

BATTLEGROUP

MODERN WARGAMING RULES 1946-2005



**FOR BATTALION LEVEL MINIATURE BASED
GAMES**

BY IAN S CLARKE & MIKE S JONES

2nd Edition (August 2004)

BATTLEGROUP

INTRODUCTION

Battlegroup has been written because of modern wargamers, dissatisfaction with the commercial rules available. Battlegroup has been play-tested over the last few years and were used successfully between 1997 and 2002 in the Ultramodern World Wargaming Championships, the 1997 Royal Air Force Wargames Association Championships and the modern competition at Roll Call 2001-2002. The feedback from all those experienced players helped the rules evolve into this edition.

Although these rules offer nothing revolutionary in the field of wargames rules you will find Battlegroup faster and easier to follow than previous modern rules, rules that due to the complexities of modern warfare ended up either too complicated or far too simplistic. Battlegroup is designed to give the feel of modern combat, taking into account all the latest technologies being fielded, yet still remain an enjoyable game. These rules are ideal for quick battles, competitions, campaign games or even for new players to learn about modern warfare.

At first glance the rules may appear as complex as its predecessors, however, you will find there are some key differences:

- The ready reference sheets are dedicated to a particular nation and date period and most of the complex statistics have been applied already, cutting down on the player's workload.
- The arithmetic has been reduced to the bare minimum so after a few games the players will be able to roll a die and tell instantly if the result is successful, fails or needs checking in the rulebook.
- Morale is tested at Company level to try and bring a result within the normal playing time of a game.
- The rolling of dice for spotting targets has largely been removed. Spotting targets is done on a distance table and this speeds the game up immeasurably.
- The effects of suppression are so severe that it also encompasses neutralisation.
- There are comprehensive examples throughout the rules, these are in italics for easy reference.
- If there is a chance of success then the top score will always succeed and the lowest score will always fail. The top score will usually kill the target too.
- There is the possibility of friendly fire.
- Armour and penetration values have been generalised so that certain types of AFVs, ATGMs, gun penetration values, etc. can be grouped together. The secrecy that surrounds modern equipment makes it impossible to give accurate number values for their performance.

The aim of these rules is to put some fun back into modern wargaming and players should try and keep the game relatively light hearted. Some players may not find these rules comprehensive enough, feel free to amend them as you see fit but remember you can only use the original version for competitions. The first and most important rule is this: enjoy the game but in the event of a disagreement that cannot be resolved amicably try and get a third party to make a judgement, if this is not possible both players should roll a die and the winner gets their way.

Finally, I must thank the following people; Bruce Rea-Taylor and Bob Connor who gave us the excellent Challenger series, Ian Shaw and his Leopard rules, Jim Dickinson, Ray Lowe, Tony Booth, "Paddy" McKee, Tristan Trench, Bob Medcraft for their invaluable help and all the competition players who play tested these rules.

I'd also like to thank Mike who originally wrote these rules for all the hard work he put in over the years. These 2nd edition rules own everything to his 1st edition.

Ian Clarke

Worlds Championship Umpire 1996-2005

Ian_S_Clarke@Yahoo.co.uk

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A: SCALE AND GAME REQUIREMENTS

A.1 - GROUND AND TIME SCALE

All distances are given in centimetres for 1:300 /1:285 scale miniatures and 1 cm equals 20 metres (50 cm to 1 km). Double all distances if using 1:200 scale (100cm to 1km). Players take it in turns to move and fight and this period is called a TURN. Players turns are broken down into phases, when all four phases are completed the players turn ends. The time taken to for both players to complete their turns represents one minute in a one off game or five minutes for campaign games.

A.2 - FIGURE SCALE

Vehicles are represented on a 1 for 1 basis by single miniatures. Infantry elements are represented by a number of figures on a base, full rifle sections should be twice the size of half or observation sections. Full infantry sections base size should between 2cm by 1cm and 3cm by 2cm. Half sections and observers should between 1cm by 1 cm and 2 by 2cm. Note:- Smaller base sizes give an advantage in melee combat so you should aim for the smaller base sizes.

A.3 - OFF TABLE UNITS

Artillery batteries, Area Anti-aircraft units and other off table units locations should be listed in a player's orders as to their distance behind the players table edge.

A.4 - DICE REQUIRED

You will require several 20 sided, 10 sided and 6 sided dice as well as at least one 12 sided, 8 sided and a 4 sided die.

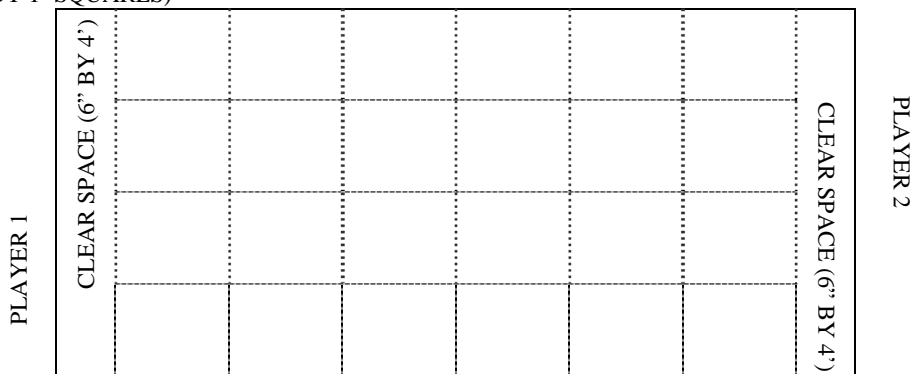
A.5 - MARKERS

You will require small markers to represent "suppression", "missile firer" and "missile target" as well as morale levels. There is a page of these counters at the rear of these rules and you have permission to photocopy them for your own use. Small smoke screens should be cut out of white card. Destroyed vehicles should have cotton wool (preferably black) placed on top.

A.6 - PLAYING AREA

The table should be at least 6' x 4'. Games should be played across the table for encounter games and down the length for attack/defence games. Try to keep an area between 3" and 6" of clear space on the players table edge. This area is used to keep rules, dice, pens, off table units, etc. Try to organise the table as illustrated below:

PLAYING AREA (1' BY 1' SQUARES)



A.7 - TERRAIN

For an effective game try and make the terrain detailed, interesting and well finished and unless there is plenty of cover, units are easily spotted and hit. Built up areas should show each building or group of buildings. Hills should be contoured and be a variety of shapes and sizes and their crests should be mark on them. If large ridges are used in the game the point at which you can see down the ridge should also be marked with a crest line. Woods should be level so as to move figures across them with ease. Try to get a neutral person to arrange the battlefield (especially for competition games).

A.8 - MINIATURES

There are several companies producing lead or pewter modern miniatures and at the time of writing prices range from 28p to £1.39 per figure, dependant on quality. Figures and infantry stands should have their parent unit details written underneath (e.g. a platoon of four elements will have three with "1 PLATOON" written on them and one with "1 PHQ").

Manufactures

GHQ Models - Maker of some very nice 1/300 tanks etc, but not cheap!
<http://www.ghqmodels.com/M/catalog/modern>

Irregular Miniatures - Maker of 1/300 tanks etc
<http://www.irregularminiatures.co.uk/6mmRanges/6mmModerns.htm>

Navwar/Heriocs & Ros - Full catalogue and new releases of their ranges
<http://www.navwar.freeserve.co.uk>

Scotia Miniatures - Make loads of 1/300 scale vehicles
<http://www.scotiagrendel.com/scotia/scotiamicromodern.html>

Skytrex - Make loads of 1/300 scale vehicles and Aircraft
<http://www.skytrex.com/>

B: PLAYING THE GAME

B.1 - INTRODUCTION

Details for the ensuing battle should be agreed before hand. Use the following step-by-step guide to sort out the relevant details:

- **FORCE.** Choose the nationality, size of the forces and type of battle to be fought (see [B.2 - Game Types](#) below). A Battlegroup for an encounter game should cost about 500 points. Use the BATTLEGROUP ARMY LISTS to give a balanced, realistic force and get the DATA-SHEET for the nation and period of your choice.
- **WEATHER.** Weather can have a detrimental effect on a battle so it is suggested that bad weather is kept for campaign games.
- **TIME.** Choose a time of day, remember, some nations have a severe handicap fighting at night.
- **SUPPORT.** Agree on the level of electronic warfare to be used and the amount of artillery or air support available to both players.
- **RECONNAISSANCE.** Decide if any pre-game reconnaissance is to be allowed.
- **DRAW MAP.** Both players need to make a detailed map of the battlefield to draw on their forces route of march, objectives, registered fire points (RFPs), artillery impact points etc. The map and orders **MUST** be made available to your opponent after the game to make sure you adhered to them.
- **WIND.** Before orders are written agree which direction is north and roll on the following table.

B.1.1 - Wind Direction Table

<i>Roll</i>	<i>Direction</i>	<i>Roll</i>	<i>Direction</i>
1	From N	5	From S
2	From NE	6	From SW
3	From E	7	From W
4	From SE	8	From NW

- **ORDERS.** Write your orders (see [C: Orders](#) below).
- **INITIATIVE.** In an attack/defence battle the attacker starts. In encounter battles both players roll a die (see [B.4 - Initiative Die](#) for the die used) and the winner decides to either go first or choose which side of the table to deploy.

B.2 - GAME TYPES

The type of battle should be agreed before the game starts. The following are some suggestions:

- **HASTY ATTACK/DEFENCE.** The defender deploys their force up to two thirds on table from their baseline and the attacker is making an attack off the line of march and arrives from turn 1 on their baseline. The point ratio should be 2:1 in favour of the attacker. Flank marches are allowed.
- **PREPARED DEFENCE/DELIBERATE ATTACK.** The defender has had several hours to prepare, can deploy their force up to two thirds on table from their baseline and can call on Brigade and Divisional level assets. The attacker has had time to mass their forces, arrives from turn 1 on their baseline and the point ratio should be between 2:1 and 3:1 in their favour. Flank marches are NOT allowed.
- **CONCENTRATED DEFENCE/BREAKTHROUGH ATTACK.** The defender has been in position for a considerable time and all available resources have been utilised. They can deploy their force up to two thirds on table from their baseline. The attacker is attempting a full frontal attack with virtually unlimited support, arrives on their baseline from turn 1 and the point ratio should be at least 3:1 in the attackers favour. Flank marches are NOT allowed.
- **ENCOUNTER OFF THE LINE OF MARCH.** This is the classic encounter battle and both forces should be of equal points. Forces arrive in the following strengths:
TURN 1 Recce elements.
TURN 2 1 Company + 1 support Platoon.
TURN 3 2 Companies + BGHQ + up to 2 support Platoons.
TURN 4 Remaining units.
If the force is a Recce Battalion then only ONE Company arrives turns 1 and 2 and the remaining units on turn 3. There will be no pre-game engineering or registered fire points but flank marches are allowed.
- **OTHER BATTLES.** The variety of different battles that can be played is only limited by the players imagination. There can be fighting withdrawals, last stands, obscure objectives, ambushes, escorts etc.

B.3 - PLAYERS TURN SEQUENCE

Once you have all the details sorted and are ready to start, the player who is going first should use the following turn sequence to play the game. When a player has finished their opponent uses the same sequence and so on until the game finishes (you should endeavour to play an equal amount of turns).

1. PRE-COMBAT PHASE

1. **COMMUNICATIONS.** Player writes orders, which units will be on overwatch and write any communications between command elements.
2. **AIRCRAFT ARRIVAL.** Player requests and rolls for arrival of helicopters and aircraft and place those arriving this turn at their entry point.
3. **ENEMY ARTILLERY.** Opponent's AOO's spot targets, request artillery support and plot barrage.
4. **ENEMY AREA ANTI-AIRCRAFT FIRE.** Opponent resolves off table AA fire and CAP interception at Players aircraft arriving this turn.

2. COMBAT PHASE

1. **MOVE ALL UNITS.** Player moves all units including aircraft and helicopters to their attack points.
2. **ENEMY REACT FIRE.** Opponent looks for targets (enemy helicopters pop-up) and engage targets with direct fire, area fire, ATGMs or AA fire.
3. **PLAYER FIRES ALL UNITS.** Player looks for targets and engages with direct fire, area fire or AA fire (including react fire at ATGM launchers and AA fire at popped-up helicopters).
4. **MELEE COMBAT.** All touching infantry elements resolve hand-to-hand fighting and close assault on vehicles.
5. **MISSILE RESOLUTION.** All targets of incoming missiles test to spot the missiles and react to the threat (if possible). Resolve all missile fire simultaneously (enemy helicopters that popped-up return to cover).
6. **AIRSTRIKES.** Surviving aircraft release ordnance, test accuracy and damage.
7. **ENEMY ARTILLERY FIRE.** Opponent tests for accuracy and damage of artillery fire. Any previous barrages cease.
8. **AIRCRAFT EXIT.** Player moves aircraft and helicopters to their exit points (helicopters complete their move towards the next objective) and any enemy elements still able to may use AA fire. Surviving aircraft leave the table.
9. **COUNTER BATTERY FIRE.** Player tests to acquire enemy artillery batteries, accuracy and damage of the counter battery fire.

4. POST COMBAT PHASE

1. **SUPPRESSION REMOVAL.** Take the morale level of the Battlegroup, roll d6 for each suppression counter and remove it if the following scores are rolled:
 - MILITIA 6
 - CONSCRIPT 5+
 - REGULAR 4+
 - VETERAN 3+
 - ELITE 2+
2. **MORALE.** **Both** Players tests the morale of any Company or independent platoon that has lost an element this turn or wants to try and improve current morale level. If the test fails keep rolling until the morale level stabilises or the unit retreats.

B.4 - INITIATIVE DIE

The die used for initiative depends on the morale level of the Battlegroup. These are used at the start of a game to determine side of table and who goes first. The dice used are:

- MILITIA d4
- CONSCRIPT d6
- REGULAR d8
- VETERAN d10
- ELITE d12

C: ORDERS

C.1 - INTRODUCTION

Orders are an extremely important way of keeping the game fair and they should be kept simple. Without orders a unit will hold and defend its current position. To change orders during the battle see [D: Command, Control And Communication](#).

C.2 - ORDERS

Using a map both players should write their orders from objective to objective and NOT timed movement (e.g. "MOVE 2 turns then ADVANCE to CLEAR objective ZULU" is not allowed). Orders should have the following details and must be written for each unit as defined in M.2. For units already in position on the table (defending in an attack defence game for example) only the objective they are in position at and the action they are doing there needs to be written, unless the player wishes to move them in which case a full set of orders must be given. See [O.3 - Orders](#) for helicopter orders.

- **ROUTE OF MARCH.** The path each unit will take must be accurately drawn on a map and **MUST** be adhered to. The route can only be changed by a higher command element (see [D: Command, Control And Communication](#)) or bad morale result (see [M.5.1 – Morale Ratings Table](#)). See [C.3 - Flank March](#) if the unit is attempting to sweep round the enemy's flank in an encounter battle.
- **FORMATION.** Write down the formation that the units are using (see [D.2 - Formation](#)) between each objective and the formation on the objective. The formation may change the following turn if the unit observes the enemy, is ambushed or is ordered by a higher command element. A change of formation **MUST** be written down in 1.1 (COMMUNICATIONS) of the PRE-COMBAT PHASE.
- **SPEED.** The rate at which the unit travels between each objective should be written down, if not it is taken as the speed of the SLOWEST element in the Company. Units must move as far as possible. There are three movement rates,
 1. MOVE, which is flat out between objectives.
 2. ADVANCE, which is slower, more cautious and allows elements to fire on the move.
 3. ASSAULT, which can be given to a unit equipped with LFC+, LR or SAT POS. The unit MOVEs until 20cm from objective then ADVANCEs to it.
- **OBJECTIVES.** A unit can have up to 3 objectives, these should be realistic, observable places such as a hill, road junction, town etc. Each objective must be clear of any enemy elements before a unit can proceed to its next objective. A unit holding an objective may use any formation that suits the terrain.
- **CHANGING SPEEDS.** Sometimes a unit reaches an objective without encountering enemy forces and has orders to continue on beyond the objective to another objective. If the unit's orders change from move to advance the unit will count as advancing if it hasn't moved more than its move speed otherwise it must stop on the objective counting as moving and then advance on next turn. (Example an AL-Khalid can move 35cm and advance 25cm on a road. It's ordered to Move to a road junction and then advance. It arrives at the road junction having moved 20cm, as this is less than its advance of 25cm it can advance on another 5cm and only count as advancing for that turn. If on the other hand it had moved 26cm when it reached the junction it would have to stop at the junction counting as moving and advance on next turn.) The same applies when using the ASSAULT command.
- **ACTION.** Upon reaching an objective an action order must be given. Those available are:
 1. CLEAR. The unit must attack and clear the objective of all enemy and then push on to the next objective.
 2. HOLD. Once the objective is cleared the unit may stay within 10cm of the location and defend it or support another unit by observing for, giving direct fire or indirect fire support.
 3. WITHDRAW. A unit may, for whatever reason, be ordered to withdraw to a previous objective or nearby cover by a higher command element.
 4. HALT. If a unit observes the enemy or comes under fire whilst moving between objectives it may change its orders to halt in the next move and open fire. If a unit comes under ATGM fire it may change to halt immediately and react to the threat.
 5. OVERWATCH. A unit may be ordered to be on either ATGM or AA overwatch. A unit on ATGM overwatch must be stationary and **MUST** attempt to spot any missiles fired at them, their parent group or a specific unit they are ordered to watch out for. If the threat is spotted it can warn the threatened elements and, if possible, engage the launchers. AA overwatch is the same but the unit are looking for enemy aircraft or helicopters. Elements on ATGM overwatch count all targets at out of arc except those firing missiles, which they shift 1 row down on the observation table. Elements on AA overwatch count all ground targets as out of arc.
 6. REARGUARD. If the battlegroup has failed a morale test and is retreating any units with GOOD morale may be ordered as a rearguard. The unit can either make fighting withdrawal at advance speed or alternate between a turn of full speed away followed by a turn stationary and so on.

C.3 - FLANK MARCH

Companies or Platoons may attempt to outmanoeuvre the enemy and arrive on their flank. This manoeuvre is risky as the flanking unit may be become lost or delayed or even ambushed by other enemy units. Write your orders for the flanking unit from its intended entry point. The options are up to and including half way on either flank, over half way or on the enemy baseline. The further you order them to move the more risk you take. You must also choose how fast your units will move, this is either, Fast, Normal or Cautious. The faster you try to move them the more risk you take.

Use the [C.3.1 – Flanking Turn Arrival Table](#) to give the turn the unit arrives, the [C.3.2 – Flanking Dice To Roll](#) table to determine the dice to roll and [C.3.3 – Flanking Success Table](#) for the result of the flank march. Each Unit should be rolled for separately

C.3.1 – Flanking Turn Arrival Table

Flanking Unit	TURN ARRIVAL								
	Up To Half Way			Over Half Way			Enemy Baseline		
	Fast	Normal	Cautious	Fast	Normal	Cautious	Fast	Normal	Cautious
HELICOPTERS	1	2	3	2	3	4	3	4	5
VEHICLES	2	3	5	3	5	7	5	7	10
INFANTRY ON FOOT	4	6	9	6	9	12	9	12	15

The turn of arrival is from the start of the game. Actual arrival should be rolled for using the table below.

