PANZER

OPTIONAL RULES

2015 Edition

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Optional Rules Table of Contents

7.0 Optional Rules

Optional Rules should be thought of as nothing more than that—optional. While typically adding more depth or realism to certain aspects of the game, many of them come with a cost—greater complexity and/or record keeping—and therefore increase play time.

There is no requirement to employ any or all of the Optional Rules. They each stand on their own merits and are not necessarily interdependent.

7.1 Morale

"The worst cowards, banded together, have their power." ~ Homer, The Iliad

Morale is a descriptive term used to convey the overall status of a formation's ability to stand in a fight. Keep in mind that a formation's morale is totally different from its Grade. Grade, at the Force, Formation or Unit level, is a measure of skill and training, while Morale is a measure of relative stability in the face of the enemy.

Two key elements make up the Morale System: the Numeric Cohesion Point and the Break Point. The Numeric Cohesion Point should be thought of as the trigger point. Until it is reached, a formation functions normally in all respects, although certain special events may cause a unit to take a Morale Check. After the Numeric Cohesion Point is reached, the units within a formation become more likely to break with each passing turn.

The Break Point is a representation of probability of a unit's breaking. Breaking is not automatic. Some units have a greater chance of breaking than others. Once a unit breaks, it is severely limited in its ability to function and must recover before it can again function normally.

A third element also comes into play: Hesitation. A unit may not break, but it is not quite certain of its situation; it is Hesitating. The addition of this element or status removes breaking as an all or nothing situation. The impact of Hesitation is not as severe as breaking. In addition, units automatically recover from Hesitation.

While a formation's units are more effective when operating within Command Range of non-command units, this can have just the opposite effect once morale starts to break down. Fear, the inability to function effectively, or whatever *breaking* actually represents, unfortunately breeds more of the same. Breaking has a tendency to cascade through a formation once it starts; units see other broken units and more often than not decide to join the fray.

When employing the Morale Option, players must record each formation's Morale information on a Formation Summary. List the Formation's name and circle its Numeric Cohesion Point in the Command Control & Cohesion Point box for that formation.

7.1.1 Cohesion Point

The Cohesion Point is an expression of a formation's initial unit composition. It is presented as a descriptive term as one of nine possible levels from Superb (the best) to Poor (the worst). That information is then translated into the formation's Numeric Cohesion Point listed as CP #.

Only Combat units are counted when determining a formation's Numeric Cohesion Point. The loss of non-combat units does not count toward a formation's Cohesion Point.

However, all units in a formation, whether combat or non-combat, are subject to Morale Checks.

Scenarios indicate each formation's Cohesion Point and Numeric Cohesion Point.

Reference Scenario 1, The Crossings: Ukraine, late 1943. The German Panzer Company (-) has a Cohesion Point of Excellent and a Numeric Cohesion Point of CP-7.

Use the Determining the Cohesion Point process (see 7.1.1.1) to vary a scenario's listed Cohesion Point or when creating scenarios.

7.1.1.1 Determining the Cohesion Point

Reference the Numeric Cohesion Point, Cohesion Point, and Cohesion Modifiers Tables on Game Card C. The Cohesion Point is calculated by rolling (100) and by combining the modifier listed on the Cohesion Point Table for the correct nationality/time period and then adding any adjustments for Formation Grade from the Cohesion Modifiers Table.

The result is then checked on the Numeric Cohesion Point Table to determine the actual Numeric Cohesion Point. It is read in the same manner as the Available Commands Table (see 6.2.1.1.1).

The period is early-42 for a Soviet Veteran formation fielding 17 combat units. The Soviet player rolls (100); the result is a 63. The Soviet Nationality modifier of –20 is added to the Veteran Formation modifier of +10 resulting in a total modifier of –10. The net result is 53 (63-10).

On the Numeric Cohesion Point Table, 53 is found in the 46-55 row; the Soviet Veteran formation is considered to have Good Morale.

Since the formation has 17 combat units, add the values found under the 10 and 7 columns. The final result is 9.5 (rounded down). 9 is the Numeric Cohesion Point.

Any unit of this Soviet Veteran formation may break when it accumulates 9 or more combat unit casualties.

Consider all factors above the same, but with a formation of 24 combat units. Add the values found under the 10x2 and 4 columns. The final result is 13, the Numeric Cohesion Point.

When varying the listed Cohesion Pont in an existing scenario, certain limitations apply:

For German, USA, French (1944+) or UK formations, do not increase or decrease the listed Cohesion Point by more than two levels.

If the listed Cohesion Point is Excellent, do not increase it above Outstanding or below Adequate.

For Soviet, French (1940) or Italian formations do not increase the listed Cohesion Point by more than one level; it may decrease to any level.

If the listed Cohesion Point is Excellent, do not increase it above Superior. However, it may fall all the way to Poor.

As an added twist, wait to determine the Cohesion Point until a formation suffers it first loss. That way players are unsure of a formation's Cohesion Point until a battle is engaged, a much more realistic situation.

7.1.1.2 Tracking the Cohesion Point

As a formation suffers combat unit losses, check off one number, starting at 1, for each of its eliminated *combat* leg or towed units (the reduction of a squad to a half-squad is not recorded) and each of its *combat* vehicles Bailed Out, Knocked Out or Brewed Up (Track or Damaged results are not recorded). Artillery and aircraft losses do not count.

Once a formation's recorded losses reach its Numeric Cohesion Point its remaining combat and non-combat units are subject to Breaking.

7.1.2 Normal Morale Check

Once a formation equals or exceeds its numeric Cohesion Point, all combat or non-combat units from the formation must immediately take a Morale Check whenever a unit:

- Moves from its current hex.
- Is attacked by Direct or Indirect Fire, or any air attack.
- Is attacked by Overrun, Close Assault, or Hand-to-Hand combat.
- Has a formation Vehicle Brew Up in the same hex.
- Has a formation *command* unit eliminated that is within Command Range (see 6.2.1.1.2). The command unit must be in the unit's chain of command, e.g., if a unit is part of company A it is not affected if a command unit from company B is eliminated. However, it is affected if its battalion or higher command unit is eliminated. This requirement also applies to command units if a higher level command unit is eliminated.
- Is a leg or towed unit that has a formation leg or towed unit eliminated by Overrun or Hand-to-Hand combat in the same hex.

All Morale Checks are taken at the completion of the triggering event, e.g., a move is completed or the Hand-to-Hand combat has determined a victor.

7.1.3 Forced Morale Check

If a unit's formation has not yet reached its Cohesion Point, combat and non-combat units are required to immediately take a Morale Check whenever a unit:

- Receives a flame attack from Direct Fire or as part of a Close Assault or Hand-to-Hand combat.
- Is attacked by Overrun combat, except if occupying an Improved Position or Building hex.
- Has a formation *command* unit eliminated that is within Command Range (see 7.1.2).
- Is a leg or towed unit that has a formation leg or towed unit eliminated by Overrun or Hand-to-Hand combat in the same hex.

Once a formation reaches its Numeric Cohesion Point, all of its units follow the Morale Check conditions (see 7.1.2).

7.1.4 Morale Check Procedure

The Break Point Table on Game Card C is used whenever a unit takes a Morale Check. The row on the table that corresponds to the unit's nationality is used to determine if the unit Breaks, Hesitates or is unaffected by the Morale Check.

If a unit Breaks it is marked with a Break/On counter; if it Hesitates, it is marked with a Hesitation/On counter. If a Broken unit receives a Hesitation result, it retains its current Break status (On or Off) instead.

Roll (100) and apply all applicable modifiers:

Elite Unit Grade
If the unit's Unit Grade is Elite, the modifier is +20.

Veteran Unit Grade
If the unit's Unit Grade is Veteran, the modifier is +10

Regulars Unit Grade
If the unit's Unit Grade is Regulars, the modifier is –10.

Green Unit Grade
If the unit's Unit Grade is Poor, the modifier is –20.

In Medium Cover
If the unit is in Medium Cover, the modifier is +10.

In Heavy Cover
If the unit is in Heavy Cover, the modifier is +20.

Unbroken Command Unit in Cmd Rng
If an unbroken (it may be Hesitating, Suppressed or Damaged) *command* unit from the unit's formation (see 7.1.2) is within Command Range, the modifier is +20.

The maximum is +20 no matter how many command units are within Command Range.

Suppressed or Damaged
If the unit is Suppressed or Damaged, the modifier is –20 each.

Forced Morale Check
If the unit is taking a Forced Morale Check, the modifier is +20.

Broken unit from Formation in Cmd Rng
If any Broken unit from the same formation is in Command Range of the unit, the modifier is –10.

Spotted Unit within 2 Hexes
If there is a spotted opposing unit within 1 or 2 hexes, the modifier is –20.

