

Rule 9: Spotting

A unit may not be fired at by direct fire unless it is spotted. All game units are back-printed with their national color and a facing arrow (*only for originally GDW issued game sets*) or National Symbol. Units start each scenario flipped over so that opponents do not know the actual strength and location of enemy forces. Units remain flipped until they are spotted, at which time they are turned face up. They remain face up (spotted) until the end of a movement phase in which no enemy unit has an unblocked line of sight to them.

- A. When spotting takes place:** A player may attempt to spot as many enemy units as he desires at the end of each movement phase. A player may attempt to spot every enemy unit which fires at the end of each fire phase. Any player who wishes to fire Msl (Missile) ammunition (*no spotting attempt is made against FGM-148 Javelin, ERYX*) from a previously unspotted unit (See Rule 12) must so declare at the beginning of the fire phase in which he will do so. (*As a player aid, Movement Markers, Missile Fire Markers and Direct Fire markers are available in the Neutral Marker Section for marking firing units*). The opposing player may attempt to spot the missile-firing unit before the fire is resolved. If successfully spotted, the missile firing unit may be fired upon that fire phase.
- B. Line of Sight (LOS):** A player may attempt to spot only enemy units which are in the unobstructed LOS of one of his own units. A LOS exists if the enemy unit is within the maximum LOS distance of the spotting unit, and if the LOS is not blocked. The LOS is a straight line between the center of the spotting unit's hex and the center of the target unit's hex.
- 1. Maximum LOS distance:** The maximum LOS distance depends on the sum of the heights of the spotting and spotted units, as shown on the LOS table.
 - 2. Elevation:** elevation is shown on the map by contour lines and colored areas between them. There are 9 levels of terrain elevation from 0 to 8. Each level change represents 25 meters of actual elevation change. Levels change at contour lines and hex boundaries. Portions of a hex which are in different colored areas are on different levels. The terrain key shows all possible combinations of color and level within a hex (See Appendix C). Note that the same color may represent either of two different levels. If a lower-level color is also present, it is the lower value; if a higher-level color is present or if the hex is only one color, it is the higher value. (Although this may sound confusing, examination of the terrain key should make everything clear; See Appendix C). For example, if light brown and medium brown areas are both present in a hex, the light brown portion is at level 2, while the medium brown portion is at level 3.

A unit is always assumed to be on all levels present in the hex; that is, it may spot and be spotted from any of those levels. In addition, non-vehicle,

dismounted units in a town hex or urban strip may attempt to spot (but not be spotted) as if they were one level higher than the hex that the town or urban strip occupies.

A helicopter in combat formation is considered to be at the same level as the hex, plus one if the hex contains woods, urban strip or town. A helicopter in march formation is considered to be four levels above the terrain of the hex. A helicopter executing a popup is at whatever level the player announces when the popup is begun, up to level 14.

- 3. Blocking Terrain:** A LOS is blocked if it passes through terrain higher than the LOS itself. When both the spotter and the target are on the same elevation, this is an easy determination to make. When they are on different elevations, the LOS graph is used (See Appendix C).

Take out the LOS graph and examine it. The vertical axis represents range measured in hexes. The horizontal axis represents height measured in elevation levels. To use the graph, first locate the position of the spotting unit. The spotting unit is always located on the zero hex range of the range axis and the correct elevation on the height axis. Next, locate the point on the graph of the target unit by cross-indexing the range to the target unit and the target unit's elevation. The intersection of these two lines is the target unit's point on the graph. Lay a straightedge on the graph connecting the two points. The straightedge is the LOS from the spotting unit to the target unit. Finally, determine the range and elevation of any blocking terrain. Determine its point on the graph as the same manner as if it were a target unit. If its location on the graph is above the LOS, then the LOS to the target unit is blocked. If it is exactly on or below the LOS, then the LOS is not blocked.

All terrain is evaluated on the basis of the colored area through which the LOS passes. Town, urban strip and woods hexes are considered to be one elevation higher than the terrain level of the hex for purposes of blocking LOS. (Note that this is true even if the LOS does not pass through the actual town, urban strip, or woods symbol; unlike the colored areas, the terrain is considered to fill the hex. Apply this only to elevation, a unit may attempt to spot a target unit through an urban strip, town or woods hex as long as the LOS does not actually cross the potentially blocking symbol when using a straightedge). Hexes with smoke screens in them (See Rule 19) are considered to be two elevations higher than the terrain level of the hex.