C.3.2 – Flanking Dice To Roll

Roll as follows

Speed	Target		
	Up to Half Way	Over Half Way	Enemy Baseline
Fast	d10-2	Roll d10-2 twice and take lowest roll	Roll d10-2 three times and take lowest roll
Normal	d10-1	Roll d10-1 twice and take lowest roll	Roll d10-1 three times and take lowest roll
Cautious	d10	Roll d10 twice and take lowest roll	Roll d10 three times and take lowest roll

C.3.3 – Flanking Success Table

Roll	Arrive	Damaged	Announce Arrival point	Re-roll dice in future Attempts
1 or lower	No	Yes	Yes	Yes
2 to 3	No	No	Yes	Yes
4 to 5	No	No	No	Yes
6 or more	Yes	No	No	No

Arrive = No, Unit Doesn't arrive test again next turn

Arrive = Yes, Unit arrives this turn

Damaged = No, No effect

Damaged = Yes, Unit loses d6 elements in combat in the enemy and must make a morale test.

If Morale ends as Hesitate or better continue rolling for arrive.

If Morale ends as Halt or worse stop rolling for the unit.

Announce Arrival point = No, Don't tell opponent where the unit arrives

Announce Arrival point = Yes, Tell opponent where the unit will arrive.

Re-roll dice in future Attempts = Yes, If you are rolling multiple dice for arrival and failed to arrive this turn you must still roll this dice when testing to arrive on a future turn.

Re-roll dice in future Attempts = No, If you are rolling multiple dice for arrival and failed to arrive this turn you don't need to roll this dice when testing to arrive on a future turn.

Example of flank marching

Fred attempt to flank march two regular companies of 14 tanks each to Bills baseline. He decides to move at a normal pace and so will start rolling for arrival on turn 4.

When turn 4 arrives he begins rolling.

For the first Company he rolls 2,3,9, as he is moving "normally" he subtracts 1 from each getting 1,2 and 8. As the lowest roll is 1 they have failed to arrived been damaged and must announce where they are targeted to arrive, ouch. He rolls a d6 to see how many elements he loses and rolls a 1 and 1 tank is killed, he then rolls for morale (See [M: Morale](#)) and gets a 12 and stays in good morale. Of the three rolls the 8 means that dice won't need to be rolled again, so next turn he will roll only 2 dice.

For the Second Company he rolls 6,7,10 which become 5,6 and 9. A 5 (the lowest roll) means they've failed to arrive, but aren't damaged and don't have to give away their target entry point. The 6 and 9 results also mean Fred won't have to roll them for the next turn and will thus only be rolling 1 die for that company next turn.

At the start of turn 5 he rolls again

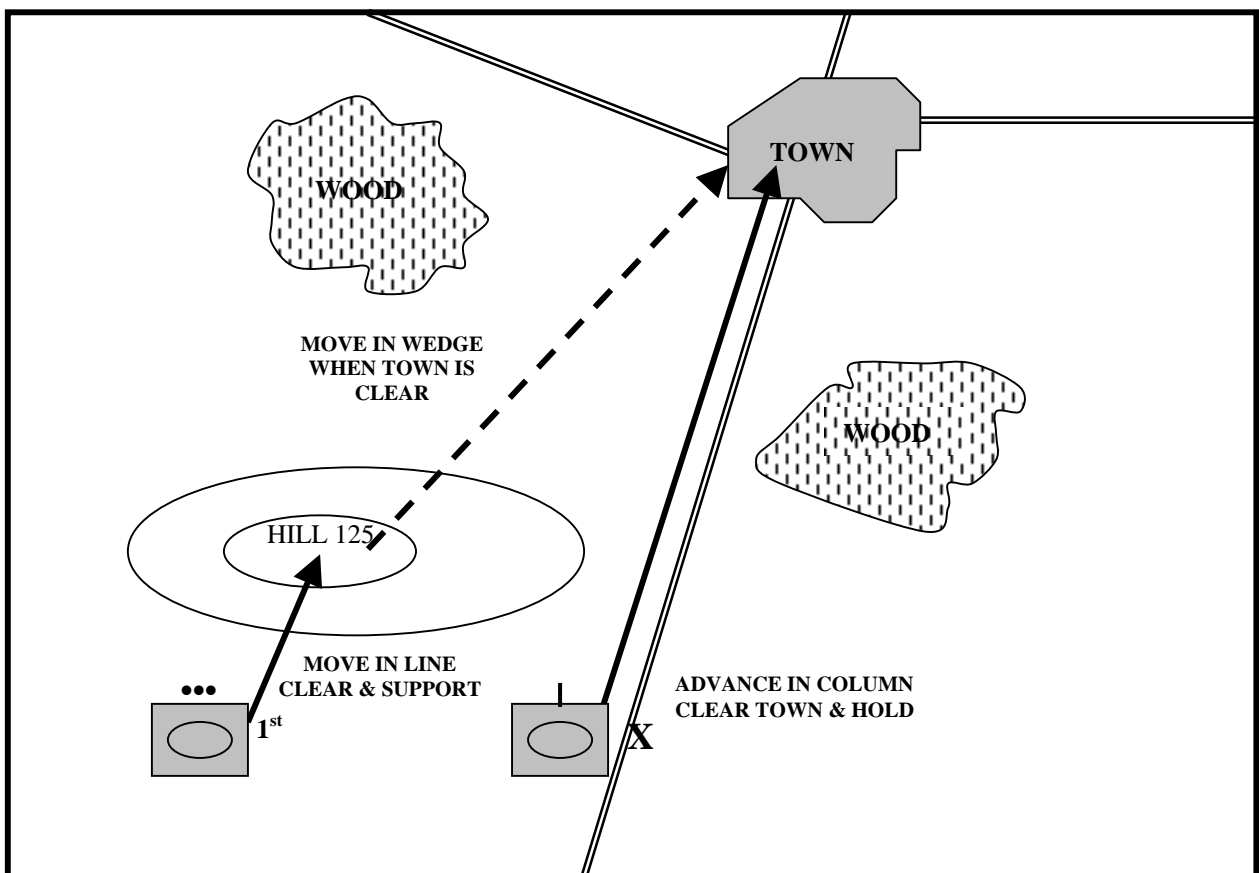
The First company rolls 1 and 5, which become 0 and 4 and thus again they fail to arrive, are damaged and Fred must announce their arrival point (which he's already done). He rolls a 6 this time for losses and loses 6 more elements taking him to seven lost from 14 = 50%. This time for morale he rolls 4 and the companies morale falls to HESITATE, plus he must roll again, which he does and gets 10 so their morale means they can continue to roll again next turn. As neither die roll ended up on 6 or more he'll have to roll both dice again next turn.

The Second company only needs to roll 1 dice and Fred rolls a 7, which is reduced to 6 and the company arrives and tears into Bills surprised troops.

At the start of turn 6 he rolls again for the first company and rolls two 2s, so once more they don't arrive and are damaged. Fred rolls a 4 for damage so they've now lost 11 tanks out of 14 with is over 75%. He rolls for morale and gets a 4 so the company falls to HALT morale and he must roll again. The next roll is a 7 so the company drops to WITHDRAW and he rolls again this time getting an 11 and stopping the rot. However their morale is now HALT or worse so the company will never arrive as Fred must stop rolling for it. Bear in mind if the companies morale had fallen to RETREAT then a Group morale check would have been needed for the next highest level (probably BHQ or BGHQ).

C.4 - EXAMPLE OF ORDERS

"X-RAY" Company will ADVANCE in COLUMN formation to CLEAR town. 1st Platoon (a support platoon attached to the BGHQ) will MOVE in LINE FORMATION to hill 125, CLEAR it and SUPPORT the Company's attack. When the town is clear "X-RAY" Company will HOLD in BOX formation and 1st Platoon will MOVE in WEDGE FORMATION to the town.



D: COMMAND, CONTROL AND COMMUNICATION

D.1 - INTRODUCTION

All elements have a chain of command and a communications network. These rules use two methods of command and control, standard communication such as radio and the latest Battlefield Management System (BMS), such as the U.S. Inter-Vehicular Information System (IVIS). Vehicles fitted with BMS are annotated in the DATA-SHEETS.

D.2 - FORMATION

Each different formation has good and bad points and at first you may find giving a unit the right formation a little daunting. With a little practice you should find which formations are best for a given mission and objective. Your orders should have the formation the unit is using (use the code to save time) as this retains cohesion and gives the visibility arcs of that unit (see [E: Observation](#)). Use the appropriate formation for the type of objective your unit is holding e.g. a Company holding a hill will probably use LINE formation in hull-down positions along the ridge. The formations allowed are as follows and the measurements given are the MAXIMUM distances that the unit can be within:

D.2.1 – Formation Details Table

CODE	FORMATION	COMPANY		IND PLATOON	
		WIDTH	DEPTH	WIDTH	DEPTH
L	LINE	30cm (45cm)	1 Element	10cm (15cm)	1 Element
C	COLUMN	1-2 Elements	All	1-2 Elements	All
RL/RR	REFUSED FLANK (L or R)	30cm (45cm)	10cm (15cm)	10 cm (15cm)	2 Elements
EL/ER	ECHELON (left or right)	30cm (45cm)	30cm (45cm)	10cm (15cm)	10cm (15cm)
W	WEDGE	30cm (45cm)	20cm (30cm)	10cm (15cm)	3 Elements
V	VEE	30cm (45cm)	20cm (30cm)	10cm (15cm)	3 Elements
D	DIAMOND	30cm (45cm)	30cm (45cm)	10cm (15cm)	10cm (15cm)
B	BOX	30cm (45cm)	30cm (45cm)	10cm (15cm)	10cm (15cm)

Note: Each element depth is ONE figure. The first number is for units with standard communications and the number in brackets is for those with BMS. Double the distances for Close Reconnaissance elements and Triple the distances for Long Range Recce or Special Forces.

D.3 - HIGHER COMMAND

Higher command and control distances depend on the mission. The Company or independent Platoon commanders should stay within the following distances (the first number is for standard comms and the number in brackets is for elements equipped with BMS) from the BHQ, Battlegroup HQ: or higher level command they are attached to.

D.3.1 – Higher Command and Control Table

UNIT	OPERATIONAL MISSION			
	ATTACK	DEFEND	C. RECCE	L.R. RECCE
COMPANY* TO BGHQ	100cm (150cm)	150cm (200cm)	200cm (250cm)	300cm (400cm)
BHQ TO BGHQ or BGHQ TO REGT/BDE HQ	300cm (450cm)	450cm (600cm)	600cm (750cm)	900cm (1200cm)

* Including independent platoons and sections that are attached directly to the BGHQ (Special Forces can deploy anywhere).

D.4 - SECOND IN COMMAND

If there are two commanders (usually western forces) then one is the overall commander and the other is the second in command (2IC). Both count as commanders for the unit.

D.5 - LOSS OF COMMAND AND CONTROL

Command and control is lost when a commander is disabled, the communications fail (e.g. due to ECM jamming) or the unit strays out of the command and control distances given above. An element or unit out of command and control cannot receive new orders and if it strayed out of command and control then it **MUST** return next turn (see [D.6 - Detaching Units](#) for ordering units out of command and control). If a HQ element is disabled then a lower command element will take over next turn (e.g. if a Company HQ is disabled then one of the Platoon HQ's will step in). A 2IC will take command immediately. A detached platoon HQ cannot take control as they don't know the commander is dead.

D.6 - DETACHING UNITS

Sections, Platoons or Companies may be ordered out of command and control to either move to a better position to give fire support or deny an objective to the enemy. On initial deployment **ALL** units **MUST** be in command and control of their parent unit and when the unit is out of command control they may not receive new orders or transmit information. Any objectives captured by units out of command control **DO NOT COUNT** towards your points but will deny them to the enemy. Units such as Tank or Mechanised Platoons may be cross-attached from one Company to another, such attachments must be written in orders.

D.7 - COMMUNICATION

Radio transmission times between elements of the same Company/Platoon are instantaneous. Communication between each command element takes place in 1.1 of the player's pre-combat phase unless both are equipped with BMS in which case it is instantaneous. Air Liaison Officers request air support in phase 1.2 and AOO's request fire support in phase 1.3 of the opponents turn.

D.8 - CHANGING ORDERS

A unit's orders may only be changed by a higher command element if it is within command control distance and the commander is aware of the circumstances that require the order change. Use the transmission times given above for the command elements to communicate and amend your orders in phase 1.1 of YOUR turn.

D.9 - SLOWING TO ENGAGE

A unit may slow down from Moving to Advancing and engage enemy forces if either the following are true.

1. The unit observes an enemy unit within 50cm and within 5cm of its route of march.
2. The unit comes under fire.

A unit may stop and engage enemy forces if the following is true

1. The unit comes under fire.

In both the above cases the whole unit must react in the same way and if any movement is done the unit **MUST** follow its route of march.

Once the threat is dealt with the unit must continue with its orders. While it is dealing with the threat it could request a change of orders.

E: MOVEMENT

E.1 - INTRODUCTION

All ground elements have been given speed rates for moving on a road or travelling cross-country. Vehicles movement rates can be found in each nations DATA SHEET. The total distance an element can travel in a turn depends on the terrain they are moving over and the modifiers.

E.2 - MOVEMENT DEFINITIONS

E.2.1 – Movement Definitions Table

MOVEMENT TYPE	MODIFIER	DEFINITION
MOVE	-	The element must move at over advance speed and up to full move speed and it cannot fire.
ADVANCE	-	This is the maximum speed that an element may move at and still be able to fire (Stabilisation has been accounted for). Elements must advance at least half advance speed.
ROAD	-	Roads include lanes and tracks and to use road speed the element MUST spend the whole turn on the road. Roads are two lanes wide (unless multi-lane) and tracks one. If a road is completely blocked the column can either leave the road, joining once past, or take a turn to push the obstacle out of the way (if it is at least the same size). Vehicles can drive over and crush soft vehicles if they are tracked.
CROSS COUNTRY	-	This is the standard cross-country speed.
POOR TERRAIN	-50% of cross-country speed	Poor terrain includes light woods, soft ground, steep slopes (contours between 1-2cm apart) etc. Half the elements remaining speed whilst on poor terrain.
BAD TERRAIN	-90% of cross-country speed	Bad terrain includes dense woods, open spaces in built up areas, soft sand, very steep slopes (contours up to 1cm apart) etc. The element can only use 10% of its remaining speed.
GOOD TERRAIN	-10% of road speed	Good terrain includes hard sand, steppes etc. The element can use 90% of its road speed.
BUILT UP AREA (BUA)	As bad terrain	Vehicles may travel through the open spaces in built up areas but cannot enter small buildings. Vehicles can enter large buildings (e.g. hangars, barns etc) and AFV's can enter a medium building but on a roll of 1 or 2 on a d10 the building collapses destroying the AFV. Infantry moving through buildings count it as POOR TERRAIN and each floor takes a turn to move up and clear.
REVERSE	Half speed	Reduce all speeds by half for reverse speed. This does not apply to vehicles with front and rear driving positions (e.g. Luchs).
IMPASSABLE	NP	Vehicles cannot move in forests, cliffs (touching contours), Anti-tank ditches, etc. Bogs and swamps are impassable unless the vehicle is amphibious.
LIGHT OBSTACLES	Tracked -10% Wheeled -25% Infantry -20%	Light obstacles include hedges, fences, light barbed wire etc. Take the relevant percentage off the speed rate of the terrain.
MEDIUM OBSTACLES	Tracked -20% Wheeled -50% Infantry -40%	Hard obstacles include walls, streams, ditches, etc. Take the relevant % off the speed rate of the terrain.
HARD OBSTACLES	Tracked -30% Wheeled -75% Infantry -60%	Hard obstacles include bocage, dense barbed wire etc. Take the relevant % off the speed rate of the terrain.
STREAMS	As above	Roll a d10 for each vehicle crossing to test if it got stuck. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck test again next turn and if the roll fails again the vehicle is stuck permanently.
DITCHES	As above	Roll a d10 for each vehicle crossing to test if it got stuck. Tracked vehicles get stuck on a roll of 1 and wheeled on a 1-2. If stuck test again next turn and if the roll fails again the vehicle is stuck permanently.
AMPHIBIOUS	Elements water speed	Vehicles capable of swimming or snorkelling have their details given in the DATA SHEETS. Vehicle screens or snorkels take 4 turns to erect and take 2 turns stationary to prepare for combat after crossing a river. Designate riverbanks suitable for crossing before the game begins.
TOWING	On road -10% Off road -50%	Any vehicle can tow a trailer. To tow another vehicle the tower must be at least the same weight and it costs 50% of its speed.
AVLB	-	Armoured Vehicle Launched Bridges (AVLBs) cross rivers, trenches, Anti-Tank Ditches etc up to 2cm in width. It takes a full turn next to the obstacle to lay or lift the bridge.
FERRIES AND PONTOONS	-	Amphibious bridges, ferries and pontoons have their details given in the ARMY LISTS.

Note: NP is not possible.

E.3 - STANDARD MOVEMENT RATES

The following table gives the speed of elements not included on the DATA SHEETS:

E.3.1 – Standard Movement Rates Table

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	8	6	4	3
INFANTRY + HVY WPNS*	4	3	2**	1**
HORSE	20	20	10**	10**
MULE	10	10	5**	5**
ANIMAL TOWING	8	4	4**	2**
BICYCLE	12	8	6**	4**
MOTORBIKE	70	25	35**	12**
DIRTBIKE	60	50	30**	25**
AUXILIARY POWERED GUN	15	10	7**	5**

*Heavy weapons include 81mm+ mortars, large ATGM's (e.g. TOW), 12.7mm+ HMG's, etc but not smaller weapons like LMGs, Light ATGM's (e.g. Milan)

**Only Personal weapons (AR, SMG etc), SAW and LMG may be used when using this form of transport. However elements may choose to dismount or leave behind the equipment which is effecting them.

E.4 - MOVEMENT AT NIGHT, IN BAD WEATHER OR SMOKE

The following table lists the maximum an element may move in adverse visual conditions. When only a part of an elements movement is in such conditions (e.g. moving though smoke), calculate out the portion of the move spent in those conditions and reduce the elements movement by that portion.

E.4.1 Maximum movement Distances in Poor Conditions Table

CONDITIONS	NIGHT DRIVING EQUIPMENT	MAXIMUM MOVE	
		ROAD	XC
NIGHT	NONE	10	5
NIGHT	ANY OR WHITE LIGHT	30	15
LIGHT RAIN OR LIGHT SNOW	N/A	40	20
MIST OR RAIN OR SNOW	N/A	20	10
HEAVY RAIN OR HEAVY SNOW	N/A	5	10
FOG OR SANDSTORM	N/A	1	1
PARTIAL SMOKE	TID	Normal	Normal
PARTIAL SMOKE	Not TID	20	10
FULL SMOKE	TID	Normal	Normal
FULL SMOKE	Not TID	10	5
IRB SMOKE	N/A	10	5

Halve all the above for infantry. If the maximum distance is more than the elements movement the element is limited to its normal movement.

If moving in more than 1 condition take the worst distance of the and halve it. Example:- moving on a road at night with TID in rain, maximum movement is 30cm at night and 20cm in rain, the worst is 20cm, which is halved to 10cm maximum movement.

