14. ABSTRACT
Cities have continued to develop into complex, adaptive systems, supporting previously unimaginable densities of people. As America's Expeditionary Force in readiness, the Marine Corps must be prepared to operate in and around complex urban environments with massive human populations. Facing personnel and budgetary cutbacks, the Marine Corps must identify requirements to operate in and around modern mega-cities. Leveraging history, whole-of-nation support, training, and professional military education programs, the Marine Corps must prepare our leaders to operate in and around modern urban battlefields.

16. SUBJECT TERMS
Urban warfare, metropolis, megalopolis, urbanization, conurbation, littoral, joint doctrine, ship to objective maneuver, range of military operations

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19a. NAME OF RESPONSIBLE PERSON
Marine Corps University / School of Advanced Warfighting

19b. TELEPHONE NUMBER (include area code)
(703) 432-5318 (Admin Office)
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TITLE:
Fighting in the Urban Littorals: 2025 and Beyond

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AUTHOR:
Major Richard A. Rosenstein Jr.

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Mentor: WRAY R. JOHNSON, PHD

Approved: [Signature]

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THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS SCHOOL OF ADVANCED WARFIGHTING OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.
Title: Fighting in the Urban Littorals: 2025 and Beyond

Thesis: Leveraging history, whole-of-nation support, training, and professional military education programs, the Marine Corps must prepare our leaders to operate in and around modern urban battlefields.

Discussion: Cities have continued to develop into complex, adaptive systems, supporting previously unimaginable densities of people. As America's Expeditionary Force in readiness, the Marine Corps must be prepared to operate in and around complex urban environments with massive human populations. Facing personnel and budgetary cutbacks, the Marine Corps must identify requirements to operate in and around modern mega-cities. Leveraging history, whole-of-nation support, training, and professional military education programs, the Marine Corps must prepare our leaders to operate in and around modern urban battlefields.

The Marine Corps Combat Development Initiative on Ship-To-Objective Maneuver (CDI STOM), dated May 16, 2011, describes the application of STOM in the global littorals and "mega-cities." Using Shanghai (17.8 million), Jakarta (9.6 million), and Mumbai (12.5 million) as examples of massive population centers in the urban littorals, CDI STOM suggests the Marine Corps must be able to operate in and around these environments, conducting the full spectrum of military operations. While these cities are in the littorals, the Marine Corps has conducted sustained operations as deep as Fallujah, Iraq, and Musa Qala, Afghanistan - depths of 360 and 527 miles respectively. These distances encompass nearly all of the world's urban population.

Considering aspects of the range of military operations from WWII, Korea, Vietnam, Iraq, and Afghanistan, the Marine Corps must develop the commanders coup d'oeil, his inner-eye, for operations in and around modern mega-cities. Urban operations doctrine must be reexamined and rewritten in accordance with JP 3-06 and FM 3-06. After developing and publishing a contemporary, relevant doctrine on urban operations, this material must be presented in all levels of professional military education (PME). Schools from the grade of Sergeant to Major must add urban operations instruction and practical application to the curriculum. In addition to the academic PME, the practical PME (training) needs to improve urban operations instruction and training. Finally, the Marine Corps must embrace the concept of "whole-of-nation" support, and incorporate networks of professional subject matter experts to improve knowledge on the nature of modern day and future urban environments.

Conclusion: Marines have found themselves unprepared for conflict in the past. As we face an era of fiscal austerity, we must be smarter in how we prepare to serve as America's Expeditionary Force. Having the corporate knowledge and ability to operate in the urban littorals includes being able to operate in and near a modern mega-city. Reinvigorating our urban operations doctrine, adding additional courses to every level of PME, and leveraging whole-of-nation approaches will greatly prepare us to execute the range of military operations across the globe. This responsibility is no small order, and will require a refocusing beyond our amphibious roots. We must look to our history in places like Hue City, Mogadishu, Haiti (1915-1922), and the Dominican Republic (1916-1924), and understand how the situation has been changed by the creation of massive densities of human populations.
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The Central Importance of Cities

Cities have played a central role in warfare for time immemorial. From the city-states in the Peloponnesian War, the sacking of Rome by the Visigoths, Napoleon's invasion of Russia in 1812, the American Civil War, two world wars, and countless other wars, the world has seen every level of combat intensity in cities. Cities have continued to develop into complex, adaptive systems, supporting previously unimaginable densities of people. As America's Expeditionary Force in readiness, the Marine Corps must be prepared to operate in and around complex urban environments with massive human populations. Facing personnel and budgetary cutbacks, the Marine Corps must identify requirements to operate in and around modern megacities. Leveraging history, whole-of-nation support, training, and professional military education programs, the Marine Corps must prepare our leaders to operate in and around modern urban battlefields.