In addition, the LOS to or from a unit in a woods hex is blocked if the immediately adjacent hex along the LOS is also a woods hex. Adjacent units may still attempt to spot each other regardless of terrain.

The hexes the spotting unit and target unit occupy never constitute a block to the LOS.

The LOS to a helicopter in a woods hex is not blocked if the immediately adjacent hex along the LOS is also a woods hex (unless it would be blocked without that special rule, of course).

- C. Number of Spotting Attempts:** Only one spotting attempt may be made per enemy unit per phase, conducted by the friendly unit of the spotting player's choice. Usually, but not necessarily, this will be the unit with the greatest chance to spot the target unit. **CITV equipped vehicles may conduct two spotting attempts per enemy unit per phase. The vehicle commander and gunner search areas overlap.**
- D. Procedure:** Five elements determine the likelihood of a successful spotting attempt: range, target type, terrain, target status and spotter status. These elements are all covered in the spotting tables.

The range from the spotting unit to the target unit determines the base die-roll required to spot the target. This is listed on the base roll table as the number or less which must be rolled on the die in order to spot.

The terrain the target unit is in modifies the base roll. The terrain modifiers table lists the target type (personnel, weapon, or vehicle) and indicates the modifier applied against the spotting number. Note that without a modifier some spotting attempts are impossible. Two modifiers appear in each cell of the table. The first modifier is used if the target is not in cover; the second is used if it is in cover. The notation *Auto* means that a unit is automatically spotted by any enemy unit at any range provided the spotting unit has an unobstructed LOS to the target.

The target status table lists additional modifiers based on the action of the target unit, making it easier to spot units which are moving, firing missiles, or have just fired. The *moving* modifier is used only during the movement phases. Formation changes, mounting and dismounting (for the transported unit), deploying and un-deploying are considered movement for spotting purposes. The *firing* modifier is used during the fire phase and, in the case of non-phasing units conducting opportunity fire, the movement phase.

Finally, the spotter status table lists modifiers based on the type of spotting unit. *(There may be a discrepancy here. From personal experience, some AFVs and AIFVs are equipped with very good thermal imaging equipment. Most of the time, the gunner conducted scanning using the thermal imaging. Thermal imaging significantly increases the likelihood that an AFV or AIFV will spot a target unit. Most modern AFVs and AIFVs are equipped with them but it was probably not until the introduction of the Soviet T-90 (and the Polish PT-91) that eastern bloc forces had a thermal imaging system comparable to NATO vehicles. The installation of the CITV (Commander's Independent Thermal Viewer) in most NATO tanks in the late 1980s and early 1990s will increase the capability of NATO units even more. It's possible to camouflage a tank but you cannot hide the thermal signature it puts out. While*

spotting should not be automatic (after all some things are just plain missed) it should be a lot easier. Thermal sight modifiers have been added to the spotting table.

Modifiers are added or subtracted from the base chance. Thus a positive modifier makes a unit easier to spot, while a negative modifier makes it harder to spot.

All modifiers are cumulative with the exception that a recon armored vehicle unit does not suffer an adverse modifier for being an armored vehicle but does receive the favorable modifier for being a recon unit. All units with asterisks other than HQs and TOCs are recon units. Observation posts and FISTs were equipped with more advanced optics, lasers, and thermal imaging. *The Russian Armata vehicles are equipped with enhanced optical and detection equipment. Russian Armata equipped vehicles have a modifier that is applied to the final spotting die roll regardless of range.*

Both players are required to give enough information about their units which are spotting or being spotted to determine which modifiers apply (but only the minimum necessary amount of information).

The die is rolled once for each hex containing units the player is attempting to spot; however, since different modifiers may apply, some units in the hex may be spotted while some may not.

The auto-spot range table and the maximum spotting ranges table are play-aids created by combining information from the base roll table and the terrain modifiers table. They provide no new information in themselves, merely saving the players the trouble of computing the values they contain.

- E. Auto-spots:** if at any time during a movement phase either player has an unobstructed LOS to an enemy unit for which the modified roll is 10 or more, that unit is automatically and immediately spotted. The auto-spot range table gives the distance at which this is true for all unit types. The spotter status and target status modifiers also apply on this table, as modifiers to the range. The notation *Max* means that the auto-spot range is the same as the maximum LOS.
- F. Maximum Auto-spot Range:** The maximum spotting range table gives the greatest distance at which a spotting attempt on a particular unit has any chance of success (that is, the roll needed is greater than 0). The spotter status and target status modifiers also apply on this table as modifiers to the range.
- G. Dummies:** Dummy counters are included as listed in the scenarios and are used to confuse the opposing player as to a player's exact strength and disposition. Dummies move using whatever mobility category and movement allowance is desired by the player. Dummy counters may not spot; they are spotted as any type the owning player desires.

