

# Armored Operations in Urban Environments: Anomaly or Natural Condition?

by Dr. Robert Cameron

For much of the past century, mounted maneuver forces experienced urban combat as an unwelcome deviation from an otherwise comprehensive mission set. Too often, doctrine treated military operations on urbanized terrain (MOUT) as special cases. Thus, when circumstances forced mounted units to operate in cities, they did so without proper preparation, leaving soldiers to improvise tactics, techniques, and procedures (TTP) while in combat. These trial-and-error measures resulted in effective MOUT capabilities, but at the cost of lives and materiel. Moreover, once the need for these skills disappeared, the temporary importance attached to urban combat faded, and later generations of mounted soldiers had to relearn the same lessons under fire.

Today, armor organizations are conducting urban combat and counterterrorism operations daily. After three years of conflict, they have become adept at such actions. This expertise must not be allowed to wither. Global urbanization trends and national interests ensure the future employment of mounted troops in urban areas. The armor community needs to build on the lessons learned to date and integrate these lessons into routine training. Until MOUT becomes a normal function for mounted forces, the historical pattern of neglect and focus will continue.

## World War II

The year 1940 found the U.S. Army in the midst of mobilization and modernization. Part of this preparation for war included creating the armored force, charged with forging a mecha-

nized capability equivalent to that demonstrated by the Germans. Early armored force training and doctrine, however, focused on basic skills. Urban combat received scant attention — a condition that remained largely unchanged before the General Headquarters maneuvers of 1941.

These training activities constituted the largest peacetime maneuvers in U.S. history. They provided field experience for all ranks and tested the readiness of America's field forces, particularly its new armored divisions. However, armored units demonstrated a lack of street fighting savvy. Tanks tended to attack enemy forces in towns without waiting for artillery or infantry support. Instead, they simply drove into the streets, where they became disoriented, isolated, and easy targets for defending infantry and antitank weapons.<sup>1</sup>

Criticism of these practices did not trigger the development of effective MOUT doctrine. The armored force's field manuals and training literature discouraged the use of tanks in built-up areas. As late as January 1944, armored division doctrine acknowledged the possibility of combat in urban areas, but it offered little guidance on how MOUT should be conducted, particularly in large cities. Tanks were encouraged to operate outside city confines to minimize the risk of losses.<sup>2</sup> Similarly, armored training included some instruction in urban combat, but it remained limited to individual soldier skills.<sup>3</sup>

The minimal MOUT training and doctrine available to armored formations did not prepare them for fighting through the large





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number of cities, towns, and villages that dotted Western Europe. Therefore, each armored division developed its own standard operating procedures. During the drive across France, and again during the final push into Germany, rapid movement and massed firepower characterized armored MOUT. Tanks seized key positions around small towns from where they fired into the defenders. Tank-infantry teams then moved through the streets firing at known or suspected targets to create terror and confusion.<sup>4</sup>

These tactics worked well against disorganized defenders in small urban enclaves, but not against prepared defenses in larger cities. In October 1944, American forces attacked the fortified city of Aachen with considerable fire support but only a single infantry regiment, reinforced with tanks and tank destroyers. Careful planning and detailed reconnaissance preceded the attack, which progressed systematically through the city. The brunt of the fighting was borne by combined arms teams built around an infantry company, supported by bazooka teams, flamethrowers, and tanks or tank destroyers. These teams advanced with the infantry leading and identified enemy positions. The vehicles then used their firepower to force the defenders into streets or basements, where they were eliminated by massed firepower or flamethrowers and explosives. The city surrendered after nine days.<sup>5</sup>

Aachen became a model for combined arms MOUT operations; however, the quality of tank-infantry cooperation demonstrated there was not universal. Infantry divisions did not routinely train with the separate tank battalions that supported them.