The United Nations estimates the world population at over seven billion people today, and is expected to reach eight billion between 2025 and 2030. As of 2008, over 50 percent of the world's population lives in a city. By 2050, it is estimated that 70 percent of the world's population will live in a city. Today there are more than 300 cities with a population greater than one million people. As time passes, the growth and urbanization of the world's population will only increase, and become significantly more complex in the future. Many of these mega-cities are in the littorals.
Whether conducting conventional warfare, counterinsurgency warfare, or humanitarian assistance/disaster relief, littoral cities must prominently figure in the Marine Corps vision of future warfare. Littoral cities played a prominent role in past conflicts and will play prominent roles in the future. Consider the following cities and their populations: Tokyo (1940: 6.8 million, 2011: 35.6 million); Karachi (1950: 1 million, 2011: 12.9 million); Seoul (1950: 1 million, 2011: 9 million, conurbation: 24 million); Manila (1945: 684,000, 2011: 11.6 million); and Baghdad (2003: 6 million, 2011 7.2 million). By comparison, New York City has a population of 8.1 million. With conurbation the population is 22 million. Each of these cities (with the exception of Karachi and New York City), has seen high intensity combat since WWII.

The make-up of urban geography is as complex as the systems that sustain it. City design varies greatly across the world, and typically includes massive slums. It is estimated that 40 percent (2 billion people) of the world's urbanized population will live in slums by 2030. The infrastructure, density, economics, and human geography provide for wicked problems sets during conflict or disaster, regardless of the intensity. As demonstrated during previous conflicts and disasters, the non-combatants don't leave the city, exacerbating military operations.

As described in Joint Publication 3-06, *Urban Operations* (published in 2002), the multidimensional aspects and types of urban battlefields are described. These battlefields are best described with the following figures:
Figure 1: Urban Battlefields

The figures fail to portray impoverished areas (such as slums and favelas), and do not adequately represent the density of people, systems, and logistics required to sustain modern cities. Critical infrastructure is not depicted, despite the certainty that ports, airfields, and power plants will be found in these cities. Additionally, these graphics do not adequately depict the phenomena of conurbation. As the first joint doctrine on urban operations, JP 3-06 provides a basic framework to understand the complexity of future urban operating environments. It is not sufficient, and more work must be done.

The Marine Corps Combat Development Initiative on Ship-To-Objective Maneuver (CDI STOM), dated May 16, 2011, describes the application of STOM in the global littorals and "mega-cities." Using Shanghai (17.8 million), Jakarta (9.6 million), and Mumbai (12.5 million) as examples of massive population centers in the urban littorals, CDI STOM suggests the Marine
Corps must be able to operate in and around these environments, conducting the full spectrum of military operations. While these cities are in the littorals, the Marine Corps has conducted sustained operations as deep as Fallujah, Iraq, and Musa Qala, Afghanistan - depths of 360 and 527 miles respectively. From the littorals to 360 or 527 miles deep covers the majority of the urbanized world and population. Is the Marine Corps truly prepared to operate in and around a modern metropolis or megalopolis?

**Experience in Cities**

The Marine Corps has fought in cities across the globe in numerous conflicts. Following the Spanish American War, the United States deployed Marines to the Caribbean, to fill a leadership vacuum left by the Spanish. Fighting small wars in Haiti, the Dominican Republic, and Nicaragua, Marines found themselves fighting insurgents in cities, agricultural areas, and jungles. In the Dominican Republic, President Wilson ordered the implementation of a military government. "As in Haiti, the Marines used a combination of civil and military measures to pacify the population and defeat the insurgents." While Marines used both civil and military measures in Haiti and the Dominican Republic in the early 1900's, more civil measures were applied in the Dominican Republic than Haiti, specifically the implementation of an education program. When the earthquake struck in 2010, why was Haiti devastated, while the Dominican Republic barely made the news? Did educational development implemented by Marines in the early 1900's contribute to the success of the Dominican Republic and the collapse of Haiti? Cities, and the methodologies we use when operating in them, matter.