In order to maintain the illusion, the owning player may place any marker he wishes on a dummy (for example, a cover or hit marker).

A dummy counter, once spotted is removed from the board. A player may return a dummy counter to play at the start of any subsequent friendly movement phase by placing it inverted in the same hex as any unspotted friendly unit. *Only dummy counters for U.S. or Soviet units were provided in the original game.*

- H. Transports:** When a spotted unit mounts a transport, the transport is automatically and immediately spotted. When a unit dismounts from a spotted transport, it is automatically and immediately spotted.
- I. Un-spotting:** If, at the end of any movement or fire phase a previously spotted unit is not within the LOS of any enemy unit, it is flipped over to its unspotted side again. Some units may become incapable of spotting due to suppression (See Rule 10) or morale (see Rule 16). Although these units may not make spotting attempts on spotted units, a spotted unit in their LOS remains spotted.
- J. Ground Surveillance Radar:** Units equipped with GSR have the capability to spot units when visual spotting techniques are inadequate. Units equipped with GSR are identified on the Unit Data Cards. The GSR auto-spot chart is on the Spotting Tables listed in the Charts & Tables section. GSR may be jammed by ECM and may be detected by Aircraft.

Rule 19: Smoke

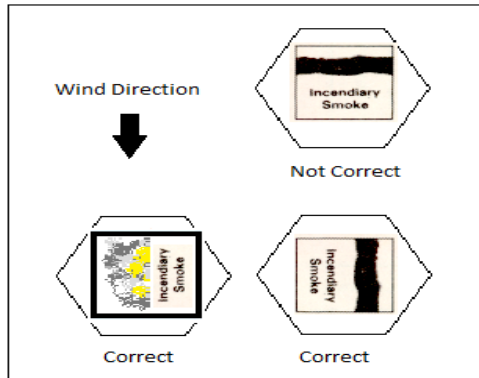
Smoke may be delivered by those indirect fire weapons so noted on the indirect fire data charts. There are two types of smoke: Incendiary smoke and chemical smoke.

A. Placement on the Board: Smoke missions are plotted using the same procedure as any other fire mission, except that units capable of laying more than one smoke screen may plot as many target hexes as smoke screens. In the artillery phase in which the smoke mission arrives, place one smoke marker on the map for each smoke screen.

1. Wind Direction: At the start of each scenario, roll the die and consult the wind direction diagram in the NATO player's scenario folder. This is the direction of the wind for the entire scenario.

2. Wind Velocity: At the start of each scenario, roll the die and consult the wind velocity table. The result will be light, moderate, or strong.

3. Orientation: Each smoke marker is placed in a hex but actually blocks two hexsides. The marker is faced toward a hex vertex, indicating that the two hexsides adjacent to the vertex are blocked. Smoke markers may only be faced in such a way that the line of blocked hexes is parallel to the wind direction.



4. Duration: On the turn of arrival incendiary smoke, place an incendiary smoke marker on the target hex. At the start of the next friendly artillery phase, remove the marker.

On the turn of arrival chemical smoke, place a chemical smoke 1 marker in the hex. If in a light wind condition, flip the marker to its chemical smoke 2 side at the start of the follow-up friendly artillery phase. If in a moderate wind condition, flip the marker to its chemical smoke 2 side and add one additional chemical smoke 1 marker one hex downwind at start of the next friendly artillery phase. At the start of the following friendly artillery phase remove the chemical smoke 2 marker and flip the downwind marker to its 2 side. In the next friendly artillery phase, remove the remaining marker.

If the wind velocity is strong, neither type smoke round creates a smoke screen; on smoke markers are placed (but IS rounds may still attack units in the hex).

B. Effects:

1. Incendiary Smoke: Incendiary smoke blocks LOS for spotting and fire purposes for all units. Incendiary smoke is considered to be two elevation levels tall. The LOS must cross one of the two blocked hexsides to be blocked.

Incendiary smoke may also cause casualties if units are in the target hex the turn of its arrival. See Rule 18.

