

TECHNICAL ANALYSIS

THE TABLES OF BERLIN

A Perspective on the Probabilities

by R.A. Hammer

Isn't it odd, when you think of it, that the charts and tables that we depend upon so heavily to drive a game are seldom questioned, analysed, or closely examined. We all assume that each and every one is necessary and correct, even when they become absurd and fantasmagorical. About the only time one hears a complaint is in some specific instance where a crucial attack fails at long odds — then teeth gnash and breasts are beaten. So, just to spare your teeth and breast when playing *Berlin '85*...

— Redmond

Since the close of World War II, West Berlin has existed as an island of hope and freedom deep within the boundaries of the Warsaw Pact. The Soviets have periodically tested the will of the Western world to defend her. Today's deterioration of relations between the world's superpowers lends considerable credence to SPI's most recent contemporary creation, *Berlin '85*.

Berlin '85 simulates a major concerted attempt by the Warsaw Pact to wrest control of this symbolic bastion of the Western world from its NATO and paramilitary police defenders. As a game, *Berlin '85* is a second generation application of the popular operational level combat system first developed for the *Modern Battles* series of simulations. To aficionados of this system, the fundamental mechanics for movement and combat will be familiar. However, there the similarity ends. In order to depict the essence of a modern day struggle for control of a heavily urbanized and resolutely defended area, the system has been expanded to incorporate virtually all the significant factors (short of a nuclear exchange) which could be expected to influence the outcome.

The map is perhaps the most detailed of any yet published for an operational level simulation. It is, in fact, somewhat reminiscent of the style of the *Highway to the Reich* graphics. A wealth of information is presented, ranging from an amazing variety of terrain to such interesting details as the locations of airfields, control towers, the city's subway (U-bahn) system, the "wasserworks," power plants, radio stations, petroleum storage tanks, NATO barracks, and so forth.

Among the new features is the concept of collateral damage, which illustrates the tradeoffs between the use of heavy bombardment firepower and the risk of extensively damaging the terrain in the target hex. More on this later. Also included is bridge demoli-

tion, which may be attempted by the NATO player whenever a Warsaw Pact unit moves adjacent to a bridge. Attacks on petroleum storage locations (POL hexes) run the risk of producing firestorms which ruin the hex, but also destroy any unfortunate defender located therein. The possible use of paratroops by the Warsaw Pact to isolate the hard-pressed and desperately stretched NATO lines is another nice touch. Perhaps the most important of all the expanded features in *Berlin '85*, is the inclusion of the Honors of War Table. As will be seen, this rule can produce dramatic shifts in the morale of both sides resulting from both external political influences and the fortunes of war on the battlefield.

The only optional rule involves the use of poison gas by the Warsaw Pact player. Application of this option seriously unbalances the play and both the developer and

I discourage its use — after all, someday you may find *yourself* sitting on the NATO side of the map!

Charts & Tables

Although I have merely scratched the surface in describing some of the features of *Berlin '85*, the intent of this article is not to review the game. I would like to explore those often overlooked elements which give a game its unique flavor — namely, the charts and tables. Few, if any, previous games on this scale have attempted to integrate so many factors into the flow of action. The tables, reflecting this design decision, require careful study to ensure effective play.

When I first began playtesting *Berlin '85*, I anticipated finding Custer's Last Stand Revisited, with about the same outcome. However, I was quite pleasantly surprised as play proceeded. Neither side can relax and

[5.27] TERRAIN EFFECTS CHART

Terrain Type	Movement Point Cost	Combat Shifts	Survival Modifier	Surrender Point Value
Air Control Tower	OT	OT	OT	2
Airfield hex	1	0	+1	1
Autobahn hex	½	OT	OT	-
Barracks hex	OT	OT	OT	2
Bog hex	4	1	0	-
Border hexside	OT+3	OT+1	OT	-
Bridge hexside	OT+1	OT+1	OT	-
Ferry hexside	OT+3	OT+2	OT	-
Forest hex	3	1	-3	-
Industrial hex	1	3	-1	-
Lake hex	1	P	P	-
Objective hex	OT	OT	OT	1
Park hex	2	1	0	-
Road Hex	1	OT	OT	-
Rough hex	2	2	-2	-
Ruin hex	OT+2	OT+1	OT	-
Suburban hex	1	2	-1	-
U-bahn hex	2	OT	OT	-
Urban hex	3	4	-3	-
Water hexside	OT+4	OT+2	OT	-

OT: Other terrain in hex. A "+" means that the cost or shift is in addition to other costs or shifts for the hex. P: means that the action is prohibited. "-" means the terrain has no Surrender Point Value.

expect a cakewalk. In fact, as we shall soon see, the Warsaw Pact player must be extremely careful to avoid unwittingly playing into NATO's strengths.

