Urban Warrior* AWE will be covered first.

The *Urban Warrior* AWE took the fight into a real city for the first time, creating an environment not before experienced in a training exercise. The experiment "was conducted in Monterey and the San Francisco Bay area from 12-18 March 1999."[190] It looked at the ability of "a forward afloat force to execute simultaneous, non-contiguous operations in both the extended and constrained battlespace."[191] The foundations of the AWE were a reflection of observations of urban combat and that we had to do it better.[192] Gangle's article on the foundations of the *Urban Warrior* AWE paint a picture of something building upon the swarm concepts of *Hunter Warrior* and the Chechen swarm

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[189] Marine Corps Warfighting Laboratory, "Project Metropolis Battalion Level Experiments After Action Report – The Combined Arms Team in MOUT", (Quantico, VA: 7 May 2001), Cover Letter.

[190] Marine Corps Warfighting Laboratory, "Urban Warrior Advanced Warfare Experiment (AWE) Reconstruction and Operations Analysis Report" (Quantico, VA: July 23, 1999), iii. The actual urban city used was Alameda, CA, which is on the eastern shore of San Francisco Bay.

[191] Ibid., iii.

[192] Randolph A. Gangle, "The Foundation for Urban Warrior." *Marine Corps Gazette*, 82, 7, July 1998, 52.

success in Chechnya.[193] Indeed, the description of the "Urban Swarm" described by Gangle is very close to that of Arquilla's, Ronfeldt's and Edwards's.[194] Of concern here is if those plans made it to execution and how successful or unsuccessful they were. While one of the objectives looked at "penetrating and operating in dense urban littorals,"[195] the actual use of swarming concepts or swarm tactics does not appear evident in actual conduct of this experiment. A hard look at swarming concepts doesn't seem to come to the forefront of any discussions or analysis in the experiments after action report. *Urban Warrior* did look at an experimental maneuver unit, which was really nothing more than a new task organization of a company and its platoons.[196] The experiments 'vapor' concept was not swarming as some of those interviewed by the author eluded too or Sean Edwards's 'vapor swarm' but were as the report described a concept to "deceive, distract, and frustrate an enemy before attacking."[197] The main points to take away from this experiment is that it failed to address any new defensive TTPs to enemy swarm tactics, and provided no new offensive TTPs for our forces to use swarm tactics against our enemies, despite the planned inclusion of those in the foundations of the experiment.[198] Furthermore, the task organization and TTP experiments in *Urban Warrior* failed to decrease the casualty rate in urban combat.[199] Whereas *Urban Warrior* failed to address the swarm and capitalize off the LRCPs success in the *Hunter Warrior* AWE, *Project Metropolis'* BLE supposedly did.

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[193] Randolph A. Gangle, "The Foundation for Urban Warrior." *Marine Corps Gazette*, 82, 7, July 1998, 52

[194] Ibid., 53.

[195] Marine Corps Warfighting Laboratory, "Urban Warrior Advanced Warfare Experiment (AWE) Reconstruction and Operations Analysis Report" (Quantico, VA: July 23, 1999), iii.

[196] Ibid., iii.

[197] Marine Corps Warfighting Laboratory, "Urban Warrior Advanced Warfare Experiment (AWE) Reconstruction and Operations Analysis Report" (Quantico, VA: July 23, 1999), viii. Also see Sean J.A. Edwards, "Swarming and the Future of Warfare." PhD diss., Pardee RAND Graduate School, 2004.

[198] Randolph A. Gangle, "The Foundation for Urban Warrior." *Marine Corps Gazette*, 82, 7, July 1998, 52-54.

[199] See both Marine Corps Warfighting Laboratory, "Urban Warrior Advanced Warfare Experiment (AWE) Reconstruction and Operations Analysis Report" (Quantico, VA: July 23, 1999), viii, and Gary Anderson, "Project Metropolis: Exploiting the Lessons of Urban Warrior," *Marine Corps Gazette*, 84, 9, September 2000, 54.