Passing though your own smoke discharger screen doesn't slow movement at all.

Example:- A Jeep moves down a road and passes though a 10cm wide partial smoke screen. The jeeps normal move is 50cm. After 10cm it enters the smoke and moves the 10cm though it. 10cm is half of the maximum 20cm the element could move though partial smoke, thus it takes the jeep half a move to pass through the screen. Half of the 50cm it started with is 25cm, plus the 10cm it moved before entering the smoke = 35cm used, thus the jeep still has 15cm of road movement left.

E.5 - ENTERING OR EXITING VEHICLES

Infantry can only exit a vehicle that is stationary or advanced up to half a move. It takes half a turn to enter or leave a vehicle and the infantry section must be adjacent to the rear. If infantry exited a stationary vehicle they may make a further half move but if the vehicle advanced then the infantry deploy to the rear. No infantry can enter or exit a vehicle that advanced over half or moved any distance (unless it has been destroyed and they are evacuating).

E.6 - HULL DOWN AND TURRET DOWN

Hull down and Turret down are positions that vehicles take up to see over a terrain feature but reveal as little of themselves as possible. For a vehicle to go turret down it needs to be 1cm from the edge of a crest line, the commander can see over the hill counting as a “V” sized target to enemy observers and can fire any roof mounted weapons. Hull down is where an AFV shows only its turret to enemy observers and can fire. There are THREE methods of moving into a hull down position: Hull down vehicles are placed touching a crest line. Hull and turret down vehicles count as being at on the contour the crest line is on.

- **FAST.** Drive onto the feature and reverse into the hull down position (just move the figure up to the crest line as part of its normal move). This costs 10% of your movement. This method is fast but shows the whole vehicle. Thus when being observed by enemy on the other side of the hill it counts its full size moving in the open. If the enemy fires the vehicle receives the benefit of the hull down size modifier.
- **CAUTIOUS.** Carefully advance into the hull down position. This method takes up half its speed to complete but only shows the hull down size to enemy observers and counts as moving in open.
- **EXTRA CAUTIOUS.** Creep from turret down to hull down. This only requires 1cm of movement and shows the hull down size counting as moving in cover.

E.7 - PREPARING WEAPONS AND EQUIPMENT

Weapon systems that take ½ turn to set up can be prepared to fire next turn if the element advanced. If the element moved or the weapon takes longer than ½ turn to set up use the following time to set up once the element is stationary:

E.7.1 – Preparing Weapons and Equipment Table

TIME	WEAPON	TIME	WEAPON
1/2 TURN	Man portable AAGMs or ATGMs	1 TURN	AVLBs to lay bridge
1/2 TURN	Mortars up to 81mm	1 TURN	Towed field guns to fire direct
1/2 TURN	AAA guns and radars	1 TURN	SP guns to fire indirect
1/2 TURN	SFMG, HMGs or AGLs	2 TURNS	Towed field guns to fire indirect
1/2 TURN	Ground mounted GSRs	3 TURNS	SP salvo rockets to fire indirect
1 TURN	Mortars 82mm+	4 TURNS	Towed salvo rockets to fire indirect
1 TURN	AT Guns/RCL Rifles	10 TURNS	Heavy rockets

Note: the time taken to pack up is half that of the above except AVLBs which takes 2 turns.

E.8 - TANK RIDING

Some lists allow troops to tank ride. Only units specified can tank ride. They suffer from the following disadvantages.

1. If hit by Arty they count as being Infantry in the open
2. If the vehicle they are riding on is hit by direct fire, but not destroyed roll a d10, on 1-5 they must test to escape and take any damage from the escape table, but stay mounted. On a 6-10 they are unharmed.
3. If the vehicle is destroyed they must test to escape. In both 2 and 3 treat them as if hit by HEAT.

Troops cannot tank ride vehicles equipped with electric armour unless the player writes in their orders that those vehicles have turned off their electric armour. If the Armour is turned off the vehicle gains no benefit from it.

F: OBSERVATION

F.1 - INTRODUCTION

Before an element may fire or call down an artillery barrage a target must have been spotted. The target may be spotted if it is currently in LOS or moved out of sight this turn. Moving targets can be spotted at any point in their movement and can be engaged at any point after.

F.2 - OBSERVATION PROCEDURE

Use the following step-by-step procedure to spot a target:

1. Check the formation the unit is using and its visibility arcs.
2. Check to see how many spotting attempts the spotter is allowed (see [F.3 – Number Of Spotting Attempts Allowed](#)).
3. Nominate the observer and its target, measure the distance and check on the [F.8.1 – Spotting Table](#) below to see if spotting is possible and if it is automatic or requires a die roll.
4. Check the [F.9.1 – Maximum Observation Table](#) to ensure time of day or weather doesn't preclude spotting
5. Check that there is a line of sight to the target [F.5 - Line Of Sight \(Los\)](#).
6. See [F.8 - Spotting](#) to determine if the target is spotted.
7. When making visual spots all other targets within 5 cm of the selected target are also spotted if they are within automatic spotting distance (see [F.8 - Spotting](#)).

F.3 – NUMBER OF SPOTTING ATTEMPTS ALLOWED

1. Infantry elements may make up to two spotting attempts.
2. Vehicles with a Commanders Independent Sight (CIS) may make up to two spotting attempts.
3. Extra Turrets on a vehicle may make up to one spotting attempt.
4. All other elements may make up to one spotting attempt.

If you wish to spot with GSR see [R.3 - Sensing Equipment](#).

AOOs and ALOs attached to infantry may make one spotting attempt which uses up one of the infantries two spotting attempts.

F.4 - TARGET SIZE

All elements have been given a letter to show their size. Vehicles have 3 sizes for front or rear, side and hull down. Helicopters also have 3 sizes for front or rear, side and pop up. All other elements have only 1 size aspect. There are five sizes as follows:

EXTRA LARGE (X)	E.g. Western MBTs, heavy rockets, engineer vehicles, etc.
LARGE (L)	E.g. Russian MBTs, APCs, light trucks, big AAA guns, etc.
MEDIUM (M)	E.g. Recce vehicles, AT guns, RCLs, smaller AAA guns, etc.
SMALL (S)	E.g. Infantry with heavy weapons, mortars, etc.
VERY SMALL (V)	E.g. Infantry, commander's cupolas, etc.
TINY (T)	E.g. One or two man teams, mast sights, etc

F.5 - LINE OF SIGHT (LOS)

To spot and engage a target it must be in line of sight. Because the miniatures used are bigger than the scale used a straight line must be traced between the centre of the observer's miniature and the centre of the target miniature to count as in LOS. If another miniature or object (that cannot be seen through) is in the way then there is no LOS. Infantry can be seen through but not fired through by other infantry.

F.6 - LOSS OF ACQUISITION

Once a target has been spotted that spot is only lost if one of the following cases apply:

- The target went out of sight in your opponents LAST turn.
- The observer went out of sight this turn.
- The observer attempts to spot another target (and is NOT infantry or has a CIS).
- The observer reacts to missile fire.
- The observer is destroyed.
- The observer leaves a vehicle.

F.7 - CONTOURS AND HEIGHT

Hills are made up of contours that are about 4m high. Contours between elements block LOS unless at least one of them is hull down or turret down (see [E.6 - Hull Down And Turret Down](#)). An elements height is the same as the contour level it is on unless it is hull down or turret down to an enemy observer, in which case it counts as the contour above. The following are heights of normal terrain:

- BUILDINGS 1 contour per floor of the building.
- WOODS 3 contours high.
- SMOKE SCREENS 3 contours high.
- VILLAGES 4 contours.
- TOWNS 5 contours.
- DENSE WOODS 5 contours.
- CITIES 6 or more contours.

F.8 - SPOTTING

F.8.1 – Spotting Table

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	T
CAMOUFLAGED	50/-	40/-	30/-	10/-	3/-	1/-
IN HEAVY COVER	50/25	40/20	30/15	10/-	5/-	3/-
IN COVER OR M or F IN HEAVY COVER	70/35	50/25	40/20	20/5	10/2	5/1
IN OPEN OR M or F IN COVER OR M & F in H.COVER	150/75	100/50	70/35	50/20	20/5	10/2
M or F IN OPEN OR M & F IN COVER	250/125	200/100	150/75	100/40	40/10	20/5
FIRED AND MOVED IN OPEN	-/250	250/200	250/150	200/75	100/20	40/10
FIRED (OR USING WL) AT NIGHT	-/250	-/250	-/250	-/250	-/250	250/125

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See [F.10 - Friendly Fire](#)). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.

Out-of-arc of the observer.

Is within a partial smoke screen (and observer is without TI).

The observer is Moving.

The observer is suppressed.

60mm+ weapons kick up so much dust if a vehicle is stationary and firing it counts as having partial smoke all round it. This dust is affected by wind and dissipates if the vehicle holds its fire for a react fire or fire phase.

Setting up equipment doesn't count as moving for spotting.

F.9 - MAXIMUM OBSERVATION

The following table gives the maximum distances that an element can either see into (or be within the edge of to see out) depending on conditions, vision equipment and terrain. The distances for looking at or out of the edge of a terrain feature are as per the visibility conditions.

F.9.1 – Maximum Observation Table

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
CLEAR DAYLIGHT	250cm	-	-	-	-	200cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	200cm
LOOKING INTO/THROUGH						
PARTIAL SMOKE	50cm	5cm	50cm	25cm	50cm	-
BASE EJECTED SMOKE	NP	NP	NP	NP	NP	-
WHITE PHOSPHEROUS SMOKE	NP	NP	NP	NP	NP	50cm
IR BLOCKING SMOKE	NP	NP	NP	NP	NP	NP
ARTILLERY ZONE*	50cm	10cm	50cm	50cm	50cm	NP
LOOKING INTO/OUT OF COVER	1cm	1cm	1cm	1cm	1cm	2cm
ALONG ROAD IN WOODS/BUA	10cm	10cm	10cm	10cm	10cm	12cm
WEATHER CONDITIONS						
LIGHT RAIN OR LIGHT SNOW	100cm	10cm	NP	NP	50cm	25cm
MIST OR RAIN OR SNOW	50cm	8cm	NP	NP	NP	NP
HEAVY RAIN OR HEAVY SNOW	25cm	5cm	NP	NP	NP	NP
FOG OR SANDSTORM	2cm	3cm	NP	NP	NP	NP

Note: COVER = Woods, BUA, etc.

BUA = Built Up Area.

NP = Not Possible.

- = No Effect.

WL = White lights.

IR = Infra-red night fighting equipment.

II = Image Intensifying equipment.

LLTV = Low Light Television.

TI = Thermal Imager.

* The area that has explosions in it at the time an observation is attempted (airburst and smart rounds do not count).

An element looking out of cover within the distance given above can see outside the cover up to the normal maximum for that type of equipment. Or to put it another way if you are within 1cm of the edge of a wood and have II on a clear moonlit night you'll be able to see 99cm outside the wood for a total of 100cm (maximum II can see on a moonlit night).

F.10 - FRIENDLY FIRE

When rolling to spot a target and a ROLL OF 1 IS SCORED there is a chance of friendly fire. If there are friendly units within 25cm of the target, not from the same Company and in LOS then the spotter MUST engage that friendly unit! (your opponent decides which ammunition and type of fire is used or in the case of an AOO or ALO they will call in a strike). The spotter can only try to rectify the mistake (reacquire) once the target has been attacked. If the spotter is equipped with BMS or a BIFF (Battlefield Identification Friend or Foe) system roll a d10 and on a score of 6+ for BMS and 4+ for BIFF the spotter realises the mistake and doesn't fire.

F.11 - THERMAL IMAGERS (TI)

Though thermal imagers are primarily a night-time aid they can be used in the day to aid observation. TI can only be used if the element using it was either stationary or advancing and the target was within visibility arc.

F.12 - HULL DOWN

Hull down is where an AFV exposes as little as possible and still be able to fire (see [E.6 - Hull Down And Turret Down](#) for how to go hull down). If an AFV is dug-in or touching a contour it counts its hull down aspect to any enemy observers beyond. Hull down vehicles can see down the slope in front of them but there is an area of deadground where it cannot depress its gun. The deadground is taken from the opposite edge of the contour they are on. The table below shows the deadground distances for the various depression classes of gun. There is no deadground if the vehicle is ON the hill shooting down the slope at a target below.

F.12.1 – Weapon Deadground Table

Depression Class of Gun	Marked on Datasheet	Deadground firing down	Deadground firing up
Limited Depression	(Ld)	20 cm per Contour	10 cm per Contour
Normal	None	10 cm per Contour	5 cm per Contour
High Angle	(HA)	2 cm per Contour	None

F.13 - TURRET DOWN

Turret down is where a vehicle is hidden from view but the commander can see over the hill. The commander, CIS or cupola count as "V" sized targets and any roof-mounted weapons can fire (i.e. pivot AAMG). The cupola can be engaged with direct fire (counting as armour class of 1 and if destroyed the whole vehicle is killed) and the commander or CIS with area fire (counting as INFANTRY IN COVER and if destroyed the vehicle is suppressed for the rest of the game because the commander has been killed). If the commander spots a target the vehicle may move into a hull down position next turn counting the target as automatically spotted (see [E.6 - Hull Down And Turret Down](#)).

F.14 - ILLUMINATION ZONES

Artillery illumination flares last for four turns and aircraft flares last for six turns. The flares give daylight conditions to anything inside or outside looking into the illumination zone. IINF and LLTV systems looking into or through an illuminated zone do not work. The zone sizes are as follows:

- 5cm radius Light mortars up to 79mm.
- 10cm radius Mortars over 80mm and guns/howitzers up to 89mm.
- 15cm radius Guns/howitzers over 90mm.
- 20cm radius Aircraft flares.

F.15 - VISIBLE DEADGROUND

If a higher observer (A) is trying to look over an intervening feature (B) then there will be an area that is out of view behind that feature. If the feature is the same height as the observer then nothing can be seen beyond. Visible deadground and gun depression/elevation deadground are different (a MBT may be able to see a target below but may not be able to depress its gun to engage it). Measure the distance from the observer to the furthest edge of the intervening feature and multiply the measurement by the following calculation:

HEIGHT OF INTERVENING FEATURE (B)

OBSERVERS HEIGHT (A) minus HEIGHT OF INTERVENING FEATURE (B)

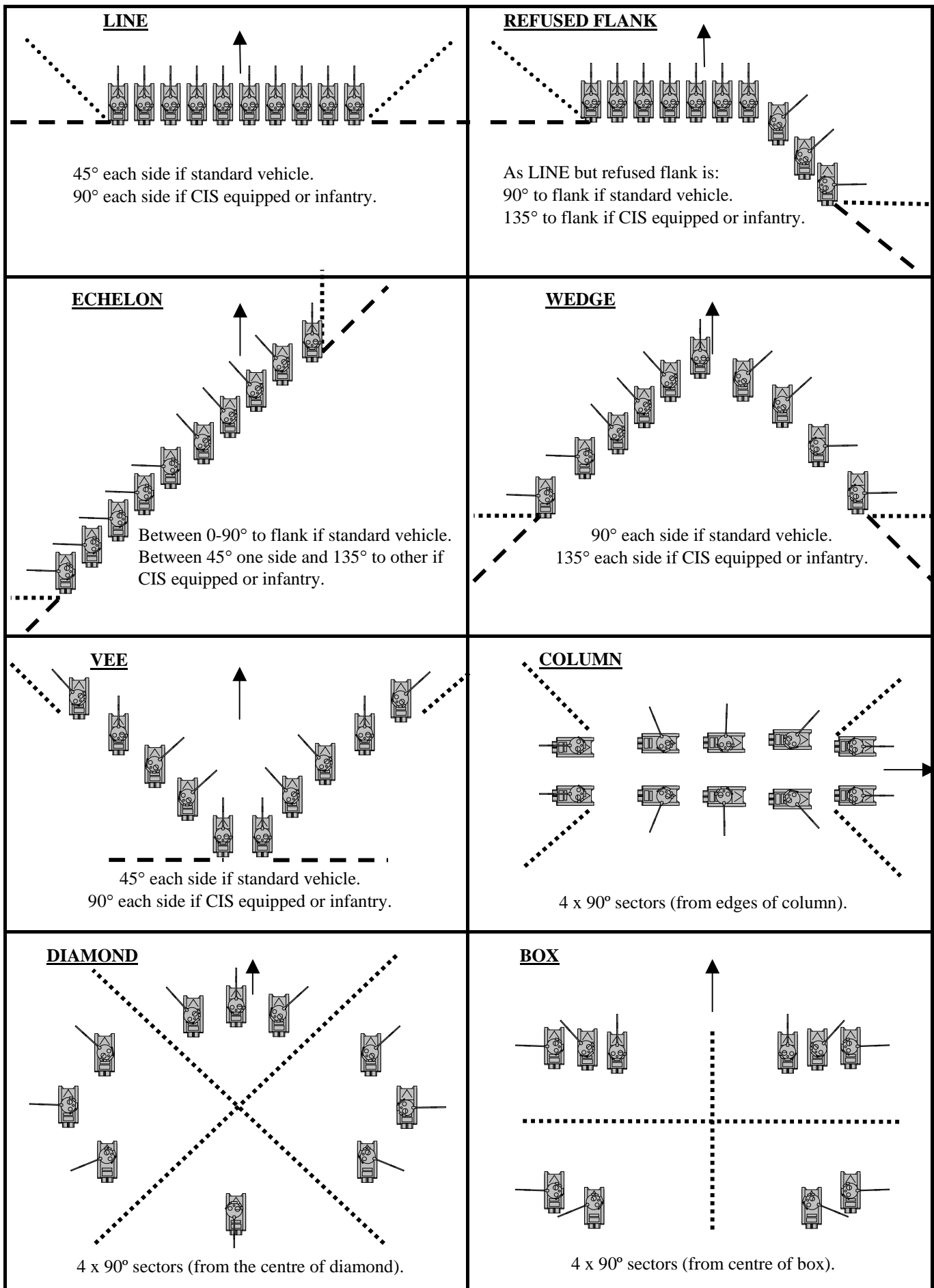
E.g. an observer at contour level 3 is looking over a 1 contour high hill and the distance from the observer to the furthest edge of the intervening hill is 30cm.

Therefore $1 (B) \text{ divided by } 2 (A \text{ minus } B \text{ or } 3 \text{ minus } 1) = 0.5 = 30\text{cm} \text{ divided by } 0.5 = 15\text{cm}.$

The deadground beyond the furthest edge of the 1 contour hill is 15cm (the observer cannot see into this area at all).

F.16 - VISIBILITY ARCS

A unit will move around the battlefield scanning for targets. The arc of visibility depends on the formation and the sighting systems of the unit. The illustrations on the next page give examples of each formation and the visibility arcs. Normal sighting systems are in blue and vehicles with hunter/killer sights or infantry are in red. Box, column and diamond formations have sectors to provide all round defence and each platoon (or section) looks for targets in their sector (See [G.5 - Arcs Of Fire And Vehicle Aspects](#) for arcs of fire).



..... Arc of visibility if standard vehicle optics.

--- Arc of visibility if Commander Independent Sight fitted.

