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**Intelligence Preparation of the URBAN Battlefield**

**A Monograph  
by  
Major Kevin D. Johnson  
Military Intelligence**



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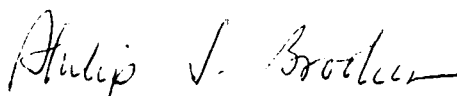
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## ABSTRACT

Intelligence Preparation of the Battlefield (IPB) is a graphic method of depicting on a map the military effects of terrain, weather, and enemy forces. Initially designed as an intelligence analysis and dissemination tool, soldiers first used IPB to anticipate the course of battles between large, fast-moving formations of armored vehicles traversing relatively open terrain. The process caught-on quickly, and IPB today is the foundation of U.S. Army tactical planning and decision-making. Doctrine writers are expanding the scope of IPB to encompass most of the operational continuum, contending that IPB can be used to predict the actions of insurgent groups as well as Soviet tank divisions. Army officers are trained to expect much from and believe in IPB. Together with each tactical field manual from corps to company team, the IPB capstone manual, FM 34-130, asserts that the five-step IPB process will provide pre-battle predictive intelligence to Army commanders regardless of the terrain, weather and enemy.

That is an imposing challenge, perhaps beyond the capacities of any single man or doctrine. This study seeks to determine whether IPB can provide predictive intelligence in urban environments, arguably the most intense, intricate, and unpredictable combat realm.

The monograph first establishes the fundamental importance of IPB doctrine in the Army tactical planning and decision-making process. Next, the paper develops a set of urban combat characteristics that distinguish urban battle from combat on open, natural terrain. Observations from classical and contemporary theorists, Army publications, and two case studies are explored to explain the nature of urban battle. Finally, the IPB procedures in FM 34-130 are analyzed to determine whether they account for the unique nature of urban battle and whether the templating process can be expected to generate predictive urban combat intelligence.

The study concludes that IPB doctrine does not accommodate the unique nature of urban combat. Urban IPB techniques are little more than slight modifications of open terrain techniques, and as such are inappropriate for urban environments. Due to problems with scale, resolution, and dimension, IPB templates do not capture all that is truly important to urban combat, and as a result will not provide predictive intelligence to unit commanders. Templates and overlays do have value during urban battle, however. The paper concludes by offering some improvements to urban IPB doctrine and proposing new varieties of overlays and templates which, while not predictive, can be helpful references to tactical planners.

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## PART I: INTRODUCTION

With the May 1989 publication of FM 34-130, Intelligence Preparation of the Battlefield, the U.S. Army elevated the IPB process to a doctrinal position of honor. Retired General William Livsey heralded IPB as "MI's greatest contribution to the Army,"<sup>1</sup> and BG E. S. Leland, former commander of the National Training Center, described IPB as "the greatest doctrinal improvement seen in twenty-four years of service."<sup>2</sup> The systematic IPB model, which portrays effects of terrain, weather and the enemy through templating, is now accepted as an article of faith in the Army. IPB is fundamental to Army decision-making and the command estimate process.

Before battle begins, unit intelligence officers use IPB to determine enemy capabilities. Then, as stipulated by FM 101-5, Staff Organization and Operations, they compare enemy capabilities in order to identify the two or three most probable enemy courses of action.<sup>3</sup> As part of IPB's subsequent templating steps, the entire staff prepares decision graphics for unit tactical operations.

Army doctrine requires IPB to predict battlefield events and reduce a commander's uncertainties, thereby enabling him to act more quickly than the enemy. IPB was initially developed for use against Soviet Army tactics in open terrain, those regions where natural terrain features dominate man-made features, but there are no specified limits to its contemporary application. Together with ongoing U.S. Army Intelligence Center and

School (USAICS) initiatives, the doctrine implies that, with minor modification, IPB can generate predictive intelligence across the operational continuum, regardless of terrain, weather and enemy. When reading Army field manuals, attending Army schools, and listening to IPB's proponents, it is difficult to escape the perception that IPB is an intelligence panacea.

The question of whether IPB will work in an urban area remains unanswered, however. Urban combat poses special problems which defy solution by the tactics, techniques and procedures employed on open ground. Consequently, Army doctrine recommends that urban combat be avoided.<sup>4</sup> History teaches that the fate of cities is often crucial to the outcome of military operations. As cities continue to grow in size and significance around the world, military experts predict that future wars will feature very important, perhaps decisive urban battles.<sup>5</sup>

The subject of Appendix B to FM 34-130 is intelligence preparation of the urban battlefield. The manual recognizes the unique nature of urban combat, and notes several problems in preparing templates for urban areas. But the specific templating techniques in the appendix are little more than adjuncts to basic doctrine. The templates do not differ to the degree one might expect after contrasting urban and open country combat. FM 34-130 contends that intelligence staffs can use IPB to predict what an enemy will do in an urban environment. The purpose of this monograph is to test that assertion.

In the following section, I will review IPB doctrine in order to establish its central role in Army tactical decision-making. Next, I will describe the nature of urban combat, from the perspective of classical and contemporary military theorists, Army doctrine, and two historical case studies--Stalingrad and Santo Domingo. The paper will identify several characteristics which distinguish urban combat from, and make it more unpredictable than, warfare in open terrain.

Finally, I will summarize and critique the urban IIB techniques and procedures outlined in Appendix B of FM 34-130, measuring them against two criteria:

\* Does IPB doctrine recognize and accommodate the differences between the nature of urban combat and warfare in open terrain?

\* Is it possible to develop standard IPB graphics (e.g., doctrinal, situational, event, decision support templates) and produce predictive intelligence in an urban environment?6

## PART II: IMPORTANCE OF IPB DOCTRINE

The IPB model originated shortly after the 1973 Mideast War. Its initial, modest purpose was to standardize "tactical intelligence analysis through the use of graphics...and templates as aids to analysis and a means of disseminating intelligence."7 The templating technique caught on quickly and IPB's purpose and scope were successively enlarged. By 1979, USAICS featured IPE instruction and promulgated the technique throughout the



Army in the form of training circulars. By the early 1980s, IPB had become the start point for general defense planning in USAREUR. By the late 1980s, success at NTC often depended upon proper application of IPB techniques by the entire battalion staff, and NTC leaders touted IPB as "one of the three most important lessons learned at the NTC."<sup>8</sup> Even before the Army articulated IPB in a field manual of its own, details of the process were (and remain) part of all tactical unit field manuals.

Since these manuals reflect the combat arms community's doctrinal consensus, it is revealing to consider what they say about IPB. They consistently state that the staff must use IPB graphics to predict what the enemy intends to do, reduce the commander's uncertainty as much as possible, facilitate his decision-making, and thus enable him to act quicker than the opponent. The emphasis is on pre-battle planning, though each manual notes a need to continuously update IPB during combat. The further down the organizational ladder one reads, the more promising IPB appears. FM 71-3, Armored and Mechanized Infantry Brigade, flatly says that IPB's purpose is "to predict battlefield events."<sup>9</sup>

Though less sanguine in tone, the capstone IPB manual, FM 34-130, advertises IPB's potential "to predict enemy activity and to produce event-related forecasts of battlefield operations."<sup>10</sup> Recognizing the Army-wide popularity of IPB, USAICS is seeking to expand the doctrine to encompass more of the operational continuum.