The *Project Metropolis* BLE that was conducted from 22 January to 9 February 2001 experimented with 'Urban Swarm' tactics.[200] The report states that "no specific experimentation was conducted with the Swarm tactic," but that "limited patrolling was conducted using infantry/armor teams."[201] So if they did not experiment with swarm tactics, then why is this particular combined arms patrolling TTP called the 'Urban Swarm'? The answer is that the MCWL personnel labeled the tactic's saturation of an area by two or more patrols of infantry squads reinforced with a tank as swarming when it was not. The idea was to send out multiple patrols from company and platoon patrol bases to dislodge the enemy from buildings and run him into friendly strong points where he could be defeated, negating the requirement to sweep every building along a patrol route.[202] Compared to the definitions of swarming considered in this paper, the swarm tactics used during the BLE fall short of fulfilling a true experiment of our definition of what would be an offensive swarm. Additionally from this experiment's report, they only used their 'Urban Swarm' concept during one day during the experiment.[203] This is a far cry from taking a notional doctrinal concept, and running it through a full gamut of evaluations necessary to either adopt or abandon a warfighting concept which historically has worked so well for others. At this point, a summary of how swarming concepts really have prevailed during the MCWL experimentations to date is suitable.

3.   MCWL Experimentation Summary

This section has reviewed the three most relevant MCWL experiments which had the potential to address the doctrinal void created by the recognition of swarming concepts and swarm tactics. Clearly, the *Urban Warrior* LOE contributed the least towards providing doctrinal solutions. Given that extending operations in the non-continuous battlespace was an experimental objective, the lack of conducting nonlinear operations complicated the ability for friendly forces to inject swarm tactics into the

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[200] Marine Corps Warfighting Laboratory, "Project Metropolis Battalion Level Experiments After Action Report – The Combined Arms Team in MOUT", (Quantico, VA: May 7, 2001), 1, 8.

[201] Ibid., 8.

[202] Ibid., 36.

[203] Ibid., 36.

experiment. The BLE experiment as part of *Project Metropolis* in 2001 mentioned swarm tactics, and even conducted an 'Urban Swarm' experiment, but only in the context of saturating an area with forces and hoping to run the enemy into a trap. Any association with swarming concepts and swarm tactics as used in this paper is a disappointment. Oddly enough, the *Hunter Warrior* AWE, which actually was the first experiment of its kind for the MCWL, developed the type of concepts required to develop doctrinal solutions in swarming. This experiment did show that the MAGTF could organize, train, equip and employ small teams of infantry Marines and have them execute limited swarm tactics against a first rate conventional enemy. The LRCPs and the 'Urban Swarm' concepts that the MCWL has experimented with provided evidence that swarming concepts are valid and increase the flexibility and lethality of the MAGTF.

D.   CONCLUSION

From this review of Marine Corps doctrinal publications and MCWL experiments, there are several conclusions that we can come to. The first is that Marine Corps doctrine does not take into account swarm tactics or swarming concepts in general, but the Corps' capstone doctrine does set the right conditions for swarming concepts to be developed. That some defensive TTPs may offer protection from and the ability to repel the swarm when used against us is more of an accident than something doctrinal writers contemplated. Patrolling seems to be a common base from which our forces could train and employ swarm tactics against our enemies, but the current focus of our tactics remains on the single decisive engagement to defeat the enemy by fire and maneuver. The second point with respect to doctrinal voids is that we have much work to do in order to fill this tremendous gap that, if filled, could give our forces an asymmetric advantage on the offensive and increased survivability when defending against swarm tactics. Third, a single ray of validation of swarming concepts occurred during one MCWL experiment. During *Hunter Warrior*, the concept of LRCPs and their ability to swarm fires upon our adversaries did work, laying ground for a conceptual model of how successful swarm tactics could be. In looking back at the two fundamental requirements

provided in the introduction, these LRCPs could in fact hit an enemy from any direction with fires and were part of the "sensory organization."

So where does all this leave us? The short answer is that we are still left with a large doctrinal void. Armed with the knowledge of doctrinal gaps and warfighting experiment after action reports, the Marine Corps should work towards filling this doctrinal void. Through concept development and experimentation, swarm tactics can be validated in both offensive and defensive doctrine for the Marine Corps. This can give us another edge against asymmetric enemies while conducting nonlinear dispersed operations on a non-contiguous battlefield.

