Chapter Two

SHORTFALLS IN USMC URBAN GROUND COMBAT RECONNAISSANCE

DOCTRINE

To do the clearing of Hue correctly, the Marines first should have isolated the city [which was never completely done by either side as the western side of the urban area was left open]. Second, leaders should have selected the point at which to enter the built-up area. In this case, the selection was predetermined by the mission as we were told to immediately move on MACV headquarters. Third, “make the determination of your clearance technique. The point is, if you have the opportunity . . . to isolate the city and select your entry point, the reconnaissance determines the location of the key terrain that allows isolation. Reconnaissance determines how to isolate the city and [helps to] determine the entry point. Reconnaissance becomes critical in finding the route and determining how to clear the urban area.”

LtGen G. R. Christmas, USMC (Ret.)¹

Battalion commanders want to move quickly in urban areas, but platoon leaders want to do it slowly.

Brig. Gen. Gideon Avidor, IDF (Ret.)

General

There is much of pertinence to urban operations in existing USMC generic reconnaissance doctrine. However, formal, written urban

¹Paraphrased and quoted (in quotation marks) from Christmas (2001).
combat reconnaissance doctrine—the foundation (at least in theory) for the planning and execution of operations and training, the development of organizational structure, and the basis for equipment procurement—is essentially nonexistent. USMC manuals provide virtually no guidance. The NATO reconnaissance publication, *Reconnaissance and Surveillance Support to Joint Operations*, is similarly deficient. British and U.S. Army publications are more forthcoming but still fall far short of comprehensive discussions regarding how to perform reconnaissance properly in densely populated and built-up environments.

Written doctrine normally encompasses field practice based on combat experience and training. These proven, if at times dated, procedures are supplemented by input from those tasked to ensure that the doctrine reflects current requirements given the inevitable evolution of threats, technologies, and capabilities. Sometimes the doctrines of other nations’ militaries or procedures employed by related professions provide insights of value.

The concern with regard to urban reconnaissance today, especially involving reconnaissance in support of tactical ground combat operations, is that U.S. armed forces have virtually no experience on which to base written doctrinal guidance. The last operations involving extended ground combat in cities date from the Vietnam War. More modern episodes, such as Mogadishu, Beirut, or Khafji, lack the duration, large-scale participation by units other than special operations forces, or scope of relevant mission requirements to make them bases for general guidance. Lessons learned from other militaries’ recent operations in Chechnya, Israel, or elsewhere have some application, but differences in force capabilities, moral perspective, or mission limit their value in developing comprehensive tactical ground combat doctrine. Similarly, insights from fire, police, or other domestic services are generally only relevant to very specific elements of military operations.

The inevitability of future Marine urban operations suggests that it would be wise to address the current doctrinal dearth. Quality training based on sound professional judgment, historical study, and analysis of the contemporary security environment at first seems to be the primary source from which viable urban reconnaissance doctrine can be drawn. Yet notably, both the USMC and the U.S. Army
have developed an innovative potential source of doctrinal guidance that has perhaps heretofore not been sufficiently recognized. The Marine Corps Warfighting Laboratory (MCWL) and the several Army Battle Lab facilities conduct activities that involve the testing of tactics, techniques, procedures, and organizational structure in addition to technologies. The results of trials, exercises, and experiments run at these facilities provide a potential supplementary and complementary source of doctrine heretofore rarely available to militaries. Given that their charter encompasses consideration of future operational environments, doctrine developed based on laboratory activities could be especially pertinent to coming deployments of U.S. armed forces.

Deriving doctrine, including TTP, from these organizations must be done with caution, however. The results of these laboratories’ efforts should, from a doctrinal sense, be viewed as more illustrative than authoritative because of the virtual impossibility of conducting controlled experiments and achieving repeatable results typical of those completed in academic and scientific laboratory settings. “Generalizable” results in the sense of what would be accepted in accordance with established academic and scientific standards require definition of a hypothesis subject to experiment (e.g., “Procedure X constitutes a new window entry technique that saves time and reduces friendly force casualties”). The hypothesis is then tested repeatedly across an appropriately large sample of windows using multiple control groups, some applying the old procedure and others a new one. The control and experimental groups would ideally be similar in every respect aside from the difference in procedures. A sufficiently large sample of windows and use of different control and experimental groups would be employed to provide the repeatability of results necessary to transcend the experimental results from “exemplar” to “generalizable” for the general population of windows and persons who perform window entries. Otherwise, the results might only be applicable under certain conditions and for certain types of persons—e.g., “The new technique can only be said to be superior for entering bay windows with a force of Marines all of whom are taller than six feet, two inches.” Where such qualifications exist, they must be understood and made explicit to avoid drawing inappropriate and unsubstantiated doctrinal inferences or conclusions based on the “test,” “trial,” or “experiment.”
The observations and findings from the just-mentioned military laboratory efforts are nonetheless valuable in identifying what should be considered potential additions to doctrine. The current publication of “X-files” by the MCWL is a step toward disseminating such lessons. Steps should be taken to ensure that they are aggressively distributed to appropriate organizations for consideration and potential validation during training or field operations, after which those passing muster can be incorporated in relevant doctrine.

Much of current USMC reconnaissance doctrine and many traditional reconnaissance procedures apply to missions undertaken in modern urban areas. However, a danger exists that too great a reliance on tried-and-true methods will preclude development of innovative approaches in an environment that many agree puts extraordinary demands on collecting, synthesizing, and disseminating information. It is widely recognized, for example, that intelligence collection in densely populated areas is more reliant on human intelligence (HUMINT) than is normally the case in other environments. Yet, there is little guidance regarding how Marine commands should integrate this greater reliance on HUMINT into their collection and analyses processes. Material derived from such human sources—whether local nationals, enemy prisoners of war, or others—should be quickly and effectively incorporated with intelligence otherwise obtained by Marine combat reconnaissance personnel.