Presently, the USAICS Low Intensity Task Group is developing new IPB doctrine for counter-insurgency and counter-terrorist operations. Thus far, there is no indication from USAICS that these unique tactical environments constitute barriers to predictive intelligence which IPB cannot somehow overcome.<sup>11</sup> In less than seventeen years, a graphic intelligence analysis and dissemination model has evolved and become the cornerstone of Army tactical planning.

Doctrine contends that IPB techniques apply to all types of battlefield terrain. IPB's five steps and their associated products and templates are:

- \* Battlefield Area Evaluation (Area of Operations, Area of Interest)
- \* Terrain Analysis (Modified Combined Obstacle Overlay [MCOO])
- \* Weather Analysis (Weather Matrix, Overlay)
- \* Threat Evaluation (Doctrinal Templates)
- \* Threat Integration (Situation Templates, Event Template, Event Matrix, Decision Support Template)

The body of Army doctrine implies that in order to produce predictive tactical intelligence, staffs must complete each IPB step and template. The individual steps and templates yield helpful information by themselves, but must be used together to maximize IPB's potential. Lack of precision at any point decreases the predictive value of the process. Still, Army officers are taught to believe in and expect much from IPB.<sup>12</sup>

IPB is a central component of all Army tactical planning. Though doctrine suggests that IPB can work anywhere against any opponent, IPB's reputation rests

upon its demonstrated utility in open terrain against simulated and postulated Soviet Army doctrine. Since, to be valid, IPB doctrine must also accommodate the nature of urban battle, the next section offers a description of that realm.

### PART III: THE NATURE OF URBAN BATTLE

To understand the complexity and diversity of urban combat, we should examine it from several perspectives. In this section, I will review comments by classical and contemporary military theorists and Army doctrinal assessments in field manuals. Lastly, I offer two representative case studies to develop a historical appreciation of the nature of urban combat. Stalingrad represents the very upper end of the operational continuum, while Santo Domingo serves as a good example of much less intense urban combat. The goal of this survey is to compile a set of urban battle characteristics found across the operational continuum.

#### Classical and Contemporary Theory

Respect for the unique nature of urban battle was expressed by Sun Tzu more than two thousand years ago in The Art of War. He simply warned that "the worst policy is to attack cities."<sup>13</sup> When no alternative was available, Sun Tzu observed that an attacker had to expend large amounts of resources and time, and above all to achieve surprise, to conquer a city.<sup>14</sup> He also advised that a commander must know the nine varieties of ground upon which he fought. Though Sun Tzu did not name

cities as a specific variety, "encircled" ground seems to best describe the effects of urban terrain:

Ground to which access is constricted, where the way out is tortuous, and where a small enemy force can strike my larger one is called "encircled." Here it is easy to lay ambushes and one can be utterly defeated...in encircled ground, devise stratagems...and block the points of access and egress.<sup>15</sup>

The venerable Clausewitz agreed with his Chinese predecessor in most respects and added further considerations. Not as concerned with casualties as Sun Tzu and cognizant of the over-arching purpose of war, Clausewitz recognized that seizure of key cities such as capitals and garrisons could yield important political advantages to an attacker during peace negotiations. In some cases, cities possessed intrinsic military value of their own and merited attack or defense. Clausewitz considered infantry as the best arm for urban combat.<sup>16</sup>

John English, contemporary author of On Infantry, underscored Clausewitz's faith in infantry. Citing Stalingrad as an example, English recounted the decisive role of small infantry units and recognized the need for a combined arms effort in support of infantry. English projected that future urban combat would be the rule rather than the exception. He also drew an important distinction between successful urban combat tactics and those tactics required in open country.<sup>17</sup> English agreed with the basic premises of the classical theorists.

Chris Bellamy repeated the proposition that urban combat will be more frequent in the future, and that it

will be a time-consuming, bloody and exhausting business fought primarily by dismounted infantry units, supported by other arms. He emphasized that imaginative tactics often lead to surprise during urban battle.18

#### Army Doctrine

Appendix E to FM 34-130 offers some familiar urban combat characteristics. More than half of the appendix has been taken from FM 90-10, Military Operations on Urbanized Terrain, published ten years earlier, though no reference is made to the MOUT manual. Even the photographs and diagrams are the same.19

FM 34-130 notes that large numbers of small units, often squad-sized or less, fight urban battles in very confined areas. Command and control of these units is more difficult than in open terrain, and decentralized operations are the norm. The pace of urban combat is generally slower, thus battles are longer in duration. Urban areas require more forces than open areas of the same size. Damage limitation considerations may prevent maximum use of combat power. Confined spaces limit vehicular movement, restrict observation and fields of fire, and make it easier for a very small force to stop the advance of a considerably larger one. Urban terrain offers many small infiltration routes in addition to traditional avenues of approach.20

FM 90-10 places more emphasis on the characteristics of urban battle and introduces several important features which are missing from FM 34-130. The presence of

civilians hampers combat operations, and steps must be taken to ensure their cooperation and welfare. Urban ground combat is three dimensional; it occurs at street level, underground in utility and transportation systems, and on roofs and upper stories of buildings, at ranges of less than one hundred meters. Urban combat isolates units and places more dependence upon leader's initiative and tactical imagination.21

Clearly, theorists and Army doctrine recognize the important distinctions between urban battle and combat elsewhere. To substantiate these theoretical and doctrinal descriptions and to gain insights that will be important in the analysis of urban IPB, we will consider two case studies: Stalingrad (1942-3) and Santo Domingo (1965-6). A detailed account of these battles is outside the scope of this paper. This study will focus on those aspects which are relevant to urban IPB.

#### Case Study: Stalingrad

Historians regard the German defeat at Stalingrad as the turning point on the Eastern Front in World War II.22 In Stalingrad, the German juggernaut finally culminated after a series of victories that had carried it 1500 miles into the heart of the Soviet Union. During six months of bloody house-to-house fighting beginning in August 1942, Hitler ceded the strategic initiative to Stalin and fed legions of irreplaceable trained troops into an urban inferno. Of the 334,000 German 6th Army troops who entered the outskirts of Stalingrad on

September 13, only 93,000 survived to surrender to the Soviet 62d Army on February 2, 1943.23 Stalingrad was the largest, bloodiest urban battle in history, approaching Clausewitz's theoretical description of absolute war.

Before the war, Stalin's namesake city was a shrine to the future of communism. Most of its 500,000 citizens worked in industrial plants along the west bank of the Volga River. Demands for water to supply the huge factories resulted in Stalingrad's linear shape, which stretched for almost thirty-five miles along the Volga but never more than three miles away from the bank.24

When the war began, workers converted many plants to weapons production and quickly constructed new arms facilities. Some of the factories were cities in themselves. The Dzerzhzinsky Tractor Factory, converted to T-34 tank production shortly after the war began, stretched for more than a mile along the Volga.25

Many buildings were new, and some rose seven stories or more. Most of the structures were built of brick or reinforced concrete. There were many wide, long streets in the city. Stalingrad featured an extensive system of elevated railways, public utilities and underground passages. Other, much older areas of the town contained tiny dwellings of stone, brick and timber crammed on top of one another along narrow, winding streets. Most structures had been built atop basements.26

As the Germans approached, citizens built more than

three hundred miles of entrenchments and fortifications in and near Stalingrad. Entire tanks and individual tank turrets were dug into the ground.27

During the battle, both sides detonated thousands of tons of munitions in the city, virtually destroying it. But soldiers learned that shells and bombs did not often penetrate underground enclosures. Artillery caused great physical damage to the town but few casualties.28 A notable exception was the Katyusha rocket launcher.29

Rubble created obstacles and fighting positions everywhere, preventing movement of large numbers of vehicles. After each barrage, the landscape was altered, often so dramatically that it was unrecognizable to the people who lived and fought there.30

Knowledge of the terrain was crucial but difficult to gain. Maps of proper scale were scarce and all but useless by November, when the surface area no longer resembled pre-war town plans. Often, the best sources of information were the civilian inhabitants of Stalingrad, many of whom remained and cooperated with both sides during the fighting, and municipal offices which held utility plan and building blueprint files.

