

1. INTRODUCTION

The ADVANCED TOBRUK SYSTEM (ATS) recreates tactical-level combat in a detailed and realistic manner. The ATS game system was launched in 2002 with the release of "Advanced Tobruk", a remake of the earlier classic board wargame. These rules are intended for use with ADVANCED TOBRUK and ALL subsequent ATS system games.

A copy of this rulebook is provided with each complete ATS game. This edition of the ATS rulebook is version 2.09 and replaces all previous versions. Important changes found in this edition are summarized in the Changes Summary Appendix provided later in these rules.

ATS scenarios recreate historical small-unit actions that depict two or more combatants, usually Allied and Axis, conducting combat with units from the other side until time runs out or one side meets the victory conditions specified. Victory conditions are unique, and balance out the scenarios, making results as much dependent upon player skill as possible.

Basic Game Rules—To assist you in getting into the game quickly, a separate BASIC GAME rulebook, play aid and training mapsheet is provided. New players should begin with the Basic Game before delving into the main rulebook. Basic Game concepts work directly with the main game; there is nothing to 'un-learn' between the two. The Basic Game is especially useful for understanding Line-of-Sight principles.

2. GAME SCALE AND TERMS

2.1 Personnel, Vehicles, Time and Distance—Each weapon or vehicle counter represents one weapon or vehicle. Personnel units vary, representing squads, crews, artillery forward observers, BAR gunners, noncommissioned officers and officers. NCOs and officers are referred to as LEADERS in the game. Each game turn represents about ninety seconds of real time. Each hex represents 50 yards of terrain.

2.2 Game Terms and Acronyms—A number of acronyms are used in these rules that will be familiar to military Personnel. An effort has been made herein to use the full name during the first usage of any acronym, followed with the acronym in parentheses. Refer to Appendix C for a complete list of acronyms used in these rules.

3. COMPONENTS

3.1 MAPS—The game maps depict historical battlefields. Labels for street and building names are occasionally affixed to add historical flavor. Each map hex uses a unique ID and a center, or sighting dot used for tracing Line-of-Sight (LOS) during play. Some scenarios use only a portion of the map. Others use more than one map. When laying out maps for play, orient them in keeping with the 'Map Layout' for that scenario and note any limitations on the playing area list in the 'Map Configuration' section.

3.2 TOPOGRAPHY—ATS maps use colored topography LEVELS to represent 3D landforms on a 2D map surface.

3.2.1 Levels—Unless marked otherwise, all hexes on desert maps have a 'height' value of Level '0' or 'sea level'. Terrain and

TABLE OF CONTENTS:

INTRODUCTION.....1
GAME SCALE AND TERMS.....2
COMPONENTS.....3
SEQUENCE OF PLAY.....4
STACKING.....6
LINE OF SIGHT AND LINE OF FIRE.....7
GENERAL TERRAIN RULES.....10
TERRAIN TYPES.....11
EMPLACEMENTS.....19
MORALE 23
MOVEMENT.....24
COMBAT.....28
SPECIAL TROOP TYPES.....47
SPECIAL WEAPON AND CREW RULES.....47
SPECIAL VEHICLE RULES.....49
APPENDIX A: CHANGES SUMMARY.....52
APPENDIX B: TABLES AND CHARTS.....53
APPENDIX C: ACRONYMS.....53
INDEX.....54

Levels rise in relative heights to Levels +5, +10, +20, etc. and fall, to Levels -5, -10, -20, and so on. Non-desert maps have topographic height notations printed on them. All terrain of the same color is considered to be at the same level.

3.2.2 Terrain types—Most hexes on the game map depict a single, particular type of terrain, for example, Woods. Some hexes combine two or more types of terrain, for instance, a Road through Woods. The terrain rules outline the effects of each type of terrain.

3.2.3 Hex Locations—Most hexes show a single 'Location'—units in that hex are all considered in the same physical place. Some hexes, in particular, have more than one location within the hex. A building on a game map can have a 'ground level' at Level 0, and 'upstairs' levels at Levels +10 and +20. Each of these, while still in the same hex, are separate locations, so units there may have a different Line-of-Sight (LOS), separate stacking limits as if each location is its own hex, and may be targeted separately by enemy fire.

3.3 OVERLAYS

Overlays are cards with printed terrain. These are placed on ADVANCED TOBRUK maps as specified by Scenario Special Rule (SSR). Overlays depict wadis, deirs, villages, hillocks, forts, and other desert terrain. The only terrain printed on desert maps is Scrub and Open Ground. The letter portion of an overlay's ID refers to the type of terrain the overlay contains.

3.3.1 Placement—SSRs provide placement information for all overlays used in a scenario. Unless the use of overlays is specified via SSR, none are used. Each overlay is identified by a letter-number ID. Simply match the X and Y coordinates found on the specified overlay with the matching hexes on the map.

3.3.2 Overlays do not contain their own coordinates. Use the hex coordinate found on the map, i.e., beneath the overlay.

3.4 CHARTS AND TABLES

Each table provided on Play Aid Cards 1-7 is identified with its own unique ID, usually found in the upper or lower right-hand corner. Example: 'F2' is the Casualty Table.

3.5 SCENARIO CARDS

3.5.1 Overview— Each ATS game or expansion contains several cards providing a collection of historical scenarios. Each scenario contains an historical summary, an Order-Of-Battle (OOB) for the combatants, a turn record track, any SSR unique to that scenario, pertinent map information and victory conditions.

3.5.2 Order of Battle—The OOB portion of the scenario card provides the type and number of units available for the combatants. Instructions for set up are also provided, including the order of set up. A number is printed under each counter that shows the quantity of that type of counter used. When a particular counter is displayed in an OOB with a number under it, players need to pick that number of that unit type. Example: An EIGHT under a 7|6|8 squad means that side receives 8 x 7|6|8 squads. When the Fog of War (FOW) side of a counter is shown in an OOB, it means that side sets up with that many dummies, of the specified type (AFV or Gun)

Units not pictured—Before beginning play, add the following units to the printed OOB for that side:

a) One 2|3|8 Crew counter for each Medium and Heavy weapon provided;

b) ONLY if NO weapons pits are provided in any portion of that side's OOB, players may, at their option, add one Weapons Pit for each Heavy weapon that begins a non-desert scenario on map.

3.5.3 Set Up Order—Players set up in the order listed for that portion of their OOB, with the side setting up first completing all set up before the side setting up second places any units on the map. In any scenario that has all units of one side entering play from off-map, the non-entering player sets up first. In any scenario lacking the set up order for units of one or both sides setting up on map, make a pre-game Initiative die roll. The lowest roll wins, and the winner may set up first OR second.

3.5.4 Set Up Area—Units may set up anywhere in their designated area(s), including in half-hexes.

3.5.5 Map Entry and Exit—Some units enter the game from off-map. All units enter within the listed instructions provided on the scenario card. Units listed as entering during a certain turn must be set up at the edge of the map at the time they are due to enter as if they were in actual hexes. This way, they will use real movement to enter the map. For this purpose, roads and waterways are considered to extend off the map in a straight line (in the same hexrow or numbered hexes where a river exits the map), allowing vehicles to set up as if in a 'virtual' road. Entering units have to follow all rules of movement. Once exited, units may not return to the playing area.

3.5.6 Victory Conditions—Victory usually involves seizing terrain, advancing on the battlefield or causing enemy casualties. In order to win, a side must COMPLETELY fulfill the stated Victory Conditions. If only one side has victory requirements provided, failure to fulfill these conditions results in victory for the other side. Draws are sometimes possible.

3.5.61 Victory Points—Some scenarios call for one side or the other to earn Victory Points (VP). Players tally VP using the values provided on the Victory Point Table. Victory Points are awarded, or 'earned', immediately when the listed action is accomplished.

3.5.62 Exit Victory Points—Units exited to meet scenario Victory Conditions are worth the same value to the exiting side as if they were destroyed by the other side. Move these units off the map from the exit hexes listed in a scenario, paying 1 movement point to move off the map from any map-edge hex. Exit is only available as an option for earning VP if so-stated by SSR or scenario Victory Conditions.

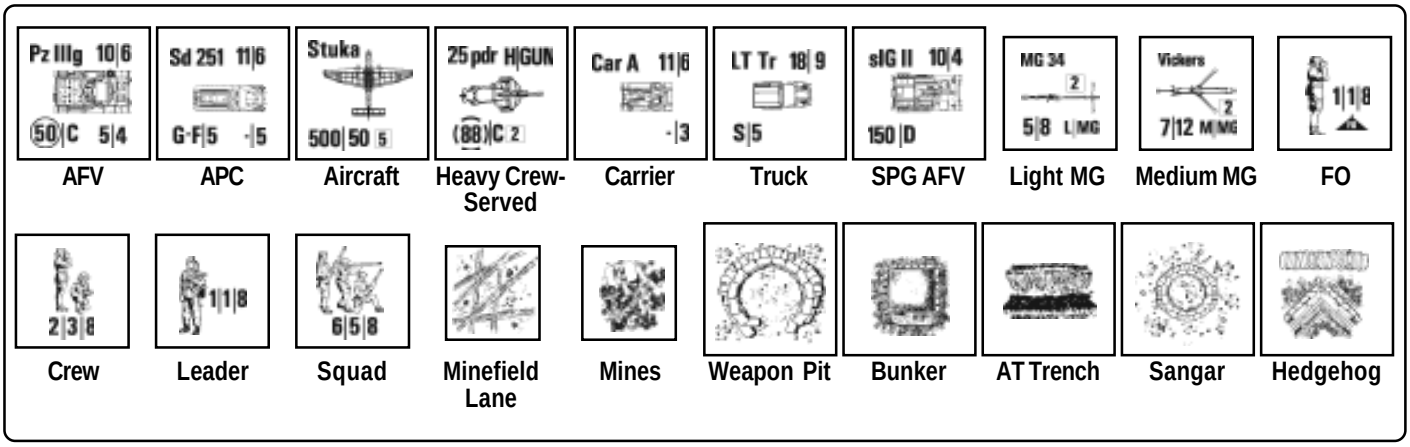
3.5.63 Control—Some scenarios call for a side to Control terrain in order to win. A side Controls a hex LOCATION if ANY of the following apply:

a) The hex is in its original set up area and no enemy unit has ever entered it;

b) It was the last to occupy a location with non Broken/Surrendered Personnel units totaling at least two Stacking Points in ANY terrain hex;

c) It was the last to occupy a location with a non M/F-KILLed AFV/APC in a non Building terrain hex.

If there is more than one location in a hex, a side can only control it if it controls ALL locations in the hex.



3.5.7 Game Turn Record Track—A group of rectangular boxes on each scenario card shows how many turns the scenario lasts. Place the Turn marker in the correct box for each turn.

3.5.8 Friendly Map Edge—Some rules refer to the 'Friendly Map Edge' (FME). If this information is not listed via SSR, any edge a side entered from or the closest edge to that side's set up area is considered a friendly map edge.

3.5.9 Scenario Special Rules—The Scenario Special Rules (SSR) detail unique rules for each scenario. SSR normally add restrictions or abilities to a side just for that scenario. SSR sometimes override rules found in this rulebook.

3.6 COUNTERS

3.6.1 Overview—The die-cut playing pieces provided, variously called units, markers or counters, show individual vehicles, weapons, or small groups of Personnel. Counters consist of purely combat units (Personnel; vehicles; weapons) and markers (emplacements; smoke; FFE; etc.) Printed on each counter is information pertinent to the play of the game. Armored Fighting Vehicles (AFV) also use cards to present information. Additional information relating to units is found on various Play Aids. The ammunition types available to gun counters is found on the Gun & Ammo Table for each nationality (Play Aid 5 for each).

3.6.2 Counters come in three types and sizes:

a) Personnel—5/8";
b) Weapons and vehicles—both 5/8" and 3/4" sizes;
c) Markers—both 1/2" and 3/4" sizes.

Personnel, weapons, and vehicles are presented in a different color for each nationality: Blue-Gray for Germans; Bright Green for Italians; Olive Drab for Americans; Khaki for British; Brown for Russians; and so on. Emplacements use a 3/4'' counter in a dusty yellow, as do all truck counters (colored yellow to denote these counter types may be used freely by any side).

3.6.3 Personnel—There are five types of Personnel counters in the game. All use 5/8" counters and have three values centered along the bottom of the counter representing: Gunfire Factors | Range | Morale.

Squads—Represent 7-12 men and have three figures on their front side; the back of the counter, bearing two figures, represents a Reduced squad, with lower values for Gunfire Factors and Morale.

Crews—Represent 2-4 men trained to fire Medium and Heavy weapons, like mortars and anti-tank guns; two figures on the front AND back of the counter (one figure is always peering through field glasses); the back of the counter is a reduced side with lower Gunfire and Morale values.

Leaders—Represent one man, usually an NCO or Officer; the back of the counter has a reduced Morale value and a 'red cross', denoting Wounded status.

Forward Observer—Represents one officer attached from an artillery unit in 'the rear'; has a reduced, Wounded side like a leader counter; referred to as an "FO" in the rules; all FO counters have a black triangle on their counters to differentiate them from other leaders.

BAR Gunner—Represents one man, only provided in some OOBs (e.g., Americans; Belgians), armed with a Browning Automatic Rifle. The BAR Gunner has a reduced, wounded side like a leader counter. The BAR Gunner has an inherent weapon that always shares the fate of the counter. It is fired in the same manner as a Light machine-gun (L|MG), with the BAR's ROF in a blue box on the counter like a MG.

3.6.4 Weapons—There are three types of weapon counters in the game, both 5/8" and 3/4". All 'M' and 'H' weapons must set up on top of their 'manning' crew.

Light Infantry Weapons— Represent one Light weapon, which can be carried and fired by Personnel counters. Includes anti-tank rifles (L|ATR), Light machine-guns (L|MG), light mortars (L|MTR), Flamethrowers (FT) and Shaped Charge Weapons (L|AT). These weapons are usually among the standard armament of an infantry company. Light infantry weapons all use 5/8" counters.

Medium weapons—Include Medium mortars (M|MTR), medium machine-guns (M|MG) and medium ATRs (M|ATR). Medium weapons use 5/8" counters marked with an 'M' weapon designation. One crew per M weapon is assigned for each scenario and all Medium weapons must set up with their manning crew. Place the weapon counter on top of the crew that has been assigned to it (referred to as 'manning').

Heavy weapons—Includes anti-tank guns (H|AT), anti-aircraft guns (H|AA), heavy anti-aircraft machine-guns (H|AA), howitzers (H|HOW), and field artillery (H|GUN). These heavier-caliber guns are the only weapon units that use 3/4" counters. One crew per H weapon is assigned for each scenario and all Heavy weapons must set up with their manning crew. Place the weapon counter on top of the crew that is manning it.

3.6.5 Vehicles

There are three types of 3/4" vehicle counters in the game, indicated by the color of the movement class icon printed behind their movement point rating in the upper right hand corner of the counters.

Gray—Armored Fighting Vehicles (AFV), those with a turret are referred to as Tanks; non-turreted AFVs are self-propelled guns or SPG. All 'gray' icon vehicles are provided their own AFV Cards for any game that has a scenario using that vehicle (noting most ATS games include bonus AFV counters included for future expansions, without their own AFV Cards);

Yellow—Armored Personnel Carriers (APC), including half-tracks and Carriers; these do NOT use AFV Cards;

White—Soft-skinned transport, including trucks, Jeeps and staff cars; these do NOT use AFV Cards and are referred to as 'Trucks' or truck type vehicles.

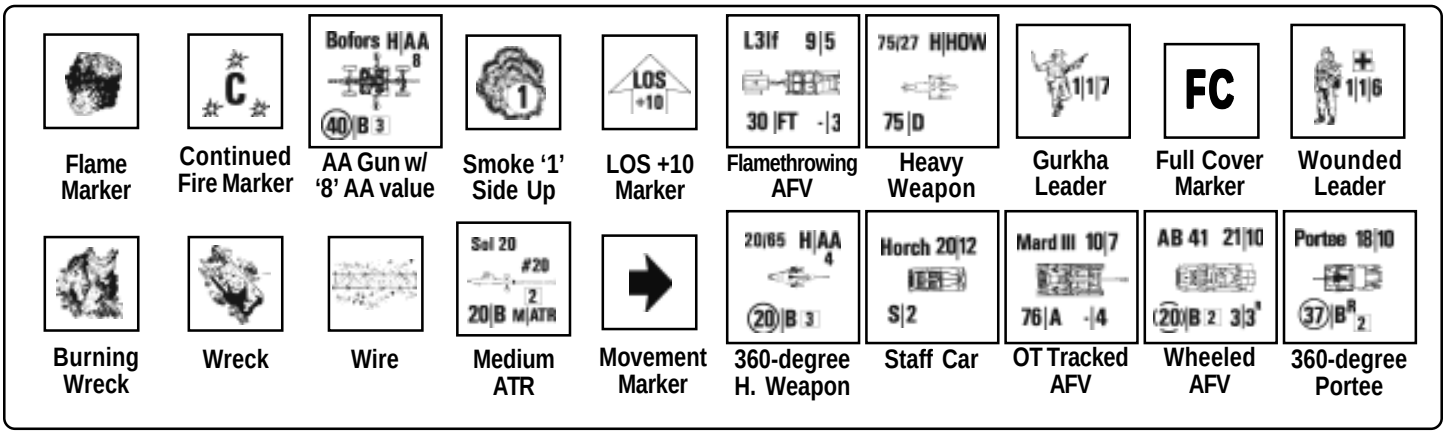
3.6.51 Open-Topped Vehicles—Some AFVs and APCs lack a fully enclosed compartment for the crew. These are referred in game terms as 'Open-Topped' (OT) vehicles and have a white outline surrounding the vehicle art on the counter (e.g., German Sd 250-1 half-track).

3.6.6 Movement Class—There are three movement classes for vehicles, indicated by the SHAPE of the gray, yellow or white movement icon found behind the Movement Point (MP) values.

Tracked Vehicle—An 'oval' indicates a FULLY tracked vehicle.

Half-Tracked—An 'oval plus small circle' indicates a half-track vehicle.

Wheeled—Two large circles indicate a wheeled vehicle.



3.6.7 Target Size—Some vehicles and Heavy weapons receive a target size modifier of +2, +1 or -1 for use on the HPT. Note: Target size modifiers are NEVER used as column shifts on the Casualty Table. These DRM are depicted by color circles behind the unit ID on the counter:

BLACK ID circle—Large target: -1 DRM;

WHITE ID circle—Small target: +1 DRM;

RED ID circle—Very Small target: +2 DRM.

No other units receive a size modifier.

3.6.8 Turrets and 360 mounts—Some vehicles have turrets, while some guns are capable of firing all around, i.e., 360-degrees. A circle around the Gun Size value indicates it can fire 360-degrees. A solid circle denotes a 'fast' turret. A dashed-line circle denotes a 'slow' turret.

3.6.9 Ammunition Limitations

A colored square or circle behind the Gun Value on some counters is used to remind players that these units face some limitations in the ammunition types they may fire. Always refer to the Gun & Mortar Ammo Table (Play Aid 5 for each nationality) and the AFV Card for each unit for all of the types of ammunition each gun may fire.

Gray—HE only;

Gold—HE and Smoke only;

White—AP only;

Yellow—APCR only;

Red—Flamethrower.

Use of each of the different types of ammunition is described later in the rules.

3.6.10 Artillery

Artillery counters show off-map actions as well as actual shells falling on the battlefield.

CFF—Call For Fire marker is placed in the target hex on the map when the owning player calls for off-map artillery.

FFE—Fire For Effect, represents the delivery of an artillery payload on the battlefield; attacks units IN and adjacent to the FFE counter (with a wider or longer attack radius possible in some instances, e.g., Barrage; Line Barrage).

Barrage Limit—These show the extent of an artillery barrage.

Counter Battery and Neutralized—These markers are not placed on the map; they are used to keep track of off-map batteries on Play Aid 2.

3.6.11 Markers use mostly 1/2" counters and record game functions and unit status. These include: Suppressed markers, Fire For Effect (FFE), Continued Fire, Movement, Wrecks, Burning Wrecks, Wire, Turret, Winded, and Courage (shown by various medals, e.g., Iron Cross; Silver Star).

3.6.12 Emplacements use both 3/4" and 1/2" counters and include Mines, Weapons Pits, Bunkers, AT Trenches, Sangars, and Hedgehogs.

3.7 AFV CARDS

Description—Each AFV used in a scenario found in that game is provided its own card, providing its Armor Factors and other pertinent information. Trucks and APCs do not use AFV Cards (noting some bonus cards have been provided in some ATS releases for APCs and truck type vehicles).

3.8 FATE

3.8.1 Dice—Ten-sided 'percentile' dice are used to represent fate. When one die is used, a '1' is the lowest roll and a roll of '0' is read as ten. When two dice are rolled together to obtain a value ranging from 1-100, the colored die is used as the tens die and the white die as the ones die. A colored '7' and a white '2' is read as '72'. Read a roll of '00' as '100'.

3.8.2 Rounding—Unless stated otherwise, players round ALL fractions DOWN. For example, 3.45 rounds down to 3 and 4.8 rounds down to 4.

3.8.3 Dice Modifiers/DRM—Die (or DICE, when two dice are rolled together) Roll Modifiers (DRM) are often applied when resolving attacks. Example: DRM are applied by ADDING or SUBTRACTING from a 'Hit Probability Number' (HPN) that must be rolled to obtain a 'hit' against a target when using the Hit Probability Table (HPT). DRM are noted as a number in the PLUS or MINUS (i.e., '+' or '-') and as a corresponding RIGHT shift for positive or LEFT shift (referred to as '1R' and 1L' respectively) for negative modifiers for fire that uses the Casualty Table without requiring a 'hit' be obtained first (e.g., small arms fire, as expressed in game terms by Gunfire Factors).

4. SEQUENCE OF PLAY

4.1 OVERVIEW

ATS is played in turns. Each turn represents about 90 seconds of elapsed time and contains four Segments. Some Segments are Broken down further into phases. During the Indirect Fire Segment, Fire & Movement Segment, and Close Assault Segment, players take turns committing their units to action. The act of firing or moving one piece is called an 'impulse', and usually consists of firing or moving one unit at a time. In some cases, players may move or fire more than one unit while using ONE impulse (e.g., Firegroups; Platoons).

4.1.1 Segments—Play follows the Sequence of Play. Once play reaches the End of Turn Segment, one complete turn is over. There is often nothing to do in some phases—if there is no off-map artillery in a scenario, players can usually skip the Indirect Fire Segment. Play continues with the Fire & Movement Segment of the turn.

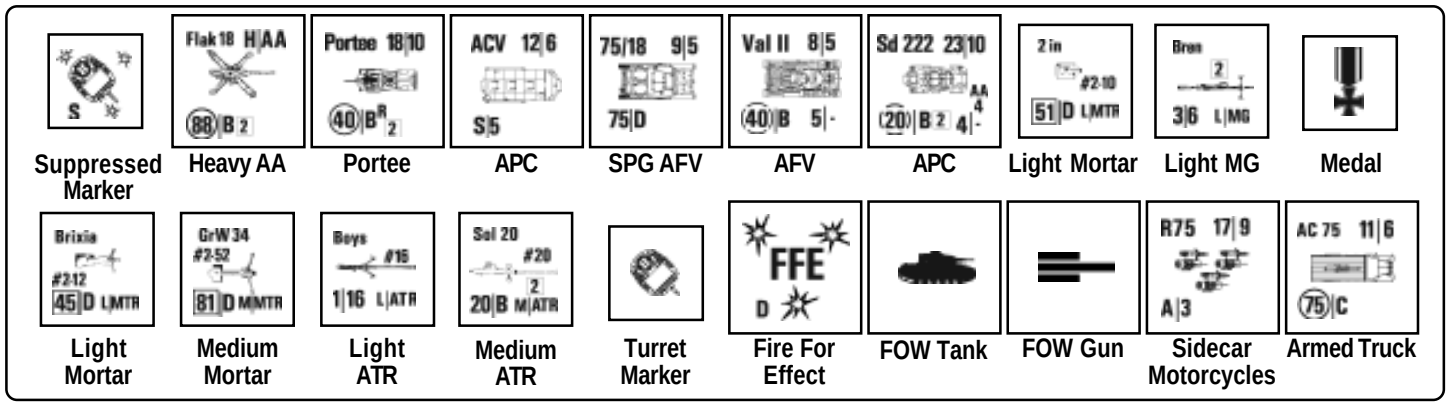
4.1.2 Game End—If one side or another has not achieved its Victory Conditions prior to the End of Turn Segment of the last turn of a scenario, the game ends. For a five turn scenario, the fifth time through the End of Turn Segment is the Game End.

4.1.3 Speed of Play—One aim of the ATS system is to reward players knowledge of the rules. This game should be played 'hard and fast', with experience determining more of the outcome than luck. Once an opponent's unit exits a hex, additional fire opportunities against it in that hex are lost. Allow your opponent a moment to decide if he has any additional 'shots' in that hex (or location within a hex). Once attacks are resolved and play proceeds to the fire or movement of another unit, the result stands, even if players subsequently decide they inadvertently made a rules mistake in a previous attack. Thus, play cannot be 'backed up' or 'reversed' if an error is discovered to have occurred in an earlier part of the game. *C'est la guerre...*

4.2 INITIATIVE

4.2.1 To determine which side has the Initiative, each player rolls a die at the beginning of each of the following phases and Segments: Indirect Fire Segment; Fire & Movement Segment; and Close Assault Segment.

4.2.2 Initiative Choices—The player rolling lowest receives the 'Initiative'. Re-roll any ties. The player with the Initiative may go first or second. Players then alternate using impulses (firing or moving) until the end of the Segment or phase.



4.3 ELIGIBILITY

4.3.1 In order to participate in certain phases and actions of a game turn, a unit must be ELIGIBLE for such actions. Unless stated otherwise, eligible units may not be Broken or Surrendered, and otherwise meet the criteria outlined in the rules to perform an action.

4.3.2 During each Segment (or phase within a particular Segment), players take turns taking actions (i.e., using impulses to fire or move) with their units. Both players may fire or move with all, some or none of their eligible units, alternating fire and movement opportunities.

4.3.3 Pass—A player may choose to Pass instead of using an available impulse. If a player does not want to use an impulse, play passes from that player back to the opponent. When the opponent executes an impulse or passes, the play comes back to the player and the player may now either execute an impulse with a unit or pass. There is no limit to the number of times a player may pass but if both players pass two times in a row the Phase or Segment ends immediately.

4.3.4 The Full Turn—The listings below show the Segments and Phases of one full game turn:

1. INDIRECT FIRE SEGMENT

A. Initiative Roll.

B. Players alternately use impulses in the following order:

1. Smoke Shells and Flares;
2. Aircraft Attacks;
3. Off-map Indirect Fire;
4. Counter-Battery Fire.

2. FIRE & MOVEMENT SEGMENT

A. Initiative Roll.

B. FIRE & MOVEMENT PHASE—Players alternately use impulses utilizing any one of the following actions:

1. Direct Fire and on-map Indirect Fire;
2. Assault movement (and Assault Fire);
3. Cross-Country Movement;
4. Running movement;
5. Crawling Movement (and Assault Fire).

Note that enemy units may use Opportunity Fire at moving units and may Gun Duel firing units.

C: Remove all "C" Continued Fire Markers.

3. CLOSE ASSAULT SEGMENT

A. Initiative Roll.

B. INFILTRATION PHASE—Players alternate using impulses utilizing the following actions:

1. Grenade Attacks;
2. Infiltration.

C. MELEE PHASE—Players resolve Melee in all hex locations containing units from both sides.

4. END OF TURN SEGMENT

A. Both players perform the following actions:

1. Remove Melee, Overrun, and Cease Fire markers;
2. Remove moved arrow, Flares, '2' Smoke and 'F' markers;
3. Flip '1' Smoke markers to '2' side;
4. Flip FFE markers to their CFF side;
5. All other markers remain.

B. Both players perform the following Rally actions:

1. Attempt to Rally Broken and Surrendered Personnel units in the same location as a leader;
2. Attempt to replace Surrendered markers with Broken markers for Surrendered units in the same hex as a friendly non-leader Personnel unit or non F- or M-KILLed AFV or APC;
3. Roll to attempt removal of Suppressed markers.

C. Move the Game Turn marker to the box for the next turn on the Turn Record Track on the scenario card.

4.3.5 Indirect Fire Segment

4.3.51 Roll for Initiative.

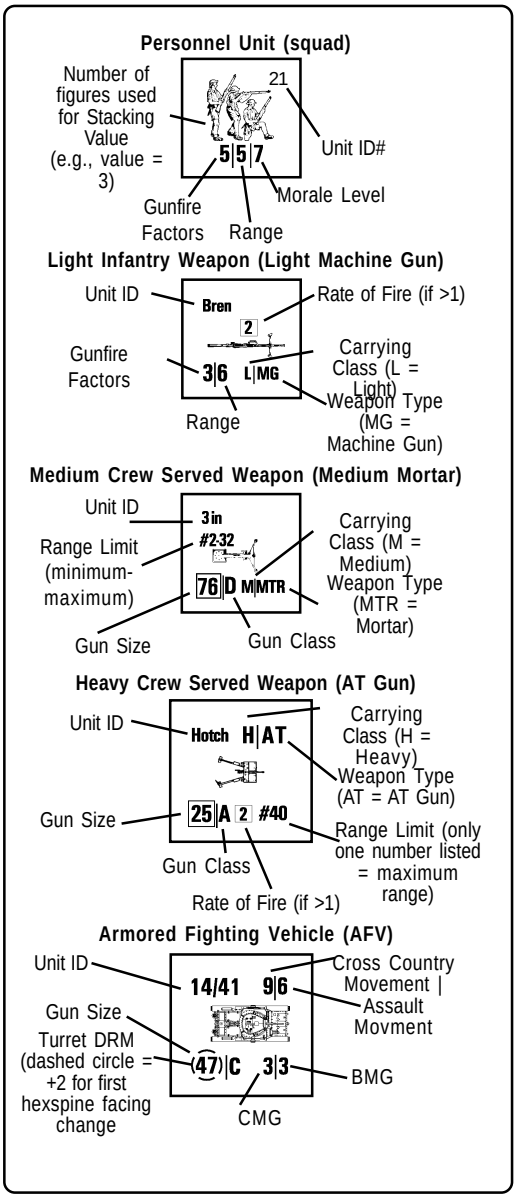
4.3.52 Play proceeds through each of the four Phases of the Indirect Fire Segment in order: Smoke Shells and Flares, Aircraft Attacks, Off-map Indirect Fire, and Counter-Battery Fire. During each action, the players alternate firing the eligible units of their choice. Finish all fire of each action before beginning the next one. Place an 'F' marker on top of the units that fired, unless hidden or off-map.

4.3.53 One Unit At A Time—The use of an Indirect Fire impulse always represents the fire of one unit at a time. There are no Platoon firing or Firegroup opportunities when using Indirect Fire.

4.3.6 Fire & Movement Segment—Roll for Initiative. The players alternate using fire and movement impulses for eligible Personnel, guns and vehicles. Eligible refers to the ability to fire or move. Eligible units include those that are not already marked as 'Fired', with an 'F' marker, or moved, with an 'arrow' marker. Units marked Continued movement (still marked with a movement arrow marker from a previous turn) may move, but may only use fire using Assault Fire (firing while in the act of using Assault movement), and may not use Direct or Opportunity Fire. A player may fire and move his eligible units in any order. Place an 'F' marker on top of the units that fire and a Moved arrow marker on or behind those that move.

4.3.61 If one player finishes moving all of his units before the other player, the other player may continue moving until all units he wishes to move have done so.

4.3.62 Opportunity Fire—During the Fire & Movement Segment, the non-moving player may fire upon the opposing player's moving units using 'Opportunity Fire'. Opportunity Fire does not require the use of an impulse; once it is completed by any units wishing to fire at the moving unit the moving player continues using his movement impulse with any surviving unit(s). The non-impulse player still receives use of the next impulse.



the squad's gunfire. The targeted unit has to have used two or more MP in the targeted hex to allow two Opportunity Fire shots from the same unit this way. A shot requires the expenditure of ONE full Movement Point in the LOS of the firing unit.

4.3.63 Gun Duels—During the Fire & Movement Segment, the non-firing player may, in some cases, return fire upon the opposing player's firing units using a 'Gun Duel'. Returning fire via a Gun Duel does not require the use of an impulse. Once it is completed by any unit(s) wishing to return fire at the firing unit, the non-impulse player still receives use of the next impulse.

4.3.64 Multiple Firing Units—Any number of units eligible to use Opportunity Fire or Gun Duels against a target may do so, including a Firegroup in the case of Opportunity Fire. Opportunity Fire and Gun Duels literally 'suspend play' following a Movement Point (MP) expenditure or other Opportunity Fire 'trigger', or fire by an enemy unit that triggers a Gun Duel, until all desired fire is used. The opponent may continue moving or firing his unit(s). Multiple ROF weapons may 'hold' their fire and 'save' additional available ROF for other Opportunity Fire targets or Gun Duels later in the same Fire & Movement Segment.

4.3.65 Removal—Remove 'C' markers at the end of this segment.

4.3.7 Close Assault Segment—Roll initiative for the Close Assault Segment.

4.3.71 During the Close Assault Segment, Personnel units may make Grenade Attacks OR may enter new hexes (including those occupied by enemy Personnel unit(s) to engage them in a special form of attack called Melee). This entry is called Infiltration. If units from both sides end up in the same location, 'Melee' takes place. All non-Broken Personnel units, even those marked with movement arrow and 'F' markers, may use Infiltration. In ALL cases Personnel may move one hex even if no enemy unit is present. Personnel may exit Full cover positions (e.g. under a Hedgehog) using Infiltration. Vehicles never use Infiltration. No unit may make a Grenade Attack AND use Infiltration in a Close Assault Segment.

4.3.8 End of Turn Segment—During the End of Turn Segment, all Melee markers, movement arrows, '2' Smoke, Flare, and 'F' markers are removed. Flip '1' smoke markers to their '2' side and flip FFE Markers to their CFF Side. Roll to remove Suppressed markers and attempt to Rally units. Flip eligible units back to their FOW side. All other markers stay.

4.3.81 Continued movement—Players may choose to keep movement arrows for VEHICLES that will continue to be marked as moving at the start of the next Fire & Movement Segment. During the End of Turn Segment, do NOT remove Moved arrow markers for vehicles that will continue moving. A non-moving vehicle may NOT BEGIN moving during the End of Turn Segment in this manner, i.e., only already moving vehicles may continue moving.

4.3.82 Rally—Make Rally attempts for all Broken and Surrendered Personnel units in the same hex with a leader and for Surrendered units within MSR of any eligible friendly unit. Without a leader present, a Broken marker replaces a Surrendered marker if Rally is successful.

4.3.83 Suppression—Roll to remove Suppressed markers from vehicles.

4.3.84 Any face-up unit with a yellow Fog of War (FOW) side on the back, such as an L|MG, may be flipped back to its FOW side when in terrain providing cover of at least ONE LEFT SHIFT and if it is out of LOS to all enemy units.

4.3.85 Move the Turn marker to the next box on the Turn Record Track.

4.4 OPTIONAL TURN RULES

Players may wish to experience additional uncertainty and excitement during play by using optional variable fire and movement impulses.

4.4.1 Variable Impulses—The side receiving the Initiative makes an additional die roll. This die roll is halved and rounded down (to a minimum of one) and represents the maximum number of consecutive impulses that may be used before the opponent may use a fire or movement impulse. When the opponent is eligible to use his first impulse, he also rolls to determine how many consecutive impulses he may use. Each player rolls in turn during each Segment and phase following the Initiative roll. This rule is recommended for scenarios where each side's OOB contains TWENTY or more AFVs, Heavy weapons and squads (i.e., for larger scenarios).

4.4.2 Optional Game End—Players who want more suspense may use this rule to make the end of a game take place randomly. Starting on the next to last turn, make a die roll to determine if the game ends immediately. On the next to last turn, the game ends on a die roll of '1'. On the normal last turn, the game ends on a roll of 1-4; the turn after, 1-6; two turns after, 1-8. The game ends automatically three turns after the normal last turn (unless players wish to extend it further at their own volition)

4.4.3 Optional Fire and Movement—Players wishing a more predictable sequence of play may conduct ALL Indirect Fire during the Indirect Fire Segment, followed by all movement during a separate Movement Segment, THEN all Direct Fire during a separate Direct Fire Segment.

5. STACKING

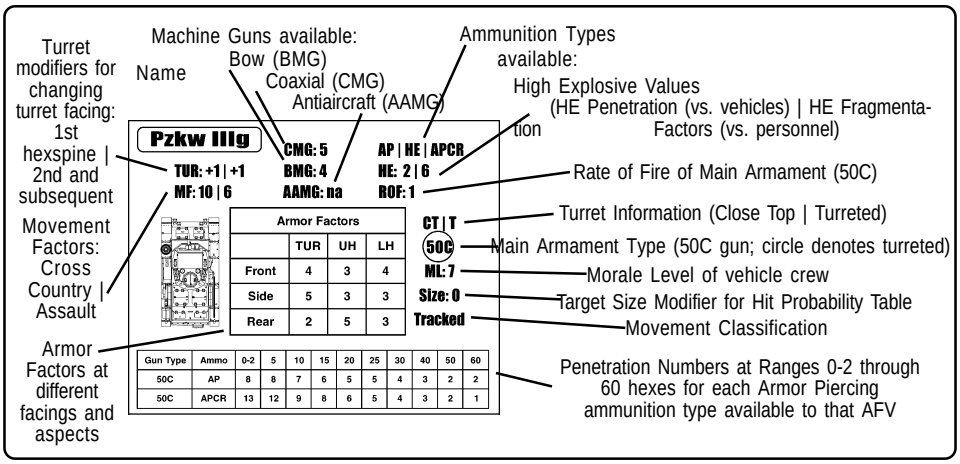
5.1 Overview—Stacking refers to the number of counters allowed in any one hex location (location within a hex, e.g., the top floor of a multi-story building) before penalties apply. Stacking limits refer to each side, not the total of the two sides.

5.1.1 A unit may enter a hex in excess of stacking limits but penalties for overstacking apply if units in the hex are fired upon or a spotting attempt is made against units in the hex.

5.1.2 Location—Some hexes such as multi-floor building hexes have multiple levels. Stacking applies separately in each location within a hex.

5.2 VEHICLES AND HEAVY WEAPONS

5.2.1 The stacking limit for vehicular units and Heavy weapons is one of each type per hex—two or more of one type violates this limit except for a vehicle towing another vehicle. One vehicle plus one Heavy weapon does not create overstacking in a hex; two vehicles or two Heavy weapons does. The presence of vehicular units and Heavy weapons does not affect Personnel unit stacking in any manner. Vehicles towing other vehicles are NOT considered overstacked.



5.3 PERSONNEL UNITS

5.3.1 The stacking limit is TWELVE Stacking Points of Personnel in a location noting a handful of terrain types specify lower limits for specific hex locations (e.g., Steeples). The number of figures depicted on a counter determines its Stacking Points value. A squad has three figures on it and totals three Stacking Points; reduced-squads (back of squad counters) and crews have two figures and represent two Stacking Points each. Leaders, BAR Gunners, Commissars, and Forward Observers (FOs) have one figure and represent one Stacking Point each.

5.3.11 Combined Stacking—Passengers riding in or on a vehicle and crews manning a Heavy weapon do NOT count to-

ward Personnel stacking limits. They are taken into account within the stacking limits for vehicles and guns. All other Personnel do count, including crews and other Personnel manning or carrying Medium and Light weapons.

5.3.2 'L' and 'M' Weapons And Others

5.3.21 Light and Medium weapons units, aircraft and marker counters have no effect on stacking.

5.3.22 Emplacement counters do not affect stacking. However, units stacked under and on top of emplacement counters are totaled for stacking purposes in a location, noting some Emplacement types have their own stacking limits (e.g., Blockhouse).

5.4 OVERSTACKING PENALTIES

5.4.11 In any location that is overstacked (by any quantity) double the usual entry cost for all units.

5.4.12 Overstacked hexes also are easier to spot and affect the Spotting Range. See the Spotting rules for more on this.

6. LINES OF SIGHT AND FIRE

6.1 TERRAIN/TOPOGRAPHY

6.1.1 Visualization—Landforms and the terrain forms that sit upon them are represented like a stack of pancakes. The battlefield has a 'sea level', or floor, known as 'Level 0' in game terms. Stacked on this are found levels, easily visualized as one, two or more pancakes stacked on the floor. A person standing on a stack of two pancakes can see over a one pancake-high obstacle to his Line-of-Sight (LOS). A person standing on one pancake cannot see past a stack of two or more pancakes along his LOS. Some of these 'pancakes' may have Wadis, Ravines, Creeks, Rivers and Sunken Roads that cut into them.

6.2 TOPOGRAPHY AND LINE-OF-SIGHT

6.2.1 Line-of-Sight—A straight line drawn between the center-dot of the firing unit's hex and that of the target hex represents a Line-of-Sight (LOS). Use a thread or a straightedge touching the center-dot of both hexes to draw the LOS. With a few exceptions, terrain in the firing and target hexes does not block LOS—only terrain in intervening hexes, along the LOS. If the LOS to a hex is blocked, no direct or Indirect Fire may be fired into it (with the exception of spotted fire, a unit spotting for another unit, such as an FO spotting for Indirect Fire.

6.2.2 Reciprocity—LOS is reciprocal even if the unit being spotted is 'only' a leader or FO. If a firing unit can see a target, then the target can also trace a Line of Sight to the firing unit, including units spotting for artillery (e.g., FO). When Spotting rules are in play, it IS possible for a unit to have a LOS to another but be unable to fire at it due to the prospective target being beyond Spotting Range. Reciprocity is denied when two different Types of units are attempting to Spot one another; see the Spotting rules for examples of this effect.

6.2.3 Exact LOS—A hex containing blocking terrain in the form of a higher contour or terrain form only blocks LOS if the thread or straight edge touches any part of the terrain depiction or contour artwork. AFVs, APCs, wrecks and smoke affect any LOS drawn into or through their hex, including a LOS that runs exactly along one of its hexsides.

6.2.4 Adding Heights—Some hexes contain a combination of land and terrain forms, such as Buildings, Hillocks, and Woods. The height of any terrain form is added to the hex's terrain level. Height is always measured in levels. Example: A building that is +10 levels high, sitting on a Level 0 hex, produces an overall obstacle to LOS drawn through its hex of +10 levels if a LOS thread hits the building art. Otherwise, a LOS obstacle of only 0 levels is given by the hex.

6.2.5 Unit Location—Treat a unit in a hex containing more than one NON BUILDING level as at the level of the center dot in the hex. Units in buildings may be at the 'ground level' (same level as the hex the building sits ON), or in higher levels, depending on the existence of additional levels (or 'stories' a.k.a. 'floors') in a building. Example: A unit in a Wadi or Ravine hex may be 'UP' (on the edge, able to see out) or 'DOWN' in the Ravine, each representing a separate location within ONE hex for stacking purposes in Linear Depression terrain. Thus, a Wadi/Ravine/Creek is ONE hex for stacking but has two locations. In buildings, EACH location is treated as if a separate hex for stacking.

6.2.6 LOS With Target on Different Level—A unit wishing to trace a Line of Sight to a unit on a different level must check for the presence of 'blind hexes'. Terrain and land forms that rise over the lowest unit between the firing unit and its target creates one or more 'blind' hexes, hexes that LOS cannot be traced into because they lie in the 'shadow' of a terrain form like a building or woods.

6.2.61 Blind Hexes—If both units are on the same level, any blocking terrain on that level and at least Level +5 high blocks LOS (as it does when +5 higher than the highest unit along the LOS). If the firing unit and its target are not at the same level, and the blocking terrain is situated below the higher unit but at the same level or higher than the lower unit, LOS may also be blocked. One or more 'blind hexes' may be created in which the obstacle may block LOS in hexes directly beyond its hex.

6.2.62 Tracing LOS—Blind hexes are traced back along the LOS from the hex directly behind the terrain form, continuing back toward the lower unit UNLESS the Blind Hex is created by a HILL contour of the SAME hill, in which case reduce the number of blind hexes by ONE along the LOS.

6.2.63 LOS Blind Hex Creation Table—To see if intervening terrain creates blind hexes, consult the LOS Blind Hex Creation Table. The axis on the left, labeled 'HEIGHT DIFF' represents the elevation difference between the higher unit and the intervening terrain. This difference must be at least +10 in levels in order for a line of sight to exist over intervening terrain or land forms that are higher (in levels) than the firing unit. The horizontal axis represents the range in hexes from the firing unit to the intervening terrain. Cross indexing these two values results in a number that represents the number of blind hexes that exist between the intervening terrain and the lower unit.

6.2.7 Vehicles and Wrecks

6.2.71 Treat AFVs and APCs (ONLY) and WRECKS in the same manner for LOS purposes. These rise +5 LEVELS in height above their location and affect any same-level (or along a continuous downward or upward slope) LOS traced into or through their hex, whether they have moved or not. These vehicles and non burning wrecks affect LOS by adding a +1 DRM/one LEFT (1L) column shift per hex (not per vehicle/wreck) through which an LOS passes (Exception: Not cumulative with any cover state provided by terrain IN a hex). Vehicles and wrecks never create blind hexes. Burning wrecks produce smoke and are treated separately.

6.2.8 Smoke and Dust Height

6.2.81 Smoke and Dust rise to Level +30 above the ground level of their hex (or the highest level a building rises to above when burning). Smoke is produced by burning wrecks and terrain, smoke shells fired indirectly by on-map guns and mortars or off-map artillery, and placed by Personnel using smoke grenades. Dust is created by moving vehicles in some desert scenarios and is in play only via SSR.

6.2.82 Cumulative Effects—Smoke and dust effects are added to any terrain found in their hex for HPN DRM purposes.

6.3 SPOTTING

6.3.1 Spotting determines whether a unit can actually 'see' another unit in its Line of Sight. Use Spotting for all scenarios in Advanced Tobruk and its expansion modules set in desert terrain. This rule is Optional for all non-desert theaters unless stated as in use by SSR. When not using this rule, the ability to fire is determined by the ability to 'see' a target unit, based only on whether a LOS exists.

6.3.2 A Spotting Ranges Table (Play Aid 6) is included with the game. It indicates how many hexes one unit may be from another and still see or 'spot' that unit, depending on the actual battlefield conditions.

6.3.3 Observation Limits—No unit may be fired on unless it is within Spotting Range. Units marked as Fired may be spotted to an unlimited range if within LOS. A target marked with a BOT marker may also be spotted an unlimited range by the firing unit that placed the BOT marker. The above additional Spotting Ranges are NOT reciprocal. When firing at buildings as targets instead of the units inside, firing Smoke, or using Indirect Fire, use the "B-SM-I' column for the current Spotting Conditions indicated by the "B-SM-I" column on the table.

6.3.31 Aircraft Limits—An LOS (and the ability to spot) always exists to and from aircraft noting the exceptions listed in the rules for Aircraft Attacks.

6.3.4 Using the Spotting Ranges Table:

1) Match the condition in the left column: Optimal; Average; Hazy; Night|Khamsin|Fog—with that listed in that scenario's SSR. Use Optimal for any scenario that does not list Spotting conditions via SSR;

2) Find the Status column—use the 'SUP | FOW' row for firing units that are Suppressed or for VEHICLE and HEAVY WEAPON TARGET units that are showing their Fog of War side up i.e., an 'L' or 'M' infantry weapon is NOT fired on using the Hit Probability Table and its carrying Personnel ONLY is referred to for Spotting Table purposes;

3) Check the cover state of the Target Unit using only Moved status and Terrain related cover states: Moved|Running|Assault; Stationary; Good; Improved; and Full. If more than one state of a target applies, use the highest (easiest to Spot) Spotting Range available. A unit is only considered Moved if marked with a Moved arrow;

4) Find the exact column under that cover state for the target's unit type;

5) Cross-reference to find the maximum Spotting Range for that unit. No unit may be spotted beyond the listed range;

6) Apply the following: unlimited Spotting Range to any target units marked as Fired; Treat an overstacked hex location as if all Personnel units are using Running movement; add any applicable Height Advantage the firing unit has over the target unit(s).

Example: A Stationary squad in the open being spotted by a Suppressed tank in Hazy conditions would have to be 4 or fewer hexes away from the tank to be Spotted. If the squad had fired (and thus was marked with an 'F' marker), the Spotting Range would be unlimited.

6.3.5 Height Advantage—A unit at a higher level than Level '0' adds its height to its Spotting Range unless the Spotting Conditions are NIGHT/KHAMSIN/FOG. A unit that adds to its Spotting Range with height advantage may also be spotted at the increased range. Also note that for spotting purposes levels are relative. For example, a unit on a +20 contour has a +10 height advantage over a unit on a +10 contour.

6.4 SMOKE

6.4.1 Spotting—Use the "B-SM-I" column on the Spotting Ranges Table for smoke. This represents the maximum Spotting Range when firing smoke. Ignore any enemy unit in the hex for the purposes of spotting for smoke shells.

6.4.2 Target hexes—Smoke shells, unlike HE Indirect Fire, may be fired into hexes occupied by friendly units. They may also be fired into empty hexes.

6.4.3 On-map units— Fire Smoke shells indirectly during the Indirect Fire Segment using the HPT in exactly the same manner as HE rounds, except they are fired at hexes instead of individual target units and receive a -2 HPN DRM. LOS may be traced to the highest level of a hex and still allow smoke to be fired into it, noting any smoke 'hits' are considered to land at the Ground level of the hex. A miss does not place a smoke counter. The BOT DRM is not used when firing smoke ammunition but any smoke already in a hex or along the firing unit's LOS is applied as an HPN DRM for the firing unit attempting to land a smoke round in a hex. On-map units may fire smoke into one hex per phase, but may use their full ROF attempting to place one or more smoke counter(s) in that one hex.

6.4.4 Off-map Ammunition—All off-map batteries may fire smoke ammunition unless restricted from doing so by SSR. Each off-map battery may place smoke into as many hexes as its FFE would affect (e.g., a Concentration may place smoke in its FFE hex and six adjacent hexes; Barrages may place smoke in every Barrage hex).

6.4.5 Smoke Effects—Smoke markers (including smoke created by Burning wreck and Flame counters) create a +4 HPN modifier OR a 4 column shift LEFT. Each smoke-producing counter along an LOS is counted, including the firing and target hex. Note any amount of smoke adds '1' to the normal cost of terrain for entering units. Smoke shells are always considered to be in the Ground level of any hex they land in.

6.4.6 Smoke Duration

6.4.61 Smoke fired from off-map batteries lasts for TWO turns. When fired by these, a smoke counter is placed face-up in the target hex displaying its '1' side. Smoke fired from on-map units lasts for ONE turn. When fired by these, place a smoke counter in the target hex with the '2,' side up.

6.4.62 Removal—During the End of Turn Segment, remove all smoke counters displaying a '2' from the map. All smoke counters on the map displaying their '1' side are flipped to display the '2' on the reverse side.

6.4.7 Smoke Grenades

6.4.71 Availability— American, British, (and Engineers) receive ONE Smoke grenade per 3 Stacking Point unit in their OOB (including reinforcements). German, French, and Italian OOBs receive one grenade for every TWO 3 SP units. Other OOBs receive Smoke grenades only via SSR. Smoke grenades do not have to be assigned to specific units, they may be used freely.

6.4.72 Usage—Any SQUAD (including reduced) Personnel unit may place a Smoke Grenade in its own or an adjacent hex during the Smoke Shells portion of the Indirect Fire Segment. A Personnel unit may not place more than one Smoke Grenade per turn and is otherwise free to move or fire. It is not marked in any way.

6.4.73 Placement—Place smoke markers in the ground level of the target hex.

6.4.8 White Phosphorus Smoke Grenades

6.4.81 Scenario SSR may provide a certain number of 'White Phosphorus' grenades. These function in the same manner as normal Smoke Grenades with the following exceptions.

6.4.82 Check Morale—Any unit in a hex location where a White Phosphorus grenade is placed must immediately perform a morale check.

6.4.83 Flame—Make a separate die roll in any terrain eligible for the placement of a Flame marker where a White Phosphorous grenade is placed. On a die roll of '1', place a Flame marker on the ground level of the hex.