Savvy employment of urban target systems analysis and urban intelligence preparation of the battlefield can enhance the value drawn from such HUMINT. Just as these methods serve to identify high-payoff targets or key terrain, they can identify those demographic nodes (e.g., an influential religious or community leader) that can provide HUMINT opportunities with greater mission value than others.2

The above should be considered with the following qualification: While historical experiences during Hue and elsewhere have pointed to the unquestionable value of HUMINT during even intense urban combat, there is a greater likelihood that noncombatants will be in

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2Marine Corps Intelligence Activity (1998) provides a number of relevant questions to assist in determining both physical and demographic critical points in built-up areas.
hiding under such circumstances and will therefore be both less well informed and difficult to access than is the case during support or stability missions. It may thus be that HUMINT, while still vital, will play a lesser role during “Block 3” missions in urban areas (Evans, 2001).3

There is a need to further investigate the possibility that the complexity of urban areas may impose greater responsibility on Marine teams to provide analysis versus only reporting what is seen (e.g., via a SALUTE report). Limited lines of sight and related fleeting glimpses might make it impossible to observe more than a small fragment of an enemy organization. Marine leaders need to determine whether they prefer urban reconnaissance elements to report what is in their judgment “an enemy dismounted infantry squad reinforced with at least one armored vehicle” rather than what they have direct knowledge of: “two dismounts and sounds of a heavy vehicle.” Such a change would put a greater burden on more-junior (in terms of rank, but likely more-experienced) personnel. One intelligence officer noted that during Project Metropolis at George Air Force base (AFB), Calif., Marine “scout sniper teams were identifying individual enemy personnel and fire team–sized (four man) units. With swarms of these personnel swarming over a constricted battlefield, teams were required to focus on the critical information without getting bogged down on the minutia of individual enemy personnel” (Mangan, 2001). The same officer noted that his toughest challenge was “separating the ‘wheat from the chaff.’ . . . The amount of information passed was staggering!” (Mangan, 2001). The decision is not a straightforward one. What is “chaff” to one consumer of reconnaissance reporting (e.g., a regimental S-2) is “wheat” to another (for example, the infantry squad leader who will encounter the nearby enemy fire team). Doctrine writers would also have to determine whether demanding more analysis from reconnaissance team members could withstand a sudden expansion of the Marine Corps should a major conflict require such an unlikely growth. The training implications of such an expansion are obvious.

3“Block 3” refers to former Marine Commandant Gen Charles C. Krulak’s “three-block war” concept in which a unit operating in a city might be providing support to the population in one block (Block 1), conducting security tasks in the next (Block 2), and have Marines involved in combat in a third (Block 3) (Evans, 2001).
Related to this concern regarding the volume of information was the observation that the density of activities in urban areas is such that traditional reporting procedures may overwhelm reporting and analysis systems. A scout sniper platoon commander noted that “we train Marines to report what they see, and if [they are] trained to report in detail properly they will flood a unit with information” (Ziegler, undated, p. 4). One of his recommendations to redress the issue in part: “Comm[unications] procedures need to be in place for sending FLASH messages when the net is clogged with maneuver units [or reports of lesser importance]” (Ziegler, undated, p. 4). In the future, portable data-processing technologies may reduce the communications and reporting burden by permitting reconnaissance Marines to submit line drawings or imagery depicting multiple adversary positions in a single report sent by burst transmission. While this will help in overcoming problems related to busy frequencies, the burden on those receiving the information will in no way be reduced.

Urban environments may precipitate other fundamental changes. Increased densities of noncombatant and enemy personnel and reduced lines of sight mean that teams will often be in closer proximity to their targets than in open terrain. The chances of teams being detected are therefore greater than on terrain where Marines can detect approaching enemy at a greater distance. Restricted passageways and the possibility that the adversary has (deliberately or incidentally) cut off all viable means of escape will complicate avoiding contact or capture. It is possible that urban reconnaissance teams will have to be better armed (e.g., with grenades and Claymore mines) to abet breaking contact or to buy time while vital hardware or intelligence material is destroyed. Additionally, they may be in closer proximity to other friendly forces, forces that in some circumstances could assist a compromised force while in others might complicate escape and evasion due to the danger of fratricide.

The issue of improving Marine reconnaissance armament is related to an ongoing and heated debate within the USMC: the extent to which force reconnaissance assets should predominantly be a “fighting force” (direct action, combat patrol, ready reaction) rather than a “reconnaissance force,” with a primary mission of intelligence collection. Weapons training dominates current predeployment
training for force reconnaissance company elements. Many in the community believe that reconnaissance skills atrophy during this period, making a unit less capable of performing reconnaissance activities. Further, some Marine Expeditionary Unit (Special Operations Capable) (MEU[SOC]) commanders thereafter view these Marines as a direct action force, one that should be kept at the ready offshore aboard ship. Force reconnaissance attachments, therefore, often have little opportunity to conduct reconnaissance missions during at-sea deployments, or “floats,” as Marines refer to them. A concern exists that the direct action mission is nonnegotiable because it has been promised as a Marine capability to combatant commanders during deployments. This need not be perceived as an either-or issue. It was suggested that maintaining but deemphasizing the direct action mission was an appropriate response.

A similar debate has arisen regarding the primary mission for STA team members: Are they “shooters” or intelligence collectors—or both? Several of those interviewed touted the extraordinary value of STA platoon members as intelligence sources while others insisted that such a role detracted from their effectiveness as snipers.

In addition to the need for urban reconnaissance doctrine, there should be a call for its mirror image. Counterreconnaissance guidance is also lacking in the USMC literature, as it is in that for NATO, the U.S. Army, and British armed forces.