After having been victimized on several occasions during early game turns, I decided that more than a casual eyeballing of the various tables was required in order to make effective gaming decisions. In fact, I began to question my understanding of exactly what was required to achieve a victory! As a result of these early experiences, I set about to reformat the tables into a more easily interpreted form upon which to make, hopefully, more intelligent use of each side's strengths and weaknesses.

In order to accomplish this, I chose to determine for each table the probability of each of the various outcomes which could occur in a given situation. Before examining the results, a brief discussion of what probability means in this context, and how it is determined, is in order.

Probability is defined as the ratio of the number of chances that something actually has of occurring to the total number of all possible outcomes. For example, for a six-sided die it is possible to roll one of six results. The probability of rolling a 1 is, therefore, one in six (16.7 percent). If a favorable result can occur by rolling either 5 or 6, the probability of obtaining a favorable result is two in six (33.3 percent).

This concept may be further extended to situations where two dice are used and the results are added together. Here, numbers ranging from 2 (1 + 1) to 12 (6 + 6) are possible in 36 possible combinations. Consequently, the probability of rolling, say, a 7 on two dice is obtained by using our definition: a 7 can be obtained by rolling a 1 and a 6 (or vice versa), a 2 and a 5 (or vice versa), or a 3 and a 4 (or vice versa) for a total of 6 possible combinations out of a total of 36 (16.7 percent). When two *consecutive* rolls are required (as on the Honors of War table), the probability of a favorable result occurring on the first roll is multiplied by the probability of a favorable result occurring on the second roll, and is summed with similar results obtained for other favorable combinations. For example, if an 11 (5.6 percent probability) or a 12 (2.8 percent probability) is required on two

dice on the first roll, and a 1, 2 or 3 (50 percent probability) is required on one die on the second roll, the total probability of a favorable result is $5.6 \times .50$ plus $2.8 \times .50$, or 4.2 percent — not very good.

Turning to the analysis of the *Berlin '85* tables, I would like to point out that, in general, the results will be presented from the viewpoint of the Warsaw Pact player, since the majority of the decisions affecting the offensive flow of the game are under his control. The tables which accompany this article present the probabilities in terms of percentages. I have shown results to the nearest tenth of a percent in order to minimize the slight distortions when rounding off. (There are people in this world who get upset when the probabilities do not total up to exactly 100 percent.)

The Price of Victory

As alluded to earlier, the Warsaw Pact player has his work cut out for him. He may

gain control of West Berlin in either of two ways. He must control all objective hexes within West Berlin (and there are lots of them!), plus all the hexes of the Gatow, Tegel, and Tempelhof airfields (including the Tegel and Tempelhof control towers), plus all NATO barracks hexes. The operative word here is *all*. Alternatively, NATO must surrender via the Honors of War table.

Regardless of which approach is taken, the city *must* fall for any victory points to be awarded to the Warsaw Pact. At this time (if it *ever* occurs), the number of Warsaw Pact non-police units remaining on the map is multiplied by the victory point multiple found on the Game-Turn Record Track. An early surrender of West Berlin is imperative since the victory point multiple decreases as the game turns pass. The Warsaw Pact also may gain 5 victory points for each unit of its reinforcements which are withheld from the map. The only victory points which NATO may receive are for interdicting or occupying

[19.3] "HONORS OF WAR" TABLE

Surrender Point Record Track Total

DICE	6...10	11...15	16...20	21...25	26...30	31...35	36...40	41 or more
2	B-2	B-2	B-2	B-1	B-1	B	B+1	B+2
3	B-2	B-2	B-1	B-1	B	B+1	B+2	C-1
4	B-2	B-1	B-1	B	B+1	B+2	C-1	C-1
5	B-1	B-1	B	B+1	B+2	C-1	C-1	C
6	B-1	B	B+1	B+2	C-1	C-1	C	C+1
7	B	B+1	B+2	C-1	C-1	C	C+1	C+2
8	B+1	B+2	C-1	C-1	C	C+1	C+2	S-2
9	B+2	C-1	C-1	C	C+1	C+2	S-2	S-1
10	C-1	C-1	C	C+1	C+2	S-2	S-1	S
11	C-1	C	C+1	C+2	S-2	S-1	S	S+1
12	C	C+1	C+2	S-2	S-1	S	S+1	S+2

B: Roll again; 1-3 NATO receives a combat column shift; 4-6 Warsaw Pact receives the shift. **C:** Roll again; 1-3 cease fire takes effect, 4-6 NATO surrenders. **S:** Roll again; 1-3 no effect, 4-6 NATO surrenders. -1, -2: Second dice roll result reduced by indicated number. +1, +2: Second dice roll result increased by indicated number.