2. Chemical Smoke: Chemical smoke has the same effect as incendiary smoke except that units equipped with thermal sights (TI and CITV) ignore the effects of smoke.

a. Enhanced Artillery Delivered Chemical Smoke: All Artillery delivered smoke has been enhanced with the capability to block line of sight and laser designation, regardless of thermal sight capability (TI and CITV).

3. Direct Fire Smoke: A few direct fire units are listed as having IS (incendiary smoke) ammunition. This may be used in conventional fire, as detailed in Rule 13. In addition, whenever IS ammunition is used to attack a target in direct fire, an IS screen counter is placed in the target hex, regardless of the result of the fire attack (but not if the wind velocity is strong). The incendiary smoke screen lasts for one complete game turn starting in the artillery phase after it appears. Thus a smoke screen which appears in the NATO fire phase of turn 4 would be removed at the start of the WP fire phase of turn 6.

4. Unit Generated Smoke: Infantry, HQs, OPs and vehicles can self-generate chemical smoke through smoke grenades and in the case of most AFVs, by dumping raw diesel fuel on the engine to generate the smoke screen.

a. Leg Units: Infantry, HQ and OP units can produce one round of chemical smoke. This smoke last for 1 game turn from the phase in which it was created. Place a

chem smoke 2 marker in the same hex with the unit generating the smoke. Infantry smoke can be produced in either movement or any fire phase. In fire phases it can be created after fires occur and fire results applied (including after resolution of opportunity fire against it). In the movement phase it may be created prior to movement or after movement but before spotting attempts. Record the specific unit's use of smoke on the ammunition record. If using the logistic rules this ammunition supply may be replenished. Generating smoke in this manner does not constitute movement and a unit does not have to be in combat formation to do so.

b. AFV Units: AFVs are equipped either with smoke grenade dischargers or can generate smoke through the engine. All tanks and turreted Infantry fighting vehicles are assumed to be able to generate smoke. All other AFVs (WP BRDM-2 or NATO M-113s for example) are equipped with smoke grenade launchers (See list for smoke generating AFVs). AFVs that survive direct fire combat may have a chem smoke 2 marker placed in its hex at the owning player's discretion. Also, a moving AFV may generate smoke in the hex from which it entered its final movement hex. In this case, a chem smoke 2 marker is placed in each hex. Smoke markers are placed in accordance with rules governing wind direction and velocity.

c. Shtora Defense System: Soviet BMP3/BMD3s, T-80s and T-90s are equipped with the Shtora active defense system developed in the early 1990s (**See the Advanced Capabilities Chart**). The system is designed to automatically activate in the event that the Soviet Shtora-equipped AFV is fired upon by an enemy unit that is using a laser designator or the enemy unit is spotting the target Soviet Shtora-equipped AFV using a laser designator. The system also will increase the chance for spotting the firing or spotting enemy unit if the enemy unit is previously un-spotted. Shtora only activates if the firing unit is firing on the front armor of the target unit. The Shtora Defense System activates whether the target unit is in combat or march formation, any time the unit is fired at; the Shtora Smoke generated by the system only occurs on the very first time the Shtora system is activated. Each Soviet BMP3/BMD3 class, T-80 class and T-90 class AFV carries one round of Shtora smoke and may be resupplied. **Shtora equipped vehicles receive a -2 modifier to the base chance to hit when attacked by enemy ATGM, either laser or wire guided. Shtora Smoke BLOCKS laser designators and Thermal Sights.** The modifier continues to be applied even after the expenditure of the Shtora Smoke round.

1. Spotting Procedure: The firing or spotting enemy unit must announce whether it is using a laser designator. If the firing unit is unspotted apply the Shtora spotting modifier. If the firing unit becomes spotted, the target unit is automatically placed in combat formation facing the target and may engage the firing or spotting enemy unit before any enemy missile fire in the resolve fires section of the fire phase. Exception: If the target Soviet Shtora-equipped unit IS ATTACKING WITH missile attack on any enemy unit, the missile is recorded as fired on the ammunition supply but no attack takes place since the Shtora system will disengage the missile. In this case the target Soviet Shtora-equipped unit may not fire again in the current fire phase.

2. Shtora Smoke placement: If the target unit has not expended a round of Shtora smoke, the owning player may place a Shtora smoke marker across the hexsides through the frontal arc of the target unit. Shtora smoke last until the beginning of the next movement phase after which it was placed. Record the use of Shtora smoke on the ammunition record for that unit. Shtora smoke may be replenished if using the Logistics Rules.