Spotted Unit within 5 hexes
If there is a spotted opposing unit within 3, 4 or 5 hexes, the modifier is –10.

Suppressed and Full Cover units are less able to spot units. Ignorance is bliss.

Command other than N/C
If the unit has a command other than N/C marked for the current turn, the modifier is –20.

7.1.5 Morale Check Results

If a unit Breaks or is Hesitating, it is subject to the following limitations until it recovers.

7.1.5.1 Hesitating

Any unit with a Hesitation/On or Hesitation/Off counter has the following limitations:

- If employing Direct or Indirect Fire, applies the following modifiers:
  - ◊ –3 to all AP combat
  - ◊ –10 to all GP combat
- May not initiate Overrun, Close Assault or Hand-to-Hand combat.

- If in Hand-to-Hand combat—the modifier is –10.
- Moves at normal speed; automatically changed to Hesitation/On if currently Hesitation/Off.
- For Called or continuous Indirect Fire response—the modifier is 1.

7.1.5.2 Broken

Any unit with a Break/On or Break/Off counter has the following limitations:

- Does not count as an active unit for command purposes; have their command span reduced to 0.
- Applies a –2 spotting modifier by moving 2 down on the table.
- If employing Direct or Indirect Fire, applies the following modifiers:
  - ◊ Does not count as an active unit for command purposes.
  - ◊ –5 to all AP combat
  - ◊ –20 to all GP combat
- May not initiate Overrun, Close Assault or Hand-to-Hand combat.
- If in Hand-to-Hand combat—the modifier is –20.
- Moves at ½ speed (round down); this is cumulative with other movement modifiers. Automatically changed to Break/On if currently Break/Off.
- For Called or Continuous Indirect Fire Response—the modifier is –2.

The Situation

A German Rifle squad, Veteran Unit Grade, located in a Scrub hex was just Overrun by a Soviet T-34/76 M43. It was Suppressed. The T-34/76 M43 is now adjacent to and directly behind the German Rifle squad. Its formation is not yet at its Cohesion Point. An unbroken command unit from its formation is within Command Range.

Due to the fact that the German Rifle squad was Overrun, it must make an immediate Forced Morale Check even though its formation is not yet at its Cohesion Point.

The net modifier is +30:

- *Veteran Unit Grade (+10)*
- *Suppressed (–20)*
- *unbroken command unit within Cmd Rng (+20)*
- *Forced Morale Check (+20).*

The Spotted Unit within 2 Hexes modifier is not applied since the German Rifle squad is Suppressed, and Suppressed units may only spot directly to their front. The T-34/76 M43 is directly behind it.

The German player rolls (100). The result is 36; the net result is a 66 (36+30). Since 66 falls within the Hesitation Range (51-70) on the German row on the Break Point Table, the German Rifle squad is marked with a Hesitation/On counter.

7.1.6 Recovery

During the Adjustment/Remove Morale Counters Step of the Adjustment Phase units may attempt to Recover.

7.1.6.1 Hesitation Recovery

All units with Hesitation/Off counters automatically recover; remove the counters.

7.1.6.2 Break Recovery

All units with Break/Off counters may attempt to recover. This is just like suppression recovery, but in this case, all units have a base recovery range of 51-00 regardless of Unit Grade. If a unit recovers, remove the counter.

Roll (100) and apply all applicable modifiers (see 7.1.4).

7.2 Hidden Units

In boardwargames, it is often very difficult to maintain the element of surprise and concealment when all on-map units are displayed in full view. It is also a very difficult and time consuming process to plot hidden movement either before the start of a scenario, or, for that matter, during a scenario.

This option helps to bridge the gap between fully open deployment and plotting hidden units.

7.2.1 Hidden Unit Counters

As dictated by a scenario's Special Conditions one or both forces' ground units may start a scenario Hidden; replaced by a Hidden Unit counter. These counters are provided in two sets, red and gray. Assign one color to one side and the other color to the other side.

A Hidden Unit counter may be used to represent nothing, a fake position to fool the opposing side, or one or more units from the *same* formation. A Hidden Unit counter may not represent units from different formations.

7.2.2 Placing Hidden Unit Counters

For Hidden Unit counters that actually represent one or more units, place the counter in any legal hex. A counter may be used to represent a mix of vehicle, towed and leg units or just one particular type. The number of Hidden Unit counters on the mapboard may not exceed the designated limit in a scenario..

Place the hidden units on the Turn Track, Transport & Summary and Hidden Unit Card in the box that corresponds to the number on the Hidden Unit counter. Place the card in a secure location away from the prying eyes of the opposing players. The hex of the Hidden Unit counter represents the actual location of at least one of the hidden units.

For fake Hidden Unit counters, just place it on the map board in any legal hex. Obviously, no units are placed on the hidden unit card.

7.2.2.1 Spotting Hidden Units

Players spot Hidden Unit counters just like any other ground units. The actual position of the units around a counter is not known until the units are placed on the mapboard, so the counter itself is used for spotting determination. If a counter is spotted, *all* of the units represented by that counter are placed on the mapboard whether or not all of the units could actually be spotted.

The unit type represented by a Hidden Unit counter that affords the *greatest* spotting range is used when determining spotting.

If a Hidden Unit counter represents 1 vehicle and 10 leg units, the vehicle is still used when determining spotting range.

At least one hidden unit of the type spotted must be placed in the hex occupied by the Hidden Unit counter. The remainder of the units may be placed in that hex or any legal hex (by not crossing impassable terrain) within Command Range of the counter; units may face in any direction.

Players may treat fake counters as any unit type, vehicle, towed or leg. However, when an opposing unit reaches the range at which even a leg unit would be spotted, the owning player must reveal the HIDDEN UNIT counter as a fake.

7.2.2.2 Moving Hidden Unit Counters

Players may move HIDDEN UNIT counters just like regular ground units. If the counter represents one or multiple types, it may not move faster than the Movement Factor of the slowest hidden unit.

Hidden units may mount or dismount following the normal rules for those actions. Moving HIDDEN UNIT counters are subject to greater spotting ranges just like visible units. Hidden units may enter Full Cover.

Fake counters may move as if they were any unit type. However, if a fake counter moves at a rate that would suggest it is a vehicle, it can not then be treated as a towed or leg unit for spotting purposes.

7.2.2.3 Revealing Hidden Unit Counters

With the exception of Indirect Fire, any hidden unit that engages in any other form of combat is automatically revealed and *all* units represented by the HIDDEN UNIT counter are placed on the mapboard (see 7.2.2.1). Units that either observe for or engage in Indirect Fire are not revealed by that fire.

Any HIDDEN UNIT counter that is the target of Indirect Fire or an Aircraft bomb or rocket attack is automatically revealed and all units represented by the HIDDEN UNIT counter are placed on the mapboard (see 7.2.2.1).

7.2.3 Adding Hidden Unit Counters

While not quite as mysterious as units that start a scenario hidden, players may, during the course of a scenario, hide units that are not currently spotted by removing them from the mapboard and replacing them with one or more HIDDEN UNIT counters. These units must still be from the same formation. Fake counters may also be added. The number of existing and new HIDDEN UNIT counters may not exceed the designated limit.

7.3 Platoon & Section Command Control

Only combat units and *activated* unarmed units that are all from the same Platoon, Section or Troop (UK) Formation and are within Command Range of one another may utilize the same unique Command counter. Units from other platoons, sections or troops, including non-command HQ units, even if they are part of the same formation may not share the same command.

Command units from the same formation, at any level, may share commands with subordinate platoons or sections, e.g., regimental Command units may share a command with a platoon or section unit in their regiment.

The command unit must be in the unit's chain of command, e.g., if a unit is part of company A it may not share with a command unit that is from company B.

Utilization of this option requires the players to document the Formation organization for each platoon and section. The unit numbers for each platoon or section should be noted on the Formation Summary.

7.4 Without Radio Sets

In the early stages of the war, and even throughout the war, many vehicles were not equipped with radio sets or were only equipped with rudimentary Morse code sets. This greatly limited their tactical flexibility, forcing the vehicles to fight and move in close proximity to one another. Those vehicles without radio sets have an R notation listed in the Unit Identifier section of their Data Cards.

Reference Data Card S-1A, the Soviet T-70 M42 has the without radio set notation.

Many of these vehicles were later fitted with radio sets or command vehicles of their type were equipped with radio sets. The Notes section of their Data Cards lists these exceptions.

7.4.1 Spotting Limitation

Vehicles from one platoon, section or troop (UK) may not *hand off* spotted targets (see 4.1.1) to or receive spotted targets from units from a different platoon, section or troop (UK).

7.4.2 Command Limitation

Vehicles from the same platoon, section or troop (UK) must share the same Command counter no matter the number of available commands. Their Command Range is treated as 0 regardless if their Formation Grade is Seasoned, Veteran or Elite.