In combat, teamwork suffered further from the inability of the tanks and infantry to communicate via radio. Too often, battlefield communication devolved into improvised means that often failed. This problem was largely corrected by mounting field phones on tanks, permitting soldiers to talk directly to the vehicle commander.<sup>6</sup>

### **From Korea to Vietnam**

After the war, armor doctrine incorporated MOUT tactics and lessons learned in all theaters of operations. This emphasis was not paralleled in training. Between 1945 and the onset of the Korean War in 1950, Army readiness declined and the ability to conduct combined arms, urban operations diminished.<sup>7</sup>

The Korean War, however, did not require sustained urban combat. Fighting in built-up areas tended to occur in small villages, with the important exception of Seoul. In September 1950, this city became the target of United Nations’ forces, following the successful invasion at Inchon. Responsibility for taking the city fell to a Marine Corps division, which faced a series of fortified strong points throughout the city, each supported by snipers, machine guns, antitank weapons, and often a self-propelled gun or tank. As at Aachen, close cooperation between infantry and tanks systematically destroyed each strong point. Marine riflemen guided tank movements and identified targets. The tanks breached the strong points with firepower, overran them, and relied on supporting Marine infantry to eliminate survivors. In this manner, armor sustained the momentum of the Marine advance and much of the city was cleared in four days.<sup>8</sup>

After the Korean War, the U.S. military focused its attention on Europe. There, the onset of the Cold War increased the danger of conflict with Warsaw Pact forces. However, in the 1950s, reliance on atomic weapons, rather than conventional forces, to deter Soviet aggression did little to encourage the development of combined arms MOUT doctrine.

The following decade, America became immersed in counterinsurgency operations in the Republic of South Vietnam. For much of this conflict, fighting occurred outside population centers. Until 1968, the cities remained safe havens, largely immune from the sometimes bloody engagements fought elsewhere. However, in that year, communist forces launched the Tet offensive, targeting urban areas to discourage American popular support for the war.

Tet opened with a series of simultaneous attacks throughout South Vietnam. American and South Vietnamese forces reacted with counterattacks that generally quickly repulsed the communist forces. However, the imperial city of Hue became the center of protracted street fighting for nearly a month. There, North Vietnamese infantry overran much of the city and established strong points. U.S. Marine Corps quick reaction forces responded shortly after the initial attacks, but they lacked MOUT experience. One battalion commander sought to correct this deficiency by hurriedly reviewing urban combat manuals. Generally, however, company teams arrived piecemeal and simply drove their truck columns into the city until ambushed.<sup>9</sup>

The survivors reorganized and began to attack North Vietnamese strong points ensconced among buildings and walled compounds. Tactics suited to jungle operations did not work in the streets of Hue. The Marines suffered heavy losses, particularly among junior leaders, while improvising new tactics suited to their environment. Finally organized into combined arms teams of riflemen, mortars, machine guns, recoilless rifles, and tanks, Marines began systematic block-clearing operations. Tanks provided direct fire support, moving with their dismounted escorts to engage targets identified by other team members.<sup>10</sup>

These tactics worked, but the city fell after 25 days of intense combat, which generated heavy casualties among the Marines and the large civilian population that remained. The final victo-

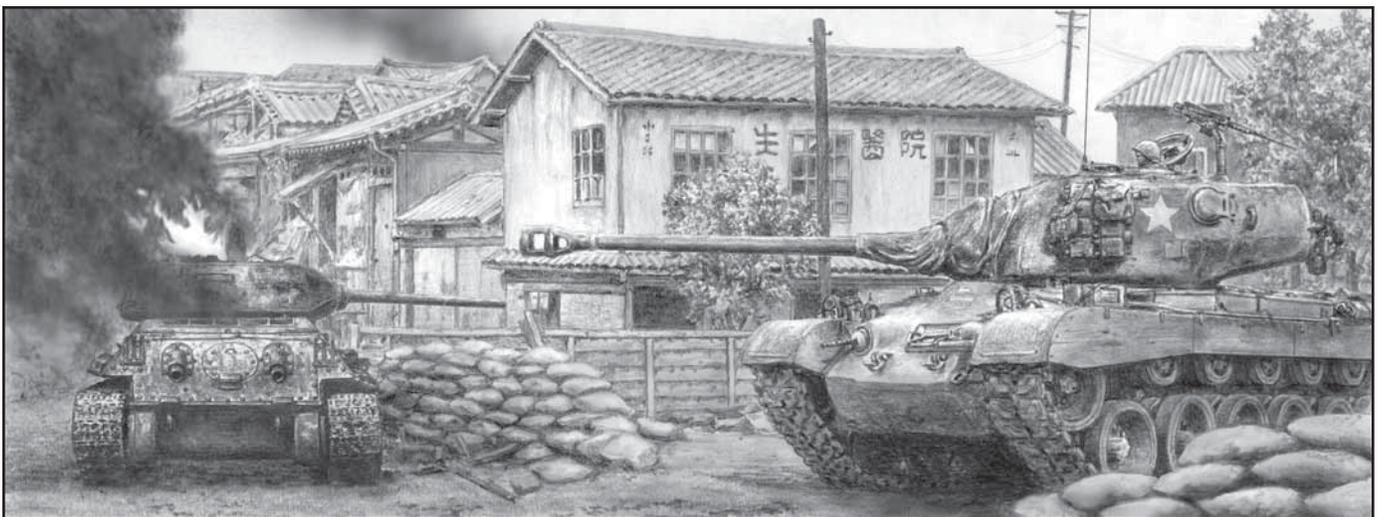
ry owed much to the quality of the Marine Corps forces. Their training and unit cohesion permitted them to adapt to an unfamiliar environment under fire, forge appropriate tactics, and refine these tactics at the enemy's expense. Although noteworthy achievements, they exemplified the loss of MOUT expertise similarly obtained during World War II.