**WWII: Manila**
The Japanese invasion of the Philippines had a tremendous impact on Manila. After delaying the Japanese advance down Luzon, US forces declared Manila an open city, prior to the Japanese reaching the city. Manila was occupied by the Japanese from 1942 to 1945. The people of Manila suffered under the Japanese occupation, culminating in a massacre of an estimated 100,000 Philippino's (approximately 10% of the population of Manila) before Allied forces retook the city in March, 1945, after a month of fighting for the city. The Allies received significant assistance from Filipinos, due to the existing US/Filipino relationship. The ratio of Allied casualties to civilian casualties in Manila was 1:100, a casualty ratio that is politically unfeasible today. Did General MacArthur's experience as the Field Marshal of the Philippine Army and personal relationship with Philippine President Quezon, provide him with the requisite knowledge and understanding of the city to retake the Philippines and Manila with minimal civilian casualties? Would the destruction of Manila been worse than it was, if the Allies didn't recapture the city when they did? General MacArthur's experience in the far east certainly impacted both his campaign in the Pacific, and how he administered the occupation of Japan.

**Occupation of Japan**

The post-WWII occupation of Japan brought many changes to Japan. A constitutional democracy was established, as well as sweeping social and economic changes. While the Marine Corps did not play a significant role as the occupation force, the US Army undoubtably faced significant challenges with the demilitarization effort, economic reform, rebuilding, crime, and administration. Despite his vast experience working closely with the Philippine Government before the war, the staff structure that General MacArthur entered the occupation of Japan with 1945 was completely restructured by 1946, as the staff was dysfunctional in the performance of
occupation duties and basic staff coordination. Having served closely with the Philippine government in the interwar years as the Field Marshal of the Philippine Army, and then as Supreme Commander of Allied Forces in the Southwest Pacific Area, General MacArthur's staff had to learn many lessons in the first year of the occupation, while dealing with large population densities and socio-economic reforms.

**WWII in Europe**

The war in Europe had distinct differences with the war in the Pacific. One of the most striking differences was the amount of combat in urban environments. Sedan, Dunkirk, Dieppe, St. Lo, Leipzig, Munich, and Berlin each experienced heavy combat operations (on the Western Front alone). Sedan experienced the German breakthrough in 1940, while St. Lo experienced the Allied breakthrough in 1944. Many cities saw fierce, house to house combat. Massive aerial bombardments, armored forces, and artillery firepower reduced some cities to rubble. The European Theater had more modern cities with significant population densities than the Pacific Theater, but both theaters saw high intensity combat operations in areas with high population densities.

**Occupation of Germany**

While MacArthur was solving occupation problems in the Pacific, the Allies were dealing with similar occupation problems in Germany. In addition to the challenges of reconstruction, demilitarization, and socio-economic reforms, the Allies in Europe had to contend with a divided Germany. The Soviets, French, British, and US each had occupation zones in post war Germany. How these zones were administered differed greatly, as evidenced by the distinct difference between East and West Germany. Today, Germany stands as the economic powerhouse of
Europe. Is German economic success today due to foundations laid by the Marshal plan?

Whether that's true or not, it is certain that how US forces conduct an occupation are likely to have consequences for generations to come.

**Incheon and Seoul**

While the US still maintained occupation forces in both Europe and Japan, the North Koreans invaded South Korea. Spearheaded by 1st Marine Division, Operation Chromite was a deep, amphibious envelopment at Inchon, which led to heavy in Seoul. This operation led to the Allied forces driving the North Koreans out of South Korea. In the process, Seoul was virtually destroyed. How often do we, the Marine Corps, study urban operations in Seoul, 1950? Do we believe that operations like CHROMITE are relevant today? As mentioned earlier, the population of Seoul in 1950 was approximately one million people. With conurbation, the population estimate is over 24 million people. The Marine Corps is not prepared to operate in an urban environment with this population density. In addition to combat operations, the US has invested significantly in South Korea. The comparison between South and North Korea are stark. Today, South Korea's GDP is approximately $1.5 trillion, or 13th in the world.17

**Hue City**

Cities were Ho Chi Minh's focus during the Tet Offensive in 1968. The NVA's ability to launch a widespread offensive against cities and government centers led to a strategic loss for the United States. Despite tactical success against the North Vietnamese forces, the offensive changed public perception of the war, eventually leading to the US withdrawal. The most well known Marine experience during the Tet Offensive was in Hue City (population
in 1968: 140,000, in 2011: 950,000). While US forces were able to root the North Vietnamese out of the city, an estimated 5,800 civilians were killed, and much of the city was destroyed. Marines, fighting with the Army of the Republic of Vietnam, cleared Hue City, house-by-house. Ho Chi Minh and General Giap realized the importance of cities, why didn't US forces in Vietnam recognize the same importance?