“A tactical collection plan has to be what ties the various Marine reconnaissance efforts together” (Christmas, 2001). Though urban areas make special demands on Marine reconnaissance elements, as they do on virtually any Marine organization, it should be remembered that this fundamental truth already incorporated in doctrine will remain the bedrock on which to build an urban reconnaissance doctrine.

**Specific Observations**

There is a need to delineate STA, division reconnaissance, and force reconnaissance responsibilities relative to each other and to provide guidance with regard to their positioning that accounts for lines of sight, supporting fires, and communications limitations in the urban environment. As the quotations below note, traditional
concepts regarding divisions of responsibilities articulated in terms of supporting fires or distances are unlikely to be applicable in many urban contingencies:

By doctrine, [force reconnaissance] should be deep, and we should stay that way. When a unit is in a city we ought to be looking beyond it.

It depends on the level of combat. If it’s full combat like in Seoul it is a different situation than if it is . . . involving lesser combat . . . It depends on what fires you have supporting you. A STA team is at most five kilometers out from its battalion, within 81-mm mortar range [5,720 meters]. Division recon is generally within the artillery fan [ground fires’ area of influence]. Force recon could be sent out up to 500 miles.

There is some overlap and it depends on the mission. All could be conceivably operating within a 10-kilometer radius.4

Mission, terrain, and available supporting fires will influence reconnaissance element assignments. However, “deep” in open terrain has far different connotations than when in built-up areas. Snipers in 1968 Hue were only a few buildings away from the remainder of their battalion elements. An operation may not involve the deployment of large numbers of friendly forces outside of a built-up area, meaning force reconnaissance teams may be deployed within or in close proximity to other Marine organizations. On the other hand, the generally desirable objective of isolating an urban area (or a portion thereof) will require locating reconnaissance assets so that they can detect and target enemy elements attempting to gain access to the proscribed area. This mission (likely assigned to division or force reconnaissance units) could mean that reconnaissance Marines are outside, on the edge of, or within the urban area of concern.

In addition to this dearth of guidance regarding how to adapt reconnaissance responsibilities, a similar lack of guidance exists on how to coordinate organic and external (in particular clandestine or “black”) intelligence-collection assets. The same densities that shorten engagement ranges and distances between forces will at times cause a compression of the distances between Marine organic and non-

4All three quotes are from 1st Force Reconnaissance Company interviews.
organic reconnaissance organizations. Standard means of protecting the external elements may be less applicable in urban scenarios. Retired LtGen Christmas, a veteran of intense combat during fighting in 1968 Hue, concluded that “there is nothing worse than having a black unit in your area and you have a lot of restricted fire or no fire areas. . . . You have to know where those teams are or you’re going to kill them.” He went on to state that there must be greater openness with regard to exchanging information between organic and non-organic reconnaissance elements when operating in urban areas (Christmas, 2001).

While reconnaissance organizations (e.g., STA teams, division reconnaissance battalions, or force reconnaissance companies) will probably continue to provide much of the tactically relevant urban combat intelligence, any unit can provide information of value. This has long been recognized for combat arms organizations, but others that can also provide valuable conduits for HUMINT are too often overlooked. For example, prebriefings and immediate debriefings of civil affairs and medical personnel working with noncombatants should be incorporated into collection efforts, whether during Block 1, 2, or 3 missions.

Urban reconnaissance doctrine and training need to better identify requirements of other Marine units they are likely to support. Reconnaissance organizations assisting in determining urban positions for air defense or artillery systems, for example, require training and appropriate references regarding how to determine a building’s capacity to withstand a system’s weight and the shock of its discharges. Other factors are less obvious. Positioning artillery systems in enclosed open areas (e.g., surrounded by walls but without overhead cover) can cause fatal concussion injuries among gun crews, thus making seemingly attractive concealed locations deadly.

There is a lack of guidance regarding mission-relevant relationships between critical components of the civilian infrastructure. The effects of combat actions in open areas are generally straightforward. For example, the destruction of a village deprives its residents of their shelter. Actions in urban areas have effects that may be far less obvious. Neutralizing a power source to deny power to enemy in the local vicinity may interrupt its supply to friendly occupied territory or result in closure of the city’s airport, delaying incoming civil and mil-
itary support. Similarly, curtailing distribution of water from a purification plant can affect civil and military operations many kilometers distant, both within and outside the urban area. Such “knock-on” influences are found with greater frequency and have more immediate effect in metropolitan areas. They can also be far more difficult to foresee than is the case in less complex rural infrastructures. (Concerns regarding infrastructure had relevance for training also. Several of those interviewed felt that training with regard to how urban infrastructure might influence Marine missions is insufficient. Target analysis training provided by agencies outside the Marine Corps was thought to be “pretty good,” but it suffered in that it “needs to focus on other than U.S. cities” and is available only once annually.) A need also exists to understand the social infrastructure—e.g., the doctors, nurses, and other personnel who staff a hospital—rather than considering only the inanimate physical components.

Interviews with 1st Force Reconnaissance Company Marines pointed to a lack of information regarding how to conduct subterranean reconnaissance. The British Army Field Manual (AFM), Volume 2, Operations in Specific Environments, Part 5, Urban Operations, specifically covers subterranean operations in Chapter Four, Part II. While more is needed, these four pages are a good start that provides several points of value. The recently published Change 1 to U.S. Army FM 7-92, The Infantry Reconnaissance Platoon and Squad (Airborne, Air Assault, Light Infantry), has a section entitled “Urban Reconnaissance Tactics, Techniques and Procedures” that also offers considerable information that will abet initial steps toward Marine development of reconnaissance TTP, to include those encompassing subterranean operations.5

The MCWL and personnel serving in reconnaissance units both recognize the absence of viable guidance regarding the insertion and extraction of reconnaissance elements. Use of aircraft (helicopter support operations are another area seen as requiring much more investigation) may be uneconomic. The demonstrated vulnerability of rotary-wing airframes (e.g., Mogadishu and Grozny) means that a primary reconnaissance mission may be identification of enemy air

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defense assets within a city. Unless sufficient resolution of this threat can be obtained using overhead assets prior to insertion efforts, the risk of using helicopters to insert the same forces needed to secure safe landing zones will be seen as putting the cart before the horse. While specific tactics (false insertions, rooftop landings) may work early in an operation, their viability is likely to quickly diminish as the foe adapts.