RULE 12: Anti-Armor Fire

Anti-armor fire is directed at armored vehicle units. Ammunition types which may be used for anti-armor fire are those which, on the fire data charts, have two numbers separated by a colon in each column of the *effectiveness at range* section of the chart. These include AP, APDU, HEAT, HESH, MPAT, SCAP and MSL ammunition.

A. Hit Procedure: The first number in the *effectiveness at range* section of the direct fire data chart is the base chance of achieving a hit on a target unit at a given range. Roll the decimal die; if the number rolled is equal to or less than the base chance to hit, the fire attack results in a hit. Several factors modify the base hit number.

1. Multiple Targets in Hex: Divide the number of enemy AFV steps in the hex by two, rounding fractional results down, subtract one, and add the total to the base hit number. This step is performed before using the modifiers in bullets 2-4 below. For example, a unit has a base hit number of four and there are six steps of enemy AFV units in the target hex. Add $(6/2-1) = 2$ to the base hit number, giving a new hit number of 6. The number of steps in the hex is considered separately for units on the ground, helicopters in combat formation, and helicopters in march formation.

2. Cover: If a unit is under cover and is being fired at across one of the two covered hexsides, divide the base hit number by 2 and round fractions down, *unless the ammunition being utilized is a top-attack round, in which case there is no modification for cover.*

3. M-901 Units: If a U.S. M-901 unit is under cover and is being fired at across one of the two covered hexsides, divide the base hit number by three, rounding fractions down. (*See the Anti-Armor Fire Modifiers chart for additions to this list, i.e. FIST units, PRAT, etc.*)

4. Missile Fire: If a unit is firing Msl ammunition at units in a woods hex, divide the base hit number by two, rounding fractions down. If the target is also under cover, (see 2 and 3 above), divide with both modifiers before rounding down. (*I do not know why missiles are any different than any other ammunition firing into the woods unless we are assuming that small limbs may break the wire or leaves reflect the laser. Following that same logic, wire guided ATGM should not be fired across the lakes because of the possibility of the wire hitting the water and shorting out the circuit. Also laser guided missiles should probably suffer the same effect when firing into woods, i.e. laser beam reflecting off a tree. After all, an APFSDS round traveling at 1600mps would probably pass through a limb like a hot knife through butter.*)

After the final hit number is determined, roll the die. A roll equal to or less than the hit number means that the target unit suffers one hit. A roll equal to or less than the hit number minus two means that the target unit suffers two hits. For example, a firing unit's final modified hit number is 7. If a 7 or 6 is rolled the target suffers one hit; if a 5 or less is rolled the target suffers two hits. *Shtora equipped vehicles receive a -2 modifier to the base chance to hit when attacked by enemy ATGM, either laser*

or wire guided. This modifier is applied after all other modifiers (see Rule 19.B.4.c. Shtora Smoke).

A target unit which suffers one or more hits will lose steps, provided the hits penetrate.

Top attack profile ammunition and missiles, such as the U.S. Army Javelin and the BGM-71 TOW-2B, always use the flank armor value of the defending unit. Top attack profile munitions are designed to engage the top armor of vehicles where armor is the thinnest. These weapons are identified on the Direct Fire data charts.

- B. Penetration:** Once a hit has been achieved, determine whether or not the ammunition used is capable of penetrating the vehicle's armor. To do so, compare the penetration value of the ammunition to the armor value of the target. If the penetration value is equal to or greater than the armor, the hit may penetrate. If it is less than the armor, the hit does not penetrate, and instead causes the target unit to be suppressed.

1. Penetration Value: Locate the correct column of the *effectiveness at range* section of the direct fire data chart. The second number (i.e. the number following the base hit number) is the penetration value of the ammunition at that range. For example, Soviet T-80 firing AP ammunition has a penetration value of 15 at a range of 8 hexes.

2. Armor Value: Each AFV has two armor values; the first value is for frontal shots and the second value is for flank shots. If the LOS crosses the hexside (march formation) or hexsides (combat formation) the unit is facing, the frontal armor is used. If the LOS crosses any other hexside the flank value is used. If the LOS exactly crosses the vertex between a front hexside and a flank hexside, the front value is used. If the firing unit is in the same hex as the target unit the flank value is always used. Units always use the flank value when defending against top attack profile munitions.

3. Hit Confirmation: A hit from APDU ammunition which is capable of penetrating the target's *UNMODIFIED* armor value automatically causes a loss of one step. Hits from other ammunition must be confirmed. Roll the die once. If the number rolled is equal to or less than the difference between the penetration value of the ammunition and the armor value of the target, the hit causes a one-step loss. If not, the target is suppressed but otherwise unharmed.