6.4.9 AFV Smoke Candles

6.4.91 AFVs and APCs carry smoke candles for self-defense.

6.4.92 Whenever an AFV or armed APC is forced to leave the map due to an F-KILL result on its main armament it may lay one smoke counter in any hex through which it moves to retreat from the map. The smoke may only be placed once. Place a smoke counter with its '2' side up in the chosen hex.

6.4.93 OPTIONAL Smoke Candles—Players may wish to use smoke candles more freely. If both players agree before play, AFVs and APCs may place a smoke counter this way once per game, i.e., they need not be F-KILLed or exiting the map. Make a side note of vehicles that have used their smoke candles.

6.5 WEATHER AND AEROSOLS

6.5.1 Overview

Aerosols are airborne factors such as haze, dust and heat shimmer that affect the ability of men to observe on the battlefield. These are used in addition to the use of the Spotting Table to depict weather such as intense dust storms, or 'Khamsin', that occasionally take place.

6.5.2 Dust

6.5.21 Vehicles moving across the dry and dusty battlefields of North Africa raised plumes of dust behind them that caused severe visibility problems. Dust is only used in a scenario when provided via SSR.

6.5.22 Vehicles create Dust ONLY when using cross-country movement. Place a Moved arrow behind the vehicle in the hex it just exited to indicate Dust and 'follow' the vehicle with the marker, always keeping it directly behind.

6.5.23 Roads and Tracks—Vehicles moving along a road do not raise dust. Dust is raised on a track.

6.5.24 Removal—Dust markers are removed during the End of Turn Segment unless a vehicle continues moving between turns.

6.5.25 Dust (movement arrow) counters obscure Line-of-Sight in the same manner as Smoke counters.

6.5.26 FFE and Aircraft Bombs—Dust is created in every hex affected by an FFE or aircraft bomb attack, but not from MG or

cannon attacks. Place a Smoke counter in such hexes with its '1' side facing up.

6.5.3 Sun Glare

6.5.31 The difficulty of looking east, i.e., into the rising sun during the morning, or west, into the setting sun, is represented by an HPN and Casualty Table modifier to re-create this effect. Sun Glare is only used in a scenario via SSR.

6.5.32 When sun glare is in effect, any Line-of-Sight that leaves the firing unit's hex through the two (or three, depending on the map orientation for that scenario) hexsides facing directly east or west receives a +2 HPT DRM for hit attempts OR a two column shift left for fire using the Casualty Table only. Whether sun glare is created by LOS facing east or west will be stated via SSR.

6.5.33 Sun glare creates no effect on off-map indirect or aircraft fire. Sun glare is not affected by range. A +2 HPN DRM applies for all fire no matter the range.

6.5.4 Heat Shimmer

6.5.41 Heat shimmer is a form of aerosol that hinders LOS dependent on range. Heat shimmer is only used in a scenario via SSR.

6.5.42 When Heat Shimmer is in effect, a '+1' is added to all HPT hit attempts for each FRACTION of ten hexes (i.e., fractions rounded UP) in range between firing unit and target. Heat shimmer also affects units firing directly on the Casualty Table by providing a one-column shift LEFT for each ten hexes in range. Example, an LOS of 12 hexes would receive a +2 HPN DRM or a 2 column shift left on the Casualty Table for fire not using the HPT. At a range of 21, a +3 applies; and so on.

6.5.5 Khamsins

6.5.51 Khamsins (desert dust storms) could, and did, sweep across battlefields with blinding suddenness. Khamsins are only used in a scenario via SSR. When in use, the SSR will specify when and what die roll is needed for their implementation.

6.5.52 A Khamsin has the effect of reducing Spotting Conditions to 'Khamsin' for the remainder of the scenario. Scenarios may also begin with Khamsin Spotting Conditions in effect.

6.6 LIMITED INTELLIGENCE

6.6.1 The following rules reflect the lack of accurate detailed information a field commander would have concerning enemy units and defensive positions.

6.6.2 Full/Under—The opposing player may never examine Personnel units UNDER an emplacement (or marked with an FC marker) unless they move out of their Full cover position or a friendly unit enters their hex location.

6.6.3 The opposing player may also not look at:

a) Any units under the top unit in a stack unless those units are within Spotting Range AND move or fire;

b) The other side of any counters currently showing their FOW side UP or any units under any counter showing its FOW side.

6.7 FOG OF WAR

6.7.1 Vehicles and weapons have a yellow blank or generic tank or gun icon known as their 'Fog of War' (FOW) side that conceals their identity. Players may set up all such units with their FOW side up. All such units that enter from off-map also enter with their FOW side up.

6.7.2 Removal–A unit flips from its FOW side when it FIRES or MOVES within the LOS (and Spotting Range if in use) of a non Suppressed/Broken/Surrendered enemy unit. A unit does not lose FOW simply for being within Spotting Range. Enemy aircraft never benefit from their FOW side; this side is simply provided if players wish to randomly choose during solitaire play.

6.7.21 FOW DRM—Any VEHICLE or HEAVY weapon (including the crew of such a weapon) with its FOW side up receives a +2 HPN DRM when fired on using the HPT. There is NO Casualty Table column shift for such targets (e.g., when firing to attempt to Suppress a vehicle [presumably an AFV] showing its FOW side up). When Night|Khamsin|Fog Spotting Conditions are in effect, ALL units are fired at as if they have their FOW side up AND all Personnel units receive a TWO COLUMN SHIFT LEFT for attacks that use the Casualty Table ONLY (exception: units in Flare hexes during Night Spotting Conditions).

6.7.3 During the End of Turn Segment, face-up units may be flipped back to their FOW side if the unit is (all three):

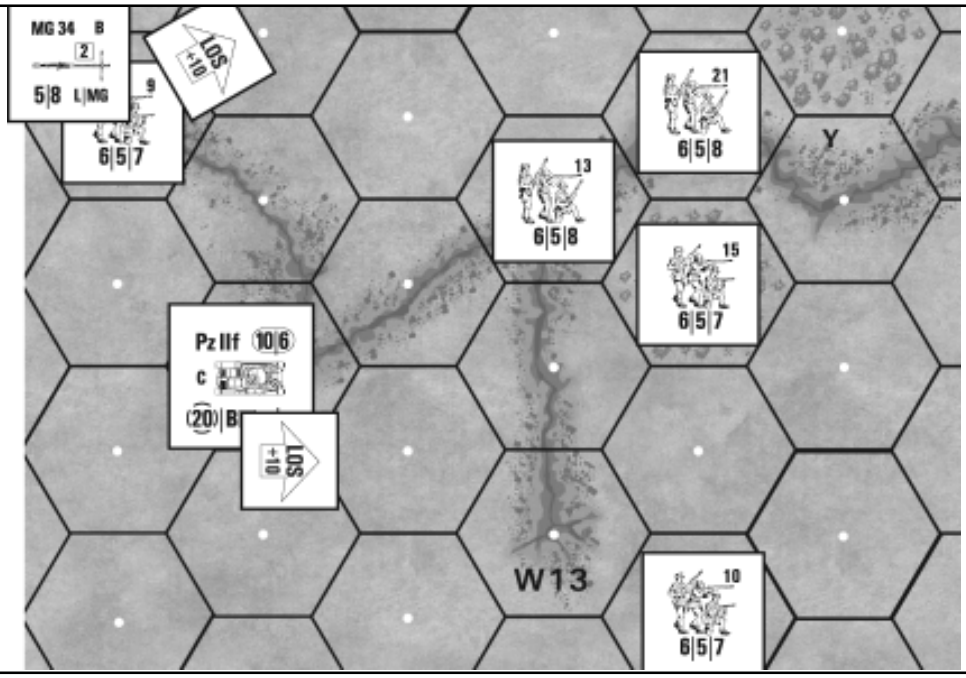
a) In any terrain that provides at least one column shift LEFT for LOS traced into or through it AND;

b) Not Surrendered or Broken, AND;

c) Out of LOS or Spotting Range of all non-Suppressed/Broken/Surrendered enemy units.

6.7.4 Light and Medium weapons—Light and Medium weapon counters are flipped to their FOW side only if their carrying Personnel units meet the above conditions. The ONLY purpose of flipped L and M weapons is to conceal from the opponent the exact weapon being carried.

6.7.5 Dummies—Some scenarios provide dummy Heavy weapon and vehicle counters via OOB. These are set up or enter from off-map with their FOW side up. Vehicle dummies ONLY may be moved as if they are any vehicle–there is no limitation on their Movement Points. A moving dummy vehicle will be removed the moment it enters the Spotting Range and LOS—or just LOS if not using Spotting—of an enemy unit. Use any extra 5/8" counter to provide a dummy crew for Heavy weapons if they are placed on map with their FOW side up. If a



In the example at left, squad '13' only has a LOS to '21', '15' and the Pz IIf 'C' (and vice versa).

Squad '9' UP in the wadi (along with its MG 34 L|MG) can SEE but has no LOS to FIRE at squad '10' (ignore ramifications for same nationality for this example) or '15'. Squad '10' CAN see and fire at (i.e., has a LOS) squad '9' with no restriction as can '15'.

Pzkw IIf 'C' is also UP in its wadi hex. It has a LOS to squad '10' but no ability to fire at any other unit in the example. Its line-of-fire to '15' crosses a wadi hexside; squads '13' and '21' are down in the wadi and can be seen but not fired at. Its LOS to squad '9' would NOT cross the three allowable hexsides the Panzer's LOS has to cross from a hull-defilade position in a wadi. If squad '10' was an enemy tank instead, Pzkw IIf 'C' would be in hull-defilade to its direct fire.

Squad '10' cannot see squads '13' and '21' down in the wadi. If it was in the hex with the "W13" overlay ID text, it COULD see along the continuous wadi to squad '13'.

dummy counter is forced to flip to its non-FOW side for any reason, it is removed from play, along with any dummy crew.

6.8 HIDDEN SET UP

6.8.1 Heavy weapons and their manning crews may ALWAYS set up HIDDEN, as may other units via SSR. Hidden set up may only be used in terrain that allows such set up. Hidden weapon counters are not set up on the map, nor are their manning crews (and any leaders in the same stack) or any emplacements the hidden units are set up in.

6.8.11 Terrain—ONLY non-hexside terrain that provides at least a one column shift left for any LOS traced into or through it, such as Brush, may be used for Hidden set up. Exception: Units that set up with a Bocage hexside between them and ALL enemy units may set up Hidden.

6.8.2 Set Up

Make a side note of hidden units, including covered arc for any crew-served weapons and vehicles (include turret-covered arc if it differs from the vehicle-covered arc) and any other unique parameters (e.g., FO inside a particular vehicle).

6.8.3 Revealing Hidden Units

Place Hidden units on map for the following reasons:

a) Conducting any fire or movement action, including changing vehicle or turret covered arc if the hidden unit's location is otherwise within LOS and Spotting Range (if the latter is in use);

b) An enemy unit attempts to enter their hex;

c) A 'C1' or better result is obtained on the Casualty Table against an 'empty' hex in any manner. When firing at an EMPTY hex location treat it as if a FOW unit is therein and HALVE the GF, HE or FRAG Factors.

6.8.4 Revealing Hidden Emplacements

Emplacements containing hidden units are not placed on map until the units under or on them are revealed. An emplacement may set up hidden if only units eligible to be hidden are set up stacked UNDER the emplacement.

6.8.5 Suggestions for Solitaire Play

6.8.51 For solitaire play, place all units on map but do not allow enemy units to fire upon friendly units that would be Hidden until they fire or move.

6.8.52 Random Placement—Players may also wish to place weapons for the 'enemy' in a cup and place them randomly during set up with the FOW side up in order to conceal their identity. A dummy or two can be added when using this approach to add flavor during solitaire gaming.

6.9 NIGHT RULES

6.9.1 Spotting—Spotting at night is slightly different. Fired units are still spotted at any range. Vehicles marked with a Moved arrow are spotted at DOUBLE range.

6.9.2 Firing—Apply the +2 FOW DRM to all Night fire unless the target is in a Flare hex.

6.9.3 Morale Support Range—The Morale Support Range is 0—only units in the same location affect morale.

6.9.4 Platoons and Fire Groups—Only same hex firegroups are allowed. Personnel Platoon movement is only allowed for units starting in the same hex. Multiple locations within a hex are permitted for both platoons and firegroups. Vehicle convoys and platoons operate normally.

6.9.5 Flares—Flares are provided by SSR and may be allotted during scenarios with NIGHT Spotting Conditions (whether Spotting is in use or not). During the Indirect Fire Segment, an unbroken unit with Flares can place an 'F' (Fired) marker in the ground level location of any hex within its LOS and within THREE hexes. Mortars may place a Flare marker within its minimum and maximum range limits. After any unit places a Flare marker, roll on the Indirect Fire Accuracy Diagram applying a -20 Accuracy DRM for flares placed by Personnel units. Flares are removed during the End of Turn Segment of the turn they were placed.

6.9.6 Flare Allotment—Unless another quantity is provided by SSR, ONE Flare is provided for every LEADER (including BAR Gunner and Commissar) in the OOB for a side.

6.9.7 Flare Effects—Ignore the night FOW +2 DRM for all units in or adjacent to a Flare hex. All units in/adjacent to a Flare hex may be Spotted as if they fired.

7. GENERAL TERRAIN RULES

7.1 Terrain Chart-This play aid provides the following data about each terrain type:

Terrain—The name of the terrain type.

Type-A terrain type may be Clear, Obscuring or Blocking.

a) Clear (C)—No effect on LOS;

b) Obscuring (O)—LOS can go through but fire will be less effective. Apply a +1 DRM|LEFT shift for every hex of obscuring terrain touched along the LOS;

c) Blocking (B)—The terrain blocks LOS completely if touched;

d) Special (S)—Some unique terrain rules apply to this kind of terrain.

Height—The 'obstacle' height of the terrain, expressed in LEVELS.

Cover—Indicates the cover provided by the terrain, whether it is none, Good, Improved, Masonry and/or Full. Some terrain may provide two different covers; see the rules for that terrain type. For example, a Building has 'I|M' cover, denoting it may provide Improved cover (if brown, or Wooden) or Masonry cover if gray, or of Masonry construction. Personnel units may be set up under emplacements providing Full cover for units stacked beneath them AND marked with an 'FC' marker in some terrain.

Entry cost—These four columns list the entry cost for each type of unit (Personnel; Fully Tracked; Half-Tracked; or Wheeled). An entry cost of '1 + CoT' means that the unit must pay 1 MP AND add the entry cost of the terrain in the hex. An entry of '2 x CoT' means DOUBLE the Cost of Terrain. A diamond indicates the need to check for Immobilization when entering the terrain or crossing the hexside. Sometimes, there are two entry costs, such as one+CoT|Road, meaning the unit must pay 1 plus the cost of the other terrain in the hex if it doesn't follow a road. In this case the term 'Road' may also apply to a Track, Path, or Railroad for Sunken Roads and Embankments that contain these terrain types.

Im—Indicates if a roll on the Immobilization Table is required Before (B) or After (A) entering the hex or crossing the hexside. If a roll is required before, any M-KILL result leaves the vehicle in exactly the same covered arc it was in at the time it made the roll.

Cu—Indicates this terrain creates 'Cushion' effects, representing the absorption of HE explosions. Any Personnel unit in Cushion terrain has its Cover shifted one column LEFT for all Direct or Indirect HE Fire. This Cover modifier applies ONLY on the Casualty Table, even if the fire needed the HPT to hit. Cushion does not provide a one column shift Left against Personnel units in Full Cover in APCs (marked with 'F' on their counter), Bunkers, Blockhouses or Buildings.

Flam-Indicates if the terrain is flammable. It can burn for two reasons: By SSR or by a FT|HE attack. Such an attack must obtain a C6 result or more on the Casualty Table to create a Flame in an applicable terrain hex.

AirB-Indicates the terrain creates Airbursts. Certain terrain represented additional danger due to fragments being thrown about by exploding HE rounds. Any Personnel unit in Airburst terrain has its Cover shifted one column Right for all Direct HE or Indirect Fire. This Cover State modifier applies ONLY on the Casualty Table, even if the fire needed the HPT to hit. Airbursts do not provide a one column shift Right against Personnel units in Full Cover in APCs (marked with 'F' on their counter), Bunkers, Blockhouses or Buildings.

H-D—Indicates if the terrain or terrain hexside allows for automatic Hull Defilade or a die roll to create H-D status.

Hide—Indicates terrain where a unit may set up Hidden. Units may set up Hidden in any terrain giving at least a one LEFT shift into or through them cover (e.g., Scrub).

Notes—Some brief notes to remind players of rules that apply to the terrain.

7.2 Hexside terrain—Terrain located in a hex is referred to as 'In-hex' terrain. Some terrain is 'Hexside' terrain, and appears on the border of the hex. Even if that hexside terrain blocks LOS, same-level LOS can still be traced to the hex bordered by that hexside terrain, but not beyond it. If the LOS runs exactly along a hexside contain-

ing hexside terrain, it can still be traced to the hex just behind that hexside terrain, and units behind it receive any eligible cover. If the Hexside terrain is at least Level +10 high (e.g., High Wall; Bocage), Blind hex(es) are created beyond the hexside and there is no LOS exactly ALONG that kind of hexside terrain. There is no cover from hexside terrain against Indirect Fire (including off-board or aerial attacks) or Direct Fire from an adjacent unit at least +20 levels higher than the height of that hexside terrain. Example: A 0 level unit behind a Hedge hexside gets no cover from the Hedge against a unit at Level +20 in a building in the adjacent hex.

7.3 Linear Depressions (LD)—Some terrain types represent a 'Linear Depression', (e.g., Ravine; Wadi; Sunken Road). Linear Depressions depict a narrow low area and units in their hexes may be in one of two positions:

a) UP (at Ground level, indicated by placing the unit on a LOS +10 marker with the arrow pointing toward two hexsides NOT crossed by the Depression art [if possible; otherwise at least ONE]); and;

b) DOWN (inside the Depression, considered at Level –10 on desert overlays or -10 levels lower than the ground level of the hex).

BOTH locations count as ONE hex for Stacking and entry purposes. Example: A Personnel unit may not enter the DOWN location of a Linear Depression hex that has an enemy unit in its UP location.

7.3.1 Moving Into And Between Up and Down Positions—Unless stated otherwise by a specific terrain rule, Personnel, ALL weapons and vehicles may set up in or enter an UP position in a Linear Depression. It costs FOUR MP to enter an UP position from the Down position of the same hex, and Personnel may also use Crawling movement and Infiltration to move between these positions. It costs ONE MP to enter a Down position from an Up position of the same hex. Vehicle turrets may be pointed in any direction normally when the vehicle is UP.

7.3.11 Exiting an Up position—A unit in an Up position must go Down the wadi in its hex before it may move to another wadi hex or enter the other side of the Wadi hex. The unit may only exit through the non-Wadi hexsides on the side of the wadi indicated by the arrow of the LOS +10 marker (i.e., across non-Wadi hexsides that the unit would be eligible to receive Hull-Defilade [or Good cover] across) by spending 1 MP. Units can Infiltrate from Up position to another hex or elsewhere within the hex.

7.3.2 Entry & Exit—Unless stated otherwise in a specific rule for a terrain type, it costs 2 MP to enter and exit a Linear Depression hex, including when not entering from a continuous, adjacent hex of the SAME LD. Note: If two separate Linear Depression hexes, i.e., non-continuous, were adjacent, a unit would have to pay 2 MP to exit one, and another 2 MP to enter the new LD, for a total cost of 4 MP. Only units IN a down location may enter the UP location of that hex but units already in UP locations may exit to non Depression hexes OR move into the down location of their hex. Entering and exiting a Linear Depression involves a roll on the Immobilization Table for some vehicle type and situations.

7.3.3 LOS and Hidden Set Up—A Linear Depression doesn't block or obscure LOS crossing its hex. A Down unit in a Linear Depression hex may only see and be seen from an adjacent hex or any hex within the SAME Linear Depression in which the LOS does not leave the depression art. It is otherwise out of LOS to units in higher levels UNLESS they can sight into (and ALONG, i.e., the LOS does not leave the Depression artwork) the Depression across a crestline (also referred to as a 'contour') formed by a higher hex meeting an adjacent Depression. A unit may set up Hidden if down in a Linear Depression and out of the LOS of ALL enemy units (determined after all set up).

7.3.4 Cover—Units in UP positions receive Good cover or (H-D status for Depression terrain that allows vehicles UP) for Direct Fire across the two hexsides pointed to by the Level +10 marker (as long as the hexside is NOT also crossed by the Depression art). Unless eligible for Good cover, no cover benefits are created by Linear Depressions.

7.4 Cumulative Terrain Effects—All terrain that provides a cover benefit for units occupying the hex or behind a hexside terrain, provides a modifier. If a hex has a hexside terrain and in-hex terrain, for example a Building behind a wall hexside, the targeted player must choose either the hexside or the in-hex terrain when fired on. Any terrain along the LOS that is not a hexside of the target hex affects the LOS normally. For each hex containing at least one occurrence of Obscuring terrain touched along the LOS, add a cumulative +1 HPN DRM/one column shift LEFT. The exception to this is Smoke; if the LOS enters an OBSCURING hex/hexside containing Smoke, apply ONLY the Smoke modifier; if the target occupies a hex containing a terrain providing a cover modifier AND a Smoke, apply both Fire modifiers. Example: A unit fires on the HPT along an LOS that has a Brush hex with a Smoke marker in it. A +4 HPN DRM is applied. If this fire instead involved a squad firing its Gunfire Factors (GF), a FOUR column shift would apply on the Casualty Table. Note: Only ONE instance of OBSCURING apply in a hex; use the highest modifier/shift in all cases.

7.5 Overlays—Overlays are added to some maps to change the terrain used in scenario. They provide landforms—Hillocks, and depressions—Deirs and Wadis, as well as Rock-Strewn terrain, villages, desert tracks, etc. Trim these overlays out from the sheets they are given on—being sure to trim right along the 'colored' edge—leaving no white space around the edge of each overlay. Overlays don't have any hex numbering, so use the map numbering. Overlays have two adjacent hexes named X and Y. SSRs give overlay placement by saying which two adjacent hexes the X and Y hexes should cover.

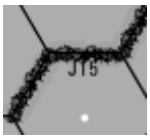
7.6 Floorpan Armor Hits—An AFV crossing some hexsides (e.g. Walls) or exiting certain emplacements (e.g., Sangars) is subject to a Floorpan Armor Hit for Direct Fire when crossing/exiting.

7.6.1 Floorpan Hits—If an AFV receives a Lower Hull (LH) hit when fired on by Opportunity Fire as it crosses a hexside creating the possibility of a Floorpan hit, roll a subsequent die. If this roll is 1-5, treat the Armor Factor for that hit as '1' (i.e., ignore the AF provided on the vehicle's AFV Card).

7.7 Hull-Defilade (H-D)—Some terrain may automatically provide vehicles a 'Hull-Defilade' advantage. In other terrain, vehicles need to roll equal to or lower than a given number to obtain H-D status. Place a Hull-Defilade marker to indicate this status unless the vehicle is in terrain that always provides H-D (e.g., behind a Wall), in which case marker placement is unnecessary. If the roll fails to gain H-D, a vehicle must exit the hex and reenter before it may roll to attempt H-D again. HPT fire against turreted vehicles in Hull-Defilade must roll a 1-3 on the Hit Location Table in order to hit the vehicle (non turreted vehicles must roll an UH to be hit). Any other aspect rolled is considered a 'miss', even if the HPN was successfully rolled for on the HPT.

8.0 TERRAIN TYPES

8.1 BOCAGE



8.1.1 Description—Bocage terrain is depicted by an irregular brown hexside 'bank' with green foliage on top.

8.1.2 LOS—Bocage is Level +10 Blocking HEXSIDE terrain.

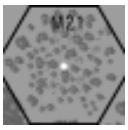
8.1.3 Cover—Units may set up Hidden (if otherwise allowed or via SSR) and may set up marked with an FC marker if behind a Bocage hexside to ALL enemy units after both sides have set up. Any LOS traced across a Bocage hexside adds an Improved +2 HPN DRM for hit attempts using the HPT OR a two column shift LEFT for attacks using only the Casualty Table. LOS traced directly down a Bocage hexside between same-level units is BLOCKED (or Blind hexes are created normally for LOS from higher levels). Ignore ALL column shifts RIGHT for Personnel units using Assault or Running movement for fire that crosses a Bocage hexside. Bocage hexsides create Hull-Defilade for AFVs and APCs.

8.1.4 Movement—It costs 2 MP for Personnel units to cross a Bocage hexside (in addition to the CoT of the hex entered), and 4 MP + COT for Fully Tracked vehicles. Vehicles must check for Immobilization before crossing the Bocage hexside unless using a gate. Other units may not cross. If

a tracked vehicle successfully crosses, a Minefield Lane marker is placed across the hexside, all other vehicles may then cross that hexside without Immobilization checks ONLY if using Assault movement.

8.1.41 Floorpan Hits—Floorpan hits may occur when AFV crosses a Bocage hexside (even if across a Minefield Lane but not when moving through a gate).

8.2 BRUSH



8.2.1 Description—Brush is depicted as small, irregular green foliage.

8.2.2 LOS—Brush is Level +5 Obscuring terrain.

8.2.3 Cover—Brush provides no cover for units within but allows Hidden set up.

8.2.4 Movement—It costs 2 MP for all units to enter a Brush hex.

8.3 BUILDINGS



8.3.1 Description—Buildings are a terrain feature found on maps and on overlays, the latter bearing a 'V' (for 'village') in their ID. Buildings are either depicted as brown or gray structures, and it is this coloring that determines the kind of COVER the building (or its Rubble) provides. Treat all buildings on overlays as 'gray' unless stated otherwise by SSR.

8.3.11 Building Colors and Cover—Brown buildings (and their Rubble) are considered somewhat less substantial and provide IMPROVED cover (i.e., 2L or +2 HPN DRM). They are referred to as 'Wooden' buildings. Gray buildings (and their Rubble) are considered more substantial, and provide MASONRY cover (i.e., 3L or +3 HPN DRM). They are referred to as 'Masonry' buildings. All building rules apply to both types.

8.3.12 Levels—A Building always contains a Ground level (the level of the ground on which it is situated) and may have higher 'floors' representing additional locations that rise +10 or more levels above the ground level of the hex. A great variety of other types of Buildings are depicted on historical maps or overlays, ranging from small cottages, to churches, large factories and major urban cathedrals. Buildings vary mainly by height, and other features noted below. STAIRWELLS exist only in multi-hex Buildings and hexes containing large center-dots.

8.3.121 HOUSE—A House is a Single hex Building that has a small white center dot. It is Level +10 Blocking terrain. It only contains a Ground level. It has a Stairwell that leads to its ROOF level if it is flat-roofed.

8.3.122 TOWER—A Tower is a SINGLE hex Building with a large yellow or white center dot. It has a Ground level and an additional Level +10 location (or story), and is Level +20 Blocking terrain. It contains a Stairwell.

8.3.123 LARGE BUILDING—A multi-hex Building with normal center dots in EACH hex. It has a Ground level AND an additional level (+10) AND Stairwell in EACH hex. It is Level +20 Blocking terrain.

8.3.124 STAIRWELL BUILDING—A Stairwell Building is also a multi-hex Building, but at least ONE hex contains a large RED center dot (or large center-square on Stalingrad maps). It has a Ground level and two additional levels (+10 and +20), and is level +30 Blocking terrain. It has a Stairwell ONLY in hexes with a large red center dot (or square).

8.3.2 LOS—All Buildings are Blocking terrain of varying height. Units in an upper level (or floor) or rooftop location trace their LOS from that level. A LOS exists between one level and the NEXT up or down ONE level only if a Stairwell connects the locations. Thus, there is no LOS between the Ground level and Level +20 of the same hex, or between Ground level and Level +10 if there is no Stairwell connecting the hexes. There is also no LOS between different levels of adjacent locations of the same building or the same level of non-adjacent locations of the same building unless the LOS leaves the building (and reenters in the target hex).

8.3.3 Level Markers—3/4"-sized 'Level +10' and 'Level +20' markers are provided. Place Personnel inside Buildings on top of a Level marker according to its current level whenever they are not in the Ground floor of a Building.

8.3.4 Cover—All Buildings provide IMPROVED cover. Personnel units may set up marked with FC markers in a multi-hex Building hex.

8.3.41 Indirect Fire Effects—Any unit in a Building attacked by INDIRECT FIRE receives an ADDITIONAL column shift LEFT for each 'floor' (i.e., +10 in levels) of non rooftop locations ABOVE its location. Example: A unit on the Ground level of a Large Building adds one additional column shift LEFT to its cover because of the +10 levels above it.

8.3.5 Fire restrictions—Mortars, Bazookas, Panzerfausts, and Panzerschrecks may not fire from a non-Rooftop building location. Vehicle armament and Heavy weapons may not fire at a different location of the building hex they are in (i.e., may not fire 'up-' or 'downstairs'). Only Personnel and their Light and Medium weapons may fire at units occupying the next level above or below in the same Building hex and only through a Stairwell, treating those targets as if inside a Building normally (even if occupying the roof location above). No unit may fire at a different level of an adjacent hex of the same Building unless the LOS leaves the Building first.

8.3.6 Movement—All eligible units pay 2 MP to enter any level of a Building hex or 1 MP to move up or down to the next existing level through a Stairwell. A unit may only exit a Building from a Ground level location. From a level other than the Ground level, it can only move Up or Down to the next connected level of the same hex through a Stairwell or enter a connected, adjacent hex of the same level of the same Building (or may move across adjacent connected rooftop hex locations).

8.3.61 Movement restrictions—FULLY tracked AFVs and APCs and Heavy weapons may enter or set up only in the Ground level of a Building. Any eligible Vehicle that ENTERS a Building location during play must roll on the Immobilization Table AFTER entering. Vehicles that set up in Buildings do not risk Immobilization.

8.3.7 FLAT-ROOFED BUILDINGS—All Buildings in desert scenarios, unless stated otherwise via SSR, are Flat-Roofed and thus have a top level called a Rooftop. Buildings in other theaters are Flat-Roofed only by SSR or as specified in the "Terrain Walkaround" booklet for a specific game. The level of the Rooftop is the same as the obstacle level of the Building. Flat-Roofed Buildings allow Personnel to move onto the Rooftop level through a Stairwell.

8.3.71 Rooftop Spotting—Use the Improved column on the Spotting Range Table to spot units in Buildings unless occupying a Rooftop, which is considered GOOD cover from same and lower level units and Stationary to higher firing units (apply DRM and shifts normally for units on a Rooftop that are moving).

8.3.72 Rooftop Cover—Rooftop positions provide GOOD Cover, from lower level fire ONLY and do not block LOS from along the same-level (e.g., roof to roof LOS).

8.3.73 Rooftop Firing Restrictions—Only Personnel and their Light and Medium weapons may fire from Rooftop level. Mortars and SCW fire without restrictions.

8.3.74 Rooftop movement Restrictions—Units may move from one Rooftop location to an adjacent one of the same Building (unless roofless) at a cost of 1 MP. Units may move to a Rooftop location to the next lower level of the same hex and vice-versa if there is a Stairwell in the hex.

8.3.8 Building as Targets-A unit may opt to fire at a Building INSTEAD when units within it are beyond Spotting Range or at the firing player's option (e.g., if any target in the Building is beyond Spotting Range or LOS). When firing at the Building (including forts) target only, use the Spotting Range found in the "B SM I" column on the Spotting Table.

8.3.9 Building Destruction—Any hit obtained by Direct or Indirect HE Fire from Guns, Aircraft Bombs or off-board artillery, or any attack by a Satchel Charge, may destroy (or 'rubble') a Building location (as long as it isn't Direct Fire against rooftop units). Whenever any Original 'C5' or greater results on the Casualty Table is obtained this way, the Building hex is changed into 'Rubble'. All units in that location and above are eliminated. Place a Rubble marker in

the hex, on top of a Level +10 or +20 marker if the targeted unit was NOT on the Ground Level AND the form of attack (e.g., Direct Fire HE) is not specified as attacking the GROUND level of a hex. Rubble at the Ground level also eliminates any Cellar location (i.e., the building is now considered Ground level rubble (which rises to +5 levels high in the hex).

8.3.10 Flame—A 'C6' or greater result on the Casualty Table from an attack that causes (or is eligible to cause rubble [for non Building flammable terrain]) rubble in any level of a Building hex may also cause the Building to burst into Flame. Make a subsequent die roll. On a die roll of 1-3, place a Flame marker ALSO in the hex (with the rubble marker). A Flamethrower may also place a Flame marker in a building or flammable terrain (in addition to buildings, Woods and Crops terrain are flammable) location attacked.



8.3.11 Interior Walls—Some Buildings have a black bar Running along the interior hexsides of some hexes. There is no movement (including Infiltration) permitted across these hexsides (Exception: Unless stated otherwise via SSR or Terrain Walkaround rules, e.g., Arnhem: Defiant Stand) and LOS is blocked.

8.3.12 CELLARS—If stated by SSR, some Buildings have a building location level below their Ground level known as a Cellar. In addition to other Stairwells in the building, buildings with Cellars are treated as if they contain a Stairwell in each ground level hex, heading ONLY into the cellar. Cellars are at Level –10. Place units in a Cellar UNDER a +10 LOS marker.

8.3.121 Cellar Fire Restrictions—Only Direct Fire is allowed from a Cellar, and then only between the Cellar and Ground level of the same Building hex, or against adjacent units in hexes that are not part of the same building. This same restriction applies for Direct Fire INTO a Cellar location. Only Light weapons and Personnel Gunfire Factors, including Grenades/Satchel Charges/Gammon Bombs may be fired from a Cellar. Add ALL levels above the Cellar for Indirect Fire against Cellar occupants.

8.3.122 Cellar Movement Restrictions—Only Personnel and their carried Light and Medium weapons may set up in or enter a Cellar. A Cellar may be entered from the Ground level of the same hex (and vice-versa) at a cost of 2 MP. Units may also move directly to a Cellar location from an adjacent Hedgehog, AT Trench, Blockhouse or Bunker directly from UNDER those Emplacements. No movement or fire is allowed between adjacent Cellar hexes.



8.3.13 STEEPLE—A Building Hex that contains a white cross depicts a 'Steeple'. A Steeple is treated as a Building location Level +10 higher than the highest non-Steeple Building level. A Stairwell leads to it. A Steeple adds +10 levels to the LOS Obstacle height of the Building in the Steeple hex ONLY. Example: A House is Level +10 Blocking terrain with a Steeple it is +20 Blocking terrain. A new level is created in the Steeple hex. There is no Rooftop location in a Steeple hex.

8.3.131 Steeple Stacking Restrictions—Stacking is limited to TWO Stacking Points. Overstacking is not permitted.

8.3.132 Steeple Fire Restrictions—Only Direct Fire using Personnel and non-Mortar Light and Medium weapons is allowed from a Steeple location.

8.3.133 Steeple Movement Restrictions—Only Personnel may enter a Steeple location. Place Personnel on an appropriate Level marker (including the use of multiple Level marker for units in Level +30).

8.3.14 FACTORIES



8.3.141 Factory Defined—A 'Factory' is any Building with a Road or Railway physically depicted as 'entering' it at some point. Factories are treated in the same manner as Buildings for all purposes except where noted below.

8.3.142 Levels—Factories ONLY have a Rooftop location above Ground level and it is located at their highest Obstacle level. Factories with at least one large RED center dot (representing the Stairwell; or a large white square) are Level +20 Blocking terrain. All other Factories are Level +10 Blocking terrain, with a Stairwell in each hex that connects to the Rooftop. As there is no level above the Ground level, Factories do not provide additional Fire modifiers against Indirect Fire for units in the Ground level.

8.3.143 Rooftops—Factories ALWAYS have Rooftops (Exception: Roofless hexes).



8.3.144 Roofless Factories—Factories are depicted on some ATS maps with some Rooftops bearing battle damage. Known as 'Roofless' hexes, there is no Rooftop in these hexes. Roofless hexes may not be created during play. For fire from the roof or within the Factory, treat these hexes according to the other terrain in the hex, usually Debris (Airbursts may occur). Mortars may fire from these hexes. LOS to (and from, i.e., within the building) roofless hexes is treated as if across a CONTOUR hexside.

8.3.1441 Other Roofless Buildings—Treat non Factory buildings that are roofless NORMALLY for all purposes with the exception of any LOS that is created in the Roofless hex.

8.3.145 LOS—Factories are different from other Buildings in that as long as a LOS INSIDE the same building does not cross an 'black bar' hexside, it is NOT blocked. Unless rubbled, or filled with Debris in the case of a Roofless hex, ignore intervening hexes ALONG an LOS within a Factory and treat the hex of the target unit as JUNKYARD for inside-to-inside fire ONLY.

8.3.146 Entry and Exit—Personnel enter Factory hexes normally from the outside (i.e., like buildings). When moving from one interior hex to another, treat each non Rubble or Debris hex as if it is a JUNKYARD hex. Unlike normal Buildings, all vehicles may enter Factories using Road or Railway 'entrances' in the first hex where they enter the Factory without rolling on the Immobilization Table in the FIRST Factory hex entered (unless the hex is Rubble or roofless (i.e., Debris). Vehicles already inside a Factory move to new interior hexes as if entering JUNKYARD hexes. Vehicles enter non-entrance Factory hexes from OUTSIDE in the same manner as normal buildings.

8.3.15 FORT—Several *Beau Geste* style Turkish Forts were found in North Africa, and are depicted by the overlay with the 'F' ID. A Fort is a Building with one Gate and a Courtyard in its center surrounded by a Rampart.

8.3.151 Fort Movement restrictions—The Rampart hexside next to hex 'X' on a Fort overlay is the 'Gate' hex. Units may only exit/enter the interior 'Courtyard' through the Gate, and only if it is 'open'. Placing a movement arrow in the Gate hex facing IN to the Fort signifies an open Gate. Only the side with a Personnel unit in the Gate hex may open or close the Gate. The Gate may be opened or closed by that side during the End of Turn Segment by any Personnel unit in the Gate hex.

8.3.152 Rampart and Courtyard—The Fort consists of one center Courtyard hex, surrounded by Rampart hexes. Units in the Courtyard center hex may only be at Ground level. Units in a Rampart hex may be in a Courtyard location (at Ground level) inside the Fort or on a Level +10 marker, to signify they are in the Rampart location. Personnel units and their L, M, and H weapons may set up in a Rampart location. They may also enter from a same-hex or adjacent Courtyard location within by Crawling or via Infiltration. ALL weapons may set up and fired from a Rampart location. Units in a Rampart are considered in Improved Cover to fire from OUTSIDE the Fort. They may not 'Drop' from a Rampart when fired on. Units in a Courtyard location are considered out of LOS from any hex outside the Fort, except for Indirect Fire, from which they receive no cover benefits. Indi-

rect Fire may fire IN a Courtyard that would be otherwise out of LOS. Use the column B-SM-I when spotting a Fort on the Spotting Table. A Rampart hex may be destroyed and changed into Rubble like a building.

8.3.16 Other Building Types-Occasionally an SSR will specify that a particular Building is a 'tomb', a 'mosque' or some other type not covered in these rules. Rules for such Building types will be provided entirely by SSR or in the "Terrain Walkaround" provided with an ATS game.

8.4 CROPS



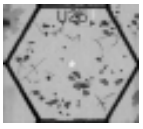
8.4.1 Description—Crops terrain is depicted by yellow-brown mass with irregular edges filling most of one or more hexes. In some scenarios Crops will be defined as "Harvested" by SSR. A Flame marker may be created in Crops hexes.

8.4.2 LOS—Crops are level +5 Obscuring terrain. Harvested Crops are Clear Terrain (and no Flame may be created).

8.4.3 Cover—Crops provide no cover benefits (Exception: Running benefit), but units may set up Hidden in them. TREAT RUNNING Personnel unit in a Crops hex as if it is using ASSAULT movement and an Assault moving Personnel unit as if it was Stationary. A Crawling unit derives no extra benefit. Harvested are ignored for LOS and attack purposes.

8.4.4 Movement—It costs 2 MP for all units to enter a Crops or Harvested Crops hex.

8.5 DEBRIS



8.5.1 Description—Debris terrain is only found on Stalingrad maps and is depicted by random specks.

8.5.2 LOS—Debris is level +5 Obscuring terrain.

8.5.3 Cover—Debris provides Good cover to units within and create Airbursts. Units may set up Hidden in Debris.

8.5.4 Movement—Debris terrain costs 2 MP to enter. Personnel may not use Running movement in a Debris hex. Vehicles must roll on the Immobilization Table after entering a Debris hex.

8.6 DEIR



8.6.1 Description—Deirs depict slight depressions in the desert and are represented by any overlay with a 'D' ID.

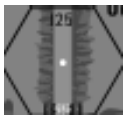
8.6.2 LOS—All Deir topographic contours depict a gentle slope in level down to Level -5 Open ground, barring other terrain in the hex. Stationary and Crawling Personnel units in a Deir hex have their LOS blocked if the LOS crosses a Deir contour to a Level 0 hex or a +5 level hex (and vice-versa). Units in +5 Level hexes or higher may also see into a Deir hex (and vice-versa) if the range in hexes from the unit in the Hill/Hillock hex to the first hex of the deir does not exceed the relative height of the unit in the Hill/Hillock hex. Any non-burning Wreck in a Deir hex is ignored for LOS purpose if the LOS is between another Deir hex and a higher level hex.

8.6.3 Cover—Units in a Level 0 hex adjacent to a Deir contour are in Good Cover if fired at from a unit IN the Deir (i.e., from Level -5 locations across a hexside to a higher unit at Level 0). Units in a Deir hex adjacent to a Level 0 hex are also in Good cover from firing units in a non adjacent higher level hex.

8.6.31 Hull-Defilade-Deir contours automatically create Hull-Defilade for Vehicles on a Deir hex adjacent to a contour for all non-adjacent LOS traced from higher level hexes and crossing that contour.

8.6.4 Movement—There is no additional movement point cost to move Down onto a Deir location. Moving Up (crossing a hex side with a contour to a Level 0 hex) costs 1 MP+CoT of the hex entered.

8.7 EMBANKMENT



8.7.1 Description—Embankment terrain represents a raised road or railroad. It is depicted as a light background, with a darker background and Road or Railroad terrain depicted in the center.

8.7.2 LOS—Embankment is Level +10 Blocking terrain.

8.7.3 Cover—Vehicles are automatically considered in Hull-Defilade position in an Embankment hex from a lower level firing unit. All other units receive Good Cover in the same situation.

8.7.4 Movement—In each case movement is allowed along the Road, Path, or Railroad normally, noting any elevation changes if the Embankment enters or exits to lower-level terrain.

8.7.41 Non Road Movement—Units moving into or out of embankment hexes without moving along a Road/Railroad pay 1 MP plus the cost of any terrain entered. Any Vehicle using Non-Road movement must roll for Immobilization BEFORE entering or AFTER exiting the Embankment.

8.8 FLAME

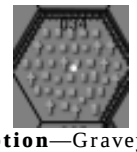
8.8.1 Description—Flame exists only in the form of a marker placed in a hex by SSR or created during play. Flame never 'spreads' from its current hex. Burning Wrecks are NOT treated in the same manner as Flame markers but instead as a Wreck with a permanent Smoke.

8.8.2 LOS—Flame is treated as Smoke for LOS purpose and rises to Level +30 above the Ground level of its location.

8.8.3 Cover—Flame provides no cover.

8.8.4 Movement—No unit may enter a LOCATION containing a Flame marker and any units in a newly created Flame location must exit by the End of Turn Segment of the NEXT turn or are eliminated (Exception: Vehicles are replaced by burning wreck markers although no additional smoke effect is created in such hexes).

8.9 GRAVEYARD



8.9.1 Description—Graveyard terrain is depicted by a group of many small white rectangles and crosses in a hex.

8.9.2 LOS—Graveyard is level +5 Obscuring terrain.

8.9.3 Cover—Graveyards provide Good cover to units within. They create Airbursts. Units may set up Hidden in a Graveyard.

8.9.4 Movement—Graveyard terrain costs 2 MP to enter. Vehicles must check Immobilization after entering a Graveyard hex unless moving on a road.

8.9.41 Graveyard Roads—Roads may run through Graveyard hexes, often entering through Gates. Units may move along Road hexsides through Graveyard to avoid the cost and risk of entry but are otherwise treated as being IN the Graveyard hex.

8.10 HEDGE



8.10.1 Description—Hedge terrain is depicted by an irregular green hexside.

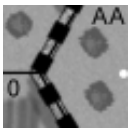
8.10.2 LOS—Hedge is level +5 Blocking Hexside terrain.

8.10.3 Cover—Hedges provide Good cover for LOS traced across their hexsides.

8.10.31 Negated Protection—A higher unit ADJACENT to a Hedge hexside negates the Good cover given to any target behind the hedge if the firing unit is +20 Levels or higher.

8.10.4 Movement—All eligible units pay an additional 1 MP + CoT to cross a Hedge hexside. Wheeled Vehicles may cross Hedge hexsides but must roll on the Immobilization Table BEFORE crossing the Hedge. Heavy weapons may never be Pushed or Towed across a Hedge hexside unless through a Gate. When an opening in the Hedge hexside art is depicted, representing a Gate, all units may cross the Hedge without any restrictions and without MP cost supplement. A Gate is treated for all other purposes as a Hedge hexside.

8.11 HIGH WALL



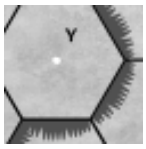
8.11.1 Description—A High Wall is depicted with Wall artwork containing two or three large black squares.

8.11.2 LOS—A High Wall is Level +10 Blocking Hexside terrain.

8.11.3 Cover—High Wall hexsides provide Improved cover to units in the hexes immediately behind them.

8.11.4 Movement—No Vehicle may cross a High Wall unless using a Gate opening. Personnel may only use Crawling or Infiltration to cross a High Wall hexside.

8.12 HILLOCKS



8.12.1 Description—Overlays with an ID beginning with 'H' contain a Hillock, represents a small rise. Non desert maps also contain Hillock hexsides.

8.12.2 LOS—Hillocks depict slight rises of +5 Levels above the Ground level of their hex and serve as low HILLS. On DESERT overlays, additional HILLOCK contour hexsides rise successively to Level +10 and Level +20 (i.e., not an additional +5 per 'ring' of contours on overlays). These additional contour lines are treated as HILLS, not additional levels of HILLOCK terrain. On Hillock overlays the terrain slopes 'upward' from the outside of the overlay, in.

8.12.21 LOS from +5 level Hillock over +5 level terrain—A unit anywhere on a +5 Hillock may see over any other +5 level terrain/vehicles/wrecks except other Hillocks.

8.12.22 LOS between Level 0 and adjacent +5 level Hillock—A Level 0 unit adjacent to the contour hexside of a Level +5 Hillock may see (and be seen) beyond all +5 level hexes of that Hillock as if that Hillock didn't exist.

8.12.23 LOS Between Level 0 And Non-Adjacent Level +5 Hillock—A Level 0 unit hex may never see beyond the first hex on the far side of a non-adjacent +5 level Hillock. Such a Level 0 unit may see anywhere on the first +5 Hillock along its LOS, barring other intervening terrain along the LOS.

8.12.24 LOS from +5 level Hillock past another +5 level Hillock—Despite being Level +5 terrain, Hillocks do create a special Blind Zone from units on other hillocks only equal to the range between the firing (or viewing) unit and the last Hillock hex (not counting any portion of the viewing unit's Hillock or the FIRST hex adjacent to the last Hillock) along the LOS quartered (fractions rounded down as usual).

8.12.25 Personnel Out of LOS—Personnel units in Full cover UNDER an Emplacement at Level 0 behind a HILLOCK contour hexside are considered out of LOS to all Direct Fire from non-adjacent hexes that crosses a hex of that Hillock.

8.12.3 Cover—Hillocks provide the cover of the other terrain in the hex, usually Open Ground. If the firing unit is in a lower level, a Hillock hexside provides GOOD cover for any LOS traced across it.

8.12.31 Hull-Defilade—Hillock contours automatically create Hull-Defilade for any LOS traced across a Hillock contour hexside to a vehicle at Level 0 (i.e., -5 levels below the Hillock) in the hex sharing that hexside. If set up in a +5 level Hillock hex next to a contour, a Vehicle may roll during set up OR if entering the hex using Assault movement. In both cases this form of Hull-Defilade ONLY applies for fire from lower level units and a die roll of '1' is needed to creates this Hull-Defilade across the lower (facing out) contour (only). Note also that a Vehicle that is +10 or more levels above a firing unit is automatically considered in H-D status if in a hex with a Hillock contour facing out (i.e., the AFV is in the 'high' portion). This manner of automatic H-D status takes place on overlays that have a +10 or higher contour and on non-desert maps with Hillocks ON Hill terrain.

8.12.4 Movement—Any unit moving Up must pay 1 MP + CoT to cross a Hillock contour hexside. Such units are considered to be ON a Hillock at Level +5 if coming from a Level 0 hex. If a unit crosses another contour hexside UP, it will be at Level +10, and so on in keeping with the HILL nature of these higher contours.

8.13 HILLS

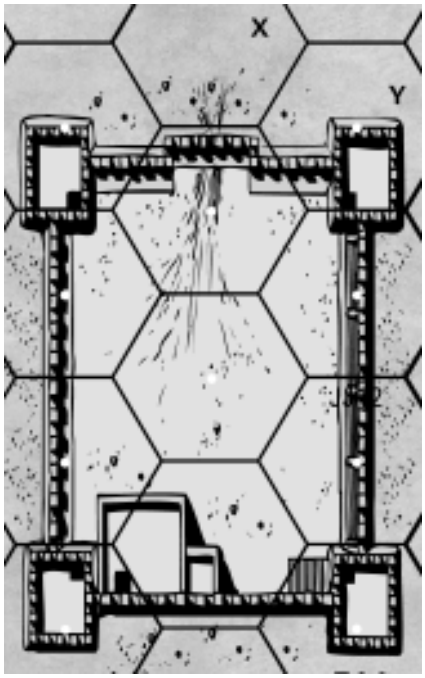


8.13.1 Description—Historical maps depict Hills and Hillocks using relative topographical 'levels', each printed in a different color. In the above example, hex G35 is a HILL hex; hexside G35/G36 is a HILLOCK contour hexside ON a Hill. On non desert maps Hillock hexsides represent Level +5 contours ON TOP of the colored levels. Unlike Hillock terrain, which is depicted using artistic contour depictions that face out from along a hexside, the contours for Hill terrain is found inside a hex in a similar manner to Deirs (except the terrain surrounding the hex center dot slopes UP instead of DOWN). Example: A Level +30 Hill will have a "+30" appended to one or more of its hexes, as reference, somewhere on the mapsheet. All other hexes of that color found on the map are considered the same height. Hillocks are NOT marked with height information—only Hills are.

8.13.2 LOS—Hills depict more substantial terrain undulations than Hillocks do. The default change in elevation of a Hill is +10 LEVELS. Hills block LOS from units at a lower level beyond the first hill hex along the LOS of the same level.

8.13.21 Blind Hexes—Hills create Blind hexes in keeping with the relative height difference between firing and target units. Non Cliff crest lines (contours) create one LESS Blind hex if the firing unit is in a hex that is part of the SAME hill. To be part of the same hill, there must be connected hexes above Level 0, making up one 'hill'. (Exception: When TERRACED hills are in effect a Blind Hex is always created by a crest line). SUBTRACT ONE from the number of Blind Hexes specified on the LOS Blind Hex Creation Table. Example: A squad in a Level +20 Hill hex tries wishes to see past a Level +10 Hill (on a different hill) hex 16 hexes away to see an enemy squad in Level 0 open ground 20 hexes away. Using the '13-18' column, the row used is the '+10' row, since the firing unit has a +10 Height Advantage (Height DIFF) over the +10 Hill and is 16 hexes away from the blocking terrain. Three Blind hexes are created, so the firing squad has a LOS to the enemy squad. If the enemy was 19 hexes away, the LOS would be blocked, due to the three Blind hexes. If the LOS contained Hill hexes of the same hill ONLY, one less Blind Hex would be created.