Thanks to a city sewer worker, the Soviet 62d Army acquired an entire set of Stalingrad's underground plans. This windfall enabled Soviet troops to move undetected behind enemy lines, conduct raids, and collect intelligence on German disposition and intentions. Because they were ignorant of the layout of the system,



the Germans could not deny it to the Soviets.31

Soldiers improvised building-to-building mouseholes and underground infiltration routes. They lived in basements and fought at street level.32 There were episodes when German and Russian soldiers established quarters in adjacent cellars, conversed with one another through the wall during daylight, then emerged from their warrens at night to do battle.33

Maneuver down streets was suicidal during the day unless artillery or aircraft suppressed the opponent. "Whoever stuck his head out or ran across the street was inevitably shot by a sniper or tommy-gunner."34 Fighting atop upper stories and roofs was frequent until most buildings had been knocked flat or so badly damaged that it was too dangerous to make use of their upper levels.35

Often, some of the most important intelligence described the composition and construction of strong-points and location of infiltration routes to and from them. Since these fortifications were based on buildings and cellars, each was unique and necessitated a different tactical approach. Individual buildings and rooms were numbered on tactical maps.36

For the Germans, flushed with "blitzkrieg" victories ranging over hundreds of kilometers, it appears that Stalingrad was a tactical as well as a strategic turning point. As described by one German general officer:

The time for big operations was over...As a measure of length, a meter now replaced a kilometer. Fierce actions had to be fought for

every house, work-shop...wall or cellar, and even for every heap of rubble.... The no-man's land between us and the Russians was reduced to an absolute minimum, and, despite the intensive activity of our bombers and artillery, there was no means of widening this "close combat" gap.37

The Soviets originated new tactics in Stalingrad and forced the Germans to do likewise. Russian troops refused to break contact, making it impossible for German aircraft to provide air support against strongpoints without fratricide. Engagements began at ranges of less than seventy-five meters. Previously, in open terrain, German infantry had followed in the wake of tanks. But in Stalingrad infantry had to precede and protect tanks, a new and difficult task.

At first, German armor advanced to the outskirts of town, and small numbers of tanks were able to penetrate further until blocked by rubble and knocked out. Neither side was able to employ large armor formations within the city. The Soviets often used tanks in pairs, surrounded by infantry, and emplaced AT guns at heights above or below the elevation limit of German tank guns.

Both sides used snipers, sappers, ambush teams and special purpose squads to combat Stalingrad's terrain and each other. Snipers were the most effective long-range killers. 62d Army snipers alone killed more than 6000 Germans during the battle. Sniper N. Zaitsev was honored as a "Hero of the Soviet Union" after slaying 245 enemy troops.38 Snipers also reported important intelligence.

Demolition charges, Molotov cocktails, hand tools, mortars, grenades, and automatic weapons replaced tanks,

artillery and aircraft as decisive weapons. Mines and booby traps emplaced by sappers inflicted almost as many casualties as small arms and grenades. Anti-aircraft guns effectively served as direct-fire weapons.39

Stalingrad was the domain of small, isolated infantry units.40 This occurred as a result of the terrain, and also because to reduce casualties the Soviet commander, LTG V. I. Chuikov, forbade the use of large formations. The battle became cellular as it progressed; strongpoints changed hands many times.41 Surrounded units often held out for weeks. One sixty-man Russian strongpoint, known as "Pavlov's House," was cut off for fifty-eight days but never captured.42

Chuikov masterminded another tactical innovation that proved to be decisive in Stalingrad, "storm" groups, which quickly penetrated and cleared fortified positions.43 In his after-action report on Stalingrad, Chuikov devoted most of his commentary to the organization and employment of these special groups.44

Each storm attack was unique and included special requirements. Most were conducted at night. The Soviets often used artillery to stun German defenders and enable the storm units to close on the strongpoint. Success depended upon daring and imagination. Chuikov observed that "new tactical methods are born in the actual course of urban fighting. Each commander should be on the watch for new ideas and take careful note of them."45 Flexibility and originality were paramount, because

orthodox compliance to orders led to predictable tactics and high casualties.

Combat in Stalingrad inevitably resulted in a bewildering array of offensive and defensive small unit tactics that had no resemblance to tactics developed for open areas. By changing tactics frequently, the Soviets often achieved tactical surprise even though outnumbered.

The terrain, scope, duration, violence, complexity, concentration of forces, and three-dimensional nature of ground combat in Stalingrad were completely different from anything else previously experienced by either opponent in open country.

#### Case Study: Santo Domingo

During 1965-6, the United States committed armed forces to prevent rebels from overthrowing the government of the Dominican Republic. Most of the action occurred in the nation's capital, Santo Domingo. U.S. Army and Marine forces were successful in forestalling "a second Cuba."<sup>46</sup> The subject of this case study is the nature of urban combat in a low intensity environment.

The intervention lasted from April 28, 1965 until September 21, 1966. U.S. forces suffered 47 deaths (27 killed in action) and 172 wounded.<sup>47</sup> The combat they saw in Santo Domingo was mainly against snipers, small, poorly-organized groups and a very few obsolete tanks.

Rebel forces comprised former government officials, military officers, some Dominican military units, and armed civilians. Most rebel military resistance occurred

outside of the capital. Within Santo Domingo, rebels wore no distinguishing uniform, fought in small groups, and essentially made up their tactics as they went along. They had no formal tactical doctrine. Accordingly, it was always difficult to know who the enemy was, where he was, and what he was up to.

American troops traveled 1500 miles to reach Santo Domingo, the same distance traveled by the 6th Army to reach Stalingrad, and faced similar problems. They had a very foggy picture of what was happening in the city. There was an acute shortage of maps, and those available were of improper scale and out of date. U.S. troops obtained most of their intelligence after landing and contacting local authorities and cooperative civilians. This could have been fatal, had a more capable and determined opponent confronted the Americans. Like Stalingrad, human intelligence (HUMINT) was the best intelligence source in Santo Domingo.48

The capital was a large city of 460,000 made up of a wide variety of barrios which included slums, mansions, luxury hotels, factories, a business district, government offices and garrisons. The Ozama River bisected Santo Domingo, and only one bridge spanned the river. Newer areas featured wide, tree-lined avenues. Most of the old city, however, had grown up on narrow, winding streets that restricted armored vehicle movement. Building size, shape and construction varied according to age, original purpose of the structure, and location in the city.49

Santo Domingo was home to several hundred foreign nationals. The first Marines ashore on April 28, 1965 established an "International Safety Zone" encircling most of the embassies. In addition to the thousands of native Dominicans, foreigners were a constant worry. Military operations were always subordinated to their safety, a situation that did not pass unnoticed by the rebels, who routinely used civilians as concealment and intelligence sources.50

Following the Marines, elements of the 82d Airborne Division landed at an airport near the eastern edge of the capital on April 30, 1965. When troop deployments were complete, a Marine Expeditionary Force and the 82d Airborne Division (with support units from XVIII Corps) were committed to Santo Domingo. Estimates said that fewer than four thousand armed rebels stood against the Americans.51 Though rebels did not oppose the initial landings, Marine and Army units were soon engaged as they moved further into the city.