F.17 - SMOKE

There are several types of smoke and means of delivery. Artillery fired smoke puts a smoke screen on the normal HE fire zone. A base ejected smoke area spreads 10cm per turn down wind (if wind is present) until it disperses. Vehicle smoke dischargers cover the vehicle that fired them and smoke generators leave a trail of smoke behind the vehicle. The following table gives the types, burn time and effects of artillery delivered smoke:

F.17.1 – Smoke Details Table

SMOKE TYPE	CODE	SMOKE STRENGTH			EFFECTS
		TURN 1	TURN 2-5	TURN 6	
BASE EJECTED	BES	Partial	Full	Partial	This is the standard smoke used.
WHITE PHOS	WPS	Full	Full	-	WPS smoke has a HE effect in the first turn but doesn't increase in size.
IR BLOCKING	IRB	Partial	Full	Partial	IRB smoke has no HE effect and doesn't increase in size.
MIXED HE & WPS	HEW	Full	Full	Partial	Half the battery fires WPS, the other HE. It has a better HE effect than WPS but half the fire zone.
MIXED HE & BES	HEB	Partial	Full	Partial	Half the battery fires BES, the other HE. It has a reduced HE effect and half the fire zone.
BOTH BES & WPS	-	Full (WPS)	Full (BES)	Full	A battery with both smoke types may fire WPS turn 1 & BES turn 2. There will be partial smoke turn 7.

F.18 - SMOKE EFFECTS

There are two effects of smoke, either partial or full, as follows:

Partial smoke – This obscures the target (unless observer is using TI in which case ignore all effects) see [F.8.1 – Spotting Table](#) and [F.9.1 – Maximum Observation Table](#) for details of the observation effects. It also effects movement, see [E.4.1 Maximum movement Distances in Poor Conditions Table](#).

Full smoke – This is a full smoke screen and blocks sight completely (unless observer is using TI and the smoke is not VIRSS or IRB in which case ignore all effects). Observers that already had the target in sight may have a disappearing shot (include the SMOKE EVADE modifier). It also effects movement, see [E.4.1 Maximum movement Distances in Poor Conditions Table](#).

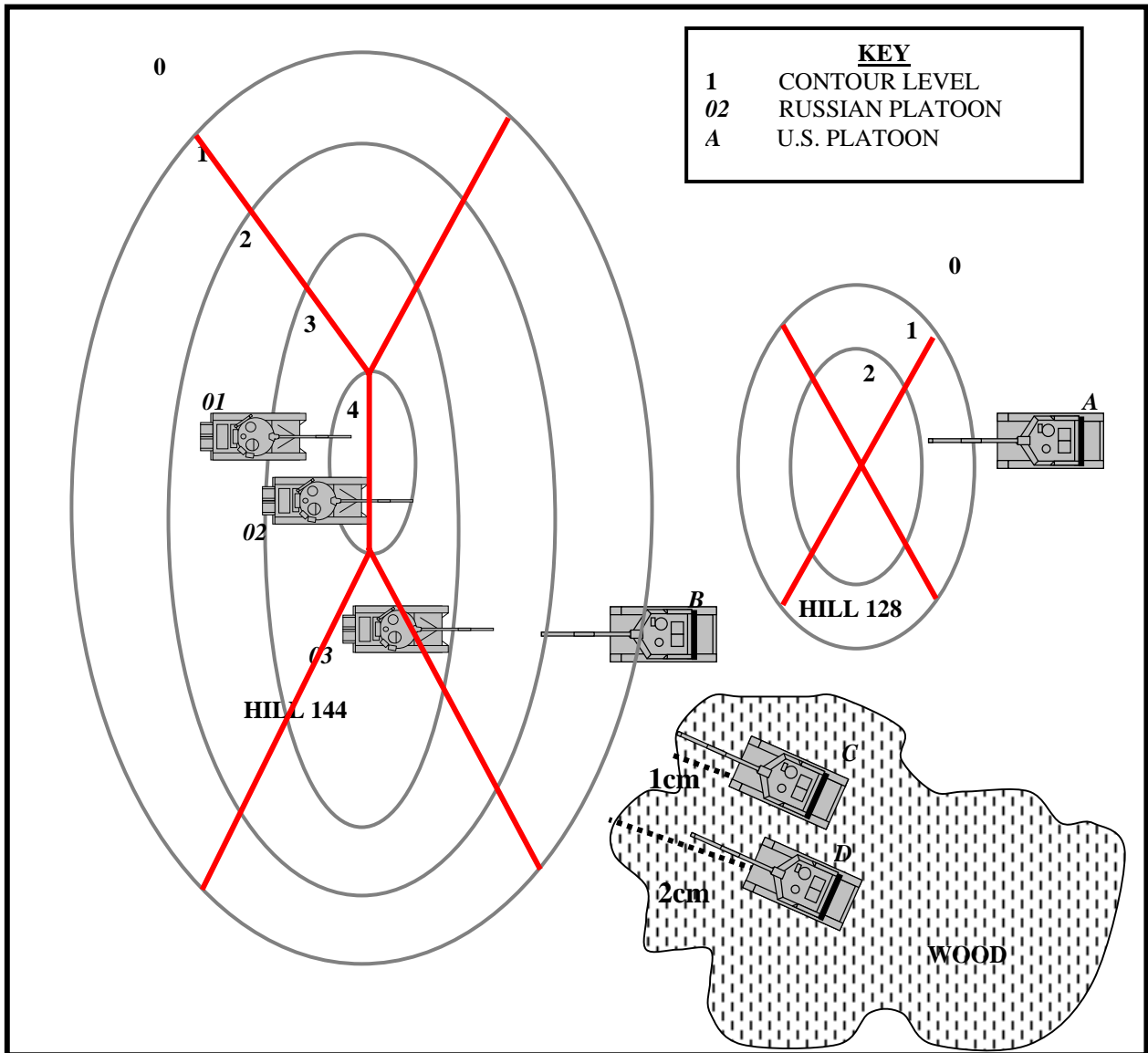
F.19 – SMOKE DELIVERY

The following table gives smoke types, burn times and effects of other methods of delivery:

F.19.1 – Smoke Delivery Table

SMOKE TYPE	CODE	EFFECTS
SMOKE DISCHARGER	SD	A vehicle can use its SD in phase 2.1 or 2.5 if it comes under fire, spots an ATGM or an alarm goes off. The SD takes a turn inactive to reload. The screen is full for 1 turn, 4cm wide by 2cm depth and placed 1cm away indirection of threat. A vehicle that deploys smoke may only be engaged by observers that spotted it last turn or by ATGMs already inbound, counting any modifiers.
SMOKE GENERATOR	SG	Smoke generators are basically injected fuel into the exhaust. The vehicle turns on the generator in the movement phase and provided it hasn't moved more than 20cm it gives a partial smoke screen 4cm wide by 20cm long. The screen lasts for 1 turn and the SG can be turned on for 5 turns with 5 turns rested (to stop engine flooding). The screen is placed at the rear of the vehicle at the end of its move and either follows the track of the vehicle if there is no wind or angled in the wind direction.
VEHICLE INFRA-RED SCREENING (VIRSS)	V	SDV and SGV are as above but give a full IR blocking (IRB) smoke screen (i.e. TI cannot see through it).
SMOKE POTS	SP	Each pot produces BES, angled down wind 5cm by 30cm for 15 turns and is usually used in defence.
SMOKE CANISTERS	SC	These are smaller than pots and are usually mounted on vehicles (e.g. Gulf war Challengers). They produce a FULL smoke screen as per a smoke generator for 10 turns.
DIRECT FIRED SMOKE	-	Any weapon with smoke rounds may fire them direct, they are 5cm wide by 2cm deep and are always on target. The smoke screen is partial and lasts 2 turns.
SMOKE GRENADES	-	Infantry may use smoke grenades, which form a partial smoke screen 5cm wide by 2cm long for 1 turn.
BURNING VEHICLES	-	Any destroyed vehicle burns providing an IR blocking (due to heat and dirt) smoke screen over its position. Destroyed miniatures should have cotton wool placed on top. The vehicle continues to burn for the duration of the battle.

F.19 - EXAMPLES OF OBSERVATION



CONTOURS

- MBTs 01 & 03 are on contour level 3.
- MBT 02 is on contour level 4 (because it is hull down).
- MBT B is on contour level 1.
- MBT's A, C & D are on contour level 0.

OBSERVATION

- MBT 01 is turret down and the commander can see B in the open and C in cover (because it is within 1cm from the edge of the woods) but because the Russians don't have TI they cannot see MBT D which is 2cm in.
- MBT 02 is hull down and can see the same as MBT 01.
- MBT 03 is in the open and can see the same as MBT 01.
- MBT B can see 03 in the open, 02 as a hull down target and possibly 01's commander.
- MBT C can see the same as B (normally the targets would count as in cover because it is looking out of woods but because it has Thermal Imaging they all count as in the open).
- MBT D can see the same as C.

SHOOTING

- MBT 03 can shoot down the slope at B and C.
- MBT 02 because it is hull down cannot depress its gun to shoot B or C (the shooting deadground is 80cm from the edge of the top contour).
- MBT 01 can engage B or C with its 12.7mm HMG only.
- MBT B cannot elevate its gun to shoot 02 but can shoot straight up the hill at 03.
- MBT C can shoot at 03 and 02 (because it is 42cm from the near edge of the top contour and its gun elevation deadground shooting up is 40cm).

VISIBILITY DEADGROUND

- MBT's 01, 02 & 03 cannot see MBT A (or vice versa) as it is within the area of deadground. The distance from the Russians to the far edge of the intermediate hill is 40cm. The deadground distance is $\text{contour } 2 \div 2 (\text{contour } 4 - \text{contour } 2) = 1$, so multiply 40cm by 1 is a deadground distance of 40cm from the far edge of the intermediate hill.

G: DIRECT FIRE

G.1 - INTRODUCTION

Direct fire is gun, autocannon, Light Anti-tank Weapon (LAW) or Anti-tank guided missile (ATGM) fire at an ARMoured TARGET by any weapon of at least 12.7mm in calibre, which uses either kinetic or chemical penetration to destroy it. Fire at infantry, soft vehicles and buildings is covered in AREA FIRE (see [J: Area Fire](#)) except when using Fuel Air Explosive from an ATGW or LAW (see [G.8 - FUEL AIR EXPLOSIVE on ATGWs and LAWS](#)).

Vehicles may fire at 1 target. Each extra turret on a vehicle may fire at 1 target (which doesn't have to be the same target as the vehicles main turret). Vehicles and extra turrets can either area fire or direct fire. Infantry may area fire at one target and fire up to two different LAWs at one other target.

Elements may only fire at targets they has spotted (see [F.2 - Observation Procedure](#)).

G.2 - DIRECT FIRE PROCEDURE

Use the following step-by-step procedure to hit armoured targets:

1. Nominate the firer and its target, measure the distance (ranges for acquisition and firing are taken from centre of the miniature to centre of the target) and check to see if it has been spotted.
2. If the target has been spotted find the firer on the DATA-SHEET and cross-refer the weapon (and ammunition type) against the range in the DIRECT FIRE TARGETING section to give the basic number required to hit, if your element is advancing use the number in brackets.
3. Modify the basic chance by the "DIRECT FIRE TARGETING MODIFIERS" in the middle left of the datasheet of the DATA-SHEET and if applicable the To Hit Effect of AMD Type 2 table also on the DATASHEET in the middle under the Additional area fire modifiers table.
4. Roll a d20. If the modified number or greater is rolled then the target has been hit.
5. If the target has been hit check to see if it was penetrated and any damage (see [I: Penetration And Effects](#)).

The following points apply:

- Fire in the players turn (phase 2.3) is at targets in LOS.
- Enemy react fire (phase 2.2) is at targets in LOS or moved out of sight THIS TURN (firing at any point in its movement and if destroyed it is brought back to that point).
- A hit target is always suppressed.
- A natural roll of 1 always misses.
- A natural roll of 20 always hits the target provided there isn't a dash in the targeting column (and provided the penetration level is at least ONE UNDER the armour level, or greater, the target is destroyed).

G.3 - TARGETING MODIFIERS

The following points apply to the targeting modifiers on the DATA-SHEET:

- Second shot modifier counts for the second and all subsequent shots.
- The movement modifier is for each 10cm and part of 10cm moved. Though fire can take place at any point in a targets move include the whole moving modifier (this represents the speed of the target).
- Came into and went out of sight modifier is for targets that appeared/disappeared to both players this turn.
- TI refers to the gun sight or missile controller/designator. If the target deploys SDV count "SMOKE EVADE (NO TI)" even if TI equipped.
- If a target deploys smoke in its movement phase only observers that had ALREADY SEEN IT or can see through the smoke may engage it, counting the relevant modifier.

G.4 - WEAPON SYSTEMS

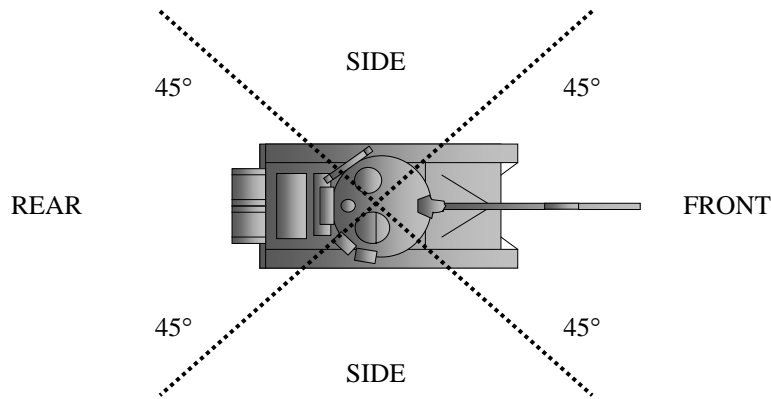
The following weapon systems can be used in direct fire mode:

G.4.1 – Weapon Systems Table

WEAPON SYSTEM	DETAILS
Machineguns	Machineguns cannot penetrate armour but are used in area fire. See J: Area Fire .
Heavy machineguns (HMG)	12.7mm and 14.5mm HMGs can penetrate thin armour and are effective up to 1km.
Autocannons	Autocannons are fast firing guns (20mm+) and are effective up to 2km.
Guns	Guns are slower firing, can have a HE effect and can be effective up to 4-5km.
Light AT weapons (LAW)	All infantry anti-tank weapons have been grouped under LAWs. A section can carry up to 2 and they mostly use CE to kill. They can be used in area fire (some having special rounds) but are relatively close range weapons.
Recoilless rifles (RCL)	RCLs include low-pressure guns and are short-range weapons firing CE rounds.
Anti-tank guided missiles	See H: ANTI-TANK GUIDED MISSILES (ATGMs) .
Others	There are several non-dedicated weapons that can be used in direct fire (e.g. AGLs, Gun-Mortars, grenades etc).

G.5 - ARCS OF FIRE AND VEHICLE ASPECTS

The following illustration gives the size aspects of a vehicle for observation and armour levels:



There is an imaginary cross, centred on the vehicle that gives 4 arcs and an observer will be in one of these arcs. A target can only be engaged if it is the front or side arc of a turreted vehicle and in the front arc only if fixed weapon (non-turreted). If a target is out of firing arc the vehicle must turn to face it in its next movement phase.

G.6 - MOVEMENT

Stationary or advancing elements may spot and engage a target and moving elements may spot a target BUT cannot fire.

Moving targets engaged in the react fire phase 2.5 may be hit at any point in their move by guns, autocannons or Light Anti-tank Weapons (LAWs). Moving targets engaged by ATGMs can be hit either at the end of their move or at the point where they went out of sight. Fire in any other phase is at the targets current position.

A target destroyed by guns, autocannons or LAWs is returned to the point where it was engaged (so in effect you can choose where it dies) and if destroyed by ATGMs in its current position or where it went out of sight. Any personnel that dismounted in the move or managed to escape are placed at the rear of the vehicle where it died.

G.7 - FIRING EXAMPLE

An advancing U.S. M1A2 “Abrams” is firing an APFSDSDU round at a moving Russian T-80U at a range of 75cm (1500m). Looking at the DATA-SHEET (see [U. Combat Data-Sheets](#)) the base chance to hit at 75cm, whilst advancing, is 10 (75cm falls in the “ up to 100cm” column in the targeting section and the advancing number is given in brackets).

The modifiers to hit are: Target’s size is L. No Modifier
 “Per 10cm target moved” (the T-80U moved 5cm). +2

The final roll required to hit is 12 or higher on a d20.

G.8 - FUEL AIR EXPLOSIVE on ATGWs and LAWs

Fuel Air Explosive (FAE) is an exception to the normal rules. All fire using FAE is direct fire. All direct fire rules G.2 thru G.7 are followed however any hit is an automatic kill.

Because FAE is considered a chemical weapon permission must be given at the highest level before its use is authorised. To reflect the political effects of using FAE the firer gets no points for kills achieved using FAE.

G.9 – LARGE AHEAD ROUNDS

120mm or larger AHEAD rounds can be programmed to fire the AHEAD darts in a specific direction. Such round can be fired above the target and then use the AHEAD darts to attack the target from above. When this option is used roll on [D.10.1 – Top Attack Table](#) to determine which part of the target is hit.

G.10 – ELEMENTS FIRING FROM WITHIN BUILDINGS AND BUNKERS

Infantry and soft vehicles which fire Infantry AT Weapons or ATGW from within building or bunker risk harming themselves from the flames which come out of even those weapons listed as without back blast. Roll a d20 against the following table each time such an element fires.

G.10.1 – Back Blast Danger Table

Weapon Type	Firer Suppressed on	Firer Killed on
Soft launch	20	-
Without BB	15-18	19-20
With BB	11-16	17-20

H: ANTI-TANK GUIDED MISSILES (ATGMs)

H.1 - INTRODUCTION

This section covers all ATGMs and includes laser designated artillery rounds and air launched missiles. To fire an ATGM the launcher must be a stationary ground element or a helicopter that advanced up to 25cm. However, if the missile is designated by another source, is self homing or an aircraft launched missile then the launcher may move up to full advance speed. Most ATGMs use CE to penetrate armour.

The DATA-SHEET gives an ATGMs minimum and maximum range, base chance of hitting a target, the rate of fire (ROF), guidance and command system, warhead type, armour penetration value, area fire value and any other details.

H.2 - ATGM PROCEDURE

ATGMs may only be fired in the react fire phase of the opponent's turn. Use the following step-by-step procedure to hit a target with an ATGM:

1. Nominate the firer and its target, measure the distance and check to see if it has been spotted (see [F: Observation](#)).
2. Check the ROF rating for number of missiles fired and number of targets.
3. If the target has been spotted place a marker on both the firer and its target.
4. The target has a chance to spot the threat and react to the missile in phase 2.5.
5. If the missile is still inbound on the target find the ATGM on the DATA-SHEET and cross-refer the missile against the range in the DIRECT FIRE TARGETING section to give the basic number required to hit.
6. Modify the basic chance by the "DIRECT FIRE TARGETING MODIFIERS" in the middle left of the datasheet of the DATA-SHEET and if applicable the To Hit Effect of AMD Type 2 table also on the DATASHEET in the middle under the Additional area fire modifiers table.
7. Roll a d20 per target. If the modified number or greater is rolled then the target has been hit.
8. If the target has been hit check to see if it was penetrated and any damage (see [I: Penetration And Effects](#)).