8.13.21 Hillocks ON Hills—Hillocks are found on non desert (i.e., non overlay) Hill hexes, including multi-hex Hillocks depicted on larger Hill 'masses' (multi-hex Hills).



Above is the Fort overlay provided with Advanced Tobruk. The gate hex is found along the hexside between the 'X' hex and the one directly under it. The three hexes directly under the 'X' hex, and the two adjacent hexes on either side of these represent the 'courtyard' of the fort. Personnel may be 'up' in all hexes of the fort EXCEPT the one hex directly in the center of the courtyard.

These Hillocks do NOT affect LOS. They simply raise units higher and provide H-D benefits normally for units DIRECTLY BEHIND a +5 contour ONLY. Use the 'base level' of the viewing unit on a Hillock, applying the +5 level change normally.

8.13.3 Cover—Vehicles are automatically considered in Hull-Defilade position from any lower level firing unit if occupying a Hill hex containing a contour line, i.e., the LOS crosses a HILL contour in the target unit's hex. All other units receive Good cover from lower level fire UNLESS receiving in-hex cover from ANY other terrain or Emplacement in their hex location.

8.13.31 No H-D—A Vehicle is not considered in H-D position across a Hillock hexside from an adjacent firing unit.

8.13.4 Movement—It costs 1 MP+ CoT to cross a Hillock contour moving UP.

8.13.5 Cliffs—A rough dark-brown hexside on a Hill hex depicts a 'Cliff'. Cliffs separate Hill hexes along hexsides when the change in elevation represents more than a +10 or -10 Level change. Cliffs are treated as normal Hill hex except that no unit may move across a Cliff hexside.

8.13.6 Precipitous Terrain—A unit must pay 4 MP (OR 4 MP + CoT if the terrain in the hex is NOT Open Ground) to move across any non Cliff hexside or enter any hex that changes level by +20 or more. Winded units may not Infiltrate into Precipitous terrain. Note that Hillocks on Hills, as well as Ravines and Creeks may create Precipitous terrain—always use the actual level the unit is entering when it crosses a hexside or enters a new hex. All non Fully-Tracked Vehicles must roll on the Immobilization Table before crossing one.

8.13.61 Hillock—Precipitous terrain is created whenever a Hillock hexside is printed along a hexside that ALSO has a Hill contour.

8.13.62 Roads and Paths—Any type of Road that crosses a Precipitous terrain hexside cancels the Immobilization risk for units moving along the Road and reduces the cost for vehicles to HALF the normal Movement Point cost. A Path reduces the cost for Personnel by ONE MP.

8.14 JUNKYARD



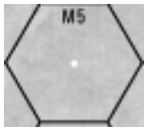
8.14.1 Description—Junkyard terrain is depicted by a pile of gray or brown shapes.

8.14.2 LOS—Junkyard is level +5 Obscuring terrain.

8.14.3 Cover—Junkyard provides Good cover. It creates Airbursts. Units may set up Hidden in Junkyard.

8.14.4 Movement—Junkyard terrain costs 2 MP to enter. Personnel may not use Running movement in Junkyard hexes. Vehicles must check Immobilization AFTER entering a Junkyard hex.

8.15 OPEN GROUND



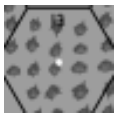
8.15.1 Description—All 'blank' terrain, containing no other terrain art depiction within is considered Open Ground.

8.15.2 LOS—Open Ground is Level 0 Clear Terrain.

8.15.3 Cover—Open Ground provides no cover.

8.15.4 Movement—All units enter Open Ground at the cost of 1 MP.

8.16 ORCHARD



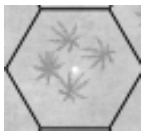
8.16.1 Description—Orchard terrain is depicted by rows of large foliage depictions that do not touch one another.

8.16.2 LOS—An Orchard is Level +10 Obscuring terrain, and creates Blind hexes for LOS to and from higher level units if the LOS traced actually touches a part of the artistic Orchard depiction in a hex.

8.16.3 Cover—An Orchard provides no cover. Units may set up Hidden within.

8.16.4 Movement—All units enter Orchards at the cost of 1 MP.

8.17 PALM GROVES



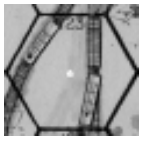
8.17.1 Description—Palm Groves are found on any Overlay with a 'P' ID and green 'palm tree' artwork.

8.17.2 LOS—A Palm Grove is Level +10 Obscuring terrain. They create Blind hexes for LOS to and from higher level units.

8.17.3 Cover—A Palm Grove provides no cover. Units may set up Hidden in a palm grove hex.

8.17.4 Movement—All units enter Palm Grove at the cost of 1 MP.

8.18 RAILCARS



8.18.1 Description—Railcars are found on maps depicting industrial complexes, such as in Stalingrad.

8.18.2 LOS—A Railcar is Level +10 Blocking terrain. The traced LOS must actually touch a Railcar artistic depiction within the hex to be affected.

8.18.3 Cover—A Railcar provides Good cover to units in the hex. ONLY Personnel and their carried L and M weapons (not H weapons) may set up Hidden in Railcar hexes.

8.18.4 Movement—Personnel enter a Railcar hex at a cost of 2 MP. Only fully tracked vehicles may enter at the cost of 2 MP and they must roll on the Immobilization Table AFTER entering a Railcar hex.

8.19 RAVINE



8.19.1 Description—A Ravine is depicted by green and brown terrain art similar to a Wadi. Ravine is a Linear Depression.

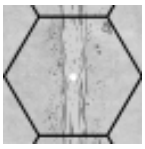
8.19.2 LOS—Ravine follows the LOS rules for Linear Depression terrain.

8.19.3 Cover—Ravine follows the Cover rules of Linear Depressions normally noting the restriction below on which units may be in UP positions.

8.19.4 Movement—Ravine follows the movement rules for Linear Depression terrain.

8.19.41 Up and Position Restriction—Only Personnel and their carried L and M weapons may be in the UP location in Ravine hexes.

8.20 ROADS, TRACKS, PATHS, AND RAILROADS



8.20.1 Description—These are depicted on maps and overlays by brown, gray or hatched stripes. Overlays with an ID beginning with 'Tr' are Tracks. Overlays that begin with the letter-number ID 'RR' are Railroad terrain. Roads (including Paved and Unpaved Roads as well as Paths) are depicted on non desert maps. Paved Roads are depicted in gray. Non paved Roads are printed in light brown or tan. Paths are depicted by squiggly brown lines. Unless stated otherwise, there is no difference in game terms between 'paved' and 'un-paved' roads.

8.20.2 LOS—Tracks, Roads, Railroads and Paths themselves are Clear terrain, noting other terrain in their hexes.

8.20.3 Cover—Tracks, Roads, Railroads and Paths have NO effect on LOS or cover, noting other terrain in the same hex is treated normally for the purposes of cover.

8.20.4 Movement—When moving ALONG a Road or Track, vehicles pay a HALF MP (Exception: WHEELED vehicles pay ONE MP when moving along a Track). Railroad costs ONE MP for all units moving ALONG a Railroad. Personnel pays ONE MP unless changing levels, in which case the MP cost is reduced by ONE.



8.20.41 Paths—Paths ONLY affect Personnel movement. They reduce by ONE the cost for Personnel moving to a higher level across a hexside crossed by a Path. Paths also allow Personnel to move through other terrain along a Path as if moving through Open Ground. Pay the other cost of entering the terrain otherwise. Hex N3 (above) is an example of a Path hex.

8.20.42 Moving Along—To be considered moving ALONG these terrain types, a unit must be moving along the SAME Track, Road, Railroad or Path (or Open Ground to one of these across a hexside that points to the 'clear' portion of the hex) by entering and exiting through connected hexsides crossed by the contiguous art depiction. Personnel pay ONE MP for all three types, when moving along. In ALL other movement cases, use the OTHER terrain in the hex (usually Open Ground if ONLY Road, Railroad, or Path terrain art is depicted in the hex).

8.20.5 Mines setup restrictions—Mines may NOT be set up Hidden in Paved Roads; they must be set up on-map if set up in a Paved Road.

8.20.6 Hexside Roads and Buildings with Roads—Some Roads run along hexsides (e.g., L32-L33 hexside on the Scottish Corridor mapsheet 1; G21-H20 hexside on the Arnhem map) or in the same hex as a Building, but not directly along a hexside (e.g., hex A5 on the Combat Rangers map; hex H6 on the Arnhem map). The rules treat both of these Road situations in the same manner. A unit may move along such Roads, moving from one Road hex to another, without entering other terrain in the hex. Place a movement arrow OFF the unit, pointing AWAY from the terrain as a reminder of this in-hex location status.

8.20.61 LOS—All LOS is traced at units using hexside Roads normally, except a special LOS is allowed for Opportunity Fire. When tracing an LOS into a hex to fire at a non-moving unit, if the LOS hits any terrain in the hex shared by the hexside Road before it touches the Road art depiction in the hex, it is blocked by the terrain. Treat a LOS directly along a hexside as touching a Road that crosses any part of a hexside it is connected to.

8.20.62 Entry and Exit—A unit using a Hexside Road to enter a new hex (i.e., instead of entering the other terrain in the hex) may only enter a new hex across a hexside physically touched by the Road. A unit exiting a hex along a hexside Road may only enter new hexes connected to the Road. For example, a Vehicle in the hexside Road location of K35 (on Scottish Corridor mapsheet 1) facing L34-L35, may only enter hex L34.

8.20.63 Opportunity Fire—When using Opportunity Fire at a unit newly entering a hex along a hexside Road or Road + Building Road, a LOS is valid if:

a) Any part of the Road art can be touched on a hexside the unit moved across to enter the hex before hitting any terrain that would block it.

8.20.64 Vehicle Movement—Vehicles may only use Assault movement on Hexside Roads and pay ONE MP instead of HALF a MP for entering along a Hexside Road. They make all VCA changes normally when entering hexes with hexside Roads. They must pay to change VCA to follow the hexside Road. The facing hit when a vehicle is fired at is determined normally as if the hex contained no terrain. LOS may be blocked by terrain in the hex sharing the hexside, however, and is based on where the vehicle entered the hexside in relation to where the building is in the hex. Vehicles may end the Movement Segment in hexside Road locations and may use Continued Movement along them.

8.20.65 Vehicles Entering In-Hex Terrain—A vehicle may not enter in-hex terrain once it moves along a hexside Road location of that hex. It must exit the hex first. Example: A vehicle in the hexside Road location of K35 (on Scottish Corridor mapsheet 1) facing L34-L35, will have to move to L34, turn around, and enter the Building in K35 if it wishes to enter the terrain therein.

8.20.66 Limitations—No more than ONE vehicle may be in the Hexside Road location of a hex. Any vehicle with a Gun Size of 75 or greater, and an 'A' Gun Rating may ONLY move along the hexside if its turret is facing toward the FRONT covered arc (usually NO turret marker placed unless the vehicle is Suppressed) or REAR covered arc.

8.20.661 Range Limit—Any firing unit in either hex sharing a hexside Road fires at a target along a shared hexside at a range of '0' (zero).

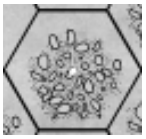
8.20.67 Personnel Movement—Personnel units may move along the hexside Road f a hex that has NO enemy unit in its Ground level. A Personnel unit may not voluntarily END the Movement Segment in a Hexside Road.

8.20.68 Personnel Entering In-Hex Terrain—A Personnel unit moving along a hexside Road may enter the terrain in the hex by paying the appropriate MP cost normally (unlike a vehicle). A Personnel unit that must end its involuntarily is considered IN the terrain, not along the hexside, and no Hexside Road may be entered by a Personnel unit if it does not have enough available MP to do one of the following:

a) Continue along the hexside road to end its movement impulse in a non Hexside Road location;

b) Enter the terrain in the hex after entering one or more Hexside Road locations.

8.21 ROCK-STREWN TERRAIN



8.21.1 Description—Rock-Strewn terrain is found on Overlays (and some others) with an 'R' ID and gray terrain artwork on maps.

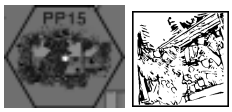
8.21.2 LOS—Rock-Strewn terrain is Level +5 Obscuring terrain.

8.21.3 Cover—Rock-Strewn terrain provides Good. It creates Airbursts. Units may set up Hidden in Rock-Strewn terrain.

8.21.31 Hull-Defilade—Eligible vehicles set up in or entering via Assault movement may attempt to gain Hull-Defilade on a roll of '2' or less in Rock-Strewn terrain.

8.21.4 Movement—Rock-Strewn terrain costs 2 MP points to enter. Vehicles must check Immobilization AFTER entering Rock Strewn terrain.

8.22 RUBBLE



8.22.1 Description—Rubble represents shattered buildings, printed on-map (left, above) or using markers (at right) to depict building hexes destroyed during play.

8.22.2 LOS—Rubble is Level +5 Blocking terrain (noting it may rise above the level of a level marker in a building hex NOT 'rubbled' at Ground level).

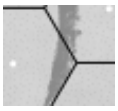
8.22.3 Cover—Rubble provides Improved cover if created (or printed on map) from a Wooden (i.e., brown) building and Masonry cover if created (or printed on map) from a gray one. It creates Airbursts. Units may set up Hidden in Rubble.

8.22.4 Movement—Only Personnel and their Light and Medium weapons, and FULLY tracked vehicles may set up in or enter Rubble, at a cost of 2 MP. Personnel may not use Running and vehicles may only enter using Assault movement, requiring a roll on the Immobilization Table AFTER entry. Heavy weapons may set up in Rubble hexes but may not ENTER during play.



8.22.5 Creation—Rubble is created by attacks using the HPT only, by HE (including HE payloads delivered by aircraft) The creation of rubble is treated elsewhere in these rules.

8.23 SAND DUNES



8.23.1 Description—Sand Dunes are represented by any Overlay with an 'Sd' ID and hexside terrain art. All pale yellow terrain on a Sand Dune overlay is Soft Sand. Combine the rules for Soft Sand and Sand Dunes when 'Sd' overlays.

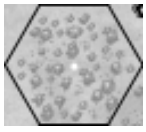
8.23.2 LOS—Sand Dunes hexsides are Level +5 or +10 (as specified by SSR) Blocking Hexside terrain. Unless stated otherwise by SSR, the default height of any Sand Dune hexside is Level +5. They affect LOS along any hexsides touched by the Sand Dune artwork in the same manner as 'contours' but can also be visualized as Walls, noting that they are considered to slope 'down' in both directions from the hexside they touch. For LOS purposes, treat Level +5 Sand Dunes as if a Hillock contour runs along the hexside; +10 Sand Dunes as if a Hill contour runs along the hexside.

8.23.3 Cover—Sand Dunes do not provide any cover benefits except for fire that is treated as being on the other side of a Hillock contour (e.g., H-D status).

8.23.31 Floorpan hits—A Floorpan Armor Hit may occur when an AFV crosses a Sand Dune hexside.

8.23.4 Movement—Crossing a Sand Dune hexside costs DOUBLE the normal entry cost for the hex (e.g., as a Soft Sand hex costs 2 MP, crossing a Sand Dune doubles this cost to 2 MP + CoT = 4 MP).

8.24 SCRUB



8.24.1 Description—Scrub terrain is found on desert maps in ADVANCED TOBRUK (e.g., hex QQ20) and on some Overlays.

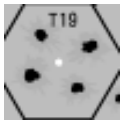
8.24.2 LOS—Scrub is Clear Terrain.

8.24.3 Cover—Scrub doesn't provide any cover. Scrub is Hiding terrain.

8.24.31 Hull-Defilade—Eligible vehicle set up in or entering Scrub via Assault movement may attempt to gain Hull-Defilade on a roll of '1' or less in Scrub terrain.

8.24.4 Movement—Scrub terrain costs 2 MP to enter for ALL unit types.

8.25 SHELLHOLES



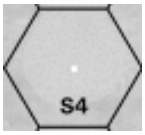
8.25.1 Description—A Shellhole hex is depicted as two or more 'holes', with a dark brown center and light brown, irregular edges.

8.25.2 LOS—Shellhole is Clear Terrain.

8.25.3 Cover—Shellholes provide Good cover to Personnel units and their Light and Medium weapons (i.e., not to Personnel manning Heavy weapons).

8.25.4 Movement—Shellhole terrain costs 2 MP to enter. Wheeled Vehicles must check Immobilization AFTER entering a Shellhole hex.

8.26 SOFT SAND



8.26.1 Description—Soft Sand terrain is represented by any Overlay with an 'S' ID and a pale yellow hex terrain depiction.

8.26.2 LOS—Soft Sand is Clear Terrain.

8.26.3 Cover—Soft Sand provides no cover. IT creates a Cushion effect.

8.26.4 Movement—Soft Sand costs 2 MP for all units to enter. All Vehicles must check Immobilization after entering a Soft Sand hex. A Vehicle may not tow another Vehicle into a Soft Sand hex, but may tow one out.

8.27 SUNKEN ROADS, LANES AND RAILROADS



8.27.1 Description—A Sunken Road, Lane and Railroad show Roads, Paths and Railway tracks cut into the surrounding terrain. These terrain types are depicted with a dark background with lighter, jagged sides facing 'downhill'. They are Linear Depressions.

8.27.2 LOS—While treating a Sunken Road normally as a Linear Depression, note the art is wider than a Ravine or Wadi when tracing LOS between units down in the terrain, i.e., making it easier to obtain LOS in this manner.

8.27.3 Cover—Only Personnel units, with any Light and Medium weapons carried, may be in an UP position.

8.27.4 Movement—In each case movement is allowed along the Road, Path, or Railroad normally, noting any elevation changes if the Sunken Road or Lane enters or exits to higher-level terrain.

8.27.41 Up to Down Position—Only Personnel with any Light and Medium weapons carried may set up in or enter an UP position in a Sunken Road hex. It costs FOUR MP (or Personnel may Crawl) to enter an UP position from the Down position of the same hex. It costs 1 MP to enter a Down position from an Up position of the same hex. Infiltration may be used in both cases.

8.27.42 Exiting an Up position—A unit in an Up position must go Down in its hex before it may move to another Sunken Road hex or enter the 'other side' of the Sunken Road. The unit may also exit through the non Sunken Road hexsides on the side of the Sunken Road indicated by the arrow of the LOS +10 marker (i.e., across non Sunken Road hexsides that the unit would be eligible to receive Good cover across) by spending 1 MP or via Infiltration.

8.28 SWAMP



8.28.1 Description—Swamp terrain is depicted by a large irregular blue-green mass with 'grass' symbols.

8.28.2 LOS—Swamp is level + 5 Obscuring terrain.

8.28.3 Cover—Swamp gives no cover but creates a Cushion effect.

8.28.4 Movement—It costs 2 MP for Personnel units and any Light and Medium weapons carried to enter a swamp hex. Personnel may not use Running movement in Swamp hexes. A non FULLY Tracked vehicle entering a Swamp hex is automatically M-KILLed upon entry. Fully Tracked Vehicles pay 4 MP to enter a Swamp hex and must check Immobilization after entering the Swamp hex. Heavy weapons may never enter a Swamp hex, even if towed.

8.29 WADI



8.29.1 Description Wadi terrain is represented by any Overlay with a 'W' identification letter-number combination. Wadis are Linear Depressions.

8.29.2 LOS—Wadis follow the LOS rules of Linear Depression except where noted below.

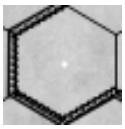
8.29.3 Cover and H-D—Wadis follow the Cover rules of Linear Depression. Turreted vehicles (only) may enter UP positions and turreted vehicles receive Hull-Defilade status for fire crossing UP cover-creating hexsides.

8.29.4 Movement—Wadis follow the LOS rules of Linear Depression except where noted below. The END of a Wadi (where the wadi art meets non-wadi terrain) is considered to slope gradually up to level '0', creating an entrance into the Wadi that does not increase the movement cost to enter or exit and does not require a roll on the Immobilization Table for any vehicles.

8.29.41 Vehicles In Up and Down Position—TURRETED vehicles may set up in or enter an UP position in a Wadi at a cost of FOUR MP to enter and ONE MP to exit to a Down position from an Up position of the same Wadi hex. AFV Turrets may be pointed in any direction normally.

8.29.42 H Weapons In Up and Down Position—Heavy weapons may SET UP (only) in UP positions in a Wadi. They may move to down position in the same manner as normally pushing a Gun. Guns may not be towed from UP positions in a Wadi, only pushed by Personnel.

8.30 WALLS



8.30.1 Description—Some map and overlay hexsides contain Wall artwork.

8.30.2 LOS—Walls are Level +5 Blocking Hexside terrain.

8.30.3 Cover—Personnel units and Heavy weapons behind Wall hexsides receive Good cover. Walls create Hull-Defilade for all Vehicles.

8.30.4 Movement—Unless using a Gate, all eligible units pay ONE MP + CoT when crossing a Wall hexside. Unless using a Gate, Wheeled Vehicles may not cross Wall hexsides. Half-Tracked Vehicles may, but must check Immobilization BEFORE crossing the hexside. Fully-Tracked Vehicles may cross wall hexsides at no risk of Immobilization. Heavy weapons may never be pushed or towed across a Wall hexside unless using a Gate.

8.30.41 Gates—An opening in a Wall hexside represents a 'Gate'. All units may use Gates to cross Wall hexsides without extra MP cost. A Gate is treated for all other purposes as a Wall hexside.

8.30.42 Floorpan hits—AFVs are subjected to Floorpan Armor Hits when crossing a Wall hexside unless using a Gate.

8.31 WATER OBSTACLES



8.31.1 Description—Water obstacles represent rivers, creeks and ponds and are unique in nature as regards rules treatment.

8.31.11 Water Terrain Depictions—The different categories of water obstacle are depicted differently, with all water containing BLUE found in the 'water' portion of the terrain artistic depiction.

8.31.12 Pond Terrain—A Pond is depicted by an irregular blue shape covering one or a small number of hexes.

8.31.13 River Terrain—A River is depicted by an irregular blue shape with a blue portion at least two hexes wide.

8.31.14 Creek—A creek is depicted in the same manner as a Ravine with the exception that a blue 'water' element is found in the middle.

8.31.141 Creek Description—A Creek is a Linear Depression.

8.31.142 Creek LOS—Creeks follows the LOS rules for Linear Depression terrain.

8.31.143 Creek Cover—Creeks follows the Cover rules of Linear Depressions normally noting the restriction below on which units may be in UP positions.

8.31.144 Creek Movement—Creeks follows the movement rules for Linear Depression terrain UNLESS the water depth is stated to be 'deep' via SSR.

8.31.145 Creek Up Position Restriction—Only Personnel and their carried L and M weapons may be in the UP location in Ravine hexes.

8.31.2 LOS—All water hexes are considered to be at -10 levels below the terrain they are found printed on (or abut in the case of a river). Water hexes themselves do not effect LOS in any way.

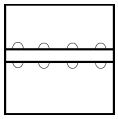
8.31.3 River and Pond Entry—No unit may enter a river or pond hex unless on a Bridge or utilizing Wading, or Watercraft.

8.31.4 Wading and Fords—If allowed by SSR, personnel units (and vehicles if specifically allowed by SSR) may enter Pond and River hexes using 'wading' as if they are creek hexes. All vehicles must roll on the Immobilization Table in each water hex moved into unless defined by SSR as a 'ford'. Wading costs DOUBLE the usual MP for entering a creek (i.e., wading costs FOUR Movement Points per hex)

8.31.5 Bridges—A bridge is treated as a Road crossing water terrain. Unless stated otherwise by SSR, bridges are considered to be at the same level as any road that crosses them (i.e., +10 levels higher than the water obstacle they cross).

8.31.51 Bridge Hexsides—Treat all non Road hexsides between bridge and non bridge hexes as if a Wall is present where the LOS hits the bridge artwork.

8.31.52 Under Bridge—Place a LOS +10 marker ON TOP OF any unit that is in the terrain UNDER a bridge to signify this status. LOS is blocked from units at or higher than the bridge level if no other LOS exists and only Indirect Fire from an FFE may affect a unit UNDER a bridge. When attacked by an FFE on the bridge above, add one column shift LEFT if under a 'dirt' road or TWO shifts LEFT for a paved road. Otherwise, units under a bridge may only be fired on by units on the same or lower level.

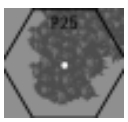


8.31.53 Pontoon Bridge—Counters for Pontoon Bridges are provided in some ATS games. These are placed as per SSR and are treated normally as bridges with the following exceptions.

8.31.531 Stacking Limit—A Pontoon Bridge may never be overstacked. No unit may ever be in a position under a Pontoon Bridge.

8.31.532 Destruction—A Pontoon Bridge counter is removed by any result in its hex that would create rubble if it were a building hex.

8.32 WOODS



8.32.1 Description—Woods terrain is depicted by large, clumped foliage depictions that touch one another. A Flame marker may be created in Woods hexes.

8.32.2 LOS—Woods is Level +10 Blocking terrain.

8.32.21 Forest—In some scenarios some or all Woods hexes are defined as 'Forest'. Forest is treated as Woods in all cases except it is Level +20 Blocking terrain.

8.32.3 Cover—Woods provide Good cover. Woods creates Airbursts.

8.32.4 Movement—It costs 2 MP for all units to enter Woods. All Vehicles check Immobilization AFTER entering a Woods hex. No roll is required during set up.

9. EMPLACEMENTS

9.1 OVERVIEW

9.1.1 Emplacements are man-made field works, used to strengthen defensive positions. The include Anti-Tank Trenches, Blockhouses, Bunkers, Foxholes, Hedgehogs, Minefields, Roadblocks, Sangars, Weapon Pits, and Wire.

9.1.2 Emplacements Positions—All Emplacements except Minefields, Roadblocks and Wire have two distinct Positions: ON TOP and UNDER. Both positions count as one Hex location for Stacking purposes. Unless otherwise restricted, units may move between positions during Movement by spending 1 MP or by Infiltrating.

9.1.3 Emplacement Entry and Exit—A unit may enter or exit a hex with an Emplacement. Usually, a unit enters an Emplacement hex by moving on top of the Emplacement marker, by Crawling, Infiltrating, or moving normally. In some cases, a Personnel unit UNDER an Emplacement may move to an adjacent Emplacement, and remaining underneath. Example: A unit in Open Ground moves into a hex containing a Hedgehog. It is placed on top. It then moves under the Hedgehog. If it wants to leave this Hedgehog and enter an adjacent one, it may enter directly to UNDER the adjacent Hedgehog.

9.1.4 Set Up Restrictions-Only one Hedgehog, Bunker, Blockhouse or Foxhole marker may be placed in a hex. NO Emplacement may be set up in a Swamp or Water Obstacle hex.

9.1.5 Stacking Limits—Emplacements do not affect stacking. The stacking limit applies for all units in the hex, whether on top of or under an Emplacement marker.

9.1.6 Destroying Emplacements—Some Emplacements may be destroyed by different means. When destroyed they are removed from the map.

9.2 ANTI-TANK TRENCH



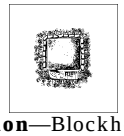
9.2.1 Description—An Anti-Tank (AT) Trench is a steep-sided ditch used to block vehicular movement. With the following exception, an AT Trench is treated like a Hedgehog.

9.2.3 Movement Restrictions—No vehicu-

lar units of any type may enter hexes containing AT Trenches.

9.2.4 Destruction—An AT Trench may be eliminated only by a Dozer. See the rules relating to the Demolition Table.

9.3 BLOCKHOUSE



9.3.1 Description—Blockhouses were concrete defensive structures built in defensive strongpoints. They are in use only by SSR and use Bunker counters. A Blockhouse has two Positions:

On Top Effects-Units On top of a Blockhouse occupy the other terrain in the hex.

Under Effects—Units Under a Blockhouse marker are assumed to be in FULL cover.

9.3.2 Setup Restrictions—Blockhouses may not be placed in building or Linear Depression hexes.

9.3.3 Stacking Restrictions—A Blockhouse may hold up to SIX Stacking Points of Personnel and any Light and Medium weapons they carry. A Blockhouse may not be Overstacked.

9.3.4 Movement restrictions—Units on top of a Blockhouse may never 'drop' into Full cover Under the Blockhouse. They may move into Full cover using Movement and Infiltration. Friendly units may not move under a Blockhouse that is already occupied by enemy units, even by Infiltration.

9.3.6 Fire Restrictions—No unit may fire or Spot when UNDER a Blockhouse (even to an adjacent hex). Units under a Blockhouse may not be attacked by Small Arms Gunfire or Grenades, even from adjacent or same-hex units, but may be attacked by Guns, applying a Full cover HPN DRM.

9.3.7 Destruction—A Blockhouse is destroyed in the same manner as a Bunker (see 9.4.6).

9.3.8 Same Hex Effects—Friendly Personnel may enter a hex occupied by enemy units under a Blockhouse during Movement or Infiltration. There is no Melee unless the unit in the Blockhouse Infiltrates out to be placed on top of the Blockhouse marker. Units in a Blockhouse ignore Overruns.

9.4 BUNKER



9.4.1 Description—Bunkers represent weapons pits covered with reinforced roofs. Bunkers have two positions:

On top effects—Units on top of a Bunker occupy the other terrain in the hex.

Under Effects—Units under a Bunker marker are assumed to be in FULL cover with some restrictions. They may fire out normally, and may only be attacked by some weapons.

9.4.2 Set Up Restriction—Bunkers may not be placed in building or Linear Depression hexes.

9.4.3 Stacking Restrictions—Each Bunker may only hold ONE Heavy or Medium weapon AND a crew OR Personnel units and their Light weapons totaling no more than THREE Stacking Points. A Bunker may not be Overstacked.

9.4.4 Movement restrictions—Units on top of a Bunker may never 'drop' into Full cover under a Bunker but may move under the Bunker using Movement and Infiltration. Friendly units may not move under a Bunker that is already occupied by enemy units, even by Infiltration. Enemy and friendly Personnel may occupy the same hex if one side is UNDER a Bunker. Entry may be made using movement or Infiltration in this case.

9.4.5 Attacking Bunker occupants—Bunker occupants may be attacked only by:

a) AP/APCR/APDS/HEAT/SCW fire on the HPT (including from the same hex);

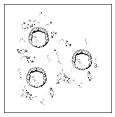
b) Fire from the same or adjacent hex, including Satchel charges, Gammon bombs, Grenade Attacks.

9.4.51 AP Fire—Direct Firing Guns using AP/APCR/APDS/HEAT may fire at a Bunker's occupants. A special +4 HPN DRM, replacing the Full cover modifier, is used to show firing of solid shot through the Bunker's vision slits. There is no size DRM. AP fire has no effect on the Bunker itself. AP Fire may target the Heavy weapon normally or any Personnel unit occupying the Bunker with a FRAG equivalent of FOUR Gunfire Factors. Units firing AP at a Bunker may not use or place BOT markers.

9.4.52 Units in the same hex—Units occupying the same hex as a Bunker reduce the cover of enemy units under the Bunker to Good cover to THEIR FIRE ONLY. There is no Melee allowed in a Bunker hex unless the unit UNDER the Bunker Infiltrates out.

9.4.6 Bunker Destruction—A Bunker is destroyed by HE (Direct or Indirect Fire) or by a Satchel Charge attack following a 'C6' or greater result on the Casualty Table. When a Bunker is destroyed, remove the marker and resolve the attack against the Personnel units inside.

9.5 FOXHOLE



9.5.1 Description—Foxholes depict individual holed dug by soldiers. Foxholes have two positions:

On Top Effects—Units receive no cover from the Foxholes.

Under Effects—Only Personnel units and their Light and Medium weapons may move under a Foxhole marker. Units Under a Foxhole marker receive Good cover.

9.5.2 Set Up Restrictions—Foxholes may not be placed in a Building hex, a Linear Depression, a Paved Road, or on a Bridge.

9.5.3 Movement restrictions—Foxholes do not affect movement for Vehicles. Personnel must pay 1 MP to move under a Foxhole counter after entering the hex. They may also enter via Infiltration.

9.5.4 Morale effect—Personnel units under a Foxhole marker do not suffer the +4 DRM to their Morale during an Overrun. They still check morale when Overrun.

9.6 HEDGEHOG



9.6.1 Description—Hedgehogs represent a network of trenches that provide all-round protection for Personnel units. Hedgehogs have two positions:

On Top Effects—Personnel and their Light and Medium weapons are in Improved cover. No other units receive a cover benefit.

Under effects-Only Personnel units and their Light and Medium weapons may be placed Under a Hedgehog marker during movement and Infiltration. Personnel may also 'drop' into Full cover when stacked on top of a Hedgehog. Units UNDER a Hedgehog receive Full cover.

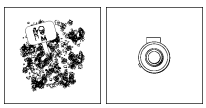
9.6.2 Set Up restrictions—Hedgehogs may not be placed in a Building, a Linear Depression, or Bridge hex.

9.6.3 Entry—Personnel pay ONE MP to enter a Hedgehog when stacked ON TOP of a Hedgehog marker or from UNDER an adjacent Hedgehog hex (this latter without having to move our from under, i.e., exit FULL cover). Entry may also be conducted from under-to-under or on top to under via Infiltration. Personnel under a Hedgehog may also move and Infiltrate to directly under an adjacent AT Trench, Bunker, Blockhouse, Weapons Pits, and a Building Cellar and vice-versa. When UNDER, and moving between Hedgehogs, ignore the cost of any hexside terrain (e.g., Bocage).

9.6.4 Movement restrictions—Hedgehogs do not affect movement for FULLY or HALFtracked vehicles. Wheeled vehicles must check Immobilization AFTER entering a Hedgehog hex. To pick up a weapon left un-attended under a Hedgehog, a Personnel unit must move under the marker. Personnel may not use Running movement when moving from one under one emplacement to under another.

9.6.5 Morale effect—Hedgehogs add '1' to the Morale value for Personnel units that receive cover benefits from the Hedgehog. Personnel units in Full cover under a Hedgehog counter do not suffer the +4 DRM to their Morale during an Overrun. They still check morale when being Overrun.

9.7 MINEFIELDS



9.7.1 Description—Minefield markers depict a combination of AP and AT mines. Some depict AT mines only (marker depicted at

right, above).

9.7.2 Set Up Restrictions—Minefields may not be set up in Water or Swamp hexes. They may be set up in hexes containing other types of emplacements.

9.7.3 Minefield Density—On the back of each Minefield marker, the field Density is indicated in the form of a number. The Density is never revealed to the Opponent.

9.7.4 Minefield Quantity—In some scenarios the Defender is given a quantity of Mines in his OOB. This quantity corresponds to the total (using the values on the back of each Mine marker) Mines the Player may use for that scenario. Any quantity of Mine markers may be used, as long as this number is not exceeded. Once a total quantity of markers is selected, up to the quantity given for that scenario, the markers are then placed on the map (unless set up Hidden) by the Defender with the number face down until a Forcing is attempted.

9.7.41 AT Minefields—Some Minefield markers only show Anti-Tank Teller mine art on them. Personnel units ignore such AT Minefields, i.e., they are not attacked when entering. Only Vehicles are attacked.

9.7.42 Remove AT Mines—A Personnel unit of at least two Stacking Points may 'pick up' a non-hidden AT Minefield marker as if it is a Light weapon. The AT Minefield marker is immediately removed from play.

9.7.5 Units entering a friendly Minefield—Most Minefields contained secret lanes through which the laying side could safely pass. Crawling or Assault moving Personnel units, or Assault moving vehicles, enter a friendly minefield hex without any effect. Running Personnel units or Cross-Country moving Vehicles must make a Forcing attempt when entering a friendly minefield.

9.7.6 Entering Enemy minefields—Crawling or Assault moving Personnel units, or Assault moving Vehicles, enter an enemy Minefield hex without any effect if moving along a Minefield Lane as do Personnel using non Running movement from under-to-under an emplacement. All other units that are not Running or using Cross-Country movement require a 'Forcing' die roll upon entry of a mine hex.

9.7.61 Automatic Attack—Running Personnel units and Cross-Country moving vehicles are automatically attacked by the Minefield when entering an enemy Minefield hex.

9.7.7 Forcing a Minefield—When resolving a Forcing attempt, roll a die immediately. A die roll greater than the Minefield Density value means the unit has successfully 'Forced' the Minefield. If the die roll is equal to or less than the Minefield Density, the Forcing attempt has failed and the unit is attacked by the Mines.

9.7.71 Hidden Minefield—There is a -1 DRM for any Forcing attempt when entering an enemy Hidden Minefield.

9.7.8 Creating Lanes—Assault moving FULLY tracked vehicles may create a Minefield Lane. A Lane is created if a vehicle successfully enters the hex without being attacked by the mines. Place a Minefield Lane marker in the hex.

9.7.9 Minefield Attacks—Units unsuccessful in Forcing a mine hex or attacked automatically while entering suffer the following damage:

9.7.91 AFVs—Are M-KILLed and must perform a check on the AFV Bail Out Chart. Any Personnel units transported on that AFV are placed on the hex, and suffer automatic minefield attack unless the mines in the hex were ONLY AT mines.

9.7.92 APC and Trucks—Are K-KILLed and replaced by burning wrecks. Any units being carried are placed in the hex and suffer an attack unless the mines in the hex were ONLY AT mines. Units being Towed are unaffected unless a Towed Gun, which is marked with an F-KILL marker.

9.7.93 Personnel Units—They are attacked on the Casualty Table by FRAG Factors equal to the Minefield Density number multiplied by four, using STATIONARY cover.

9.7.10 Dummy Minefields—Dummy Minefields, marked fields containing no mines, were often laid between real ones to increase coverage. To simulate this, some scenarios provide 'Dummy' minefield markers via SSR. If enemy units attempt to Force a Dummy Minefield, the true nature of the Minefield marker must be revealed. The marker stays in place, face down, challenging the Opponent to remember its location.

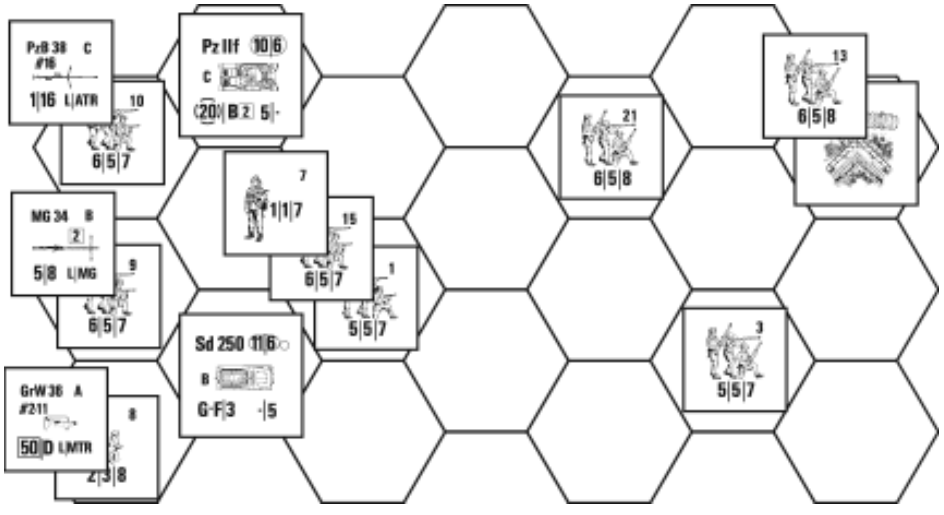
9.7.11 Hidden Minefields—Minefields are set up Hidden by SSR only. The location of Hidden Minefields is recorded, including the Minefield Density in the hex. A Hidden Minefield is treated normally in every respect and is placed on map when an enemy unit enters the hex or finds it via searching. Apply a –1 DRM for any Forcing attempt in a Hidden minefield. Dummy Minefields may not be set up Hidden. Minefields may not be Hidden in Paved Road hexes or on a Bridge.

9.7.12 Searching For Mines—Any Personnel unit may spend a full Movement Segment in its current hex to 'search' for Hidden minefields. The unit is considered to use Crawling movement although it does not exit its hex. Any Hidden Minefield marker(s), adjacent to the Searching unit, is (are) placed on map. No attack is made

It is the start of the Direct Fire Phase during the Combat Segment. British squads '21', '13' and '3' are faced by a large number of Axis troops supported by a half-track and a Pzkw IIf tank. The German player has a number of options.

German squad '15' and Italian squad '1' may form a same-hex firegroup because German leader '7' is in their hex (otherwise, German and Italian units may not firegroup).

The Axis player may instead opt to add to this stack and form a large firegroup, adding squad '10' + ATR 'C' + squad '9' + L|MG 'B' + Sd 250 'B' for a total of '23' Gunfire factors that can be fired at any ONE of the British squads. Squad '10' is reduced by ONE factor for the ATR it is carrying, but the ATR may use its '1' factor directly on the Casualty Table. Squad '9' is also reduced by ONE Gunfire factor for using



the MG 34, but the machine-gun adds its '5' factors to the attack. The Sdkfz 250/1 half-track is allowed to firegroup with personnel. The Pzkw IIf is NOT. The German Granatenwerfer 36 light mortar is also dis-allowed from firegrouping as it is an indirect firing weapon. If instead a PaK 36 was in its hex, it also would be dis-allowed from joining the firegroup since it must use the HPT to secure a hit.

The Axis player may instead opt to make a series of separate shots. Squad '10' and ATR 'C' can fire at British squads '21' or '3' using '6' Gunfire factors ('5' + '1'). If it chose to fire at British squad '13', it would fire using '3' factors due to the range of SIX hexes reducing the printed Gunfire by HALF ('6' MINUS '1' HALVED = 2.5 [FRD]; the ATR is still within its range of 16 and provides '1' factor). If any unit fires on British squad '13' it my 'drop' into FULL cover under the hedgehog. The firing unit(s) is still marked as fired.

against the Searching unit—it does not enter the Mine hex.

9.7.13 Mine Clearance—Remove any mines in a hex attacked by Indirect Fire obtaining a 'C6' or higher result in its location.

9.8 ROADBLOCK



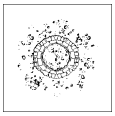
9.8.1 Description—A Roadblock is a form of Emplacement designed to stop vehicles. A Roadblock marker has three arrows on it. When setting it up, point the arrows at three hexsides. The Roadblock is actually considered ON the hexsides, treat these three hexsides as if they contain a WALL with the following exceptions.

9.8.2 Set Up Restrictions—Roadblocks may not be placed in a Linear Depression. Nor may one be placed in a Building hex unless there is a Building + Road combination. If placed in a Building Road hexside or on a Bridge, only the hexside crossed by the Road contains the 'Wall'.

9.8.3 Movement restrictions—No Vehicle may cross a Roadblock hexside.

9.8.4 Clearing Roadblocks—A Roadblock marker is removed by any C6 or better result obtained by Indirect Fire in its hex or via Demolition OR if the Roadblock itself is targeted for an attack by Direct Fire HE (treat it as a Building target) and a C6+ is obtained.

9.9 SANGAR



9.9.1 Description—A Sangar is a form of Weapons Pits that is constructed above the earth by piling stones. Sangars have two positions:

On Top Effects—Units on top of a Sangar do not occupy the Emplacement and receive no defensive advantages.

Under Effects—Personnel and Heavy weapons are in Good cover. Vehicles receive Hull-Defilade status.

9.9.2 Set Up Restriction—Sangar markers may not be placed in a building hex or a Linear Depression.

9.9.3 Stacking Restrictions—Each Sangar may hold one Heavy weapon and its crew OR one vehicle OR up to THREE Stacking Points of Personnel and their Light and Medium weapons. A Sangar may not be Overstacked.

9.9.31 K-KILL and F-KILL Units in Sangars—A unit continues to occupy a Sangar regardless of its damage status. A vehicle that is K-KILLed while in a Sangar stays there (replaced by the appropriate wreck counter, i.e., Burning or non-Burning) and prevents other units from occupying that Sangar. Likewise, a Heavy weapon unit that is F-KILLed while in a Sangar stays there, preventing other units from occupying the Sangar. Heavy weapons, vehicles and Wrecks Under a Sangar may be Towed out normally by Vehicles in the hex (i.e., on top of the Sangar marker) without the towing vehicle having to move under the Sangar. Personnel may move under a Sangar to push a Heavy weapon out using normal movement rules and a cost of 2 MP.

9.9.4 Movement Restrictions—Vehicles and Heavy weapons may never move under a Sangar during play; they may only set up under one. Sangars do not affect movement through their hex

9.9.5 Floorpan Hits—AFVs Overrunning or exiting a Sangar are subject to Floorpan hits in the same manner as if crossing a Wall hexside, without reference to hexside.

9.9.6 Sangar Destruction—A Sangar is removed from play by when any target within is hit by HE ammunition, either by direct or indirect fire, that results in a C4 or greater on the Casualty Table. Overrun of a unit in a Sangar by any fully-tracked AFV removes the sangar AND any Heavy crew-served weapons (and Light and Medium weapons NOT carried by a Personnel unit) in it. Any Personnel (including the manning crew of the H weapon) receives no additional penalty from the overrun that destroys the sangar (i.e., they check morale normally due to the Overrun).

9.10 WEAPONS PIT



9.10.1 Description—Weapons Pit counters depict dug-in gun positions providing partial protection for weapons, Personnel, and vehicles. Weapons Pits have two positions:

On Top Effects—Units on top of a Weapons Pit do not occupy the Emplacement and are considered in the hex's terrain.

Under Effects:

Personnel units—Receive Improved cover. Heavy weapons may not set up or move in Full cover, but their crew may.

Heavy weapons—Improved cover, and they benefit from an additional +1 HPN DRM for Direct Fire. Their crew, like any Personnel unit, receives Improved cover, but may also move or drop into Full cover like a Hedgehog. When the crew is in Full cover, it may not fire its Heavy weapon.

Non-Small Vehicles—Are in H-D positions, (they may not use any Sponson-mounted or Bow weapons).

Small and Very Small Vehicles—Are in Full cover. They may not fire ANY weapons except against adjacent units and aircraft.

9.10.2 Set Up Restrictions—Weapons Pit markers may not be placed in a building hex, or on a bridge. Weapon Pits and any units in them may set up Hidden in any terrain as long as they set up outside of the Spotting Range (or LOS) of all enemy units at the start of a scenario. Make a side note of their location and the facing of any turret or Gun. The Weapons Pit and its units are placed on the map as soon as the unit is Spotted or its hex is in LOS of an enemy unit if not in terrain that would otherwise permit it to otherwise set up Hidden.

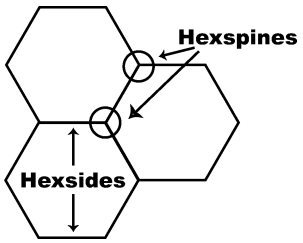
9.10.3 Stacking Restrictions—Each Weapon Pit may hold ONE Heavy weapon unit and its crew OR one vehicle OR up to THREE Stacking Points of Personnel and their Light and Medium weapons. A Weapons Pit may not be Overstacked.

9.10.31 K-KILL and F-KILL Units IN Weapon Pits—A unit continues to occupy a Weapons Pit regardless of its damage status. A Vehicle that is K-KILLed while in a Weapon Pit is replaced by the appropriate Wreck counter which prevents other units from occupying that Weapons Pit. Likewise, a Heavy weapon unit that is F-KILLed while under a Weapons Pit prevents other units from occupying the Weapon Pit. Heavy weapons, vehicles and wrecks under a Weapons Pit may be towed out normally by vehicles in the hex without having to move under the Weapon Pit. Personnel may move under a Weapon Pit marker for 2 MP to Push a Heavy weapon out.

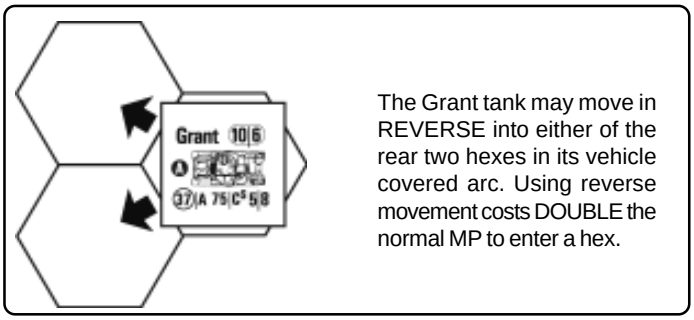
9.10.4 Movement restriction—Vehicles and Heavy weapons may never move Under a Weapons Pit during play; they may only set up under one. A vehicle may exit from under a Weapons Pit by paying ONE MP, and is placed on top of the marker; they may then move normally. Weapons Pits do not affect movement through their hex, noting the ability to enter from an adjacent Hedgehog (and vice-versa) while staying under each Emplacement (and thus still in Full cover).

9.10.5 Morale effect—Personnel units in Full cover under a Weapon Pit counter do not suffer the +4 DRM during an Overrun. They still check morale during Overruns.

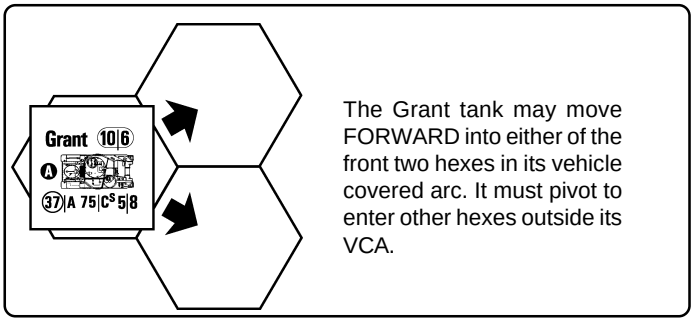
9.11 WIRE



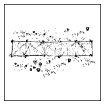
The example at left illustrates the difference between a "hexside" and a "hexspine". Most references in the rules refer to hexsides, the name for the six sides that are found around each hex.



The Grant tank may move in REVERSE into either of the rear two hexes in its vehicle covered arc. Using reverse movement costs DOUBLE the normal MP to enter a hex.



The Grant tank may move FORWARD into either of the front two hexes in its vehicle covered arc. It must pivot to enter other hexes outside its VCA.



9.11.1 Description—Wire represents rolled or staked concertina wire used to hinder enemy movement on the battlefield.

9.11.2 Setup restrictions—Wire may not be placed in a Building hex. Wire may be placed in the same hex as other Emplacements (e.g., Mines).

9.11.3 Movement restrictions—No Wheeled vehicle may enter a hex containing Wire. Tracked and Half-Tracked Vehicles must check for Immobilization AFTER entering a Wire hex. Personnel units may only enter Wire hexes by Crawling or Infiltration. All may EXIT freely.

9.11.4 Clearing Wire—A wire counter is removed by Indirect Fire HE receiving a 'C6' result or greater. A LANE may be created through a wire hex by a TRACKED (not Half-Track) vehicle that uses Assault Movement and successfully enters AND exits the wire hex. There is no effect to the wire when a vehicle enters and becomes M-KILLed.

10. MORALE

10.1 OVERVIEW—Each Personnel unit is assigned a morale value on its counter that represents the mental state of the men in that unit. The morale value is located on each Personnel counter as the third number on the counter.

10.2 MORALE MODIFIERS

10.2.1 Some friendly and most enemy units within the one hex Morale Support Range (MSR) alter a unit's current morale value, as do some conditions such as being in a minefield. The one hex range includes all locations of all six adjacent hexes and any locations within the unit's hex. There is no 'maximum' morale value.

10.2.2 Intimidation—During the End of Turn Segment, if the quantity of enemy units within a unit's morale support range reduce its ADJUSTED morale value to LESS than zero, it immediately surrenders (and is removed from play) unless a non Broken friendly leader is in its location. Leaders ignore Intimidation.

10.2.3 Morale Support Table—This table provides morale modifiers applied for same-hex and adjacent friendly and enemy units. The entry for "Each 3 Stacking Point" Personnel unit points to the fact that reduced-side squads, crews, and other non-leader Personnel units, friendly and enemy, have no effect on a unit's morale value. Only friendly SQUADS and ONE leader affect morale. Broken friendly units do not affect a unit's morale, but Surrendered ones do.

10.3 CHECKING MORALE

10.3.1 The following situations cause Personnel units to check morale (i.e., conduct a morale check):

a) Casualties are inflicted on the Casualty Table to Personnel units in the hex;

b) Attacked by an Overrun;

c) Melee Attackers;

d) Rally attempt.