If a tank suffers a track hit the remaining platoon members may leave it behind (see 6.5.2.2.1). Damaged vehicles may not be separated from the platoon. If a platoon member suffers a track hit, in later turns, it may be assigned a command up to limits of what is available to the company.

Recon vehicles maintain all of their special abilities with the exception of the Observer Limitation (see below).

7.4.3 Observer Limitation

Vehicles may not call Indirect Fire or observe targets for aircraft.

7.4.4 Morale Limitation

To receive the modifier associated with the presence of an unbroken command unit, that command unit, regardless if it is equipped with a radio set, must occupy the same hex as the vehicle taking a morale check.

Some of the early war tactical advantages demonstrated by the German forces can be attributed to the wise installation of radio sets in their vehicles.

7.5 Soviet Early War Communications

When the Germans invaded the Soviet Union in 1941, the Soviet communications network was somewhat primitive, lacking an adequate number of radios and also challenged with having to manage poor indirect fire integration.

To model these limitations, for scenarios set in 1941, Soviet Observers should apply a –2 modifier to all Indirect Fire calls. For scenarios set in 1942, Soviet Observers should apply a –1 modifier to all Indirect Fire calls. Planned Indirect Fire is unaffected by these limitations.

For any scenario, the players certainly could determine that better supplied or trained Soviet units are available during 1941 or 1942 and not apply or adjust these modifiers.

7.6 Tank Fright

Prior to executing Close Assault attacks, leg units must first pass a Forced Morale Check (see 7.1.3). This option applies to all forces in 1941. At their discretion, players may also apply this option at any time during the war to leg units with Green Unit Grade.

This Morale Check does not use the Spotted Unit Morale Check modifiers. All of the other listed Break Point modifiers are applicable.

Units executing an Advancing Attack (see 6.6.1.1) conduct this Morale Check prior to executing the move. The Tank Fright Morale Check does not in and of itself trigger Overwatch Fire, the unit must still actually move.

If the Morale Check result is *Break*, mark the unit with a Suppressed/On counter instead. If the result is *Hesitate*, mark the unit with a Suppressed/Off counter instead. If the unit passes the Morale Check, it conducts the Close Assault normally.

7.7 Limited Spotting

The absolute nature of spotting a target unit is a chance situation, especially as spotting ranges increase. With this option players must attempt to spot units when the spotting range is greater than 1; units at a range of 1 are still automatically spotted.

7.7.1 Spotting Ranges

The ability to spot is based on the spotting unit's Unit Grade and its range to the target unit. Reference the Spotting (OR) Table on Game Card A.

For each Unit Grade, two values are listed: if the spotting range is equal to or less than ½ of the maximum spotting range (round down) use the first value; for ranges greater than ½ up to the maximum range use the second value.

If more than one friendly unit is attempting to spot the same opposing unit, utilize the friendly unit that has the greatest probability of actually spotting the target unit since only one attempt is made to spot a unit; each spotting unit does not roll individually. However, for each unit attempting to spot the same target unit, apply a +10 modifier to the attempt. A spotted target is handed off to other friendly units as long as the target unit is within their maximum spotting range.

Roll (100) if the result is less than or equal to the listed value, it is spotted. Failure does not cancel Overwatch Fire.

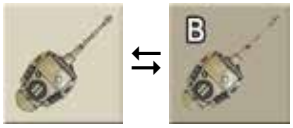
Two German PzKpfw IIIMs, Veteran Unit Grade, are both attempting to spot a Soviet T-34/76 M42 located in a Woods hex at a range of 4 hexes. Since the spotting range of 4 hexes is greater than ½ of 7, the German player must roll (100) with a result of 70 or less (60+10) to spot the T-34/76 M42.

7.7.2 Maximum Spots

A subset of this option limits the total number of spotted units a single unit is able to maintain. This limitation is also based on its Unit Grade.

Reference the Spotting (OR) Table on Game Card A. The value listed in the Max column is the maximum number of spots a unit of any particular Unit Grade may individually maintain including hand-offs. Any spots in excess of the Max value are ignored or must be removed.

7.8 Turrets

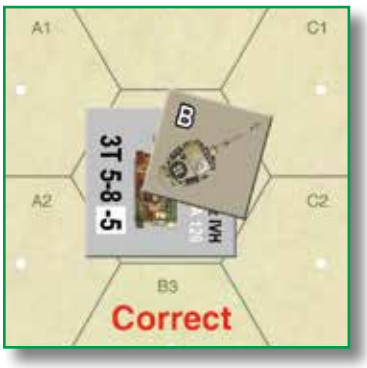


This option adds moveable Turret counters for vehicles. Turret counters display an image of either a German or a Soviet turret, but either may be utilized as there is no functional difference between the two types. The front side of the counter designates Open turrets while the reverse B side designates Buttoned-up turrets.

The use of Turret counters enables turreted vehicles to face their turrets to different hexsides from their hulls. This presents a more realistic game model as turreted vehicles may only direct fire at targets that fall within their turret's Field-of-Fire. It also enables them to minimize the impact of the Overwatch Adjust modifier by positioning their turrets to cover specific areas.

Whether a turret is open or buttoned-up also impacts the potential damage sustained from GP Fire by A-Type vehicles.

7.8.1 Adjust Turrets



Like vehicle counters, turrets must face a specific hexside. They are adjusted during movement and/or the Adjust Turret Step of the Adjustment Phase. The maximum number of hexsides a turret may turn is equal to its Tt Factor found in the Weapon Data row of its Data Card. Tt Factors range from 1 to 3. Turretless vehicles have a factor of 0.

Reference Data Card G-1A, the German PzKpfw IIIM's Tt Factor is 2. Its turret may turn 1 or 2 hexsides.

As a vehicle moves, it may adjust its turret up to its listed TT Factor or maintain its turret's facing in relation to its hull. The non-phasing player may fire eligible units in Overwatch at any time while the phasing player adjusts a turret, by simply interrupting the phasing player, prior to or after a turret adjustment. Tracked vehicles retain their listed Tt Factor. A Damaged vehicles' Tt Factor is reduced to 1 if not already a 1.

7.8.2 Turreted Vehicle Hit Locations

When a vehicle is hit by AP Direct Fire, its turret may have the same or a different Hit Angle than its hull. When determining the Hit Location, if the Hit Location is a Hull Hit, continue on to the next step.

However, if the result is a Turret Hit, an additional check is made. If the Turret's Hit Angle is the same as the Hull's Hit Angle continue on to the next step. However, if it is not, determine its Hit Angle and apply the same result (the dice are not rolled again) against the Turret's Hit Angle.

A Soviet T-34/85 M44's, Data Card S-2A, Level Shot Hit Angle is Rear/Side. The German player rolls (100) the result is 39. The Hit Location is TR. However, the T-34/85 M44's turret is actually positioned on its Hull's Rear/Side directly facing the German unit making the Turret's Hit Angle Front. The Hit Location is now TF. The Armor Value is 21 as opposed to 14, a 150% advantage.

7.8.3 Open & Buttoned Up Turrets

A-Type vehicle turrets are positioned as Open or Buttoned Up. This Turret status is selected during the Adjust Turret Step of the Adjustment Phase and applies to the entire next turn. Turret status may not change during a turn.

Non-turreted A-Type vehicles may Button Up; they just, of course, do not adjust their turrets. There are turreted P-Type vehicles; however, they never Button Up.

Turret status affects a vehicle's ability to spot targets and the impact of Direct or Indirect GP Fire and Aircraft Combat. Vehicles with Open Turrets spot normally, but are more susceptible to GP Fire and Aircraft Combat. Vehicles with Buttoned Up turrets have spotting limitations, but resolve GP Fire normally.

Vehicles with Buttoned Up turrets only spot those targets that fall within the *Turret's* line-of-sight (like Suppression). In addition, they must apply a –1 Spotting modifier by moving 1 row down in the table.

Vehicles with Open Turrets may suffer increased damage from GP Fire. AP Direct Fire is not affected.

- With non-small arms fire with an Effective Result, the vehicle is Damaged if the shooter's maximum GP Effectiveness Factor is less than the vehicle's GP Defense.
- With small arms fire with an Effective Result at Point Blank Range, the vehicle is Damaged.

7.8.4 Overwatch Fire

If the firing vehicle is executing Overwatch Fire at a target located outside of the turret's Field-of-Fire—the modifier is –3. Based on its Tr Factor, the turret must be able to adjust its facing a number of hexsides to place the target within its Field-of-Fire. This becomes the turret's new facing.

Again, the Target Moving modifier is also applicable in addition to this modifier if triggered by movement.