The following points apply:

- A hit target is always suppressed.
- A natural roll of 1 always misses.
- A natural roll of 20 always hits the target (and provided the penetration level is ONE below the armour level or greater the target is destroyed).
- The missiles minimum range is always taken from the launcher.
- If the target has moved in to the missiles minimum range (or out of its maximum range) treat it as having made a cover evade.
- If the missiles controller is destroyed the missile is lost (except self-homing missiles which carry on as normal).

H.3 - ATGM CONTROL AND GUIDANCE

There are currently four methods of missile control and several methods of guiding the missile. The following tables give these methods.

H.3.1 – ATGW Control Methods Table

CODE	CONTROL METHOD	CONTROL DETAILS	EXAMPLE
M	Manual Command to Line Of Sight (MCLOS)	First Generation ATGMs are wire guided by a controller (up to 100m away from the launcher) who tracks both missile and target and directs the missiles' flight by a control lever.	AT-3 "SAGGER"
S	Semi-Automatic Command to Line Of Sight (SACLOS)	Improved first and second Generation ATGMs have the operator with the launcher (or can be controlled by a TV link) and the tracking and flight corrections are automatic.	MILAN
A	Automatic Command to line Of Sight (ACLOS)	Improved second and third generation ATGMs usually have some sort of designation. The controller just keeps the sight on the target and the missile homes in automatically.	HELLFIRE
F	Fire and Forget	The latest ATGMs are locked on to a target and once fired are self-homing on to the target.	JAVELIN

H.3.2 – ATGW Guidance Methods Table

CODE	COMMAND METHOD	COMMAND DETAILS	EXAMPLE
W	Wire guided	Controller commands missile through a wire.	AT-3 “SAGGER”
WIR	Infra-red wire guided	Controller sends commands through a wire with the aid of an IR flare at the back of the missile.	AT-4 “SPIGOT”
L	Laser beam riding or Laser Designated	Controller aims a laser at the target. If remote designation the firer may be behind cover and the designator must be within 45° of the line between target and firer.	AT-11 “SNIPER”
R	Radio guided	Controller commands missile with radio signals.	AT-6 “SPIRAL”
S	Scanning Infra-red	A Fire & Forget missile, using an IR seeker to home in on the target.	JAVELIN
M	Millimetric Radar	Either a Fire & Forget missile, which uses a Radar seeker or an ACLOS missile controlled by the launchers radar in LOS.	HELLFIRE L
F	Fibre-Optic Guided	Controller commands missile through a fibre-optic wire.	FOG-M
H	Hyper-Velocity Missile	A Fire & Forget missile which is fired as a direct fire weapon in phase 2.2. The target has no chance of spotting or reacting to the threat.	LOSAT

H.4 - SPECIAL WARHEADS

The following is a list of the special warheads that are available:

- Precursor (P) An extension to the warhead to make ERA react prematurely.
- Tandem (T) A small warhead in front of the main warhead to remove the ERA.
- Vertical Attack (VA) Top attack missile that hits roof armour.
- Vertical Dive (VD) Direct attack missiles or CLGP that arrive from a high angle.
- Twin (TW) A top attack missile with two warheads (2 hits on target).
- High Explosive* (HE) Proximity-fused with blast effect against soft targets or helicopters.
- Fuel Air Explosive FAE (or thermobaric) see [G.8 - FUEL AIR EXPLOSIVE on ATGWs and LAWs](#).
- Jam resistant (JR) Half any jamming, chaff or flare modifiers (round down).
- Multi-Purpose* (MP) This warhead has limited penetration but with increased HE effect.
- Precision Jammer (PJ) See [R.4 - Jamming](#).
- Anti-helicopter (AH) The missile has a chance of hitting slow moving helicopters.

*Firing MP or HE missiles at soft targets treat as Area Fire (see [J: Area Fire](#)). If the result is no effect then the missile is deemed to have landed harmlessly nearby.

H.5 - RELOADING MISSILES

Missile loads are given on a DATA-SHEET as ready missiles and in brackets as reloads. Infantry half sections can carry 3 reloads. Reloading takes place in the player’s turn, ready to be fired in the opponent’s turn. Suppressed elements cannot reload unless under armour (i.e. M901). Multi-mounted launchers (i.e. Striker) take 2 turns to reload.

H.6 - MISSILE RATE OF FIRE (ROF)

Most launchers fire one missile at one target. Some of the latest generation ATGMs can ripple fire at one or more targets. Laser designated missiles can be ripple fired one per designator. Missiles have a rate of fire as follows:

- 1 One missile at one target.
- 2 Two missiles at one target.
- M Multiple targets can be engaged depending on the number that precedes the M (e.g. AH-64D with Longbow has a ROF of 16M and can engage sixteen targets simultaneously).

H.7 - LASER DESIGNATED ARTILLERY/BOMBS

Rounds such as Cannon Launched Guided Projectiles (CLGPs), Laser guided bombs (LGBs) or laser guided missiles that are targeted by an on table designator count as ATGMs. They arrive at a relatively steep angle (see [H.10 - Top Attack Missiles](#)), the target cannot have moved more than 30cm and only targets that have had a laser sensor set off an alarm may react.

- Artillery launched rounds are deemed to have been fired in COMBAT PHASE 2.2 of your opponents turn at a rate of ONE per designator or ONE per barrel, which ever is lower. The designator must be in contact with the battery and the CLGP arrives in PHASE 2.5.
- Aircraft launched bombs/missiles were launched in PHASE 2.2 from a stand-off distance, the designator must be in contact with the aircraft and the munition arrives in PHASE 2.5.

H.8 - THREAT DETECTION

The target of an incoming missile can test to spot either the launcher/designator using the normal observation method or the missile in phase 2.5. The target may only respond if it spots the threat, an alarm goes off or it is warned by another element in their Platoon (or Company if equipped with BMS) that has seen the missile or launcher.

- **VISUAL SPOTTING OF THREAT**

For elements attempting visual spotting of an inbound missile use the following table. Elements on ATGM OVERWATCH have a better chance of spotting but MUST respond to a missile fired at them or an element of their company by react firing at the launcher and/or warning the target of the threat. Roll a d10 and score the required number or more to spot the missile.

H.8.1 – ATGW Visual Spotting Table

OBSERVER STATUS	RANGE (in cm up to and including)				
	10cm	25cm	50cm	100cm	250cm
MOVING	-	10	9	6	4
ADVANCING	-	9	8	5	3
STATIONARY	-	7	6	3	2
ON ATGM OVERWATCH	-	5	4	2	2

Modifiers

- 2 to die roll if out of arc
- 2 to die roll if observer suppressed

- **ELECTRONIC SPOTTING OF THREAT**

Vehicles with electronic sensors may make a visual spot as well as using the sensor. Sensors are on continuously, roll a d10 and if an alarm goes off it warns of the incoming threat but does not show the launch position. The following table gives the sensor types:

H.8.2 – ATGW Electronic Spotting Table

CODE	SENSOR	DIE ROLL REQUIRED	MISSILE TYPE SPOTTED	NOTES
IRS	INFRA-RED	4+	ALL	The target and any sensors within 10cm of the target MUST test.
LS	LASER	4+	LASER DESIGNATED	Only the target can test. Laser sensors will detect ALL lasers pointed at them including gun LRF's (though up to 10cm the firer won't bother with its LRF).
AR	ACTIVE RADAR	3+	ALL	Only the target can test.

H.9 - RESPONSE TO MISSILE THREAT

If a target is aware it is under missile attack it may make ONE of the following responses (if it uses cover or manoeuvre evade it may not fire that turn):

- **COUNTER MEASURES** – Most AFVs have a missile countermeasure, if an AFV is aware of the threat it may use its countermeasures to “put the missile off”. If it has more than one countermeasure, the player may choose which one is used. Reload of FL and CH is as per smoke dischargers. AMD is always loaded. If an AFV's countermeasures are prefixed with an “A” then it will fire off one automatically if an alarm goes off. AMD are always automatic. The countermeasures available are:

H.9.1 – ATGW Counter Measures Table

CODE	TYPE	DETAILS
-	Smoke	See F.17 - Smoke for details of all smoke evasion.
FL	Flare Launcher	These dazzle the controller of an IR guided missile and decoy SIR missiles.
CH	Aerosol Chaff	These deploy aerosol chaff and effect MM, SAR or SIR missiles.
IRJ	Infra-Red Jammer	These are better at dazzling IR missiles than the flare launcher.
AMD#	Anti-Missile Defence type #	These react automatically if an alarm is set off try and destroy the missile (Russian “ARENA” sends a salvo of rockets into the missiles path for example).

- **COVER EVADE** – If an advancing or stationary vehicle spots an incoming missile it may change its move to find cover within 10cm of its current position. If the vehicle went out of sight of the missile controller this move it automatically counts the cover evade modifier.
- **MANOUVRE EVADE** – If a moving vehicle (or advancing/stationary vehicle that is not within 10cm of cover) spots an incoming missile it may attempt to dodge the missile at the last moment.
- **REACTIVE FIRE** – If the launcher or designator has been spotted the vehicle may engage it with direct fire or area fire in COMBAT PHASE 2.3.

- **IGNORE THE THREAT** – The target may be too busy to react to the threat and simply ignore it (unless it is on ATGM overwatch in which case it **MUST** react).

H.10 - TOP ATTACK MISSILES

Vertical attack missiles are designated as VA in the statistics, they fly above the target and a sensor fires the warhead down onto the weaker roof armour. Cannon Launched Guided Projectiles (CLGP) and some missiles are “lobbed” onto the target and hit from a high angle (missiles are known as vertical dive). Missiles with vertical dive (VD) mode capability **MUST** be stressed before firing otherwise it will be a normal direct attack. If the target has overhead cover then there is a +3 modifier to hit. If the missile hits roll a d10 and consult the following table:

D.10.1 – Top Attack Table

ASPECT HIT	DIE ROLL		
	1-5	6-8	9-10
FRONT	FRONT	ROOF	REAR DECK
SIDE	SIDE	ROOF	REAR DECK
REAR	REAR	REAR DECK	ROOF

Notes: Use this table for other weapons firing from above.
 Rear deck is the engine area and has an armour value of 1.
 Modify the die roll by -2 if vertical dive or CLGP or AHEAD.

A Roof or Rear Deck hit against a helicopter automatically kills it.
 For vehicles with no Rear Deck treat rear deck hits as Roof hits, such vehicles will be marked on the datasheets.

H.11 - ATGM RESOLUTION

Once the target has attempted to spot the threat and has reacted roll to hit it, adding any modifiers. If the missile controller has been disabled or if using a CLGP/LGB and the target moves over 30cm the missile fails to hit (unless it is a self-homing missile in which case it continues). A natural roll of 20 always hits. If the missile misses it is deemed to have landed harmlessly nearby (including FAE/Thermobaric warheads).

H.12 – FIBRE OPTIC GUIDANCE AND DISAPPEARING TARGETS

If a fibre optically guided missile is fired at a target that moves out of sight of the launcher and the distance moved out of sight is less than 5cm the missile doesn’t count the “went out of sight/cover evade” modifier (see datasheet).

This is because the controller can see via the fibre optic line through a camera on the missile and can thus track the target better as the missile flies even if the missile moves out of sight.

I: PENETRATION AND EFFECTS

I.1 - INTRODUCTION

When an armour-piercing round has hit an armoured target you must use the following procedure to find out if the armour was penetrated and the after effects.

I.2 - PENETRATION PROCEDURE

Use the following step-by-step procedure to find the effects of a hit:

1. Use the DATA-SHEET to find the weapons penetration value for the range (this is in the column titled “P” on the DIRECT FIRE TARGETING area).
2. Find the targets armour class, for the aspect hit, on your opponents DATA-SHEET.
3. If the target was hit with a CE warhead use the armour value in brackets (include the ERA modifier) to give the final penetration value.
4. Compare the penetration value against the targets armour class.
 - If the penetration value is LESS than the armour value then the round has failed to penetrate and the target is SUPPRESSED.
 - If the penetration value is MORE than the armour value then the round has penetrated and the target is DESTROYED.
 - If the values are the same roll a d10 and check the round type on the DAMAGE TABLE. If the die roll is equal or above the number given the round has penetrated and destroyed the target, if it is below then the round has failed to penetrate and the target is suppressed.

I.3 - ARMOUR CLASS AND PENETRATION

All vehicles have been given a numbered armour class for their front, sides, rear and top aspects. The known or estimated armour (including grazing angles) for each aspect of an AFV are averaged and given an armour class . Some vehicles have special armour to defeat chemical energy attacks, this is the second number in brackets (see [U.3 - The Data-Sheet](#) & [U.4 - Example Data-Sheet](#)). Armour penetration is achieved by either kinetic energy (KE) or chemical energy (CE).

- KE rounds include solid shot such as AP, APHE, APDS, HVAP, APFSDS etc, and explosive formed penetrators (EFP) that use velocity to punch a hole in the armour and kill the vehicle and its occupants. The level of penetration depends on the range.
- CE rounds include HEAT, HESH and HEP rounds from main guns as well as warheads on ATGMs, Recoilless rifles and infantry AT weapons. HEAT rounds use an explosion to send a molten jet burning through the armour and HESH (or HEP) make the inner wall of the armour come off and bounce around inside the vehicle. Range does not affect the penetration value of CE penetrators.

I.4 – AHEAD vs ERA

When AHEAD hits normal ERA, the AHEAD darts can fool large areas of ERA plates to fire to protect the vehicle. Because Heavy ERA is set to fire in a different way AHEAD doesn't affect it. Each time normal ERA is hit by AHEAD and the target isn't destroyed roll a d10 and on a 8+ the ERA has been stripped off that aspect of the target vehicle.

I.5 - EXPLOSIVE REACTIVE ARMOUR (ERA) MODIFIERS

ERA (including Heavy ERA) affects CE rounds only. If a round is fired at armour protected by ERA use the following table for the ERAs effectiveness and alter the rounds penetration be the amount given

I.5.1 – ERA vs CE Effects Table

CE WARHEAD TYPE	PENETRATION VALUE MODIFIER
SINGLE	-2 to penetration value
PERCURSOR TIP (P)	-1 to penetration value
TANDEM (T)	No effect

I.6 – SPECIAL ARMOUR EFFECTS

Two special types of armour have recently entered service. Both are intended to reduce the effect of CE rounds.

Electric Armour consists of charged panels on the vehicle. When one of these is hit by a CE round the charge of the panel causes the plasma jet a CE round uses to penetrate to fail to form. The drawback is that each panel takes time to recharge.

Slat Armour consists of a cage around the vehicles armour which attempts to trap and deflect a round before it hits the vehicle with the effect of causing the jet to form away from the armour or in the wrong direction to effect the armour.

The Column marked 1st Hit is used for the first CE hit of a fire phase and the Subsequent hit column for any later hits in the same fire phase.

I.6.1 – Special Armour Effects Table

ARMOUR TYPE	PENETRATION REDUCTION	
	1 st HIT	SUBSEQUENT HITS
ELECTRIC ARMOUR (Z)	-6	-d6
SLAT ARMOUR (X)	-d3	-d3

I.7 - DAMAGE

I.7.1 – Damage Table

PENETRATION DIFFERENCE	TYPE OF ROUND			
	Other	HEAT/HESH, FAPDS	APDU	APSE, AHEAD
2 OR MORE UNDER	S	S	S	S
1 UNDER*	S	S	S	S
EQUAL*	7+	5+	4+	3+
OVER	K	K	K	K

Notes:

* A roll to hit of 20 will destroy the target if the round is at least 1 value below the armour value.

S = Suppressed.

K= Destroyed.

Secondary Effect rounds include Multi-Purpose, Triple HEAT and follow-through rounds.

Depleted uranium has roughly the same penetration performance as tungsten but is several times more likely to burn.

I.8 - ESCAPING A DESTROYED VEHICLE

If a vehicle is destroyed while stationary or Advancing any passengers (including tank riders) have a chance of escaping. Test for each escaping element separately after your opponent has finished all their firing. If testing to escape from a landed helicopter/aircraft test as normal, if crashed from NOTE use a -2 to the die roll and if it crashed from higher then all passengers' count as lost. If a 1 is rolled the vehicle explodes killing the testing element and any still on board. Any survivors are placed at the rear of the vehicle. Test for passengers that disembarked or embarked this turn or were aboard when the vehicle was destroyed. If a vehicle moved and disembarked this turn, was then destroyed at a previous point, the vehicle is taken back to that point and any escaped passengers are then placed to the rear. Roll a d10 and consult the following table to test for escaping destroyed vehicles:

I.8.1 – Vehicle Escape Table

WEAPON THAT DESTROYED VEHICLE	RESULT	
	SUPPRESSED	KILLED
FAE (KO Vehicle had no NBC), FLAME	10	1-9
HE, MP, SE	7-10	1-6
HEAT, HESH, APDU, AHEAD, FAPDS	5-10	1-4
AP, FAE (KO Vehicle had NBC)	4-10	1-3

I.9 - PENETRATION EXAMPLE

Continuing from example G.7 the American M1A2 "Abrams" fired and a roll of 15 was scored. The shot hit the Russian T-80U, the 120mm APFSDSDU penetrates armour level 5 at 100cm and the T-80U's armour is 5. The penetration difference is equal and looking at the DAMAGE TABLE (I.5) a roll of 4+ is required to kill the T-80U. A roll of 3 is scored meaning that the T-80U is suppressed.

J: AREA FIRE

J.1 - INTRODUCTION

Area fire is all fire at soft targets (i.e. infantry, soft vehicles and buildings). The firer uses all their weapons to give a greater volume of fire in the general direction of the target. Area fire takes place in the combat phase 2.2 and 2.3 of a turn. See [S: Engineering](#) for details on destroying buildings.

J.2 - AREA FIRE PROCEDURE

Use the following step-by-step procedure to hit unarmoured targets:

1. Nominate the firer and its target, measure the distance and check to see if it has been spotted.
2. If the target has been spotted find the firer on the DATA-SHEET and cross-refer against the range and cover status of the target in the AREA FIRE section to give the basic number (see [U.4 - Example Data-Sheet](#)) required to either suppress (S row) or kill (K row) the target.
3. Roll a d20.
4. Modify the basic roll by the “DIRECT FIRE TARGETING MODIFIERS/AREA FIRE MODIFIERS” which are shown in brackets beside the direct fire modifiers on the middle left of the DATA-SHEET.
5. Modify this result with the Additional Area Fire modifiers which can be found on under the “DIRECT FIRE TARGETING MODIFIERS/AREA FIRE MODIFIERS” table on the datasheet.
6. The final die score will give a result of Ok, Suppressed or killed.

The following points apply:

- Area fire in the players turn (phase 2.3) is at targets in LOS.
- Enemy react area fire (phase 2.2) is at targets in LOS or moved out of sight THIS TURN (firing at any point in its movement and if destroyed it is brought back to that point).
- Only stationary or advancing elements may fire (as per rule G.6).
- A UNMODIFIED roll of 1 always misses.
- A UNMODIFIED roll of 20 always kills the target provided there isn't a dash in the K row.