10.3.2 'C#' DRM—When checking morale following a 'C#' result on the Casualty Table, the casualty 'level' (the number to the right of the 'C') incurred is ADDED to the die roll as a DRM to the morale check (making it harder to pass). Example: If a squad receives a C1, add '+1' to the morale check die roll.

10.3.3 Adjusted morale—When checking morale use the 'adjusted' value, which includes all morale modifiers from the Morale Support Table. If a LEADER fails its morale check or a friendly unit SURRENDERS, other friendly units in their MSR that subsequently check their morale must immediately adjust their morale.

10.3.4 Die roll—Check morale by rolling one die and comparing the number rolled to the unit's adjusted morale value. If the result exceeds the adjusted value, the unit is Broken, and immediately marked with a 'Broken' marker. If the result is less than or equal to the adjusted morale value, the unit is 'passes', and is unaffected.

10.3.5 Order—Check morale in the following order when the listed units are present:

1) Officers;

2) NCOs;

3) All other units at the owning player's discretion.

10.3.6 Automatic Results—Units that roll a '1' automatically PASS a morale check. Conversely, any unit that rolls a '0' always FAILS a morale check. Exception: unless Courage results on a '00'.

10.3.7 Commissar—Commissars NEVER check morale. All units in the same location with a Commissar ONLY fail morale checks on a die roll of '0'. When any unit in the same location as a Commissar fails a morale check, a C1 result is immediately applied to that unit (i.e., more than one may roll a '0' and each such-rolling unit receives a C1) and Courage may NOT result. Exception: Commissar-created C1 results have no need for the morale check that usually follows casualties.

10.4 COURAGE



10.4.1 Any Personnel unit that rolls a '0' on a morale check (including when attempting to Rally) immediately makes a subsequent die roll. Another '0' results in Courage. The unit is NOT Broken or Surrendered. Instead, mark the unit with a 'medal' marker (a handful of historical medals are provided; they are all the same in game terms). If a second '0' is not rolled after a first '0' morale check roll, the unit fails the morale check normally.

10.4.2 Courage Benefits—Units marked with medals are immune from morale checks for the remainder of the scenario. Any unit marked with a medal marker DOUBLES its Melee Value against Personnel and vehicles. So-marked units may also carry and fire all types of weapons with no penalties for reduced crew, etc., including manning weapons by a leader or leaders serving as crews. Example: One leader may fire a Heavy weapon with no penalty. Units marked with a medal may use Running movement EACH turn and are not marked as Winded.

10.5 BROKEN UNITS

10.5.1 Units that fail to pass morale checks when outside of the MSR of ANY enemy unit are Broken. They may not fire, Infiltrate, and are eliminated if any enemy unit Infiltrates into their location during the Close Assault Segment. Moving units that become Broken must immediately STOP and may not move again until the next turn.

10.5.11 Surrender—An already Broken unit that fails a morale check Surrenders, as does any unit that fails when one or more non Broken/Surrendered enemy units are within its MSR.

10.5.2 Reaction—Broken units react in the following ways.

10.5.21 In Emplacement—Broken Personnel units in Emplacements that allow them to 'drop' into FULL cover do so, and remain there for the remainder of the turn they became Broken.

10.5.22 Carried Personnel—Broken Personnel transported by vehicles that do NOT provide GOOD or FULL cover immediately unload and are placed in the current hex. Personnel units in vehicles providing G|F to transported Personnel are immediately marked with an FC marker and are considered in FULL cover.

10.5.23 Enemy Infiltration—A Broken/Surrendered unit is immediately eliminated when a enemy unit Infiltrates to enter its location.

10.5.3 Broken Unit Movement—When a moving Personnel unit first becomes Broken/Surrendered, it immediately stops and moves no further during that Fire & Movement Segment. Already Broken units otherwise eligible to move may be moved by the owning player during subsequent Fire & Movement Segments subject to the following restrictions.

a) They may only use Assault or Crawling movement (not Infiltration);

b) They may not move closer (or adjacent in a multi-location hex) to Enemy units that are within their LOS and Spotting Range. If a Friendly Broken unit is ineligible to move due to Enemy units, it may always Crawl ONE hex or location in any direction.

10.6 PINNED DOWN UNITS

10.6.1 Any moving unit (including Broken units) that passes a morale check by rolling equal to the highest number it may without failing must immediately stop moving unless a non-Broken leader is also in the hex. Place a Moved marker on the unit normally. Treat such units as temporarily 'pinned down'—they may Infiltrate normally during the Infiltration Phase if otherwise eligible.

10.7 SURRENDER

10.7.1 Place a 'Surrender' marker on a unit when any of the following occurs.

a) The unit fails a morale check while already Broken (including when being Overrun if already Broken);

b) The unit fails a morale check within the MSR of a non Broken/Surrendered enemy unit;

c) The unit is in the attacking force in a Melee at odds worse than 1-2;

d) The unit is in the defending force in a Melee at odds better than 4-1.

10.7.2 Surrender Effects—Once a unit has Surrendered it is treated in the same manner as a newly Broken unit. During the End of Turn Segment immediately after its Surrender it is eliminated if no friendly unit (including Broken units but not other Surrendered units) is in the same or adjacent (not Infiltration). Surrendered units are never moved by the owning player.

10.7.3 Fire at Surrendered units—Surrendered units may not be targeted for fire unless other enemy units are in their location or an enemy unit is targeted by an FFE that also hits the surrendered units. If, for whatever reason, a Surrendered unit is fired upon and subsequently fails a morale check, the unit is immediately eliminated.

10.8 RALLYING

10.8.1 Broken and Surrendered units may be restored to normal function by 'rallying'. To 'Rally,' a unit must pass a morale check with an non Broken leader in its location. Any Broken leaders in a hex must attempt to Rally FIRST, before all other units. A Broken leader does not need another leader to attempt to Rally. A unit may only attempt ONE rally per turn.

10.8.2 Germans and Italians—German leaders may Rally German and Italian Personnel. Italian leaders may only Rally Italian Personnel.

10.8.3 Surrendered Units—Surrendered units may attempt a limited form of rallying, to improve their condition to Broken status and avoid elimination. The following units within MSR allow a Surrendered unit to check morale and replace a Surrender marker with a Broken marker upon passing:

a) Friendly non Broken Personnel;

b) Non K-, M- or F-KILLed AFV, APC or ARMED truck type unit;

German units are considered friendly for German and Italian Personnel but Italian units are considered friendly only for Italian Personnel.

10.8.4 Failure to Rally—Any unit that fails to Rally simply remains Broken. Surrendered units are eliminated.

10.9 CAPTURING ENEMY UNITS

10.9.1 Any weapon unit or non-K-KILLed vehicle may be 'captured' and used as if it were a friendly piece of equipment.

10.9.2 Weapon units—L, M, and H weapons are captured if they are alone in a location when an enemy unit enters. They may be picked up normally and subsequently used by the new owners. There is no additional penalties applied for use of enemy units.

10.9.3 Truck Type Vehicles—Unarmed truck type vehicles (white movement icons) are captured if they are in a location at the End of Turn Segment (only) with a non moving enemy AFV, APC, or non broken Personnel unit. They may be used without penalty once captured.

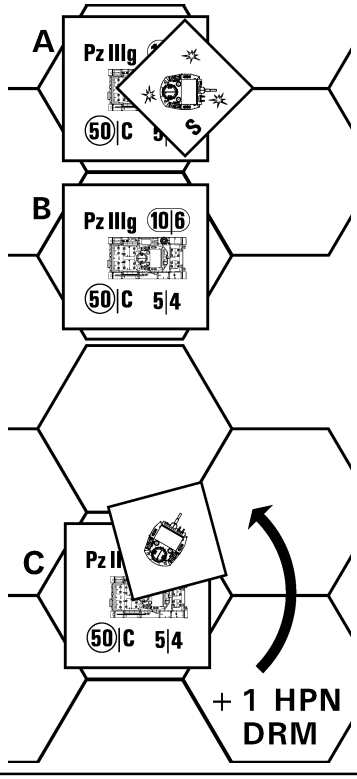
10.9.4 AFVs—Only Bailed Out AFVs may be captured. The procedure is a the same as for weapon units with the exception that ONLY crew Personnel units may capture an AFV and AFVs may only be captured during the End of Turn Segment. A captured AFV may fire any weapons normally. Captured AFVs may never move or pivot.

10.9.5 Towing Captured Units—Captured H weapons and vehicles may be towed normally.

10.9.6 Victory Point Bonus—In those scenarios using victory points, captured units are worth double the normal VP value.

The turret marker placed on Pzkw IIIg 'A' in the top example is there to illustrate placement oriented in the same direction the AFV is. Pzkw 'A' and 'B' are exactly the same as regards status. A turret marker is not needed for this facing UNLESS the AFV is Suppressed.

If 'A' chose to turn its turret ONE hexspine during the Direct Fire Phase, a +1 HPN DRM would be added to its to hit attempt. A one column shift LEFT would also apply to any Casualty Table fire using its coaxial machine-gun ONLY (it is in the turret) after such a turn. If the turret was turned another hexspine, a +2 HPN DRM (and two column shift LEFT) would be applied. If this was a Pzkw IIf, a +2 HPN DRM would apply for the FIRST TCA change (and TWO column shifts LEFT) and a +1 HPN DRM for each hexspine change that phase. Note the facing for any turret hit is applied for 'A' in the lower example.

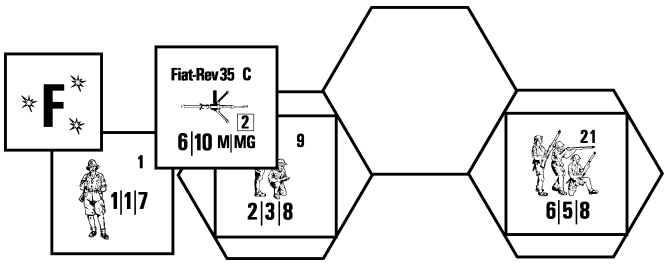


11. MOVEMENT

11.1 OVERVIEW—In any one turn, a player may move some, all or none of his units. Moving requires the use of an impulse in all cases. Units may use any amount, up to the available Movement Points for the unit being moved.

11.1.1 Movement Type—Before physically moving a piece the owning player announces what type of movement is being used. Unless stated otherwise, units are always considered to be using Assault movement.

11.1.2 Movement In General—A moving unit usually expends 1 or 2 MP (deducted from its total Movement Point (MP) allowance) for each hex it enters. When crossing hexside terrain (e.g., Wall; Hedge) a cost of one plus the cost of the entered terrain (1 + CoT) is paid. To move under some Emplacements also costs 1 MP. Some hexes and hexsides cost more to enter/cross, and these costs are specified on the Terrain Chart and in the specific terrain rules. Once a player takes his hand off the unit at the end of its move, it may not be changed or



The Fiat-Revelli medium machine-gun, possessed by the 2|3|8 crew '9' will form a firegroup with the 1|1|7 leader '1', noting the leader may not fire its '1' Gunfire factor if 'leading' another unit's fire. The crew manning the M|MG also may NOT use its '2' Gunfire factors when operating a medium (or heavy) weapon. The attack is made directly on the Casualty Table, no HPT 'to hit' attempt is needed for direct fire by personnel and machine-guns. The attack will be made on the '8' column of the Casualty Table ('6' for the MG and a one column shift RIGHT provided by the leader). Due to its ROF of '2', the MG may make a SECOND attack against the 6|5|8 squad or another hex. It may NOT attack the enemy squad by 'combining' its ROF to 'create' a '12' Gunfire factor attack (2 x '6'). Mark all units in the firegroup with an 'F' marker after both shots are made. The leader may 'lead' one multiple ROF LIGHT or MEDIUM weapon for ALL of its ROF shots (in this case two) in a single Phase. Leaders do NOT affect the fire of HEAVY weapons.

repositioned. Place a Moved arrow on or behind it (based on the type used).

11.1.3 Entering Enemy Hexes—Vehicles may enter enemy-occupied hexes freely. Exception: A TRUCK type vehicle may never stop in one unless forced to by enemy fire. Personnel may only enter an enemy-occupied location during Infiltration or if all enemy units within are marked as surrendered. Note: Units of both sides may be in the same HEX, if it has more than one location that is not specified as being ONE location for stacking and movement purposes (e.g., BUILDING hexes that have multiple 'floors' or locations like rooftop, cellar, etc.). If Hidden enemy units are in a location about to be entered by a friendly unit, place the Hidden unit(s) on-map and all friendly PERSONNEL units must stop their movement in the last hex location they were in before entering the hidden unit's hex or location. Example: A unit moving 'downstairs' from a Level +20 to a Level +10 location in a building must stop in the +20 location if a Hidden unit is in the +10 location. For Opportunity Fire, the unit is considered to have moved only in the first location, in this case, the +20 level location. Note: When Personnel is using Platoon movement, ONLY the entering unit(s) must back up one MP expenditure; if otherwise eligible the rest of the Platoon may continue moving.

11.2 MOVEMENT ELIGIBILITY—Units may move if they are not already marked as Moved, Fired, M-KILLed, Bail Out, or Surrendered. These units are ELIGIBLE to Move.

11.3 PERSONNEL MOVEMENT—Personnel units do not have a movement allowance printed on their counters. The MP provided are the same for all Personnel units and based on the movement type used.

11.3.1 Movement Types—Personnel may use one of the following Movement types during a Fire & Movement Segment.

11.3.11 Crawling Movement—Allows a Personnel unit to Move one hex, or from one location to the next higher or lower location within a hex (e.g., from Ground level to Level +10 in a multi-story Building; or from Level +10 to Level +20 in a Stairwell Building). Units may never Crawl more than ONE location within a hex (e.g., from Ground to +20 using Crawling as this represents a move of TWO levels). Units may also Crawl one-hex-and-under an Emplacement providing Full cover, when entering an adjacent hex. A unit may not Crawl 'down' to the ground if 'upstairs' in a Building, then to an adjacent hex or vice-versa. Personnel using Crawling movement receive Stationary Cover. Place a Moved arrow marker on top of Personnel units using Crawling movement. A Crawling Personnel unit may use Assault Fire DURING its move, before or after entering the new hex or location.

11.3.12 Assault movement—Allows a Personnel unit to use up to FOUR MP. Personnel using Assault movement receive Assault cover. Place a Moved arrow marker behind Personnel units using Assault movement. An Assault moving Personnel unit may Fire during its move, before or after entering a new hex or Location, using half GF (for small arms or any L MG/ATR ONLY). Medium and Heavy weapons may NOT be fired by moving Personnel.

11.3.13 Running movement—Allows a Personnel unit to use up to SEVEN movement points. Personnel using Running movement are considered to be in Running cover for Opportunity Fire ONLY, while the player is moving the counter. Use Assault cover for any fire at them later in the Fire & Movement Segment. Place a Moved arrow marker behind the unit(s) at the end of their move, in the same manner as Assault moving Personnel. Personnel using Running movement may not fire during the Fire & Movement Segment. Personnel carrying Medium weapons may not use Running movement.

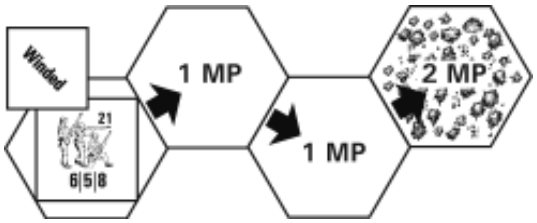
11.3.131 Winded—A 'Winded' marker is placed on of Running Personnel. A Personnel unit may not use Running movement in two consecutive turns (Exception: Courage). Remove previously placed Winded markers at the end of the next turn's Fire & Movement Segment or after these units complete their move (or fire) during the next turn.

11.3.2 Platoon Movement

11.3.21 Platoon Formation—A Movement Impulse may also be used to create a 'Platoon', to allow Personnel units in up to 3 adjacent hexes to move simultaneously (using the same movement impulse). To qualify for multi-hex Platoon movement, at least one location must contain a LEADER moving with the rest of the Platoon. In order to take part, each hex needs to be adjacent to at least one of the other hexes (or locations) in the Platoon at the start of the Fire & Movement Segment and it must be possible to move BETWEEN all hexes 'connecting' the Platoon. Example: A Platoon cannot be formed between hexes separated by a Cliff. Players should announce all units of the Platoon that will be moving prior to moving ANY.

11.3.211 Same Stack Platoon—Personnel units stacked in the SAME location may always move together as a Platoon. No leader is needed.

11.3.22 Movement—When using multi-hex Platoon Movement, all Personnel units must use the same movement type (e.g., Assault; Running; Crawling). Units using Platoon Movement may not create Overstack with other units in the Platoon at any time during the move. If the Platoon leader is unable to continue moving for any reason, (e.g., no MP left due to a Wounded result; Broken; pinned-down; Eliminated) all units in the Platoon must immediately stop moving unless there is another leader moving in one of the Platoon hexes. When moving as a Platoon, all units expend MP simultaneously hex-by-hex (and location-by-loca-



The squad in the example above uses FOUR movement points, one each to enter each open ground hex and two MP to enter the Scrub hex. Since the squad started the turn already marked as 'Winded', it CAN make this move using Assault movement. It could not move further, however, since it must use RUNNING movement to use 5-7 MP and may not do so when marked as Winded.

tion within hexes). Exception: All units in the Platoon pay the SAME cost in MP as the HIGHEST expenditure of ANY unit in the Platoon.

11.3.23 Cohesion—Once Platoon movement is initiated, individual units may not voluntarily 'break off' from the Platoon that turn. All units must move to the next adjacent hex or location together, and all units must stay adjacent to one another in no more than three hexes. If any unit(s) of the Platoon are unable to continue moving, the remainder must use their next MP expenditures to 'close up' and qualify for multi-hex Platoon status again before any other movement is conducted (otherwise all immediately stop). Different movement types may NOT be used (e.g., Running and Assault [or Assault and Cross Country] in the same Platoon).

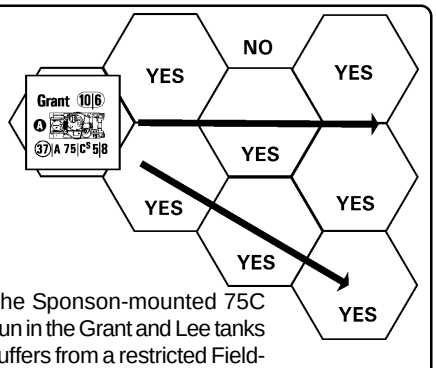
11.3.24 With AFVs—Personnel using Platoon Movement may also combine with Platoon-moving AFVs, creating one Platoon. All Personnel and vehicles must follow Platoon movement rules for each type, and at least ONE vehicle of the AFV Platoon must be in the same hex of at least ONE Personnel unit at all times, including 'closing up' to continue to qualify as a Platoon if any vehicles or Personnel are unable to move further.

11.3.241 Cover Bonus—An AFV/APC provides cover for any fire into or through its hex, including during Platoon movement for an AFV. An Elite Tank Commander allows the Personnel portion of the Platoon to continue moving even if other Leaders aren't present.

11.3.25 Leader Bonus—Any Platoon using non Crawling movement may add 1 MP to their available total if accompanied by a Leader.

11.3.3 Carrying Light and Medium weapon—Weapon units may never move by themselves. Each Personnel unit may carry a number of Light and Medium weapons equal to its Stacking Points value. A Light weapon has a Stacking value of 1, a Medium of 2. Any two 1 Stacking Point units may combine to carry a Medium weapon.

11.3.31 Movement Restrictions—Light weapons may be carried by any Personnel unit using Crawling, Assault, or Running movement. Personnel units may not use Running movement when carrying M weapons.



The Sponson-mounted 75C gun in the Grant and Lee tanks suffers from a restricted Field-of-Fire. It may ONLY fire in a field of fire indicated by the hexes marked "yes" in the example above (and further along its LOS).

11.3.32 Assault Fire Restrictions—Medium weapons may not fire using Assault Fire. However, any remaining Gunfire Factors (after deducting for the carried Weapon) left to the carrying Personnel unit may be used.

11.3.33 Pick Up and Carry Routine—Units may spend ONE MP to 'pick up' weapons in their location (or position, e.g., on top of or under an emplacement) at any point during the movement. A unit that intends to use Crawling movement may pick up a weapon during the same Fire & Movement Segment and still move one hex (i.e., it does not have to be carrying the weapon already to carry it to a new hex or location that turn). Weapons may also be transferred between units in the same location if neither unit is moving or marked as moved. The unit that 'gives up' the Weapon is still free to move. The transfer of a weapon from one unit to another is not considered movement by BOTH units, just the one giving it up, and costs no MP to the receiving unit. Weapons transfer is not an Opportunity Fire trigger. A unit may also pick up a weapon in its location during Infiltration or after Melee is completed.

11.3.34 Pushing Guns—Heavy weapons may be moved, or 'Pushed' during the Fire & Movement Segment by their crew (or manning Personnel unit) if the Personnel is otherwise eligible to move. Heavy weapons may not be moved during Infiltration and may never enter Water or Swamp terrain. A Personnel unit Pushing a Heavy weapon may never exceed its MP allowance. LARGE target type guns may never be PUSHED. They may only be moved via Towing. For H weapons that have NO target size modifier, treat the pushing unit as if using Running movement (i.e., mark as Winded; apply Running cover for Opportunity Fire). Personnel pushing a SMALL or
target size Heavy weapon may use Assault movement to Push it ONE hex, or Running movement to Push it TWO hexes, treating each movement type accordingly. Example: A Personnel unit stacked with a leader pushing a SMALL H weapon may not enter a hex that would cost SIX or more MP while using Assault movement as it only has FIVE MP available (4 for Assault movement + 1 bonus MP from the leader).

11.4 VEHICULAR MOVEMENT

11.4.1 Movement Types—Each vehicle counter has a set of two Movement Point values printed on it in the following format: 'Cross Country' movement | Assault movement. Assault movement is used to allow a moving vehicle to conduct a variety of actions, e.g., load or unload Personnel for transport; Overruns; move and fire during the same impulse using Assault Fire.

11.4.11 Markers—Place a Moved arrow on top of a vehicle using assault movement and behind a vehicle using cross-country movement. When placing a Moved arrow behind a moving vehicle, place the marker in the hex just vacated by the unit.

11.4.2 Facing and Covered Arc—Each vehicle has a Front, Rear, and Flank orientation determined by the hexspine to which the front of the unit's silhouette is pointed. This is known as its 'facing', also referred to as 'Covered Arc' (CA). A separate Covered Arc is used for any turret, and is known as 'Turret Covered Arc' (TCA). The facing of a VEHICLE, usually referred to when being differentiated from its turret facing, is known as 'Vehicle Covered Arc' (VCA). Note TCA and VCA may be different from one other. Both TCA and VCA must always face towards one definite hexspine. When a turreted vehicle has NO turret marker placed on it, the turret is always considered to face toward the FRONT VCA (unless stated to be a rear-facing weapon, via an 'R' superscript on the value on that counter).

11.4.3 Movement Direction Vehicles may move FORWARD into one of the two hexsides it is facing. Vehicles may also use REVERSE movement, to enter one of the two hexsides to its rear. Reverse movement costs DOUBLE the normal MP expenditure. A Vehicle may use both Forward and Reverse movement in the same Fire & Movement Segment.

11.4.4 Pivoting—A Vehicle may change its VCA/TCA to any hexspine within a hex during a movement or fire impulse. During a movement impulse, a unit may 'pivot' to face its VCA to any other hexspine at the cost of ONE MP per hexspine change. Pivoting is a 'trigger' for Opportunity Fire. When using an impulse to fire, a unit may also pivot one (including turret) or more hexspines before firing. Note: The act of firing itself does not trigger Opportunity Fire; pivoting does (including turret).

11.4.5 Continued Movement—A vehicle marked as Moved may opt to 'continue' moving during the marker removal portion of the End of Turn Segment. Keep the existing Moved marker on or behind the vehicle (and treat it as a moving target during the next Fire & Movement Segment). During the next Fire & Movement Segment, so-marked vehicles must use a movement impulse, but may move using ANY movement type. Vehicles using Continued Movement may not use a fire impulse during the subsequent Fire & Movement Segment, They may Assault Fire if using Assault movement. They may not take part in a Gun Duel nor may they Opportunity Fire.

11.4.6 Convoy Movement—When allowed to via SSR, vehicles may set up or enter play using 'Convoy Movement.' Convoy vehicles must set up or enter play in adjacent hexes, with no more than ONE vehicle per hex. A Convoy moves in the same manner as a Platoon, remaining adjacent, never exceeding one vehicle per hex and using Assault movement (only) of the SLOWEST vehicle in the Convoy.

11.4.61 Off-road Movement—Convoys are not required to remain on Roads.

11.4.62 Disbanding—No Vehicle may move independent of the Convoy, including the voluntary loading or unloading of transported Personnel or Towed weapons, until at least one unit in the Convoy is fired on or has a LOS (within Spotting Range when the Spotting Table is in use) to a non FOW-side enemy unit. All units in the Convoy MUST use Continued Movement between turns until the Convoy is eligible to move independently.

11.4.7 AFV Platoon Movement—A group of 2-5 adjacent Russian, American, Italian, Japanese, or German or 2-3 British or French AFVs (not APCs or trucks) may move together as a multi-unit 'Platoon'. This form of Platoon movement represents the use of ONE Movement Impulse during the Fire & Movement Segment. The Platoon (or 'Troop' for British AFVs) must use the MP allowance of the slowest AFV in the Platoon at all times. A Platoon may use Continued movement.

11.4.71 Starting Limitations—Platoons are created at the beginning of each Fire & Movement Segment by an appropriate number of adjacent vehicles. Each must be adjacent at all times during that Fire & Movement Segment. If one or more of the AFVs in the Platoon are unable to continue movement (e.g., due to M-KILL, K-KILL, or F-KILL results) all remaining AFVs in the Platoon may continue moving. Any 'gap' between remaining AFVs must be 'closed up' by immediate movement to bring them adjacent again. No AFV may voluntarily 'break off' from a Platoon once using Platoon Movement in a Fire & Movement Segment (Exception: An F-KILLed AFV is no longer restricted by the AFVs in the Platoon and stops immediately; it will have to exit normally, beginning with the next available movement opportunity, i.e., the following turn).

11.4.72 Overrun and Fire Restrictions—AFVs using Platoon Movement may conduct overruns and use Assault Fire, and they may conduct Overruns and use Assault Fire at different times and at different targets during the course of moving as a Platoon. Each AFV is marked individually after it fires.

11.4.73 MP Expenditure—When moving as a Platoon, all AFVs expend MP simultaneously, hex by hex, paying the same cost as the highest expenditure of any AFV in the Platoon for any location entered and action conducted. Example: One AFV may spend one MP to enter a new hex while another spends one MP to change VCA, at the same time, at a cost of ONE Movement Point for the Platoon.

11.5 TOWING, TRANSPORTING AND RIDERS

11.5.1 Carrying Capacity—Vehicles that are used primarily for TRANSPORT have a maximum capacity in Stacking Points listed on their counters in the following format: [Cover State] | [Stacking Points]. Other vehicles (without printed transport capacity) may also transport Personnel and ALL have a maximum of THREE Stacking Points. Transported or Towed units are referred to as 'passengers' (for those that ride IN a vehicle) and 'riders' for those that ride on (e.g., a tank) a vehicle.

11.5.11 Riding IN Transport—Personnel ride IN vehicles that have S (usually trucks) or G-F (usually APC) printed on them receive Stationary, Good, or Full cover states.

11.5.12 Riding ON Transport—Personnel ride ON vehicles that lack any S, G, or F notation (usually AFVs and APCs).

11.5.13 Transporting Weapons—Each Vehicle capable of Carrying THREE or more Stacking Points may ALSO carry one Light weapon AND one Leader PER SP capacity listed. Example: An AFV (with a standard capacity of 3 SP) may carry a Squad, three L weapons and three leaders.

11.5.2 Towing capacity-Vehicles may also TOW Heavy weapons. Note H weapons may also be pushed by Personnel (Exception: LARGE target type H weapons may only move via towing). The Tow | Carry Personnel Table lists the ability of each vehicle type to carry personnel and tow an H weapon. Note: An H weapon's crew is counted towards Personnel carrying limits when transported. Vehicles towing other vehicles may only use Assault movement. Units towing Heavy weapons may use Cross Country movement ONLY when moving along a Road.

11.5.21 Towing Vehicles—Vehicular units may hook up to tow another vehicle, regardless of their apparent facing in respect to the unit being towed. Once hooked up, turn the towed vehicle counter so the VCA of the vehicle being towed matches that of the towing vehicle and place it on top of the towing vehicle. There is no cost for this change in VCA.

11.5.22 Towing Restrictions—A vehicle may never tow a 'larger' (measured by target size modifier) vehicle. Exception: Wheeled vehicles may tow larger WHEELED vehicles when moving along a Road. Otherwise, Wheeled vehicles may only tow normal (no target size modifier) or SMALL tracked or half-track vehicles, in addition to other non wheeled vehicles that do not exceed the size of the towing vehicle.

11.5.3 Loading and Unloading Procedures—Loading and Unloading procedures are the same for Passengers, Riders and Towed Vehicles.

11.5.31 Loading—To Load a Passenger, the transporting Vehicle and its Passenger must be in the same hex Location. The transporting Vehicle must use Assault move during the turn it wishes to 'pick up' a Passenger; it is then placed on top of the transporting Vehicle counter. No movement is allowed in the turn of Loading by the transporting Vehicle once it enters the hex of the Passenger.

11.5.32 Unloading—Place Unloaded units under the transporting Vehicle. Only Vehicles using Assault movement may Unload Passengers. No movement is allowed in the turn of Unloading by the transporting Vehicle once it Unloads its Passenger. A Heavy weapon can be Unloaded with any CA.

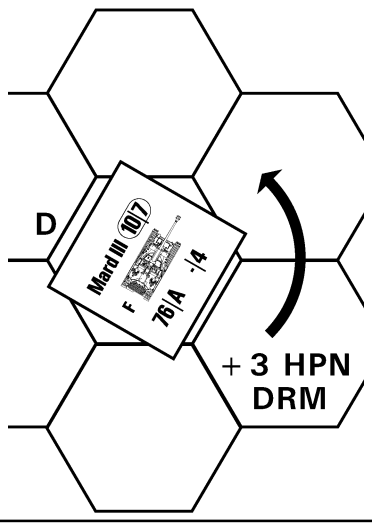
11.5.4 Broken—Any Personnel unit that is Broken or Surrenders when attempting to load or hook a Heavy weapon up for towing may not do so and remains in the hex. Any Personnel unit that fails a morale check while being transported must drop into Full cover in the vehicle if available (i.e., denoted by an 'F') or unload in the hex immediately. Place an FC marker on Personnel units that drop into 'F' vehicle cover. Vehicles carrying Broken or Surrendered Personnel are not restricted from moving closer to enemy units.

11.5.5 Infiltration—Personnel may unload from a vehicle AND still Infiltrate during the Close Assault Segment of the same turn.

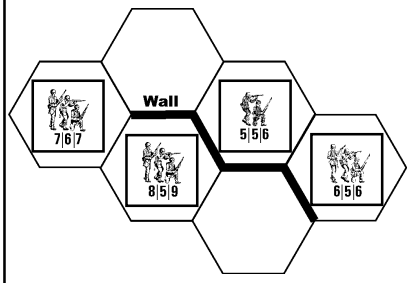
11.5.6 Transport and Passenger Fire Restrictions—Passengers may NOT fire or move during the Fire & Movement Segment they are loaded/unloaded. Towed Heavy weapons may never fire while being Towed. Personnel units and some Light weapons may fire in some instances (e.g., in half-tracks) when being transported. Vehicles previously carrying or towing are still eligible to fire using Assault Fire during the Fire & Movement Segment they load/unload.

11.5.7 Passengers as Targets-Passengers may be attacked normally, as any Personnel units in the same location, but with a separate cover state, independent of their transport vehicle, as follows.

11.5.71 In APC—Personnel units in 'G-F' vehicles are considered in Good cover, but



If 'D' pivots its vehicle VCA one hexspine to fire, a +3 HPN DRM will be applied to any 'to hit' attempt it makes on the HPT. A three column shift LEFT will be applied to any Casualty Table fire using the '4' factor Bow machine-gun (BMG) by this non turreted AFV. If another hexspine change was made, an additional +1 HPN DRM would be applied (+1 per hexspine after the initial +3), as well as an additional column shift LEFT (a total of 4L for the BMG). Note the three and four 'L' shifts make the BMG shot useless, as it is less than a '1' on the Casualty Table and would not be rolled for.



In the example at left, all of the personnel units are on the same level. The American 7|6|7 squad has a LOS to German the German 5|5|6 reduced squad. It does NOT have one to the German 6|5|6 squad. The 8|5|9 has a LOS to both the 5|5|6 and the 6|5|6. If the 8|5|9 fired on the 5|5|6 or the 6|5|6 it would use the '6' column on the Casualty Table, applying its usual '8' Gunfire factors, with a one column shift LEFT, reducing it to a '6'. Note all LOS's are reciprocal. Treat a hedge in the same manner as the wall in this example.

If the black bars were instead *Bocage*, the 7|6|7 and 5|5|6 would NOT have a LOS to each other. Nor would the 8|5|9 and the 6|5|6 as Bocage is Level +10 hexside terrain and blocks any LOS drawn exactly along them. If the 5|5|6 was at a higher level (including if the LOS was traced from a longer range but otherwise directly along the hexside in the same manner as the 5|5|6 vs. 7|6|7 LOS the hex the 7|6|7 is in would ALSO be a blind hex. Also, ALL units in this example are eligible to place 'FC' markers since ALL enemy units trace their LOS across a bocage hexside.

If the black bars were inside a buidling instead, no American unit i.e., the 8|5|9 and 7|6|7 squads) would have a LOS to a German unit and vice-versa.

may drop into Full cover (in the same manner as a Hedgehog when fired on or using Infiltration). Mark them with an 'FC" marker. Personnel already marked as 'FC' when riding in any eligible APC may not be targeted separate from their transporting vehicle. Exception: Grenade Attacks affect them normally even when marked 'FC'.

11.5.72 In Truck Type Vehicle—Personnel in 'S' vehicles are in Stationary cover.

11.5.73 In AFV—Units riding on AFVs receive Assault cover.

11.5.74 Towed Heavy weapons—Towed Heavy weapons must be targeted separately for hits using the HPT, using any appropriate modifiers. They are not fired on as part of an attack against the towing vehicle or its passengers.

11.5.8 Passengers Fate-If a transport vehicle is targeted, Passengers suffer the following fates:

11.5.81 Transport Non K-KILLed—Transported Personnel are attacked normally by any HE if their Transport is not K-KILLed (Exception: Personnel in 'F' cover).

11.5.82 Transport Vehicle K-KILLed by Direct Fire

a) Light and Medium weapon units eliminated; Heavy weapons are placed in hex with the wreck marker;

b) Personnel units are attacked by FOUR FRAG Factors for K-KILLs resulting from AP/APCR/APDS/HEAT ammunition; use the HE equivalence on the Casualty Table normally when the K-KILL results from HE ammunition (including Indirect and aircraft bombs); Gunfire Factors for small arms and MG attacks that do not use the HPT; when a K-KILL is caused by ATR/MG using an HPT, no further affects are applied against transported Personnel following a K-KILL.

After the vehicle is replaced by a non burning wreck, surviving Passengers are placed in the hex.

11.5.83 Transport Vehicle Burned by Direct Fire

a) Personnel, as well as Light and Medium weapon units are eliminated;

b) Heavy weapons are placed in the hex with the burning wreck and marked with F-KILL marker.

11.5.84 Transport K-KILLed or Burned by Indirect Fire

a) Light and Medium weapon units and Personnel eliminated;

b) Heavy weapons undergo separate attack.

11.5.85 Riding ON Automatic Unload—Whenever an AFV is hit by an AP hit from a weapon of a Gun Size of 20 (i.e., 20mm) or larger, any Personnel riding ON the AFV must immediately suffer the specified attack then immediately unload. Personnel units riding on an AFV also unload immediately when it fires its main armament or non-AA machine-guns. This unloading does not require use of a movement impulse but IS considered an Opportunity Fire trigger.

12. COMBAT

12.1 OUTLINE

While complex in appearance, armored-fighting vehicles, Personnel, artillery, and aircraft use intuitive, easy to understand methods to conduct ATS battles. Combat resolution speeds up tremendously as players become more familiar with the system. Fire combat consists of the following categories:

a) **Direct Fire**—The firing unit can see the target unit.

b) **Indirect Fire**—The firing unit is off-board artillery or on-board mortars and howitzers that cannot (or do not need to) see the target unit in order to fire at it.

c) **Overrun**—An attacking vehicle unit enters the target unit(s) hex.

d) **Close Assault**—Attacking Personnel units make Grenade Attacks and enter the enemy hex to conduct Melee.

e) **Aircraft Attacks**—Aircraft attack ground units and anti-aircraft fire is conducted.

12.2 ATTACK ROUTINES

An 'Attack Routines' table is provided to refer to when resolving combat. Simply cross reference the firing unit with the target unit and use the tables in the order presented. Each table is provided an ID, as well as a name, and is identified on the table using its ID (e.g., the Casualty Table is table 'F2'). In any case in which the table and rules differ, the rulebook takes precedence.

12.3 ELIGIBLE ATTACKERS

Whether a unit is an eligible attacker depends mainly on the type of unit it is and the type of attack it will use.

12.3.1 Direct Fire Attackers

Any on-map unit, except a mortar, may use Direct Fire if it:

a) Has an LOS to the target;

b) Is within Spotting Range of the target (if using Spotting rules);

c) Is not Broken or Surrendered;

d) Has not moved except by Crawling or Assault move;

e) Is not F-KILLed; and

f) It has not already been marked as Fired, using up its entire (ROF). Example: A gun has a ROF of '2' (and is not using a BOT marker). It is marked as Fired to show it has fired once. It still has 1 ROF shot left, and may fire again. If it had fired twice, two Fired markers would be placed (and no fire opportunities remain for that turn).

12.3.2 Indirect Fire Attackers

Any on-map mortar (MTR), howitzer (HOW), and off-map artillery batteries use Indirect Fire if the manning crew or an eligible FO or spotter:

a) Has an LOS to the target hex;

b) Is within Spotting Range of the target (if using Spotting);

c) Is otherwise eligible to fire and NOT moving.

12.3.3 Overrun Attackers

An AFV may conduct an Overrun if:

a) Eligible to move and fire (noting that entering terrain that entails a check on the Immobilization Table may render the AFV unable to move, and thus unable to make an Overrun attack in the hex it just entered);

b) The overrun hex may be entered;

c) It has enough Assault MP to spend within the hex (1 MP per enemy unit being Overrun).

12.3.4 Close Assault Attackers

There are two actions that may be taken during the Close Assault Segment: Grenade Attacks and Melee.

a) **Grenade Attack**—A Personnel unit may make a grenade attack if it is not Broken or surrendered and has not already been marked as Fired.

b) **Melee** Any Personnel unit may Melee if not Broken or Surrendered.

12.4 ELIGIBLE TARGETS

Whether a unit represents an eligible target depends on the type of unit it is and the type of attack intended against it. See

below for information regarding eligible targets.

12.4.1 General Rule

All enemy Personnel (except surrendered units), vehicles and weapons are eligible targets for direct or Indirect Fire, close assault and air attacks. There are four main exceptions:

a) Guns that may only fire AP—This ammunition limitation is denoted by a white circle or square behind the unit's Gun Value (and on the AFV Card portion listing available ammunition). Only Personnel units in Bunkers may be attacked by AP. They may otherwise fire against non-Personnel units (i.e., H weapons and vehicles).

b) Shaped Charge Weapons (SCW)—The only eligible Personnel targets for these weapons are Personnel units in buildings, Bunkers or behind a Wall hexside. SCW otherwise fire against non-Personnel units (i.e., H guns and vehicles).

c) Units in Full cover—These are only eligible targets for Indirect Fire, direct firing guns (noting GF/HE is halved against FULL cover units), and adjacent and same-hex attackers.

Important: If eligible, any Personnel units on top of an Emplacement that creates Full cover when beneath it may 'drop' into Full cover AFTER the opponent declares he will fire at the unit but BEFORE the HPT or Casualty Table roll is made.

d) Air Attacks—Aircraft may not attack a target if it is in a building or a woods hex and all six adjacent surrounding hexes are either Woods or building hexes (unless the unit is on a building rooftop or in an roofless building hex).

e) AA Fire—Aircraft may only be attacked by anti-aircraft (AA) guns, anti-aircraft machine-guns (AAMG) and Medium machine-guns (M|MG) from units that can be seen by aircraft as per 'd' above.

12.4.2 Direct Fire Targets

Gunfire Factors, including L|MG and M|MG and high explosive (HE) attack ALL eligible Personnel units in a hex location. If a unit fires AP it may EITHER fire at a vehicle or Heavy weapon OR all the Personnel units in a Bunker. Fire using the HPT and directed at a vehicle does not affect another unit in the same location, except any Passengers transported by the vehicle.

12.4.3 Indirect Fire Targets

Indirect Fire and aircraft bombs attack every location in a hex. Example: Indirect Fire hits a hex that has a building with two floors. Resolve the attack against all units on both floors.

12.4.4 Overrun Targets

The only eligible targets for overrun are Personnel units and Heavy weapons. An overrun attacks as many Personnel and Heavy weapons units as the attacker wishes and spends MP for. It costs 1 MP for each unit attacked counting a Heavy weapon and its crew as one unit. The attacker chooses which units he overruns if he does not (or cannot) spend Assault MP to overrun all eligible targets in a hex location.

12.4.5 Close Assault

Grenade and Melee attacks affect all eligible Personnel units or any ONE vehicle in a hex location.

12.4.6 Attacked units

Work out casualties for any hit unit using the appropriate table(s). Ignore units that are 'missed' or not targeted. Exception: On a 'C1' or greater result, the other Personnel units in the LOCATION must take a morale check unless they are in Full cover and were not attacked or are otherwise not an eligible target. Remember: Units in Full cover are only eligible targets for Indirect Fire, direct firing guns and adjacent or same-hex attackers.

12.4.61 Running Exception

Opportunity Fire against a Running Personnel unit does not affect other non-Running Personnel units in the location, including morale checks following Casualties results.

12.4.7 Personnel Units and Steps

A Personnel counter with three figures on its front represents a SQUAD and is provided four 'steps' representing states of combat effectiveness. Each ONE 'C' in casualties 'absorbed' by a squad results in one step loss.

1st step loss—Place a Casualties marker on the squad.

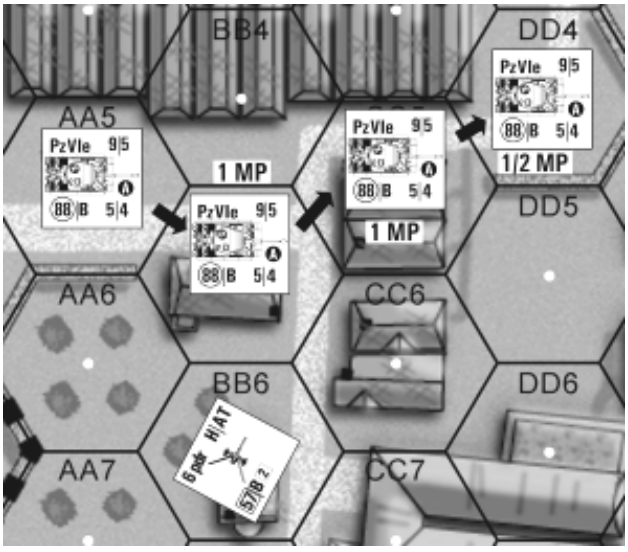
2nd step loss—Remove the Casualties marker and flip the squad to its reduced side (the back side, with two figures).

3rd step loss—Place a Casualties marker on the reduced squad.

4th step loss—Remove the reduced squad from play.

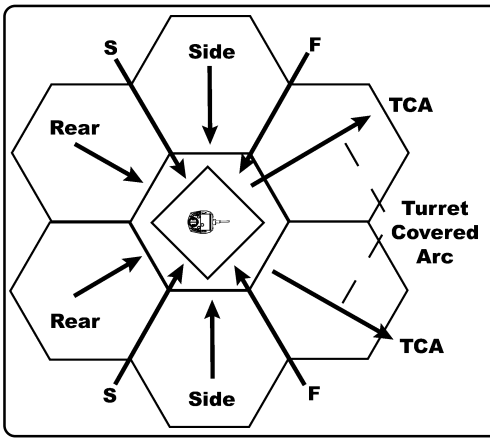
Crews, FOs, BAR gunners and leaders do NOT use Casualties markers. These units only have two steps: normal (front) and reduced (back). They flip to their reduced side when absorbing a 'C1' result and are eliminated on receiving a 'C2' or second casualties result if already flipped. The reduced side of a leader or FO counter is called its Wounded side. When a Personnel unit is eliminated by any non SMALL ARMS attack, any Light or Medium weapons it is carrying are also eliminated.

Example: A result on the Casualty Table of 'C4' or greater eliminates a squad from play (as would cumulative 'C' results totaling '4' or greater absorbed during play). A 'C8' would eliminate two squads in a location, and so on. Example: A squad and a leader are in a location fired on by an AFV using HE on the HPT. A hit results and the Casualty Table die roll provides a 'C3' result. The 'C3' result is distributed among the two units by the owning player. He decides to wound the leader by flipping it over, thus absorbing ONE Casualty. The other TWO



In the example at left, the Tiger tank pays 1 Movement Point to enter hex BB5. It enters the hex across the AA5-BB5 hexside, following the road as if entering the hex normally (i.e., as if no building was present). Once it enters BB5 it may head into CC5, reverse back into AA5, or follow the road along the hexside, entering CC6. For our example, the tank moves into CC5, spending another 1 MP. Once there, it continues to DD4, spending another 1/2 (half) MP. When moving along a road + building hex (or a hexside road) the cost is DOUBLED (to 1 from 1/2 MP on a road) and ONLY Assault movement may be used.

The 6-pdr in BB6 does NOT have a LOS to the Tiger tank when it moves along the road in hex BB5 since the LOS, drawn normally by using a straight-edge between the sighting dots of BB6-BB5, hits the building in BB5 before touching the road. When the tank continues to CC5, the 6-pdr can see it, since the LOS can be drawn to touch BOTH a hexside crossed by the tank when it entered CC5 AND the road IN hex CC5. Opportunity Fire ONLY could be used when the Tiger first entered CC5. If it stopped there, the LOS would have to be traced normally to the sighting dot in CC5 (i.e., not to the hexside as can be done against a moving target).



In the example at left the two hexes to the front of the turret marker define its Turret Covered Arc (TCA). HPT direct hits from within its TCA, as well as exactly along the hexsides marked 'F' are FRONT facing hits. Hits from within the 'side' (used for this example instead of "flank") and 'S' hexside are considered FLANK facing hits. Hits from within the 'rear' hexes are considered REAR facing hits.

The exception to the example at left is if the target is moving. If the LOS is traced exactly between the flank and the front the aspect is FRONT if the target is MOVING and flank if it is STATIONARY. If the LOS is traced exactly between the flank and rear, it is rear if stationary and flank if moving.

casualties are absorbed by flipping the squad to its reduced side.

12.4.8 Casualty Effects

a) The placement of a Casualties marker reduces the printed Gunfire Factors AND printed morale level of a squad (or reduced squad if already flipped when placing the marker) by ONE. Casualties markers have no effect on the use of Light weapons.

b) A leader or FO flipped to its Wounded side may not use Running movement.

c) A reduced crew reduces the ROF of Heavy or Medium weapons to 1.

12.4.81 Morale Checks

For all 'C1' and greater results, after applying all casualties, all surviving attacked Personnel check morale. A DRM equal to the C# of the combat result is applied to this morale check (along with any other applicable DRM for nearby friendly or enemy units). Example: Following a 'C1' result, all surviving targeted units check morale, applying a +1 DRM. On a 'C2', a +2 DRM is applied, and so on.

12.4.82 Effects on Non-Personnel Units

Refer 'C' results to the Attack Results Vs Vehicles And H Weapons table to and apply the listed effects against these targets in locations attacked by Indirect Fire and other weapons. On this table a unit suffers the listed damage if it receives a 'C' result equal to or lower than the C# listed in the appropriate row and column. Example: Indirect Fire attacks an AFV. The result is a C4. As a C5 is needed to K-KILL the AFV, it is M- or F-KILLed instead (depending on the Hit Location, using the colored die of the Casualty Table attack die roll used for the Indirect Fire on the Hit Location Table).

12.5 COVER STATES

A cover state represents units vulnerability to attack. Cover states affect both Personnel and vehicles, but some cover state modifiers only apply to Personnel.

12.5.1 Cover State Modifiers

During combat cover states will provide modifiers to EITHER**:**

(a) The column used on the Casualty Table; or;

(b) the chance of obtaining a hit on the Hit Probability Table (HPT).

If the attack uses the HPT ONLY apply the cover state modifier to the HPT as a modifier to the Hit Probability Number [HPN], NOT to any subsequent roll on the Casualty Table in the event of a hit. Exception: The DRM for certain states (e.g., Air Bursts; carrying a Flamethrower) are ONLY applied on the Casualty Table (i.e., after a hit is obtained).

12.5.11 Cover State Effects Table (F1)—Provides DRM and resulting Casualty Table column shifts left 'L' or right 'R' for different cover states. A shift to the left favors the target. A shift to the right favors the attacker. When using cover state shifts on the Casualty Table, shift to the left or right from the starting column appropriate for that attack. When a cover state shift is used on the HPT, each 'L' modifier creates a +1 DRM to the HPN and each 'R' modifier creates a -1 DRM to the HPN.

Example: A unit in Good cover receives a shift of '1L'. For an attack using the '14' column on the Casualty Table, the fire would be resolved one column to the left, in the '10' column. If the attack instead required a roll on the HPT to obtain a hit, a +1 DRM to the Hit Probability Number would be applied INSTEAD, making it more difficult to hit the target. If a hit was obtained, no shift would be applied to the subsequent Casualty Table roll.

12.5.12 Table Usage—Refer to the Cover State Effects Table to obtain a unit's cover state and applicable column shifts and HPN DRM.

a) Cover states denoted with a 'P' only apply to Personnel units;

b) Note that AFVs and non burning wreck markers provide Good cover in the ground level of their hex if no other terrain is provided, and their cover is not cumulative with other cover in the hex;

c) Apply all applicable shifts cumulatively.

Example: A Personnel unit using Running movement is fired on while in Good cover. The cumulative modifiers are '2R' for Running and '1L' for Good cover, resulting in a ONE right shift, i.e., a '1R' result. If the firing unit is a Personnel unit with 6 Gunfire Factors, instead of rolling on the '6' column of the Casualty Table the fire shifts one column to the right and uses the '8' column. If the firing unit is a gun rolling for a hit on the HPT, apply a -1 DRM to the Hit Probability Number. If a hit is obtained, no shift is applied to the Casualty Table roll.

12.5.2 Personnel Movement

The following cover states ONLY apply to Personnel units:

12.5.21 Stationary—A Personnel unit that is Crawling or not moving is in a Stationary cover state. A Personnel unit being transported by a vehicle that (a) is not an AFV and (b) does not provide Good or Full cover (as denoted on the counter by a G|F or G notation), is considered in Stationary cover. A modifier of ZERO is applied, i.e., no shift or DRM applied due to cover state. Note: If a vehicle provides transported Personnel units Good or Full cover, it will say so on the vehicle counter and this cover ONLY applies to transported Personnel, not towed weapons.

12.5.22 Assault—A Personnel unit using Assault movement is considered in Assault cover. Note: A Personnel unit riding ON (as compared to being IN a White movement icon Truck type vehicle or Yellow movement icon APC providing 'G' or 'F' cover [or G|F in most cases, e.g., a half-track]) an AFV is considered to be in Assault cover and receives a cover state modifier of 1R when using the Casualty Table but may not be separately targeted by HE (i.e., on the HPT) from the AFV. Any hit by HE on the AFV affects riding Personnel units ALSO, using the Casualty Table for the latter AND applying a 1R shift INSTEAD of a -1 HPN DRM in this special case.