## Cold War

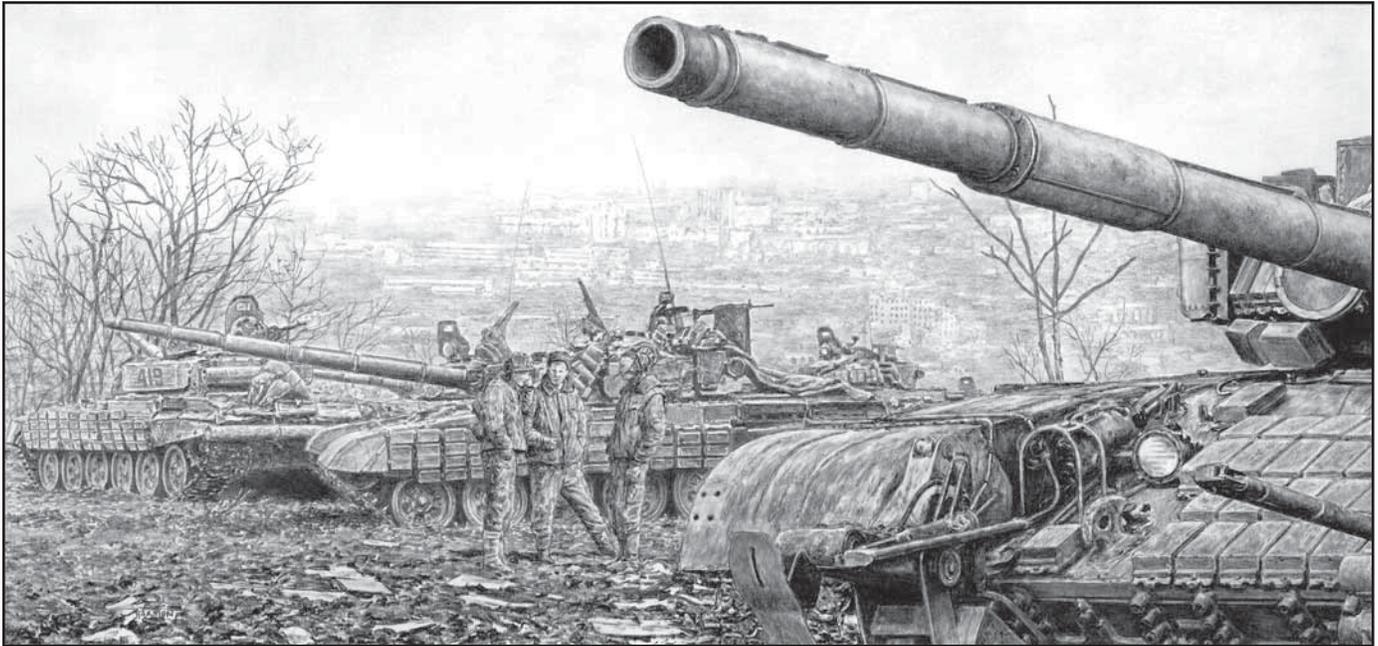
After Vietnam, America's military focus returned to the defense of Central Europe from a possible Warsaw Pact invasion. Combined arms operations and the application of firepower and maneuver received considerable doctrinal attention, but urban operations remained the infantry's responsibility. Armor's role lay in maneuvering outside built-up areas and providing fire support as necessary. The 1979 publication of U.S. Army Field Manual (FM) 90-10, *Military Operations on Urban Terrain (MOUT)*, reinforced this impression. It provided detailed guidance for infantry to fight in cities, but relegated the role of armor to a short appendix. The latter warned readers of the dangers to armored vehicles in urban areas while simultaneously noting that mounted units should expect to fight in them.<sup>11</sup>