TABLE 1. Surrender Points

Destroying Enemy Units	WP	NATO
Police	1	1
Military	2	2
WP Paratroops	-	3
Seizing Terrain	WP	NATO
Objective hex	1	-
Airfield hex	1	-
Barracks/Control Tower	2	-

TABLE 2. Honors of War Probabilities (from Warsaw Pact perspective)

Outcome	Surrender Point Differential							
	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41+
Unfavorable	56.0	51.3	47.7	45.8	41.7	36.2	29.6	22.6
Null Result	--	--	--	2.3	6.5	12.0	18.5	25.5
Favorable	44.0	48.7	52.3	51.9	51.8	51.8	51.9	51.9
West Berlin Falls	6.0	11.2	18.5	26.4	33.3	39.8	45.4	49.6

the East German railroad line (5 victory points per turn for interdicting and 8 points per turn for occupying) by dedicating one of his artillery units to the sole purpose of interdiction, or by physically moving a unit onto the rail line. The degree of victory (marginal, substantial or decisive) is determined by the difference between the Warsaw Pact and the NATO victory point totals.

Because of the large number of widely dispersed objective hexes and the relatively short time (16 game turns) available to achieve a victory, the Warsaw Pact player cannot realistically hope to fulfill the first set of victory conditions to gain control of Berlin. As a result of this limitation, the overriding objective of the Warsaw Pact forces should be to force a NATO surrender by means of the Honors of War Table. This table, more than any other element of the game, controls the actions of both players, and its interpretation is essential to effective play of the game.

Honors of War

The Honors of War Table is undoubtedly the most interesting and the most critical in the game. It is intended to represent the influence of political and military intangibles on the morale of the combatants and, ultimately, to produce a surrender of West Berlin, if the situation becomes sufficiently grave. The table results reflect the relative losses taken by each side (an effect on morale reflected by a one column shift on the CRT for all attacks made in the current game turn), external political maneuverings (the cease fire result), and, of course, the possible final acknowledgement of the futility of further resistance (West Berlin surrenders).

The Honors of War Table operates as a function of the net surrender points amassed by the Warsaw Pact player. These surrender points are awarded for destroying enemy units and for capturing certain objectives (see Table 1). Unit losses taken by the Warsaw Pact subtract from the total, which is why it becomes so important that, whenever possible, the Warsaw Pact player avoid making attacks which involve a significant risk of an exchange result.

The Honors of War table results can be grouped into four categories:

1. Results unfavorable to the Warsaw Pact player. These consist of a combat morale shift in favor of NATO or a cease fire for the current game turn. A cease fire is regarded as an adverse result since it deprives the Warsaw Pact of one game turn in which to amass additional surrender points.
2. Null result — one which has no effect on either player.
3. Results favorable to the Warsaw Pact player. These consist of a combat morale shift in favor of the Warsaw Pact or the surrender of West Berlin.
4. West Berlin surrenders. This result is a subcase of (3) and is broken out separately

ly since it is pivotal to satisfying the Warsaw Pact victory conditions.

The breakdown of the probability of each of the preceding four results is presented in Table 2 as a function of the surrender point differential.

Just what does Table 2 illustrate? The first observation is that under the *best* of conditions (using the 41+ column) only a 50 percent chance exists of a West Berlin surrender occurring on a given game-turn. Consequently, surrender is not at all automatic just because the Warsaw Pact has amassed a large number of surrender points. Because time is of the essence (remember that that the victory point multiple is decreasing as the game-turns pass), the Warsaw Pact player must accumulate a large total of surrender points as early as possible in order to allow for the likelihood of needing several attempts to get a surrender result on the Honors of War Table.