In most cases, an addition to the difference between armor and penetration is made (thus making it easier to confirm the hit). If the target unit is protected by Chobham (*Composite*) Armor, no addition is made (*Composite/Depleted Uranium and Chobham 2 armors were developed in the late 1980s and early 1990s. These are exceptionally dense versions of Chobham Armor and as a result a negative modifier is applied to the die roll. See Vehicle Equipment Anti-Armor Chart for complete list*). All vehicles protected by Chobham (Composite) style or laminate armor are listed on the armor types table.

For example, a U.S. infantry unit firing HEAT ammunition achieves a hit on the front of a T-80 unit. The T-80 has a frontal armor value of 15 while the infantry's HEAT ammunition has a penetration of 17, or a difference of two. Since the T-80 has laminate frontal armor, two is added to the difference, for a final difference of four. The U.S. player must roll a four or less on the die to inflict a step loss on the T-80.

a. **Reactive Armor-** Reactive Armor (and Explosive Reactive Armor) consist of add on armor, explosive bricks such as Kontakt 5 or the Israeli Blazer, designed to defeat AP (NOT APDU) and HEAT rounds including anti-tank missiles. More modern AP, HEAT, and MSL rounds have built in counter-measures, such as probes, designed to defeat Reactive Armor. Both NATO and Russian armies utilized RA or ERA to some degree, generally becoming more common after 1990. This new rule mainly addresses the add-on or bolt-on RA/ERA.

1. After it is determined that a hit has occurred with AP/HEAT/MSL ammunition, check the Advance Capabilities chart for the RA/ERA modifier. This number is added to the armor value being attacked. Subtract the ERA modifier listed on the Direct Fire Chart for that particular type ammunition from the target armor value. This is the target modified armor value. Subtract the target modified armor value from the firing unit ammunition penetration value. This is the Penetration value. Add the Armor Type to the Penetration value. Roll the die. If the number rolled is equal to or less than the penetration value of the hit causes a one-step loss. If not, the target is suppressed but otherwise unharmed. The final modifier is applied to the hit confirmation die roll to determine if the round penetrates.

For example, a U.S. M901 successfully fires a TOW2 missile flank shot on Soviet T-90A tank. The Soviet T-90A flank value is (11) + ERA Armor modifier (7) + Ammunition ERA modifier (-3) = Soviet Modified Armor Value (15). Subtract the Soviet Modified Armor Value (15) from the US TOW2 penetration value (23); $23-15=8$. Since the T-90A is equipped with composite armor (-1), these values are added giving a final penetration value of 7. The U.S. player must roll 7 or less to achieve a hit. The U.S. player rolls an 8. The Soviet Kontakt 5 ERA and composite armor has defeated the TOW2 missile.

C. Non-armored vehicles: Non-armored vehicles may be attacked using anti-armor rounds; HEAT, AP, APDU and SCAP. Roll the die to determine if a hit occurs (all modifiers apply). A hit results in an automatic loss of 1 step.

D. Active Protection Systems: Modern MBTs and APCs may be equipped with defensive systems that "attack" or intercept incoming fire. Units with this capability have modifiers to final die role listed on the Unit Data Cards. These

are identified by the acronym APS and list the type of rounds that maybe intercepted. The modifier is added to the final die roll. Listed in parenthesis is the number of attacks that maybe intercepted by the APS. Record each use as a round of ammunition. After the expenditure, the unit may be resupplied through normal logistic operations.

- E. Upgraded ERA:** When conducting direct fire against Russian AFVs equipped with Malachit or Relikt ERA, all rounds must roll for penetration regardless of angle of fire (i.e. Frontal or Flank). APDU type rounds no longer automatically penetrate.

Hit Confirmation Procedure

- 1. Determine primary armor value (Front or Flank)**
- 2. Add the ERA Armor Value for Target Armor Value**
- 3. Add the Ammunition ERA modifier to the Target Armor Value = modified Target Armor Value**
- 4. Subtract modified Target Armor Value from the Ammunition Penetration Value = Base Penetration Value**
- 5. Add the Front or Flank armor modifier**
- 6. Final value is the Penetration Value.**
- 7. Roll die and add APS modifier if required; if this number is less or equal to the Final Penetration Value, the round penetrates and causes a step loss.**