7.9 Smoke Dischargers

Vehicles equipped with Smoke Dischargers (see 5.16.2) may create a smoke cloud that covers just that vehicle and any units it is transporting. It may attempt to create a smoke cloud only once per turn during its Command Phase before placing its command.

Since this process actually takes place before the current turn's Initiative Phase, the previous turn's First Player places all DS smoke first followed by the Second Player.

To determine if a vehicle creates a smoke cloud, roll (10) and compare the result to the listed Ammo Limit value (see 5.16.2.3). If the result is less than or equal to the Ammo Limit value, place a Smoke/DS counter on the vehicle; if it is greater than the Ammo Limit value, the attempt failed.

The smoke cloud is treated as Open/SHEAF Smoke that applies only to fire to or from the vehicle and its passengers not to any other units in the hex. It does not apply to Indirect Fire or Aircraft Combat.

The Smoke/DS counter is removed during the current turn's Adjust/Remove Counters Step (see 6.8.4) or if the vehicle moves to a new hex or moves within its hex. Place the counter under the vehicle unit; vehicles may not create discharger smoke in consecutive turns. It is removed during the next turn's Adjust/Remove Counters Step.

7.10 CE Ammo Types

With the advent of HEAT-Type anti-tank shells, including those fired from guns as well as hand-held anti-tank weapons, the Germans were the first to develop countermeasures to degrade or attempt to defeat their performance.

This took the form of light armor skirts or plates mounted in such a way to create a standoff distance from the main armor. This would theoretically cause a HEAT shell to pre-detonate, thereby reducing its penetrative power.

7.10.1 CE-Type Armor

German vehicles so equipped have special notations in the Defensive Information section of their Data Cards. Those protected Hit Locations are highlighted. In addition, a CEx# notation indicates to what extent the CE-Type Armor increases the listed Armor Factor.

Reference Data Card G-1A, the German PzKpfw IIIM's TS, TR and HS are protected from CE-Type shells. It also has CEx3 listed. If a HEAT shell strikes its HS with a Level shot, the Armor Factor is 24.

German add-on armor was very susceptible to battlefield damage. It was not uncommon to find vehicles with their side skirts, and to a lesser extent turret armor, missing. Feel free to field vehicles with missing armor.

7.10.2 CE Ammo & S-Type Vehicles

CE rounds vs. S-Type vehicles do not apply the –2 damage modifier.

7.11 Bu Modifier

Based on their turret layout or ammo storage, some vehicles are more susceptible to explosive damage when receiving a Knocked Out result from combat. Those vehicles have a *BU* notation listed in the Unit Identifier section their Data Cards.

The Bu modifier does not increase the overall chance of damage; it just increases the chance of a Knock Out becoming a Brew Up. A modified Damage Result is never greater than 10. It is not applicable with Basic Game Damage.

Reference the Vehicle Data Card Key, the Soviet SU-76M M43 has the BU notation listed. A German STuG IIIG (Data Card G-4B) penetrates it with its AP ammo and rolls a 7 result for damage. That would normally result in a Knock Out. However, with the +2 BU modifier applied, the 7 result is now a 9, resulting in a Brew Up.

If the same STuG IIIG instead achieves an Effective Result with GP Fire and rolls a 5 damage result, the –2 BU modifier is applied; the 5 result is now a 3, resulting in a Brew Up.

7.12 Variable AP Penetration

AP penetrations values (KE and CE-Type shells) are presented in absolute terms based on a long study of ballistic data. The actual penetration values did vary due to the variances in the quality of the shells or caused by slight deviations in the angle of impact or the quality of the vehicle armor at any given impact point.

With this option, whenever an AP Hit is made, before the Hit Location-Damage roll, the firing player rolls (10x2) and references the AP Penetration (OR) Table on Game Card A. Reference the row on the table that corresponds to the listed AP Penetration Factor.

The two dice are read separately. Add the two listed results together to find the total adjustment. It may not be plus or minus greater than the listed Max Value.

Note that dice roll results of 1, 2, 3, and 4 subtract from the AP Penetration Factor, while results of 7, 8, 9, and 10 add to it. Results of 5 and 6 have no effect.

With an AP Penetration Factor of 27, the roll (10) results are 10 and 4. The Total Adjustment is +2. The 10 result adds 3 to the Penetration Factor while the 4 result subtracts 1.

With an AP Penetration Factor of 18, the roll (10) results are 1 and 2. The Total Adjustment is –3. The 1 subtracts 2 from the Penetration Factor while the 2 result also subtracts 2. However, the Max adjustment is ±3.

As an added variable to this option, subtract 1 from all Soviet roll (10) results when determining variable AP Penetration. This simulates the lower quality of Soviet metallurgy and its effect on their AP shells.

7.13 Lower Hull Hits

This option models the possibility of hitting a vehicle's less armored lower hull front with AP Direct Fire. It is only possible when a moving vehicle is changing elevation or its Height is 2 or more above an opposing unit.

7.13.1 Changing Elevation

When a vehicle moves out of a Gully, Ford or Stream hex or crosses a Wall hex, any *overwatching* unit at a Height equal to the Vehicle's new Height hitting the HF utilizes an Armor Factor equal to ½ (round down, not less than 1) of the listed Rising HF Armor Factor. Note that Rising Shot is utilized even though it is actually a Level Shot.

7.13.2 Height Difference

When the target vehicle is not in a Hull Down or an automatic Partial Hull Down position and the firing unit's range is equal to or less than twice the Height difference hitting the HF utilizes an Armor Factor equal to ½ (round down, not less than 1) of the listed Rising HF Armor Factor.

If the target vehicle's Height is 3 and the firing unit's Height is 0, the firing may hit the target vehicle's lower hull if the range is 4, 5 or 6. The target vehicle is Partially Hull Down if the range is 3 or less (see 6.1.4.1.3).

7.14 Fire Priority

In the heat of battle, vehicles typically engage opposing *vehicle* targets posing the greatest threat and those tend to be the closest targets. A vehicle with a Fire or Short Halt command must fire at the closest opposing vehicle *combat* unit (see 4.1.1) unless it is already engaged by another vehicle from the same formation. Friendly leg and towed units firing at a vehicle do not offset this requirement.

7.15 CE Ammo GP Direct Fire

CE-Type ammo has considerable explosive force and can be used for GP Direct Fire. However, the construction of the shells makes them somewhat less effective in *open* areas.

When hand-held ant-tank rocket weapons are fired at dismounted leg or towed units in terrain other than inside of buildings or Improved Positions, apply a –10 modifier.

7.16 Towed Unit Platform Gun Mounts

Some anti-tank and anti-aircraft guns were mounted on platform or turntable mounts that enabled them to quickly engage targets located in any direction. The Towed Data Cards indicate which units have Platform Gun Mounts.

Reference Towed Data Card Key, the German 8.8cm FlaK 36 ATG/AAG has a Platform Gun Mount.

Like Turretless 360° vehicles, for the purposes of Overwatch and Anti-Aircraft Fire, their Field-of-Fire is always assumed to be facing the target. These units always use the Overwatch Front Modifier for all Overwatch Shots.

If they fire at a target located in their Side or rear Fields-of-Fire, pivot the towed unit to face the correct Field-of-Fire.

7.17 Attached Weapon Loss

When a full squad is reduced as a result of GP Fire or Hand-to-Hand combat, roll (10) for each attached weapon the squad was carrying. On a result of 1-5, the attached weapon is destroyed.

If the squad was carrying more than one attached weapon, apply a –2 modifier to the first roll (10). Randomly select which is the first attached weapon.

7.18 Pinning Fire

Ground units employing small arms Direct GP Fire against leg or towed units may use *Pinning Fire* against the target. Pinning Fire simulates a unit spraying fire in the proximity on a target unit to pin or force them to keep their heads down as opposed to trying to eliminate them.

Pinning Fire may be used with Fire, Short Halt or OW commands. It must be declared at the point the fire is announced. The GP Fire is resolved normally; the +20 Pinning Fire modifier is applied.

An Effective Result is treated as a Suppressed result instead. It is not possible to achieve an Effective Result with Pinning Fire.

7.19 Engineer vs. Terrain Combat

Engineer squads, half-squads and sections are the only ground units that may directly attack certain types of terrain. All Terrain types possessing a GP Defense Factor, with the exception of Building hexes, may be attacked as if they are normal ground units.

The engineer unit must have a Move command. With an Effective Result roll (100) again. These attacks utilize the Close Assault combat procedures. With two Effective Results the Terrain type is destroyed; otherwise there is no effect.

7.20 Long Guns

If utilizing the Optional Turrets Rule (see 7.8), some turreted vehicles have long guns that can inhibit their movement in Alley, Woods and Light Woods hexes. Units so equipped have *Long Gun* listed in the Notes section of their Data Card.