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IV. CONCLUSION

A. INTRODUCTION

Armed with new lessons learned and perspectives from the Russian and Chechen sides of the Chechen Wars and a critical review of Marine Corps doctrinal publications in light of swarming concepts and swarm tactics, we need to finalize our research and answer the thesis question and the remaining research question. Is there potential to develop doctrinal concepts of swarming? Can we [U.S. forces, but more specifically, Marine forces] incorporate swarm tactics into our doctrine for use in the offense and defense without drastic changes to organization, command, control and communications (C3), training, and logistics? The first thing required is to look back at this puzzle that has been created, and see where we really stand in relation to swarm tactics, doctrinal voids and experimentation. Next, we need to provide a preliminary "test of the water" towards a swarming doctrine. The Marine Corps' DO concept requires additional clarification and despite the rhetoric, and this paper would be incomplete without examining if its relevancy to swarming is more than what we are led to believe.

B. THE CHECHEN WARS REVISITED

In Chapter II , we took key variables such as C3, organization, doctrine and training and logistics provide additional insight to the Chechen Wars. The Chechen perspective reinforces some principles of swarming concepts first captured by Arquilla, Ronfeldt and Edwards in their publications. The Russian perspective provided additional lessons learned to the extensive list that has been distributed in many publications over the years. But in relation to the research question at stake and in light of its effect on U.S. forces, we need to recall key lessons from the Chechen Wars.

1. You cannot ignore the concept of swarming and the use of swarm tactics as a potential asymmetric advantage.

2. Attacking an urban area is difficult, and it is exponentially more difficult if your adversary can successfully employ swarm tactics.

3.   Defending an urban area is difficult if your adversary can successfully infiltrate the urban area and employ swarm tactics.

4.   Force ratios that resulted in success for the Russians in the first battle for Grozny was essentially 2:1. In the second battle for Grozny, the Russians enjoyed at 3-4:1 force advantage over the Chechens, but were still forced to surrender the city. In the third battle for Grozny, the Russians attacked with more than a 30:1 force ratio, which resulted in their eventual seizure of the city after a very hard fight.[204] The lesson from this is that you must have an overwhelming force advantage to seize and hold a city against a swarm tactics.

5. While learning from the Russian experience in Grozny is imperative, the U.S. cannot imitate the Russian's use of force and tactics less it lose its high level of status and trust in the American public.

6. An examination of our warfighting doctrine must include swarming concepts and swarm tactics. Gaps identified in doctrine must be addressed in TTPs or we have failed to really learn from the Russian experience in Chechnya.

Acknowledging these additional lessons, prepares us to move onto what we have gained from the doctrinal review in Chapter Three.

C.   THE DOCTRINAL VOID

Chapter III really contributes more than one part to this thesis, thus why it precedes the conclusion. First, does the Marine Corps have the doctrinal framework necessary to advocate swarming concepts and swarm tactics? The short answer to this is yes it does. The Marine Corps' capstone doctrinal publications recognize key top level variables and conditions that are conducive to swarming. Swarm tactics thrive in nonlinear operations conducted within the non-contiguous battlespace. Well-trained, educated and empowered junior leaders, mission type orders, clear commander's intent, and solid networked communications are all things that enable swarm units to operate effectively under various conditions. We saw this environment established in every MCDP that was reviewed here.

The next question asked is if swarming concepts and swarm tactics expose doctrinal voids. Our doctrinal problems begin with a departure from the capstone

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[204] Sean Edwards, *Swarming and the Future of War*, (Santa Monica, CA: RAND, 2005), 274-278.

publications; meaning that of warfighting and reference publications. With very few exceptions, swarming concepts and swarm tactics reveal doctrinal gaps in every single publication. While those few exceptions are not specifically related to swarming, they do provide venues that make the recognition and integration of swarm tactics all the easier. The swarming concept challenge to our publications has in fact identified a valid doctrinal void that can be filled by developing swarming concepts that translate into swarm tactics for use by our forces in the offensive and defensive. Of course, one of the ways you discover and mature new concepts and TTPs is through experimentation.