12.5.23 Running—A Personnel unit using this form of movement is in Running cover ONLY when targeted by Opportunity Fire while in the act of using a movement impulse. Personnel units pushing guns are also considered to be in Running cover with the same Opportunity Fire restriction. Running cover provides a cover state modifier of 2R. Once play has moved on from the impulse used by a Running Personnel unit it is considered to be using Assault movement for the purposes of modifiers and being targeted by fire. Mark a Personnel unit using Running movement with a Winded marker to denote Running may not be used during consecutive turns (noting the exception for units marked with Courage; these may run each turn).

12.5.3 Cover & Terrain

The terrain rules and Terrain Chart provide the cover state for each terrain type. Emplacements supersede the cover state of terrain for units in or on them. The use of the term "applicable terrain" specifies cover provided by terrain and emplacements.

12.5.31 Good—Any unit in GOOD cover receives a 1L modifier.

12.5.32 Improved—Any unit in IMPROVED cover receives a 2L modifier.

12.5.33 Full—A unit may be in FULL cover

if marked with a Full Cover (FC) marker or under some emplacements. The modifier for Full cover is 3L if the unit is an eligible target, and the GF/HE equivalent is halved. Note: Units in Full cover are only eligible targets for Indirect Fire, Guns using the HPT and adjacent/same hex attackers, including Overrunning vehicles.

12.5.4 Other Cover Modifiers

As well as movement and terrain, there are other factors that affect cover. In addition to those listed below, there are also modifiers on the HPT that refer only to fire on that table. In all cases each ONE column shift LEFT provides a +1 HPN DRM on the HPT and each RIGHT a -1 HPN DRM.

12.5.41 Obscuring—Some terrain types disrupt fire through them. (e.g., Rock Strewn terrain). For EACH obscuring (also referred to as a 'hindrance' to fire) hex along an LOS provide a 1L modifier or +1 HPN DRM.

12.5.42 Smoke—If a unit fires into, out of or through a hex with smoke in it, apply a shift of 4L or a +4 HPN DRM. Burning wrecks, flame markers and smoke markers create smoke.

12.5.43 Leader directed—Leader directed attacks receive a modifier of 1R if directed by a 1|1|7 and 2R if directed by a 1|1|8. Commissars (1|1|*) do NOT direct attacks.

12.5.44 Airburst—An Indirect Fire HE attack against Personnel in airburst generating terrain receive a modifier of 1R. No HPN DRM are produced by Airbursts, they ONLY provide a column shift on the Casualty Table AFTER a hit is obtained by direct or indirect HE or aircraft bombs, using the HPT.

12.5.45 Cushion—An indirect or Direct Fire HE attack following a hit on the HPT against Personnel (only) in cushioning terrain receives a modifier of 1L. No HPN DRM are produced by cushioning effects, they ONLY provide a column shift on the Casualty Table AFTER a hit is obtained against Personnel by direct or indirect HE or aircraft bombs, using the HPT.

12.5.46 Fog of War—If a unit fires at one of the following units a modifier of 2L or a +2 HPN DRM is applied:

a) An H weapon with its FOW side up;

b) The original manning crew under an H weapon with its FOW side up;

c) A vehicle with its FOW side up (noting that it must be non moving since moving within an enemy LOS will flip a vehicle to its non FOW side in all cases).

12.5.47 Carrying a FT—A modifier of 1R is provided on the Casualty Table ONLY for any fire targeting a Personnel unit carrying a FT**.** No HPN DRM are produced by carrying a Flamethrower, they ONLY provide a column shift on the Casualty Table AFTER a hit is obtained against carrying Personnel by direct or indirect HE or aircraft bombs, using the HPT.

12.5.5 Full Cover

A unit under an eligible Emplacement or set up with a Full Cover (FC) marker on it is considered in FULL cover. When a unit leaves Full cover, remove the FC marker (if it has one) or place the unit on TOP of the just-exited emplacement.

12.5.51 Firing To And From Full Cover

Units in Full cover are only eligible targets for Indirect Fire, direct-firing guns and adjacent or same-hex attackers. A Mortar, whether manned by Personnel or in a vehicle, may fire from Full cover if an eligible mortar spotter is spotting for it AND if in full cover under an emplacement (this latter without the need for a separate spotter). Otherwise, units may only use Direct Fire against adjacent or same-hex enemy units in Full cover, and Personnel units may only make Grenade Attacks against eligible adjacent enemy units in Full cover.

12.5.52 FC Terrain and Set Up

Vehicles and Personnel may set up marked with an FC marker in certain terrain. Personnel may also set up in Full cover UNDER eligible emplacements or may 'drop' into FC when fired on if on top of these emplacements. Once an FC marker is removed, a unit may NEVER place an FC marker again during the course of play (it may only obtain Full cover under an emplacement after set up).

Refer to the following list of applicable terrain that units may set up in marked with FC markers:

a) Any non roof hex of a multi-hex building;

b) Behind Bocage hexsides to LOS of all enemy units (remove if an LOS exists after all units have set up).

12.5.6 Dropping Into Full Cover

A Personnel unit on top of an eligible emplacement may 'drop' into Full cover when an enemy unit fires on it. Use the following order: a) Enemy unit declares the attack; b) The owning player of the targeted Personnel unit declares if it will drop into Full cover (if eligible, i.e., not already marked as fired or moved); c) Fire is resolved if any effect can be obtained. If the Personnel unit dropped into Full cover, it benefits from that cover state against the just-declared fire (unless the fire cannot affect units in Full cover, in which case no attack die roll is made).

Refer to the following list of applicable emplacements that units may drop into Full cover when stacked on top of them:

a) AT-Trench;

b) Hedgehog;

c) Weapons Pit.

12.5.61 Eligible Units—A unit is eligible to drop into Full cover if stacked on the appropriate emplacement marker and not already marked with a fired or moved marker. Dropping into Full cover is considered the equivalent of using Crawling movement. However, dropping into Full cover is NOT an Opportunity Fire trigger. The unit is marked with a movement marker accordingly and may not move or fire that turn after dropping into full cover.

12.5.7 Leaving Full Cover

A unit may voluntarily exit Full cover in the following ways:

a) The unit exits the hex location it set up in marked with an FC marker;

b) The unit spends 1 MP to move on top of an emplacement marker from a Full cover position under it.

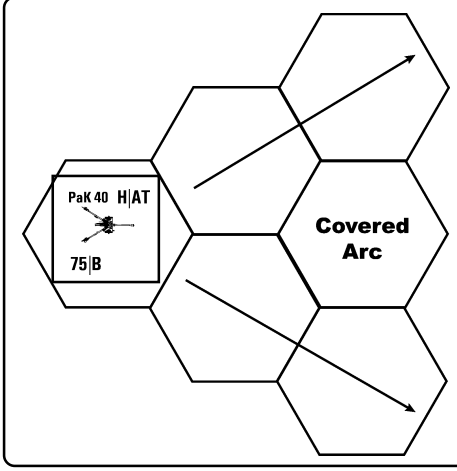
Note that once a unit 'drops' into Full cover it cannot exit the emplacement until the following turn at the earliest.

12.5.8 HE Vs Personnel Cover State

When using the HPT to attack a hex location containing multiple Personnel units in differing cover states, some may be hit, and others missed, depending on the applicable HPN DRM. Apply the appropriate DRM and make ONE die roll on the HPT to determine the units hit, noting that Casualty Table shifts are NOT applied (since the DRM are used on the HPT) except in the case of Personnel carrying Flamethrowers (FT), Air Bursts, and other column shifts specified as ALWAYS being applied on the Casualty Table. Note: When targeting Running Personnel units, other non Running units in the location are not affected by the attack or any resulting morale checks.

12.5.9 Gunfire Factors (GF) Vs Personnel Cover State

When an attack using ONLY the Casualty Table against a hex location containing multiple Personnel units in differing cover states, different column shifts apply based



In the example at left Covered Arc (CA) of the PaK 40 is traced through its front two hexsides, continuing out to include all hexes within the CA area enclosed by the arrows. To fire outside of this Covered Arc, the Heavy weapon (also referred to as a GUN)would have to pivot to face a new hexspine, thus changing its CA. If it turned ONE hexspine, a gun would have to add a HPN die roll modifier of '3', making it harder to hit a target after changing Covered Arc.

This example also describes the Covered Arc of any vehicle that does not have a turret. These are referred to as 'non-turreted' vehicles, or in the case of AFVs, Self Propelled Guns (SPG). Non-turreted vehicles must also pivot to engage targets outside their Covered Arc.

on the cover state of the target units. ONE die roll is made and all casualties are absorbed by the target units in the LEAST beneficial cover state (i.e., the right-most column used on the Casualty Table against any targeted Personnel units in the location). If those targets can't absorb ALL resulting casualties from THEIR column, using the same die roll, refer to the result in the column (i.e., always working columns from worst to best cover states) that applies for other Personnel units targeted. Apply this result to these units, deducting any 'C' results already absorbed by the previous units. If these additional Personnel units must still absorb casualties, apply them and move on to the next cover state if their are still 'C' results left to be absorbed.

Example: The enemy fires using 15 Gunfire Factors directly on the Casualty Table, targeting a Woods hex containing three friendly squads. Squad '1' is marked as moved (it used Assault movement) and also happens to be carrying a Flamethrower. Squad '1' receives cumulative shifts of 1R for Assault moving plus 1R for carrying a FT. It also receives a shift of 1L due to the Good cover provided by the Woods, resulting in a final shift of ONE RIGHT for Squad '1'. Squad '2' is also marked as moved after Crawling. It receives a cumulative shift of ONE LEFT column due to no shift for Stationary movement and 1L for the Woods cover. Squad '3' also Assault moved, and receives a total shift of ZERO due to 1R for moving and the 1L for the Woods. The Casualty Table die roll is a '2', resulting in a 'C5' (i.e., five Casualties must be absorbed) against Squad '1'. Since Squad '1' is the unit with the least favorable cover state, its 1R moves the attack to the '20' column on the table. Squad '1' is eliminated, absorbing FOUR Casualties. Since ONE Casualty remains to be absorbed, the next unit cover state is referred to, in this case Squad '3' which would receive a 'C4' result using the '15' column due to its cumulative ZERO shift. Since Squad '1' already absorbed FOUR Casualties, there is no further affect in terms of Casualties. All surviving units will have to check morale, applying a +5 for the C5 result (the highest one applied in the hex for that attack).

Example: Using the above example, if Squad '1' was already flipped to its Reduced side, it could only absorb TWO of the five Casualties called for by the C5 result. In this case, the next most vulnerable unit, Squad '3' would have to absorb TWO Casualties due to the C4 result in its column and the fact that Squad '1' only absorbed two Casualties.

12.6 DIRECT FIRE

Direct Fire represents the act of firing at enemy ground units within the firing unit's LOS. A separate rules section is provided for Opportunity Fire (when a friendly unit uses Direct Fire to engage moving enemy units).

12.6.1 Range and LOS

For all types of Direct Fire, determine the range by counting the number of hexes in the shortest contiguous path from the firing unit to the target hex. Do not include the firing unit's hex but do include the target unit's hex. Determine if there is an LOS between the firing unit and its intended target. If, after declaring his intent to fire the LOS is found to be blocked the firing unit is NOT marked as fired. The firing player is considered to have 'passed', i.e., his impulse is lost and reverts to the opponent. The unit(s) he wished to fire are free to fire during a later impulse if otherwise eligible (e.g., have not been destroyed in the interim).

It is strongly recommended players have the Play Aid cards at hand when reviewing the following rules sections.

12.6.2 Direct Fire Routines

Refer to the following routines when resolving Direct Fire attacks.

12.6.21 Small Arms—The term 'small arms' refers to the values for Gunfire Factors (GF) printed on Personnel, Light machine-guns (L|MG), Medium machine-guns (M|MG) and Light anti-tank rifles (L|ATR). These weapons ONLY use the Casualty Table when firing at Personnel targets. ATR and MG may also use the appropriate Hit Probability Table when firing at AFVs and APCs. Small arms attack in the following manner:

CASUALTY TABLE MODIFIED GUNFIRE EXAMPLE

ID	1	2	3	4	5	6	7	8	9
	GF	GF	GF	GF	GF	GF	GF	GF	GF
1	-	4	-	4	2	-	-	1	2
2	6	-	-	6	6	2	6	6	6
3	-	-	-	-	4	-	-	-	-
4	8	8	-	-	6	2	-	8	-
5	4	6	6	4	-	-	6	2	6
6	2	6	-	4	1	-	6	6	-
7	-	8	-	-	8	4	-	-	4
8	1	4	-	4	1	1	-	-	-
9	6	8	-	-	8	-	4	-	-

Number = Casualty Table column used for attack

LINE OF SIGHT EXAMPLE

ID	1	2	3	4	5	6	7	8	9
1	●	●	-	●	●	●	-	●	●
2	●	●	-	●	●	●	●	●	●
3	-	-	●	-	●	-	-	-	-
4	●	●	-	●	●	●	-	●	-
5	●	●	●	●	●	●	●	●	●
6	●	●	-	●	●	●	●	●	-
7	-	●	-	-	●	●	●	-	●
8	●	●	-	●	●	●	-	●	-
9	●	●	-	-	●	-	●	-	●

● = LOS IS GOOD

The tables above use the example at right on page 33. The Line of Sight Example provides for a simple review of the inter-relationships of different terrain on varying levels. The Casualty Table Modified Gunfire Example table uses the actual column used for each shot. For example, squad '8', with '5' printed Gunfire Factors, uses the '4' column on the table.

Squad '3' only has a LOS to '5' due to its LOS following the continuous road from R36 to R37, then as it exits the sunken road. It would also have a LOS to any adjacent units (e.g., hex S37; Q37). A unit in any adjacent hex would fire at '3' as if the latter were in open ground. A squad in Q37 would receive the one column shift LEFT for the hedge on the Q37-R36 hexside if fired at by '3'.

Squad '7' cannot see '8' due to the hedge on the Q36-R35 hexside.

Squad '4' fires at '1' using its full '8' Gunfire factors since it's up on a hillock, providing an unobstructed LOS over the crops in O380P38. Note when a LOS between two hexes of terrain goes right down the hexside, only ONE hex is added to the shot, i.e., not a TWO column shift LEFT, just one.

The walls adjacent to hex O35 have no impact on fire at or by squad '6' since it is at Level +10, above the +5 walls on ground level. For the same reason, Squad '2', up on a hillock, can see Squad '7' and fire at it ignoring the hedge in R37/Q38. Squad '6' cannot exit its hex from its current location. It will have to use 2 MP (or infiltration) to move 'downstairs' to the ground level location. If '6' was in the ground level now, the only squads it could see would be '8' and '7'. Note fire at '6' would either receive the benefit of the wall OR the building (squad '6' owning player's choice), not both.

If squad '3' was in hex R35, it could exit the sunken road moving along the road, into Q35 at the cost of 1 MP. Hex R35 is at the same level as Q35. If it wanted to move from R35 directly to R34, it would pay 2 MP + CoT.

1) Tally the total GF for all firing units;

2) Apply any applicable target column shifts;

3) Make a die roll on the appropriate column of the Casualty Table when firing at Personnel (including Crews of M and H weapons);

4) Refer the result from the Casualty Table to the appropriate row and column on the Attack Results Vs Vehicles And H Weapons table when attacking vehicles and H weapons.

12.6.22 Attacks using the HPT—Guns (including any weapon using the HPT to secure a hit) use the following procedure:

1) Determine the Hit Probability Number (HPN) by cross-referencing the range and the Gun Value and Gun Size (e.g., '75|C') on the Hit Probability Table (HPT) or the HPTs provided for MG and SCW weapons;

2) Apply any HPN DRM to the die roll needed to secure a hit on the target vehicle or H weapon; or target(s) plural in the case of firing at Personnel; HPN DRM are listed beneath the HPT and are also used when firing MG and SCW on their separate HPTs;

3) A HIT is obtained against the target(s) if the DRM modified die roll is less than or equal to the HPN; if greater, the target is missed and the attack has no effect.

12.6.23 Personnel as Targets—Use the following routine whether attacking with small arms, directly on the Casualty Table and for attacks that first required a HIT on the HPT to be obtained:

1) Roll a die and cross-reference the DR with the appropriate column on the Casualty Table matching the GF (for small arms firing without the HPT), FRAG equivalent (e.g., for Grenade Attacks) or HE (matching Gun Size of the firing unit) after a hit is obtained on the HPT. A result of '-' results in no effect. A 'C' followed by a number results in that quantity of Casualties, followed by a morale check using the HIGHEST C# obtained against any Personnel target by the attack that caused the 'C' as a morale DRM for all surviving attacked Personnel.

12.6.24 Vehicles as Target—There are two ways Direct Fire can affect a vehicle target: small arms (using the Casualty Table without a roll needed on the HPT); and weapons using the HPT (i.e., requiring a HIT to be obtained to cause a result to the target).

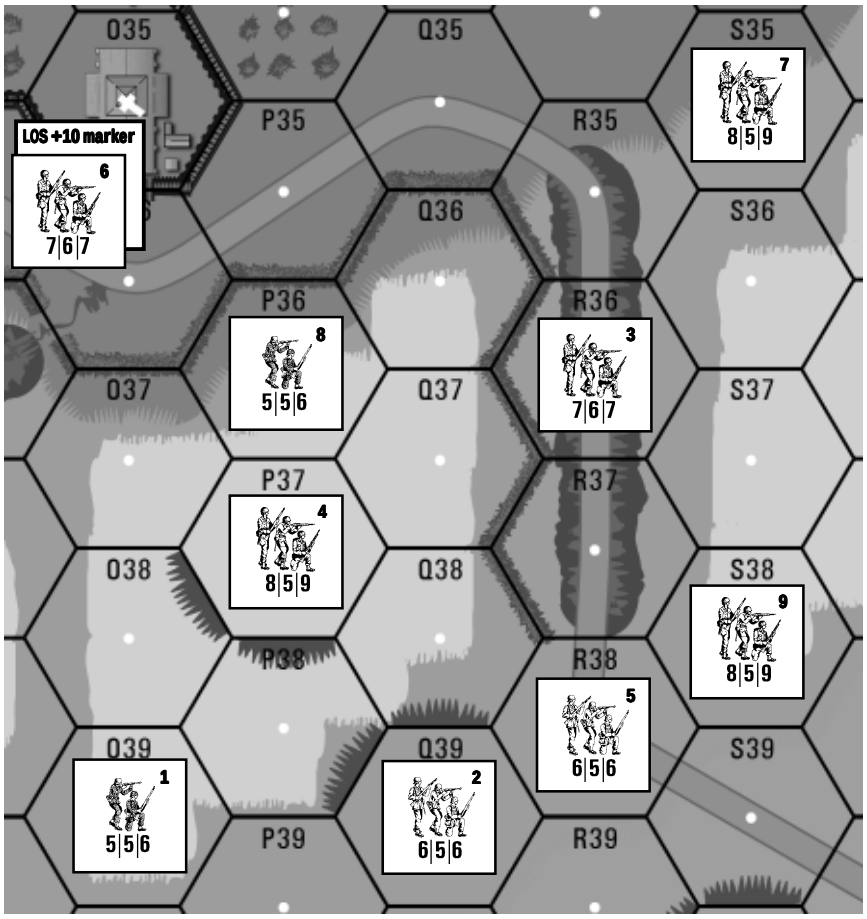
12.6.25 Small Arms—Can only cause a SUPPRESSION result against AFV and APC vehicles when attacking with Gunfire Factors. Make a die roll using the appropriate column of the Casualty Table and cross reference the result (if any) with the appropriate column on the Attack Results Vs Vehicles and H Weapons table (and the Suppression Table Vs AFVs, using any C# as a DRM). See 12.10.83.

12.6.26 H Weapon and Vehicle Main Armament Firing On HPT

1) After obtaining a HIT on the HPT, a roll is then made on the Hit Location Table to determine the target ASPECT struck;

2) Use the AFV Card for the target vehicle and compare the Armor Factor (AF) for the facing/aspect struck to the (found on the Gun Penetration Values table on Play Aid 5 (OR use the values found on the HE Penetration Table [HE] if firing HE) for all nationalities [and repeated on AFV Cards for convenience]) Penetration (PEN) value; PEN is obtained by cross-referencing the firing range to Gun Size (and using the row for the appropriate ammunition or using the Gun Size on the 'HE' table); this comparison calculates the AF to PEN 'Differential' (DIFF);

3) Make a die roll on the appropriate DIFF column of the K-KILL Table; apply a K-KILL result (i.e., replacing the vehicle counter with a non burning wreck); a 'BURN' result (replace the vehicle with a burning wreck marker) OR on a 'POSS K-KILL' result, make a immediate die roll on the M- or F-KILL Tables and apply any resulting M- or F-KILL result obtained INSTEAD of a K-



The example at left is used for the Line Of Sight Example and the Casualty Table Modified Gunfire Example on page 32. The map used in this example is Scottish Corridor mapsheet 1.

Squad '1' is in a crops hex on Level +10. It has no LOS to squad '3' since the latter is down in a sunken road. It also cannot see '7' due to the hedge in the R36-Q37 hexside. The hedge is +5 levels high and blocks same level (or lower) LOS. Squads '1' and '7' are both on Level +10.

Squad '6' has a LOS to '1', '2', '4', '5', and '8' because it is up in the steeple in hex O35. It has to pay for the crops in hexes O37 and O38 when firing on '1', with each reducing its fire by one column LEFT. Its shot on '4' is reduced by one column due to the crops in P36. It ignores the hedge on the P36-O36 hexside as it is lower than the firing and target unit. The hedge is on Level 0. Squad '6' does not pay for any crops along the LOS to '2' since the latter is on a hillock in hex Q39, raising it up +5 levels and allowing it to see, and be seen, over +5 terrain like crops, hedges, walls, and wrecks.

Squad '3' can ONLY see '5' since the former is down in a sunken road. And since a sunken road is -10 levels below the terrain it cuts into, '5' is treated as if fire from '3' crosses a +10 hill hex, providing a one column shift LEFT from '3'. If squad '3' was a gun instead, a +1 HPN DRM would be applied against '5' instead of the column shift.

KILL (i.e., no wreck marker is placed; place M- or F-KILL markers instead);

4) A roll is made on the Suppression Table whenever a roll is made on the K-KILL Table that does NOT result in a wreck (of any type), including when M- or F-KILL results are obtained.

Note: To speed up play, roll two dice at once: white for the Hit Location Table and colored for the K-KILL Table.

The results on the K-KILL Table are explained below:

a) BURN—A die roll less than or equal to this number replaces the AFV counter with a burning wreck marker.

b) K-KILL—A die roll less than this number but greater than a BURN number replaces the AFV counter with a non burning wreck marker.

c) POSS K-KILL—On a die roll EXACTLY equal to the values found in this row another die roll is made on the M-KILL or F-KILL table, depending on the aspect struck. A result on either of these tables places an M-KILL or F-KILL marker INSTEAD of a non burning wreck. If NO RESULT occurs on the M- or F-KILL tables, a K-KILL results INSTEAD.

12.6.27 Small Arms Vs Non AFV Vehicles and H Weapons—Small arms may only cause a Suppression result against AFVs and APCs (subject to a roll on the Suppression Table). They may have no effect against H weapons (or any other weapons and instead attack manning crews as Personnel targets) with the exception of 36+ Gunfire Factors, which cause an automatic roll on the F-KILL Table against H weapons whether manned or not. Small arms can affect truck type vehicles using Gunfire Factors used directly on the Casualty Table. Compare the result (if any) to the Truck row on the Attack Results Vs Vehicles And H Weapons table. Any casualties result is ALSO applied against any Personnel unit transported in the truck. In the case of a K-KILL, replace the truck with a non burning wreck marker and place surviving Personnel in the hex, applying all casualties and checking morale as appropriate. ALL transported Personnel are eliminated in a BURN result (and the truck counter is replaced by a burning wreck marker).

a) Use the Attack Results Against Vehicles And H Weapons table (noting this table simply refers players to the K-KILL Table for Direct Fire Vs AFVs).

12.6.28 Other HPT Attacks Vs Non AFV Vehicles and H Weapons—Any weapon capable of using the HPT (including the separate HPTs provided for MG and SCW weapons) uses the K-KILL Table when attacking an AFV. When attacking APCs, truck type vehicles and H weapons, use the Attack Results Vs Vehicles And H Weapons table after securing a HIT on the HPT.

12.6.29 Personnel F-KILL attempt—Occasionally a large volume of small arms fire would damage an AFV's optics. Personnel may attempt to obtain an F-KILL using Gunfire Factors (GF). If a C8 or greater result from Gunfire Factors fire (i.e., an attack that does not use the HPT, e.g., Personnel GF; MG; etc.) on the Casualty Table on the FRONT facing of an AFV (must be FRONT of a turret for turreted AFVs). Make a roll on the F-KILL Table using the 'C8+' row. A successful die roll places an F-KILL marker normally. Note that the vehicle would ALSO roll for Suppression.

12.6.3 Small Arms

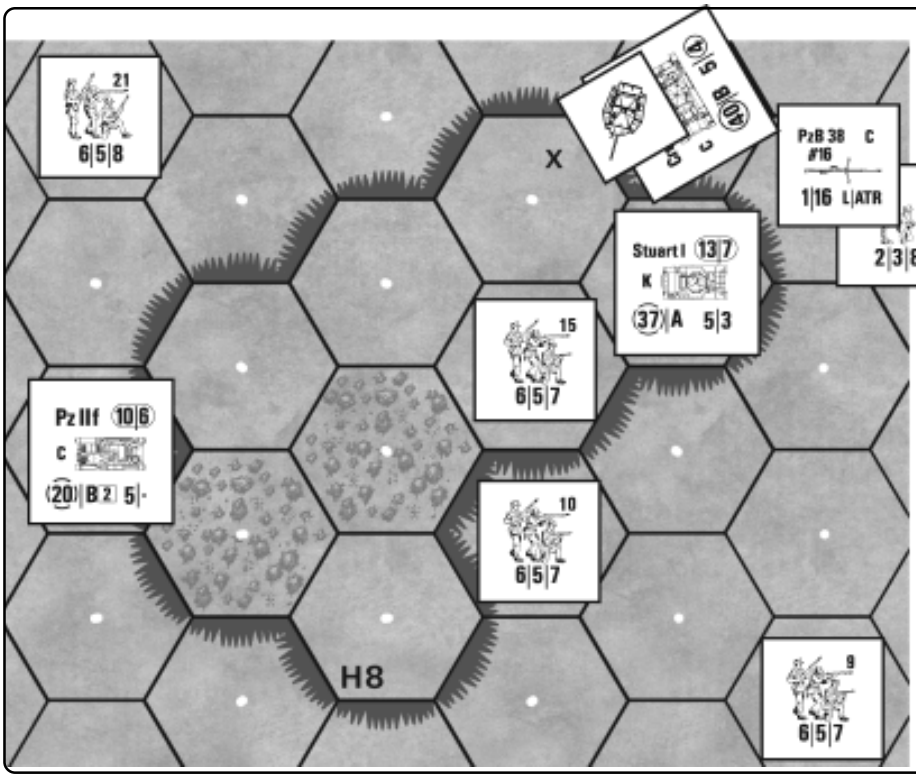
Small arms represent infantry weapons, such as rifles and sub-machine-guns, and Light and Medium weapons like machine-guns and anti-tank rifles when used directly on the Casualty Table. Personnel, Light and Medium MG, and L|ATR have values for Gunfire Factors (GF) printed on their counters. Most AFVs and APCs (and some truck type vehicles) are also equipped with machine-guns, and have these values printed on their counters. Gunfire Factors (only) may be modified by Long-Range Fire, Assault Fire, and in the case of Personnel, reduced for weapons carried by the unit. Casualties markers also reduce the GF by ONE for SQUADS (including reduced squads) ONLY. Personnel using small arms (and APCs and trucks using MG) may combine their fire to form a 'Firegroup'. AFVs may not form firegroups but APCs can when using their MGs.

12.6.31 Light and Medium weapon Firepower Reduction

Any Personnel unit (including Crews and Leaders) carrying an L weapon must subtract one from its GF value (not the GF of the weapon itself). For each M weapon carried, subtract TWO. A leader may fire an L weapon but may not use its printed '1' GF in the same turn. Two leaders (worth 1 Stacking Point each) may combine to fire an M weapon, if at least ONE is carrying the weapon. BOTH lose their '1' GF of small arms firepower, signified by stacking both leaders under the weapon. Reductions for carried weapons are made before any modifications for Long Range Fire and Assault Fire and there is no additional effect on a REDUCED crew when firing a carried M weapon (than a reduction in ROF to '1').

12.6.32 Long Range Fire

Personnel Gunfire Factors, L|MG and



In the example at left, Crusader 'C' is in a Hull-Defilade position to Pzkw IIf 'C' (and vice versa). It can ONLY be hit in the turret, which is showing the Crusader a FRONT facing. The Crusader is not in defilade from ATR 'C'—it can be hit in the hull REAR or turret SIDE.

Squad '9' has no LOS to squad '21'. Squad '15' has a LOS to all the units shown and is at Level +5.

Squad '10' can see squad '21' and is in GOOD cover to '21', Pzkw IIf 'C', Stuart 'K', and Crusader 'C'. If squad '15' was an enemy unit, it would deny the GOOD cover when firing at '10' due to being ADJACENT.

Stuart 'K' is not automatically in Hull-Defilade—it may roll when in an hex up on a hillock—after setting up in or entering the hex. If squad '21' was ALSO on a hillock, it could still see '10' (and '15' and '9)'.

If '10' was in FULL cover in a hedgehog, it would be out of LOS of all units in the example except '9' and the adjacent '15'.

M|MG, and vehicular-mounted MG (only) may fire at a range greater than their printed range. This is known as Long Range Fire and may be used at HALF strength for hexes beyond normal range and up to DOUBLE the printed range. No other weapons may fire beyond the range MAXIMUM printed on their counter, designated by a number following a '#' on some L|ATR, L|SCW, L|MTR, FT and M|MTR counters (and vehicles equipped with these weapons).

12.6.33 Assault Fire

Personnel using Crawling or Assault movement types may fire their small arms Gunfire Factors and any carried LIGHT weapons while in the act of moving. Weapons may also be fired by vehicles using Assault movement. In all cases firing on the move is known as Assault Fire and in all cases units using Assault movement (including Crawling) fire non HPT shots at HALF their GF value, calculated before applying any reduction for Long Range Fire. Vehicles and Personnel using L|AT and SCW weapons may use Assault Fire to attempt to obtain hits using the HPT, applying a +5 HPN DRM.

12.6.4 Firegroups

Personnel, including any carried L|MG, M|MG and L|AT weapons (and MG/L|AT mounted on APC and truck type vehicles) NOT using an HPT, may combine their Gunfire Factors to attack the SAME target hex with small arms fire. This form of attack is known as a Firegroup and may only use Direct Fire directly on the Casualty Table (i.e., no form of HPT use is allowed for Firegroups) with certain restrictions. All MG of the same vehicle may combine their GF by themselves in a form of one unit Firegroup.

12.6.41 Restrictions

All units of a Firegroup must be in the same or adjacent hexes (and locations within a hex in hexes with multiple locations, e.g., units on two levels of a building cannot form a Firegroup unless there is a no more than one level between them and a Stairwell exists). Units in a Firegroup do not need to be adjacent to every other unit in the Firegroup but there cannot be a break in the 'chain' and it may no total more than THREE hexes. There must be a non Broken/surrendered leader in at least ONE location and at least one unit in each location must be eligible to fire and take part in the Firegroup with two exceptions:

a) A leader may be alone in a hex, providing a 'link', and instead of firing WITH the Firegroup, provide his leadership shift TO the attack OF the Firegroup;

b) All units of the Firegroup are in the SAME location of a hex.

Only ONE leader may apply its leadership to a Firegroup attack. Eligible friendly units in the same location may ALWAYS form a Firegroup. However, German and Italian units must have a GERMAN leader in at least one location of the Firegroup in order to combine their fire. Only one hex may be targeted at a time by a Firegroup.

12.6.42 Leadership

A leader must be otherwise eligible to fire to provide Leadership to a Firegroup. At least one leader must provide Leadership for a multi-hex Firegroup to exist. The leader may not use its GF or a carried weapon. The leader's printed range is ignored when leading a Firegroup. If a leader leads a Firegroup, a Leadership' column shift of one for NCOs (1|1|7) and TWO columns to the right for Officers (1|1|8) may be applied to (a) that fire and (b) subsequent fire impulses provided by the ROF of any machine-gun(s) in the Firegroup. Only ONE leader may direct a single Firegroup. Additional leader units provide no additional benefit and may add their printed GF or that of any weapons they carry to the total of a Firegroup they are part of. A leaders-only Firegroup may form AND receive RIGHT column shift(s) as ONE of them must 'lead' the Firegroup (i.e., does not contribute any GF or use its weapon). There is no requirement that the highest 'ranking' leader must 'lead'.

12.6.43 Impulse Use

Units in the same location that wish to fire at the same target hex need not form a Firegroup, in which case EACH firing opportunity uses a separate impulse. Each shot by a Firegroup uses ONE impulse.

12.6.5 Continued Fire

Place a Continued Fire ('C') marker in any hex that receives Direct Fire from SIX Gunfire Factors (or their equivalent in FRAG Factors on the Casualty Table) from a STATIONARY firing unit. Fire from a moving unit and Indirect Fire never places 'C' markers. The 'CF' in the '6' Gunfire Factors column on the Casualty Table is a reminder of this rule.

12.6.51 Entering a C Marker

Any Personnel unit that enters a 'C' marker hex without using Crawling movement must take an immediate morale check. If the morale check results in a failure, the unit suffers casualties equal to the amount by which the unit failed the check. Treat all Continued Fire morale checks as normal morale checks for all other purposes. Example: A unit may receive a Courage result from a 'C' marker morale check.

12.6.52 Removing C Markers

Remove all C markers at the end of the Fire & Movement Segment.

12.6.6 Fire Restrictions

Certain restrictions limit fire opportunities and reduce ROF and Gunfire Factors during attacks. No unit or weapon may split one 'shot' of GF or one hit attempt on the HPT between two different target hexes, but a unit with a ROF greater than one, a vehicle with multiple weapons, or a Personnel unit carrying a weapon(s) may target different hexes.

12.6.61 Impulse Use—When ONE unit fires, it uses ONE impulse, even if multiple weapons are used. Example: An AFV may fire its main armament (usually a Gun) AND its machine-guns during ONE impulse, and may target more than one hex in the process. Note: A unit so-used may draw a Gun Duel BEFORE it can finish using its weapons during an impulse.

12.6.62 Rate of Fire

No unit may fire more than its available ROF. Units lacking a ROF value (found in a blue box) receive a default ROF of '1'. A Personnel unit may only fire its Gunfire Factors ONCE per turn (using an impulse). Units with multiple weapons (e.g., an AFV with gun, CMG and BMG weapons) may fire EACH weapon during the use of ONE impulse, but each weapon with an ROF of greater than one must use a separate impulse for each ROF usage.

12.6.63 Carried weapons

A Personnel unit's inherent Gunfire Factors are independent of any weapons it carries. A Personnel unit may fire all carried weapons if otherwise eligible to fire.

12.6.64 Non eligible targets

Personnel units may not fire into LOCATIONS containing other friendly Personnel units nor those containing surrendered enemy units, unless they also contain at least one non surrendered enemy unit.

12.6.7 Pivoting & Covered Arc

All Light and Medium weapons have a 360-degree field-of-fire and may fire in any direction without restriction. All H and vehicle-mounted weapons have a restricted field-of-fire known as a Covered Arc (CA). These weapons must 'pivot' to fire at any target outside of the current CA (considered to be to the FRONT two hexes for all vehicles unless marked with a TURRET marker in which the CA of the turret is used instead) and always to the front two hexes of all Guns.

During Direct Fire (or Opportunity Fire), a vehicle may change the facing of the vehicle (i.e., change its Vehicle Covered Arc [VCA], separate from that of its turret) and/or pivot its turret any number of hexspines before it fires. The appropriate HPN DRM (or Casualty Table left column shifts for non HPT fire) are applied to any fire conducted during the impulse (or Opportunity Fire shot) used when pivoting. When moving, a vehicle pays ONE Movement Point for each hexspine it pivots its VCA. It may independently pivot its turret one hexspine for each MP it spends while IN a hex (not TOTAL MP spent during the move). Heavy weapons may also change their CA without firing. If hidden, a unit changing CA without firing may stay hidden if not in the LOS (and Spotting Range if in use) of an enemy unit.

Pivoting is a 'trigger' for Opportunity Fire, but the pivoting unit may change covered arc one hexspine BEFORE Opportunity Fire can take place against it. Mark a unit that pivots but does not fire with a Moved marker. A Hidden unit that changes its CA may stay hidden if it is not within LOS and Spotting Range of any enemy unit.

When pivoting, turn the entire gun or ve-

hicle counter to face its new covered arc OR just the turret of a vehicle that has one. Some guns are on 360-degree gun mounts and pivot like a turret—just turn the entire counter. A player may decide to turn the entire vehicle even when using a turreted vehicle (e.g., to face its stronger frontal armor to an enemy threat) and any combination of vehicle AND turret covered arc changes apply cumulatively to any shot taken immediately following the pivot.

All vehicles are considered non-turreted (i.e., may only fire within the two hexes of their front covered arc without turning the entire counter, i.e., changing VCA) unless marked as a turreted weapon by a circle or dashed-line circle around the Gun Value. Non turreted units ALWAYS pay a +3 HPN DRM (or 3L column shift directly on the Casualty Table for non HPT fire) for the first hexspine pivot AND +1 per additional hexspine change thereafter. Turreted and 360-degree guns with a solid circle around the gun value are considered 'Fast' traverse turrets/guns and pay +1 for the FIRST and ALL subsequent hexspines pivoted. Units with a dashed-line circle around their Gun Value pay +2 for the first and +1 thereafter and are considered 'Slow' traverse turrets. Each '+' penalty for pivoting a turret also provides a one column shift LEFT for any thusly-pivoted vehicle or turret-mounted machine-gun (or semi-automatic weapon) firing directly on the Casualty Table.

When a weapon with multiple ROF pivots to shoot without moving, it only applies the HPN DRM for a pivot on the FIRST HPT die roll following the pivot(s). Its second and any subsequent HPT shot receive no HPN DRM unless the unit pivots AGAIN before making a new die roll on the HPT. Any multiple ROF vehicle MG is treated in the same manner when pivoting.

12.6.8 Guns

The term 'Guns' refers to all weapons when they must obtain a HIT on the HPT before affecting a target, noting semi-automatic fire does not require an HPT hit. Both vehicular-mounted main armament (MA) and Heavy (i.e., 'H') crewed weapons are ALWAYS used as Guns. Rules that apply to 'Guns' also refer to Light and Medium weapons such as M|MG and L|AT when using the HPT (noting that MG and SCW use their own HPT versions). With the exception of L|MG (which can never be used on the HPT), M|MG and L|ATRs, Guns always have a Gun Size value (representing their bore in millimeters, e.g., '75' depicts a 75mm gun) instead of a value for Gunfire Factors on their counters.

12.6.81 Firegroup restriction

No weapon may form a Firegroup when using the HPT.

12.6.82 Maximum range

Except for LIGHT and MEDIUM weapons with a RANGE '#' printed on their counters, Heavy weapons do not have a maximum or minimum range limit. They may fire at any range, unless the basic hit probability number on the HPT is '-' or otherwise ZERO due to applied HPN DRM.

12.6.9 Same hex fire against vehicles

When firing at a vehicle in the same hex or location, the column for '0' range is always used. Determine the target facing at '0' range by using the direction a moving vehicle entered the hex. If both units occupy the same hex at the beginning of an impulse, the facing considered the same as when the last moving vehicle entered the hex.

12.7 OPPORTUNITY FIRE

Opportunity Fire allows friendly units to use Direct Fire against enemy unit(s) that move in the firing unit's LOS (and Spotting Range if in use) during the Fire & Movement Segment. The firing player may check if he has an LOS to the moving unit and there is no penalty if none exists (unlike when using an impulse to fire). The following are considered 'triggers' for Opportunity Fire purposes:

a) Any expenditure of a Movement Point;

b) Loading Personnel for transport;

c) Pivoting vehicles, turrets, and Heavy weapons.

For a turret, vehicle or gun pivot, Opportunity Fire cannot be initiated until a ONE hexspine change in covered arc is made by the triggering unit.

12.7.1 Eligibility for Opportunity Fire

A unit that wishes to use Opportunity Fire must be otherwise eligible to use Direct Fire. Vehicles marked as Moved already, including vehicles using Continued or Assault movement, may not use Opportunity Fire. Opportunity Fire is conducted during the Fire & Movement Segment against moving units and all rules for Direct Fire apply normally. Targets using Running movement (including Personnel pushing guns) suffer from the Running cover state ONLY when attacked by Opportunity Fire (or if moving through an FFE hex). Otherwise, the cover state is Assault for all assault moving Personnel units, and Stationary for all Crawling and crews of pivoting Heavy crew-served weapon units.

12.7.2 Opportunity Fire Limit

A unit may not use more Opportunity Fire ROF against a moving unit than the target unit spent in MP in:

(a) the hex entered; or a unit or turret pivoted;

(b) the hex moved in when entering a new hex location if moving within a hex.

There is no need to count MP in the hex location a target unit stops in, only the hex locations it moves THROUGH. In other words, there is no ROF limit tied to MP against an Opportunity Fire target in the hex it ends its move in. Otherwise, units utilize ROF normally.

12.7.3 Opportunity Fire & Assault movement

Against units using Assault movement, Opportunity Fire always takes place in the following order:

1) Enemy unit moves or pivots, triggering Opportunity Fire;

2) Individual Opportunity firing units use ONE available firing opportunity (unlike firing during an impulse, which allows ALL firing opportunities subject to Gun Duels);

3) Assault Moving unit may fire one shot (if eligible);

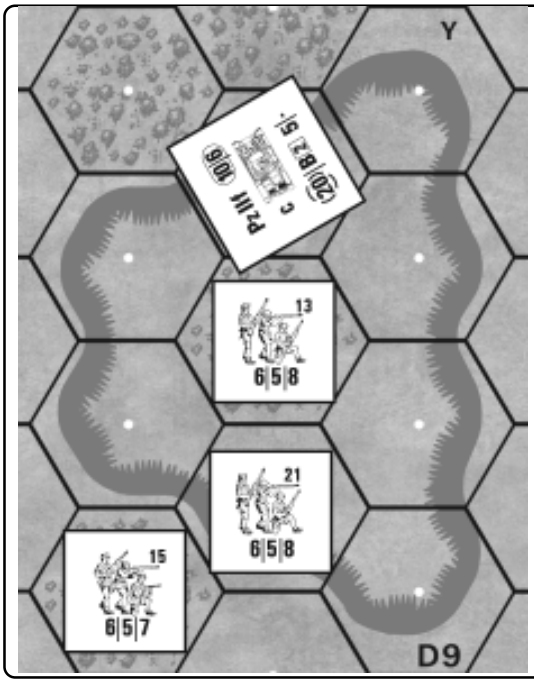
4) Opportunity firing unit(s) may use remaining ROF in the same manner as 1-3 above subject to stated restrictions.

12.8 ASSAULT FIRE

In certain cases units using Assault movement may move AND fire. This is known as Assault Fire.

12.8.1 Personnel Assault Fire

Personnel may both move and fire their



In the example at left, Pzkw If 'C' is in a hull-defilade position across the down contour hexsides in its hex (the front two hexes corresponding with its VCA). If squad '15' was an enemy AFV, Pzkw IIf 'C' would NOT be in hull-defilade to its fire.

Squad '15' can see all units in the deir. If it was one hex back (away from the deir), it could NOT see '13' unless the latter was Running or using Assault Movement. Also, if '15' was back away from the deir contour, squad '21' would get the benefit of being in GOOD cover. Being adjacent to '21' denies this benefit (making it in STATIONARY cover).

If squad '15' was backed away from the deir BUT was up on Level +10 or greater (or on +5 and within FIVE hexes to the target hex in a deir) it could see into all hexes of the deir.

printed Gunfire Factors and any carried LIGHT weapons under certain circumstances. A Personnel unit that utilizes Crawling or Assault movement may fire at half its normal Gunfire Factors DURING its movement impulse (i.e., before the opposing player uses an impulse or any additional friendly impulses are used and noting a Running unit may never use Assault Fire). Light weapons may be used normally, albeit with lower efficiency (+5 HPN DRM on the HPT; Gunfire Factors HALVED for non HPT attacks).

12.8.11 Platoon Use—Personnel units moving as a Platoon may use Assault Fire as a Firegroup but units in a Platoon are NOT required to all fire at the same time and must otherwise meet all Assault Fire restrictions. Assault firing units may not Firegroup with non-moving units.

12.8.12 Restrictions

An Assault moving unit may use Assault Fire before moving, during its move (after it spends any MP), or in the last hex it enters. Assault Fire must be used by a unit during its movement impulse. The unit cannot save its Assault Fire for later use.

12.8.13 Reduced ROF

Light weapons (e.g., L|MG) are considered to have a ROF of ONE when using Assault Fire and thus may only fire once during the impulse. A Personnel unit carrying an L weapon does NOT have to fire at the same time as the weapon, nor at the same target, as long as ALL Assault Fire is conducted DURING it's movement impulse.

12.8.2 Vehicle Assault Fire

12.8.21 Multiple Weapons—Vehicles may fire all available weapons when using Assault Fire. Vehicle weapons also receive the Assault Fire +5 HPN DRM and non HPT fire is HALVED.

12.8.22 Vehicle ROF—Unlike Personnel, when using Assault Fire vehicles may use their entire ROF but may only use ONE shot of its ROF (for weapons that have multiple ROF; any combination of weapons [e.g., CMG] that have a ROF of one may fire during the same MP expenditure) for each MP spent in a hex it fires from. Note, vehicles may spend more MP in a hex than is required to enter, thus affording additional ROF opportunities as MP are spent. ROF is never increased for BOT marker placement when using Assault Fire.

12.8.23 Platoons—All fire from an AFV Platoon must be done with the same restrictions as Personnel Platoon movement. Platoon movement and Assault Fire may be combined and AFVs of a Platoon are neither required to all fire at the same time nor at the same target.

12.9 GUN DUELS

In some cases, an AFV or Heavy crew-served weapon unit may return fire immediately when fired on using the HPT (only on HPT shots) during the Fire & Movement Segment. Known as a Gun Duel, in the following rules the unit returning fire is called the 'responding' unit. Once initiated, a Gun Duel is completed before any other action takes place. A player responding to enemy fire with a Gun Duel is not considered to be using an Impulse in the same manner as Opportunity Fire. Mark units that fire in a Gun Duel with an 'F' marker normally.

12.9.1 Eligibility

To take part in a Gun Duel the responding unit must be otherwise eligible to fire AND currently have a BOT marker on the firing enemy unit. Example: A gun that has already used its ROF before it is fired on cannot take part in a Gun Duel. The responding unit must have the enemy firing unit in its current Covered Arc, i.e., it must be able to fire without pivoting vehicle or turret. Suppressed vehicles may take part in Gun Duels. A Gun Duel is declared by the responding player BEFORE the firing player makes a roll on the HPT following the announcement of his shot.

12.9.2 Responding—If the responding unit currently has a BOT marker on the enemy firing unit, after the responding player declares a Gun Duel the first shot is considered to be SIMULTANEOUS. Both sides roll and the player rolling LOWEST is considered to have fired first (i.e., if the shot renders the enemy unit unable to fire for any reason, its shot is considered to have never taken place). If the rolls result in a tie, the firing player is considered to have fired first. The losing unit then uses one ROF (if still able), after which the opposing player's unit may fire on the HPT again, and so on. Unless a BOT marker is in place by the responding unit, a Gun Duel may NOT be declared.

12.9.3 Sponsons And Multiple Weapons

For Gun Duels involving AFVs with sponson-mounted (e.g., Grant; Lee) or turret MA and hull-mounted Guns (Char B1 bis; Pzkw B2), BOTH weapons may duel independently with two different targets (or one target) if they have BOT markers in place. Each weapon is treated independently during a Gun Duel (i.e., each receives its own die roll).

12.10 COMBAT TABLES

This section provides detailed explanations of the charts and tables used to conduct combat. It is strongly recommend players have their Play Aid cards available when reviewing this section. Each table is provided its own ID (e.g., the Casualty Table ID is 'F2').

12.10.1 Casualty Table (F2)

The Casualty Table is used for ALL fire that does not involve the Hit Probability Table. When using the Casualty Table to attack an enemy unit, no roll is made on the HPT. Simply tally the number of Gunfire Factors being used against one hex and use the appropriate column on the table. For artillery attacks, use the HE column equivalent to the artillery being used. Example: When 88mm artillery attacks on the Casualty Table, use the '80' column, i.e., 20 FRAG Factors.

12.10.11 Determine The Column Used

(a) When using Gunfire Factors this is the highest numbered column in the GF|FRAG row that is not greater than the total attacking GF. Example: A Firegroup totaling 28 Gunfire Factors attacks an enemy hex. It uses the '24' column on the Casualty Table.

(b) Similarly, when using weapons calculated in FRAG Factors, the appropriate column is the highest numbered column in the GF|FRAG row that is not more than the total FRAG. Example: An attack totaling 18 FRAG Factors uses the '14' column.

(c) When using HE (for mortars, off-board Indirect Fire, or Guns) the appropriate column is the highest numbered column in the HE row that is not more than the Gun Size. Example: A 75|C Gun has a Gun Size of '75' uses the '14' FRAG column.

(d) When asked to use half the FRAG factor to an HE-equivalent, find the GF|FRAG column equivalent to its size and then use the highest column which is not more than one half that value. Example: A 76mm mortar is firing in a case that demands you use half the FRAG Factors. Normally the mortar would use the '75' column on the HE row which is the same as the '14' column on the GF|FRAG row. Half of 14 is 7. Use the '6' column in the GF|FRAG row.

12.10.12 Apply Cover State Effects Table (F1) Shifts And HPN DRM

Apply cover state shifts on the Casualty Table for small arms against Personnel fire, applying any column shifts on the Casualty Table for the target unit(s). Note: Refer to the F1 table for HPN DRM when using the HPT. Shifts that are ONLY used on the Casualty Table are noted by a 'C' on the F1 table. Apply any column shifts left or right according to the modifiers, to derive the final column to be used for the attack. Example: A Firegroup totaling 12 GF, directed by a 1|1|7 NCO fires on a target in Improved cover. The starting column is the '10' column on the GF|FRAG row. The improved cover gives two shifts left (2L) and the leader provides one shift right (1R) for a final modifier of ONE shift LEFT. Use the '8' column on the GF|FRAG row. If the shift takes the column to the left of the '1' column on the GF|FRAG row the attack automatically has NO EFFECT and any attacking unit are still marked as fired if the opponent announced the attack and the final tally of shifts turns out to reduce the attack to less than the '1' column. Note that different cover state shifts may apply for different units in the target location. The most 'exposed' target unit(s) always absorb casualties before other units in the target location.

12.10.13 Roll the Result

Cross-reference a die rolled with the Casualty Table column that applies to the attack. A '-' result means the fire has no effect (Exception: 8+ GF still result in a roll on the Suppression Table against AFVs and

APCs). A "C#" results in casualties equal to the "#" result, or inflicts damage on a vehicle or H weapon as per the Attack Results Vs Vehicles and H Weapons Table.

12.10.14 Apply the result

(a) Apply the C# result to Personnel units. The owning player chooses the units to absorb casualties among targeted units in the same cover state.

(b) If Personnel units in the targeted location are in more than one cover state, cross reference the die roll with the appropriate column on the Casualty Table for the units in the least beneficial cover state used; all Personnel in that cover state absorb all casualties called for in the Casualty Table column that applies to them BEFORE other Personnel units absorb any casualties. If there are still casualties to be absorbed and all Personnel units in the least beneficial cover are eliminated, cross reference the original die roll with the column for the least beneficial cover among all surviving units. Apply this result (if any), less any casualties ALREADY absorbed. Continue this process until no further casualties need to be absorbed or no friendly units remain in the attacked location.