J.3 - TARGETING MODIFIERS

The following points apply to the targeting modifiers on the DATA-SHEET:

- “Fired LAW” modifier is included if a LAW is added to the area fire at a soft target.
- Include the “firing from firing ports” modifier if an infantry section is closed down in an AFV that has firing ports.
- If an infantry section fires area fire at one target and a LAW at a second target include the “Fired at second target” modifier (infantry can use direct fire to engage one target with two LAWS).

J.4 - INFANTRY

Infantry are organised in sections (or squads) of about 8 personnel and half sections (or heavy weapon crew sections) of about 4 personnel. The full section can have up to four support weapons (e.g. squad assault weapons, light machineguns, light anti-tank weapons etc) and half sections up to two. The DATA-SHEET gives the infantry type, any additional support weapons carried, the direct fire targeting details of any LAWS carried and the area fire numbers.

J.5 - SUPPRESSIVE FIRE

Any element can be ordered to use area fire at a terrain feature either in initial orders or if it is known the enemy is there. Each element has a suppressive fire zone of 2cm wide by 5cm deep along the terrain feature. Suppressive zones can be joined together (e.g. 10 elements would have a suppressive zone of 20cm wide by 5cm deep). Roll a d20 and check below for the results:

SOFT VEHICLE	14+ = Suppressed	19+ = Destroyed
INFANTRY	16+ = Suppressed	20 = Killed
AFV	18+ = Suppressed	

If half the elements fire smoke rounds into the suppressive zone then any element in the zone counts the +8 “SMOKE EVADE (NO TI OR VIRRS)” targeting modifier, even if equipped with a thermal imager. This is due to the mixed effects of the smoke and the explosions (see [F.19 – Smoke](#) Delivery for details of direct fired smoke rounds). *E.G. Ten T-80U's are using suppressive fire against a treeline. Five fire HE rounds, co-ax machine guns etc, whilst five fire smoke rounds. The area affected is 10cm wide by 5cm deep.*

J.6 - COVER DEFINITIONS

There are three levels of cover as follows:

OPEN (O)	There is very little or no cover for the element to hide behind.
COVER (C)	The element is in woods, dug-in, a built up area, an open-topped AFV or behind fences, walls, hedges, ditches etc.
HEAVY COVER (H)	The element is in a building, pillbox, dug-in with overhead cover or in an enclosed AFV.

J.7 - BODY ARMOUR AND ARMOUR PIERCING SMALL ARM ROUNDS

Personal body armour has made a huge difference to survivability of modern troops as it offers protection from most small calibre rounds. As a consequence of it's introduction though some nations are now equipping their troops with armour piercing small arm rounds.

Infantry sections equipped with body armour will be marked on the datasheets with “Body Armour” and those with armour piecing rounds with “AP Ammo”. The datasheets show the modifiers against targets with Body Armour when not using AP rounds. Note - that HMGs and larger always count as having AP rounds.

J.8 - SNIPERS

Many modern armies are beginning to field snipers in large numbers. Some states are fielding them at rates as high as 1 per section. These are listed with the section’s data as “Sniper” for normal snipers and “H.Sniper” for snipers with heavy calibre weapons (normally 12.7mm). The following rules represent the effects these can have on the game.

- 1) Against infantry equipped with Body Armour they partially reduce the effectiveness of the armour (see datasheet).
- 2) Against targets in cover and heavy cover they reduce the effect of that cover (see datasheet).
- 3) An element with a sniper can choose to fire just the sniper with the following effect.
 - a) The element doesn’t count as firing.
 - b) Against an infantry section roll a d20. On a roll of 18+ any commander in the section is killed and the unit the infantry element is part of will be out of command control unless it has a 2IC to take over. On a roll of 20 the section is destroyed.
 - c) Against an armoured vehicle without CIS roll a d20. On a roll of 20 the vehicle commander is killed and the vehicle will count as Suppressed for the rest of the game. If the vehicle is a command vehicle the unit the vehicle is part of will be out of command control unless it has a 2IC to take over.
 - d) In the sniper is a heavy calibre sniper (H.Sniper) add 1 to the rolls in b and c above.

J.9 - EXAMPLE OF AREA FIRE

A Russian infantry squad (AR+2xSAW+RPG-26) is firing everything at a British infantry squad in a wood, 25cm away. The basic number for a target in cover is 13-17 to suppress and 18+ to kill. The RPG-26 has a HE warhead so there is a +4 targeting modifier to the die roll. The Russian player rolls 10, plus 4, equals 14 which suppresses the British troops

J.10 – AHEAD AND FAPDS VS BUILDING

Hits from AHEAD and FAPDS can leave a building a shattered wreck. Each time an element is suppressed or killed in hard cover with these there is a chance that the building will collapse. When using suppressive fire the rate of fire is too low to cause this effect.

J.10.1 – AHEAD and FAPDS Destruction Table

POSITION/OBSTACLE	DESTRUCTION/REMOVAL DETAILS
SMALL BUILDING	AHEAD collapses small buildings on a roll of 19+ on a d20. FADPS collapses small buildings on a roll of 18+ on a d20.
PILLBOX	Either will destroy pillboxes on a roll of 20+ on a d20.
LARGE BUILDING	Use the destruction values given for small buildings but depending on the size of the building it will need to successfully hit more than once to bring it down. The number of hits needed must be agreed before the game begins.

Note that any calibre of AHEAD or FAPDS can be used.

See [S.3 - POSITION DESTRUCTION](#) for the effect of a building collapsing.

K: MELEE COMBAT

K.1 - INTRODUCTION

Infantry elements in base-to-base contact with other infantry sections are automatically in melee combat. If an infantry section is touching an enemy vehicle it is automatically in close assault. Melee combat or close assault only stops when one side is killed, surrenders or moves away (see [M.5 - Morale Ratings](#) for the results of morale failure).

K.2 - MELEE COMBAT PROCEDURE

Use the following step-by-step procedure to resolve melee combat:

1. The player whose turn it is moves the infantry section into contact with an enemy section in phase 2.1.
2. The opponent MAY fire at attacking infantry in phase 2.2.
3. If the players' infantry section advanced and is still alive it MAY fire in phase 2.3.
4. If both (or more) sections are still alive then they go into melee combat in phase 2.4. Roll the appropriate die for each half section and 2 dice for a full section in contact.
 - D4 MILITIA
 - D6 CONSCRIPT
 - D8 REGULAR
 - D10 VETERAN
 - D12 ELITE
5. Some elements carry specialist melee equipment over and above the norm (such as pump action shotguns). The effect of these will be shown on the datasheet and will be either a bonus to melee (+1, +2 etc) or * showing that they win draws.
6. Modify the result by the following:
 - -2 FIRED THIS TURN
 - -2 IF SUPPRESSED

The player with the highest score chooses to either kill an enemy element or move away. In the event of a draw (and neither or both sides win draws) or both sides have a minus result the sections will continue their hand to hand combat next turn. If a victorious section moves away the loser is suppressed and cannot chase for at least ONE TURN.

K.3 - CLOSE ASSAULT PROCEDURE

Close assault takes place in phases 2.4. when an infantry element is touching an enemy vehicle. It is deemed the infantry climbs on the vehicle using grenades, LAWs and any other means to destroy the vehicle. To close assault a vehicle the infantry MUST NOT be in contact with an enemy infantry section. Vehicles can try using area fire in either phase 2.2 or 2.3 and can drive away from the threat in their next movement phase. Roll a d20 and consult the following table to find the results of a close assault:

K.3.1 – Close Assault Table

VEHICLE	RESULT (d20)		
	Attacker Killed	SUPPRESSED	KILLED
SOFT VEHICLE	-	2-10	11-20
AFV	-	10-15	16-20
AFV with Electric Armour	1-10	11-15	16-20

Subtract the Vehicle Top armour from the die roll.

Example :- a Top Armour 3 tank is assaulted by infantry. The d20 is 17, minus 3 (top armour) = 14 which is a suppression.

Note attacking a vehicle with Electric armour is very dangerous!

L: DAMAGE

L.1 - INTRODUCTION

There are two forms of damage in the game, temporarily suppressed or permanently destroyed. Elements suppressed must test in phase 3.1 to overcome their state and any limitations apply until the element recovers. Elements destroyed, killed or disabled are basically dead for the rest of the game but in reality may have just become “combat ineffective”.

L.2 - SUPPRESSION

An element that is suppressed has been hit and slightly damaged. Suppression causes vehicles to close down and infantry keep their heads down. All movement is halved, aiming becomes more difficult and the element is just not happy. Elements may still give and receive orders. Passengers in a suppressed vehicle are suppressed too.

L.3 - SUPPRESSION MARKERS

The moment an element is suppressed a marker is placed to the rear of the miniature. There is a page of markers at the back of this rulebook and you have permission to photocopy it for your own use.

L.4 - SUPPRESSION REMOVAL

To remove a suppression marker roll a d6 in phase 3.1 of your turn. The following table gives the score required to remove the marker, dependant on the morale grade of the element:

L.4.1 – Suppression Removal Table

MORALE GRADE	SCORE REQUIRED
MILITIA	6
CONSCRIPT	5-6
REGULAR	4-6
VETERAN	3-6
ELITE	2-6

L.5 - DESTROYED

Any element that is disabled, killed or destroyed is dead for the rest of the game. Vehicles have taken severe damage and infantry have suffered crippling losses. Leave vehicles on the table but add cotton wool to show that they are burning fiercely and remove infantry elements.

L.6 - CAMPAIGN GAMES

The force that holds the battlefield at the end of any fighting can recover destroyed vehicles in a campaign game. Infantry lost in battle cannot be recovered. Roll a d10 for each vehicle and consult the following table:

L.6.1 – Vehicle Damage in Campaign Games Table

DAMAGE	WITH RECOVERY TEAM	WITHOUT RECOVERY TEAM
SLIGHT (10%)	1-4	1-3
MINOR (25%)	5-6	4-5
MAJOR (50%)	7-8	6-7
CHF (100%)	9-10	8-10

Notes:

- Recovery team must be 1 engineer section and ARV per 3 wrecked vehicles.
- CHF is catastrophic hull failure (totally wrecked).
- The damage given is the % of the cost of the vehicle needed to fix the vehicle ready for combat (e.g. a vehicle costing 20 points took minor damage and will cost 5 points to fix).

M: MORALE

M.1 - INTRODUCTION

Morale is an extremely complex subject and yet is the most important aspect of combat. Morale checks are done at company level (or platoon level if independent platoon or section) and above. There are two types of morale check, Unit Morale and Group Morale.

M.2 - UNIT MORALE

A unit is either a Company, a detached platoon/section, an Independent Platoon/Section or the BGHQ/BHQ unit. A Unit Morale check must be made each time an element has been destroyed or the unit had a poor result in their last test and the player wants to try and improve it this turn.

Procedure

Use the following step-by-step procedure to test a unit's morale:

1. Count ALL the elements (each infantry section/half section and each vehicle counts as 1 element) of a unit and work out the percentage losses of the unit (round up)
2. Find the morale check box on the DATA-SHEET and cross-reference the command Status against the percentage lost to give the score required to pass.
3. Roll a 2d6.
4. If the required score is rolled or higher the unit stays on its present morale rating or if testing to recover morale, the level is improved by one level. If the roll fails the unit drops a rating and MUST test again. Keep testing the morale until either it stabilises (place a morale marker behind the unit) or drops to a retreat result.

Example

A company of 10 BMP-1s and 10 Infantry Sections + 1 Half Section has 21 elements. It has lost 2 Sections and 5 BMPs (none of which are the CHQ) = 7 Elements. 7 out of 21 = 33% so a Unit Morale Check would be made on the 26-50% column on the with CO row.

M.3 - GROUP MORALE

A group is all the units under a BGHQ, BHQ, RHQ or higher-level command unit and the command group itself. A Group Morale check must be made each time a subordinate unit gets to a withdraw or retreat morale result on a Unit Morale check or is destroyed (Including the command Unit itself). The test can also be made to try to improve the morale of a group that had a poor result in their last test.

Procedure

Use the following step-by-step procedure to test a unit's morale:

1. Army lists include how many morale points each unit is worth. Add up the number of morale points which make up the Group and how many morale points the withdrawing, retreating or destroyed units are and work out the percentage losses of the unit (round up). If the command unit for the group is retreating or destroyed the Group counts as "without CO".
2. Find the morale check box on the DATA-SHEET and cross-reference the command Status against the percentage lost to give the score required to pass.
3. Roll a 2d6.
4. If the required score is rolled or higher the unit stays on its present morale rating or if testing to recover morale, the level is improved by one level. If the roll fails the unit drops a rating and MUST test again. Keep testing the morale until either it stabilises (place a morale marker behind the unit) or drops to a retreat result.

Examples

A Laotian T-34/85 Battalion consists of The BHQ (1 morale point), 3 T-34/85 Companies (2 morale points each) and a SR Recce Platoon (1 morale point) giving it a total of 9 morale points. It has lost one tank company and the SR Recce Platoon = 3 Morale points. 3 out of 9 = 33% so a Group Morale Check would be made on the 26-50% column on the with CO row.

A Laotian Battlegroup consists of the BGHQ (1 morale point), 2 battalions like the one above (9 morale points each) and a Regt SR Recce Platoon (1 morale point) Giving a total of 20 morale points for the battlegroup. The BGHQ has been destroyed by enemy helicopters, but the rest of the battlegroup is okay. 1 out of 20 = 5% so a Group Morale Check would be made on the upto 25% column on the without CO row as the BGHQ is dead.

M.4 - MORALE LEVELS

All forces have been given a base morale level. The morale level depends on training, equipment, experience and confidence. A good example would be the post-Vietnam U.S. Army of the 70's would have had a "CONSCRIPT" level but the re-equipped, re-trained Americans of the 90's would be "REGULAR". Small Special Force units such as Delta Force, SAS, etc do not need to check their morale. The base morale levels are as follows:

M.4.1 – Morale Level Table

MORALE LEVEL	TYPE	EXAMPLE
MILITIA	Irregular troops, "police" units or armed civilians.	Armed mob
CONSCRIPT	Territorials, inexperienced conscripted troops or experienced militia.	Russian troops
REGULAR	Full time troops, well trained Territorials or conscripts with combat experience	U.S. troops
VETERAN	Regulars well trained or with combat experience.	U.S. Marines
ELITE	Large Special Force units.	U.S. Rangers

M.5 - MORALE RATINGS

If a test fails the following morale ratings apply:

M.5.1 – Morale Ratings Table

FAIL	RATING	DETAILS
1 st	HESITATE	Maximum half speed towards enemy.
2 nd	HALT	Stop in current position or withdraw away from observed enemy to nearest safe cover.
3 rd	WITHDRAW	Unit MUST pull back from enemy to nearest safe cover and halt there.
4 th	RETREAT	Unit moves at full speed off player's baseline (counting as half points lost) or if within 10cm of enemy will surrender (counting as full points lost). There can be no recovery within a normal game.

M.6 - RECOVERING MORALE

Morale rating can be recovered during a battle only when a unit or group is in cover and away from combat. Test as normal but if the result is a failure ignore it, the unit will stay at its current morale rating. For campaign purposes the unit will return to its normal morale level after a short respite (the umpire may decide to reduce the morale level e.g. a veteran Battalion has just been soundly beaten and its remnants are reduced to a regular morale level for the next encounter).

M.7 - REPLACING COMMAND ELEMENTS

If a unit commander is disabled then test as "Battalion/Company/Platoon WITHOUT CO". If the unit has a 2IC then test as "WITH CO". If a lower commander has taken over (i.e. a Platoon HQ has taken over the Company, see [D.5 - Loss Of Command And Control](#)) the unit still counts as "WITHOUT CO" for the duration of the game.

N: ARTILLERY SUPPORT

N.1 - INTRODUCTION

Indirect fire is when batteries of guns, rockets or mortars shoot at a target using a high trajectory. The target is usually out of sight of the battery so an Artillery Observation Officer (AOO) controls the fire. The accuracy of the indirect fire depends on the equipment being used. Artillery batteries are bought as part of the battlegroup in the initial set up and are online to the battlegroup throughout the battle. All indirect fire takes place in your opponent's turn.

N.2 - INDIRECT FIRE PROCEDURE

Use the following step-by-step procedure to use indirect fire:

1. In phase 1.3 the AOO or command element spots its target, requests a "fire mission" and plots where the barrage will land in phase 2.7.
2. If the target moves within 10cm of a Registered Point (RP) in phase 2.1 fire arrives immediately. The unit is moved back to the nearest point it came to the RFP, roll a d20 to resolve any damage and the unit may then complete the move (counting any movement modifiers such as suppressed).
3. If fire is received from within 10cm of the RP and the firer is spotted, fire arrives at the end of that fire phase if the owner of the RP wants it to.
4. All other fire arrives in phase 2.7. Roll a d10 to test the accuracy, modify the result and place the fire zone.
5. Roll a d20 for each element in the fire zone to test any damage.

N.3 - ARTILLERY OBSERVATION OFFICERS (AOO)

AOOs should be attached to the HQ element of the unit they are supporting, either CHQ or BHQ. They operate with the unit unless ordered to a better position where the AOO may deploy up to 10cm from their vehicle (but must be in command control distance). Suppressed and destroyed AOOs lose their target and any indirect fire continues for one more turn then stops. Indirect fire will continue until the observer cancels the fire mission or switches the barrage to another target.

Any command element may request and observe for a battery but they are classed as untrained. They spot as per an AOO and cannot fire in the rest of the turn. Russian doctrine makes the command element make a request via a COP (Command Observation Post) taking a turn of communication.

Any BMS equipped element can request and observe for a battery but they are classed as untrained. However only 2 requests can be made per company and 1 per platoon. They spot as per an AOO and cannot fire in the rest of the turn.

Observers may request up to three batteries at the same time. The first battery is requested at it's normal level of support any additional ones are requested as if one level higher. Thus Dedicated extra batteries should be called for as if Direct and Direct as if General. General support batteries are still requested as General support though. This increase in support level is even done when using ABMS as it partly simulates the artillery prioritising targets across the whole front.

Note that no single battery can be requested more than once in a turn.

N.4 - REQUESTING A FIRE MISSION

Once a target has been spotted in phase 1.3 a battery (or batteries) may be requested to provide fire support providing the requester is in command control. Roll a d10, modifier it and check the following table, if the number or over is scored then the battery is available, if not, the battery was not available. Each battery requested should be rolled for separately.

N.4.1 – Artillery Fire Mission Request Table

COMMUNICATION EQUIPMENT	LEVEL OF SUPPORT		
	DEDICATED	DIRECT	GENERAL
STANDARD	2	5	8
ABMS	1	3	6

Note: ABMS is Artillery Battlefield Management System

- 1 Per level of radio jamming (standard radio communications only)
- 1 Observer is untrained.
- +1 Per subsequent request from same observer.

N.5 - LEVEL OF SUPPORT

The level of support depends at what level the battery is commanded at. The available batteries and AOOs are given in the ARMY LISTS. There are three levels of support as follows:

- **DEDICATED.** The battery is either on table or allocated to a specific Company or Battalion. Full points are paid for a dedicated battery.
- **DIRECT.** A Brigade or Regimental asset allocated to a Company or Battalion. A direct support battery costs 75% of the full cost.
- **GENERAL.** A Divisional or higher asset allocated to the highest on table commander or used for counter battery. Half points are paid for a general support battery.