The likelihood of employing armor in built-up areas increased with urbanization in the Federal Republic of Germany. By the 1980s, each American brigade sector, on average, included 25 villages and at least one mid-sized town.<sup>12</sup> Nevertheless, one NATO analyst noted, "It is also questionable whether there is adequate training, whether adequate thought has been given to the adaptation of new weapons, equipment, and munitions to the requirements of MOUT and, perhaps most importantly, whether the career soldier has come to an acceptance of the importance of MOUT."<sup>13</sup>

In the absence of published doctrinal guidance, military personnel sought to generate their own doctrine. The pages of the service journals, including *ARMOR*, were filled with articles outlining concepts for the employment of mounted units in urban areas, ranging from generic principles to detailed tactical guidance at the platoon level.<sup>14</sup> These articles stimulated discussion and raised the visibility of MOUT in the armor community, but analysis of urban operations remained largely an intellectual exercise without parallel developments in training. With the



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exception of the Berlin Brigade, mounted units continued to focus training on maneuver and gunnery.

### Post-Cold War

The collapse of the Soviet Union opened a new era no longer dominated by superpower rivalry. Instead, regional crises replaced the threat of a third world war, and U.S. military forces found themselves providing humanitarian assistance and stability operations to areas wracked by factional or ethnic violence. The military’s posture also changed from forward deployment to force projection, requiring access to ports and airfields abroad for all overseas movements. These developments thrust American soldiers into cities wherever they deployed.

Operations other than war triggered training and doctrine changes intended to support peacekeeping rather than warfighting. Teamwork with psychological operations and civil affairs teams replaced analysis of Soviet tactics and the application of unrestrained firepower. Doctrinal publications included entire sections dedicated to stability and support operations, which were mirrored by related articles in the service journals. This literature tended to focus on two dimensions: command and organizational issues related to peacekeeping; and the techniques associated with security, traffic, and crowd control.

MOUT doctrine, however, remained rooted in World War II. It reflected neither the changing nature of the American military nor the newer weapons available. Therefore, in Haiti, Bosnia, Kosovo, Macedonia, and Somalia, U.S. forces entered volatile urban areas, where the possibility of combat was high, equipped with outmoded tactics. In Somalia, this possibility became reality after American forces undertook military operations to eliminate the threat to United Nations’ food deliveries. The climactic street battle in Mogadishu in October 1993 resulted and 91 American soldiers were killed or wounded when an attempt to apprehend a hostile faction’s leadership went awry.<sup>15</sup>

The Russian experience in Chechnya further demonstrated the possible consequences of conducting urban operations without appropriate training and doctrine. In December 1994, a hastily

assembled force of inexperienced soldiers entered Grozny to end Chechen aspirations of independence. The Russians expected a bloodless operation, relying on a show of force to deter resistance. The Chechens, however, prepared a sophisticated, nonlinear defense designed to exploit Russian vulnerabilities. Employing small teams equipped with rocket propelled grenades (RPGs), snipers, and small arms, the Chechens quickly destroyed a motorized brigade and decimated the combat effectiveness of other Russian units during several weeks of urban combat.<sup>16</sup>