If a Long Gun turreted vehicle unit moves into or within an alley hex or a Woods or Light Woods hex, its turret must be positioned directly to the vehicle's front or rear. While stationary, it may turn its turret to any hexside.

If a Long Gun turreted vehicle unit is following the route described by a Path or Road (see 4.5.1.1.5), its turret may be positioned in any direction.

7.21 Variable Track Damage

In reality, small caliber guns would have a difficult time achieving a track hit against many of the more heavily armored vehicles. With this option, an additional calculation is required to determine if a track hit is actually made. This same method of calculation is used whether firing AP or GP weapons.

Double the firing unit's maximum GP Effective Factor for its GP weapon. If the result is equal to or greater than the target's GP Defense Factor, the Track Hit was made; if it is less, the Track Hit is treated as a miss instead. If treated as a miss, no Bail Out attempt is required.

For firing units with small arms or for those that lack a GP weapon, they are assumed to have a doubled factor of 1. Hand-held anti-tank weapons are excluded from this calculation.

A Soviet T-70 M42 (Data Card S-1A) made a Track Hit on a German PzKpfw VIE Tiger I (Data Card G-3A). The T-70 M42's maximum GP Effectiveness Factor is 2. That value is doubled to 4 and compared to the PzKpfw VIE Tiger I's GP Defense of 5A. Since 4 is less than 5, the Track Hit is treated as a miss.

7.22 Infantry Smoke

Squads and half-squads receive a Smoke Ammunition limit based on their nationality, Unit Grade and engineer status. Unsuppressed, non-hesitating, and non-broken units may create smoke in their current hex if it does not contain any other dismounted leg or towed units.

7.22.1 Direct Fire Smoke

Only units with FIRE or SHORT HALT commands may place smoke within the Ammo Limits (see 5.16.2) constraints as Small Arms Fire. The unit may still utilize any attached weapons.

Place a SMOKE/ON counter in the hex. The smoke affects just the target hex and is the equivalent of an Open SHEAF Pattern.

7.22.2 Smoke Ammo Limits

Smoke Ammo limits by Nationality:

- German: S5
- Soviet: S2
- USA: S5
- UK: S4
- France '41+: S3
- France '44: S5
- Italy: S3

Special Ammo Limit modifiers:

- Elite Unit Grade: +2
- Veteran Unit Grade: +1
- Green Unit Grade: –1
- Engineer: +3

7.23 Vehicle Collateral Damage

This option requires some form of record keeping or unit notation.

Any AP hit on an A-Type or P-Type vehicle that penetrates but results in No Damage may cause Collateral Damage. Each collateral hit is only applied once. Cross-reference with the vehicle hit location and roll (10):

7.23.1 TF – Turret Front

On a result of 1: Optics damaged.

Apply a –1 AP Direct Fire modifier for the remainder of the scenario.

Apply a –5 GP Direct Fire modifier for the remainder of the scenario.

On a result of 2: Coax MG damaged if equipped, otherwise, mark a SUPPRESSED/ON counter.

The vehicle no longer applies the +10 Coax MG modifier to GP Direct Fire or Overrun combats.

On a result of 3-10: No effect.

7.23.2 TS/TR – Turret Side or Turret Rear

On a result of 1: Turret Ring.

The turret is fixed in its current position. It may not rotate for the remainder of the scenario.

For Turretless 360° (see 4.4.3.1.2) and Turretless (see 4.4.3.1.1) vehicles, mark a SUPPRESSED/ON counter.

On a result of 2: Radio damaged.

The vehicle loses any *Command* and/or *Recon* abilities. For ultimate realism, the vehicle must also follow Optional Rule 7.4, Without Radio Sets.

On a result of 3-10: No effect.

7.23.3 HF – Hull Front

On a result of 1: Running Gear Damage.

The vehicle loses 2 Movement Factors (minimum 1) for the remainder of the scenario.

On a result of 2-10: No effect.

7.23.4 HS/HR – Hull Side or Hull Rear

On a result of 1: Fuel Damage—at the beginning of each Movement Phase roll (10).

On a result of 1: the vehicle is out of fuel for the remainder of the scenario. Mark a TK Hit (including Bail Out attempt).

On a result of 2: the vehicle catches fire and suffers a BU Hit (including Bail Out attempt and Suppression effects).

On a result of 3-10: No effect.

7.24 Camouflage

As dictated by a scenario's Special Conditions one or both forces' ground units may limit the ability of opposing forces to spot them by the use of camouflage. Only those units that start a scenario setup on the mapboard may camouflage. Use the Formation Summary to list camouflaged units.

Camouflage does not function in the same manner as Hidden units (see 7.2). Camouflaged units remain on the mapboard at all times. The controlling player must announce a camouflaged unit at the point the opposing player announces a spot. Camouflaged units are automatically spotted at a range of 1 hex.

After meeting normal spotting range requirements, the spotting player rolls (10); the result must be less than or equal to the spotting range found on the Spotting Ranges Table on Game Card A for the unit being spotted. Spotting units hand off spotted camouflaged units to other friendly units at the same range or less.

If a unit attempts to spot a vehicle located in a Woods hex, the spotting player must roll a 7or less to spot the vehicle.

Camouflaged units permanently lose their camouflage status once they execute a MOVE or SHORT HALT command. They also permanently lose their camouflage status once they execute a FIRE or OW command if an opposing unit meets the normal spotting range requirements. No spotting roll is necessary.

7.25 Weapon Malfunction

This option requires some form of record keeping or unit notation.

AP Direct Fire combat resulting in 00 or GP Direct Fire combat resulting in an unmodif ied 01 is treated as a weapon malfunction.

It may not fire again until repaired. The combat that resulted in the malfunction is resolved normally.

To repair, roll (10) at the *end* of the Command Phase:

- If the final result is a 2 or less, the weapon is repaired and functions normally on all subsequent turns.
- If the result is a 10, the weapon is permanently out of action and may not attempt repair during future turns.
- If the unit has an N/C Command, apply a –2 modifier.

7.26 Indirect Fire Scatter

When the modified response roll equals the value listed for the observer on the Called Indirect Fire Response Table on Game Card B, the Impact Point for that firing unit missed the designated target hex and has scattered 1 or 2 hexes.

Roll (10). On a result of 1-6, it scatters 1 hex; on a result of 7-10, it scatters 2 hexes. It may be easier when determining fire response to just roll (10x2) on the chance fire scatter occurs. Roll (d6) and reference the Directional Hex on the mapboard or geomorphic map panel and move the Impact Point the required number of hexes in the indicated direction.

If the new Impact Point is still within the observer's line-of-sight, the Indirect Fire may be continued or adjusted normally next turn.

An expansion of this optional rule adds aircraft bomb scatter. If bombs are dropped from an aircraft flying at Medium or High Altitude that was attacked by Anti-Aircraft fire within 5 hexes of the drop hex, may result in bomb scatter.

- If a No Effect result from the Anti-Aircraft Fire, roll (10). If the result is a 1 or a 2, the bombs scatter.
- If a Suppressed or Damage result from the Anti-Aircraft Fire, roll (10). If the result is 6 or less, the bombs scatter.
- Based on the Aircraft's Unit Grade, apply the following modifiers:
  - ◊ Elite: +2
  - ◊ Veteran: +1
  - ◊ Regulars: –1
  - ◊ Green: –2

Roll (d6) and reference the Directional Hex on the mapboard or geomorphic map and move the Impact Point in the indicated direction 1 hex if at Medium Altitude or 2 hexes if at High Altitude.

7.27 Illumination Indirect Fire Missions

Illumination Fire Missions are used to increase spotting ranges during night/limited visibility conditions. Illumination rounds may be fired only in non-linear Closed SHEAFs. When not represented by a counter, Illumination rounds function in a similar manner as Smoke rounds with an On/Off state.

They illuminate the area described by the SHEAF Pattern. Any unit within the area applies a +2 spotting modifier as long as the area remains illuminated. The illumination modifier never increases the Spotting Level above 0.

7.28 Counter Battery Fire

Counter Battery Fire is the action of locating opposing *off-map* artillery batteries and then executing disruptive fire missions to suppress or eliminate those batteries.

Counter Battery Fire is conducted only by off-map batteries dedicated to counter battery fire missions. They are not the same organic or attached batteries assigned to the support of the friendly forces. They must be included as specific Counter Battery Fire assets in the list of friendly forces in a scenario.

7.28.1 Utilizing Counter Battery Fire

A Counter Battery unit is considered to be available at all times, may be used any number of times, and each may attempt to find one opposing off-map artillery battery per turn. Whenever opposing off-map artillery responds to Called Indirect Fire, continues a fire mission or arrives as planned fire, "counter battery fire" may be announced.