**Fallujah**

The Marine Corps experienced house to house and street by street fighting again in Fallujah, 2004, during Operation PHANTOM FURY. The population of Fallujah was estimated to be 300,000 people in 2004. After an intensive information operations effort, it is estimated that 70-90% of the population (30,000 to 90,000 civilians remained) fled the city, leaving approximately 3,000 to 4,000 insurgents in the city. The battle of Fallujah has been compared to Hue City, and claimed to be the bloodiest combat for US forces since Vietnam. Fallujah sustained significant damage during the battle, and has taken years to rebuild. Fallujah is not a modern metropolis, and proved to be a challenging urban battlefield. One estimate suggests that approximately 200,000 people fled Fallujah, becoming internally displaced persons (IDPs). Fallujah was transferred to Iraqi authority and control late in 2007. In January, 2012, several articles were published blaming US weaponry for high rates of birth defects, linking Fallujah and Fukushima to "the Global Radiation Catastrophe." While US forces transferred authority and control of Fallujah to the Iraqi government in 2007, the legacy of combat operations remain undetermined.

**Marjah**
While Marines were fighting in Al Anbar Province of Iraq, there was an ebb and flow to the contest to control Afghanistan. Marine (and ISAF) forces were deployed in a largely piecemeal fashion until the surge of 2009. Marine Expeditionary Brigade-Afghanistan (MEB-A) took control of Helmand Province, committing the largest force ever seen in Helmand Province during Operation Enduring Freedom (OEF). In July, 2009, MEB-A commenced Operation KHANJAR (Strike of the Sword). This operation was the largest Marine operation since Fallujah, involving approximately 4,000 Marines and 650 Afghans. Taliban control was challenged and defeated in Garmsir, Nawa-I-Barakzayi, Khan Neshin, and Dahaneh. This operation has been overshadowed by Operation MOSHTARAK (Together), which was executed in February, 2010. MOSHTARAK took place in Marjah and the surrounding areas. Population estimates are disputed, and vary from 85,000 to 125,000 people living in the city of Marjah and outlying agrarian areas. MOSHTARAK was a multinational, joint operation involving Canadian, French, British, and US forces. While the Taliban were defeated in the area, the value of Marjah and it's outlying areas are questionable. Poppy production can easily shift to other locations, and significant portions of the poppy crop are grown and processed in other areas of Helmand Province. This operation and the subsequent delay in rooting out Taliban forces was referred to as a "bleeding ulcer," by General McChrystal. The largest population centers in rural Afghanistan have proven to be vexing problems to solve, as far as using standard military and inter-agency solutions.

Coup d'oeil in the City

Considering aspects of the range of military operations from WWII, Korea, Vietnam, Iraq, and Afghanistan, how can the Marine Corps develop the commanders coup d'oeil, his inner-
eye, for operations in and around modern mega-cities? The Marine Corps must develop its officers and Staff Non-Commissioned Officer leadership to conduct the range of military operations in dense, urban environments. To ensure we are prepared, several low-cost efforts must be further developed and implemented immediately. First and foremost, urban operations doctrine must be reexamined and rewritten in accordance with JP 3-06 and FM 3-06. After developing and publishing a contemporary, relevant doctrine on urban operations, this material must be presented in all levels of professional military education (PME). From squad leaders course, SNCO Academy, Expeditionary Warfare School, Command and Staff College, and the School of Advanced Warfighting, instruction and practical application covering urban operations must be added to the curriculum. In addition to the academic PME, the practical PME needs to improve instruction regarding urban operations as well. Finally, the Marine Corps must embrace the concept of "whole-of-nation" support, and incorporate professional subject matter experts to improve our corporate knowledge on the comprehensive and challenging nature of modern day and future urban operations.