A second point to keep in mind is that, in general, regardless of the number of surrender points, a roughly even probability exists of either being hurt or obtaining a null result rather than being helped by invoking the Honors of War Table. (I should point out here that the Honors of War Table is used on a given game turn at the discretion of the Warsaw Pact player only.) Based on this result, in the early game-turns when the sur-

render point differential is low, the last thing the Warsaw Pact player needs is any additional adverse combat column shifts — life is tough enough. Consequently, unless you are a gambler by nature, stay away from the Honors of War Table until a large surrender point differential has been achieved. My own personal preference is to hold out until at least a 31 to 35 point differential exists, preferably more. It makes little sense to me to risk exposure to additional losses unnecessarily.

When one looks at the Honors of War Table, it is always possible to debate the specific probabilities of the various results and their adequacy in “realistically” representing the real world. However, the Honors of War Table works admirably well in game terms by introducing the influence of some of the intangibles surrounding any conflict. In addition, the Honors of War Table adds an interesting element of uncertainty into both players’ planning. This one single feature ensures that *Berlin ’85* will not become a “set-piece” simulation after several playings.

Combat Results Tables

Let us now turn our attention to the Combat Result Table (CRT) and some of the factors which must be taken into account during the heat of the battle. The results on the CRT are a function of the combat strength differential (the difference between

[7.61] COMBAT RESULTS TABLE

DIE	Combat Differential (Attacking Strength minus Defending Strength)											
	-7	-6,5	-4,3	-2	-1	0	+1	+2,3	+4,5	+6,8	+9,11	+12
1	A1	A1	Br	Ax	Ex	Ex	D1	D2	D3	D4	De	De
2	A1	A1	A1	Br	Ax	Ex	Ex	D1	D2	D3	D4	De
3	A2	A1	A1	A1	Br	Ax	Ex	Ex	D1	D2	D3	D4
4	A3	A2	A1	A1	A1	Br	Ax	Ex	Ex	D1	D2	D3
5	Ae	A3	A2	A1	A1	A1	Br	Ax	Ex	Ex	D1	D2
6	Ae	Ae	A3	A2	A1	A1	A1	Br	Ax	Ex	Ex	D1

D1(2,3,4): Defender retreats the number of hexes indicated. **A1(2,3,4):** Attacker retreats the number of hexes indicated. **Br:** Both Defender and Attacker retreat one hex, Defender first. **Ae:** Attacker eliminated. **De:** Defender eliminated. **Ex:** Exchange; all defending Strength Points eliminated and an equal or greater number of attacking Strength Points eliminated. **Ax:** All defending units

retreat one hex and a number of attacking Strength Points, equal to or greater than the Defense Strength of the defending units, are eliminated. **Note:** See 7.6 for detailed explanation of combat results. Combat at a differential less than -7 is resolved on the -7 column; combat at a differential greater than +12 is resolved on the +12 column.

TABLE 3. Probability of Attacker Losing a Unit by Suffering and Exchange Result

CRT Result	Attack Differential						
	-4 or -3	-2	-1	0 thru +5	+6 thru +8	+9 thru +11	+12
Probability of Ex/Ax Result	0.0	16.7	33.3	50.0	33.3	16.7	0.0

[10.6] COLLATERAL DAMAGE TABLE

	Artillery & Ground Support Barrage and FP Strength Points					
Park/Rough	7	8	9	10	11	12
Forest/Suburban	6	7	8	9	10	11
Industrial/Urban	5	6	7	8	9	10
DIE						
1	-	-	-	-	-	d
2	-	-	-	-	-	d d
3	-	-	-	d	d	d d
4	-	-	d	d	d	d d
5	-	d	d	d	d	d d
6	d	d	d	d	d	d d

- = No effect. d = Damage.

the attacker's and the defender's strengths) and, of course, the die roll. In addition, the effects of terrain occupied by the defender, possible collateral damage, the supply status of both the attacker and the defender, the relative morale (from the Honors of War Table), and the optional use of poison gas are integrated into the CRT as cumulative column shifts. The effects of these column shifts are pivotal to planning optimal attacks, defending effectively, and minimizing one's losses.

The CRT is a bloody one. The distribution of exchanges is particularly troublesome and mandates attacking at the highest combat differential in combination with as many favorable column shifts as can be mustered. For example, Table 3 shows that even when attacking at +6 to +8, a 33 percent chance exists of the attacker suffering a loss via an exchange result. The Warsaw Pact player can be seriously damaged when attacking West Berlin police units, particularly when the police are in good defensive terrain. In this case, the elimination of one or two NATO strength points (worth one surrender point) could cost the Warsaw Pact a unit of considerably greater strength (and worth two surrender points). Clearly, this is no way to win a war! The Warsaw Pact problems are compounded by the fact that low strength units, useful in exchange situations, are extremely hard to come by. This necessitates making fewer attacks on a given turn in order to generate the highest possible relative strengths and thereby minimize the high risk of exchanges which exists below +9 combat differentials. The units to be attacked must also be chosen with care to gain, if possible, a favorable combination of column shifts. None of this is easy, and careful pre-planning is essential.