The failure to end Chechen resistance triggered Russia’s withdrawal in 1996. Over the next three years, the Russians reinstated MOUT training and updated their urban combat doctrine. In particular, they analyzed the combined arms street-fighting tactics developed by the Red Army during World War II. In 1999, the Russians applied similar tactics — modified to reflect current weapons and technology — when they again attacked Grozny. They fared much better and took the city without the protracted fighting that characterized earlier operations.<sup>17</sup>

By the late 1990s, the Somalia and Chechnya experiences had encouraged a long overdue update to American urban combat doctrine. However, training programs and guidance did not yet reflect the heightened interest in MOUT. Tank companies participating in Joint Readiness Training Center rotations continued to plunge into the mock city without support or reconnaissance — much like their 1941 forebears had done.<sup>18</sup>

Fort Knox opened a MOUT training site in 1999 optimized for heavy vehicles, but two years later, its principal customers remained infantry and Special Forces. For most armored soldiers, few opportunities existed to train the combined arms tactics that doctrine indicated were vital to success in urban environments. MOUT awareness was high, but related training remained an elusive target.

### Operation Iraqi Freedom

The greater doctrinal emphasis given to urban combat ensured a degree of MOUT preparedness among mounted units operat-

ing in Iraq. However, the extent of preparation varied. Some tank units obtained exhaust shields to permit infantry to operate in close proximity to the Abrams tank, while others did not. At least one armor task force altered vehicle load plans, shortened battle sight ranges, and trained to scan for targets among the upper stories of buildings. Some units actually practiced MOUT operations in the months before combat operations began.<sup>19</sup>

Conversely, scout HMMWVs were not hardened for urban combat, despite the negative experience of unarmored, wheeled vehicles in Somalia. Army tanks lacked the field phone that had been characteristic of fighting platforms since World War II. This absence complicated tank-infantry communications.<sup>20</sup> Overall, however, most armor soldiers anticipated their role as one of isolating cities, leaving their reduction to the infantry.

The drive to Baghdad exposed mounted forces to a series of sharp, close-range encounters with Iraqi soldiers, tanks, and paramilitary forces that often fought from urban ambush positions. American tank crews, trained for long-range, precision gunnery engagements, found themselves the targets of RPG showers, while fending off enemy soldiers with side arms.

Battle drills and task organizations optimized for desert conditions simply did not work in urban areas. One of the few tank-versus-tank engagements of the war occurred in the streets of Mahmudiyah at point-blank range. Training did not address such engagements and American gunners wondered in combat if they could safely or effectively fire sabot rounds at distances of less than 50 meters.<sup>21</sup>

Mounted forces soon adapted to their new operational environment. Much like their predecessors in prior wars, they developed under fire combat techniques that leveraged organizational, ma-

teriel, and leadership strengths. In 2004, these new MOUT skills were employed successfully in destroying terrorist safe havens. During the final assault on Fallujah in November, Marine Corps tanks advanced through the streets while riflemen cleared the adjacent buildings. Forward observers and snipers helped to guide the tanks forward into positions where their firepower could be applied against enemy strong points.<sup>22</sup>

Army operations paralleled this systematic application of teamwork and firepower. In Sadr City, combined teams of M1A2 SEP tanks and M2A3 Bradley fighting vehicles formed armored boxes that moved at slow speed through the city's grid-like street layout. Crews operated their vehicles buttoned up and used their onboard viewing devices to scan for targets, while mounted infantry secured key buildings. These roving, armored boxes moved steadily through the opposing militia with minimal loss.

At An Najaf, the combination of a large cemetery, narrow streets, and confining terrain mandated different tactics. Here, combined arms sections made up of a tank, Bradley, and up-armored HMMWVs predominated. The tank led to absorb the impact of any ambush with its armor. The Bradley provided flank and high-angle security, and the HMMWV covered the rear. Infantry advanced through buildings and alleyways on each side of the vehicle section. Similar innovations occurred wherever mounted forces were present.<sup>23</sup>

Current operations in Iraq are providing mounted maneuver forces with a broad range of urban combat experiences that reflect tactical, cultural, and technological considerations. Similar situations will be encountered again in the future. Therefore, the lessons learned to date need to be reflected in MOUT doctrine development and in the training given to individual sol-

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diers and units. The time for relegating MOUT to field manual appendices is over. Global urbanization is a confirmed trend, even in less-developed parts of the world where stability and reconstruction operations are likely. Urban areas will be common battlefield environments and their distinctive nature and characteristics need to be digested and understood at the soldier level to avoid the pitfalls of the past. The simple application of generic doctrinal principles to urban areas does not meet soldier needs.