**Ground insertion techniques have proven viable for allied forces, the use of which has thus far been denied by some Marine Corps leaders.** British reconnaissance elements in Kosovo donned coalition member uniforms and teamed with them for both foot and vehicle patrols through future British Army areas of operation. Similar initiatives to accompany coalition forces during vehicle patrols in Mogadishu were disallowed by Marine leaders for reasons that are unclear. The possibility of capitalizing on such opportunities should not be overlooked in the future. Discussion of these and other ground insertion techniques (including use of indigenous vehicles and drivers and “swarm drills” during which large numbers of a mounted patrol move into an area, subsequently departing with one or more patrols or observation or listening post [OP or LP] teams left behind) is thus far lacking in formal USMC doctrine.

**Time factors for urban insertions and extractions are unknown and may vary from those in open terrain.** One member of the Marine Corps 2nd Reconnaissance Battalion recognized that the command estimate process for a given mission must first involve a decision regarding the feasibility of committing manned reconnaissance assets, noting that “if you need intelligence immediately you don’t send recon out. You use something else. Twelve to 24 hours is about realistic for force recon forewarning.”

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7Interview notes from George AFB, Calif. Interviews by Jamison Jo Medby, February 6–7, 2001. Capt M. Ciancarelli, 2nd Reconnaissance Battalion, similarly noted that members of the British Army’s Royal Dragoons would make repeated passes by buildings during “routine” patrols to obtain specific information on targets of particular interest. Frequent halts in the vicinity, especially those at night, would provide opportunities to infiltrate reconnaissance teams (Ciancarelli, 2001).

8At the time, the division reconnaissance battalion included the 2nd Marine Expeditionary Force reconnaissance capability.
independently arrived at a similar conclusion based on his experiences as Scout Sniper Platoon Commander during the February 2001 MCWL Project Metropolis experiment in Victorville, California. He concluded that “you would need at the very minimum 36 to 48 hours before the trigger pullers cross the LD. . . . The urban environment doubles the need for stealth, which doubles the usual time needed for movement into the AO,” or area of operations (Ziegler, 2001, p. 3). Further evaluation is called for as this “rule of thumb” was drawn from but a single series of events conducted at one location.

There is a need for planning and coordinating fire support plans to cover teams during reconnaissance missions and to minimize the number of changes to those plans during missions. Similarly, urban escape and evasion (E&E) plans should be uniform and coordinated. “Wing, BLT [battalion landing team], and other entities all generate their own E&E plans. They ought to all be the same, or at a minimum coordinated.”

Marine air support for ground reconnaissance suffers from the same absence of doctrine and training opportunities as do ground elements. Whether manned or unmanned platforms are employed, the standoff capabilities provided by aircraft and the capabilities inherent in employing such assets in support of the overall reconnaissance mission demand their inclusion in doctrinal guidance. Several of the shortfalls addressed during interviews can be mitigated by proper coordination of ground and air reconnaissance assets. Among the benefits of such coordination:

- Confirmation or updating information on maps and overhead photography.
- Identification of rooftop positions suitable for OPs, LPs, sniper positions, or insertion and extraction points.
- Preliminary reconnaissance of selected structures by looking through windows with visual or thermal capabilities.
- Observation of approaches from the flanks or the far side of the AO, either within or outside the urban area (Schenking, 2001, pp. 15–17).

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91st Force Reconnaissance Company interviews.
The density of noncombatants, critical infrastructure nodes, and other indigenous civilian elements that may be encountered during urban operations increasingly task military organizations beyond their organic capabilities. Greater cooperation between military assets and those nongovernmental or private enterprises is necessary. Though to a lesser extent than during stability and support missions, combat reconnaissance elements may still find themselves reconnoitering in support of multinational and nongovernmental organizations (NGOs) and private volunteer organizations (PVOs). No USMC doctrine currently exists that provides guidance with regard to proper execution of or training for these tasks.

Force reconnaissance representatives envision themselves as responsible for assisting a commander in shaping his battle. Marine doctrine needs to discuss how reconnaissance assets can best aid leaders in this shaping activity during actions involving villages, towns, or cities. Depending on the sympathies of the urban population, responsibilities could include efforts to influence indigenous population behavior in addition to more traditional tasks, such as the following:

- Determining how the enemy is supplied.
- Determining how it executes command and control activities.
- Discovering what the reconnaissance teams could do as part of a greater effort to isolate all or part of the urban terrain.

Force and division reconnaissance personnel also expressed concern regarding a lack of tailored intelligence support, for example, an inability to obtain urban maps of an appropriate scale (e.g., 1:10,000 or larger) or timely overhead imagery.

The close proximity of STA teams and other reconnaissance assets to other friendly units during urban operations means that traditional reporting procedures may be inappropriate. A STA team in general support to its battalion will usually report to the Sniper Control Center (platoon commander), which in turn reports to the battalion S2. Information is then processed and disseminated to appropriate users in the line companies. Because of the density of forces and activities in heavily populated and built-up areas, this process may not be timely enough to serve mission requirements.
There may be a need for modifications to doctrine that ensure that reconnaissance personnel have a broader knowledge of operations in their AO, including the location and mission of units there, and that specify reporting procedures to ensure timely passage of information to both traditional nodes and directly to supported units. The latter may require specification of “trigger lines” that determine at which points in time or space a given reconnaissance element’s reporting procedures change (Mangan, 2001).