Compared to the devastation at Stalingrad, very little damage was done to Santo Domingo, largely because of politically-imposed restrictions. Americans fired artillery sparingly, only along the fringes of the capital. Instead of using rubble, American troops constructed fighting positions, command posts, and street barricades with sandbags, steel beams, barbed wire and timber. When these materials were in short supply, furniture and vehicles were substituted for rubble.52

After evacuating diplomats and some civilians, U.S. forces were directed to restore order in the capital and capture as many rebels as possible. Gradually, U.S. forces drove the rebels back into their bastions in Ciudad Nueva, an older, impoverished section of the city.

To evade American troops at street level, rebels moved through underground sewer and water passages. U.S. forces were unwilling to enter the maze of tunnels until they had been provided with detailed plans of the sub-street routes. Control of underground terrain was crucial. U.S. troops used the tunnels for movement and stationed soldiers in manholes to assist in searches for car bombs at road blocks.53

Snipers were the primary cause of casualties in Santo Domingo. The preferred methods of dealing with them included another sniper, grenades, and the M2 machine gun, firing single rounds through the walls surrounding a sniper's position.54

Americans employed tanks to create roadblocks, but their main guns were rarely fired within the city. Rebels used a few captured Dominican tanks inside the city, but these were destroyed by American 106mm recoilless rifles.55 The 106mm also silenced several rebel strongpoints.56

Due to rebel dispositions and damage limitation concerns, U.S. troops continuously changed tactics during the fighting. Initially, it was hoped that a show of force by several infantry battalions would intimidate the

rebels and facilitate a cease fire.<sup>57</sup> When this failed, it became necessary to establish control of successively larger portions of the city. As Sun Tzu predicted, this required the Americans to "devise stratagems."<sup>58</sup>

Marines, who landed on the western side of the city, together with Army paratroops, who landed on the eastern side, cleared a corridor through the capital. It was gradually enlarged to protect it from harassing fire, and became the major line of communications between U.S. troops in the city.<sup>59</sup> Constant patrolling prevented interdiction of the corridor.

Key government and public works facilities had to be seized from the rebels, and eventually American troops took the fight into the depths of Ciudad Neuva.<sup>60</sup> The battle was fought over several varieties of urban terrain, and tactics changed as often as the terrain did.

Besides snipers, rebels occasionally used small hit-and-run teams to ambush Americans. A favorite rebel tactic was dropping Molotov cocktails from windows as American vehicles passed by. Wire cutter bars were mounted on jeeps to sever wire strung across streets by rebels. Except for sniper attacks, combat erupted at ranges well below one hundred meters, usually within the minimum arming distances of heavier munitions.

The Americans established large headquarters and staffs, but actual planning and conduct of battle happened at the battalion level and lower. It was usually impossible for small units to remain in contact



with one another, and combat became cellular as pockets of resistance were surrounded and reduced.

Strict rules of engagement always frustrated and often infuriated soldiers. Some, such as a prohibition against returning fire unless one's position was directly threatened, made no sense whatsoever. Others, however, were necessary in order to facilitate a peaceful political solution to the insurgency.<sup>61</sup> President Johnson made the rules of engagement more and more restrictive, prohibiting ground commanders from using air support, artillery, mortars, tanks, and heavy machine guns.<sup>62</sup>

As peace prospects improved, a cease fire was agreed upon and the primary task became separating rebel and government forces. Soldiers from other nations joined American troops to help enforce the cease fire. Eventually, regional leaders established an Organization of American States Peace Force to maintain order as a new government assumed control in Santo Domingo. There were hundreds of cease-fire violations. Booby-traps and snipers killed and wounded many members of the combined force during house-to-house searches in Ciudad Nueva. The presence of 108 Peace Corps members, tending to rebel wounded, complicated the clearing of the stronghold.<sup>63</sup>

On May 26, 1965, the first contingent of Marines left Santo Domingo and returned home. More combat troops followed in their wake, and were replaced by service support units engaged in "nation-building" activities.<sup>64</sup>

Sporadic violence occurred until the last U.S. troops were withdrawn on September 21, 1966.

### A Summary of the Nature of Urban Combat

Taken together, military theorists, Army doctrine and the case studies suggest several important characteristics that distinguish urban combat, of any intensity, from battles in open terrain. Separated into three broad categories, these characteristics include:

#### **Terrain--**

- \* Ground combat occurs in three dimensions: street level, subterranean, and above ground.
- \* Combat favors the opponent with detailed knowledge of the town. Building-by-building precision is vital, because greater numbers of troops are engaged in a smaller area and progress is measured in meters, not kilometers.
- \* Detailed city maps, utility plans and building blueprints are more difficult to obtain and update than open country maps.
- \* The battlefield comprises an ever-changing mix of man-made and natural terrain; units become isolated on a dynamic, non-linear battlefield.
- \* Urban battles last weeks or even months, not days.

#### **Tactics--**

- \* Attrition is more prevalent than maneuver.
- \* Synchronized tactics are usually possible only at battalion level and lower.
- \* Though all combat arms play a role, small, dismounted infantry units are decisive.
- \* A small force can inflict disproportionate damage on a larger one for sustained periods of time.
- \* Grenades, demolitions, booby traps, submachine guns, recoilless rifles, and direct-fire air defense guns inflict more casualties than tanks, aircraft, artillery, and anti-tank missiles.
- \* Most engagements occur at ranges of 100 meters or less, sometimes within minimum safe arming distance.
- \* Snipers provide the most effective long-range fires.
- \* Tactical movement is slow and occurs along many small, concealed infiltration routes, not down streets.
- \* Surprise often occurs as a result of sudden changes in tactics that give an edge to one opponent after battle has been joined.

#### People--

\* Fear, disorientation, and claustrophobia often force troops to return to dangerous streets.

\* Large numbers of civilians will interfere with operations and require protection, sustainment and control. Essential intelligence regarding terrain and the enemy must be obtained from the local populace.

\* Damage limitation restrictions are more prevalent and vexing in urban terrain.

\* Urban combat causes greater casualties and stress.

A letter, found on the body of a German officer at Stalingrad, offered its own summary of urban combat:

We must reach the Volga. We can see it--less than a kilometer away. We have the constant support of our aircraft and artillery. We are fighting like madmen but cannot reach the river. The whole war for France was shorter than the fight for one Volga factory. We must be up against suicide squads. They have simply decided to fight to the last soldier. And how many soldiers are left over there? When will this hell come to an end?...65

#### PART IV: ANALYSIS OF URBAN IPB DOCTRINE

With a greater appreciation of the nature of urban battle now established, the task at hand is to measure urban IPB doctrine against two criteria: whether the doctrine accounts for the unique features of urban combat, and whether templating is a feasible, reliable method of predicting enemy action in a city. A review and critique of IPB templating techniques will shed some light on how we are supposed to apply fundamental IPB doctrine to urban combat.

