



## **OBSTACLES AND ELEVATION (Modified)**

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The PanzerBlitz map-board is a two-dimensional representation of a three-dimensional space. The various terrain features, aside from affecting movement and defense, also affect the ability of attacking units to fire at given defending units. Since the weapons used in PanzerBlitz are direct-fire weapons, an attacking unit may not fire at any target which it cannot "see." The terrain symbols on the map show the location of potential obstructions and the obstacle-hex side symbols, and in some cases the hex itself, show in which direction fire is obstructed. These "heavy" hex-side symbols are color-coded according to the type of obstruction they represent.

There are five general types of obstacle/hex-sides and hexes which cut off the line of sight and therefore prevent fire:

1. Low Obstacles: Ground-level Green (woods) hex-sides, ground-level Grey (town) hex-sides, and single hex town and woods hexes. 10 to 20 meters.
2. Medium-Low Obstacles: Dark Brown (Level 1 Slope) hex-sides. 60 to 70 meters.
3. Medium Obstacles: Orange/Red (Level 1 Hilltop) hex-sides. 100 to 140 meters.

4. Medium-High Obstacles: Yellow (Level 2 Slope) hex-sides. 160 to 170 meters.
5. High Obstacles: Purple (Level 2 Hilltop) hex-sides. 200 to 240 meters.

Whether or not a firing unit can "see over" these Obstacles depends upon the elevation at which the firing unit and its potential target are. Units themselves are not considered as obstacles, and players may fire over or through all units, enemy or friendly.

There are five elevations at which a unit may be:

1. Ground Level: 0 meters.
2. Level 1 Slope: 50 to 60 meters.
3. Level 1 Hilltop: 100 to 140 meters.
4. Level 2 Slope: 150 to 160 meters.
5. Level 2 Hilltop: 200 to 240 meters.

The elevation which a unit is at, is of course determined by the terrain it is on. The modified Target Elevation Table shows, in a general way, what hex-side symbols, obstruct the line-of-fire in different cases. The table, however, does not cover all the situations which might arise.

### HOW TO DETERMINE THE LINE OF SIGHT/LINE-OF-FIRE (LOS/LOF)

For all practical purposes the Line-of-Sight is equivalent to the Line-of-Fire. In "real life" the Line-of-Sight would be a perfectly straight line. In the game, however, the Line-of-Sight is traced through the hexagons in a manner similar to the way the units are moved. First, determine the range to the target. Then plot the route through the hexagons which your Line-of-Sight takes. The Line-of-Sight should trace through the exact same number of hexes as the range to the target. The Line-of-Sight, in other words, should be as short and as straight as possible while still conforming to the hexagonal grid. Whenever there is more than one possible "shortest and straightest" route, choose the one least favorable to the attacker: i.e. if one route is clear and an alternate route is obstructed, the obstructed route is considered to be the one through which the Line-of-Sight must be traced. In other words, the defender gets the benefit of the doubt. Using the modified TET and the special notes, determine whether or not any hex-side symbols encountered in tracing the Line-of-Sight, actually obstruct the Line-of-Sight.

#### SPECIAL NOTES (TO BE USED IN CONJUNCTION WITH THE MODIFIED TET)

- A. When firing FROM a slope or a hilltop (of either level) TO a ground-level target, the Line-of-Sight is obstructed if the TARGET UNIT is directly behind a Grey or Green hex-side, or

directly behind a single-hex Woods or Town hex: i.e. "directly behind" means that the intervening Gray or Green hex-side(s) forms one or more of the hexagon sides of the target hex itself. In the case of a single-hex Town or Woods hex, the target unit must be in the adjacent hex directly behind the Town or Woods hex.

- B. When firing FROM ground-level TO a target on a hilltop or a slope (of either level), the Line-of-Sight is obstructed if the FIRING UNIT is directly behind a Gray or Green hex-side or directly behind a single-hex Woods or Town hex.
- C. When firing FROM a Level 1 hilltop TO a ground-level target, the Line-of-Sight is obstructed by intervening Brown hex-side symbols if such a symbol is closer to the TARGET UNIT than to the firing unit or if the symbol is exactly mid-way between the two. To determine the relative position of the Brown symbol, count the number of hexagon SIDES through which the Line-of-Sight is traced (including the side of the firing hex and the side of the target hex).
- D. When firing FROM ground-level TO a target on a Level 1 hilltop, the Line-of-Sight is obstructed by intervening Brown hex-side symbols if such a symbol is closer to the FIRING UNIT than to the target, or exactly midway between the two.
- E. When firing FROM a Level 2 hilltop TO a ground-level target,