**TRAINING**

Gibler’s company commanders helicoptered into the firebase for a briefing. The companies themselves would not close until the next morning. “I kept looking at Saigon on the map,” remembered Gibler. . . . “I asked the company commanders, ‘When’s the last time any of you ever did any instruction in your units about Combat in Cities?’ They never had, so I said, ‘Well, get in the footlockers and get the manuals out—we’re going to have classes tonight on Combat in Cities.’"


**General**

Training presents a notable challenge to the Marine Corps reconnaissance community. Selected units receive considerable urban-specific preparation (MEU[SOC] in particular or those supporting MCWL urban experimentation). Others, reconnaissance and infantry units included, undertake far less in the way of such training, the actual extent being a function of commander priorities, inadequate facilities, and many other factors. For example, no urban training facility, and none envisioned, provides the geographical volume or density of challenges necessary to train Marine reconnaissance assets adequately. There is considerable concern with the resultant lack of proficiency in officer and NCO ranks alike. Cognizance of their lack of experience in built-up areas is evident in remarks made by both veterans and serving Marines. The sentiment that “none of us are comfortable in urban because we don’t train in urban” environments was widespread. **There is an outstanding and immediate need to develop a comprehensive and tiered approach**
to urban reconnaissance training that incorporates classroom instruction, drills, military training facilities, and actual urban areas. Use of assets such as George AFB near Victorville, California, fulfills part of the fourth element of this requirement, but by themselves such temporary solutions are insufficient. Instruction should include “terrain walks” and other uses of domestic and international densely populated, active civilian urban areas of varying size.

The curriculum and standards for urban training should be consistent in reconnaissance schools and across units. Urban training packages (to prepare units for the specific built-up areas in which they will operate during pending deployments) should be tailored to meet local unit mission requirements.

There is a misunderstanding of weapons effectiveness in cities. The contentions that “mortars will be marginally effective at best” and that “artillery and naval guns have too flat a trajectory to support” urban operations were proved false by Marines in both Hue and Beirut (Root, 2000).

Specific Observations

“Controlling fires is difficult for us,” noted a member of 1st Force Recon with the agreement of contemporaries. This was especially true given situations involving avoidance of collateral damage or noncombatant casualties. Urban areas complicate communications, laser designation, and location determination. Finding positions from which to laser designate while at a safe distance and still being in a location that provides an acceptable “cone” for aircraft or artillery engagement requires intimate knowledge of supporting systems, urban geometry, and ways to compensate for the challenges inherent in the latter. Training ground reconnaissance assets is only part of the solution. “Air Force and Navy aircraft fly too high and too fast. Marine air will do what’s needed. They know the survivability of their aircraft depends on us and what we’re pointing out.”10

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“Teams are not properly educated with regard to ROE [rules of engagement]. They need to know enough to make the right decision. . . . The quality of ROE guidance is extremely variable [from] mission to mission, from excellent to virtually nil.” Further, the ROE have to be robust enough to account for sudden changes in mission. “One minute you’re feeding them [the indigenous population], the next you’re getting attacked. You can go from Block 1 to Block 3 very quickly.”11

Cultural awareness/cultural intelligence training for urban reconnaissance personnel was identified as an area requiring significant attention. The MEU(SOC) on-ship preparation sessions were considered too superficial to meet reconnaissance team requirements. This deficiency encompasses knowledge as basic as better instruction in simple language phrases to more sophisticated insights that could provide the basis for immediate decisions of tactical importance. Those specifically cited as examples of the second include the times and dates of periodic events (e.g., prayer sessions, market days), habitual civilian diets, and the expected hours of stores opening and closing. One 1st Force Recon Marine noted that “we need to have a minimal understanding or we waste the first three days just obtaining a basic understanding.” Those who recently participated in Project Lincolnia war games share his concerns:

Cultural Intelligence is very important in urban operations. Thus, relevant local embassy political and tactical information has to be merged with the JTF [joint task force] commander’s military intelligence. Also, non-traditional sources of cultural information, such as relief workers, reporters, missionaries, and businessmen, need to be better exploited. (“Lincolnia,” 2001, p. 4.)

It should be further noted that cultural awareness is as important to intelligence analysts as to Marines at the “sharp end.” The more detailed and comprehensive the cultural understanding, the better analysts can properly interpret the actions of the indigenous population and adversary.

Not surprisingly, several of the areas cited as doctrinal deficiencies were also noted by those interviewed as areas in which reconnais-

11Ibid.
Shortfalls in USMC Urban Ground Combat Reconnaissance

...require better training. These include techniques for inserting and extracting teams and E&E procedures. **Other techniques thought to be of value but insufficiently covered in training are as follows:**

- Quiet and undetectable urban entry methods (e.g., picking locks and window latches, overcoming computer security systems).\(^{12}\)
- Gaining entry into and “hot wiring” vehicles for use when keys are unavailable.
- Better procedures for detecting, neutralizing, and installing booby traps (Root, 2000).\(^{13}\)

The Special Operations Training Group (SOTG) was thought to provide the best urban training available in the Marine Corps. However, at least one experienced source considered the instruction to be of “limited application. It is based on a mid-1980s tactical model for support of limited objective raids.”\(^{14}\)

The lack of effective urban training involving units of greater than platoon size was considered a deficiency in USMC readiness.\(^{15}\)

Though communications, laser designating, photography, and vision enhancement hardware have been improved in recent months, the lack of training that would permit testing these assets in urban environments leaves team members unsure of how built-up areas will influence technological performance during missions.\(^{16}\)

**Urban environments impose special medical concerns for reconnaissance elements.** Some require few adjustments other than modifying the contents of personal or corpsman aid packets (e.g., more bandages to account for the increased likelihood of cuts; the

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\(^{12}\)1st Reconnaissance Battalion interviews.