All Counter Battery Fire takes places after the targeted artillery battery resolves the fire mission for the current turn.

7.28.2 Resolving Counter Battery

For each Counter Battery Fire announced, the controlling player rolls (100) to first determine if its counter battery firing unit located the targeted artillery battery.

Reference the Artillery Data Card for the Counter Battery Fire information. If the location result falls within the range of 01-20, the artillery battery is located. Otherwise the location attempt failed.

The following location modifiers apply:

- If the targeted artillery battery's current fire mission equals or exceeds the listed number of consecutive turns, e.g., German counter battery attempting to locate a battery firing for 3 or more consecutive turns, apply a –10 modifier.
- If the targeted artillery battery is self-propelled (SP), apply a +10 modifier.
- If a Soviet counter battery unit attempts to locate in 1941 or 1942, apply a +10 or +5 modifier, respectively.

If the artillery battery is located, roll (100).

- On a result of 01-50, the targeted artillery battery is suppressed.
  - ◊ Suppressed artillery batteries may still function and conduct normal operations, but apply the Shooter Suppressed –20 GP Fire modifier (see 6.5.4.3). Place a SUPPRESSED/ON counter on the battery's Data Card for reference.
  - ◊ All artillery batteries have a fixed recovery range of 01-50 when attempting to recover from Suppression. No Suppression modifiers apply.
- On a result of 51-80, the targeted artillery battery is Damaged.
  - ◊ Damaged artillery batteries may still function and conduct normal operations, but apply the Shooter Damage –10 GP Fire modifier (see 6.5.4.3). Place a DMGD counter on the battery's Data Card for reference.
  - ◊ All damaged batteries apply a –2 modifier when determining fire response.
  - ◊ A second damage results in a Knock Out.
- On a result of 81-00, the artillery battery is Knocked Out.
  - ◊ It may not fire for the remainder of the scenario.
  - ◊ Its listed Victory Points are awarded to the opposing side.

7.28.3 Counter-Counter Battery Fire

If both forces possess Counter Battery Fire assets, they are also subject to Counter-Counter Battery Fire. Once Counter Battery Fire is announced and resolved an opposing Counter Battery Fire unit may attempt to locate and fire on the first counter battery unit.

In this case, a Suppression result is ignored. A Damage or Knock Out result eliminates a counter battery unit for the remainder of the scenario. Its listed Victory Points are awarded to the opposing side.

7.29 Bogging Down

Unhidden vehicles are subject to Bogging Down in some terrain types. Reference the Bog column on the Terrain Effects Table on Game Card A. Only those Terrain types with a listed numerical range are subject to Bogging unless otherwise instructed by the Set Up or Special Conditions in a scenario.

Some vehicles have a positive or negative Bog modifier listed in the Movement row or in their Notes section of their Data Cards and on their counters. In addition, all vehicles currently towing another unit, apply a –5 modifier.

Reference the German PzKpfw VIB Tiger II (Data Card G-3B), it has a B: –5 listed. It applies a –5 Bog modifier.

If any vehicle has a MOVE or SHORT HALT command while occupying one of the listed Terrain types, it first checks for Bogging Down. Vehicles employing the Path or Road bonus are not subject to bogging.

A vehicle entering a hex of the listed Terrain types does not check for bogging. However, if it attempts to exit the hex or move within the hex, e.g., searching for a Hull Down position or entering a building, it must check for bogging before exiting the hex or moving within the hex.

The controlling player rolls (100). If the net result (modified for any vehicle specific modifiers) falls within the listed range for the Terrain type, the vehicle immediately ceases movement and may not turn for the remainder of the turn.

A German PzKpfw VIB Tiger II, Data Card G-3B, attempts to exit a Rough terrain hex. If the German player rolls (100) with a net result of 35 or less (the Tiger II applies a –5 modifier), it bogs down.

A bogged vehicle moves during the next turn with no additional penalties. It must again check for bogging before exiting or moving within the hex. Passengers mount or dismount normally from a bogged vehicle. A bogged vehicle still marks a SPOT/MOVE counter.

7.30 Narrow Roads & Paths

As dictated by a scenario's Special Conditions roads and paths through Building hexes or Woods, Light Woods or Heavy Woods hexes may be classified as Narrow Roads or Paths. This Optional Rule could also apply to a narrow bridge.

In those cases, vehicles and dismounted towed units may not enter or move through a hex occupied by opposing vehicles. Vehicles may only move through a hex occupied by dismounted towed or leg units by Overrun combat. All units may enter a hex occupied by friendly vehicles, towed units or a wreck, but may not exit the hex. Dismounted leg unit movement is not restricted.

Vehicles and dismounted towed units may not exceed stacking limits (see 5.13). The order of entry of the units in a hex are stacked first on top (excluding wrecks).

By expending their entire movement speed allowance, tracked vehicles with a MOVE command may attempt to push a wreck, immobile vehicle, or towed unit to the shoulder of the road or path hex.

- The pushing vehicle's Weight must be equal to or greater than the immobile unit.
- Roll (100). On a result of 51+, the immobile unit is moved to the shoulder of the road or path, but still considered to be in the same hex. Otherwise, no movement is possible.
- For each full 5 tons of additional Weight the pushing vehicle has over the unit to be pushed, apply a +5 modifier.
- Units pushed to the shoulder of a road do not stop a vehicle from using its Path or Road movement factor.

When a German PzKpfw VIB Tiger II (Data Card G-3B), attempts to push an immobile PzKpfw IVH (Data Card G-2A), it applies a +30 modifier.

This Optional Rule could also apply to sunken roads. Players may at their option or as dictated by a scenario's Special Conditions, allow units to exit the sides of a sunken road. Sunken roads typically have a Height of –1.

7.31 Mines & Minefields

Mines are employed to deny or channel movement into an area or in a certain direction. In some respects, they are an effective offensive weapon not just a defensive weapon.

There are two types of mines: anti-vehicular (effective against vehicle units) and anti-personnel (effective against dismounted leg and towed units). Anti-vehicular mines have the capability of damaging or inflicting track hits on vehicles. Anti-personnel mines can inflict effective results on leg and towed units. Unless otherwise indicated, minefields may contain either or both types.

Mines are not employed individually; they are laid in minefields covering multiple hexes. Correspondingly, there are two types of minefields: Hasty and Deliberate.

The scenarios indicated the type and availability of mines.

7.31.1 Minefield Placement

Minefields typically occupy a multiple hex area of the mapboard. The controlling player plots their location during the setup of a scenario after all terrain counters are placed on the mapboard, but before any units are placed. In most cases, the location of minefields is kept hidden from the opposing side. The scenarios indicate when a visible minefield is in play.

Use the back of the Formations Summary to note their type and location. Once placed, minefields may not move or alter their type.

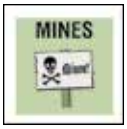
Minefields may not be placed in bridge (although they may be placed in any path or road hex), building, alley, ditch, ford, gully, Improved Position, rubble, shell hole, stream, or water hexes. The plotted location of a minefield may surround these terrain types, but may not occupy their hex.

Minefield plots must include the minefield hexes, the type of minefield (Hasty or Deliberate) and the type of mine (anti-vehicular, antipersonnel or both). Unless otherwise indicated, a minefield's hexes must be contiguous.

A legal 4 hex minefield plot includes hexes 0807, 0907, 1008, and 1009.

7.31.2 Minefield Combat

Friendly units are assumed to know the exact placement of minefields and the clear paths through them unless otherwise indicated by the scenario. They may freely move through friendly minefield hexes without being attacked.



When an opposing unit *enters* a minefield hex, the controlling player *must* announce that a minefield hex was entered and resolve the minefield attack. The controlling player is not required to announce the entry into a minefield hex if a vehicle enters an anti-personnel minefield or a dismounted leg or towed unit enters an anti-vehicular minefield hex. Once a minefield hex is discovered, the opposing player may place a Minefield counter as a reminder of its location.

Leg or towed units that dismount into an anti-personnel minefield hex are immediately attacked. Leg or towed units that mount a vehicle while occupying anti-personnel minefield hex are not attacked as a result of mounting.

Units that move within a minefield hex are attacked again.

7.31.2.1 Anti-Vehicular Minefield Combat

Reference the Minefield Effects Table on Game Card B and find the column containing the vehicle's GP Defense Factor; the vehicle's target type A, P or S is not a factor. Cross-reference this with the two rows indicating the type of minefield, Deliberate or Hasty.

The player controlling the minefield rolls (100) and the indicated result, if any, is immediately applied with the normal effects for that type.

A vehicle with a GP Defense Factor of 5A enters an opposing Hasty Anti-Vehicular Minefield, a roll (100) result of 01-10 is a Damage Hit, a result of 11-50 is a TK Hit, while a result of 51+ has no effect.