**Doctrine**

The oft quoted General Krulak changed the Department of Defenses paradigm with respect to urban operations. "The threat of the early 21st Century will not be the son of Desert Storm; it will be the stepchild of Chechnya." Since the development of the three-block war concept, the Marine Corps seems to have contributed very little to the joint community in preparing to deal with this problem set in future conflict. Several key elements are missing from current urban operations doctrine. As discussed in several RAND studies, doctrine must develop the concepts of decisive points, critical points, and density. Decisive points are defined as a
"point that has value due to its potential influence in unbalancing a center of gravity." Critical points are defined as a "point or other element that could have an extraordinary influence on the achievement of objectives." Density is defined as "the number of elements per unit space or the quantity of activities per unit time." While elements of these definitions are alluded to throughout joint publications, they are not particularly defined. Each of these concepts are important to develop our understanding of the complexity of urban operations. A series of non-military vignettes can effectively illuminate these points, such as the cholera epidemic in London, 1854. The development of urban operations doctrine must also integrate Joint Task Force operations, multi-national operations, and interagency operations. Integrating these types of operations into one urban operations doctrine will assist small unit leaders, planners, students, and commanders to better understand urban operations, much like FM 3-24 improved service men and women’s understanding of counterinsurgency operations. A more practical, executable MCRP could be published in addition to the larger doctrinal publication.

Professional Military Education

Examining the EWS, CSC, and SAW curriculums, there are no formal periods of instruction regarding urban operations. While "Warfighting from the Sea," "Culture and Interagency Operations," and the "Operational Arts," seminars may cover aspects of urban operations, there is not a dedicated, focused seminar on this subject. EWS does conduct the Occupational Field Expansion Course (OFEC), this course includes a planning problem at the Washington Navy Yards, largely focused on Military Operations on Urban Terrain (MOUT) - a term which is outdated and limiting at best. There are many well documented cases, or vignettes, of urban operations that could easily be added as focused studies to each of these curriculum.
Simply looking at our own history would be sufficient. Seoul, Hue City, Mogadishu, Fallujah, and Marjah are each relevant examples of the complexity of urban operations. Adding detailed studies and guest presentations covering these historical case studies to infantry squad leaders school, SNCO Academy, EWS, CSC, and SAW would greatly prepare the Marine Corps for future conflict in the urban littorals. In addition to historic case studies, contemporary literature and studies regarding future urban conflict must be added to the curriculum. Using relevant RAND studies as a baseline, a course on the future of urban operations could be developed to enhance understanding of the complex nature in these operating environments.

**Whole-of-Nation Approaches**

The 2011 National Military Strategy make reference to the concept of "whole-of-nation" approaches five times in the strategy. In short, whole-of-nation approaches leverages national assets, informal networks of experts, and interagency capabilities to ensure national interests are met. One of the authors of the document, Lieutenant Colonel William Bowers (USMC), discussed the application of a whole-of-nation approach within the medical community. LtCol Bowers' brother, while serving in Afghanistan on a surgical team, communicated on a regular basis (via VTC) with a panel of surgeons at John Hopkins Hospital. Personal relationships and networks were leveraged to provide better care to wounded service men and women, and non-combatants. Developing similar approaches with urban operations has the potential to enhance our understanding of the challenges we face in future cities. Linking into the urban planner professors at MIT, the staff at FEMA, anthropologists, historians, and

**A Way Ahead**
Marines have found themselves unprepared for conflict in the past. As we face an era of fiscal austerity, we must be smarter in how we prepare to serve as America's Expeditionary Force. Having the corporate knowledge and ability to operate in the urban littorals includes being able to operate in and near a modern mega-city. Reinvigorating our urban operations doctrine, adding additional courses to every level of PME, and leveraging whole-of-nation approaches will greatly prepare us to execute the range of military operations across the globe.

In the words of the 82nd Congress,

"[The Marine Corps] must be the most ready, when the nation is generally least ready... to provide a balanced force in readiness for a naval campaign and, at the same time, a ground and air striking force ready to suppress or contain international disturbances short of large-scale war."\(^{33}\)

This responsibility is no small order, and will require a refocusing beyond our amphibious roots.

We must look to our history in places like Hue City, Mogadishu, Haiti (1915-1922), and the Dominican Republic (1916-1924), and understand how the situation has been changed by the creation of massive densities of human populations.

Aside from the fiscal challenges we face in a less stable world, the Marine Corps faces additional changes in the DOD's focus on warfighting. Having fought in small wars for over 100 years, and currently fighting a "small war" in Afghanistan, the sine wave\(^{34}\) will return, lessening the nation's interest in fighting small wars, or messy conflict in urban terrain. We cannot allow this intellectual apathy to return.
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