\(^{13}\)1st Force Recon interviews.

\(^{14}\)From Russell W. Glenn interviews. Source will remain anonymous.

\(^{15}\)1st Force Recon interviews.

\(^{16}\)Ibid.
related need for Marines other than corpsmen to sew up such cuts requires more extensive adaptation of doctrine and training). Others require study and special training. Removing casualties from confined spaces and from under collapsed structural material was cited as one such category.  

Though unlikely to be the case during high-intensity combat operations, Marine reconnaissance training is currently too reliant on host nation support, in the view of several of those interviewed. The result is that Marines are unsure of what will serve as effective means of moving or maneuvering in international urban areas.

ORGANIZATIONAL STRUCTURE, MANNING, AND PERSONNEL MANAGEMENT

Enhance capabilities to operate in urban and austere environments across the spectrum of conflict while simultaneously further reducing our dependence on existing infrastructure.

Gen J. I. Jones
Marine Corps Strategy 21

General

Members of the reconnaissance community are unsure of what the optimum standard size should be for reconnaissance teams operating in urban areas. The trade-off between detection avoidance and sufficient combat power should a team suffer compromise came up repeatedly during Project Metropolis discussions and interviews conducted in support of this research. In the absence of operational experience, comprehensive training, or specific testing, no one was comfortable with making a conclusive statement regarding force structure or task organization. Some of the views expressed in this regard reveal relevant concerns:

- “I wouldn’t want to [perform urban reconnaissance] with our current six-man team, which is often five men at current

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17 1st Reconnaissance Battalion interviews.
18 Comments are from 1st Force Recon interviews unless otherwise noted.
• “The team needs flank security and enough in the way of manpower to carry a guy if he is wounded. After a casualty, you’ve been compromised, so you are no longer recon; you’re a combat patrol.”

• “I don’t think we need to alter our force structure, [but] none of us are comfortable in urban because we don’t train in urban.”

• “Until we physically go do it, we don’t know what we need.”

• “In general, units were more effective as two-man teams for the short-duration missions they were assigned [during Project Metropolis at George AFB]. They could cover more NAIs [named areas of interest], traveled with a decreased signature (two vice four men), and provided increased mutual security. Two teams could cover the buildings and approaches to their adjacent teams better. However, it was recognized that operating as a two-man team accepted a degree of risk. Two-man teams would not have been sustainable if the mission lasted longer than four to six hours and would likely have weighed the Marines down significantly (carrying radios, ammunition, and other required gear).” (Mangan, 2001, p. 2.)

• “We deployed two-man sniper teams in Hue, and they were the most supportable. They often operated independently, away from the battalion and company positions or front lines.” (Christmas, 2002.)

“The limited line of sight [LOS] from any one position restricted the amount of area one R&S [reconnaissance and surveillance] team can cover. This requires a saturation of R&S teams to cover a particular area or roving team that moves within a building to cover different NAIs. . . . When we sent out two-man teams, we usually started them off [as] four-man sections for an initial penetration into the AO. They would split into two-man teams after the penetration and would also mutually support each other via bounding movements and for a small reaction force. These two teams could also link up if the operation required an extended time in the AO for rest in a harbor site” (Ziegler, 2001, p. 1–2). (An obvious implication of this observa-
tion is that more smaller teams can cover a greater number of NAIs than a lesser quantity of larger teams.)

It should be noted that a reconnaissance element generally seeks to avoid detection and combat (barring assignment of a mission that explicitly calls for same). Its task is to observe, report, perhaps perform targeting, and return undetected. Concerns regarding survivability of such assets are valid, but those born of an expectation of fighting as a primary responsibility may be misguided.

That it is necessary to “break the wall between the G2 and G3” was a repeated observation. Information of value to maneuver units at times never reached the elements most in need of it because intelligence personnel too slowly disseminated key information from reconnaissance reports. The recommendation applied to more than reconnaissance products, however. It was felt that oversensitivity to classification or handling issues caused valuable material from other sources to be kept from those who could best put it to use (or whose survival depended on the information).

**Specific Observations**

There is a lack of specific information regarding urban infrastructure in mission areas and local national points of contact that can address specific related mission concerns. Members of 1st Force Recon noted that SEALs have access to databases that provide detailed information on city infrastructures, including city sewerage plans and contact information for key design and maintenance personnel. SEALs both actively input and extract data from these sources. Marine reconnaissance units should have access to such databases. In exchange, Marine reconnaissance elements could act as additional sources of input. (Authors’ note: Despite the observation made in the field, in truth these databases are available through the MEF G2 (Christmas, 2002). That those in the force reconnaissance company were unaware of this implies that this availability should be better advertised.)

The echelon to which unmanned aerial vehicles (UAVs) will be allocated and how they will be integrated into reconnaissance and intelligence dissemination systems need to be determined. At least one individual interviewed felt strongly that UAVs should not be
Shortfalls in USMC Urban Ground Combat Reconnaissance

organic components of reconnaissance units because the man-
power, communications equipment, and logistics tail associated
with the systems would too greatly burden them. Increases in man-
ning would have to include those operating the equipment, mainte-
nance personnel, and analysts. Manning analyst positions with
qualified personnel would be especially important. As noted by a
British officer with extensive reconnaissance experience in Northern
Ireland, when it comes to the evaluation of real-time visual imagery,
“the money is in the analysts who watch the screen” (Chalmers,
2001). It should be noted, however, that assigning the systems to
higher headquarters or supporting organizations may hamper the
timely transmission of intelligence gained from UAV missions to
users in the field.