##### Step One: Battlefield Area Evaluation

Doctrinally, BAE for a city has the goal of categorizing the urban area and nature of the threat. Unlike open country BAE, this step of urban IPB does not

specify urban areas of interest or operations. Cities are classified only by size, and areas within cities by building typology and street layout. Pre-hostilities population estimates determine city size. However, this convention does not reflect population changes caused by casualties, evacuation, the city's perimeter, age or other relevant information. The five building types are drawn from Korea/Europe examples:

- \* Dense, random construction
- \* Closed-orderly block
- \* Dispersed residential area
- \* High-rise area
- \* Industrial or transportation 66

Except for the last category, these classifications have little bearing on why combat leaders choose to make use of a specific structure. In time, battle damage nullifies the significance of area categories. As such, they are only distinctions without a difference and add little to urban area analysis.

#### Step Two: Terrain Analysis

The basic problem of urban terrain analysis is one of scale, resolution and dimension. In open country, terrain analysis can help determine where and how quickly large armored formations might maneuver. This will not suffice in an urban area, where decisive elements are small teams of soldiers rather than formations of tanks and APCs. Discovering how the intricacies of urban terrain impact upon small unit tactics and weapons must be the goal of urban terrain analysis. This distinction is missing from FM 34-130.

FM 34-130 concedes that familiar rules of terrain analysis are inadequate for an urban area. Analysts must use special products for urban terrain analysis, such as photo-mosaics and detailed city maps.67

Even that level of resolution is still inadequate, however. Current city maps are in short supply and are often of improper scale. They do not routinely include data for all three dimensions of urban combat and sometimes bear no resemblance to ground truth after months of fighting. For these reasons, city maps are very difficult to update. Meters mean more than kilometers, and victory can be decided in an area no larger than a brigade-sized assembly area situated in open terrain. As a consequence of its inadequate resolution, urban terrain analysis doctrine is not comprehensive.

FM 34-130 acknowledges that urban combat is three-dimensional, and recommends the preparation of special overlays to show subterranean features and tall buildings.68 Sadly, this suggestion is not thoroughly developed during the Terrain Analysis step of urban IPB. The nature of urban battle suggests that three-dimensionality is the most important military aspect of urban terrain and should drive the templating process rather than be a mere addition to it.

The manual describes urbanization and defines three basic urban patterns and two subpatterns: hub, satellite, network linear, and segment/pie slice.69 These patterns

can affect time/space calculations between separate urban areas but have nothing to do with intra-city terrain analysis. The patterns have no impact on specific templating techniques, and hence do not enhance IPB's predictiveness.

According to FM 34-130, the five urban sub-area types are to be considered in terrain analysis.<sup>70</sup> This typology accounts for building appearance and distribution in a large area, but does not include important variances among buildings, such as frame versus masonry construction, age and condition, function, height, and underground detail. These factors are essential in assessing the tactical value of buildings, and must be part of urban terrain analysis.

Specific characteristics of buildings and facilities help determine why one becomes key terrain and another does not. This level of precision is not easily carried over to the large-scale templating process, which regards urban areas as little more than obstacles to be avoided.

The manual states that urban terrain analysis must identify key buildings, such as hospitals, food stores, armories, fire and police stations, and major city government facilities.<sup>71</sup> There is an important inconsistency between what the doctrine requires and what the example templates illustrate, however. Specific buildings are not featured on the sample urban combined obstacle overlay shown in FM 34-130.<sup>72</sup>

FM 34-130 contends that each sub-area type is

distinguished by particular ranges of observation and fields of fire.73 This is a very imprecise guide, because each city is different and no two blocks are the same. In Santo Domingo and Stalingrad, observation and fields of fire varied several hundreds of meters within the same area, frequently within the same block.

The manual concedes that "every city is different," but its templating techniques are inconsistent with that admission.74 For example, no mention is made of line-of-sight versus ground-level dead space trade-offs common to fighting from tall buildings, which help explain why observation occurs at higher levels than engagements. In an urban area, observation and fields of fire are not always the same.

Stalingrad showed that because of battle damage, military aspects of terrain can vary widely even within a very small area, rendering general pre-battle classifications meaningless. The manual does not suggest the need, let alone offer a method to record and assess changes to man-made and natural terrain in an urban area.

The five basic types of urban terrain are also associated with specific avenue of approach widths, varying from 150 to 600 meters; the avenues are determined by clear passage routes between buildings.75 Supposedly, analysts can use these widths to calculate the size of force likely to maneuver along the avenues, as is presumed to be the case with open areas. This speculation does not pass the test of history, however.

Commitment of forces to street approaches was very dangerous in the unsecure parts of Santo Domingo and pure suicide in Stalingrad. Street maneuver was the risky exception, not the rule.

In an urban area, it is small scale tactical movement, not massed maneuver, that matters most. Successful urban movement occurs along narrow, often concealed routes. Though infiltration routes predominate in urban battles, IPB doctrine does not account for them during the terrain analysis step. Of course, attempting to predict and portray infiltration routes on a scale template would be a frustrating if not impossible undertaking.

The results of terrain analysis are shown on a MCOO. The example urban MCOO in Appendix B of FM 34-130 closely resembles a "slow-go/no-go" MCOO prepared for open terrain. It portrays two broad avenues of approach sweeping through a large town.<sup>76</sup> The important details of urban terrain are missing from the MCOO.

Urban terrain analysis has little value unless it concentrates on vital details of small areas, such as infiltration routes and the composition of important buildings. There certainly can be an almost infinite number of each in an urban area, and they are likely to change as the battle drags on.

Urban areas do not lend themselves to standard IPB terrain analysis techniques. A great many overlays are needed to capture all that is truly important.<sup>77</sup>



Depicting the complexities of a dense, three-dimensional urban area on a two-dimensional MCOO may be asking too much of IPB, but the doctrine cannot promise to be predictive without this level of detail. Present urban terrain analysis procedures are inadequate because they do not accommodate the nature of urban battle.

#### Step Three: Weather Analysis

FM 34-130 provides a good description of weather analysis for urban areas. A great deal of thought has gone into this section; it encompasses the features of weather inherent in the nature of urban war. This step does not differ significantly from open terrain weather analysis, though some aspects merit discussion here.

Light data is of special concern in urban areas. Built-up areas attenuate natural sunlight, resulting in shorter periods of natural daylight than surrounding open terrain. Large buildings can cause unpredictable wind patterns and canalization, making low-level flight more dangerous. As a rule, built-up areas are always warmer than surrounding open terrain, often by as much as ten to fifteen degrees.<sup>78</sup>

#### Step Four: Threat Evaluation

Foreshadowing many of its own shortcomings, FM 34-130 concedes that "familiar threat doctrine will not apply to urban terrain, and weapons systems capabilities will be seriously degraded."<sup>79</sup> By "familiar," the manual means "familiar open terrain." It is difficult to ignore the implication that familiar friendly doctrine, such as

IPB, will not apply to urban terrain either. The passage is half correct--open terrain tactics do not work in urban areas. However, the assertion that all weapons effects will be degraded in urban combat is entirely mistaken. Snipers, grenades, demolitions and booby traps assume much greater importance. The nuance of this statement belies a bias that permeates FM 34-130, and suggests that Appendix B is not based on a comprehensive appreciation of the nature of urban combat.

Ostensibly, the same three threat integration procedures are required for open and urban terrain: data base development, enemy capabilities determination, and doctrinal templating. Cognizant of the role of small units, Appendix B focuses the threat evaluation step on Soviet battalion and smaller formations, and makes reference to assault groups of Stalingrad fame.<sup>80</sup> Guerrilla and terrorist tactics are briefly mentioned.