N.6 - FIRE MISSIONS

Batteries may use the following type of mission:

- **OPPORTUNITY FIRE.** The battery is on call for fire at an opportunity target. A target must be spotted, the request made successfully and the impact point marked down **ACCURATELY** on the map. If the target is moving then the player must guess where the target will be at the end of its move. A deviation roll must be made.
- **REGISTERED FIRE.** A registered point (RP) is a previously recorded position that if an AOO or command element spots a target within 10cm of it a barrage may be called down immediately. This form of fire is only available to attackers or defenders. The RP must be **ACCURATELY** marked on the map. A defender can have up to 4 RPs and an attacker 3. The barrage has no deviation but must be centred on the RP. Note:- You still need to roll on the Requesting Arty Fire Table in N.4.
- **PLANNED FIRE.** An attacker can pre-plan fire before the game. The fire mission must be written in orders and include the turn fire starts, the point of impact, the number of batteries, the ammunition type and the number of turns the fire will last. Planned fire doesn't have to be requested and there is no deviation. Batteries using planned fire may shift their fire each turn to give a rolling barrage.
- **COUNTER BATTERY FIRE.** These batteries have locating equipment and have been given CB orders before the game started. The batteries may not engage in any other fire mission. Test in phase 2.9 to locate enemy batteries that fired in phase 2.7 of your turn. To locate an firing enemy battery roll a d10 and score the modified number or higher the following table:

N.6.1 – CB Location Table

CB LOCATION EQUIPMENT USED	TARGET DISTANCE (UP TO & INCLUDING)			
	5km	10km	25km	50km
RADIO INTERCEPT	7	8	8	9
SOUND & FLASH	7	8	9	10
CB RADAR	6	7	8	9
OTHER MEANS*	8	9	10	10

E.g. Aircraft, Long Range Reconnaissance Group, etc.

DIE ROLL MODIFIERS

- 1 Each turn the enemy battery fires.
- 1 Enemy battery firing salvo rockets or mortars (sound & flash only).
- +1 Per point of jamming (Radar or Radio intercept).

See [N.11 - Counter Battery Fire, Additional Rules](#) for further details of counter battery.

- **SHOOT AND SCOOT.** To overcome CB fire a battery may be ordered (written **CLEARLY** in orders) to move as soon as the first volley is fired. If the battery is fully mobile any CB fire has no effect, if the battery is towed it takes 1 turn to move out. The battery will be able to fire from its new position 1 turn after their set up time (see [E.7 - Preparing Weapons And Equipment](#)).

N.7 - DEVIATION

The actual deviation depends on the training of the AOO, the CEP (Circular Error Probable: the accuracy of a round) and the positioning equipment used. The DATA-SHEET gives the CEP die to roll. Roll the die and modify it, the deviation modifiers are on the DATA-SHEET and are as follows;

- 1 If range 5km or less
 - +1 If firing long range rounds (i.e. Base Bled or Rocket Assisted rounds)
 - 3 If target is in line of sight of the battery
 - 1 If observer is using Ground Surveillance Radar* or Sat Pos
 - 2 If observer is using Laser Range Finder*
 - 2 Per turn of firing at the same target
 - 3 CB Fire if target spotter with Sound and Flash or CB Radar.
 - +1 Per 10km of range over 10km (so 20km = +1, 30km = +2 etc)
- *Use either GSR or LRF, not both.

If the final score is 0 (or less) the battery is on target but if it is 1 (or more) multiply the result by the amount given in the table below. to give the distance the barrage has missed.

N.7.1 – CEP Multiplier Table

Range	CEP Multiplier
0-5km	5cm
6-10km	6cm
11-20km	7cm
21-30km	8cm
31-40km	9cm
41+km	10cm

If it missed roll a d10 to check in which direction the barrage lands (the direction table is on the DATA-SHEET) and lay the template down. If the target went out of sight or the observer has become suppressed or killed then just roll the deviation die without any modifiers. A spotting round may be fired instead of the full battery, if the spotting round lands on the target the battery may fire for full effect (including burst bonus) at the next opportunity. Deviation is tested each turn until the battery arrives at the original aim point. If more than one battery from a battalion is firing at the same point then only one battery tests for deviation but if the batteries are NOT from the same battalion test separately.

N.8 - FIRE ZONE

Each battery has a sheaf size given on the DATA-SHEET, this is the OPEN sheaf for the ammunition being used. The LINEAR sheaf can be used instead and this is half the depth and twice the width (the direction it is angled at must be drawn on the player's map). It is worth making up barrage templates for each battery (draw them on paper and photocopy them on to acetate). When the impact point has been worked out place the template, centred on the impact point, with the base parallel with the battery's front edge (usually the player's baseline). A battery of six or more weapons may divide into two smaller batteries (half the weapons firing and half the sheaf size) but different observers must control each mini-battery.

Once the template has been laid any elements in the fire zone (only count the centre of the element) are tested for possible damage. Roll a d20 against each element, modify the result and check it against the ammunition type. There are two columns for each target type, the number required to suppress it and the number for destroying it. If a vehicle is either soft or an open topped AFV use the "0" column otherwise use the CE armour class, for helicopters use half their armour value (A) rounded up. Test each element in the fire zone once.

Except for batteries performing Shoot and Scoot (See [N.6 - Fire Missions](#)) fire continues to fall until the phase it's fired in (Normally 2.7, but possible 2.1 or 2.9), in the firing players next turn. Such fire can effect observation (see [F.9 - Maximum Observation](#)).

Any Element moving into a fire zone must check for damage as if it were in the fire zone when the fire started (see above) unless the battery is performing Shoot and Scoot. (See [N.6 - Fire Missions](#)).

Infantry moving through a fire zone outside of buildings must test again for damage. Other elements can move through fire zones with no further effect.

N.9 - AMMUNITION TYPES

The types of ammunition that are available to a battery are given in the DATA-SHEET. The types and capabilities available are as follows:

- HE ROUNDS (HE). HE is the most common ammunition used.
- AIR BURST HE (AB). These are HE rounds that are proximity fused or radar fused to explode in the air above the target.
- FAE WARHEADS (FAE). Fuel-Air Explosive (including Russian Thermobaric) rounds are usually large calibre rockets and are extremely effective against most targets. Because FAE is considered a chemical weapon permission must be given at the highest level before its use is authorised. To reflect the political effects of using FAE the firer gets no points for kills achieved using FAE.
- SMOKE ROUNDS (BES, WPS or IRB). See [F.17 - Smoke](#). White Phosphorous (WPS) has a reduced HE effect.
- ILLUMINATION (ILL). See [F.14 - Illumination Zones](#)
- LONG-RANGE ROUNDS. These include HE-Rocket Assisted (HERA), Rocket Assisted Projectile (RAP), Extended Range Full Bore (ERFB) and Base Bleed (BB). These rounds tend not to be as accurate or powerful due to their requirement for long range.
- CANNON LAUNCHED GUIDED PROJECTILES (CLGP). See [H.7 - Laser Designated Artillery/Bombs](#).
- MINELET (ATM, APM or MIXM). These are sub-munition cargo rounds with AT, AP or MIXED mines (e.g. FASCAM). The strength is 2 per turn of fire from a battery or per 500lb bomb (5 if salvo rocket), See [T. Mines And Booby Traps](#). Some minelets are sensor fused to attack a vehicle's roof before landing and becoming mines.
- BOMBLET (ICM). These are sub-munition cargo rounds with anti-material grenades that have an effect on infantry and vehicles (e.g. DPICM).
- SMART ROUNDS. Sensor fused munitions can be either sub-munitions (e.g. SADARM) or full rounds (e.g. BONUS) and they scan the ground below for vehicular targets and home in on them.
- BURST RATE. Guns and mortars have a burst rate modifier for the first turn of fire. This represents the gunners loading a little faster for the first few rounds and the surprise of the target at coming under fire. After this they slow down to a sustained rate of fire. If guns switch targets without stopping fire for a turn they get half their burst rate (rounded down) against the new target provided the new target wasn't under arty fire last turn..
- STOT. Same Time On Target is a capability of modern weapons where several rounds are fired at different trajectories all arriving on target at the same time. Weapons that can do this have a greater burst rate.
- PRECISION JAMMING ROUNDS (PJC or PJR). These are rounds (e.g. JABBERWOCKY) that land and jam communications or radars. See [R.4 - Jamming](#).

N.10 - ARTILLERY BATTLEFIELD MANAGEMENT SYSTEM (ABMS)

ABMS include the U.S. TACFIRE (being replaced by AFATDS), British BATES, German ADLER, etc, all of which speed up the request for fire support. Only Battlegroups with an ABMS vehicle with them can use this system.

N.11 - COUNTER BATTERY FIRE. ADDITIONAL RULES

If an enemy battery is located counter battery fire takes place immediately, the barrage is centred on the battery. For an on table target carry out the normal firing procedure N.7 and N.8. For an off table target roll for CEP distance and direction and use the following table to determine which elements in the battery are hit.

N.11.1 – CB fire on Target Table

CEP Direction	Battery Hit if
1,2,6 or 7	Fire Zone Depth/2 is equal or more than CEP distance.
3,5,8,10	Fire Zone Depth*2/3 is equal or more than CEP distance AND Fire Zone Width*2/3 is equal or more than CEP distance.
4 or 9	Fire Zone Width/2 is equal or more than CEP distance.

If the Battery is hit test each element in it to see the effect of the fire.

If a battery is hit by CB fire and fails its morale check, it must move location before it can fire again or regain morale. The battery will be able to fire from its new position 1 turn after their set up time (see [E.7.1 – Preparing Weapons and Equipment Table](#)).

N.12 - EXAMPLE OF ARTILLERY FIRE

A Russian AOO spots a moving British CHALLENGER 2 squadron in phase 1.3 and requests battery of six 152mm 2S19's. The player has standard comms and requires a score of 2 or more to receive fire support. A 9 is rolled, -1 due to radio jamming gives a result of 8 and the battery comes on line. The player plots the battery's aim point on a map and decides to fire for effect (rather than use a spotting round first). In turn 2.7 the barrage arrives, the battery uses a d4 for its CEP die (because it has satellite positioning and advanced fire control) and a 3 is rolled, -2 due to the ammunition not being long range rounds gives a result of 1. The player rolls a d10 for the direction, scoring a 6. The battery arrives 5cm short and captures half the British tanks in its fire zone. The ammunition used was BOMBLET, the CHALLENGER 2's count as "4 top armour" (its CE armour class 4) meaning the Russian player must score 11 or higher to suppress and a 19 to kill each tank.

O: HELICOPTERS

O.1 - INTRODUCTION

Helicopters have had an incredible impact on modern warfare, giving tactical, operational and even strategic options to a commander. With the upcoming arrival of air manoeuvre units (e.g. British 16 Air Assault Brigade) the future looks bright for the helicopter. Helicopters are fast, manoeuvrable but fragile machines and can be used for a variety of roles such as observation, transport, attack, escort or specialist (i.e. ECM). Helicopters are organised in FLIGHTS (equivalent to Platoons) and SQUADRONS (equivalent to Companies). They are attached to the highest on table commander and are bought as part of the battlegroup in the initial set-up.

Helicopters move in phase 2.1 to an attack point (similar to an aircraft release point) and fire in phase 2.3. They can either stop in that position or continue on their flight path in phase 2.8 until they reach their objective or run out of movement (moving a maximum of advance speed if it fired). They can also engage targets in LOS in phase 2.2.

O.2 - ALTITUDE

The speed a helicopter moves at depends on the altitude as follows:

- **NAP OF THE EARTH (NOTE).** The helicopter is flying extremely low, 1 contour above ground level, using the terrain as cover and can land. The helicopter cannot fly in woods, built up areas (BUA) or through obstacles they must fly round them.
- **CONTOUR.** The helicopter flies at between 2-5 contours above ground level and can fly over woods, BUAs or obstacles. It can land or pop-up. Contour is the maximum height for abseiling troops.
- **LOW.** The helicopter is flying at 6 contours or higher above ground level and cannot land until it has descended to contour or NOTE.
- **POP-UP.** In the opponents turn the helicopter must be at contour (if at NOTE it rises to contour), may not have moved more than ADVANCE speed in its turn, must be behind a terrain feature and it can pop-up (or up to 5cm to the side) to look for targets as follows:

PHASE 2.2 Once the opponent has moved all units the helicopter rises to look for a target (showing its pop-up size aspect).

If it spotted a target and wants to fire guns or rockets it must raise completely above the cover (showing its front size aspect), fires and then returns behind cover (counting as manoeuvre evade to any AA fire)

To fire an ATGM or AAGM it remains showing its pop-up size and fires the missile (if it fired a self-homing missile it can return behind cover).

PHASE 2.3 Enemy AAA and AAGM fire at the helicopter. Resolve AAA fire straight away (see [Q: Anti-Aircraft Fire](#)).

PHASE 2.5 The helicopters missile fire and any incoming AAGM's are resolved simultaneously (counting its pop-up modifier). It returns behind cover.

The helicopter ends its move within 10cm of the position it started in.

- **HOVERING.** Helicopters and VTOL aircraft at any altitude that end their turn within 5cm of their initial position, popped-up but were in sight the whole turn or landed count as a hovering target. Note that this means the Aircraft model must be more than 5cm from where it started the move, you cannot just say oh it's moved 5cm it **MUST** be more than 5cm from where it started. A hovering aircraft may be engaged with AA fire, direct fire or area fire (if the weapon can elevate, see [F.12 - Hull Down](#) and [Q.7 - Hovering](#), [Q.9 - ATGM'S IN AA MODE](#) and [Q.10 - AUTOMATIC TARGET TRACKERS \(AuT\) and AA](#)). A helicopter hovering at NOTE can load or unload infantry in half a turn.
- **LANDED.** Helicopters at NOTE or contour may land in their movement phase. Helicopters that landed or took off this turn may be engaged by AA fire or direct fire (count normal modifiers). It takes a turn to load or unload infantry and two turns for vehicles.

Also see [P.6 – Effect Of Altitude On Spotting](#).

O.3 - ORDERS

Helicopters orders must be written before the game and include the following:

- **FLIGHT PATH.** The flight path should be drawn accurately on the map in straight lines between specific objectives (see below). The flight path can only be changed during the game by the BGHQ or ALO (if they are aware of a threat or better target). If flight comes under fire or spots a target enroute to an objective it can move behind the nearest cover and wait for the threat to be removed or attack the threat. Once the threat has been removed the flight must continue with its original flight path.
- **ALTITUDE.** The altitude the flight is travelling at (see [O.2 - Altitude](#)).
- **SPEED.** As with ground elements, helicopters have two speed rates, ADVANCE (where the helicopter can fire guns/rockets) or MOVE (where the helicopter cannot fire) and these are given on the DATA-SHEET. They move during the 2.1 of the player's turn and the speed depends on the altitude.
- **FORMATION.** Use formations and distance as per a ground Company (see [D.2 - Formation](#)).
- **OBJECTIVES.** Attack helicopters flight path can have up to FOUR objectives, which must be specific point where the helicopters can loiter (or move within 10cm from) to look for targets before moving on to the next objective. Transport helicopters must travel straight to the objective and land (they may have a secondary objective if the first is defended).
- **ESCORT.** Helicopters with escort orders may either travel with the transport helicopters or move 2 turns ahead to suppress the landing zone.

O.4 - ATTACK POINT

An ATTACK POINT is the position where the helicopter/aircraft is placed ready to make an attack. If it is firing direct, area fire or observing a single target in LOS then measure the distance to the target and use the appropriate procedure.

O.5 - AIM POINT

If the helicopter/aircraft is using rocket pods, dropping bombs or making a strafing attack the player must point out the AIM POINT. An AIM POINT, either a target element or a landmark, is the position in front of the ATTACK POINT. A player must estimate the right distance for its ATTACK POINT (the player CANNOT measure the distance) and place the aircraft. The ATTACK POINT is 10cm away from the AIM POINT **PER HEIGHT LEVEL** if strafing or dropping retarded bombs. If firing rockets or standard bombs the distance is 20cm per height level. If the distance has been guessed wrong, hard luck, that's where the attack lands. If the ATTACK POINT is close to the table edge then the attacker counts as being the right distance from the AIM POINT.

O.6 - EXAMPLE OF ATTACK AND AIM POINTS

An A-10 is making a strafing attack with its 30mm cannon whilst at LOW altitude, its ATTACK POINT must be 30cm from its AIM POINT. An AH-64A is firing a 70mm rocket pod whilst at a CONTOUR height, its ATTACK POINT must be 40cm away from its AIM POINT.

O.7 - DIRECT FIRE

Helicopters may fire one weapon system at an armoured target using the normal firing procedure. On the direct fire targeting columns of the DATA-SHEET the first number is for a helicopter that moved up to 10cm or popped-up and the number in brackets is if it advanced. Helicopters at NOTE or contour level may fire but if it is at low or landed it cannot use direct fire.

O.8 - ATGMS

To fire an ATGM the helicopter must not have advanced over 25cm. If the missile is designated by another source or is self-homing then the helicopter may move up to full advance speed.

O.9 - AREA FIRE

Area fire is used against soft targets, infantry or buildings. A helicopter hovering, popping-up or advanced up to 10cm may use area fire (from autocannons, door-mounted machineguns, AGLs etc) against a single target and the area fire details are given on the DATA-SHEET.

O.10 - STRAFING

Helicopters that advanced 10cm or more may make a strafing run. The fire zone is 20cm by 5cm, the base is placed on the observed target at any point along the helicopters flight path. The fire zone is directed along the path if forward firing weapons or up to 25cm out but parallel to the flight path if chin turret, door-mounted MG, etc. This is modified in the same way as area fire.

O.11 - ROCKETS AND BOMBS

Large rockets, rocket pods and bombs are covered in section [P.8 - Air To Ground Attack](#).

P: AIRCRAFT

P.1 - INTRODUCTION

Air operations play an important role in modern warfare, in fact, a decisive role. There are several types of mission that can be performed by aircraft but to keep things simple these rules will deal with only the types that will affect the battlefield. The army lists will give full details on aircraft available, their statistics and their weapon loads. Aircraft are usually formed up in flights of at least two and usually have an on table Air Liaison officer (ALO) to guide them on to the target.

P.2 - FLIGHT PATHS AND MOVEMENT

The first turn an aircraft arrives on table it must enter at a point on the players table edge (thereafter it may enter from any direction). On a turn an aircraft is in action it must enter, fly across and exit the table (unless landing). It must then spend at least a whole turn off table before it can enter the table again. An aircraft's entry point, attack point and exit point MUST be drawn on your map before it arrives and all flight paths are in a straight line.