Members of the USMC reconnaissance community expressed con-
cern that once the difficult task of undetected insertion had been
successfully accomplished, means to resupply Marines in hides,
OPs, or LPs without compromising the position are lacking. Apart
from short-duration missions during which a team can carry its sus-
tenance and other support, this logistical shortfall presents a serious
problem. Potential solutions include premission establishment of
caches, surreptitious resupply drops by mounted patrols, and subter-
ranean resupply. In the not-too-distant future, robotic resupply will
likely be feasible.19

MATERIEL

The map was another problem in itself. It really bothered me. I had
never been issued any other map like it during my entire lifetime-
long three-month tour in Vietnam. The maps we had used hump-
ing through the rice paddies and mountainous jungle terrain of I
Corps had always been 1:50,000 terrain maps.

Nick Warr,
Phase Line Green: The Battle for Hue, 1968

191st Force Recon and 1st Reconnaissance Battalion interviews.
General

Development of innovative technologies and improvements to those already fielded is a focal point for both USMC and U.S. Army warfighting and battle labs. Given this focus and the guidance of the Commanding General of the MCWL not to overemphasize technological solutions in this study, RAND efforts to identify areas of current reconnaissance shortfalls deliberately avoided covering ground already considered by previous and ongoing MCWL investigations. Members of the Marine reconnaissance community who were interviewed are aware of MCWL technological initiatives and find value in many of them. There is, however, a concern that too great a reliance on extant commercial off-the-shelf (COTS), military off-the-shelf, or brass board (in advanced concept, early development, or prototype form) products may fail to fully address identified needs in the interest of cost savings or immediacy of fielding.

Specific Observations

A need exists for acoustic or motion sensors that assist in detecting targets and potential threats in built-up areas. Crude predecessors of such devices proved helpful to reconnaissance elements in Vietnam, for example, where force reconnaissance units employed Personnel Seismic Intrusion Devices (PSIDs) to detect enemy intrusion, notably during periods when a team was in a harbor site. A PSID system had five primary components: four battery-powered transmitters and one receiver. The transmitters would be placed at appropriate locations to provide warning of an approach. Each transmitter would emit its own coded signal so that the Marine listening on the receiver knew from which of the four sensors a signal was coming. Employed in conjunction with Claymore mines, the PSID enhanced security and team effectiveness. Unfortunately, the devices were not infallible. Thunder, rain, artillery, or animals could provide false detections that led to unnecessary alerts (Norton, 1992, pp. 116, 143). Cities pose even greater challenges for such technologies. The density of enemy and friendly forces, noncombatants (even those seeking to do nothing other than avoid those fighting), and vehicles makes it difficult to place sensors to best give readings of value. Sensors need to be disguised to avoid being compromised and removed or placed elsewhere.
The increased opportunity for compromise, given the density of combatants and noncombatants, means that any such devices must be wireless. Even if placement difficulties are overcome, recent modeling of acoustic sensors at RAND reflects that fewer than 25 percent of passing vehicles in heavily trafficked areas are acquired, much less properly identified (Matsumura et al., 2000, pp. 7, 39–44). These findings were for sensors placed in less densely occupied terrain than is the case in urban areas, terrain with fewer challenges related to hard surfaces reflecting noise or vibrations and with less traffic density than is likely to be found in a village, town, or city. Sensors may eventually be of considerable assistance to U.S. Marine urban reconnaissance teams, but it would be unwise to expect too much from these assets in the immediate future. For the next several years, these devices will be of questionable value at best to reconnaissance Marines given their inconsistent cuing data and the potential for compromise that exists when placing such devices in the vicinity of a ground reconnaissance team.

In addition to sensors, other wireless listening devices, including those that can amplify sounds over considerable distances or distinguish sounds through walls, would permit standoff collection of intelligence. Simple and economical amplification devices have been readily available on the commercial market for several years.

Design standards for equipment should consider the special demands urban environments put on end items. While an overgeneralization, the observation that moisture (environmental and human perspiration) is a primary cause of failures in much of nonurban terrain, whereas shocks, crushing, other forms of breakage, and dust present the primary challenges in built-up areas, contains some truth. Similarly, urban undertakings place unusual requirements on weapons, munitions, and other equipment. Rounds with limited penetration properties, grenades that detonate on impact rather than after a time delay, nonlethal capabilities, and suppression of weapons sounds for use in near-silent kills of dogs or other targets is a sampling of needs cited by various sources. Many of these capabilities will have application to other-than-urban contin-

\footnote{1st Reconnaissance Battalion interviews.}
gencies as well, but they have been noted as being of particular value during urban combat taskings.

Reconnaissance Marines are pleased that they can often acquire new technologies quickly, but new equipment purchases are too often not accompanied by the operator and maintenance training necessary to properly employ it, which causes some concern. Acquisition of equipment, whether through routine channels or COTS, should be integrated into an “acquisition system” that encompasses consideration of how the new item will be integrated into Marine doctrine, training, support requirements, and the employment of other systems.

Reliable communications and Global Positioning System (GPS) signals are areas of notable concern. Traditional force reconnaissance and division reconnaissance missions rely heavily on satellite and high-frequency equipment for communications. The likelihood that these forces will be in closer proximity to parent and supported headquarters during urban missions may mitigate reconnaissance team reliance on over-the-horizon communications equipment. However, the successful use of any line-of-sight system (e.g., Single-Channel Ground/Air Radio System [SINCGARS]) in an urban environment often requires exactly that, unobstructed LOS, to overcome the signal attenuation effects of intervening structures. Recent MCWL experiments have demonstrated that attaining sufficient unobstructed LOS to achieve effective communications can be problematic in urban areas, leading to elaborate networks of radio relays and other workarounds to improve communications reliability. These ad hoc approaches will not always be feasible in a combat environment. Field-expedient and directional antennas, for example, are at times not employed because their detection would compromise user positions. LOS limitations also exist with GPS. They are of notable concern when reconnaissance Marines must traverse underground facilities, such as subways and sewer systems.