There are crucial flaws in this portion of Appendix B. First, Soviet urban tactics are described in the same set-piece fashion that can now be recognized as the norm in open terrain doctrinal templates. But urban combat routinely demands the creation of stratagems, as Sun Tzu anticipated centuries ago. In Stalingrad, the Soviets demonstrated that their urban tactics were situation-dependent and constantly changed to surprise the Germans. No set of doctrinal templates could have captured the ingenuity and variety of either Soviet or German urban tactics.

A good example of this was the evolution of assault groups, who used imaginative organization, techniques and procedures in their daring, cunning attacks. The description of assault groups on page B-22 reads simply, "motorized rifle companies may be designated as assault groups." The manual does not give tactical leaders credit for the adaptability and imagination that they have historically shown during urban combat.

Second, doctrinal template examples are provided only down to platoon level, whereas the actions of even smaller units are often decisive in urban combat. There is no evidence to suggest that any of the small unit tactics used at Stalingrad or Santo Domingo can be reduced to a doctrinal template. Here again, IPB's larger resolution level does not suit the reality of urban battle.

Third, the manual ignores the many other conventional threat forces which we may engage in future urban combat. As our most familiar potential opponent, it is natural that the Soviets are featured. They are no longer our most probable opponent, however. IPB must be adaptable to the doctrine of other possible adversaries; there is no indication of this in Appendix B.

Fourth, the Santo Domingo case study suggests that doctrinal templates may not be feasible during urban insurgency, simply because some groups may not have developed specific doctrine. FM 34-130 admits that doctrinal templates are normally not prepared for

terrorist and insurgency situations.<sup>81</sup> We may assume the same in cases where we are fighting a conventionally-armed but unfamiliar opponent.

One key to tactical predictability is baseline knowledge of how an opponent would fight if free from restrictions and constraints. Without a solid doctrinal template, we have only educated guesswork as the basis for pre-battle situation, event and decision support templates. In these situations, the pre-battle IPB process is not precise enough to be predictive. Instead, we must rely on reactive pattern analysis and situation updates during the battle.

Finally, IPB doctrine should recognize that urban tactical techniques and procedures make use of combat-proven small unit weapons and organizations. Can we template the probable doctrinal employment of snipers, sappers, grenades, and ambush teams in an urban combat environment? The evidence suggests that this cannot be done in advance at the level of precision required. The permutations of small unit urban tactics are almost endless and, therefore, essentially unpredictable. It appears that Army doctrine promises more than IPB templating can reasonably deliver in urban terrain.

We again encounter problems of dimension and scale in this urban IPB step. Doctrinal uncertainty, and the fact that urban tactics tend to change during the battle, add to the imprecision. Flaws at this stage of the process will contaminate succeeding templates and greatly

reduce the predictive value of IPB.

#### Step Five: Threat Integration

Step Five, Threat Integration, is the most important part of IPB, because it is here that products of earlier steps are combined to construct situational and event templates. Staffs use these graphics in an attempt to predict the enemy's most probable course of action and produce decision support graphics for the commander. The quality of these graphics will suffer should imprecision or uncertainty dull any of the preceding templates. Certainly, the intricacies and complexities of urban combat are fertile ground for guesswork and imprecision.

FM 34-130 refers to the importance of political considerations during urban operations, and recommends that a population overlay be prepared to depict the sentiments of the local populace during low-intensity operations. This is not enough, however. Stalingrad shows how the actions and cooperation of civilians can make an important difference in very high intensity urban combat. Civilians should also be included in the threat integration step for mid- and high-intensity operations.

Careful reading of Appendix B reveals that the clear linkages between each open country IPB step are missing from urban IPB steps. Specifically, Threat Integration requires important information that is not part of the urban terrain analysis or threat evaluation steps.

For the most part, the components and products of Threat Integration should not differ because of terrain

or tactics. However, Appendix B admits that a decision support template is not normally prepared for LIC or terrorist situations because doctrinal templates are impossible to produce.<sup>82</sup> The same theme is evident in emerging USAICS IPB doctrine.<sup>83</sup> This does not bode well for the predictive potential of urban IPB across the operational continuum, since it will be as difficult to construct doctrinal and situational templates for a familiar opponent in a conventional fight.

For conventional operations, situation templates are to be based on the doctrinal employment of Soviet battalions, and should include platoon and even squad strongpoints in buildings. The templated area is usually smaller than a square kilometer.<sup>84</sup> While this is a good approach, it cannot be conducted at the level of resolution required because the MCOO lacks the necessary detail and no two squad strongpoints will look the same over the course of an urban battle.

When fighting in open country, a commander often has the latitude to select terrain which will facilitate the doctrinal employment of his forces, as they were trained. But when a commander conducts urban combat operations, he is compelled from the beginning to sacrifice freedom of maneuver and accept terrain- and enemy-induced changes to his use of combat power. Experience shows that he will seek to modify his tactics to achieve surprise rather than react to the enemy. Should his mission include damage limitation restrictions, or in the event large

numbers of civilians are present in the city, his use of combat power is much more restricted than in open terrain. For these reasons and others, urban tactics vary widely, even among the same combatants during the same battle (as both case studies suggest). This makes urban situational templating a daunting task.

There is an explicit doctrinal inconsistency concerning the event template. FM 100-15 and its organizational subordinates direct that the event template be based on the situation template which shows the most probable enemy course of action.<sup>85</sup> FM 34-130 requires that each enemy capability, drawn from all situational templates, be shown on the event template.<sup>86</sup> The former method is most often employed in Army schools and in the field, and the event template is usually keyed to a single enemy course of action.

This inconsistency has dangerous implications regardless of where IPB is used, and is particularly important when considering the application of IPB to an urban environment. Simple determination of enemy capabilities in an urban area is hard enough. Comparing the myriad options available to the enemy, with the goal of selecting the two or three most probable courses of action, may require the intelligence staff to "wish away" some enemy capabilities without sufficient cause. This propensity has often returned to haunt guilty staff officers at the NTC and CGSC. IPB is not the place to take risk.

Appendix B posits that urban event templates cannot really be keyed to events, but only to terrain (such as attack routes).<sup>87</sup> Specific buildings are designated as Named Areas of Interest, but urban terrain analysis does not provide the detail required to contrast one building with another. Lack of MCOO detail negates the value of tying the event template to terrain.

Finally, Appendix B insists that the Decision Support Template (DST) is absolutely essential, but implies that it is a direct result of "what if" wargaming. Perhaps in silent recognition of the shortcomings of preceding templates, the DST has tenuous connections to them. This is an important departure from basic doctrine, which requires IPB to be an iterative, intra-dependent process. To the extent that the urban DST is a "stand alone" graphic, it becomes all the more important in the predictiveness struggle.

The manual contends that a DST is necessary because "the restrictive nature of terrain limits freedom of action to such an extent that the commander must be able to determine enemy options at a glance."<sup>88</sup> In fact, the contrary is often the case in urban battle.

Restrictive urban terrain usually prohibits large scale maneuver in towns, but this is replaced by small unit movement which cannot be discerned at a glance. A DST can certainly show the few avenues of approach where armored units might be able to maneuver through rubble, but it cannot depict the multiple infiltration routes



routinely used to decide the outcome of urban battles.