- the Line-of-Sight is obstructed by intervening Brown, Yellow, and Orange/Red hex-side symbols if such a symbol is at least 2/3 or more of the distance from the FIRING UNIT to the target.
- F. When firing FROM ground-level TO a target on a Level 2 hilltop, the Line-of-Sight is obstructed by intervening Brown, Yellow, and Orange/Red hex-side symbols if such a symbol is 1/3 or less of the distance from the FIRING UNIT to the target unit.
- G. When firing FROM a Level 2 hilltop to a target on a Level 1 hilltop or Level 1 slope, the Line-of-Sight is obstructed by intervening Yellow hex-side symbols if such a symbol is closer to the TARGET UNIT than to the firing unit or if the symbol is exactly mid-way between the two.
- H. When firing FROM a Level 1 hilltop or Level-1 slope to a target on a Level 2 hilltop, the Line-of-Sight is obstructed by intervening Yellow hex-side symbols if such a symbol is closer to the FIRING UNIT than to the target, or exactly mid-way between the two.
- I. When firing FROM a Level 2 hilltop or Level 2 slope to a target on a Level 1 hilltop or a Level 1 slope, the Line-of-Sight is NOT obstructed by any intervening Orange/Red hex-side symbols.
- J. When firing FROM a Level 1 hilltop or Level 1 slope to a target on a Level 2 hilltop or a Level 2 slope, the Line-of-Sight is NOT obstructed by any intervening Orange/Red hex-side symbols.
- K. (Note B is the converse of Note A, Note D is the converse of Note C, Note F is the converse of Note E, Note H is the converse of Note G, and Note J is the converse of Note I.)
- L. The ONLY case in which a unit may trace an unobstructed Line-of-Sight through more than ONE Orange/Red (Level 1 hilltop) or Purple (Level 2 hilltop) hex-side symbol, other than in cases G, H, I, and J above, is when both the target and the firing unit are on the same level hilltops. In all other situations, except in cases G, H, I, and J above, the LOS is obstructed if it must be traced through more than one Orange/Red and/or Purple hex-side.
- M. No matter what the obstacle or the terrain, a unit may ALWAYS fire at a target to which it is directly adjacent (regardless of elevation).
- N. Notice that in some cases there are towns and woods on top of hilltops. The Green and Gray hex-sides, and in the case of single-hex town and woods the hex itself, obstruct ALL fire no matter what the elevation of the target and the firing unit (except when directly adjacent to each other as per note "J"). The ONLY exception to this is when the target or firing unit is on a Level 2 hilltop or slope hex and the other unit is on a Level 1 hilltop in which case notes A

- and B would apply with the unit on the Level 1 hilltop hex being treated as if it were on a ground-level hex.
- O. Note that when both the target and the attacker are on ground-level, ALL hex-side symbols (Gray, Green, Brown, Orange/Red, Yellow, and Purple) obstruct the Line-of-Sight (except as per note "J").
  - P. (MAPBOARD NOTES:) The interior hexes on the large plateau-like hilltops on various map-boards such as Board No. 2 are all hilltop hexes even though they do not have Orange/Red hex-sides superimposed upon them. (For practical and esthetic purposes the board designer felt it would be redundant to so outline those hexes.)
  - Q. You will notice that in some cases, slope hexes do not have Brown or Yellow hex-side symbols. This is because the Brown and Yellow symbols actually represent the way in which slopes curve and form "corners" to obstruct the LOS. Consequently, whenever a slope is relatively straight, it does not obstruct the LOS along it.
  - R. In some instances, two or more slope hexes meet without a hilltop being formed between them. This represents a ridge or "razorback" hillock. The Brown or Yellow hex-side symbols represent the "spine" of these ridges.

## HILL AND SLOPE DEFENSE EXCEPTIONS

As indicated on the TEC (Terrain Effects Chart) a unit attacking an enemy unit defending on a slope or hilltop, attacks at half-attack-factor. There are some exceptional cases, however, in which the attacker is NOT halved. They are:

- A. When the defending unit is on a hilltop hex, an attacking unit is NOT halved if it is also on a hilltop hex (not necessarily the same hilltop) of the same or higher level. An attacking unit is also not halved if he is on a Level 2 Slope hex and firing down at a defending unit on a Level 1 Hilltop hex. A defender on a hilltop hex could conceivably be attacked by units not on hilltops and units on hilltops as part of the same attack; in which case the attackers not on hilltops would STILL be halved, except as noted above.
- B. When a defender is on a slope (of either level), the attacking unit is not halved if the attacker is directly adjacent to the defender (regardless of elevation). If, however, there is a Brown or Yellow hex-side symbol between an adjacent attacker and defender, the attacking unit's factor is halved. Units on slopes can conceivably be attacked by attacking units which are halved and units which are not halved as part of the same attack.

- C. In all situations other than those described in "A" and "B" above, an attacking unit (regardless of elevation) is halved when firing at units defending on slopes or hilltops.

#### GULLIES AND STREAMBEDS

The gullies and streambeds shown on the board are DEPRESSIONS (minus 5 to 7 meters). The terms "streambed" and "gullies" are interchangeable.

- A. Units in gullies may not fire at (or BE fired at by) units at ground level or in other gully-hexes (unless they are directly adjacent to each other).
- B. Units in gullies may fire at (and BE fired at by) units on slopes and hilltops of either level. In these cases treat the unit in the gully as if it were at ground-level for TET purposes.
- C. "Fords" represent exposed (not depressed) areas of the streambed. They are equivalent to clear terrain for all purposes. The hexagons on which a road crosses a gully (note that on the newer maps the roads will have a bridge symbol where it crosses over the gully) are also considered as clear terrain (even if for some reason the road becomes unusable).
- D. Hexagons containing the end or beginning of a gully are treated as full fledged gullies.

#### REAL-SPACE LINE OF SIGHT DETERMINATION (OPTIONAL RULE)

Use a straight edge (ruler, stiff cardboard, etc.) to determine the Line of Sight. Determine range in the normal way but to calculate Line of Sight, place a straight edge between the center of the firing hex and the center of the target hex. Only those hex-side symbols intersected by the straight-edge need be taken into account. If the straight edge bisects a hex-side symbol through its LENGTH, take that symbol into account UNLESS it is a Brown or Yellow symbol which connects with an Orange/Red or Purple symbol of the same respective level. The defender gets the benefit of the doubt if the straight-edge cuts exactly through the "corner" of a hex where a symbol-side and a non-symbol side meet. In any other ambiguous cases, use "common-sense" to decide, keeping in mind the fact that the board is representing a three-dimensional space.

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