Note that transported leg or towed units bailing out into an anti-personnel minefield are immediately attacked.

7.31.2.2 Anti-Personnel Minefield Combat

Reference the Minefield Effects Table on Game Card B and find the Leg & Towed column and cross-reference this with the row indicating the type of minefield, Hasty or Deliberate.

The player controlling the minefield rolls (100) and the indicated result, if any, is immediately applied with the normal effects for that type.

A leg unit enters an opposing Deliberate Anti-Personnel Minefield, a roll (100) result of 01-70 is an Effective Result, while a result of 71+ has no effect.

Squads are reduced to a half-squad and Suppressed, while all other leg and towed units are eliminated by an Effective Result.

If a squad, half-squad or section enters or moves within an anti-personnel minefield using Quickmarch (see 6.6.4.2), apply a –20 modifier.

7.31.3 Eliminating Minefields

Minefield are not consumed or used up by attacking ground units. They are deployed densely enough to attack all units that may enter their location for the duration of the scenario. They may be eliminated in three ways: by Indirect Fire, aircraft bombs and rockets, or by engineer leg units.

Minefields have a GP Defense Factor and are treated as a Terrain type. However, in the case of mines, only a single effective result is required for elimination. Unless indicated otherwise in a scenario, Hasty minefields have a GP Defense Factor of 3 while Deliberate minefields have a GP Defense Factor of 6.

7.31.3.1 Indirect Fire vs. Minefields

Both off-map and on-map Indirect Fire attacks *visible* minefield hexes that fall within the area defined by their SHEAF Patterns. Smoke and Illumination Fire Missions do not attack minefields.

7.31.3.2 Bombs & Rockets vs. Minefields

Aircraft bombs and rockets attack *visible* minefield hexes that fall within the area defined by the bomb or rocket impact patterns.

On the off chance an aircraft crashes into a visible minefield hex, it attacks it with 15 GP Factors.

7.31.3.3 Engineer Units vs. Minefields

Engineer leg units attack *visible* minefield hexes in the same manner as other terrain types.

Why only visible minefield hexes? It is the cleanest method of dealing with minefield elimination without a great deal of record keeping, delayed elimination determination, or forcing the controlling player to reveal the location of hidden minefields. As an offset, it requires only a single Effective Result to clear a minefield hex.

7.32 Weight Limitations

Bridges may be assigned a weight limitation in a scenario. Unless specifically addressed, the weight limit for a bridge is considered unlimited and any unit may cross it. If a unit is too heavy to cross a bridge, it must use an alternate route; it may not enter the bridge.

A scenario may designate that a stream is frozen over and may also indicate a weight limit for its ice. Units that may cross the ice treat the terrain as if it were Clear terrain. If a unit is too heavy for the ice, it may only cross at a Ford by expending the indicated movement costs.

7.33 Dual Driving Controls

A few armored cars are equipped with dual-driving controls that enable them to move in reverse without expending the twice normal movement cost for the terrain entered. They expend the same cost as if they are moving forward. Units so equipped have an *R* following their mode of traction on their Data Card.

7.34 Amphibious Movement

A few vehicles have an amphibious movement capability enabling them to traverse impassable streams or water hexes. Units so equipped have an *A* following their mode of traction on their Data Card.

Amphibious units may only move one hex per turn when entering an impassable stream or water hex. They may not transport towed units.

If an amphibious unit suffers a Track Hit, is Damaged, Knocked Out or Brewed Up while occupying an impassable stream or water hex, it immediately sinks and is eliminated and removed from play. No Bail Out is possible.

7.35 Fires

Buildings or Rubble may catch fire and *burn* as a result of Direct GP Fire that is directed at units located in a building or rubble hex or Indirect GP Fire and aircraft bombs and rockets that includes a building or rubble hex that fall within the SHEAF or impact patterns. Close Assaults, Overruns and Hand-to-Hand combats do not normally start fires.

In all cases, there can only be one fire in a hex; it is either on fire or not. Once a fire starts, it continues to burn for the remainder of the scenario.

7.35.1 Start Fires

Any building or rubble hex, not currently on fire, that had Direct, Indirect or Aircraft delivered GP Fire directed at a unit occupying the hex or if it falls within a SHEAF or impact pattern must be checked to determine if a fire has started. The check for fire starts anytime during the Adjustment Phase. Small arms may not start fires.

Reference the Building Effects Table on Game Card B and cross-reference the building/rubble type with the largest GP Factor that was directed at a building or rubble hex during the turn. No matter how many shots were directed at the hex during a turn, only one fire determination is made.

Roll (100). If the result falls within the listed range a fire starts. Mark the building or rubble hex with an On Fire counter.

If checking for a fire start in Rubble hex, apply a –10 modifier.

8 GP Factors are directed at a unit in a Brick Building hex. If the roll (100) result is 10 or less, a fire starts.

Close Assaults, Overruns and Hand-to-Hand combats may not start fires unless a flamethrower was utilized in the attack. If a flamethrower was involved in an attack directed at a target in a building or rubble hex, the fire automatically starts.

7.35.2 Ground Units in Fires

Ground units may not remain in a fire hex. Any ground unit that has not vacated a fire hex by the end of the next turn after the fire started is eliminated and removed from play. Do not place Wreck counters.

7.35.3 Hand-Held Anti-Tank Rockets

As an added option, if a hand-held anti-tank rocket fires at a vehicle located in a building or rubble hex and the shot misses, determine if the errant shot starts a fire; utilized their fixed GP Factor listed in Ammo Type column.

7.35.4 Fire in Woods

As indicated by the scenarios, fires may start in Woods, Light Woods, or Heavy Woods hexes. These Terrain types are not listed on the Game Card as this option is treated as special case only.

The scenario must list that the Woods, Light Woods, or Heavy Woods hexes are treated as if they are a Wood, Brick or Stone Building hex, plus any additional modifiers, for starting a fire purposes.

A scenario's Special Conditions could list that fires may start in Woods and Heavy Woods hexes (both treated as a Wood Type Building) also applying a –5 modifier.

7.36 Terrain, Time of Day & Weather Conditions

The basic conditions in the game are daytime, clear weather and no adverse terrain conditions. However, in many cases alternative conditions may exist. The scenarios indicate if any alternate conditions are applicable.

7.36.1 Alternate Spotting Conditions

The time of day when a scenario takes place may have limited visibility. Limited visibility applies a –1 to –5 spotting modifiers so it works well to represent dusk, twilight or dusty conditions as well as fog or moonlight conditions.

Battles, other than chance encounters or small unit infiltrations , rarely took place during total night or very poor conditions.

7.36.2 Cautious Movement

During periods of limited visibility, units naturally were more cautious when executing movement.

If the scenario calls for it, reduce vehicle movement factor by ½ (round down). Squads and half-squads may not quickmarch. During limited visibility conditions, vehicles reduce the vehicle path and road movement factor by ½ (round down); during very limited visibility conditions vehicles may not use the path or road movement bonus (see 4.5.1.1.5).

7.36.3 Ground Weather Conditions

Combat forces did not take a vacation during the winter. As such, less than desirable ground conditions such as snow or mud could dominate a battlefield. In addition, during snow conditions, streams may be frozen over or overflowing their banks making them impassable during springtime thawing or rainy conditions.

These special ground conditions may be designated as applicable to only certain portions of the mapboard.

With *snow* ground conditions, add 1 to the listed movement cost for all impacted Terrain types.

With *mud* ground conditions, double the listed bogging range for all impacted Terrain types.

During snow or mud conditions, transporting vehicles must apply a –5 modifier per each unit of the passenger unit's towed capacity when checking for bogging.

7.37 Artillery Reconnaissance by Fire

The standard artillery rules do not allow the possibility of calling fire against an unsighted hex, i.e., the target hex must contain at least one spotted unit. In reality, the ability to target open areas is a major force multiplier of artillery fire. It is strongly recommended that this Optional Rule only be employed if the Hidden units option (see 7.2) is also in play.

To call artillery reconnaissance fire, the observer must have a clear line-of-sight to the target hex and must be within the maximum range of the firing unit. Only an FO may call artillery reconnaissance by fire and only from a single artillery battery; on-map units may not be utilized. It must be a Closed SHEAF, GP Fire mission. In addition to all the other Fire Response modifiers, the FO must also apply a –2 Fire Response modifier.

The fire must check the next turn; it may not be adjusted or continued.

Why a –2 Fire Response modifier? Yes, it is really not any more difficult to call reconnaissance by fire than standard Indirect Fire. However, having the knowledge of where the opposing forces are most likely located, even if employing hidden units, is a very large advantage those in the real world do not possess. The –2 modifier just balances that out.