This assessment has shown, first, that doctrinal urban IPB techniques are little more than modifications of the techniques used for open terrain, and second, that superimposing these techniques on urban battlefields cannot reliably produce predictive intelligence. With the exception of the weather analysis step, urban IPB doctrine does not accommodate the nature of urban battle. While analysts can and should use graphics to assess and record the intricacies of urban combat, the procedures contained in Appendix B to FM 34-130 cannot be depended upon to predict urban battlefield events.

#### PART V: CONCLUSIONS AND RECOMMENDATIONS

Urban combat is fundamentally different than combat on open terrain; professional soldiers have long recognized this fact. Classical and contemporary theorists have acknowledged the distinctions that mark urban combat as more difficult, complicated and dangerous than combat elsewhere. The U.S. Army appreciates the implications of any urban military operation and has some doctrine that is expressly tailored for combat in cities.

But Army IPB doctrine does not accommodate the unique nature of urban combat. Because of problems with scale and dimension, basic IPB templating is not easily adaptable to urban terrain. Large scale, short duration, two-dimensional templates cannot reliably produce predictive intelligence for a small scale, long duration, three-dimensional urban battlefield. Extant urban

templating techniques do not account for the complexity, intricacy and concentration of force in a small urban area. Nor can we template fog, friction, stress, confusion, imagination and cunning--elements that are probably even more important in determining the outcome of urban battles than contests in open terrain.

Intelligence personnel initially developed IPB for use against a heavily mechanized enemy, operating in deeply echeloned, fast moving vehicular formations over great distances. Though modified somewhat for urban areas, IPB techniques are still inappropriate for use in predicting the actions of enemy forces organized in small, dismounted units fighting in complex urban terrain. Urban combat merits its own customized IPB techniques and procedures, just as it merits special tactics. The changes required to adapt IPB to urban combat, expressed in FM 34-130, do not overcome IPB's developmental bias.

Unlike open country, man-made terrain is quickly altered as a result of battle damage, often in ways that subsequently affect the course of important events. There are an infinite number of small unit tactical combinations possible in a three-dimensional urban battlefield. Selection of one combination over another is a function of many variables, not the least of which is the physical and emotional condition of leaders who are immersed in the most intense form of combat. These considerations are not easily templated on a map. There

are simply too many possibilities and too little resolution in the templating process to make urban IPB predictive.

This said, there remain several possible uses for IPB-derived products on an urban battlefield. While urban combat remains absolutely undesirable and unpredictable, it has become positively inevitable; we must become better prepared for it.

Michael Howard stated that we have an obligation to ensure that our doctrine not be "too badly wrong."<sup>89</sup> Cognizant of the nature of urban combat, Army doctrine should demand less of urban IPB. In urban terrain, across the operational continuum, IPB cannot be predictive to the extent that is envisioned for open terrain. We should not expect more of the process than it can reasonably deliver.

Once freed from their predictive shackles and then properly expanded in scope and detail, overlays and templates can illustrate the intricacies of urban battle that are not immediately obvious on a map. They are also instrumental in tracking the evolving character of the battlefield after combat begins. In this role they serve as important references for tactical planners, but cannot reliably predict enemy action on urban battlefields.

How can urban IPB techniques and procedures be improved? First, we must focus on the all-important details of urban terrain. Traditional terrain analysis is inadequate because it does not focus on specific

features of individual buildings and facilities. Geographers have developed a detailed process of assessing the layout, function, utilities and construction of buildings: town morphology.<sup>90</sup> Several authorities have suggested morphology models that have military applications. Though a detailed assessment of this field is outside the scope of this paper, town morphology is an excellent bench mark from which to begin the design of detailed urban terrain analysis techniques.

Next, we must gain a better appreciation of the need to generate very detailed urban intelligence to augment basic terrain analysis. Sometimes it may be possible to develop such intelligence in advance, from sources that include telephone books, town plans, bus and subway route maps, and emergency shelter locations. Usually, however, U.S. troops will have to scrounge for urban intelligence once on the scene. Utilities plans, building blueprints, public transportation system plans, factory layouts, and information found in commercial zoning and licensing offices can be invaluable. Local civilian and government officials are good sources, as well. Gaining access to these sources must be considered a top tactical priority, and may be an initial objective in many MOUT situations.

Intelligence officers and agencies should expand intelligence data bases to include the urban combat doctrine of other possible opponents. That a nation's army was trained and equipped by the Soviet Union does not mean that it will use Soviet tactics, as the Iraqis

demonstrated during their war with Iran.91

Capitalizing upon all intelligence sources, we should prepare additional overlays and templates before and during urban combat. Some may be simple variations of basic IPB products, but they have special utility in an urban environment. Examples include:

- \* Population overlays to depict the location, number and sympathies of local civilians.

- \* Commercial zone overlays to show the location, type and amount of local services and supplies.

- \* Damage limitation overlays to post the location and description of important landmarks or facilities that should be spared damage.

- \* Vertical elevation overlays to denote the heights of major buildings and establish line of sight.

- \* Utilities network overlays, to identify underground passages and facilitate the rapid resumption of essential public services.

- \* Subterranean overlays to record known and suspected below-ground movement routes.

- \* Rubble overlays to depict "ground truth" on the MCOO.

- \* Pattern Analysis templates, based on reports and tactical debriefings, to record and analyze enemy small unit tactics.

Finally, Appendix B of FM 34-130 should be completely rewritten during the next review of the manual. The same insightful tone that distinguishes the weather analysis section should be apparent in the entire appendix. After that, FM 34-130 should be the single source for IPB doctrine. Tactical unit field manuals should make general reference to the process, but its details should be vested in one manual where there is less chance for misunderstanding and conflict.

The root of the urban IPB problem is that, in our enthusiasm to make the most of what appears to be a good thing, we have mistakenly tried to expand a model of

restricted utility into a multi-purpose doctrinal shortcut. We compound the problem with our insistence that IPB be predictive across the operational continuum. That is simply asking more than the graphic model can deliver. Before our next adventure in urban combat, we must acknowledge what IPB can and cannot do for us and revise its urban battlefield techniques accordingly.

### Endnotes

1. GEN William Livsey, USA (retired), address to the 1990 CGSOC class in Eisenhower Auditorium, Bell Hall, Fort Leavenworth, Kansas, September 13, 1989.

2. BG E. S. Leland, Jr., "Memorandum for LTC Riscassi, Subject: NTC Observations," Headquarters, National Training Center and Fort Irwin, 20 November 1985.

3. U.S. Department of the Army, Field Manual 101-5, Staff Organizations and Operations (Washington, D.C: U.S. Government Printing Office, 25 May 1984), pp. E-17 through E-18.

4. U.S. Department of the Army, Field Manual 90-10, Military Operations on Urbanized Terrain (Washington, D.C: U.S. Government Printing Office, 15 August 1979), p. 1-12.

5. John A. English, On Infantry (New York: Praeger Publishers, 1984), p. 202-5; Chris Bellamy, The Future of Land Warfare (New York, St. Martin's Press, 1987), pp. 136, 166, 192 and 283-4.

6. For a good summary of the predictive versus capabilities intelligence debate, see MAJ Douglas A. Campbell and MAJ Robert W. McKinney, "Predictive Intelligence--An Old Lesson Unlearned," Military Review (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, August 1990), pp. 50-8.

7. MAJ George A. Gaun, "Intelligence Preparation of the Battlefield," Military Intelligence (Summer 1976), p. 30, quoted by MAJ Russel H. Thaden, "Intelligence Preparation of the Battlefield and Predictive Intelligence," monograph, (Fort Leavenworth, Kansas: School of Advanced Military Studies, 3 December 1986). The possible pitfalls of asking IPB to provide predictive intelligence in open terrain are detailed in Thaden's monograph.