At first glance this disparity in losses may seem unreasonable. Upon reflection, however, the real world costs to an attacker assaulting a stubborn, prepared defender is well simulated. For instance, it is believed that the Soviets estimate that a 10 to 1 ratio of strength in city fighting is approximately

TABLE 4. Probability of Collateral Damage

Terrain Type	Barrage/Air Points					
Industrial, Urban	5	6	7	8	9	10
Forest, Suburban	6	7	8	9	10	11
Park, Rough	7	8	9	10	11	12
Probability of Ruin	16.7	33.3	50.0	66.7	83.3	100.0

equivalent to a 3 to 1 ratio in other, more open types of terrain. This result does, in fact, occur in *Berlin '85* because of the successful integration of the CRT with the terrain, supply, and morale effects. The Warsaw Pact player must exercise discretion in selecting his attacks and must anticipate NATO effects on his combat advantage. Clearly, the losses are going to be heavy if indiscriminate attacks are made on a regular basis.

Terrain benefits for the defender range from zero to four column shifts for the terrain within the hex; an additional shift of up to two columns can be obtained if an assault crosses various types of hexsides. The optimal defensive terrain on the map is the urban area which, in addition to a four column shift, is not influenced by enemy zones of control. This prevents the easy elimination of surrounded defenders who are forced to retreat. In addition, it is not possible to cut off the defender's supply at the instant of combat, except by completely surrounding the hex with attacking units — a most inefficient use of one's forces. The benefits of defending in urban hexes give the feeling of having to "dig out" pockets of stubborn resistance in a most realistic manner. Each of the other terrain types conveys its unique characteristics in a similar fashion.

Unit supply status at the time of combat is often crucial to the outcome. When out of supply, the affected unit(s) suffer an adverse two column shift on the CRT. Obviously, putting a defender out of supply can go a long way toward offsetting a strong defensive position or high combat strength. The value of urban hexes, which negate this tactic

in most instances, cannot be overstated for aiding beleaguered NATO units in the later game-turns when mere survival may be in doubt.

Morale is reflected by a one column shift on the CRT which may result from using the Honors of War Table (at the discretion of the Warsaw Pact player).

The optional use of poison gas by the Warsaw Pact seriously tilts the game in its favor and is not recommended. In any event, the use of gas — moral and practical issues aside — should not be taken lightly, since victimized opponents generally have long memories!

Among the new features is the concept of collateral damage, which simulates the effects of heavy bombardment on various types of terrain. Basically, as the number of barrage and air support points used against a specific target hex increases, so does the likelihood of collateral damage (i.e., ruin). The resulting movement penalties and defensive combat bonuses retard the Warsaw Pact advance, since only he has sufficient bombardment resources to inflict collateral damage. Table 4 presents the probability of inflicting collateral damage on various types of terrain. The figure can be used as a guide when deciding whether to commit to a heavy bombardment of a specific hex. Since collateral damage is a two-edged sword, the temptation to "load up" against targets indiscriminately (which prevails in some similar games) should be tempered a bit.

Table 5 summarizes the possibilities of NATO reinforcements. A glance at the table confirms the futility of NATO merely trying

[17.3] REINFORCEMENT TABLE

DIE	Result
2-5	No reinforcements
6-10	No effect
11	Air Support
12	Air Support and Jager brigade

See 17.1 for explanation of Reinforcement Table results.

TABLE 5. Probability of NATO Reinforcements

Probability of Given Outcome

27.8	Reinforcements lost for remainder of game.
63.9	No effect (future reinforcements are possible).
5.6	NATO Air Support only.
2.8*	Jagerbrigade dispatched plus NATO Air Support.

*There is a 0.9 probability of the Jagerbrigade's safe arrival, a 1.4 probability of losing 14 Surrender Points, and a 0.5 probability of aborting.