Whether solutions to these problems involve common Marine communications systems or specialized equipment appears secondary to ensuring that reconnaissance Marines possess the appropriate systems to perform their most basic function in urban environments: timely reporting of enemy activity. However, an implicit requirement is communications compatibility with nearby U.S. Marines and
other forces in the area. Interviews with reconnaissance Marines revealed concerns that their communications systems (such as Automatic Link Establishment [ALE] high-frequency radios) are not compatible with radios presently used by organizations with which they must operate. “Compatibility even within the Marine Corps is terrible,” much less with elements from other services.\textsuperscript{21}

A requirement exists for a stealthier means of monitoring radios. The H-250 radio handset used on Marine radios is considered too loud by some reconnaissance personnel, thus creating a potential source of compromise that threatens teams’ security. It was suggested that the listening mode be made substantially quieter.\textsuperscript{22} Another option might be to exploit other phenomenology, such as vibrations, to alert reconnaissance Marines that traffic is incoming.\textsuperscript{23}

The cumulative bulk of equipment was cited as a concern, one with special implications for urban operations. The need to pass through windows, mouse holes, or other restricted passageways typical of urban terrain led to calls for longer, narrower, “body hugging” means of loading equipment in place of those that protruded beyond the Marine’s frame to his right or left.\textsuperscript{24} Further, equipment, including boots, needs to be quieter to permit traversing populated areas without being detected.

Several concerns have arisen regarding unmanned aerial vehicles in addition to those already mentioned, most of which are well known to the MCWL. Interviews included calls for

- better system optics,
- the ability to make a visual record of missions,
- solving problems with operating the systems in even moderate wind conditions, and
- revising reporting procedures for disseminating intelligence gathered from flights (e.g., transmission to local units as well as

\textsuperscript{21}1\textsuperscript{st Reconnaissance Battalion interviews
\textsuperscript{22}Ibid.
\textsuperscript{23}Ibid.
\textsuperscript{24}1\textsuperscript{st Force Recon interviews.
the headquarters or intelligence section assigning aircraft missions).

All of the above have been repeatedly cited and represent but a small number of the considerations that should be reviewed as the appropriate roles for unmanned aircraft are introduced into Marine Corps doctrine.

**Miscellaneous Calls for Technological Capabilities**

- Portable water purification system.
- Urban Digital Terrain and Mapping System (DTAMS) that allows 360-degree views of selected terrain features for use during planning and rehearsals. Ideally this system could also send three-dimensional terrain representations to a team in the field when necessary.
- A means of accessing existing phone lines and using them for encrypted transmissions.
- Longer-lasting, lighter batteries with no hazardous materials that are capable of working in an airless environment.
- Power transformers (alternatively, equipment that operates using 110-volt, 220-volt, or other power sources).
- A fiber-optic capability to see around corners, under doors, or through windows without exposing the user.
- An effective night photography capability (Campbell, 2001).

**USMC URBAN GROUND COMBAT RECONNAISSANCE SHORTFALLS: CONCLUSION**

  Interviewer to reconnaissance Marine: “So you’re telling me you can’t do the job?
  Marine’s response: “I know it sounds bad, but that’s the case.”

It has been repeatedly noted that much of current generic USMC reconnaissance doctrine applies to urban operations. It has similarly been brought to the reader’s attention that much needs to be done in
the four areas of consideration before Marines have guidance, organizations, preparation, and equipment appropriate to the extraordinary demands the urban environment imposes on reconnaissance personnel. The focus of this report is tactical urban ground combat reconnaissance. The lack of recent USMC experience in this realm, and a similar lack of adequately challenging training, leaves the limitations of equipment unknown, questions unanswered, and other problems undiscovered.

An open mind free of predispositions is an essential tool for all seeking to redress these shortcomings. That a definitive break exists between Block 2 urban reconnaissance and reconnaissance conducted during Block 3 missions was a point of major emphasis during the March 13–14, 2001, Urban Reconnaissance Conference in San Diego. The latter were accepted as being inherently harder, with the definition of Block 3 requirements correspondingly more difficult. Historical examples and discussions with those currently serving in Marine reconnaissance units cast some doubt on the uniform applicability of this conclusion. Infiltrating and maintaining the viability of teams during Block 2 missions will be extraordinarily challenging in many circumstances, notably so given the demographic character of reconnaissance units compared with those of the indigenous urban populations into which they are likely to be committed. A Block 3 environment may offer a reduced likelihood of compromise by noncombatants because those individuals will probably be more concerned with their own protection than providing information to combatants. Stalingrad and other examples from the past demonstrate that urban reconnaissance during Block 3 is very difficult and exceptionally dangerous. Nevertheless, it may offer reconnaissance elements more options than are available during Block 2 commitments. Given so little in the way of recent historical experience and applicable training, it falls to all who are seeking solutions to question even the seemingly most obvious conclusions. Further, as is true with reconnaissance activities anywhere at any time, the solutions sought should neither seek to attain nor promise perfection. Neither should leaders believe that demands on their initiative and innovative thinking will be any less during operations because the terrain is dominated by man-made features or a noncombatant population. Major General Baron von Freytag-Loringhoven’s observation is no less applicable for those committed to success during
tomorrow’s urban undertakings than it proved prescient for operations during World War I and World War II after being written in the first decade of the twentieth century:

If the great generals at Marengo, Ulm, Jena, and Koeniggratz had waited for the situation to clear up fully, they would have missed the proper moment for action, and military history would be without some of its most brilliant days. (von Freytag-Loringhoven, 1938, p. 79.)

The goal for Marines performing urban reconnaissance is to provide sufficient timely intelligence to establish the conditions for mission accomplishment at the minimum feasible cost in friendly force and noncombatant lives.