8. LTC Robert Jordan, Commander, 1-52 Infantry (OPFOR), lecture to SAMS Seminar Three, BCTP Briefing, Fort Irwin, California, August 1990.

9. U.S. Department of the Army, Field Manual 71-3, Armored and Mechanized Infantry Brigade (Washington, D.C: U.S. Government Printing Office, 11 May 1988), p. 2-9. Each organizational manual, from Corps (FM 100-15) to Company Team (FM 71-1), contains a "how-to" description of the IPB process. The procedural details vary in some important respects from those contained in the capstone IPB manual, FM 34-130. Furthermore, each states or clearly implies that the purpose of IPB is to predict

battlefield events.

10. U.S. Department of the Army, Field Manual 34-130, Intelligence Preparation of the Battlefield (Washington, D.C: U.S. Government Printing Office, 23 May 1989), p. 4-1.

11. U.S. Army Intelligence Center and School, "Intelligence Preparation of the Battlefield in COIN Operations," SIS AA05387C (Fort Huachuca, Arizona: USAICS, January 1989), pp. 1-2; discussions with CPT (P) Tim O'Neil and CW2 Richard Fulton, USAICS Low Intensity Conflict Task Group, July 1990.

12. Some would argue against this contention, but after reviewing relevant IPB text in each of our field manuals and completing several periods of formal IPB instruction, I am convinced that IPB is an iterative process that successively builds upon itself. For example, if doctrinal or situational templates cannot be prepared, for any reason, the predictive value of the event template and DST will be seriously reduced.

13. Sun Tzu, The Art of War, translated by Samuel B. Griffith (New York: Oxford University Press, 1963), p. 78. Except for note 15, each of the theoretical urban combat comments have been previously recorded by MAJ John R. Kennedy, "Players or Spectators? Heavy Force Doctrine For MOUT," monograph (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, 26 March 1990), pp. 5-9.

14. Ibid., pp. 38, 41, 61, 70, 110, 138.

15. Ibid., pp. 131-2.

16. Carl von Clausewitz, On War, translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), pp. 181-2, 220, 270, 351, 364, 394-5, 402-3, 529, 551, 568, and 598-9.

17. English, pp. 202-5.

18. Bellamy, pp. 136, 166, 192 and 283-4.

19. FM 90-10, pp. 1-2 through 1-11; FM 34-130, pp. B-1 through B-13.

20. FM 34-130, pp. B-1 through B-2.

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Leavenworth, KS: U.S. Army Command and General Staff College, 1985), pp. 27-80, for a concise appraisal of the Stalingrad battle.

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26. Alexander Kononenko, Stalingrad: An Eye-Witness Account (London: Hutchinson and Co., 1945), unnumbered plates.

27. Seth, pp. 62-4; Albert Seaton, The Russo-German War 1941-45 (New York: Praeger Publishers, 1971), p. 280; Marshal A.M. Vasilevsky, "A Victory to Outline the Centuries," Two Hundred Days of Fire (Moscow: Progress Publishers, 1970), p. 26. The last book, a collection of eye-witness Stalingrad accounts, is essential reading for those interested in urban combat.

28. Colonel-General A.I. Rodimtsev, HSU, "On the Last Line," Two Hundred Days of Fire, p. 174; Kenneth J. Strafer, "A Recapitulation of Contemporary MOUT Techniques," Military Review (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, February 1981), p. 50.

29. Alexander Werth, The Year of Stalingrad (New York: Alfred A. Knopf, 1947), p. 463.

30. Kononenko, pp. 30-5; A.M. Vasilevsky, p. 23.

31. Seth, pp. 156-7.

32. Colonel-General I.I. Lyudnikov, HSU, "There is a Cliff on the Volga," Two Hundred Days of Fire, pp. 186-192; Strafer, p. 48-50.

33. Kononenko, p. 108; Lyudnikov, p. 186.

34. Werth, p. 472.

35. Strafer, p. 50.

36. Lyudnikov, p. 200.

37. Werth, p. 458.

38. Kononenko, p. 89.

39. Seth, p. 83; Rodimtsev, p. 173.

40. English, p. 203.
41. Chuikov, p. 292; Lyudnikov, p. 190; Rodimtsev, p. 169.
42. Kononenko, pp. 44-5.
43. Ibid., p. 102; English, p. 204.
44. Kononenko, pp. 102-113.
45. Ibid., p. 110.
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47. Ibid., p. 176.
48. Ibid., pp. 103-6, 176.
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50. Walsh, p. 13.
51. Kurzman, p. 133.
52. Ibid., unnumbered plates.
53. Ibid., p. 27; Yates, p. 130.
54. Lawrence A. Yates, class lecture to 1990 CGSC students, Spring 1990.
55. Walsh, p. 16.
56. Ibid., p. 18.
57. Yates, p. 63.
58. Sun Tzu, pp. 131-32.
59. Ibid., pp. 88-96; Kurzman, p. 240.
60. Walsh, p. 41.
61. Yates, p. 178.
62. Walsh, p. 36.
63. Ibid., p. 35; Kurzman, p. 243.

64. Yates, p. 38.

65. Translation of a letter found on a German officer in Stalingrad, contained in Two Hundred Days of Fire, p. 184-5.

66. FM 34-130, pp. B-3 through B-7.

67. Ibid., p. B-8.

68. Ibid., p. B-19.

69. Ibid., pp. B-10 through B-13.

70. Ibid., pp. B-14 through B-16.

71. Ibid., p. B-9.

72. Ibid., p. B-18.

73. Ibid., p. B-14.

74. Ibid., p. B-7.

75. Ibid., p. B-16.

76. Ibid., p. B-14.

77. This is not meant to imply that urban templates are worthless and should not be prepared. Rather, the use of templates and overlays described in Appendix E of FM 34-130 for the pre-battle prediction of enemy actions seems to be unworkable, as the detail and dimension of the example overlays do not capture the intricate, three-dimensional way urban battles are fought. One cannot concede that it would have been possible to prepare a predictive overlay for any phase of Stalingrad or Santo Domingo. Graphics should be prepared in advance if possible, to illustrate those details which are not obvious on a map alone, and updated during the course of the battle.

78. FM 34-130, pp. B-19 through B-20.

79. Ibid., p. B-2.

80. Ibid., p. B-22.

81. Ibid., p. B-27.

82. Ibid., p. B-28.

83. SIS AA05387C, p. 10.

84. FM 34-130, pp. B-28, B-31.

85. FM 100-15, p. 4-12.
86. FM 34-130, p. 4-59.
87. Ibid., p. B-31.
88. Ibid., p. B-34.
89. Michael Howard, "Military Science in an Age of Peace," Chesney Memorial Gold Medal Lecture, 3 October 1973.
90. Harold Carter, The Study of Urban Geography (New York: John Wiley and Sons, 1976), pp. 8-15. See also Ray M. Northam, Urban Geography (New York: John Wiley and Sons, 1975), and Larry S. Bourne, ed., Internal Structure of the City: Readings on Space and Environment (New York: Oxford University Press, 1971). The study of town morphology can be of tremendous value in refining urban terrain analysis.
91. Stephen C. Pelletiere, Douglas V. Johnson, and Leif R. Rosenberger, Iraqi Power and U.S. Security in the Middle East (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 1990), pp. 31-40.

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