TABLE 6. Paratroop Landing Probabilities

Terrain Type	Destroyed	Scattered	Total
Airfield	5.0	13.9	19.0
Park, Bog	11.6	19.4	31.0
Suburban, Industrial	20.9	25.0	45.0
Rough	32.9	30.6	63.5
Forest, Urban	46.8	30.6	77.4

TABLE 7 Paratroop Landing Probabilities in Enemy Zone of Control

Terrain Type	Destroyed	Scattered	Total
Airfield	5.1	13.9	19.0
Park, Bog	11.6	19.4	31.0
Suburban, Industrial	20.9	25.0	45.0
Rough	32.9	30.6	63.5
Forest, Urban	46.8	30.6	77.4

[18.5] SURVIVAL TABLE**DIE Result**

1 Unit destroyed

2-4 Unit scattered

5-12 Safe Landing

See 18.6 for modifiers to Survival Table die rolls.

to hold out until the West German Jaeger-brigade arrives. Although it appears that a whopping 3 percent chance exists of the reinforcements arriving, a second die roll is also required. This die roll has a 50 percent chance of the brigade being intercepted and destroyed in the air (14 surrender points to the Warsaw Pact), a 17 percent chance of aborting (lost for the game) and only a 33 percent chance of actually arriving safely. These probabilities, combined with the 3 percent chance on the reinforcement table, result in only *one chance in 100* of any reinforcements ever becoming available to the hard-pressed NATO forces in Berlin. Likewise, the NATO forces cannot even realistically hope for air support more than once or twice per game. NATO moral: minimize your losses, use the most favorable defensive terrain, keep in supply and avoid costly counterattacks, all of which are easier said than done.

Since you *must* lose units, try to sacrifice the West Berlin police units in hard-fought delaying tactics in order to minimize the surrender points which the Warsaw Pact will inexorably amass as the struggle continues. It is important to realize that NATO's best hope is to keep the Warsaw Pact from quickly piling up a high total of surrender points. Keep in mind that as long as you have viable units on the map, and Berlin has not surrendered, the Warsaw Pact player is at the mercy of the Honors of War Table — and your willingness to provide him with surrender points. Sacrificing police units (at one surrender point per unit), while delaying the advance, is the most effective means of keeping him on the low side of the Honors of War Table. Hold out as long as possible — after all, maybe the U.N. will intervene with a strong condemnation. That would fix 'em, eh?

One final, rather obvious, point regarding use of the Reinforcement Table. Refrain from using the table on night turns, since any air support which you might get cannot operate at night! Effectively, you are exposing yourself to the 28 percent chance of losing the West German reinforcements forever with only a one percent chance of getting any useful assistance at all, and *no* air support — a bad risk in anyone's book.

Paratroops

The last area I would like to touch upon is the use of the Warsaw Pact paratroops. Before committing these units, a careful balancing between usage and cost must be reached, a situation which is ever present in *Berlin '85*. Withholding the paratroops from the map is worth 5 victory points per unit. Committing the paratroops is fraught with risks which begin with the decision of whether to airland them at a friendly airfield or to paradrop them behind NATO lines. Airlandings involve no losses. However, much of the usefulness of the paratroops is lost since they are undoubtedly entering the fray on the friendly side of the front lines. Paradrops, on the other hand, involve possible losses just getting on the map.

If the decision is made to paradrop the units, careful consideration must be given to the terrain into which they are to drop. The Survival Table is referred to for each unit and, like the forward pass, three things can happen, two of which are bad. A unit may: (1) land safely, (2) scatter into an adjacent hex; or (3) be destroyed. Landing in an enemy zone of control further increases the possibility of sustaining losses.

Table 6 summarizes the probabilities of paratroops being destroyed or scattered during the drop into various types of terrain. The additional effects of landing in an enemy zone of control are shown in Table 7. (For those purists out there, Table 7 also includes the possibility of a unit scattering on top of an enemy unit, thereby being destroyed. I assumed that only one such hex existed within a scatter zone.) It is clear from these tables that drops into built-up or rough hexes should be avoided unless a desperation attack is absolutely your last hope.

In general, it has been my experience that the withholding of the paratroops for victory point purposes is the most productive

use for them since the Warsaw Pact units already committed to the map can usually keep NATO backing up without additional assistance. In addition, most of the potential drop areas threaten significant casualties before the paratroops ever engage the enemy. (Besides, by withholding these units you are able to prolong your opponent's mental torment — a most satisfying prospect, indeed.)

As can be seen, *Berlin '85* is fraught with challenges and suspense for both sides. Properly played, the outcome is in doubt until the final turns. Hopefully, the above sampling will whet your appetite to explore the situation more fully and reach your own conclusions concerning how best to conduct the battle for Berlin. ■■

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