Example: A Firegroup with 22 GF attacks a Woods hex occupied by three units. The first unit is an Assault moving squad with a flamethrower. It has cover state modifiers of 1R for assault moving, 1R for the FT and 1L for the cover state provided by the Woods, for a final shift of 1R. The second unit is an Assault moving Leader. It has cover state modifiers of 1R for Assault moving and 1L for the Woods for a final modifier of ZERO shifts. The third unit is a stationary crew. Because of the Woods it has a cover state shift of 1L. The attack starts on the '20' column on the GF|FRAG row. The attack uses the modifier least beneficial to targeted units, i.e., the 1R. The attack resolves first on the '24' column against the squad + FT. The firing player rolls a 3 for a result of C5. The owning player must first apply the C5 against the unit in the least favorable cover, the Assault moving squad. C5 eliminates it, absorbing FOUR of the casualties called for in the C5 result. The firing player now recalculates the fire with the same die roll against the next most exposed target. This is the Assault moving leader with ZERO column shifts. The '20' column and the original die roll of 3 provides a C4. Four casualties have already been absorbed by the Assault moving, flamethrower carrying squad that was eliminated. Thus, there are NO further casualties to be absorbed by the remaining units.

(c) Any surviving Personnel units in the location must check morale using the C# as a morale check DRM (along with any other Morale Table DRM). With target units in different cover states, surviving units always use the C# obtained with the least cover state modifier.

Exception: Non-Running units do not have to check morale if they are in the same location as Running units targeted by Opportunity Fire.

Exception: Full cover Personnel units who are not eligible targets ignore the combat result, including any survivor morale checks.

(d) Apply the C# result to AFV, APC, truck type vehicles, and H weapons on the Attack Results Vs Vehicles And H Weapons table.

12.10.2 Hit Probability Table (A1)

Guns, including vehicle MA and ATRs use this table to determine if each of their shots hit the target. MG and SCW use their own HPTs, tables A2 and A3. Each available ROF used by a Gun provides the opportunity to make one roll on the HPT.

12.10.21 Determining the Hit Probability Number (HPN)

To determine the Hit Probability Number (HPN), using the HPT, cross-index the range with the Gun Rating. Guns have a rating of A, B, C or D. ATRs always use the D|ATR row. If the range is 17 hexes or greater, use the appropriate column according to the Gun Size of the firing unit. The resulting HPN found on the table is the BASE number used to determine if a target is hit. Example: A gun firing at a range of '2' hexes uses an HPN of '9'. A '70' Gun Size gun with a 'B' (i.e., a 70|B) Gun Rating, firing at a range of '18' hexes, uses a base HPN of '4'; a 76|B gun firing at a range of '18' hexes uses a base HPN of '6'.

12.10.22 HPT Die Roll

Make a die roll on the HPT for each shot. Apply any cumulative HPN DRM to the die roll (i.e., these DRM never modify the HPT or the HPN, just the die roll that is compared to the HPN needed for a hit). If the resulting DRM-applied die roll is equal to or less than the final HPN needed, a HIT has occurred. If a shot fails to hit the target, there is no effect.

Example: A base HPN of '6' receives a +2 HPN DRM. The firing player rolls a '5'. Adding the +2 DRM results in a final die roll of '7', greater than the final HPN. The shot is a 'miss'. If a '4' was rolled instead, the +2 HPN DRM would result in a '6', and a HIT would have instead occurred.

12.10.23 Die Roll Modifiers (DRM)

A variety of HPN DRM modify the die roll. These DRM are listed beneath the HPT. Most are self-explanatory, others are explained below.

12.10.231 Moving Vehicle

If the target is a moving vehicle there is a +2 modifier unless the target is at a range of 16+ hexes AND the firing unit previously placed a BOT marker on the target (in which case there is no modifier for the moving vehicle).

12.10.232 Burst On Target (BOT)

A Heavy weapon or vehicle Main Armament (including units using Assault Fire) 'acquires' its target when it secures a HIT on the HPT. Place a Burst on Target (BOT) marker of the firing player's choice of color in the LOCATION of the thusly HIT target unit(s). A weapon may ONLY benefit from BOT markers it placed via hits on the HPT. Note: The following units NEVER place BOT markers: Light and Medium weapons; Aircraft; any weapon that does NOT use the HPT to secure a HIT.

12.10.2321 BOT Removal

Remove a BOT marker if the firing weapon unit that placed it switches targets, moves, becomes NEWLY suppressed, or is otherwise rendered ineligible to fire (e.g., a crew manning an H weapon is Broken; K-KILL; Bail Out) or the LOS is blocked to the hex for any reason (e.g., smoke along the LOS). Also, if the BOT-marked unit leaves the location, the BOT marker may not 'follow' it. The placing player may leave the BOT marker in the current location and use it against any newly entering enemy unit. Note: A BOT marker left alone in a location is removed normally if any of the listed attributes from sentence one of 12.10.2321 apply to the placing unit (e.g., it moves).

12.10.2322 BOT & Spotting

When using the Spotting Rules, targets marked with BOT may be spotted at any range by the BOT-placing units.

12.10.2323 BOT & Hit Location

When firing at targets in Hull Defilade, a -3 BOT DRM is ALSO applied on the Hit Location Table AFTER a hit is obtained on the HPT.

12.10.2324 BOT & ROF

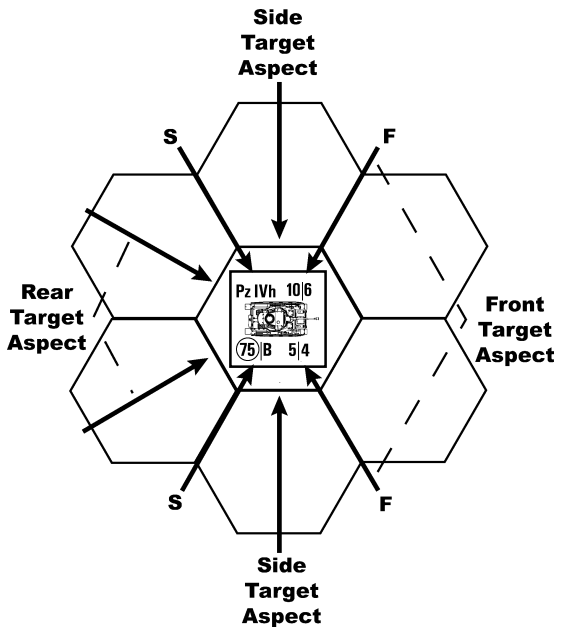
When the BOT-placing weapon continues to fire at its so-marked target, DOUBLE any REMAINING ROF for the current firing impulse. The full printed ROF is doubled during the next TURN (i.e., a turn in which the firing unit started with a BOT marker placed on the target unit). The firing unit may also use any remaining ROF against any other target within the same LOCATION of its BOT hex after placing a BOT marker, including 'shifting' the BOT marker to other units in the same location of a hex at the behest of the placing player or if the originally targeted unit exits.

Exception: some units, as shown on their AFV cards, do not receive an increase in ROF because they have a BOT (e.g., German sIG II SPG). However, such units still receive the BOT –3 HPN DRM.

Example: A ROF 2 weapon fires and hits and K-KILLs an AFV. The gun may use its remaining ROF of one, now doubled to TWO, in the BOT marker hex if other units are in the same location as the just-hit AFV. It may fire again, twice, this impulse against these other units (or at the AFV if it was not K-KILLed). If it decides to use its second ROF to fire at another target outside the BOT-marked location, its remaining ROF would be ONE and it will lose the just-placed BOT. If it keeps firing at the same BOT-marked location the next turn, its ROF is doubled from 2 to 4.

12.10.3 MG Hit Probability Table (A2)

A separate HPT for MG attacks against vehicles is provided. Use this table for M|MG



In the example at left the two hexes to the front of the vehicle marker define its Vehicle Covered Arc (VCA). HPT direct hits from within its VCA, as well as exactly along the hexsides marked 'F' are FRONT facing hits. Hits from within the 'side' (used for this example instead of "flank") and 'S' hexside are considered FLANK facing hits. Hits from within the 'rear' hexes are considered REAR facing hits.

The exception to the example at left is if the target is moving. If the LOS is traced exactly between the flank and the front the aspect is FRONT if the target is MOVING and flank if it is STATIONARY. If the LOS is traced exactly between the flank and rear, it is rear if stationary and flank if moving.

carried by Personnel and ALL vehicle MG when firing against vehicles. The HPN DRM found under the HPT apply normally if applicable. Use the PEN value of '1' for MG against AFV on the K-KILL Table normally (comparing the AF to the '1' PEN and using the resulting DIFF column on the table) and resolve hits on the Attack Results Vs Vehicles And H Weapons against APCs, truck type vehicles and H weapons. Small arms fire by MG against non-AFV vehicles uses the Casualty Table directly and compares result obtained with the appropriate target row on the Attack Results Vs Vehicles And H Weapons table.

12.10.4 SCW Hit Probability Table (A3)

A separate HPT for SCW (all non ATR L|AT weapons) is provided. Use this table when SCW L|AT weapons fire at vehicles and use any applicable HPN DRM from those provided under the HPT.

12.10.5 Hit Location Table (B)

This table is used after any HIT is obtained on the HPT against an AFV. Roll one die for each hit, modifying the die roll if the vehicle is in Hull Defilade (H-D) position (and for target size). The result shows the aspect struck: Turret (TUR); Upper Hull (UH); Lower Hull (LH); or Track. (Exception: For fire against a target in the same hex as the firing unit). Aspect is different from facing, the latter always determined by the LOS as it enters the target hex and the former always determined by the Hit Location Table roll.

12.10.51 Track | UH Hit—When a Track or UH aspect is struck (and the UH hit is from the FRONT or REAR facing of a TURRETED AFV (or REAR ONLY for a non-turreted AFV) and does not result in a K-KILL), a subsequent roll is made on the M-KILL Table. Whenever a unit is M-KILLed, another roll is immediately made on the Bail Out Table.

12.10.6 K-KILL Table (C1)

Use this table for any non-track hit on an AFV. This table provides rows for AP/APCR/APDS/HEAT and HE attacks against AFVs. All SCW and ATRs use the AP portion of the table.

12.10.61 PEN Vs AF Differential (DIFF)

The AFV Damage Table compares the Penetration Number (PEN) of the attacking gun with the Armor Factor (AF) of the AFV target. Subtract the AF from the gun's PEN to provide the Differential (DIFF) for that gun Vs armor comparison. Use the appropriate DIFF column on the K-KILL Table, using the AP or HE portion of the table depending on the type of ammunition that secured the hit. A die roll is made and compared to the results on the table.

12.10.62 Armor Factors (AF)

The armor factor of an AFV varies with the aspect and facing, determined by the LOS to the target hex (unless firing and target units are in the same hex) and the aspect struck. Determine the target unit's facing in relation to the firing weapon. By definition, this is the target's hex side that the LOS crosses. If the LOS is traced exactly between the flank and the front the facing is front if the target is MOVING and flank if it is STATIONARY. If the LOS is traced exactly between the flank and rear, it is rear if stationary and flank if moving. On the AFV Card, cross-reference the target facing and aspect to determine the appropriate AF.

12.10.63 Non HE Penetration Number (PEN)

When firing non HE ammunition (including HEAT), the Penetration Number of the weapon firing is found by cross-referencing the Gun Value and the range column on the Gun Penetration Values table (Play Aid 5), provided for each nationality (also found on the AFV Card for AFV main armament). Example: An American 75|B gun using AP ammunition and firing at a range of 2 hexes has a PEN number of 10.

12.10.631 HE Penetration Number (PEN)

The Penetration Number for the HE of the guns of ALL nationalities is provided on the HE Penetration Table (HE). This PEN does not vary by range. When firing HE at an AFV, use the HE portion of the K-KILL Table. Note: The PEN for HE ammunition (including HEAT, although this latter ammunition used the AP portion of the K-KILL Table) does NOT vary due to range.

12.10.64 K-KILL Results

Comparing PEN to AF provides the K-KILL Table Differential (DIFF). If the AP DIFF is less than '–1', the shot has no effect. Make a roll on the appropriate column of the K-KILL Table for each hit obtained against the targeted AFV. Immediately apply any K-KILL result (i.e., replace the counter for the target AFV with a wreck or burning wreck) and roll on the M- and F-KILL Tables for Possible K-KILL results. For any hits that fail to result in a K-KILL, a roll is ALSO made on the Suppression Table.

12.10.641 BURN—The target AFV is 'brewed up'. The target vehicle is K-KILLed and replaced by a burning wreck, the back side of a wreck marker (with red flames).

12.10.642 K-KILL—The crew or multiple vehicle systems are 'out of action.' The AFV is knocked out permanently but not burning. Players may wish to make a side note of the vehicle type (and facing when removed from play) for each non burning wreck; these may be fired on again in an attempt to 'brew' the AFV, replacing it with a burning wreck.

12.10.643 M-KILL Table (D2)—An M-KILL result destroys a vehicle's mobility, i.e., suspension or track integrity is lost. Vehicles may not move or pivot for the remainder of game. Any turret may still pivot to fire or during a Movement impulse, although the vehicle itself may not move or pivot. Use this table if the AFV is hit on the Tracks (TR) or on the FRONT or REAR aspect of the Upper Hull (UH) and a POSS K-KILL result is obtained on the K-KILL Table. Cross-reference the column for the aspect struck. A roll less than or equal to the number provided results in an M-KILL. If an M-KILL does not result following a roll using this table, the AFV receives a K-KILL result INSTEAD for NON TRACK hits. A K-KILL does NOT result for track hits that fail to M-KILL an AFV. A roll on the Suppression Table is also made for vehicles receiving an M-KILL result. M-KILLed vehicles ALSO make a roll on the Bail Out Table and mark the vehicle with an M-KILL marker.

12.10.644 F-KILL Table (D1)—An F-KILL result represents a vehicle's loss of firepower for remainder of the game. Units may not fire ANY weapon for the remainder of the game. Use this table if the AFV is hit on the front aspect of the turret (TUR) for turreted AFV or the upper superstructure (UH) for non-turreted

AFV and a POSS K-KILL result is obtained on the K-KILL Table. A roll less than or equal to the number provided results in an F-KILL instead of a K-KILL. If the roll is greater, the AFV receives a K-KILL result. A Bail Out check must be rolled for after receiving an F-KILL. If it passes its Bail Out check, any vehicle suffering an F-KILL must exit the map along the nearest friendly map-edge at its earliest opportunity. If the unit has already suffered an M-KILL, the crew AUTOMATICALLY bails out. Mark F-KILLed units with an F-KILL marker.

12.10.7 AFV Bail Out Table (E)

Use this table when an AFV has been M-KILLed by any means. A 'B' result marks the vehicle with a 'Bailed Out' marker. Vehicle crews are not represented by a counter and never appear on the battlefield. A vehicle marked with a 'Bail Out' marker may not move or fire for the remainder of the scenario, except if re-manned. While it is not considered K-KILLed for Victory Point purposes, the same quantity of VP are awarded (noting another attack that K-KILLs a bailed-out AFV may earn ANOTHER 6 VP). Mark Bailed Out vehicles with a Bail Out marker.

12.10.71 Re-Manning Bailed Out AFV

A friendly FULL strength crew may enter a Bailed Out AFV in the same manner as Personnel entering a vehicle for transport purposes. The AFV remains marked as Bailed Out (place the marker to the side of the AFV). However, if it is not F-KILLed, the new crew may fire its weapons. The AFV may NOT move, turn a turret or change the covered arc of the vehicle, and if a subsequent Bail Out result is obtained, the Personnel crew is NOT placed on map. It is eliminated in the same manner as a normal vehicle crew.

12.10.8 Suppression—Whenever a direct hit has a chance to, but fails to K-KILL an AFV (including after M-KILL and F-KILL results), make a roll on the Suppression Table, using the appropriate row for Gun Size. On a roll less than or equal to the required number, the player must mark the target with a Suppressed marker.

12.10.81 APC Targets—Any OT APC that is fired on by Gunfire Factors or receives a Direct Hit from any weapon capable of causing an M- or K-KILL also rolls for Suppression, and the SUPPRESSION result for APCs also includes any Personnel carried inside the APC (simply restricting them from being able to fire until rolling successfully to remove Suppression). Mark the vehicle with any Suppressed marker. Suppressed APCs lose any BOT markers they placed AND a suppressed OT (only) APC may NOT fire any of its weapons, nor may suppressed Personnel inside a suppressed APC fire in any manner. Personnel carried in a Suppressed APC may not serve as an FO or Spotter.

12.10.82 TUR Aspect Automatic Suppression—Turret aspect POSS K-KILL results from the K-KILL table result in AUTOMATIC suppression (i.e., if a K-KILL does not result; even if M- or F-KILL results are obtained).

12.10.83 Casualty Table Suppression—When an AFV/APC is attacked by Gunfire Factors (e.g., GF from Personnel or machine-guns) or Fragmentation (FRAG from aircraft, mortars, off-board artillery) roll on the row of the Casualty Table corresponding to the attack. On a 'C1' or greater result (only; a '-' result has no chance of causing Suppression), a roll is ALSO made on the Suppression Table, applying any 'C' result as a NEGATIVE DRM (making Suppression more likely). Example: On a 'C2' result, a '-2' DRM is applied, resulting in Suppression on a roll of less than or equal to a die roll of '3'.

12.10.84 Removing Suppressed Markers—During the End of Turn Segment, any vehicle that wishes to have its suppressed marker removed must pass a morale check. Suppressed APCs AND their passengers use a 'combined' morale level of '7' and only ONE roll is made for the APC and all non-Broken Personnel inside. All AFVs have their Morale listed on their AFV Cards and no morale modifiers apply to Suppression removal morale checks.

12.10.85 Newly Suppressed AFVs/APCs—Newly suppressed vehicles lose any BOT markers previously placed and suffer a '+2' HPN DRM for any fire while so-marked (2 column shift left for MG and semi-auto guns). Mark them with a suppressed marker, orienting the marker with the turret facing (or ignoring facing for non-turreted vehicles). Note that already suppressed vehicles may place new BOT markers for any Direct Hits they obtain.

12.10.86 Already Suppressed AFVs/APCs—The effects of Suppression are NOT cumulative. With the exception of newly suppressed vehicles, no additional effects are applied and thus no additional Suppression Table roll is needed for already suppressed AFVs that have no BOT markers in play. An already Suppressed vehicle may place a NEW BOT marker, but is ONLY treated as a non-Suppressed firing unit when it has successfully removed its Suppressed marker.

12.10.87 Suppression Effects—A Suppressed AFV/APC uses the Suppressed row on the Spotting Table (if Spotting is in effect), has a maximum ROF of ONE, loses any BOT it PREVIOUSLY placed on a target unit, and may not fire its AAMG.

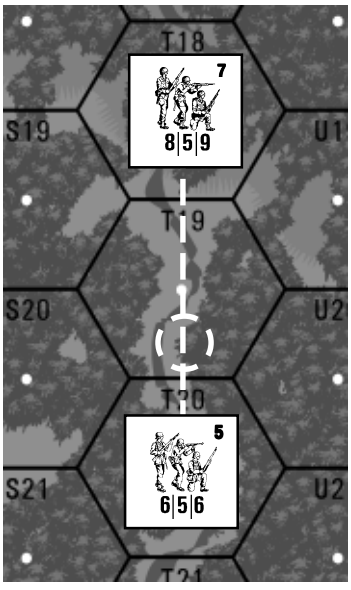
12.10.9 Attack Results Vs Vehicles And H Weapons Table (C2)

Use this table to determine damage done to non Personnel units by attacks that do not use the K-KILL Table. When attacking an APC or truck type vehicle with a weapon that requires a HIT on the HPT, a hit must first be obtained. When firing HE, a roll is then made on the Casualty Table using the appropriate column for the HE equivalent of the firing weapon OR the AP equivalent found in the 'AP | Other' row on the table. Use the '≤20' column for AP from weapons of a Gun size of '20' (i.e., 20mm) or less, and '25+' for AP from guns of 25 or larger Gun size. Note: This table refers to results obtained on the Casualty Table. Use the C# obtained there to determines the damage suffered by the target. For attacks that do NOT require a HIT on the HPT, simply roll on the Casualty Table normally, then refer to the C2 table for the results.

12.10.91 Reading the Table

Each row corresponds to a certain target type. Use the appropriate row for the target type: AFV, APC, Truck type vehicle, and H weapons. The table has three attack categories and four outcomes (in columns). The first section is for Indirect Fire, and is used for both on-board and off-board artillery and mortar attacks. The second section is for small arms attacks. The final section is used for HPT hits against APCs, Truck type and H weapon targets; AFV hits are referred back to the K-KILL Table. The following results are provided on the table.

a) '-'—No Effect on the target;



In the example at left a path in T18-T19-T20 runs through woods hexes. From T18-T19 it moves 'uphill' from Level 0 to Level +10.

If there was NO change in elevation squad '7' could NOT see squad '5' due to the intervening woods between the sighting dots of T18 and T20. The white dashed-line represents a straight-edge, used to trace LOS from '7' to '5' (once again, assuming there is no change in elevation). The circled part of the 'straight-edge' in hex T19 depicts where it touches woods art, blocking the LOS to hex T20.

If squad '7' chooses to move into T19, it pays only 1 MP due to the path in the hex. If there was no path, it would pay 1 + CoT for moving uphill. Since woods costs 2 MP, it would cost 3 MP for '7' to enter hex T19.

For the sake of the following example, once again assume there is no hill in the terrain at left. If a unit traced a LOS from S19 it could see (and thus fire at) a unit in hex U19 (just above the 'U2' hex in the example; the second digit is truncated). There is no woods in the intervening hex T19 and woods in the firing and target units' hexes do NOT block LOS.

b) C#—An equivalent 'C' result on the Casualty Table provides the result for that column.

12.11 INDIRECT FIRE

Indirect Fire refers to when a firing unit cannot (or does not need to) see the target unit to fire at it. Off-map artillery on-map mortars ALWAYS fire using Indirect Fire. On-map Howitzers (HOW) and all Guns with a Gun Size of '75' or greater and capable of firing HE may also use Indirect Fire. As opposed to Direct Fire, which targets units in specific locations, Indirect Fire targets entire hexes.

12.11.1 Registration

Some scenarios provide one or more 'Registrations' for an off-map artillery battery or on-map mortar or howitzer. A registration is a target hex that the indirect firing unit has 'ranged' and may hit more easily, reflected by an accuracy DRM.

Before play begins, but after all set up, players secretly record the locations of their registrations by writing the hex coordinates of the registered target hexes on a side note, also noting the off-map battery (or on-map mortar) to which they belong. Each off-map battery or on-map mortar may be assigned any number of available registration locations via SSR. Note: Once the registration locations have been assigned, they may not be changed. They may not be transferred between batteries or mortars.

Example: the German player has two off-map batteries. One is an 81mm mortar battery and the other is a 75mm howitzer battery. The scenario allows each battery to register one hex. The owning player writes down '81mm registered hex is C16' and '75mm registered hex is F14'.

12.11.2 Accuracy Modifier

When Indirect Fire attacks a registration hex, apply a -20 DRM to the artillery accuracy roll.

12.11.3 Indirect Fire Casualties

Indirect Fire attacks are resolved in a different manner than Direct Fire. Indirect Fire attacks all locations of each hex targeted. Each hex location in each hex in an off-map battery's fire for effect (FFE) area is attacked.

When using Indirect Fire make a separate roll on the Casualty Table for each:

a) Locations containing Personnel units (excluding crews for Heavy weapons);

c) Each Heavy weapon (eliminate the manning Crew if its H weapon is eliminated); and;

d) Each vehicle (apply vehicle type column shifts as well as any for cover state).

Absorb casualties suffered by Personnel units (excluding any crews for Heavy weapons) and refer to the Attack Results Vs Vehicles and H Weapons table to apply C# results for other target types.

12.11.31 Vehicle Shifts—Apply the following shifts on the Casualty Table for Indirect Fire against vehicles (cumulative with all other applicable cover state modifiers):

a) Lowest UH/TUR AF is 4+—1L;

b) APC/OT AFV—1R;

c) Truck type vehicle—2R.

12.11.32 Full Cover Units

Units in Full cover under an emplacement have a 3L modifier and are attacked by HALF the normal FRAG Factors. Units in Full cover in an APC share the fate of their vehicle. Units under FC markers receive NO additional cover benefit.

12.11.33 Terrain

Apply normal terrain cover benefits. However, units are not protected by hexside terrain during Indirect Fire. They have the cover provided by the in-hex terrain only.

12.11.4 Forward Observers (FO)

FO are attached artillery officers assigned to direct and adjust off-board artillery fire. One FO counter is provided for each off-map battery in a scenario. Assign one FO to each battery by writing the FO's ID number in a side note. These assignments are permanent. If a scenario lists artillery and no FO is provided for that side, add one automatically to any portion of the OOB.

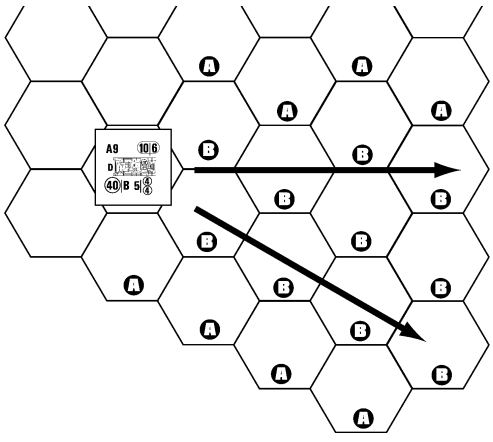
FOs are treated as Leaders for all purposes. Exception: They do not affect the morale of other units in any way nor do they Rally friendly Personnel. FO counters are 1|1|8 Personnel units with an FO triangle icon on their counter.

An FO sets up or enters with any friendly units it is listed with on a scenario card. It may also be set up off-map via SSR. If a SSR allows an FO to set up off-map or in a map-edge hex, the only function of the hex location is to serve as the source of the FO's LOS; in such a case do not use a counter for the FO as a reminder the FO cannot be attacked or affected in any way during play. An FO may always set up Hidden in appropriate terrain.

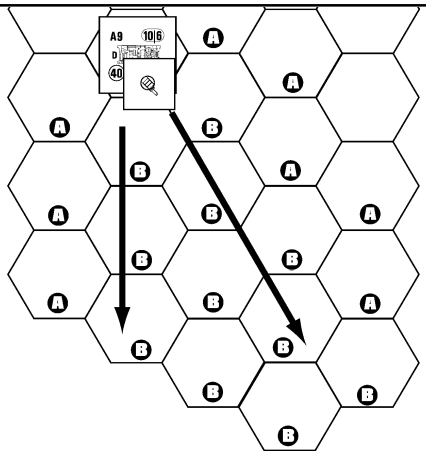
An off-map artillery battery with an FO counter on the map may only fire if the FO is on the map. If a battery's FO is eliminated its off-map battery may not fire for the remainder of the game, unless an alternate FO is used to spot for a Barrage. Off-map artillery batteries may only fire at targets that their FO can see: where the FO has a LOS and the target hex is Spotted.

12.11.5 FO Spotting

FOs must be stationary to observe their targets. They may not observe and then move in the same turn. Mark an FO with an 'F' marker when their corresponding



The example at left depicts the limitations of the starboard side machine-gun turret on the A9 (and A9 CS) cruiser tank. The '4' Gunfire Factors of the starboard side bow machine-gun may fire into any hex marked with a 'B'. It may NOT fire into any hex marked with an 'A'. The port side machine-gun is likewise restricted, with a 'mirror image' to the left of the AFV as regards 'A' and 'B' marked hexes.



The example above right serves two purposes. It depicts the eligible hexes for machine-gun fire using the 'A' and 'B' method from the above example. It also depicts the LIMIT the machine-gun sub-turret on an A9 may turn. In this example the starboard side turret is shown. The port side turret is treated in the same manner, transposing all 'A' and 'B' marked hexes in a 'mirror image' to the other side of the AFV.

Thus, the machine-gun sub-turrets in an A9 (and A9 CS) cruiser tank may not pivot their facing more than one hexspine AND each sub-turret may ONLY pivot to the side it is on, i.e., the port sub-turret may only turn to the left and the starboard (depicted in the example) to the right.

Note also the machine-gun sub-turrets on an A9 pay +1 for each hexspine pivoted when changing facing to fire.

In keeping with the 'chrome' provided in the ATS in the form of model-specific turret markers, a supply of A9 turrets is provided with TOBRUK EXPANSION #1: Wavell's 30,000.

battery (or other weapon, e.g., mortar or howitzer) has fired. Note: Being marked as 'Fired' does not change the range at which units may Spot an FO if Spotting rules are in use. If the FO is in Full cover or hidden, do not mark place a marker (thus giving away its location); make a side note instead.

If an FO moves, any CFF it placed may remain in its current hex. An FO that Infiltrates one hex during the Infiltration Phase or takes part in Melee has no effect on any CFF (or FFE for a barrage) already on the map.

FOs have a maximum Spotting Range equal to double the result listed on the Spotting Table or anywhere within their LOS when Spotting Range rules are not in use. An FO may adjust its artillery battery's fire onto any hex in this range provided (a) the LOS from the FO to the target unit is not blocked by terrain and (b) intervening HPN DRM from smoke and Obscuring terrain would be less than EIGHT.

If the LOS becomes obstructed after a FFE has been placed on a target hex, the artillery battery may still fire into that hex, but it may not shift its fire out of that hex until the Line-of-Sight becomes unobstructed. Example: An FO may move to a new hex to obtain a good LOS. Otherwise, the FO will have to place a new CFF against another target hex.

12.11.6 Leaders as FOs

Leaders may conduct limited FO functions. Leaders may call in barrage FFEs for artillery fire even if the battery has no FO on the map. This barrage fire may not shift, and is limited to the registration hex location initially recorded for that battery with accuracy determined normally (i.e., no DRM are applied due to a leader observing instead of an FO). Mark any leader that calls in a barrage with an 'F' marker to indicate it has acted as an FO. Exception: If in Full cover or hidden, do not mark the unit but make a side note. A leader may spot for more than one barrage from an off-map artillery battery, but any one leader is limited to spot for one battery per turn.

12.11.7 Observation Post (OP) Vehicles

FOs may spot from inside vehicles. They may observe from inside a vehicle, without unloading, providing the vehicle remains stationary. When spotting from an AFV or APC, the FO counter is removed from the map and a notation of which vehicle is carrying it is recorded on a side note. Otherwise, the FO simply loads into a vehicle normally. FOs may not spot when transported in ASSAULT cover (i.e., riding ON a tank). It is considered to enter INSIDE an AFV or APC, unlike other Personnel that are subject to normal rules for being transported.

If the AFV or APC is K-KILLed, the FO is eliminated. If a Bail Out results, place the FO in the hex of an AFV. If a vehicle is forced to exit due to an F-KILL, the FO must stop any observation immediately and is thus removed from play. Otherwise, an FO may exit a vehicle as if unloading from transport normally. When an FO is adjusting fire from inside a vehicle, the vehicle may not move or fire any turret weapons that turn. An FO may not adjust fire from a Suppressed vehicle.

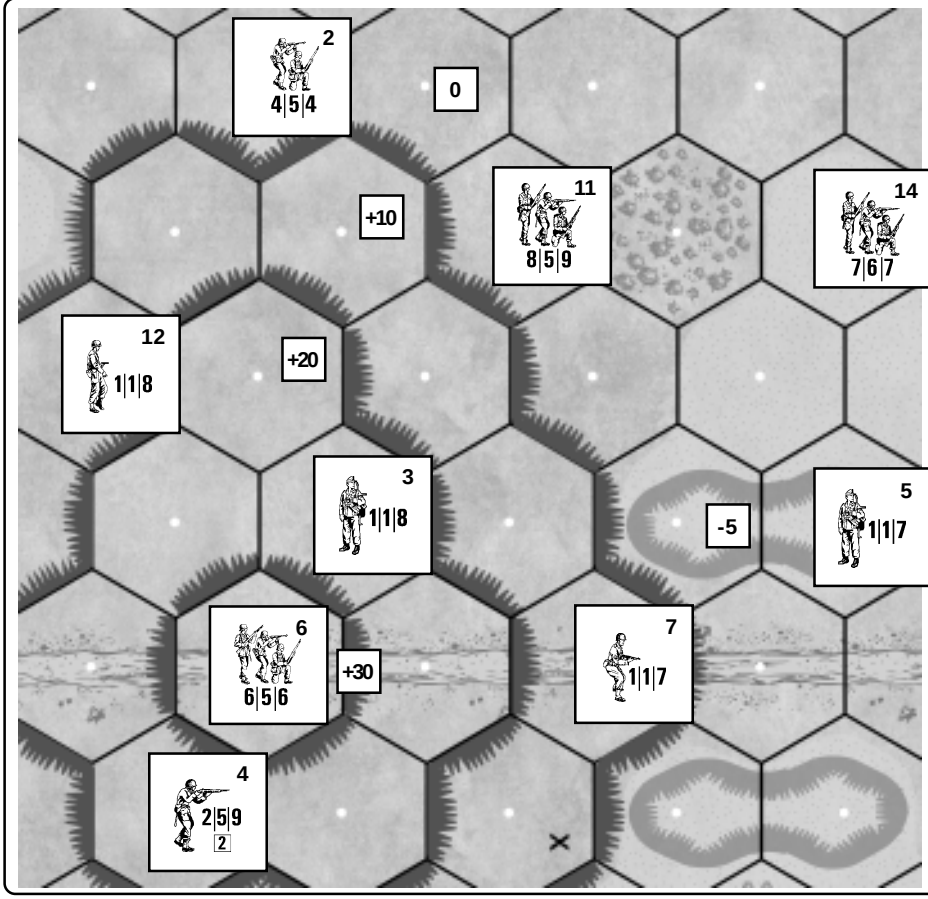
12.12 OFF-BOARD ARTILLERY SUPPORT

Many factors influencing a tactical battle occur beyond the physical limits of the map. Off-map (also referred to as 'off-board') artillery rules represent Indirect Fire available to tactical commanders from artillery batteries located off-map. With the exception of their FOs, there are no counters provided for off-map batteries. Their fire is conducted as Indirect Fire and uses the Off-Board Indirect Fire Accuracy Diagram and FRAG Factors directly on the Casualty Table. Off-board artillery fire is one type of Indirect Fire. Off-board artillery support is only provided via SSR and pertinent information about the available battery is detailed therein.

Off-board artillery is fired during the Indirect Fire Phase of the Combat Segment. Opposing players alternately fire their off-board batteries in the same manner as alternating impulse use. Effects are applied immediately as they occur. Off-board Indirect Fire is represented by an FFE marker and any unit later entering ANY hex location attacked by an FFE is also attacked. There is no set limit to the number of FFE attacks an off-map battery may make during a scenario.

12.12.1 Artillery Procedure

Artillery is a one-phase procedure. Once



The example at left provides some examples of LOS issues relating to HILLS—the contour hexsides are NOT Hillocks in this example. Each Level in the example is marked, denoting the Deir at Level -5, Open ground at Level 0, and hills sloping up to Levels +10, +20, and +30. Keep in mind the stacked 'flapjacks' effect of hills when reviewing the LOSs below.

Unit '6' has an LOS to every unit in the example, noting that no Blind Hex is created to units like '2' since the LOS is traced on the SAME HILL as the firing and target units. However, if TERRACED hills were in effect, it would NOT have an LOS to squads '2', '11', '12', or '7', since they are IMMEDIATLY BEHIND contours, which create a blind hex when this special rule is in effect. Even with terraced hills, '6' could see unit '14'.

Unit '4' cannot see '3' due to the intervening Level +30 hill hex. It also cannot see '12'. Unit '7' cannot see '2'; it can see '5' down in the Deir. Unit '3' can see '11' due to the continuous slope of the contours. If '3' was in its current hex BUT there was NO hill, it could NOT see '5' down in the Deir.

Unit '11' cannot see '2' if the hill contour is touched by the LOS.

Note that '6' can see all the other units in the example because EVERY hexside in its hex has a contour leaving it, allowing its LOS to continue DOWN along all six hexsides.

Battery Contact is made by rolling less than or equal to the Battery Contact number (Exception: Barrages do NOT require a contact roll), put a Call for Fire (CFF) marker in the intended target hex. Make an immediate accuracy roll using the Indirect Fire Accuracy Diagram and two dice. Move the CFF to the final hex and immediately flip it to its Fire for Effect (FFE) side, attacking all hexes normally (for a concentration or barrage as per the Indirect Fire Direct Hit Table). An FFE is not flipped back to its CFF side until the End of Turn Segment and continues to attack any units (friendly and enemy) that later enter any attacked FFE location.

12.12.2 Battery Contact

The Indirect Fire Accuracy Diagram provides a Battery Contact number for each nationality. A Battery Contact roll must be made each turn a player wishes to use a new FFE for a concentration. Before placing an artillery concentration CFF, roll a die, modified by any ammunition supply DRM. If the modified result is greater than its Battery Contact number, no CFF marker may be placed. Remove any previously placed CFF if a contact attempt fails.

12.12.3 Ammunition Supply

A battery may be provided an increased or decreased level of 'ammunition support' via SSR. If a battery is provided 'High Ammunition Supply', subtract '1' from all Battery Contact die rolls for that battery. If a battery has 'Low Ammunition Supply', add '1' to all Battery Contact die rolls for that battery.

12.12.4 Accuracy

Following a successful contact roll, the owning player places a CFF marker in the target hex in LOS he wishes to attack. This acquisition fire does not affect the target, but represents the reference point before a dice roll is made to 'zero in' and correct the artillery fire. After placing the CFF marker, immediately make a die roll using the Artillery Accuracy Diagram to determine the final hex of the CFF marker. Align the chart in any manner so players agree on the direction it faces on the game map; there is no one right way as the aid is simply used to orient the die roll to find a final hex. Roll two dice, one for 'tens' and the other for 'ones'. Apply any applicable accuracy DRM AND any OBSCURING DRM along the LOS to the CFF marker and place the FFE marker in the hex that corresponds with the roll noting modifiers that create results less than one are treated as a roll of '1'.

12.12 41 CFF continued in its hex or an adjacent hex—No accuracy roll is needed if a player wishes to continue attacking the current (or an adjacent hex within its LOS) hex of a CFF the following turn. The CFF simply remains in its hex or is moved to the adjacent hex of the owning player's choice and attacks normally by being flipped to its FFE side, assuming no other limitations prohibit use (e.g., failed contact die roll; newly blocked LOS).

12.12.42 CFF moved two to six hexes—Roll for accuracy with a -20 DRM for any existing CFF that is moved 2-6 hexes (making accuracy easier). This DRM is NOT cumulative with any Registration DRM (i.e., the DRM remains -20 in this case).

12.12.43 CFF moved seven hexes or more—Roll for accuracy normally for any existing CFF that is moved greater than six hexes.

12.12.44 Results out of FO's LOS—Any CFF that strays out of the FO's LOS is immediately removed from play and is not flipped to create an FFE. For the purposes of seeing a CFF, the marker is considered to rise to +20 levels higher than the ground level of the hex it is in.

12.12.5 Off-Map Artillery Types

There are four types of off-map artillery: Concentration; Barrage; Line Barrage; and Rolling Barrage.

12.12.51 Concentration

This the default form of off-board artillery. Use this type if the SSR does not state a Barrage is available. All hexes in and adjacent to the FFE marker are attacked.

12.12.52 Barrage

A Barrage is provided via SSR only. A Registration hex must be used to place a Barrage FFE. No Battery Contact roll is made and no CFF placed. Simply place the FFE in the Registration hex. Roll for accuracy in the normal fashion (applying the modifier for a Registration hex) and place the FFE in its final hex. All units in the FFE hex and the adjacent TWO hexes are attacked (a total of 19 hexes).

12.12.53 Line Barrage

When in effect via SSR, a line of seven adjacent hexes, centered on the FFE marker (three on each side) will instead be affected by a Barrage FFE. This is known as a Line Barrage and it is otherwise treated as a Barrage (e.g., requires a Registration hex). Place the barrage FFE and two Barrage Limit markers (one in each of the end hexes of the seven-hex string of the Barrage) and attack units in these seven hexes ONLY.

12.12.54 Rolling Barrage

A barrage may be provided as a Rolling Barrage via SSR. When a rolling barrage is used, treat it as a Line Barrage noting the following rules for movement.

12.12.541 Movement The seven-hex long barrage must be set up in keeping with a map orientation listed in the SSR providing the rolling barrage capability. The SSR will also state how many turns the barrage moves forward, how many hexes per turn and in what direction if accurate. A Rolling Barrage only attacks the hexes in its line after it moves, not all those between the two lines. A rolling barrage moves and attacks FIRST during the Off-map Indirect Fire Phase of the Combat Segment.

12.12.542 Accuracy and Duration A Rolling Barrage never flips to its CFF side. As long as it is in play, its FFE and end-hex markers remain on the map. During the End of Turn Segment of the turn it is scheduled to be 'lifted' (removed permanently), a Battery Contact roll must be made successfully for removal. Otherwise, the rolling barrage continues into the next turn, when another attempt to lift it must be made, and so on. Until lifted (removed), the rolling barrage continues to move and attack, rolling for accuracy normally each turn. Note: The Registration DRM no longer applies once a Rolling Barrage has moved from a Registration hex.

12.13 COUNTER BATTERY FIRE

An important task of artillery is 'counter-battery fire', during which friendly batteries (or aircraft when available) engage enemy batteries in an attempt to interrupt their fire. Off-board artillery batteries conduct counter-battery fire during the Indirect Fire Phase. A FO need not be present on the map for its battery to engage in counter-battery fire.

12.13.1 Battery Limits

Only certain types of batteries may engage in counter-battery fire against certain types of enemy batteries. Consult the Off-Map Counter-Battery Matrix to determine which types of batteries may conduct counter-battery fire against specific types of enemy batteries.

12.13.2 Counter-Battery Effects and Procedure

Counter-battery fire does not destroy enemy off-map batteries, but rather neutralizes them so that they cannot fire. The procedure for neutralization is as follows.

12.13.21 Locating Enemy Batteries

Enemy batteries must be located before they may be affected by counter-battery fire. Only enemy batteries that fire (i.e., place a CFF or FFE) during a turn may be located in that turn. Locating attempts are conducted at the end of the Indirect Fire Segment in which the enemy battery fires.

To attempt to locate an enemy battery, roll one die for each enemy battery that fired. A die roll of 1-2 means that the enemy battery has been located. Once located, an enemy battery remains located for the remainder of the game. Make a side note or use the provided markers to serve as a reminder. A friendly battery need not be used to locate an enemy battery; it is only used to neutralize it, i.e., a roll may be made every time an enemy battery fires if a friendly battery is available that may provide counter-battery fire.

12.13.22 Acquisition

Once located, counter-battery fire may be initiated against that battery by a friendly battery any time thereafter. Counter-battery fire requires a two-turn acquisition procedure. At the beginning of the second turn after declaring counter-battery fire, the enemy battery is neutralized and may not fire. Make a side note or use the provided markers to indicate this status.

12.13.23 Duration

Enemy batteries remain neutralized for as long as the counter-battery fire is maintained and for two turns after it is ended. That is, if a battery ceases counter-battery

fire, the target battery may not place a CFF or FFE on the map until three turns later. If the friendly battery resumes fire on the enemy battery, it must re-acquire that target battery again. Once a friendly battery is no longer maintaining counter-battery fire, it may be used normally again.

Players should use the markers provided to make note of the status of locating and neutralizing enemy batteries.

12.14 OVERRUN

An overrun attack is a special type of combat by AFV entering an enemy hex. Any non M-KILLed/F-KILLed AFV may Overrun units when entering a hex occupied by enemy Personnel or weapons. Only AFV may conduct Overruns.

12.14.1 Overrun Restrictions

AFVs may only overrun Personnel and weapon units in hexes they physically enter. AFVs that conduct overruns may only use Assault movement in the impulse they overrun. Overrunning units may fire their weapons normally using Assault Fire before the overrun hex is entered. Once entering an enemy hex and conducting an Overrun, the overrunning vehicle may not use any weapons once inside the overrun hex nor during the rest of its movement impulse. It may exit and enter new hexes to make more Overruns.

12.14.2 Spending MPs

Each AFV spends 1 MP for each Personnel unit or un-possessed H weapon unit it wishes to Overrun in a location. It pays 1 MP for an H weapon to include the manning crew AND the weapon. The AFV may Overrun as many units in a hex as it wishes as long as it has enough MP available. The owning player simply specifies the units he wishes to Overrun and spends the appropriate number of MP once entering the hex. A vehicle need not Overrun, nor must it Overrun all units in a location entered. Enemy units may use Opportunity Fire shots against an Overrunning AFV for each overrun MP it uses in a hex and such fire ONLY affects the moving vehicle if using the HPT. Non HPT attacks also affect friendly units in the Overrun location, even if NOT targeted by the Overrun attack.

12.14.3 Overrun Resolution

To execute an Overrun attack, simply move the vehicle into the target's hex, paying the entry cost to enter the hex, announce 'overrun,' and identify the attacked unit(s), paying 1 MP per unit overrun. All Personnel and weapon units in the overrun hex are 'frozen' and may not move out of the hex if the AFV ends its movement in their hex.

12.14.4 Overrun Personnel

Overrunning a Personnel unit does not cause Casualties. Instead, an immediate morale check is taken, applying a +4 Morale Value (MV) DRM for each AFV Overrunning it that turn (to a maximum DRM of +8 in any one turn). Use one Overrun marker to show a +4 DRM and two markers to denote a +8 DRM. This DRM is cumulative with any other normal Morale Table DRM (Exception: Do not count the Overrunning vehicle it is already accounted for by the +4 DRM) and an Overrun MV DRM remains in force for the remainder of the turn, even after Overrunning AFV(s) have exited. Once Overrunning AFVs move off, enemy AFVs once again affect MV of a Personnel unit normally for any morale checks not caused by an Overrun. Personnel units being Overrun must have their morale checked immediately.

12.14.5 Overrun Vs Weapons

Overrunning a Heavy weapon destroys it. Overrunning Light and Medium weapons are NOT destroyed if they are being carried or operated by Personnel units or if they are under an emplacement counter providing FULL cover. Outside of these restrictions, all other weapons are automatically destroyed when overrun.

12.14.6 SCW Same Hex Opportunity Fire

A Personnel unit that possesses a L|AT or L|ATR weapon and is otherwise eligible to fire may do so at an Overrunning AFV using Opportunity Fire AFTER the vehicle enters its hex and announces an Overrun but BEFORE it checks morale. In this case, if the AFV is M- or K-KILLed, the Overrun morale check does NOT take place (and no weapons are destroyed). The Overrun takes place normally if an F-KILL results unless a Bail Out result occurs. Use the front facing the Overrunning AFV for this fire.

12.14.7 Final Defensive Fire

Heavy weapons being Overrun may fire at an Overrunning AFV before being marked as F-KILLed subject to the following restriction:

a) The weapon may not pivot to face the hexside the Overrunning vehicle used to enter the hex;

b) Ignoring any 'F' markers placed, it is otherwise eligible to fire.

Example: A final defensive fire shot may be executed regardless of whether the firing weapon is marked with an 'F' marker or has exhausted its ROF. Execute final defensive fire like any normal Direct Fire, except that it occurs at a '0' hex range. If a weapon unit does not prevent the Overrun (i.e., K-KILL or M-KILL the vehicle), it is F-KILLed normally.

12.14.8 Attacking AFV Damage

When a tracked AFV destroys a Heavy weapon in an Overrun, there is a small chance of track breakage. For each weapon Overrun, roll a die. On a die roll of '1', the AFV is M-KILLed in the target hex. Conduct the overrun normally. Place the AFV in the overrun hex marked with an M-KILL marker and check for Bail Out normally.

12.14.9 Overrun Hex

A hex with an overrunning enemy vehicle does not stop friendly units in that location from using Direct Fire. Personnel units in a hex with an Overrunning enemy vehicle may not attack the AFV unless they have L|AT or M|MG weapons available for use.

12.14.10 Continuing Overruns

An AFV may continue to Overrun a unit in a hex for more than one turn by remaining in the hex and announcing Continued movement during the End of Turn Segment. Keep the 'Overrun' marker in place. Otherwise, remove Overrun markers from prior Overruns during the End of Turn Segment. The same AFV cannot overrun the same unit more than once during the same impulse.

12.15 Close Assault

During the Close Assault Segment Personnel units that are capable of moving may conduct Grenade Attacks OR move one hex and engage in Melee. Players make a roll to determine which side receives the Initiative at the start of the Infiltration Phase. The Close Assault Segment consists of two phases:

a) Infiltration Phase

b) Melee Phase

12.15.1 Infiltration—During this phase, PERSONNEL units have the possibility of performing only one of the two following actions:

a) Infiltrate;

b) Make a Grenade Attack.

12.15.11 One Hex Infiltration movement—If otherwise capable of moving, a Personnel unit (or stack of Personnel units in the SAME location) may make an Infiltration move as follows:

a) Move into an adjacent hex or another location within its current hex—even if marked as Moved or Fired;

b) Is otherwise allowed to enter the hex (e.g., not across a Cliff).

12.15.12 Infiltration Exceptions—Any unit that is in a hex with an emplacement that provides FULL cover for movement under it may move under or on top of the emplacement counter during Infiltration. A Personnel unit may also exit (and thus remove) an FC marker during Infiltration and mine hexes may be entered for clearance attempts.

12.15.2 Grenade Attacks—All Personnel carry hand grenades. Grenades may only be used during the Infiltration Phase against adjacent (without reference to differences in level) enemy units ONLY if the friendly Personnel unit meets the following criteria:

a) It did NOT FIRE during the Combat Segment;

b) It is otherwise eligible to fire; (it may be marked as Moved and still make a Grenade Attack);

c) It is not in an Overrun location.

12.15.21 Grenade Attack Resolution—Grenade Attacks use FRAG Factors. To determine the grenade FRAG Factors, simply multiply the Stacking Points of the unit by THREE (e.g., a squad produces a 9 FRAG factor grenade attack). Deduct any Stacking Points for carried weapons. Use these FRAG Factors on the Casualty Table with normal adjustments for cover state. Grenade FRAG Factors may also attack AFVs, causing them to check for Suppression. Personnel units stacked in the SAME hex

location may combine their grenade attack for one attack or may attack different adjacent hexes (noting only ONE impulse is used per location of units attacking). All units combining their grenade attacks must attack one adjacent hex. No other form of 'Platoon fire' is possible for grenade attacks.

12.15.3 Satchel Charges—Some scenarios provide 'satchel charges' in a specific quantity via SSR. An individual Personnel unit eligible to make a Grenade Attack may declare the use of ONE satchel charge for that Grenade Attack. A Satchel Charge DOUBLES the normal FRAG provided for a Grenade Attack (i.e., multiply by SIX). Each Satchel Charge may only be used once and does not have to be assigned before play to specific units. Use of a Satchel Charge does not reduce the number of Stacking Points used for grenade attack and carried weapons are IGNORED for Satchel Charge strength purposes.

12.15.31 Satchel Rubble Creation—A Satchel Charge may create rubble in a building hex (and the possibility of Flame). For the purposes of determining Rubble and Flame ONLY, an ADDITIONAL two column shift is applied (i.e., to the doubled Satchel Charge attack).

12.15.32 Engineer Usage—Any Personnel specified to be a 'Combat Engineer' via SSR receives a THREE column shift right when using a Satchel Charge.

12.15.33 Hurl Back—An enemy unit that is not Broken or Surrendered and is attacked by a Satchel Charge may attempt to 'hurl back' the charge prior to the attack die roll being made on the Casualty Table. If the hurl back roll is successful, make a grenade attack on the attacking unit INSTEAD. However, no additional Satchel Charge column shifts are applied; use the original Grenade Attack value from the attacking unit (and any terrain shifts for cover). If the hurl back failed, the unit having attempted to hurl back a charge suffers an ADDITIONAL one-column shift RIGHT.

12.15.34 Hurl Back Die Roll—The Hurl Back die roll must be less than or equal to the Stacking Point value of a Personnel unit being attacked. Personnel units may NOT combine their SP for hurl back purposes, i.e., only individual Personnel units make a roll. For example, a leader has a hurl back die roll of one; a squad three; and a crew or reduced-squad two.