Organizations fight the way they train — at least during the opening phases of a conflict. Combined arms tactics remain among the most effective means of tackling defended cities, but team members need to train and work together to understand how best to leverage strengths and protect vulnerabilities. As a central member of the combined arms team, armor also needs to view urban operations as standard activities and prepare in peace for what it will be required to execute in war. If MOUT is not integral to unit readiness standards and training schedules, future armor soldiers will find it difficult to dominate the battlefield while relearning the lessons of the past and present at a time, place, and tempo of the threat's choosing.



## Notes

<sup>1</sup>See for example the report of Major F.T. Searcy concerning actions of 13th Armored Regiment during first phase of Carolina maneuver, 21 November 1941, p. 2, NARA, Record Group 337, Entry 57D, Headquarters, Army Ground Forces, General Headquarters General Staff, G3 Section, Subject File 1940-March 9, 1942. For a comprehensive analysis of these maneuvers, see Christopher R. Gabel, *The U.S. Army GHQ Maneuvers of 1941*, Center of Military History, Washington, D.C., 1991.

<sup>2</sup>U.S. War Department, Armored Command Field Manual 17-100: *The Armored Division*, U.S. Government Printing Office, Washington, D.C., 15 January 1944, pp. 91-96.

<sup>3</sup>Historical Section, Army Ground Forces, Study No. 27, "The Armored Force Command and Center," 1946, pp. 53, 66, 76-78.

<sup>4</sup>For example see 4th Armored Division training memorandum dated 23 September 1944 included in U.S. Army Armor School, "Military History: Training/Tactics," CS-1251-M-Army-Knox-Sep 86-2C; "XII Corps Operations Notes No. 2," dated 7 September 1944, included in U.S. Army Armor School, "Military History: Training/Tactics," CS-1251-M-Army-Knox-Sep 86-2C.

<sup>5</sup>Christopher R. Gabel, "Knock 'em All Down": The Reduction of Aachen, October 1944," Combat Studies Institute, Fort Leavenworth, pp. 6-7, U.S. Army Armor Branch Archives; Christopher R. Gabel, "Military Operations on Urbanized Terrain: The 2d Battalion, 26th Infantry, at Aachen, October 1944," pp. 1-2, U.S. Army Armor Branch Archives; Charles B. MacDonald, *United States Army in World War II: The European Theater of Operations: The Siegfried Line Campaign*, Department of Army, Office of the Chief of Military History, Washington, D.C., 1963, pp. 251-306; Major William R. Campbell, "Tanks With Infantry," *Armored Cavalry Journal*, September-October 1947, pp. 50-51.

<sup>6</sup>General Board, "Study No. 50: Organization, Equipment and Tactical Employment of Separate Tank Battalions," 1945, pp. 6, 12; Historical Section, "The Armored Force Command and Center," pp. 59-60.

<sup>7</sup>For an understanding of the Army's readiness problem in the Korean War, see T.R. Fehrenbach, *This Kind of War: A Study in Unpreparedness*, Macmillan, New York, 1963.

<sup>8</sup>Matthew H. Fath, "How Armor was Employed in the Urban Battle of Seoul," *ARMOR*, September-October 2001, pp. 25-29.

<sup>9</sup>See Keith William Noe, *Battle for Hue: Tet 1968*, Presidio Press, Novato, CA, 1983; Ron Christmas, "A Company Commander Remembers the Battle for Hue," *Marine Corps Gazette*, February 1977, pp. 19-26; Lieutenant Andrew J. Lawler, "The Battle for Hue City," July 1999, MOUT Homepage website accessed on 31 March 2006: <http://www.geocities.com/pentagon/6453/hue3.html>; LTG Ernest C. Cheatham and LTG George R. Christmas, "The Battle for Hue," 23 January 1998, MOUT Homepage website accessed on 31 March 2006 at <http://www.geocities.com/pentagon/6453/hue1.html>.