D.   MCWL EXPERIMENTS AND DISTRIBUTED OPERATIONS

The MCWL's experiments that were reviewed here showed many interesting things. First, *Hunter Warrior* showed that basic Marines and NCOs could be trained and equipped to conduct swarm tactics successfully. This is important, as the enabling capabilities for DO are rooted in the training, education, and empowerment of Marine NCOs, not in developing new warfighting TTPs. In the words of Col. Goulding,

> The DO concept was never designed to create "DO squads," "DO platoons," or even "DO battalions." Rather, it was designed to train man, and equip Marines to be more lethal, agile, and survivable on an increasingly distributed battlefield…Neither the concept nor the experimentation that supported it ever sought to create ersatz reconnaissance teams or independently operating squads trained to engage our Nation's enemies with binoculars and indirect fire.[205]

Yet, DO have reinforced the training and education lessons we learned at *Hunter Warrior*, other MCWL experiments and combat operations in OEF and OIF. That is our NCOs are capable of leading their Marine without an officer standing over them. They are capable of understanding and executing mission orders with commander's intent. Our NCOs today understand high technology tools that enable them to be more capable than simply directing fire team rushes. While *Hunter Warrior* did specifically look at swarming and provided us what I argue is the impetus for exploring swarming further, *Urban Warrior* and *Project Metropolis* failed to execute the swarming concepts that were

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[205] Vincent J. Goulding, "DO: More than Two Words," *Marine Corps Gazette*, 92, 4, April 2008, 78.

preplanned during both of the AWEs. Unfortunately, MCWL experimentation to develop any type of swarming concepts that would fill our newly identified doctrinal voids died long before the DO concept matured. This does not mean that DO is completely useless to the concept of swarming. If fact, it is vital.

Going back to our definitions of swarming and BGen. Schmidle's description of the DO concept, knowing what we have learned thus far, one can argue that DO, by virtue of what it has done for the infantry battalions, has established optimal conditions for further experimentation in swarming concepts. This is not in an effort to completely replace traditional infantry battalion roles, but as in DO, to give the battalions "additional capabilities"[206] to present asymmetric combat power on the dispersed, nonlinear, non-contiguous battlespace. Furthermore, should experimentation show further utility for swarming concepts, the construct of doctrinal concepts and TTPs would be the next step. Before we affirm the potential to develop doctrinal swarming concepts and conclude the answer to the final research question, it would be helpful to present the discussion in a manner consistent with the question and our case study variables.

E.   PUTTING IT TOGETHER

In order to strengthen this argument for swarming doctrinal concepts, we need to place this argument into the context of service realities. Keeping with the Marine Corps-centric focus of this thesis, the following discussion continues with that theme. The Marine Corps has been America's premier expeditionary force-in-readiness, and has enjoyed a most respected place in the lore of military fighting organizations. Any concept and resulting warfighting doctrine must increase the Corps effectiveness, efficiency and lethality or face a quick death in the halls of service-level staff offices. So what do we know?

- We have already set precedents for swarming's success in the Chechen wars.
- We have identified that the Corps capstone doctrinal publications do set the top-level conditions for swarming.

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[206] Vincent J. Goulding Jr., "DO: More than Two Words," *Marine Corps Gazette*, 91, 2, February 2007, 51.

- We have identified that current warfighting doctrine does have substantial gaps that swarming can fill.
- We have shown in a brief warfighting experiment that our Marines can employ swarm tactics.
- We have created a complementary bridge between swarming concepts and the Corps' DO concept.

Knowing all this, do we know enough to develop a warfighting concept and build an experimentation plan? The answer is yes, we do.

F.   TOWARDS DOCTRINAL SWARMING CONCEPTS

In order to develop swarming concepts and an experimentation plan, a comprehensive approach based on historical uses of and lessons from the use of swarm tactics, Dr. Edwards's theory of swarming, and the targeting of doctrinal voids provides a good starting point. The theory, literature and after actions provide everything needed to draft conceptual documents on swarming and swarm tactic vignettes. Building upon the lessons from *Hunter Warrior* and other pre-DO MCWL experiments can provide baselines to construct further experimentation. Truly capitalizing the work from *Hunter Warrior* into more advanced swarm TTPs is not new. LtCol Jon Hoffman argued that the *Hunter Warrior* AWE did not go far enough, and provided well-articulated arguments for further developing the concepts in the AWE.[207] Within that concept, and crucial for Marine Corps' acceptance, would be the description of organizational requirements, training and education requirements, and additional equipment required to enable the concept to mature.