12.15.35 Satchel Charges Vs. Vehicles—Satchel Charges may be used against vehicles and add '2' to the Melee Value of the unit using it. Vehicles may not attempt to Hurl Back Satchel charges. Add '3' for units specified by SSR to be Combat Engineers when using Satchel Charges.

12.15.4 Gammon Bombs—Some scenarios provide Gammon Bombs via SSR in the same manner as Satchel Charges. They are treated as Satchel Charges (including against vehicles) except they add FOUR to the Grenade Attack value (or add '1' to the close assault value of the unit using it, even for Combat Engineer Personnel).

12.15.41 Flame Creation—In addition to the normal effects, any Casualty Table attack die roll of '1' by a Gammon Bomb also places a FLAME marker in the target hex location if in applicable terrain. When used against vehicles, any wrecks created by a Gammon Bomb attack are automatically burning wrecks.

12.15.5 Melee Phase

12.15.51 When opposing Personnel units occupy the same location, they must Melee (i.e., engage in hand-to-hand combat). A Melee situation occurs whenever a Personnel unit enters a hex location occupied by an enemy Personnel unit, which is not in a bunker. The Melee situation is resolved during the Melee Phase of the Close Assault Segment.

12.15.52 To engage in Melee, a player simply moves Personnel units into a hex during the Infiltration Phase of the Close Assault Segment, announces 'Melee,' and places a Melee marker in the hex.

12.15.53 Frozen In Melee—Once the Melee marker has been placed, all enemy units in that location are 'frozen' and may not use Infiltration to move out OR conduct Grenade Attacks (including Satchel Charges or Gammon Bombs). Units in a bunker may use Infiltration to exit the bunker and move into the other location in the hex to take part in a Melee, but once out of the bunker they are also frozen. Other units, friendly or enemy, may still enter the hex. All units in the Melee hex take part in the Melee resolution (Exception: Moving AFVs and those not attacked due to the presence of friendly Personnel in the hex).

12.15.54 One Turn Resolution—All melees initiated in the Close Assault Segment are completely resolved in the Melee Phase of the same turn.

12.15.55 Attacker and Defender Designation—Even if additional units subsequently enter the hex, the player that instigates the Melee (by entering an enemy hex) is the attacker. The other player is the defender. Place all attacker Personnel units on top of defender Personnel units in the hex.

12.15.56 Morale Check in Melee Hex—At the start of the Melee segment, the players check morale for all units involved in Melee, starting with all the attacking units and followed by all the defending units. The ONLY morale modifiers applied in the hex during Melee morale checks are for FRIENDLY units IN THE HEX. Ignoring any units that subsequently fail a Melee morale check (i.e., only the 'at start' morale modifiers in the hex apply to Melee morale checks). Leaders check first for both sides.

12.15.561 Broken Attackers—An ATTACKING unit whose morale is BROKEN while in a Melee situation is not removed from play, but it may not participate in the Melee and does not affect Melee resolution in any manner. Mark BROKEN attacking units with a BROKEN marker. Remove a DEFENDING unit whose morale is BROKEN from play immediately, i.e., they do not surrender. Note: If all attacking units have their morale BROKEN, then no defending units have their morale checked, no Melee takes place in that hex, and remove all of the attacking player's units in that hex from play.

12.15.562 Attacker Defeat—If the attacker is defeated in the Melee, attacking units that suffered BROKEN morale are also eliminated from play. If the attacker wins the Melee, they may resume normal function in the following turn (i.e., they do not remain BROKEN). Remove their BROKEN markers immediately.

12.15.57 Stacking In Melee—Within the Melee hex itself, stacking limitations are relaxed. There is no penalty for stacking beyond the limits in Melee.

12.15.58 Melee by Personnel in Vehicles or Riding on AFVs—Personnel units that are in vehicles (or riding on AFVs) cannot Melee or be attacked via Melee. They are eliminated if their vehicle is K-KILLed. If their vehicle survives the first round of Melee, place them in the Melee hex but they attack and defend at half their normal Melee value in the second round. If they survive any second round, they may conduct Melee at their normal strength in any subsequent rounds of Melee in that hex.

12.15.59 Personnel units may unload and infiltrate one hex during the Infiltration Phase unless frozen in Melee by attacking units that enter the hex first.

12.15.6 Close Assault Vs. Vehicles

12.15.61 At close range, infantry have a chance of destroying AFVs in a procedure similar to Melee. Meleeing infantry units automatically capture truck-type transport, unless that transport is carrying Personnel units.

12.15.62 Each Personnel unit may only Melee one vehicle per turn. A vehicle may undergo more than one attack in a Melee phase. If two or more Personnel units are in a hex, they each may attack.

12.15.63 Melees are disallowed if there are non-transported enemy Personnel units in the hex with a vehicle (exception: enemy Personnel in a bunker do not affect the Melee). If enemy units move into a hex in which Personnel units are attempting a Melee against a vehicle, the attack cannot occur. The Personnel units must Melee with the enemy Personnel units. Even if the enemy Personnel are subsequently eliminated, no attack may take place against the vehicle during that Melee phase.

12.15.64 Infantry units being overrun may not engage in Melee or any form of attack against the overrunning vehicle.

12.15.7 Melee resolution

12.15.71 Personnel Vs. Personnel—Total the number of PERSONNEL Gunfire Factors (i.e., no weapons are applied, only the GF printed on Personnel units but do NOT reduce this GF for carried weapons) in the hex involved in the Melee for each side. Ignore attacking units whose morale has BROKEN. State these numbers as a ratio,

attacker-to-defender, and round down in the defender's favor to conform to the simplified Melee odds printed on the Melee Table.

12.15.711 Roll one die. Cross-index the die roll number with the Melee odds on the Melee Table. The result will be the casualties sustained by each side. Example: 'AC1 | DC2' means the attacker sustains one casualty step loss and the defender sustains two. One round of Melee is over.

12.15.712 Recalculate the Melee odds at the new strength levels of the participants. Continue with additional rounds of Melee, rolling the die and extracting casualties until one side is eliminated or until the Melee odds become worse than 1 to 2 or greater than 4 to 1, at which point the weaker side is automatically eliminated and removed from play.

12.15.713 The owning player may distribute casualties within the participating units in any manner desired, provided all casualties are absorbed.

12.15.714 If there is more than one Melee hex in play, they are resolved in the order they were initiated or by mutual player consent.

12.15.72 Personnel Vs. AFV or APC—Melee resolution requires only a simple tally of the stacking factors of each assaulting Personnel unit and a die roll. Personnel units always attack AFV or APC units separately, but a leader can aid the attack by adding '1' to the Melee Value of another Personnel unit. Each Personnel unit in the hex may only make one attack during the Close Assault Segment. Not all Personnel in a hex must take part. However, any Personnel that checks morale (and passes) to attack an AFV, MUST attack.

12.15.721 Melee Value—The Melee Value of a Personnel unit is equal to its Stacking Points. It may add the modifiers for ONE accompanying leader, and ONE satchel charge OR gammon bomb if available. If reduced to a value of LESS than '1', a minimum MV of ONE is always used. An additional +1 MV modifier is applied if ALL Personnel making the attack (i.e., one Personnel unit and any accompanying leader) has a Morale value of EIGHT or greater. All modifiers to the Melee Value are made AFTER any halving or quartering for CT and moving AFV.

12.15.722 CT AFV and APC—If the attacked vehicle is a close-topped (CT) AFV/APC, HALVE the total, rounding fractions up.

12.15.723 OT AFV and APC—Against Open Topped AFVs and APCs the Melee Value is NOT halved.

12.15.724 Moving Vehicles—A Melee attack by Personnel against a MOVING vehicle is HALVED, fractions rounded up. Thus, an attack against a moving Close Topped AFV/APC would be QUARTERED, (halved then halved again, then rounding fractions up). An attack against a moving OT AFV/APC is halved.

12.15.725 MV Summary—See below to summarize the process used to determine Melee Value:

1. Determine number of Stacking Points;
2. Halve for CT AFV;
3. Halve for moving AFV;
4. Round Up;
5. Double for Courage;
6. Add for Satchel Charges, Gammon Bombs, Leadership, etc.

12.15.726 Attack Resolution—Roll one die. If the roll is less than or equal to half of the Melee Value, the vehicle is K-KILLed and replaced with a burning wreck. If the die roll is less than the Melee Value, the vehicle is K-KILLed, and replaced with a non burning wreck. If the die roll is equal to the number, the vehicle is M-KILLed. Make a Bail Out roll normally for M-KILL results. If the die roll is greater than the number, the vehicle is unaffected.

12.15.727 Truck Type Vehicles—Unarmed truck-type vehicles (with white movement icons) that are not carrying Personnel are automatically captured in Melee unless carrying enemy Personnel at the time. The capturing player simply takes control of the vehicle. If carrying Personnel or armed, treat un-armed, non-AFV vehicles in the same manner as Open Topped AFVs and APCs. After the first round of Melee is conducted, place the enemy Personnel in the hex and treat them in the same manner as any transported units in Melee. The winning side in the hex will take control (or retain control) of any un-armed, non-AFV vehicles.

12.15.73 Vehicle Close Assault Morale Check

12.15.731 Personnel units close assaulting a vehicle must undergo a morale check in the same manner as units engaging in Melee. If the morale check is unsuccessful, the Personnel may NOT attack. However, unlike Personnel Vs. Personnel Melee, units Broken in this manner are NOT eliminated. They remain in the hex with the AFV and are marked as Broken and may attempt to Rally normally.

12.15.74 Unsuccessful Close Assault

12.15.741 Personnel and vehicles left in a hex following an unsuccessful close assault may move and fire normally (including if they successfully Rally if Broken while attempting to close assault a vehicle), i.e., there is no restriction on their use (e.g., a Personnel unit may fire a Panzerfaust at '0' range during the subsequent Direct Fire Phase if in the same hex as a vehicle). A Melee counter never REMAINS in a hex since all Personnel Vs. Personnel Melee is fought to conclusion during each turn.

12.16 AIRCRAFT ATTACKS

12.16.1 Certain scenarios provide ground attack aircraft in the OOB for one or both sides. Aircraft counters represent dive-bombers and fighter-bombers that may be armed with MG, Rockets or Bombs. Aircraft attacks are resolved in the following order:

1) Place the aircraft in its target hex (facing the hexes it will use Strafing fire in if using MG);

2) If there are any other units within THREE hexes of the target, the owning player must roll one die to determine if a Mistaken Attack occurs;

3) Resolve all anti-aircraft fire against the aircraft;

4) Unless driven off or shot down, the aircraft resolves its attacks using the appropriate procedures for bombs, MG, Rockets or Cannon;

5) After making attacks against all targeted hexes, remove the aircraft from the playing area unless it has un-used Cannon ROF left (in which case it may begin the process again).

12.16.2 Entry and Quantity—Unless available at the start of play, the turn of arrival for ground attack aircraft is specified by SSR.

12.16.3 Duration—Once available, a ground attack aircraft is removed from play (not eliminated; it is assumed to return to its base) after THREE turns. A player may not delay entry of ground attack aircraft available at the start of play.

12.16.4 LOS— Aircraft have a LOS to all hexes on the map except the following:

a) In a Woods hex entirely surrounded by adjacent Woods hexes;

b) In a building hex entirely surrounded by adjacent building hexes, unless the unit is on the roof or if the hex and at least ONE adjacent hex is roofless (i.e., two roofless hexes are required);

c) In a cellar location of a building.

12.16.5 Placement— When not in use (i.e., attacking a hex), aircraft are placed out of the playing area. To attack, ground attack aircraft are placed IN the target hex or the starting hex for a Strafing Attack. Aircraft may not initiate bombing attacks in hexes containing friendly units in any location of the hex. They may, however, bomb targets adjacent to friendly units.

12.16.6 Attack Limits—Any number of ground attack aircraft may attack one hex during the same turn.

12.16.7 AA Fire—Before an aircraft makes its attack, resolve all enemy anti-aircraft fire against it in the target hex. If there is ANY anti-aircraft fire conducted against it, all attacks by an aircraft suffer a +1 HPN DRM (or 1L column shift for MG attacks) for the attack in the hex it received AA fire.

12.16.8 Accidental Attack—If there are ANY other units, friendly or enemy, within a THREE hex radius of the target hex, the friendly player must roll one die for each aircraft engaged in an aircraft attack. On a roll of '1', the pilot of the aircraft has mistaken the target and the ENEMY player may select any one of the in-range hexes as the aircraft's new target—including units friendly to the aircraft. The player then continues the attack normally, using this new attack hex and the originally intended aircraft weapon.

12.16.9 Bomb-load—Some ground attack aircraft have a specific bomb-load printed

on their counter. In a given bombing attack, an aircraft may drop either a single large bomb, or ALL smaller bombs, or all bombs. Therefore, each aircraft may make, at most, two bombing attacks per game. Each aircraft has its bomb load listed in HE factors that correspond to the appropriate HE column on the Casualty Table. Multiple bombs are listed using a blue ROF circle. Unless marked otherwise on the aircraft counter, any listed ROF applies to the SMALLEST bombs available on that counter. Some Stuka counters have the HE factors listed on the counter as '500' for one large bomb and '50' for four smaller bombs. Thus, there may be a maximum of five HPT rolls in a single bomb run if all five bombs are dropped (one 'large' bomb and the '4' ROF for the smaller bombs).

12.16.10 Bombing Attacks—Place aircraft in the intended target hex and then announce the type of bomb-load dropped. Each aircraft may only bomb one hex per turn.

12.16.101 Attack Resolution—Resolve Bomb and Cannon Attacks as Direct Fire on the HPT using the +3 Aircraft Cannon | Bomb HPN DRM, applying any applicable HPN DRM for cover the target unit(s) is IN. Note ALL Bomb attacks take place in the SAME hex as the target unit, thus there is no 'A-D' gun rating provided for aircraft bombs since there is no change in HPN at a range of 0-2 hexes.

12.16.102 Cease Fire—Regardless of the damage inflicted on the target unit, an aircraft attack forces all Medium and Heavy weapons in the target hex to Cease Fire for that turn. Mark such target units with a 'Cease Fire' marker and remove all BOT markers placed by the attacked units.

12.16.11 Aircraft Cannon—Some aircraft are armed with 'Cannons', noted by having a Gun Size and Value on the counter (e.g., Russian IL 2M has a 37|B cannon). Treat Cannons like Guns for all purposes except where noted below. Cannon fired during the Aircraft Attacks Phase in the same manner as Direct Fire on the HPT with the +5 DRM for Assault Fire. Cannon-armed aircraft may attack a number of consecutive hexes up to their ROF rating during a turn. Exception: Aircraft may NEVER fire AP at a Bunker but may otherwise fire HE or AP at the owning player's choice.

12.16.12 AFV Deck Armor—When attacked by aircraft CANNON or ROCKETS, HALVE an AFV's lowest AF (rounded down to a minimum of '0'). For example, an AFV with an AF of '2' as its lowest uses Deck Armor of '1'; a '3' would be halved to '1'; etc.

12.16.13 Aircraft Machine-Guns—Many aircraft are equipped with machine-guns. These attack during the Aircraft Attacks Phase in the same manner as MG on the Casualty Table, and may attack a number of consecutive adjacent hexes up to their ROF rating. This is known as a 'Strafing' attack. Aircraft with both Cannon and MG use the same blue-box ROF, if one is provided, for BOTH weapons. Otherwise a minimum of TWO consecutive adjacent hexes may be targeted by Strafing fire whether the aircraft has Cannon or not. Example: The British Hurricane IID has both a 40|B Cannon and a -|5 MG. The ROF on the counter is '2'. This aircraft may attack 2 consecutive adjacent hexes with BOTH Cannon and MG.

12.16.14 Anti-Aircraft Fire—Medium MG and 'AA' H weapons are capable of providing anti-aircraft fire. Eligible weapons may use AA fire if in a hex that can be seen by the aircraft the MG wishes to attack. Guns that are capable will have an 'AA' notation on their counter and an anti-aircraft range beneath it. Note that not all 'AA' guns (e.g., 88mm Flak 36) may fire at low-flying aircraft. These guns were used for high-level anti-aircraft fire, not depicted in game terms. Anti-aircraft fire is a form of Opportunity Fire conducted during the Aircraft Attacks portion of the Indirect Fire Phase.

12.16.141 All AA guns have a 360-degree field-of-fire (as marked on the counter with a circle around the gun value). Turn the counter to bring any aircraft fired on into its covered arc.

12.16.142 AA guns function normally as Heavy crew-served weapons (firing AP or HE ammunition) when not using anti-aircraft fire.

12.16.143 AA Range—An AA-capable weapon may attempt to shoot down any aircraft that makes an attack within its AA range, listed on each AA-capable Gun. The AA range is THREE hexes for M|MG weapons, FOUR hexes for 20mm AA guns, and EIGHT hexes for 37mm+ AA guns. One weapon may fire at as many aircraft as its ROF will allow (e.g., a Bofors may fire at three attacking aircraft) during one Aircraft Attacks Phase, whenever they fly within its AA Range (i.e., make an aircraft attack within the AA gun's range). Each gun may fire at a particular aircraft once per hex it attacks. For firing upon on a Spotter aircraft, use the range to any CFF/FFE marker placed by that aircraft.

12.16.144 The AA machine-guns on AFVs and any medium crew-served machine-guns may be employed against aircraft the same way as M|MG weapons.

12.16.145 AA die rolls are executed immediately whenever an aircraft attacks within a weapon's AA Range. A die roll of '1' eliminates the aircraft. A die roll of '2-3' will 'drive off' the aircraft. Destroyed and driven off aircraft do not execute bombing missions in that turn and are simply removed from the map. Only destroyed aircraft count for Victory Point purposes. Driven off aircraft may attack during a subsequent turn (unless removed due to being on board three turns already).

12.16.146 Weapons that use AA fire are marked with an 'F' counter normally.

12.16.15 Interceptors—In any scenario that has interceptors provided via SSR, roll one die for each three-aircraft group of enemy aircraft entering the game. A die roll of '1' means that the group of aircraft has been intercepted en route to the target and may not enter the game. They are not assumed destroyed for victory point purposes. When aircraft of BOTH sides are in play at the same time, a player may declare one or more of his friendly aircraft will make an 'interceptor' attack instead of a ground attack.

12.16.151 Interceptor Aircraft Resolution—An on-board interceptor attack is made by ONE friendly aircraft against ONE enemy aircraft of the attacker's choice. On a die roll of '1' the enemy aircraft is destroyed. On a '2-3' it is driven off (i.e., may not attack that turn). Note both sides may declare interceptor attacks, but the side that declares one first will 'get the jump' on his opponent.

12.16.152 DRM—Apply a -2 DRM to attacks by an interceptor without a bomb load against an aircraft with a bomb load. A -1 DRM is ALWAYS applied against STUKA aircraft and is cumulative with the bomb load DRM.

12.16.16 Spotter Aircraft—In some scenarios, SSR may provide a Spotter aircraft for use by an off-board artillery battery (instead of an FO counter). A spotter aircraft does not use a counter. Instead, it provides a LOS to any enemy unit on the map that may be seen by an aircraft. A Spotter aircraft is fired at as if the aircraft is IN the same hex as any CFF or FFE marker placed.

12.16.161 Spotter Aircraft Exit—Spotter aircraft remain in play as long as their battery is available to place a CFF or until shot down or driven off.

12.16.17 Aircraft Counter Battery Fire—Ground attack aircraft may be used in a counter-battery role against off-board artillery batteries. Aircraft assigned to counter-battery operations never appear on the map (i.e., they make no on-board attacks). They simply engage in counter-battery attack during the Air Attack portion of the Indirect Fire Phase of the Combat Segment and are then put aside.

12.16.171 Enemy batteries that have not fired may also be located for counter-battery purposes by aircraft. Make a location die roll whenever aircraft are available to conduct counter-battery fire.

12.16.172 Minimum Aircraft Allotment—A minimum of THREE aircraft are required to neutralize an enemy battery. Each three-aircraft group may neutralize one battery for TWO turns, after which the battery may resume normal function.

12.16.173 Turn–Counter-battery neutralization is effective in the same turn that it is announced.

13. SPECIAL TROOP TYPES

13.1 OVERVIEW

In some scenarios an SSR will state that all or a portion of a side's OOB is made up of special troop types. Elite troops receive a beneficial DRM to their MV without the need of an SSR.

13.1.1 Elite Troops—Personnel with a printed Morale of EIGHT or greater add ONE to their Melee Value against vehicles.

13.1.2 Combat Engineers—Personnel des-

ignated by SSR as 'Combat Engineers' add 1 to their Melee Value against vehicles (no matter their current morale). They also use Satchel Charges with a 1 Right shift.

13.1.3 Gurkhas—SSR may designate all or some portion of a British OOB as Gurkhas. Gurkhas double their Melee Value against Personnel.

13.1.4 Leaders—Leaders provide a ONE Movement Point bonus, a +1, or +2 Morale Support bonus and a one or two shift RIGHT modifier (i.e., 1|1|7 provides +1 and 1R; 1|1|8 provides +2 and 2R) to non HPT Gunfire attacks for L and M weapons in a stack or Firegroup that includes the leader (noting only ONE leader may benefit a specific attack). They check morale first during Melee, and may fire a Light weapon alone with no penalty. Leaders may also be used as crews or to supplement reduced crews, subject to the rules for such usage.

14. SPECIAL WEAPON AND CREW RULES

14.1 DUG-IN HEAVY WEAPONS—Heavy weapons that begin a non-Desert scenario set up in hexes eligible for the placement of a Weapons Pit Emplacement are provided one if NO Weapons Pits counters are provided in ANY portion of that side's OOB. The only units that may set up in thusly-provided Weapons Pits are the Heavy weapon and its manning Crew. Weapons Pits provided as part of a side's OOB may have ANY unit set up within.

14.2 WEAPON CREWS

14.2.1 Overview-Crews are Personnel units and function within all previously cited rules in regards to stacking, gunfire, movement, etc. Crews are used to operate Medium and Heavy weapons but also operate Light weapons. To fire, a Medium or Heavy weapon must be 'manned', i.e., set up with its crew (or other Personnel unit later in the game if the original crew has been eliminated or moved away) or using the pick up and carry routine before it may be fired in the current turn.

14.2.2 -OOB Crews—Before beginning play, assign one Crew counter to EACH Medium and Heavy weapon provided in the OOB for that side.

14.2.3 Fire Options—A Crew may NOT fire its printed Gunfire Factors or make a Grenade Attack in the same turn it fires a Medium or Heavy weapon. They may, however, engage in Melee in the normal manner and are subject to normal Personnel restrictions when using Light weapons.

14.2.4 Crew Losses—Crew counters have two sides, full strength and reduced. They flip to their reduced side upon taking one Causalities result (i.e., on a 'C1') and are eliminated after absorbing TWO Casualties (i.e., immediately on a 'C2' or greater result), or upon receiving another 'C1' if already flipped to their reduced side.

14.2.5 Reduced Crew Penalty—Any Heavy or Medium weapon fired by a reduced Crew fires with a reduction in its printed ROF. The ROF of all H and M weapons is reduced to 1, even if a BOT marker has been placed. The –3 HPN DRM for BOT is still received.

14.2.6 Alternate crews—Two Leaders (or FOs) or a full strength squad may be used as an alternate crew, and are treated as the equivalent of a REDUCED Crew. Three Leaders (or FOs) or a Leader AND a full strength squad are treated as the equivalent of a full-strength Crew. When manning weapons, these units function as Crew units and must abide by Crew rules.

14.3 MACHINE-GUN DIRECT FIRE

14.3.1 Overview—There are two types of Machine-gun used in the game: Light and Medium 5/8" weapon units and those mounted on vehicles.

14.3.2 Long Range Machine-Gun Fire—Light and Medium Machine-guns may fire beyond their printed range at HALF Gunfire Factors, to a maximum of DOUBLE their normal range.

14.3.3 Anti-vehicle Machine-Gun fire—All Light and Medium MGs fire Vs truck type vehicles by using their GF on the Casualty Table and comparing the result to the Attack results Vs Vehicles And H Weapons table. M|MG and vehicular MG may fire Vs APC first by securing a hit via the A2 MG HPT, using all appropriate HPN DRM. After securing a hit Vs an APC, use the table to obtain a result. When firing at AFV using the HPT, MG use their PEN of '1' and use the K-KILL Table normally.

14.3.4 BOT Restriction—Machine-guns never use BOT or have their ROF increased for any reason.

14.4 SHAPED CHARGE WEAPONS

14.4.1 Overview—Shaped Charge Weapons (SCW) are Light Anti Tank Weapons (L|AT) that represent the American Bazooka, the British PIAT and German Panzerfaust (Pf) and Panzerschreck (PsK) weapons. The Pf is a one-use weapon: the counter is removed from play after it is fired the first time.

14.4.2 Anti Vehicular Usage—SCW fire at vehicles using the SCW HPT. All appropriate modifiers HPN DRM apply. SCW use the AP portion of the K-KILL Table.

14.4.3 Anti Personnel Usage—SCW may fire HE at Personnel in the same manner as a Heavy weapon—but ONLY against targets in a building location, bunker, blockhouse, or behind a Wall hexside. SCW may create rubble and Flame in building locations like other weapons firing HE (i.e., C5 for rubble and C6+ for flame).

14.4.4 Firing Restrictions—Only a PIAT L|AT may fire from inside a building or bunker. All SCW may fire from rubble locations. Personnel being transported by a vehicle may not fire any form of L|AT. A PIAT may not fire a target that is ADJACENT and +20 or more levels lower than the PIAT hex. L|AT (and L|ATR) weapons do not place BOT markers.

14.4.5 Panzerfaust and Bazooka Range—The range for Panzerfaust and Bazooka weapons varies by year. In 1943-44, the maximum range for Bazookas is 4 hexes; in 1945 it is 5. In 1943-44 the maximum range for Panzerfausts is 1 hex; in 1945 it is 2.

14.5 ANTI-TANK RIFLES

14.5.1 Overview—Anti-tank rifles (ATR) are Light weapons (Exception: The Italian Solothurn M|ATR is a Medium weapon). They may fire against Personnel directly on the Casualty Table using their '1' GF or against vehicles on the HPT. In all cases ATRs may not fire beyond the maximum range listed on each ATR counter after the '#' notation.

14.5.2 Anti Personnel Usage—An L|AT ATR may fire in the same manner as a Machine-gun, using its '1' Gunfire factor directly on the Casualty Table. All ATR weapons may fire at Personnel targets directly on the Casualty Table, using their printed GF.

14.5.3 Anti Vehicular Usage—ROF, BOT, HPT DRM and other Direct Fire rules apply to ATRs using the HPT. Use the 'D' row on the HPT for ATRs.

14.6 MORTARS

14.6.1 Overview—Mortars are Indirect Fire Weapons and are either Light or Medium weapons, or mounted on vehicles.

14.6.2 CA—Light and Medium Mortars have a 360-degree field-of-fire. Only those mounted in vehicles have a CA, and their vehicle must pivot to fire at targets outside its CA.

14.6.3 Fire Type—Mortar fire by on-map units is Indirect Fire, but is conducted during the Fire & Movement Segment. Mortars use the Hit Probability Table and BOT markers normally. When attacking vehicles refer to the Indirect Fire portion of the Direct Hit Results For APC And Non-AFV Vehicles table after making a roll on the Casualty Table following each HIT obtained.

14.6.4 Fire Restrictions—Mortars may not fire from inside Buildings (except from roof or roofless locations), bunkers, blockhouses, from water hexes, or, unless vehicular-mounted, by Personnel transported by vehicles.

14.6.5 Minimum and Maximum Range—Mortars have a minimum and maximum range as indicated on their counter in the format minimum-maximum following the "#". Example: The British 3 inch M|MTR has a minimum range of TWO and a maximum range of 32 hexes. They may not fire at targets beyond their maximum range or less than their minimum.

14.6.6 Full Cover—Mortars may fire from Full cover when located in a hedgehog (always), or from 'down' in a Wadi or Ravine, the latter two only when using an Observer that has an LOS to the target hex.

14.6.7 Mortar Observer—Mortars may fire without an LOS to their target by using a 'Spotter', a Personnel unit functioning in a similar manner to an FO. Any adjacent Personnel unit may act as a Spotter. A Personnel unit may only act as a Spotter for one mortar or multiple mortars in the same hex. When spotting for multiple mortars, each mortar may attack a different hex. Mark the Personnel unit with an 'F' marker when

spotting for mortars, or make a side note. A non-FO Personnel unit acting as a Spotter is considered to have fired an L weapon only for restricting their ability to use other weapons and move. Placing an F marker for Spotting is not itself an Opportunity Fire trigger.

14.6.71 Full Cover Usage—If an LOS otherwise would exist, mortars may be fired from FULL cover position in an Emplacement, without the need for another unit to serve the function of a Spotter. Firing a mortar in this manner does not 'reduce' the FULL cover protection of the firing unit in any way.

Example: a British 51mm Mortar down in a Ravine wishes to hit a German squad assault moving in an Open Ground hex 9 hexes away. A 1|1|8 leader in a Brush hex adjacent to the ravine is spotting for the mortar. The Mortar is a D gun type, which at 9-16 hexes needs a 4 to hit on the HPT. The Germans have Assault Cover, so the British player subtracts one from the roll; he needs a 5 or less to hit. If he hits, the result will be unmodified. Use the '6' column on the Casualty Table.

14.7 FLAMETHROWERS

14.7.1 Overview—Flamethrowers refer to both infantry weapons and vehicular-mounted versions. FT use the same procedure as small arms fire against Personnel but may not be included in a Firegroup, and use their own procedure against vehicles.

14.7.2 Fire restrictions—A Flamethrower may never combine its fire with any other unit or be used in a Firegroup. Leaders do not provide any shifts to FT attacks nor is an FT halved during Assault Fire use.

14.7.3 Cover State exception—Fire from an FT ignores any Cover State produced by the terrain in the target hex or hexside, including any cover state column shift afforded by vehicles and wrecks. Only SMOKE cover is applied.

14.7.4 Range—The range of a Flamethrower is ONE hex.

14.7.5 Flame and Fuel—Roll 2 dice when attacking with an FT. Use the colored die for the attack. If the target unit is any terrain eligible for Flame placement (Building; Woods, etc.), place a Flame marker in the attacked hex following a result of C6 or higher. On a white die roll of 9-0, the Flamethrower is 'out of fuel' and the Weapon is removed from play AFTER the attack is resolved. If the FT is a vehicle's MA, mark the vehicle with an F-KILL marker, unless the vehicle is also equipped with another MA, for example a Gun, whereas the vehicle may continue to operate normally with its other weapons.

14.7.6 Sd 251-16—This vehicle has Flamethrowers mounted on both its left and right sides. Treat each as a separate Flamethrower that may only fire at target hexes adjacent to the vehicles left or right FLANK aspect. Each Flamethrower may run out of fuel separately. The vehicle is not removed from play for being F-KILLed unless both Flamethrowers are out of fuel. Make a side note of the side out of fuel when placing one F-KILL marker on a Sd 251-16.

14.7.7 Carrying Unit Risk—Any Personnel unit carrying a Flamethrower receives a one column shift RIGHT (1R) for ANY Casualty Table attack against it, including after being hit on the HPT. This shift is only applied on the Casualty Table, never as an HPN DRM.

14.8 SEMI-AUTOMATIC GUNS

14.8.1 Overview—Some small caliber Guns (e.g., Pzkw IIf turreted MA) have a high rate-of-fire and may directly attack on the Casualty Table in the same way as a MG used without rolling for a hit on the HPT. Known as 'Semi-Automatic Fire', this form of fire consumes all available ROF of the weapon for that turn. Apply any column shifts for pivoting normally.

14.8.2 Procedure—For any AA Gun of 40mm or less and ANY Gun of 20mm or less, multiply the normal FRAG Factors for that gun by its ROF to obtain a GF equivalent. This GF value can be used against any target in the same manner as a MG.

14.8.3 Range—Semi-Automatic Guns may fire out to a range equal to half the Gun size. For example, a 37mm AA Gun may fire up to 18 hexes away.

14.9 SPIKING WEAPONS—Any type of Weapon unit may be 'spiked,' or rendered useless, by any Personnel unit that carries or picks it up. The weapon may be spiked instead of fired by any unit that could otherwise fire it. Remove Spiked Light and Medium weapons from the map. Place an F-KILL marker on spiked Heavy weapons.

14.10 ALTERNATE AP AMMUNITION

14.10.1 Ammunition Types—During World War II, the combatants developed new forms of Armor Piercing (AP) ammunition in an effort to deal with the thicker armor plating on new tank models. In game terms, these alternate ammunition types are listed on each AFV Card or for each gun on the Gun & Mortar Ammunition Table (Play Aid 5 for each nationality). Treat each form of alternate AP ammunition as a form of 'AP'—they use the AP portion of the K-KILL Table.

14.10.2 Dates of Availability—During the war, the Axis produced a limited supply of Armor-Piercing Composite Rigid (APCR) and High Explosive Anti-Tank (HEAT) ammunition, which had markedly superior penetration capabilities. HEAT may not be used for any scenario set before June 1942. Italian 75mm and 65mm guns had HEAT available beginning in September 1942. The Allies manufactured a limited supply of Armor Piercing Discarding Sabot (APDS). APDS may not be used for any scenario set before June 1944.

14.10.3 Special Ammunition Penetration—When firing APCR, HEAT, or APDS ammunition, use the appropriate entry (e.g. APDS) on the Gun Penetration Table for those ammunition types.

14.10.4 Determine number available—To determine the number of 'rounds' for each ammunition type available during a scenario, add the number of 'APCR,' 'HEAT' and APDS capable units in the Order Of Battle and use one third (round fractions down) of this total as the base number for that ammunition type. Note the modifier on the table if the opponent's order of battle includes certain tanks, such as the Grant and Tiger. The base number, plus the total from the Alternate Ammunition Availability Table roll equals the number of each type of APCR, HEAT, and/or APDS shots available for the scenario.

14.10.5 Assign Special Ammunition—The owning player must specify the identity of the AFVs or Guns 'carrying' the alternate rounds resulting from the calculation above. Make a side note of the ID letter of the unit's allotted APCR, HEAT or APDS ammunition and quantity available for each. Only the noted units may use this ammunition. Each 'round' is equal to one hit attempt die roll on the HPT.

14.11 TIME-FUZED HE AMMUNITION—When firing the 88mm Flak using Direct HE, or when an SSR specifies a 'Variable Timed Fuse', Airbursts are produced in terrain that does not normally produce Airbursts. There is no additional effect in hexes that already provide Airbursts.

14.12 CANISTER AMMUNITION

Canister ammunition is listed on the Gun & Mortar Ammo Table under the 'C' column. Canister is fired in the same manner as a Gun using Semi-Automatic Fire with the exception that it may fire at any TWO adjacent hexes (or two locations within one hex) within the LOS and covered arc (CA) of the firing weapon. Apply pivoting normally as column shifts when using Canister ammunition.

14.13 SPECIAL WEAPONS

14.13.1 Demolitions—Certain weapons allow units to destroy terrain, emplacements or other special targets during play. Satchel Charges and Flamethrowers can be used to attack normal combat targets and sometimes affect terrain, too. The following two types never attack enemy units.

14.13.11 Dozer—Bulldozers (or Dozers) come in three varieties: unarmed (and unarmored) types with a white movement icon; armored types with a yellow icon; and tanks equipped with dozer blades. All three have a special form of Assault movement that may be used for 'Dozing'. The dozing value is printed on their counter in this format Cross Country | Assault $^{\text{Dozing MP}}$. All Dozers perform Dozing tasks the same way.

14.13.12 Dozing—Dozers affect certain terrain, emplacements and remove non burning wrecks from play. They 'doze' moving normally to enter the hex in question. They then may spend their ONE Dozing MP AFTER already entering the hex, in order to conduct a Dozing activity. Dozing triggers Opportunity Fire and the results only apply AFTER any fire is completed against the Dozing vehicle. Although not considered firing, Dozing requires a roll on the '50' col-

umn of the Casualty Table to attempt an affect on the terrain, emplacement or wreck. After rolling on the Casualty Table, refer to the Demolition Table for results. If the C# is high enough, the terrain, emplacement or wreck is affected. Otherwise, there is no effect. Upon obtained a result, ONE Bunker, Beach Obstacle, Roadblock, Wreck or Wire counter in the hex (or along one of its hexsides in the case of a Roadblock) is removed from play. Mark a Bocage, Hedge or Wall (including High Wall) hexside with a Minefield Lane counter to signify all forms of units may now cross the hexside (LOS is still treated normally). Replace an AT Trench or Hedgehog with a Foxhole counter.

14.13.13 Bangalore Torpedo (BT)—Bangalore Torpedoes are special 1/2" Light weapons that may only be used once and then are removed from play. Normally used by Engineer units, Bangalore Torpedoes are used to remove Roadblocks, Wire and Mines from play. A BT attacks on the '50' column of the Casualty Table and uses the Demolition Table.

15. SPECIAL VEHICLE RULES

15.1 AFV TYPES—All AFVs have gray movement point backgrounds. Within the family of AFVs are several varieties, defined in game terms by movement type, armor, open or closed top and turret.

15.1.1 Tanks—A Tank is a fully armored, turreted, tracked AFV. Tanks may be open-topped (OT) or close-topped (CT).

15.1.2 Armored Cars (AC)—Armored Cars are turreted, wheeled vehicles and are sometimes sufficiently armored to be considered AFV. They are treated as AFV or APC or truck type vehicles normally based on their movement icon.

15.1.3 SPGs—Many nations produced turret-less AFVs, referred to here as self-propelled guns (SPGs). SPGs may be open-topped or close-topped and are treated as AFVs in all respects. An SPG may only fire at targets that are within its field-of-fire, which consists of its two front-facing hexsides. It must pivot to change its VCA.

15.1.4 Open Topped vehicles—All vehicles that are Open Topped (OT) have a white outline behind the vehicle art on the counter (e.g., German Sd 251-1). An OT vehicle is vulnerable to Indirect Fire, Grenades, and Personnel Fire due to the nature of the exposed gun position.

15.1.5 Partially Armored vehicles—Some vehicles have no armor at a particular facing. Un-armored facings are indicated by the 0 entry for the Armor Factor for that facing/aspect combination (or a black dot for some vehicles in Advanced Tobruk). Any AP or HE that hits an un-armored aspect and facing, or small arms fire against that facing, is considered to hit a TRUCK type vehicle, with Stationary Cover for the Crew. Refer to the Attack Results Vs Vehicles And H Weapons table to resolve effects, using the 'Truck' row.

15.2 VEHICLE WEAPONS

15.2.1 Multiple vehicle Weapons—Most vehicles are armed with multiple weapons, usually a Main Armament (MA), and machine-guns. Some vehicles have multiple MA (never more than two), a FT, or some combination thereof. An individual vehicle may use all of its weapons once per Fire & Movement Segment during different impulses OR all during the SAME Impulse as ONE unit. Vehicles may perform different kinds of fire in the same segment/impulse, such as firing Machine-guns at Personnel and using their Main Armament on the HPT at an enemy tank. All of a vehicle's weapons are rendered unusable if it suffers an F-KILL result (Exception: A Grant/Lee AFV has its TURRET and SPONSON mounted guns F-KILLed separately).

15.2.2 Weapons Mounts—Vehicle mounted weapons are mounted in two specific ways: Hull mounted or Turret mounted.

Turret Mounted Armament—Turret-mounted weapons are indicated by a black circle around the Gun Size (e.g., 75|B with a circle around it) on a vehicle counter. These vehicle Guns pivot with the turret, and thus can change covered arc independent of the vehicle.

Hull Mounted Armament—Some vehicles (e.g., Italian M11/39) have a main armament in the form of a gun mounted in the Hull and a MG in the turret. A Hull-mounted Gun fires in the same manner as an SPG. Almost all APC/AFV also have additional hull (also referred to as 'Bow') mounted weapons in the form of Bow MG (BMG). In some vehicles a FT or Gun is also mounted. Hull-mounted Weapons use the same covered arc as the vehicle (known as Vehicle Covered Arc, or 'VCA'). Thus, the entire vehicle must pivot to fire these weapons at a target not already within the two-hexes that define its VCA.

15.2.3 The main armament (MA) of a vehicle uses the Gun values printed in the lower left corner of the vehicle counter. In the absence of such a weapon, treat any MG marked with a circle around the machine-gun value as that vehicle's MA. No other vehicles are considered to have an MA, and thus they are not forced to exit if any other vehicle armament is F-KILLed.

15.2.4 Machine-guns—The following machine-guns mounts are found on vehicles. All are treated as M|MG, except where noted otherwise. Exception: The L|MG Carriers are armed with.

15.2.41 Coaxial (CMG)—Mounted in the turret, the CMG shares the turret's Covered Arc (also referred to as 'TCA'). Some turret-mounted MG are face to the REAR of the TCA (e.g., Italian AB 40 APC).

15.2.42 Bow (BMG)—Mounted in the front Hull, the BMG shares the same covered arc as the vehicle counter at all times.

15.2.43 Anti-Aircraft (AAMG)—Fires in an unlimited 360-degree field-of-fire (regardless of the turret or vehicle covered arcs) but capable of fire only if the vehicle is NOT Suppressed.

15.2.44 MG Format on counter—Machine gun weapons are listed on the counter in the following format: CMG | BMG | AAMG. The absence of any MG mount is indicated by a '-'.

15.2.45 MG Range—CMG and AAMG, as well as BMG mounted on APC, have a normal range of '10' hexes. Other BMG have a normal range of '6' hexes. All types may fire out to double their normal range at half Gunfire Factors as Long Range Fire.

15.2.46 MG Firegroup—The BMG, AAMG, and the CMG of a vehicle (as well as any H weapon using Semi-Automatic Fire) may combine in an form of a 'Firegroup' to fire at the same target. This is the only way a vehicle may combine firepower with another unit for an attack. Mark the units with 'F' markers, noting if any MG are left available to still fire. APC and truck type vehicles may combine their machine-guns GF with other APC/truck type vehicles and Personnel units to form a Firegroup.

15.2.47 Assault Fire—Vehicles using Assault Fire may fire any or all of their MG (as well as their MA) from the starting hex or any hex entered during their movement impulse. If a turreted weapon fires during the move, any other weapon in the turret fired from the same hex must fire at the same target hex. Assault Fire HALVES the GF of the firing MG and adds a +5 HPN DRM for HPT fire.

15.3 TURRETS

15.3.1 Turrets have two varieties, fast and slow.

15.3.11 Fast Turret—Fast turrets have a black circle around the gun value (e.g., Crusader II; Pz IVh).

15.3.12 Slow Turret—Slow turrets have a dashed line (e.g., Pzkw IIf; Pz IVj).

15.3.2 Turret Covered Arc (TCA)—Instead of turning the vehicle's VCA, a turreted vehicle may pivot its turret to fire turret-mounted weapons in a new TCA.

15.3.3 Turret Marker—Place a turret marker on the AFV to indicate its current turret facing if it is not 'straight' (i.e., the same as the vehicle's facing). Any hits on the turret aspect strike the front, side, or rear of the turret according to the turret counter facing.

15.3.4 Rear Facing—Some vehicles have Turret-mounted Weapons that are assumed to be facing to the REAR of the Turret. These have a superscript 'R' appended to the Gun Value (e.g., Portees).

15.3.5 Turning a Turret—Any AFV equipped with a turret may turn it one hex side per movement point spent during the Movement Segment (including spending MP to turn a turret without leaving its hex) or freely during the Combat Segment (the latter entails no MP expenditure). Place a turret marker on the vehicle accordingly. Turning a turret is not considered movement and the AFV may turn a turret without leaving its hex. Turning a turret is an Opportunity Fire 'trigger' but one hexspine change in turret facing may be made before the vehicle may be fired on. Turning a turret during the Combat Segment incurs HPN die roll modifiers that penalize the firing unit

(making securing a hit more difficult).

If an AFV wishes to turn a turret in order to fire during the Combat Segment, it adds an HPN modifier for each hexspine change to any direct hit attempt on the HPT, +1 DRM for Fast and +2 for Slow for the first hex side change and +1 per hex side thereafter. Each + penalty for pivoting a turret also provides a one column shift LEFT for the gun, and any vehicle machine-gun (or semi-automatic weapon) firing on the Casualty Table. For example, a +2 turret change applies two LEFT shifts on the Casualty Table for the CMG.

15.4 HULL-DEFILADE AND TURRET DOWN

15.4.1 Vehicles may move behind or into certain types of terrain so that the terrain covers the lower part of the vehicle, leaving the upper part of the vehicle, usually just the turret, free to observe and fire. This is called Hull-Defilade (H-D) or 'hull down.' Some terrain may also provide Hull-Defilade but requires a die roll (e.g., Scrub). When H-D status is obtained via a DIE ROLL, the vehicle obtains Hull Defilade protection ONLY through its FRONT hull facing, in the position it was in when it rolled successfully to obtain H-D status. In the event the vehicle moves OR pivots its HULL (i.e., turning the turret is OK), the Hull Defilade marker is immediately removed. A new roll may be subsequently made, even if the vehicle does not leave the hex (i.e., if it pivots only).

15.4.11 H-D APC/Truck as Targets—Usually a hit location is NOT rolled for APC or Truck-type vehicles. However, when these vehicle types are H-D due to terrain or emplacements that do NOT require a die roll to obtain H-D, the Hit Location Table IS used to determine IF a 'hit' is obtained. Use the Hit Location Table normally, ignoring any ineffective hits (e.g., LH or Track aspects are considered a 'miss' against all; an UH aspect is considered a 'hit' against all non turreted APC and truck type vehicles; a TUR is considered a hit against any turreted APC/truck type vehicle).

15.4.12 Flank HPN DRM—Ignore the -1 HPN Flank DRM when firing on a TURRETED H-D vehicle, i.e., there is NO flank modifier for the side of the turret. It is applied against any H-D non-turreted AFV (i.e., hit on Upper Hull aspects hit).

15.4.2 Hull-Defilade terrain—Vehicles are automatically in Hull-Defilade if any incoming fire crosses an adjacent wall, crest-line from a lower elevation hex (if on a HILL; may roll for H-D on a Hillock) or higher elevation hex (if in a deir). Vehicles may also roll to become hull-defiladed in some terrain (e.g., Scrub; on hillock hexes). H-D status is also provided by some emplacements.

15.4.3 Effects—When firing at a NON SPONSON turreted Hull-Defilade AFV/APC, only a TURRET Hit aspect is considered a HIT on the vehicle. Ignore all other aspects. An UH hit is considered a hit for a non turreted AFV/APC, including SPONSON armed AFVs. In the case of a Sponson AFV that ALSO has a turret, a TUR aspect is ALSO a hit (i.e., a turreted Sponson AFV like the Grant will be hit on TUR and UH).

15.4.31 H-D Modifiers—For targets marked with BOT, a -3 DRM applies on the Hit Location Table (in addition to applying the -3 HPN DRM). Note: BOT markers are NOT placed on H-D vehicles unless the hit strikes an aspect considered a HIT. Vehicle size is also used as a DRM on the Hit Location Table, i.e., Large vehicles receive a -1 DRM; Small a +1; and Very Small a +2.

15.4.4 Once a vehicle leaves a hex in which it had Hull-Defilade cover provided by a die roll, it may not regain that cover without exiting the hex and re-entering it.

15.4.5 No 'transfer' of Hull-Defilade is allowed from one AFV to another in hexes that require a die roll to acquire this status.

15.4.6 Each vehicle must roll separately for Hull-Defilade. Only one AFV may be in a Hull-Defilade position in a single hex.

15.4.7 Turret Down—A vehicle may use hill terrain to enter a 'turret down' position. A vehicle in a hex immediately adjacent to a Level +10 hill (or +10 higher than the vehicle's current hex) out of LOS of units on the other side of that terrain may use INDIRECT Fire HE at units blocked from its LOS by HILL terrain from 'turret down' positions using Observers in the same manner as mortars with the following exception. No target may be fired on that is less than TEN hexes from the firing unit (i.e., not the spotter).

15.5 ARMOR COMMAND, CONTROL AND COMMUNICATIONS

15.5.1 COMMAND CONTROL (C^3)—This rule simulates some of the C^3 (Command, Control, and Communications) problems associated with handling armored units in action. Armor Command Control is used if specified via SSR.

15.5.2 Company Size— For each company-level, (or smaller) 'group' of AFVs given in a scenario for each side, one AFV is the command tank which must 'lay back' and may not participate directly in an engagement. A Company is considered to be 17 AFVs, except for the British, who use 16 AFVs.

15.5.3 Command Tank Fire Restrictions—The Command Tank may not initiate fire against targets. If fired upon, it may only respond by gun dueling with the initiating unit. It may not Overrun.

15.5.4 FO—If an FO is assigned to armored units, it must be located in the Command Tank.

15.5.5 Bail Out Modifier—If the Command Tank is K-KILLed, F-KILLed or M-KILLed, add 1 to the die roll for all Bail-Out checks for the remaining AFVs in that group for the rest of the game (making bailing out more likely).

15.5.6 Commander Relocation—If the Command Tank spends an entire Fire & Movement Segment with another AFV in the same hex, without either moving, the Commander may be placed in the new AFV. Make a secret side note to this effect.

15.5.7 Initiative Modifier—If only one side in a scenario has a non M/K-KILLed Command Tank, that side has a -1 modifier to all of its Initiative die rolls if both OOBs contain vehicles only.

15.6 ELITE TANK COMMANDER -In some scenarios, SSR will specify that one or more AFVs may be recorded as carrying 'Elite Tank Commanders'. Simply make a side note of the ID of the AFV and apply a -1 on the HPN DRM, Immobilization check, Hull-Defilade check, and Suppression die rolls for that AFV. Elite tank Commanders may move from one AFV to another in the same manner as a Command Tank. An Elite Tank Commander need not be in a Command Tank and Armor Command Control need not be in force.

15.7 APC UNITS -APC are lightly armored, usually Open-Topped Transport vehicles. APC have yellow movement icons on their counters. Half-Tracks and Carriers are the most common types of APC.

15.7.1 Inherent Crew—APCs contain inherent Crews in the same manner as AFVs—they never take counter form.

15.7.2 APC as targets—Use the Attack Results Vs Vehicles And H Weapons table (C2) for all fire at an APC, noting that APC may be M- and F-KILLed.

15.7.3 APC Passengers—Personnel units being transported in APC whose counters include a 'G' or 'F' notation are in Good Cover and (if an 'F' notation is present) may drop into Full Cover, marked with a FC marker. If the vehicle counter does not contain a 'G' or an 'F,' treat the cover state as Stationary.

15.7.4 APC Firegroups—all APCs and their Passengers may form firegroups with other APC and Personnel, following the standard Firegroup rules.

15.7.5 Half-Tracks-Half-Tracks are usually APC with a yellow movement point icon in the shape of an 'oval plus small circle' – some are unarmored white icon vehicles.

15.7.51 Half-Track MG—Many Half-Track APCs such as the 251/1 are equipped with one BMG. Some have AAMG or BMG that may only fire from a REAR VCA, and are marked with an 'R' superscript. The 'standard' BMG has a front field-of-fire and fires like an AFV BMG.

15.7.52 Half-Track APC Passenger Fire—Personnel units transported in a Half-Track may fire their printed Gunfire Factors and any one L|MG possessed while in Good Cover. This L|MG is fired through the rear and side facings of the Half-Track only, but Personnel Gunfire Factors may be fired through the front facing too. If the Half-Track uses Assault movement, this fire is halved. Passengers in a Half-Track may not fire if the vehicle uses Cross-Country movement.

15.7.6 Carriers—The Carrier is a small fully-tracked lightly-armored APC usually

used by British and Commonwealth forces. It carries an inherent Crew. Unlike other vehicle Crews, a Carrier's Crew may exit normally and take counter form as a 1|3|7 Crew counter.

15.7.61 Weapon Mounts—Carrier weaponry functions in the same manner as the main armament and machine-guns of AFVs. Exception: The Carrier machine-gun functions in the same manner as a British L|MG, including when removed. Carrier weapons may only fire through their VCA. All other Direct Fire rules apply to the ATR and vehicle MG.