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<sup>10</sup>Ibid.

<sup>11</sup>U.S. Army Field Manual (FM) 90-10, *Military Operations on Urbanized Terrain (MOUT)*, U.S. Government Printing Office, Washington, D.C., 15 August 1979, Appendix F.

<sup>12</sup>Monograph M-22-83, "Defense of Villages (A German Army "How to Fight" Guide from 1944) Applicable Today?" U.S. Army Armor Branch Archives, Fort Knox, KY, 7 December 1983, p. 1.

<sup>13</sup>John J. Mahan, "MOUT: The Quiet Imperative," *Military Review*, July 1984, p. 43.

<sup>14</sup>See for example MAJ Adolf Carlson, "Tanks in Urban Combat," *ARMOR*, March-April 1981, pp. 30-36; LTC Curtis V. Esposito, "Armor Operations in Built-Up Areas," *ARMOR*, July-August 1982, pp. 26-30; LTC William R. Betson, "Tanks and Urban Combat," *ARMOR*, July-August 1992, pp. 22-25.

<sup>15</sup>See MAJ Timothy Karcher, "Global War on Terrorism Occasional Paper 3: Understanding the "Victory Disease," From the Little Big Horn to Mogadishu and Beyond," Combat Studies Institute Press, Fort Leavenworth, KS, 2004, pp. 23-37; Mark Bowden, *Black Hawk Down: A Story of Modern War*, Atlantic Monthly Press, New York, 1999.

<sup>16</sup>Les Grau, "Russian MOUT Experience in Chechnya and Afghanistan: Lessons for American Armor," briefing delivered to Armor Center, 1999; Timothy L. Thomas, "The Battle of Grozny: Deadly Classroom for Urban Combat," *Parameters*, Summer 1999, pp. 87-102; Anatol Lieven, "The World Turned Upside Down: Military Lessons of the Chechen War," *Armed Forces Journal International*, August 1998, pp. 40-43.

<sup>17</sup>Timothy L. Thomas, "Grozny 2000: Urban Combat Lessons Learned," *Military Review*, July-August 2000, pp. 50-58; Olga Olikier, *Russia's Chechen Wars 1994-2000*, RAND Arroyo Center, Santa Monica, CA, 2001.

<sup>18</sup>JRTC Observer/Controller, MOUT lessons learned briefing presented during "The Tank in the MOUT Environment Symposium," on 18 December 2001, U.S. Army Armor Branch Archives, Fort Knox, KY.

<sup>19</sup>Team C, 3d Battalion, 15th Infantry Regiment, Task Force 1st Battalion, 64th Armor, "Operation Iraqi Freedom After Action Review Comments," 24 April 2003, posted on website <http://www.2ndbn5thmar.com/tisop/tireferences.htm>, accessed 30 March 2006.

<sup>20</sup>Note that Marine Corps tanks mounted field phone proved fragile in combat.

<sup>21</sup>3d Battalion, 4th Marines, "3/4 OIF Lessons Learned," 2003, website article accessed 31 March 2006 at <http://www.2ndbn5thmar.com/tisop/tireferences.htm>; Jason Conroy with Ron Martz, *Heavy Metal: A Tank Company's Battle to Baghdad*, Potomac Books, Inc., Dulles, VA, 2005, pp. 1-15.

<sup>22</sup>CPT R.J. Bodisch, "Charlie Company, 2d Tank Battalion After Action Report, Operation Al Fajr," 8 January 2005, posted on website <http://www.2ndbn5thmar.com/tisop/tireferences.htm>, accessed 30 March 2006.

<sup>23</sup>MG Peter W. Chiarelli, MAJ Patrick R. Michaelis, and MAJ Geoffrey A. Norman, "Armor in Urban Terrain: The Critical Enabler," *ARMOR*, March-April 2005, pp. 7-12; LTC Pat White, "Task Force Iron Dukes Campaign for Najaf," *ARMOR*, November-December 2004, pp. 7-12; CPT John C. Moore, "Sadr City: The Armor Pure Assault in Urban Terrain," *ARMOR*, November-December 2004, pp. 31-37.

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