1.   Organization

Organizationally, the same baseline for swarming concepts is already there; the Marine Corps rifle squad and platoon. The Marine Corps doesn't need to reorganize its

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[207] Jon. T. Hoffman, "Getting the Hunt into Hunter Warrior," *Marine Corps Gazette*, 82, 12, December 1998, 55-59. LtCol Hoffman's article provides the rebuttal to an earlier *Gazette* article which heavily criticized *Hunter Warrior*. Hoffman's article argued that the experiments should have continued, to include increasing the size of the LRCPs and having them actually hunt for enemy nodes vice remaining stationary and waiting for the enemy to come into our sensor range.

infantry battalions to conduct swarming operations or defend against the swarm. Just as in DO, the rifle squad could be at the heart of organizational baselines in swarming concepts for executing swarm tactics. The Chechen's used small units of various sizes to swarm the Russians, but similar sized units could be formed from reinforced squads and platoons augmented with snipers and anti-armor weapons. DO concepts have shown us that our NCOs and junior officers have the capacity and maturity to conduct dispersed operations. Likewise, those same NCOs and officers would be able to lead Marines in missions which called for the use of swarm tactics. DO has fermented the training and education of those NCOs.

2. Training and Education

Additional training time sends chills down manpower planner's spines. It places stress on the training and education establishments, who are already stuffing 19 pounds of stuff in the ten pound bag. However, the Marine Corps approach to DO has laid a foundation in training and education that produces Marines fully capable of executing swarm tactics. Under the DO concept, all corporal fire team leaders should attend the Tactical Small Unit Leaders Course (TSULC). Similarly, all sergeant squad leaders should attend the Infantry Squad Leaders Course (ISLC). Staff sergeants and senior sergeants who will be platoon sergeants attend the Infantry Unit Leaders Course (IULC). These courses were either created or revamped under the DO concept. Before DO, there was a short Corporal's Course, a Squad Leaders Course and then the basic grade related professional education. The DO concept has produced training packages which truly prepare these NCOs and staff sergeants for their leadership roles in today's dispersed, nonlinear operations. Ensuring that NCOs receive the same training developed for DO facilitates follow-on training with swarm TTPs. Just as many of our squad leaders are getting qualified to call in and provide terminal guidance for close air support for current combat operations, the same would be required to execute swarm tactics. Having established that we have the organization, C2, training and education and all the tools to build the doctrinal concept, are the technology for communications and logistical methods of sustainment for swarming on par with the rest?

3. Communications and Logistics

With all the advances in communications technologies for both voice and data, problems that we faced in earlier warfighting experiments have been solved. The communications suite that is being fielded to support DO is a suitable venue for the experimentation of swarming concepts and swarm tactics in a variety of terrain, be it urban, jungle or desert. The long pole in the swarming tent may not be communications, as it was just ten years ago. The challenge today is logistics resupply to the swarm force.

Logistics support to nonlinear dispersed operations on the non-contiguous battlefield presents challenges that still need to be solved. But, as with most concepts, logistics resupply is often solved after the concepts adoption, hopefully before the concept is used in combat operations. Yet, if we are able to sustain small sniper teams, or the DO battalions that are deployed in combat operations in Afghanistan, solving the puzzle for swarm unit's logistics sustainment is not insurmountable. Logistics resupply to units employing swarm tactics can be via preplanned caches, aerial resupply, or other indirect means. The point is that while logistics sustainment of swarm forces may present challenges, there are solutions and alternative methods distinct from the traditional logistics tails that support conventional force operations. Given what we know, an answer to our final research question is possible.

G. CONCLUSION

The research conducted here and in other scholarly and professional publications, coupled with military doctrine and experimentation, all but leads to the conclusion that there is potential to develop doctrinal swarming concepts. This is based on developing answers to the three research questions posed in Chapter I. First, that the Chechen Wars did provide additional information and lessons learned in relation to not only the war in general, but to this thesis' independent variables, regarding the use of swarm tactics. Second, reviewing doctrine and warfighting experiments has confirmed the existence of doctrinal void in the area of swarm tactics, which implies a need to construct doctrinal swarming concepts, engage in experimentation, and promulgate swarm TTPs in doctrine and training. Finally, with the implementation of the DO concept, our knowledge from

the first two research questions and previous scholarly research on swarming, a potential future swarming doctrine concept foundation is set. This would allow Marines and other forces to employ swarm tactics offensively and defend against and repulse enemy swarms. The only thing left for us to do is "do it."

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