15.7.62 Crew/Weapon Removal— Weapon Removal—A weapon may be removed from a Carrier by its inherent crew, which must also exit. Removal of any weapon and unloading of the crew is done using normal loading and unloading procedures. If the Carrier is K-KILLed, all weapons are destroyed. A side note must be maintained as to which weapons are removed from Carriers – or mark with F-KILL and Bail Out markers. A Carrier can no longer fire or Overrun if its Personnel crew unloads but it may still move. Any Carrier machine-gun removed enters play as a Bren L|MG. A British L|ATR and/or L|MG may be removed from a Carrier B.

15.8 SPONSON AFVS-Some AFVs had Heavy weapons mounted in the Hull, called Sponson, in addition to Turret-mounted weapons. Any gun mounted in a Sponson has an 's' superscript on the Gun value for that Gun on the AFV counter. A Sponson AFV may fire both of these weapons independently during its portion of the Fire & Movement Segment. They may fire at completely different targets if desired. Each Gun must acquire its target separately for BOT purposes.

15.8.1 Limited Traverse—A Sponson weapon is severely limited in its ability to engage targets due to its location Consequently, a Sponson gun may only fire at targets that are within its 'field-of-fire' which consists of all hexes within the angle formed by its front-right hex spine and its right front-flank hex spine, inclusive. A Sponson gun may not fire targets that lie outside of this arc unless the vehicle pivots. It may not fire from Hull-Defilade.

15.8.2 F-KILL Exception—Weapons on a Sponson AFV are destroyed separately. An F-KILL resulting from a Turret hit F-Kills the turret-mounted weapons. An F-KILL from any other hit F-Kills the hull-mounted weapons.

15.8.3 Grant/Lee-They have two MA instead of one; the 37mm Gun in the Turret, firing only AP ammunition, and the 75mm Gun in the Hull, as a Sponson Gun.

15.8.4 M 11/39—The M11/39 has a Machine-gun armed Turret in addition to a Sponson-mounted 37mm gun in its hull.

15.9 PORTEES

15.9.1 Overview-Portees are Trucks with a Gun mounted on the bed in a rear Covered Arc. Trucks mounting AT guns in Portee may not Tow other Weapons nor Carry any other unit except its inherent Crew. AT guns mounted in Portee have their guns facing to the rear two hexsides unless marked with a Turret marker (as indicated by the 'R' superscript on the gun value on the counter). Portees fire as AFVs but remain Truck type vehicles for target purposes.

15.9.2 Crew—Portee carry an 'inherent' Crew treated the same as an AFV Crew – they may Bail Out. A Portee Crew receives Stationary Cover. AT Guns and Crews in Portee on K-KILLed Trucks are destroyed.

15.9.3 Unloading—An AT Gun may be Unloaded from a Portee in a two turn Unloading procedure during which the Gun, Truck, and Crew may not move or fire. A Crew or larger unit is required to Unload the Gun. If the Portee receives an attack by Gunfire or FRAG Factors, the Unloading process must halt. Mark the portee with a Smoke '1' marker or make a side note after the first turn of Unloading. Replace the Portee counter with the appropriate Gun, a Crew and a Light Truck counter once Unloaded. Note the '37' Portee is armed with a captured German PaK 36.

15.10 WATERCRAFT

Watercraft transport Personnel, weapons and vehicles in Stationary cover in the same manner as TRUCKS and the values printed on their counters are in the following format: Cover State | Stacking Points they may carry in WATER hexes. Watercraft are carried by Personnel in the same manner as MEDIUM weapons as denoted by the value on the counters as 'M|WC' and thus never move on their own as if they are vehicles. They may be carried IN APCs providing G or F cover or in truck type vehicles, as if they are M weapons.

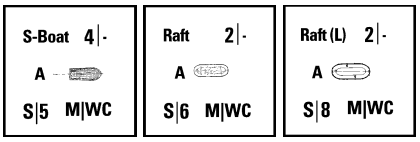
15.10.1 Personnel Usage—Personnel units carry watercraft in the same manner as M weapons, including firepower reduction for carrying units. A watercraft may be placed in a water hex by a carrying Personnel unit ONLY if using Assault movement and the carrying unit may be stacked ON TOP OF the watercraft to signify it is riding IN it in the water hex. Any Personnel unit(s) moving with the carrying unit as a Platoon may also enter the watercraft at this time. Adjacent Personnel units may also use Infiltration to enter a watercraft. Once placed in its FIRST water hex, a watercraft may be moved no further during that movement impulse.

15.10.2 Vehicle Usage—The only watercraft that may transport a vehicle is a 'Raft (L)'. If using Assault movement, ONE vehicle may be placed ON TOP OF an 'L' Raft in an adjacent water hex AND may exit one to an adjacent non-water hex. A watercraft may never be carried by Personnel until any vehicle on the raft has exited and a vehicle uses ALL Stacking Points of a watercraft (i.e., no other unit may be placed on it).

15.10.3 Heavy weapons—Rafts are treated in the same manner as normal transport (Exception: They are entered FROM and exited TO adjacent, non-water hexes).

15.10.4 Water Movement—Once in water hexes, watercraft use the MP printed on the WC movement icon (waves over a white background) to move in WATER hexes only and do NOT need Personnel on them in order to move (Exception: WC may only move during Infiltration if Personnel are on board). When riding in watercraft, Personnel may still Infiltrate one hex, including into an adjacent LAND hex. Watercraft may not use Infiltration when carrying a vehicle.

15.10.5 Target Status—When firing at Personnel in watercraft while in WATER hexes, treat them as in Stationary cover and apply Casualties normally. However, NO morale check is taken following a 'C' result when in a water hex.



15.10.6 Rafts and S-Boats—The only difference between 'Raft', 'Raft (L)' and 'S-Boat' counters in game terms is their speed and Stacking Points limits, including the ability of 'L' rafts to transport vehicles. All are considered Watercraft.

APPENDIX C. OPTIONAL RULES

The rules below are presented for use upon the mutual agreement of the players. They are in no way official. We cannot answer nutmail on these. In fact, instead of asking US questions about these, we urge the readers to answer their own questions and send us both YOUR questions and answers to assist in the development process. Talking about these online is also encouraged.

Exhausted Infantry—Any personnel unit marked as Winded adds +1 or one column shift LEFT to all fire or Melee it takes part in.

No Hand Grenades—Before making a Grenade Attack (including grenade variants, e.g., Gammon Bombs), a unit must FIRST roll for Grenade availability. A die roll less than or equal to its value in Stacking Points must be made to have grenades available. A unit that fails a Grenade Attack availability roll is NOT considered to have made an attack (i.e., it is free to Infiltrate).

Hidden Movement—Any unit that is hidden may move from a hex/location to an adjacent/same hex location using Crawling Movement and remain hidden if no enemy unit (or 'C' marker) is in the newly entered hex/location. Make a side note of this form of movement.

Bayonet Charge—When using Personnel Platoon Movement, a leader may declare a Bayonet Charge at any point when it and at least one other non-leader personnel unit is otherwise still able to move. A special Bayonet Charge Morale Check is made, with a +4 DRM (making it harder to pass). If the leader passes the check, it and all other units currently moving as part of the Platoon are eligible to make a 'Bayonet Charge'.

Treat all personnel as if temporarily marked with a Courage marker (i.e., ignore morale checks) and treat ALL units as if Running, even if previously marked as Winded. Personnel executing a Bayonet Charge may IMMEDIATELY enter enemy PERSONNEL hexes.

Once all units taking part in the Bayonet Charge cease moving, Melee may be conducted normally with the following exceptions: The Bayonet Charging units do NOT take melee morale checks. At the end of the Movement Segment remove all temporary Courage markers from Bayonet Charging units. They are treated normally thereafter, including marking all units that took part in a Bayonet Charge with a Winded marker.

Target Panic—A friendly personnel unit(s) adjacent to an enemy personnel conducting a Bayonet Charge may 'panic' at the approach of the enemy IF the total enemy units making the charge in the LOS of the friendly unit(s) exceeds their Stacking Point value by DOUBLE or more. Play is immediately halted in the same manner as Opportunity Fire and an immediate Panic morale check is made by so-affected friendly unit(s). Any units that fail are immediately marked as Broken and may IMMEDIATELY move as a Broken unit normally BEFORE the enemy Bayonet Charge can continue.

Night Vulnerability—Any personnel unit NOT stacked with a leader, entering from off-map, or with a current morale of '8' or greater must pass a morale check in order to move at night. Units that fail this morale check are marked as moved but otherwise suffer no additional consequences.

Blowing Bridges—A Satchel Charge may instead be used to blow a bridge hex (exception: NOT the Arnhem Bridge). On a C6 or greater result place a Rubble marker in the hex. The rubble is considered to be down in whatever terrain the bridge formerly crossed, at the level of the terrain (usually -10), and no longer affects LOS at the previous level.

Crashing a Roadblock—Any non-small (or very small) AFV/APC may attempt to crash through (eliminate) a roadblock. The vehicle must be using Assault Movement and must roll immediately upon entering a hex that shares a Roadblock hexside, applying the die roll results as follows:

dr	Result
1-2	Roadblock removed; vehicle enters adjacent hex;
3-4	Roadblock removed; vehicle enters adjacent hex marked with M-KILL;
5-6	Roadblock NOT removed; vehicle marked with M-KILL in its current hex;
7-8	Roadblock NOT removed; vehicle replaced with non-Burning wreck in current hex;
9-0	Roadblock NOT removed; vehicle replaced with Burning wreck in current hex.

Path Through Crops—Any tracked (including half-tracks) vehicle that enters a Crops hex places a LANE marker in the hex. Any Crops hex marked with a Lane marker is treated as Open Ground for LOS (only) purposes.

Bocage Spider Hole—Any Hedgehog or Foxhole that begins play adjacent to a Bocage hexside also serves as a passage to the other side of any connected Bocage hexside for personnel units moving from UNDER the Emplacement. The cost to enter the adjacent hex is treated normally IGNORING the Bocage hexside (i.e., pay ONLY for the other terrain in the adjacent hex).

Forests—A woods hex can be defined to be Level +20 and +30 higher than its hex.

Gun Jamming—Any time a weapon of any kind, including vehicle MGs (i.e., excluding personnel printed Gunfire Factors and Grenades), original DOUBLES create the chance for a weapon to 'jam'. A subsequent die roll is made. On a roll of 1-2, the weapon is considered to have jammed. Place an F-KILL marker, including on infantry weapons.

Unjamming Weapons—The breech of any jammed (i.e., NOT weapons F-KILLed normally) weapon may attempt to be 'cleared'. Only infantry weapons and Heavy crew-served weapons manned/carried by non-Broken/Surrendered units may have a clearing roll made. All non-Suppressed vehicles may roll. A die roll of '1' during the End of Turn Segment clears the weapon (i.e., immediately removes the M-KILL marker).

Jammed Turret—Any turreted vehicle hit by an HE/AP round in the turret may jam the turret. A roll of two dice is made and on a roll of '1-5' the turret is considered jammed. It may no longer change turret covered arc. This form of jamming may not be removed an no other effect is applied by a turret jamming dice roll.

AFV Crew Survival—Any AFV crew that Bails Out is placed on the board in the AFVs hex in the form of a Reduced side crew of that nationality. When it is placed on board, treat it as if in Running Movement (including the placement of a Winded marker). It is treated normally as a crew for all other purposes.

Closed Transport—The personnel carried in any half-track or truck may be removed from the map and a side note made of the units being carried.

Regrouping—Two non-Broken/Surrendered Reduced squads may 're-group' during the End of Turn Segment if they start non-Broken/Surrendered in the same location with a non-Broken/Surrendered leader. The owning player may keep ONE of the two in play, of his choice. IN the case of any placed Casualties markers, if the squad kept in play exceeds the Gunfire Factors value of the two removed, that squad may remain WITHOUT a Casualties marker. Otherwise, ONE Casualties marker must remain on the newly re-grouped squad.

On Board Artillery—An FO may direct the Indirect Fire of any on-board mortar or Heavy crew-served weapon instead of off-board artillery.

Alley Fire—Any unit moving BETWEEN two terrain types that have other terrain that is in the LOS of the firing unit (e.g., two buildings that are not connected, i.e., have open ground between them) may be fired on in the OTHER terrain instead IF the entire hexside between the terrain is in the LOS of the firing unit. This fire is otherwise treated normally.

Inexperienced Gun and Vehicle Crews—Any crew designated as 'inexperienced' adds a +2 HPN DRM to all HPT hit attempts.

Supplemental Armor Plating—Crews in the field occasionally added to their AFV's armor with bogie wheels, logs, and concrete. Any AFV with Supplemental Armor adds +1 to its Front UH and LH Armor Factors.

Spreading Flame—Any Flame marker in a terrain hex may 'spread'. Make a die roll during the End of Turn Segment for each hex/location ADJACENT to a already-placed (i.e., NOT one just created during that segment) Flame marker. On a die roll of '1', the new hex/location is marked with a Flame marker. Any unit unable to exit a Flame location in the next Movement Segment is eliminated, including weapons. Leave vehicle wrecks on board.

Ramming—Vehicles may ram one another in an attempt to M-KILL the opposing vehicle ONLY if the targeted vehicle is NOT already moving or marked as Moved. A ramming attempt may be announced from an adjacent hex by a vehicle of the same size or one that is a larger (i.e., a small vehicle may not ram a normal sized or large vehicle) target size. The ramming vehicle must be using Assault Movement. An immediate die roll is made upon entry. On a roll of '1', the target vehicle ONLY is M-KILLed. One a '9-0' ONLY the ramming vehicle is M-KILLed. On a '2', BOTH vehicles are M-KILLed. Any M-KILLed vehicle remains in its current facing.

Command Detonated Explosives—A hidden minefield may be set up in any hex and can be automatically detonated by a pre-designated (make a side note) non-Broken/Surrendered personnel unit that passes a morale check when it wishes to immediately detonate the minefield (usually when an enemy unit enters).

Enemy Turned the Road Signs—Any time a vehicle comes to a road hex with a 'fork' in it a die roll is immediately made. On a roll of '1' the vehicle is considered 'lost' and the opposing player may choose the road hex (exception: cannot enter a just-exited hex) it next enters. The vehicle, and any others in a platoon or convoy it is moving as part of, must continue down this road until coming to another fork (at which time the same routine is repeated) or its Movement Points for that turn are expended. Any friendly vehicle entering the SAME fork during that Movement Segment applies a '-2' DRM (making it easier to get lost) after at least one vehicle has become lost that turn.

Command Control—Unless ADJACENT to a non-Broken/Surrendered friendly leader at the time it wishes to move, no personnel unit may use Running or Assault Movement (it may Crawl) during the Movement Segment, nor may it Infiltrate, unless it passes a morale check using its current morale.

Snipers—Any leader provided in a scenario may instead be designated as a 'sniper', using its morale as its RANGE and Gunfire MULTIPLIER also (e.g., a 1|1|8 may fire 8 Gunfire Factors to a Range of '8', or 4 Gunfire Factors out to 16 hexes. A Sniper may ONLY fire on leader counters, and may set up hidden. Otherwise, treat sniper fire against leaders normally (i.e., use the Casualty Table; apply terrain column shifts).

No Quarter—'No Quarter' may be declared to be in effect at any time (by voluntary player declaration, just call out, "no quarter!") Once No Quarter is in effect, Surrendered units of both sides may be fired on, and ANY unit that fails a morale check while in the same hex as an enemy unit is IMMEDIATELY eliminated.

Looting—Any personnel unit that newly enters a building location rolls one die. On a die roll of '0', it is considered to be looting the interior. It immediately ceases its movement for that turn.

Fanatic Resistance Nest—Any one building may be declared a 'Fanatic Resistance Nest' by a player that sets up on board if Victory Conditions call for one side or the other to control one or more buildings or building hexes to win. Treat all non-Broken/Surrendered personnel in any ONE secretly recorded building (including all hexes and locations of a multi-hex building) as if they are marked with Courage markers until at least ONE enemy unit (including vehicles) enters any building location of that building.

Random ROF—A weapon with a ROF of greater than one may only fire again if its attack resulted in a die roll equal to DOUBLE its ROF or less (e.g., a '2' ROF M|MG may only use its second ROF if its first attack resulted in a die roll of '4' or less).

Camouflage Smocks—All German 7|5|8 squads in 1944-45 receive a one column shift LEFT or +1 HPN DRM when fired on in Woods or Brush hexes.

Mulligan Roll—The player that receives the first ROLLED FOR Initiative also receives a 'mulligan', i.e., the opportunity to re-roll any ONE die roll. Once a mulligan is used, it is 'passed' to the opponent for him to use once, and so on.

Hasty Mines—Add a +1 DRM (making it easier to roll greater than, i.e., pass through) mines that are Hasty Mines.

Bangalore Torpedoes—Any Satchel Charge may be used to place a Lane across two non-touching hexsides of a hex with a Wire counter on a C4 or greater.

Ditches—All non-Paved road (not Trails) hexes (i.e., not gray) are considered to have 'ditches' on either side. Treat these hexes as if a Foxhole counter is within ONLY when a personnel unit wishes to ENTER the Foxhole portion of the hex. Otherwise, an unoccupied ditch Foxhole counter is removed from play.

Wide Boulevards—Any paved road hex (i.e., gray) that is adjacent to at least FOUR other paved road hexes is considered a 'wide boulevard'. An ADDITIONAL one RIGHT column shift (but NOT an additional -1 HPN DRM) is applied to any personnel in such hexes when fired on using the Casualty Table, INCLUDING resolving HE (including artillery and aircraft bombs) against the personnel.

Shaped Charge Backblast—All SCW may be used from inside a building or otherwise restricted Emplacement HOWEVER, whenever a SCW is fired from this setting, a C1 is applied to a unit of the owning player's choice in the location.

Concrete Trenches—Treat Anti-Tank Ditch and Hedgehogs with a +3 FULL Cover benefit.

Pre-Game Massive Bombardment—This is along the lines of the bombing of St. Lo, not to be over-used. The attacking player places a CFF in any hex on the map. Roll for accuracy normally. Then every hex within FIFTEEN hexes of the resulting FFE is attacked by 200+ HE as normal off-board artillery.

Civilians on the Battlefield—Any battlefield still containing its civilian population is treated as follows. Buildings may only be entered in their ground level. No vehicle may enter a building location (it may use the street outside). If one side is entering all of its personnel from off-board, no building may be entered unless an enemy personnel unit was in the building hex and in the LOS of a friendly unit first.

Flooded Terrain—Treat ALL of the lowest non-Ravine/River/Stream terrain level on the map as 'mud' or 'flooded' terrain. Roads still cross such terrain, but are considered Embankments in those hexes. In the case of Mud, treat all such hexes as Swamp. Otherwise, treat them as fordable pond hexes. Players may instead (or additionally) treat all Woods or Crops hexes as mud or flooded. When either of these exists, ALL Ravines are treated as Creek terrain instead.

APPENDIX A. CHANGE SUMMARY

Many talented individuals from within the ranks of the ATS hobby had a hand in this edition of the rules. Despite employment backgrounds ranging from US Army intelligence, a major Silicon Valley software maker, and an engineer from one of the 'big three' auto-makers, not to mention persons from five different nations, the rules have remained remarkably consistent. And the ATS system has remained true to the vision of Hal Hock, the designer of its seminal predecessor, "TOBRUK", published over a quarter-century ago. Rather than call this 'version' 2.0, which suggests a major system change, this release version has received the moniker 'revision 2.0'.

This appendix reviews important changes and serves as a quick reference for players of earlier editions.

C1. Components—The Components Section has much better explanation and clarification of the symbols found on the counters.

C2. Rules Order—Rules that were previously spread over several different sections have been combined in one place in order to make them easier to reference. For example, mortar fire procedures were previously found in sections 12 and 14. They are now combined in section 12. Machine gun rules have also been combined in section 13.

C3. Combat—Section 12, Combat, was reorganized. It is now procedure-driven, with recipes for combat situations (e.g., SCW Vs AFV).

C4. Lethality Percentages—The Casualty Table was modified to satisfy a common complaint from our player community: the die roll of 1 was too devastating. To achieve this goal, the lower die roll results lines were dulled. The Hit Probability Table was also slightly modified to make it more historically accurate.

C5. Column Shifts—Cover shifts for the casualty table (shift left or right) and for HPN (+/- DRM) have been combined into a single notation. "1L" means a shift left and +1 DRM on the HPN. "2R" means two shifts right and -2 HPN DRM.

C6. Building Types—There are now 'wooden' (brown) and 'Masonry' (gray) building types, and a new Cover state, 'Masonry', to go along with the gray buildings. 'M' buildings provide more cover than wooden ones, the latter provide Improved cover.

C7. Terrain Rules—The terrain rules were re-organized. Previously, they were broken up by theater (North Africa, Europe). Now they presented in one alphabetized rules section.

C8. Fire & Movement Phase—The formerly OPTIONAL combined Direct Fire & Movement Phase is now the standard rule, referred to as the Fire & Movement Segment. Direct Fire and Movement Phases (the old way) may still be used as separate phases, now as the Optional Rule.

C9. ROF and Opportunity Fire—The use of multiple ROF and opportunity fire is clarified.

C10. Overstacking—Overstacking penalties are greatly simplified.

C11. Night Rules—Flares are provided, allotted by SSR only. Use them in the Indirect fire phase.

C12. Sections 7-9—Changes were made to these rules sections to clarify the use of terrain and emplacements in the game system.

C13. Terrain—A new rule for "Cushion" terrain (7.1) was added. This is terrain that inhibits the shrapnel effect of HE. The Terrain Table shows which types of terrain are cushion.

C14. Morale (10.0)—The sequence of morale checks is stated. Commissars are now provided.

C15. Chain Surrender—The chain surrender rule was dropped. Instead, there is a -2 DRM on the Morale Table for any Surrendered unit within MSR.

C16. Carrying Weapons—Pick up and carry of weapons was expanded to allow crawling units to pick up a weapon before moving to the adjacent hex.

C17. Combat section (12)—This section received extensive re-writing to tighten up the rules found in this important portion of the game system.

C18. FC Usage—Full cover has been simplified, and is now relegated ONLY to set up for non emplacement usage.

C19. K-KILL Table—The K-Kill table was modified to include the 'Possible K-KILL' results row, instead of players being forced to remember this result occurs on a roll exactly equal to a K-KILL.

C20. Suppression 'C' Based—Suppression no longer requires a minimum of 8 GF, but may now occur after any C1 result or higher on the Casualty Table.

C21. Indirect Fire—The "Direct Hit" die roll was eliminated. Accuracy is rolled for and any affect hexes attacked directly on the Casualty Table.

C22. Indirect fire casualties—Further clarification, per our player community requests. Also a change in how vehicles, buildings and emplacements are attacked by indirect fire. Roll a separate die on the Casualty Table for each of the following: Terrain and emplacement, stack of personnel, heavy weapon, and vehicle.

C23. Modifiers—Armor and vehicle type modifiers have been added for Indirect Fire. Units in Full Cover in an emplacement receive a 3R shift from indirect fire, and Frag Factors and HE are halved.

C24 MG CA—MG covered arc restrictions were removed.

C25. Infiltration—The rules were greatly simplified after it became apparent too many cases were building up. Now ALL eligible Personnel may Infiltrate if they do not conduct a Grenade Attack.

C26. Canister—Canister ammunition has been added, and is treated in the same manner as Semi-Automatic guns, except TWO hexes may be attacked.

C27. Alternate Crews—These may now also be made up from any combination of two leaders and FOs for reduced crew and three for a full-strength crew.

C28. Mortar Usage—Mortar fire, while still considered Indirect Fire, now takes place in the Fire & Movement phase. Mortar observers are now considered to have fired an "L" weapon if they spot for a mortar. Mark them with an "F" marker. The F is to make sure they are marked as having used an Impulse, but not to allow spotting or Opportunity Fire triggers.

C29. Personnel in Melee—Personnel units in vehicles may now join melees, after the first round of melee is completed.

C30. Demolition—Special demolition attacks against emplacements and other targets using bulldozers (including tanks with dozer blades attached), Satchel Charges and Bangalore Torpedoes have been specified.

C31. Command Control—For the purposes of this rule, all tank companies except British (16) are made up of 17 tanks.

C32. Vehicle MG—All vehicle MG may fire to kill AFVs.

C33. New Vehicle Types—Simple new rules were added for bulldozers and rafts.

C34. Sponsons—The rules for sponson-mounted guns and F-Kills have been changed and clarified.

C35. New and Altered Tables—The following are new or reflect alterations: K-KILL Table; Rubble | Flame Table; Indirect Fire Vs Vehicle Shifts; Demolition Table; and Attack Results Vs Vehicles And H Weapons.

APPENDIX B. CHARTS AND TABLES

E.....AFV Bail Out Table
AA.....Alternate Ammunition Availability Table
AFV.....AFV Cards
C5.....Anti-Aircraft Fire Table
TP.....Attack vs. Transported Personnel Table
F2.....Casualty Table
F1.....Cover State Effects Table
C2...Attack Results Vs Vehicles And H Weapons Table
D1.....F-KILL Table
GM.....Gun & Mortar Ammo Table
xP.....(by nationality) Gun Penetration Table
HE.....HE Penetration Table
B.....Hit Location Table
A1.....Hit Probability Table
I.....Immobilization Table
IA.....Indirect Fire Accuracy Table
G.....Indirect Fire Affects Table
C1.....K-KILL Table
L.....LOS Blind Hex Creation Table
ME.....Melee Table
A2.....MG Hit Probability Table
D2.....M-KILL Table
M.....Morale Table
CB.....Off-Board Counter-Battery Table
P.....Personnel Movement Table
A3.....SCW Hit Probability Table
S.....Spotting Ranges Table
D3.....Suppression Table
TC.....Terrain Chart
T.....Tow/Carry Personnel Table
V.....Victory Point Table
FR.....Rubble/Flame Table
V.....Victory Point Table
TS.....Target Size HPN DRM
V.....Victory Point Table
IS.....Indirect Fire Vs Vehicle Shifts
DT.....Demolition Table
DA.....AFV AF (Armor Factors) Vs Aircraft Attacks
U.....Underbelly Hits
AM.....Attack Matrix
BT.....Building Table
EC.....Emplacements Chart

APPENDIX C. ACRONYMS

A.....After
AA.....Anti-Aircraft
AAMG.....Anti-Aircraft Machine Gun
AFV.....Armored Fighting Vehicle
AP.....Armor Piercing
APC.....Armored Personnel Carrier
APCR .....Armor Piercing Composite Rigid
APDS.....Armor Piercing Discarding Sabot
ATR.....Anti-Tank Rifle
B.....Blocking; Before
BAR.....Browning Automatic Rifle
BMG.....Bow Machine Gun
BOT.....Burst On Target
C.....Casualties; Clear
CA.....Covered Arc
CFF.....Call For Fire
CMG.....Coaxial Machine Gun
CoT.....Cost of Terrain
DRM.....Die Roll Modifier
F-KILL.....Firepower KILL
FFE.....Fire For Effect
FO.....Forward Observer
FOW.....Fog Of War
FRAG.....Fragmentation Factors
FT.....Flame Thrower
G.....Good
GF.....Gunfire Factors
H-D.....Hull Defilade
H|AT.....Heavy Anti-Tank Gun
HE.....High Explosive
HEAT.....High Explosive Anti-Tank
HOW .....Howitzer
HPN.....Hit Probability Number
HPT.....Hit Probability Table
H|AT.....Heavy Anti-Tank Gun
I.....Improved
K-KILL.....Catastrophic KILL
LD.....Linear Depression
LH.....Lower Hull
LOS.....Line Of Sight
L|AT.....Light Anti-Tank Weapon
L|ATR.....Light Anti-Tank Rifle
L|FT.....Light Flame Thrower
L|MG.....Light Machine Gun
L|MTR.....Light Mortar
M.....Masonry
M|ATR.....Medium Anti-Tank Rifle
M-KILL.....Mobility KILL
MA.....Main Armament
MG.....Machine Gun
M|MG.....Medium Machine Gun
M|MTR.....Medium Mortar
NCO.....Non-Commissioned Officer
O.....Obscuring
OOB.....Order of Battle
OT.....Open Topped
PaK.....Panzer Abwehr Kanone
ROF.....Rate Of Fire
S.....Special
SCW.....Shape Charged Weapon
SPG.....Self Propelled Gun
SSR.....Scenario Special Rules
TCA.....Turret Covered Arc
TD.....Tank Destroyer
TR.....Tracks
TUR.....Turret
UH.....Upper Hull
VCA.....Vehicle Covered Arc


.....Fully-tracked vehicle icon
.....Half-tracked vehicle icon
.....Wheeled vehicle icon

INDEX

A

360 mounts 3.6.8
AA, Anti-Aircraft Fire.....12.16.14, 12.16.144
AAMG, Anti-Aircraft MG 15.2.43
AC, Armored Cars 15.1.2
Acronyms 2.2
Aerosols 6.5
AF (Armor Factor).....12.10.61, 12.10.62
AFV Bail Out Table (E) 12.10.7
AFV Cards 3.6.1, 3.7
AFV K-Kill Table (C1) 12.10.6
AFV Platoon Movement 11.4.7
AFV Smoke Candles 6.4.9
AFV, Armored Fighting Vehicles ..3.6.1, 3.6.5, 15.1
AFV/APC Assault Fire 12.8.2
AirB, Airbursts 7.1, 12.5.44
Aircraft and spotting.....6.3.31, 12.16.4
Aircraft attacks 12.16
Aircraft Bombing Attacks 12.16.10
Aircraft Cannon 12.16.11
Aircraft Counter Battery Fire.....12.16.17
Aircraft interceptors 12.16.15
Aircraft MG 12.16.13
Alternate AP ammunition 14.10
Alternate crews 14.2.6
Ammunition limitations 3.6.9
Anti-Aircraft Fire (AA) 12.16.14
Anti-Aircraft MG (AAMG) 15.2.43
Anti-tank rifles, ATR 14.5
Anti-tank trench 9.2
Anti-vehicle MG fire 14.3.3
AP/HE Diff 12.10.61
APC as targets 15.7.2
APC, Armored Personnel Carriers 3.6.5, 15.7
APCR 14.10
APDS 14.10
Armor Command 15.5
Armor Factor (AF) 12.10.62
Armored Cars (AC) 15.1.2
Armored Fighting Vehicles (AFV)....3.6.1, 3.6.5, 15.1
Armored Personnel Carriers (APC) 3.6.5, 15.7
Artillery 3.6.10
Artillery Accuracy 12.12.4
Artillery Accuracy Diagram 12.12.4
Artillery Ammunition Supply 12.12.3
Artillery Procedure 12.12.1
Assault Fire, Restrictions.....11.3.32, 12.8.12
Assault Fire, ROF 12.8.13, 12.8.22
Assault Fire, Personnel 12.6.33, 12.8.1
Assault Fire, Vehicles.....11.4.1, 12.6.33, 12.8.2, ... 15.2.47
Assault Movement, Personnel.....11.3.12, 12.5.22
Assault Movement, Vehicles 11.4.1, 12.6.33
AT minefields 9.7.41
ATR, Anti Tank Rifles 14.5
Attack Routines 12.2
Automatic morale results 10.3.6
Automatic unload 11.5.85

B

B-SM-I 6.3.3, 6.4.1
Bail Out.....12.10.643, 12.10.644, 12.10.7
Bangalore Torpedoes 14.15.13
BAR Gunner 3.6.3
Barrage 12.12.52
Barrage limit 3.6.10
Battery contact 12.12.2
Battery limits 12.13.1
Bazooka 14.4
Blind hexes 6.2.61
Blockhouse 9.3
Blocking Terrain 7.1
BMG, Bow MG 15.2.42
Bocage 8.1
Bomb dust 6.5.26
Bomb load 12.16.9
Bombing attacks 12.16.10
BOT and Gun Duels 12.9.1
BOT, Burst On Target 6.3.3, 12.10.232
Bow MG (BMG) 15.2.42
Bren Carriers 15.7.6
Bridges 8.31.5
Broken units 10.5, 11.5.4
Brush 8.2
Building as targets 6.3.3, 8.3.8
Building colors 8.3.11
Building Cover 8.3.11, 8.3.4
Building destruction 8.3.9
Building LOS 8.3.2
Buildings 8.3
Buildings with roads 8.20.6
Bulldozers 14.15.11, 14.15.12
Bunker 9.4
Burst On Target (BOT) 6.3.3, 12.10.232

C

CA, Covered Arc 11.4.2, 12.6.7
Call for Fire, CFF 3.6.10, 12.12.4
Canister ammunition 14.14
Cannon (aircraft) 12.16.11
Capturing weapons, vehicles 10.9
Carried weapons 11.3.3, 12.6.63
Carriers, Bren 15.7.6
Casualties 12.4.7, 12.4.8
Casualties, crew 14.2.4
Casualties, indirect fire 12.11.3
Casualty Table (F2) 12.10.1, 12.10.83
Cellars 8.3.12
CFF, Call For Fire 3.6.10, 12.12.4
Checking morale 10.3, 12.4.81
Clear 7.1
Clear terrain. 8.15
Cliffs 8.13.5
Close Assault 12.15
Close Assault attackers 12.3.4, 12.4.5
Close Assault segment 4.3.4, 4.3.7
Close Assault, vehicles 12.15.6, 12.15.73
CMG Coaxial MG 15.2.41
Coaxial MG (CMG) 15.2.41
Combat 12.0
Combat engineers 13.1.2
Combat Tables 12.10
Command Control (C3) 15.5.1
Command tank 15.5.3
Commissars 10.3.7, 12.5.43
Company size 15.5.2
Concentration 12.12.51
Contact 12.12.2
Continued fire 12.6.5
Continued movement 4.3.81, 11.4.5
Continuing overruns 12.14.10
Control 3.5.63
Convoy movement 11.4.6
Counter battery fire 3.6.10, 12.13
Counters 3.6
Courage 10.4
Cover 7.1, 12.5.3
Cover & movement 12.5.2
Cover states 12.5, 12.5.8
Covered Arc, CA 11.4.2, 12.6.7
Crawling 11.3.11
Creek 8.31.14
Crews 3.5.2, 3.6.3, 3.6.4, 14.2
Crops 8.4
Cross country 11.4.1
Cushion 7.1, 12.5.45

D

Deirs 8.6
Demolitions 14.15.1
Destroying emplacements 9.1.6, 14.15.1
Dice 3.8.1
Die Roll Modifiers, DRM 3.8.3, 12.10.23
Direct Fire 12.6
Direct Fire attackers 12.3.1
Direct Fire range and LOS 12.6.1
Direct Fire Targets 12.4.2
Dozers 14.15.11
DRM, Die Roll Modifiers 3.8.3, 12.10.23
Dropping To Full Cover 12.5.6
Dug-in heavy weapons 14.1
Dummies 6.7.5
Dummy minefields 9.7.10
Dust 6.5.2
Dust height and LOS 6.2.8

E

Eligibility 4.3
Eligibility to move 11.2
Eligible attackers 12.3
Eligible targets 12.4
Elite tank commanders 15.6
Elite troops 13.1.1
Embankment 8.7
Emplacement counters 3.6.12
Emplacements 9.0
End of Turn Segment 4.3.4, 4.3.8
Engineers, Combat 13.1.2
Entering enemy hexes 11.1.3
Entry cost 7.1
Examining opponent's stacks 6.6.2, 6.6.3
Exit victory points 3.5.62

F

F-Kill Table (D1) 12.10.644
Facing 11.4.2
Factory 8.3.14
Fast Turret 3.6.8, 12.6.7, 15.3.11
FFE dust 6.5.26
FFE, Fire For Effect 3.6.10, 12.12.4
Final defensive fire 12.14.7
Fire and Movement Segment 4.3.4, 4.3.6
Fire For Effect, FFE 3.6.10, 12.12.4
Firegroups.....6.94, 12.6.4, 15.2.46, 15.7.4
Firegroups, APC 15.7.4
Flame.....7.1, 8.3.10, 8.8, 12.15.41
Flamethrowers 12.5.47, 14.7
Flank 11.4.2, 15.4.12
Flares 6.9.5
Flat-roofed buildings 8.3.7
Floorpan armor hits 7.6
FO & Spotting 12.11.5
FO, Forward Observer 3.6.3, 12.11.4
Fog of War, FOW.....3.5.2, 4.3.83, 6.7, 12.5.46
Forcing a minefield 9.7.7
Fords 8.31.4
Forest 8.32.21
Forts 8.3.15
Forward Observer (FO) 3.6.3, 12.11.4
FOW, Fog of War.....3.5.2, 4.3.84, 6.7, 12.5.46
Foxhole 9.5
Friendly map edge 3.5.8
Front 11.4.2
Frozen in melee 12.15.53
Full Cover 12.5.33, 12.5.5, 14.6.6
Full Cover, Dropping 12.5.6
Full Cover, Indirect Fire 12.11.32
Full Cover, Terrain 12.5.52

G

Game end 4.1.2
Game scale 2.0
Game Turn Record Track 3.5.7
Gammon Bombs 12.15.4
Grant/Lee 15.8.3
Graveyard 8.9
Grenades, attacks 12.3.4, 12.15.2
Gun Duels 4.3.63, 12.9
Guns 12.6.8
Guns, pushing 11.3.34
Gurkhas 13.1.3

H

Half-Tracks, HT 3.6.6, 15.7.5
HD, Hull-Defilade 7.7, 15.4
HEAT 14.10
Heat shimmer 6.5.4
Heavy Weapons 3.6.4
Heavy Weapons on Rafts 15.12.3
Heavy Weapons, Set Up 8.3.61, 14.1

INDEX continued

Heavy Weapons, stacking 5.2
Hedge 8.10
Hedgehog 9.6
Height 3.2.1, 6.2.4, 7.1
Height advantage 6.3.5
Hex ID 3.1
Hex locations 3.2.3
Hexside roads 8.20.6
Hexside terrain 7.2
Hidden minefield 9.7.11, 9.7.71
Hidden set up 6.8
Hide 7.1
High ammunition supply 12.12.3
High wall 8.11
Hillocks 8.12
Hillocks on hills 8.13.21
Hills 8.13
Hit Location Table (B) 12.10.5
Hit Probability Table (HPT or A1) ...12.6.22, 12.10.2
House 8.3.121
HPN determination 12.10.21
HT, Half-Tracks 3.6.6, 15.7.5
Hull mounted armament 15.2.2
Hull-Defilade (HD) 7.7, 15.4
Hurl back, Satchel Charge 12.15.33

I

Impulses 4.1, 12.6.43, 12.6.61
Indirect Fire 12.11
Indirect Fire Accuracy Diagram 12.12.4
Indirect Fire attackers 12.3.2
Indirect Fire casualties 12.11.3
Indirect Fire segment 4.3.5
Indirect Fire targets 12.4.3
Indirect Fire v Buildings 8.3.41
Infiltration.....10.5.23, 11.1.3, 11.5.5, 12.15.1
Inherent crew 15.7.1
Initiative 4.2
Intercepting aircraft 12.16.15
Interior walls 8.3.11

J

Junkyard 8.14

K

Khamsins 6.5.5
K-Kill Table (C1) 12.10.6

L

L|AT, Light Anti Tank Weapons 14.4.1
L|M Weapon Firepower Reduction 12.6.31
L|M weapons 3.6.4, 11.3.3
Lanes 9.7.8
Large building 8.3.123
Large target 3.6.7
Leaders.....3.6.3, 12.5.43, 12.6.42, 13.1.4
Leader Bonus 11.3.25
Leaders as FOs 12.11.6
Level markers 8.3.3
Levels 3.2.1, 6.2.4
Light Anti Tank Weapons (L|AT) 14.4.1
Light infantry weapons 3.6.4, 11.3.3
Limited intelligence 6.6
Line barrage 12.12.53
Line of Sight, LOS 3.1, 6.0, 12.6.1
Linear depression 7.3
Loading 11.5.31
Locating enemy batteries 12.13.21
Locations 3.2.3
Long range fire 12.6.32
Long range MG fire 14.3.2
LOS, Line of Sight 3.2, 6.0, 12.6.1
Low ammunition supply 12.12.3

M

M 11/39 ..... 15.8.4
M-Kill Table (D2) 12.10.643
MA, main armament 15.2.1, 15.2.3
Machine Guns, vehicle 15.2.4
Machine-guns, MG 14.3
Main armament (MA) 15.2.1, 15.2.3
Map entry and exit 3.5.5
Maps 3.1
Marker counters 3.6
Medium weapons 3.6.4, 11.3.3
Melee.....12.3.4, 12.15.5, 12.15.7
Melee by passengers/riders 12.15.58
Melee morale check 12.15.56, 12.15.73
Melee stacking 12.15.57
Melee v personnel 12.15.71
Melee v vehicles 12.15.72
Melee value 12.15.721
MG Hit Probability Table (A2) 12.10.3
MG, Machine-guns 14.3
MG, vehicle 15.2.4
Minefield 9.7
Minefield clearance 9.7.13
Minefield lanes 9.7.8
Mines on roads 8.20.5
Mines, searching for 9.7.12
Morale 10.0
Morale checks 6.4.82, 10.3, 12.4.81
Morale modifiers 10.2
Mortar observer/spotter 14.6.7
Mortars 12.5.51, 14.6
Movement 11.0
Movement class 3.6.6
Multiple firing units 4.3.64
Multiple vehicle weapons 15.2.1

N

Neutralize enemy batteries 12.13.2
Neutralized markers 3.6.10
Night rules 6.9

O

OBA acquisition 12.12.1
OBA, Off-map Indirect Fire 12.12
Obscuring 7.1
Observation Limits 6.3.3
Observation Post (OP) Tanks 12.11.7
Off-Map Artillery Types 12.12.5
Off-map Indirect Fire (OBA). 12.12
OOB, Order of Battle 3.5.2
Open ground 8.15
Open-Topped Vehicles (OT). 3.6.51, 15.1.4
Opportunity Fire 4.3.62, 12.7
Optional game end 4.4.2
Optional turn rules 4.4
Orchard 8.16
Order of Battle, OOB 3.5.2
OT, Open-Topped vehicles 3.6.51, 15.1.4
Overlays 3.3, 7.5
Overrun 11.4.72, 12.3.3, 12.14
Overrun attackers 12.3.3
Overrun personnel 12.14.4
Overrun resolution 12.14.3
Overrun targets 12.4.4
Overrun weapons 12.14.5
Overrunning AFV Damage 12.14.8
Overstacking 5.4

P

Palm groves 8.17
Panzerfaust, Pf 14.4
Partially armored vehicles 15.1.5
Pass 4.3.3
Passenger fire restrictions 11.5.6
Passengers as targets 11.5.7
Passengers fate 11.5.8
Passengers in APCs 11.5.71, 15.7.3
Passengers in melee 12.15.58
Paths 8.20
Penetration number 12.10.61, 12.10.631
Personnel 3.6.3
Personnel assault fire 12.8.1
Personnel movement 11.3, 12.5.2
Personnel units and steps 12.4.7
Personnel stacking 5.3
Personnel v AFV or APC 12.15.6, 12.15.72
Personnel v trucks 12.15.727
Pf, Panzerfaust 14.4
PIAT 14.4
Pick up and carry 11.3.33
Pinned down units 10.6
Pivoting 11.4.4, 12.6.7
Platoon movement 11.3.2
Platoon movement, AFV 11.4.7
Platoon with vehicles 11.3.24
Pond 8.31
Portees 15.9
Precipitous Terrain (Hill) 8.13.6
Pre-Designated Opportunity Fire 4.3.622
Pushing guns 11.3.34

R

Rafts 15.12.6
Railcars 8.18
Railroad 8.20
Rallying 4.3.82, 10.8
Rate of Fire, ROF.....12.6.62, 12.7.2,
.....12.8.13, 12.10.2324
Ravine 8.19
Re-Manning Bailed Out AFV 12.10.71
Rear 11.4.2
Reduced crew penalty 14.2.5
Registration 12.11.1
Removing suppression 12.10.84
Revealing hidden emplacements 6.8.4
Revealing hidden units 6.8.3
Reverse Movement 11.4.3
Riders 11.5
River 8.31
Roadblock 9.8
Roads 8.20
Rock-strewn terrain 8.21
Rockets 12.16.12
Rolling Barrage 12.12.54
Roofless 8.3.144
Rooftop 8.3.7
Rounding dice rolls 3.8.2
Rubble 8.22
Rubble creation 8.3.9, 8.22.5
Running 11.3.13, 12.5.23

S

Same hex fire against vehicles 12.6.9
Sand dunes 8.23
Sangar 9.9
Satchel Charges 12.15.3
Satchel Charges against vehicles 12.15.35
Satchel Charges, Hurl Back 12.15.33
Scenario Cards 3.5
Scenario Special Rules (SSR).....3.5.9
Scrub 8.24
SCW Hit Probability Table (A3) 12.10.4
SCW Same Hex Opportunity Fire 12.14.6
SCW, Shaped Charge Weapons 14.4
Searching for mines 9.7.12
Segments 4.1.1
Self-propelled guns (SPGs) 15.1.3
Semi-automatic guns 14.8
Sequence of play 4.0, 4.3.4
Set Up area 3.5.4
Set Up order 3.5.3
Set Up, Heavy Weapons 8.3.61
Shaped charge weapons, SCW 14.4
Shellholes 8.25
Slow turret 3.6.8, 12.6.7, 15.3.12
Small arms 12.6.21, 12.6.3
Small target 3.6.7
Smoke 6.2.8, 6.4
Smoke and LOS 6.2.8
Smoke duration 6.4.6
Smoke effects 6.4.5
Smoke grenades 6.4.7
Smoke removal 6.4.62
Smoke, off-map 6.4.4
Smoke, on-map 6.4.3

INDEX continued

Soft sand 8.2.6
Solitaire play 6.8.5
Special troop types 13.0
Special vehicle rules 15.0
Special weapons 14.0, 14.15
Speed of play 4.1.3
SPGs, Self-propelled guns 15.1.3
Spiking weapons 14.9
Sponson AFVs 15.8
Sponson in gun duels 12.9.3
Spotter aircraft 12.16.16
Spotting 6.3
Spotting Ranges Table 6.3.4
Squads 3.6.3
SSR, Scenario Special Rules 3.5.9
Stacking 5.0
Stairwell, Stairwell building 8.3.124
Steeple 8.3.13
Step losses 12.4.7
Sun glare 6.5.3
Sunken road/lane/railroads 8.27
SUP | FOW 6.3.4
Suppression 12.10.8
Suppression effects 12.10.87
Surrender 10.7
Swamp 8.28

T

Tanks 15.1.1
Target size 3.6.7
TCA, Turret Covered Arc 11.4.2, 15.3.2
Terms 2.2
Terrain Chart 7.1
Terrain rules 7.0
Terrain types 8.0
Time-fuzed HE ammunition 14.13
Topography 3.2, 6.1
Tower 8.3.122
Towing 11.5
Tracked vehicle 3.6.6
Tracks 8.20
Transporting 11.5
Turns 4.1
Turret Covered Arc, TCA 11.4.2, 15.31
Turret marker 15.3.3
Turret mounted armament 15.2.2
Turrets 3.6.8, 15.3

U

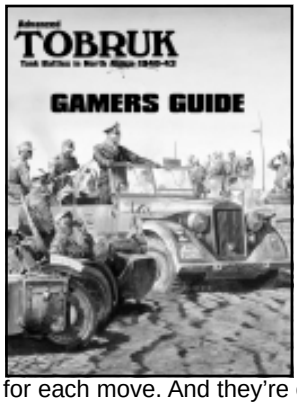
Under, emplacements.....5.3.22, 6.6.2, 7.1, ...8.12.25, 9.12
Under, bridge 8.31.52
Unloading 11.5.32

V

Variable impulses 4.4.1
VCA, Vehicle Covered Arc 11.4.2
Vehicle Covered Arc, VCA 11.4.2
Vehicle dust 6.5.21
Vehicle movement 11.4
Vehicle stacking 5.2
Vehicle weapons 15.2
Vehicles 3.6.5
Vehicles and LOS 6.2.7
Very small target 3.6.7
Victory conditions 3.5.6
Victory points 3.5.61, 10.9.6

W

Wadi 8.29
Walls 8.30
Water obstacles 8.31
Watercraft. 15.12
Weapons 3.6.4
Weapons pit 3.5.2, 9.10, 14.1
Weather 6.5
Wheeled vehicle 3.6.6
White Phosphorus 6.4.8
Wire 9.11
Woods 8.32
Wrecks and LOS 6.2.7



BECOME A DYED-IN-THE-WOOL 'DESERT RAT'

Advanced Tobruk has evolved into an acclaimed new tactical-level game system known as 'ATS'. The system has its own learning curve that needs to be travelled before you can start calling yourself a true Tobruk 'desert rat'. To that end we've created the Advanced Tobruk GAMERS GUIDE.

Stuffed with all the history and game play you can handle, the guide gets you up to speed quickly with move-by-move scenario replay, complete with extensive notes communicating the players rationale for each move. And they're out for victory in this heated match. We don't want to spill the beans, BUT the game action spilled over into some insane gaming that takes the word 'competition' to a new level.

Advanced Tobruk EXPANSION MODULES are now available, each featuring 12 scenarios that literally place you in the middle of some of the most intense actions in the annals of war. Each module has a theme and includes new overlays, scenario cards, and counters as needed. The first five modules are WAVELL'S 30,000 (1940 Campaign), ROMMEL RE-TAKES CYRENAICA (April 1941) DEVIL'S GARDEN (El Alamein 1942), BLUNTED SWORD (Tunisia 1943 British Vs Germans and Italians) and KASSERINE & BEYOND (Tunisia 1943 Americans Vs Germans and Italians). GAMERS GUIDES are also available now for other ATS modules including Arnhem: Defiant Stand and D-Day Rangers.

The best place to keep up with the latest TOBRUK action is at our website, www.Criticalhit.com. Be sure to sign up for our free electronic newsletter.

DESIGN CREDITS

Game and System Design: Raymond J. Tapio.

Development: Drew Dorman, Marc Adda, Kurt Martin, Jim Jensen, Al Berke, Donald Carlucci, Mark Porterfield, P. J. Norton, Brian Laethem, Pedro Ramis, Charlie Willmer, Dave Lamb, Jim Thompson, Bob Davis, Michael Stephan, Robert Z. Gunn, Jr., Terry M. Simo, Danny Secary, John D. DiPonio, Barry Doyle, David Clark, Christophe Annen, Rob Fabbro, Kevin Grimsley, Florian Altendorfner, Randolph Boyd, Charles Myers, Joseph Kelly, Lyonel Reinhardt, Karl Bodenheimer, Dave Cooke, Kim Meints, James Shelton, John Hovey, Ellis Simpson, David Love, C. Donald Sebolt, John Carroll, Dave Cheever, Dan Garrett, Dean Halley, Guy Handley, Oliver McClintock , Tony Nash, Paul Smith, Roger Symonds, and Tim Weber.

This game is dedicated to the life work of Harold E. 'Hal' Hock and the innovations he brought to tactical-level gaming.

Special Mention: Lorrin Bird, author of *World War II Ballistics: Armor and Gunnery*; George Bradford, Publisher of *AFV News* and creator of the AFV views used in the game.

©2002, 2003, 2004 Critical Hit, Inc.

REPLACEMENT PARTS COST: For a replacement parts price list, send a self-addressed stamped envelope to: Parts Department, Critical Hit, Inc., PO Box 279, Croton Falls, NY 10519 or drop us a line by E-mail at Info@Criticalhit.com. Our design department will be happy to take the time to answer queries by S.A.S.E. or via E-mail to Info@Criticalhit.com.

ACKNOWLEDGMENTS

Much time and effort went into the research effort upon which Tobruk was based. Without kindly assistance from personnel from the following organizations, however, nowhere near the required amount of data could have been assembled. For this reason, the publisher is highly in debt to:

The U.S. ALMC Library, Ft. Lee, Virginia
The Ballistic Research Laboratories, Aberdeen, MD.
The U.S. Airforce Academy Library
The West Point Library
The Morris Swett Technical Library, Ft. Sill, Oklahoma
The Ft. Benning Technical Library
The Armor School Library, Ft. Knox, KY
The Library of Congress
The National Archives and
The Office of the Chief of Military History

without whose assistance TOBRUK could never have been designed

CRITICAL HIT