7.42 Staggered Initiative

Originally published in *Panzer Expansion 3*, this is an alternative method of determining the Initiative for each turn as opposed to the single roll (100) method (see 4.3 & 6.3). Depending on the granularity employed, it may add a fair amount of play time to a scenario.

In this approach, Initiative is triggered on a formation by formation basis. To keep it manageable, base it on the largest formations possible. In scenarios that field multiple companies per force, use companies as the basis. With smaller scenarios of a single company per side, use a company's individual platoons and sections as depicted in the force summaries; or use any predetermined grouping. The players need to agree upfront as to the initiative organization used and maintain that structure throughout the scenario.

It should be noted that this option requires that players note the order in which the Initiative was triggered, because the same order, in reverse, is followed during the Movement Phase [Exception see 7.42.3].

7.42.1 Determining Initiative – Initial First Player

During the Initiative Phase each Force selects a specific formation, rolls (100) and applies their Force Grade Modifier to their roll; the net result may be greater than 100 or less than 0. Reroll ties unless instructed otherwise in the scenario Special Conditions. Note that while formations trigger initiative on a formation by formation basis, Force Grade, not Formation or Unit Grade determines the modifier to apply.

The Force rolling the higher result is the First Player for the Indirect Fire Combat Step and resolves all Indirect Fire followed by the Second Player. Flip the Turn counter to indicate the initial First Player.

In scenarios where one or both Forces apply a Initiative DRM based on whether or not they won the Initiative during the previous turn, its application is determined by which Force was designated as the initial First Player the previous turn.

The First Player from above then utilizes the announced formation to resolve its fire first during the following Direct Fire Combat Step. Make a note of the formation executing its Direct Fire.

7.42.1.1 Subsequent Formations

After resolving the initial formation's Direct Fire, each Force again identifies a formation and rolls (100) and applies their Force Grade Modifier to their roll. The Force rolling the higher result is next to resolve its formation's fire during the Direct Fire Combat Step. The formation now firing may be from the same Force or the other Force. Make a note of the formation now executing its Direct Fire.

Continue identifying formations to next resolve their Direct Fire until all Direct Fire is complete. Note that one Force may have a greater number of formations than the other or resolve all of its Force's Direct Fire before the other Force. In that case, all of a Force's remaining formations resolve their fire in any order desired. The order of execution is still noted.

7.42.1.2 Combining Fire

All of a formation's fire on a single opposing unit must be announced before any of that formation's fire is resolved. Subsequent formations may again fire on this same unit by announcing all fire against the same opposing unit before any of that formation's fire is resolved.

Note that this is an exception to the rule where all units had to announce their Direct Fire against a single opposing unit before that fire was resolved (see 4.4.1, 6th bullet).

A unit that must take a Morale Check due to Direct Fire, takes a single check after all fire directed at it is resolved from all opposing formations. Use Under Fire counters as necessary to note pending checks. However, it must take the Morale Check before it resolves its own Direct Fire even if all opposing units have not yet fired. It still only takes a single Morale Check

7.42.1.3 Overwatch Fire

After all formations have executed their Direct Fire, resolve all Overwatch Fire with the original First Player announcing and resolving its Overwatch Fire followed by the original Second Player.

7.42.2 Movement Phase

During that Step, the initial First Player announces and resolves all Close Assaults/Hand-to-Hand Combats followed by the initial Second Player.

During the Movement and Overrun Combat Step, formations execute their movement in reverse order with the last formation to resolve its Direct Fire moving first followed in reverse order ending with the formation that resolved its fire first moving last.

Overwatch Fire may trigger normally as each formation resolves its movement.

A unit that must take a Morale Check due to being Overrun, takes a single check after all Overruns directed at it are resolved.

7.42.3 Streamlined Movement Phase

The Movement Phase is executed as described in the Basic and Advanced Game. This eliminates the need to note the formation order in which the Initiative was initially triggered. The initial Second Player moves all units, followed by the initial First Play.

7.52 Command Span

Even in a tactical setting, command units perform critical roles beyond the function of morale support and recovery. By maintaining communications with their subordinate units, they effectively carry out a command role.

To maintain communications, subordinate units must be within a certain range of their command unit(s). In turn, the command units must be within a certain range of higher level command units. In game terms, these various ranges are called Command Span.

While many different command elements are affected, Command Span focuses on a subordinate unit's ability to engage in combat and maneuver across the battlefield.

Combat is a more basic element than maneuver. Units commanded to Fire or Overwatch are much more able to carry out those commands without interaction from their command unit(s) than those units ordered to Move or Short Halt. N/C commands are unaffected by Command Span.

Company (CHQ)

The CHQ is the smallest, or lowest command level. The Command Span from any CHQ is 10 hexes to *any* subordinate unit from its formation. A subordinate unit only needs to be within range of a single CHQ from its formation if more than one CHQ is available. CHQs do not provide any command authority for units outside of their formation.

Typically, the company-level Command Span is not modified for Formation Grade, although it may increase or decrease due to other factors, for example, nationality, a large number of subordinate units (decrease) or a defensive posture (increase).

- If *any* company-level subordinate units are out of the Command Span, excluding recon units, and any units will be moving, again excluding recon units, (Move and/or Short Halt commands), regardless if those specific units are out of the Command Span or not, the maximum number of Move and/or Short Halt commands available is equal to ½ (round down) of the total available commands (minimum 1). The total number of available commands is not affected.
- After the loss of *all* company CHQs (elimination, bail out, knock out or brew up), there is a permanent reduction of the total available Move and/or Short Halt commands by ½ (round down) of the total available commands. The total number of available commands is not affected.
- Units without radio sets (see 7.4) have their Command Span reduced to 0.

Reference Scenario 6: Assault. The Soviet CHQ's Command Span is decreased to 8 hexes due to the size of the company.

At full-strength and all leg units mounted, the company has 17 combat units. With Seasoned Formation Grade, it has a total of 10 available commands. If any of the company's units are greater than 8 hexes from the CHQ T-34/85 M44, the number of available Move and/or Short Halt commands is limited to 5 (10/2) of the available 10 commands.

Battalion (BHQ)

The BHQ is the intermediate, or middle command level. All CHQs are subordinate to one or more BHQs. The Command Span from *any* BHQ is 20 hexes to its subordinate CHQs.

Typically, the battalion-level Command Span is not modified for Formation Grade, although, like company-level command spans, it may be increased or decreased due to other factors.

In many cases, BHQs will be position somewhere off map, since they are not listed as part of a scenario's forces. In that case, it is assumed that any CHQs are within the 20 hex Command Span even if located more than 20 hexes from the mapboard edge. A scenario could include special conditions where this could be modified or adjusted.

- If a CHQ is out of the Command Span from its BHQ, its formation must move two rows down in the Available Commands table, minimum Green, when determining its available commands.
- After the loss of all BHQs (elimination, bail out, knock out or brew up), there is a permanent move of two rows down in Available Commands table, minimum Green, when determining its available commands.
- Units without radio sets (see 7.4) have their Command Span reduced to 0.

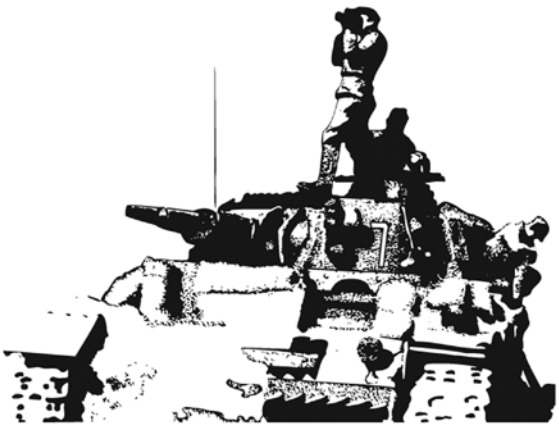
Regiment (RHQ)

The RHQ is the highest, or top command level. All BHQs are subordinate to one or more RHQs. The Command Span from any RHQ is 20 hexes to its subordinate BHQs.

Typically, the regiment-level Command Span is not modified for Formation Grade, although, like battalion-level command spans, it may be increased or decreased due to other factors.

In just about all cases, RHQs will be position off map, since they are not listed as part of a scenario's forces. In that case, it is assumed that any BHQs are within the 20 hex Command Span even if also located off map or located more than 20 hexes from the mapboard edge. A scenario could include special conditions where this could be modified or adjusted.

- If a BHQ is out of the Command Span from its RHQ, ALL of its company-level formations must move two rows down in the Available Commands table, minimum Green, when determining its available commands. Cumulative with Battalion-level above.
- After the loss of all RHQ (elimination, bail out, knock out or brew up), there is a permanent move of two rows down in Available Commands table, minimum Green, when determining its available commands. Results are cumulative.
- Units without radio sets (see 7.4) have their Command Span reduced to 0.



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