P.3 - MISSION TYPES

There are four types of mission that can be used in the game as follows:

- **RECONNAISSANCE.** This is usually used by an attacker in attack/defence games and includes observation aircraft in an encounter battle. The attacker draws the flight path, the defender sets up and the recon aircraft flies over the battlefield. The recon spots as normal (see [F: Observation](#) and [P.6 – Effect Of Altitude On Spotting](#)). Observation aircraft use a pre-planned route in an encounter battle.
- **PRE-PLANNED STRIKE.** This is used by an attacker in attack/defence games and doesn't require an ALO. The orders must be written before the game starts.
- **OPPORTUNITY STRIKE.** On call aircraft are loitering nearby and can be requested by an ALO and OP or any BHQ, BGHQ, RHQ or higher level commander. The target must have been spotted by the requester who then guides the aircraft on to the target (because of the close proximity of friendly forces the aircraft CANNOT look for its own target). If the observer has to roll to spot a target and rolls a 1 and misidentifies a friendly unit the observer will call in an air strike on that target.
- **COMBAT AIR PATROL (CAP).** Fighter aircraft can be either loitering behind friendly lines to attack enemy aircraft that come on table (they are present throughout the battle) or escort a strike mission to keep off enemy CAP (fly with the bombers). See [P.9 - Air-To-Air Combat](#) for air-to-air details.

P.4 - AIRCRAFT TYPES

The following gives details of the several types of aircraft, the missions they can have and the number of passes over the battlefield. The score required (or more) on a d10 to successfully request their support is given after the type.

The die roll modifiers are;

- +1 per subsequent turn a request is made.
- +2 if ALO is requesting.
- 1 Per radio jamming points if using standard communications.
- 1 Per 2 radio points if using Battlefield Management System or Datalink to aircraft.

- **(GA) GROUND ATTACK (request 5+).** Such as SU-25 "Frogfoot", A10 "Warthog", etc. Ground attack aircraft may make up to 6 passes of the battlefield and have a pre-planned or opportunity mission.
- **(TB) TACTICAL BOMBER (request 6+).** Such as F111 "Aardvark", SU-24 "Fencer" etc. Tactical bombers may make up to 2 passes of the battlefield and have a pre-planned mission only.
- **(SB) STRATEGIC BOMBER.** Such as B-52, TU-22, etc. Strategic bombers may make one pass of the battlefield and have a pre-planned mission only.
- **(OB) OBSERVATION (request 7+).** Such as OV-10, etc. These aircraft can make up to 4 passes of the battlefield looking for targets for either strike aircraft or artillery (see [P.2 - Flight Paths And Movement](#)).
- **(RE) RECONNAISSANCE.** Such as "Tornado" GR-1A, RF-4D "Phantom", etc. These include drones and can make one pass of the battlefield (see [P.2 - Flight Paths And Movement](#)).
- **(F) FIGHTER AIRCRAFT.** Such as F-15, Mig-29, etc. All fighter aircraft may use a CAP mission only and loiter until their mission is completed (see [P.9 - Air-To-Air Combat](#) for air-to-air combat).
- **(F/A) FIGHTER/ATTACK AIRCRAFT.** Such as the F/A 18, May carry out all missions that Ground Attack (GA) and Fighters (F) can do (see above).
- **(TR) TRANSPORT.** Such as C-130, An-24, etc. These may make one pass of the battlefield, using a pre-planned mission to drop parachutists, supplies etc or land on an airstrip.
- **(EW) ELECTRONIC WARFARE (EW).** Such as EF-11A, YAK-28E, etc. EW aircraft can either loiter behind friendly lines to jam enemy communications (count as a CAP mission) or fly over the battlefield using Anti-radiation missiles to suppress enemy air defences.
- **(UAV) UNMANNED AIRBORNE VEHICLES.** Such as Predator, Phoenix, etc. UAVs travel at a rate of shown on the datasheet. They fly as per helicopters and are on table for the number of turns shown on the datasheet.
- **(MUAV) MINI UNMANNED AIRBORNE VEHICLES.** Such as firefly. These are very small UAVs which act in most ways like UAVs. However they are so small that they CANNOT be shot down!

P.5 - ALTITUDE

The altitude an aircraft flies at depends on the weapon load they are carrying and local AA threat. The aircraft can change one altitude level per turn once they have left the table. The following altitudes are available to aircraft:

- NAP OF THE EARTH (NOTE). Available only to helicopters and VTOL aircraft (see [O.2 - Altitude](#)).
- CONTOUR. The aircraft is flying at tree top level, between 2-5 contours above ground level. Any aircraft type can fly at contour height or above.
- LOW. The aircraft is flying between 6 contours and 2000 feet above ground level (minimum height for dropping paratroops).
- MEDIUM. The aircraft is flying at up to 20,000 feet.
- HIGH. The aircraft is flying at 20,000 feet or higher.
- HOVERING. Only helicopters, VTOL aircraft and aircraft with thrust-vector control (one turn only) can hover (see [O.2 - Altitude](#))

P.6 – EFFECT OF ALTITUDE ON SPOTTING

Air craft at Low or above are far enough off the ground to increase the range the element spots at.

- LOW. Add 5cm to the spotting distance..
- MEDIUM. Add 50cm to the spotting distance.
- HIGH. Add 150cm to the spotting distance.

Aircraft at Contour or below use the aspect they are facing for spotting as ground elements do.

Aircraft at Low or above always use the largest aspect of the target as they are looking down at them.

Aircraft at low or above can see the whole table, though targets within BUAs and woods may only be spotted if the aircraft is at Low unless the aircraft has TI in which case it can spot them at medium.

P.7 - PROCEDURE

Use the following procedure for an opportunity mission (pre-planned arrive as ordered):

1. PHASE 1.2. Player tests to spot a target, if successful makes a request for air support. If the request is a success then the player draws the flight path including entry point, attack point and exit point. Aircraft are placed on their entry point.
2. PHASE 1.4. Opponent fire area AA fire and CAP intercepts player's aircraft about to arrive this turn.
3. PHASE 2.1. Player places surviving aircraft at their attack point.
4. PHASE 2.2. Opponent fires on table AA fire at aircraft at the attack point and helicopters in LOS or went out of sight in phase 2.1.
5. PHASE 2.3. Player fires AA fire at helicopters in LOS or popped-up and fires air to ground missiles.
6. PHASE 2.5. Surviving aircraft resolve air to ground missiles.
7. PHASE 2.6. Surviving aircraft release ordnance, test accuracy and any damage.
8. PHASE 2.8. Aircraft move to their exit points, any remaining elements that can fire AA do so now and surviving aircraft leave the table.

P.8 - AIR TO GROUND ATTACK

Aircraft make one attack per turn on the table at targets along their flight path (unless it has sideways facing weapons). The size and effectiveness of a fire zone is given in the DATA-SHEET. The attack options available are:

- BOMBS. A bomb is dropped individually and extra bombs either add to the depth of the fire zone or increase the effectiveness. The base of the fire zone is placed at the AIM POINT (see [O.5 - Aim Point](#)) and heads away from the aircraft. Test every element in the fire zone for damage. E.g. a 250Kg bomb has a fire zone of 12cm by 12cm a second bomb can either increase the effectiveness or increase the zone to 12cm by 24cm.
- ROCKETS/ROCKET PODS. Large rockets and whole rocket pods are fired one at a time. Each extra large rocket or pod is either added to the width or depth of the fire zone or increases the effectiveness.
- GUIDED MUNITIONS. These are standard 250-1000Kg bombs fitted with TV, radio or laser guidance. They can be released at 5km from LOW level and 10km at higher levels. Roll a d10, they will hit a stationary target on 3+ or moving target on 8+. If it hits it will destroy the target. Guided missiles range, blast effects and penetration values are given in the DATA-SHEET.
- DIRECT ATTACK. Fire by autocannons, MGs, etc are resolved as normal DIRECT FIRE or AREA FIRE at one target but ignore all aircraft movement.
- STRAFING. See [O.10 - Strafing](#).
- ANTI-RADIATION MISSILES. See [R.4 - Jamming](#).

P.9 - AIR-TO-AIR COMBAT

Aircraft and helicopters at LOW altitude or above may engage each other in air-to-air combat (if one or more are at NOTE or CONTOUR then use normal AA procedure). All aircraft/helicopters have an air-to-air effectiveness rating (AAR) for their missiles or guns, this is given as a die to roll. If aircraft meet, players should pair off the combatants (any extra aircraft can then join in a dog fight), roll the AAR die for ONE of the aircraft involved, add 2 for each extra aircraft, work out the difference between the rolls and check the DATA-SHEET for the result. An aircraft may decide to evade instead of fighting (it may be unarmed or is a bomber ignoring the threat) in which case use its "evasion value" as its AAR. If an evading aircraft manages to evade it may continue with its original mission. Roll once per turn until one side either retires or is destroyed. CAP must engage enemy escorts first and if they win they are free to hunt down the bombers next turn.

P.10 - EXAMPLE OF AIR-TO-AIR COMBAT

Two Mig-29s (missile AAR is d10) meet an F-16C (missile AAR is d12). The Russian player rolls 5 (+2 for the extra Mig-29) giving a result of 7. The American player rolls 11. The difference is 4 so a Mig-29 is aborted. If the F-16 evaded its score would have been its EVASION VALUE of 6, the difference being +1 to the Mig-29s, so no effect.

Q: ANTI-AIRCRAFT FIRE

Q.1 - INTRODUCTION

Anti-Aircraft (AA) fire is any fire at planes, helicopters, UAVs etc and throughout this section they will be referred generically as “aircraft”. It is quite difficult to shoot down an aircraft, it is more likely that it will suffer damage and be put off its aim or abort the mission.

Q.2 - ANTI-AIRCRAFT PROCEDURE

Use the following procedure to engage aerial targets:

1. Test to spot the aircraft.
2. If a target was spotted roll 2d10, one die (light) is tens and the other die (dark) is units, the result is the percentage score. Modify the result and check the AA FIRE table on the DATA-SHEET for the result. A natural roll of 00 will always shoot down an aircraft.
3. If a hit is achieved the target has a last chance to evade the threat (see [Q.8 - Target Evasion](#)), roll the evasion value of the aircraft or under to reduce the effect of the AA fire.

Q.3 - OVERWATCH

Any element can be given AA OVERWATCH orders, providing it carries weapons capable of firing in AA mode. Specialist AA elements will automatically be on AA OVERWATCH as soon as they stop (unless ordered otherwise) and if advancing with stabilisation.

Q.4 - SPOTTING AIRCRAFT

Any aircraft at NOTE (helicopters and UAV's only) or CONTOUR are spotted using the normal observation method (see [F: Observation](#)). Aircraft at LOW level or higher are deemed to be high enough for all elements to see, providing there are no visibility problems (i.e. aircraft flies by at night and the observer has no night vision aids). The effectiveness of acquisition and fire control radars, passive-alerting devices, etc has been taken into account in the targeting table.

To spot a helicopter that popped-up use the normal observation method, if it fired guns, rockets, etc use its FRONT SIZE ASPECT but if it fired an ATGM/AAGM or just observed use its POP-UP SIZE ASPECT. A popping-up helicopter DOESN'T count as a moving target.

Q.5 - AIR DEFENCE

There are two types of AA fire, on table SHORt Range Air Defence (SHORAD) and “area defence” and two methods of engaging aircraft, Anti-Aircraft Artillery (AAA) and Anti-Aircraft Guided Missiles (AAGM).

- AREA DEFENCE. Area AAA and SAM units provide rear echelon air defence cover right up to and beyond the Forward Line of Own Troops (FLOT). Area defence batteries engage aircraft at LOW level or higher (if possible) in phase 1.4 and phase 2.8.
- SHORAD. Any on table elements may engage aerial targets providing they are stationary (or advancing AA vehicles that are stabilised), on AA OVERWATCH and have weapons that can fire in AA mode. SHORAD AA fire takes place in phase 2.3 for the player and phase 2.2 for their opponent.

Q.6 - ANTI-AIRCRAFT EFFECTS

On the AA fire section of the DATA-SHEET you will find details of the weapon systems guidance, minimum & maximum range (both measured horizontally) and the percentage chances to damage (D), abort (A) and shoot down (K) an aircraft. It is taken for granted that the target will use all its counter measures. Roll the dice, apply the modifiers and check the following for the result:

- SUPPRESSED. An aircraft that has an DAMAGED result but manages to evade is suppressed. It cannot fire or drop ordnance this turn but can return later.
- DAMAGED. A result of damaged means the aircraft has taken light damage but can carry on. An aircraft that has an ABORT result but manages to evade is damaged. It cannot fire or drop ordnance this turn but can return later (it will remain damaged for the rest of the game). All movement is halved for the rest of the game. Damaged units cannot unload elements on the turn they are damaged.
- ABORT. A result of abort means the aircraft is damaged and MUST return to base (counting as half points killed in competition games).
- KILL. A kill result means the aircraft has been shot down (A natural roll of two 0's always destroys the target).

Q.7 - HOVERING

A hovering aircraft (See [Q.2 - Altitude](#) for definition) can be engaged by ANY weapon with either Direct fire (see [G: Direct Fire](#)). The weapon must be able to elevate high enough to fire (see [F.12.1 – Weapon Deadground Table](#)).

Q.8 - TARGET EVASION

If AA fire has zeroed in on an aircraft (the opponent has rolled an abort or kill result) there is a chance that the aircraft can dodge the barrage or evade the missile at the last minute. Aircraft have an evasion value (EV), this is its manoeuvrability and armour combined. Roll the aircraft's evasion value score or lower on a d10 to reduce the effects by ONE level (i.e. “shot down” becomes “aborted”, “abort” becomes “damaged” and “damaged” becomes “suppressed”).

Q.9 - ATGM'S IN AA MODE

Some ATGM's have an anti-helicopter capability; the DATA-SHEET will have its % AA effectiveness value. Any aircraft moving at 25cm or under and at NOTE or CONTOUR altitude may be engaged by the ATGM (if it hovers use the normal direct fire method). Use the normal AA procedure, including the targets chance of evading to resolve the AA fire. As with hovering the aircraft must end up more than 25cm from its start point to avoid missile fire.

Q.10 - AUTOMATIC TARGET TRACKERS (AuT) and AA

Vehicles equipped with AuTs can use direct fire against aircraft which have moved less than 15cm, provided they are of AA over watch. Again note that this means the aircraft model must end the turn more than 15cm from where it started the turn to avoid the fire.

Q.11 – AHEAD AND FAE HITS ON AIRCRAFT

Aircraft which are hit by AHEAD or FAE count any damage as one level higher than the final result.

KILL stays a KILL!

ABORT becomes KILL

DAMAGED becomes ABORTED

SUPRESSED becomes DAMAGED

R: ELECTRONIC WARFARE

R.1 - INTRODUCTION

Most electronic warfare aids have been covered in the rules already, the remaining aids are mainly for detection, jamming and acquiring targets. The electronic warfare aids are bought as part of the force from the army lists.

R.2 - INTERCEPTION

The most common intercept equipment in use today is radio interception. Roll a d10 to intercept radio messages. On table communications are detected on a roll of 9+, between off table and on table 8+ but if using satellite a 10 must be rolled. If the intercept is successful the message must be passed to the player and if a 10 was rolled the exact position of the sending element is known (it can then be engaged with artillery, including counter battery fire).

Either an aircraft or a vehicle can carry radar intercept equipment. It will detect any transmitting radars, identifying the type of transmitter and its location on a roll of 9+ (on a d10). The detection equipment can be collocated with a counter battery unit.

R.3 - SENSING EQUIPMENT

There are a variety of electronic detecting devices. Seismic sensors detect moving troops within 10cm and vehicles within 50cm and give the direction they are travelling in. Tripwire sensors (a flare or silent alarm) only detect elements that break their wire. The wire can be up to 5cm in length. Both seismic sensors and tripwires must be drawn accurately on a map.

Ground Surveillance radars (GSRs) detect moving targets in LOS and up to CONTOUR height (including a hovering helicopter) on a d10 roll of 2+. Bad weather conditions, time of day and smoke have no effect on a GSRs ability to detect. A GSR can sense moving infantry up to 100cm away and anything bigger up to 250cm. It can sense up to 10cm in woods and 5cm in BUA.

Millimetric radar (i.e. Longbow) automatically spots all moving vehicular targets on table in LOS. If a vehicular target is stationary in LOS it is spotted on a roll of 3+ on a d10. The radar can then target as many elements as missiles are available.

R.4 - JAMMING

There are two main types of jamming, communication and radar, but in the near future the use of vehicle intra-net (i.e. BMS) will give the possibility of "hacking" into and disrupting these communications. Jamming is bought per point in the initial set up. Friendly Jamming counts at half strength (rounded up) when combining.

- **COMMS JAMMING.** Any radio communication can be jammed. Combine both players jamming points (up to a maximum of 5) and roll above the level to successfully pass the message. Satellite and laser communications are unjammable (these are usually found with LR RECCE units, AOOs or senior command elements). Friendly Jamming counts at half strength (rounded up) when combining.
- **BMS HACKING.** Any BMS equipped army's communications can be disrupted if at the start of the game a 10 is rolled on a d10. If successful there can be no communication between units.
- **PRECISION JAMMERS.** Some ATGMs (KORNET-E) and artillery rounds (JABBERWOCKY) have a communication-jamming warhead whilst some have radar-jamming. They have a jam level of 5 for a radius of 50cm and hit their aim point without testing. If it was fired from an ATGM which is destroyed before it hits its target the warhead lands at the dead launchers position and jams from there.
- **RADAR JAMMING.** Ground based surveillance and fire control radars (including GSRs) can be jammed by an ECM aircraft or precision jammers (see above). The jam level is given in the ARMY LISTS. Local radar jammers can be fitted to aircraft or helicopters that jam enemy radars trying to lock on it or incoming radar controlled missiles.
- **ANTI-RADIATION MISSILES.** Dedicated ECM aircraft can carry anti-radiation missiles (e.g. HARM, ALARM, etc). Test to see if the radar detects the incoming anti-radiation missile (roll the radar's effectiveness value or lower on a d6) and roll a d10. If the radar detects the threat and turns itself off the missile will hit on a 7+ (older missiles will miss automatically) otherwise they hit on 3+. If hit the radar is destroyed.

S: ENGINEERING

S.1 - INTRODUCTION

Most engineering will take place in campaign games but where an attack/defence game is being played the defender usually has had time to construct some positions.

S.2 - POSITIONS

The types of fighting positions and their effectiveness are as follows:

S.2.1 – Engineered Positions Table

POSITION	DETAILS
INFANTRY TRENCH.	Infantry in trenches, foxholes, etc count as in COVER for observation and any area fire, indirect fire or bombs. It takes infantry 10 turns to dig a foxhole and a trench digger 1 turn to dig 1cm of trench.
PILLBOX OR INFANTRY POSITION WITH OVERHEAD COVER.	Infantry counts as in COVER for observation and OHC for any area fire, indirect fire or bombs. It takes 10 turns to add overhead cover to a position but pillboxes take a great deal of time to build.
VEHICLE REVETMENT.	Vehicles count as hull down to all observers (except aircraft at LOW or higher). It takes a vehicle with a dozer blade 10 turns and an engineer vehicle 5 turns to dig the revetment.
BARBED WIRE.	Barbed wire takes engineers 1 turn to lay 1cm (2 turns if non-engineers). One or two layers thick counts as a soft obstacle, three or more as a hard obstacle. Infantry must test for getting stuck (a roll of 3 or under for soft and 5 or under for hard on a d10) but AFVs clear a path through it.
BARRICADE.	It takes 10 turns for engineers (20 for non-engineers) to build a log barricade in woods or rubble barricade in a BUA and 5 turns for an engineer vehicle.
ANTI-TANK DITCH.	It takes a ditcher 5 turns to dig a 2cm by 1cm AT ditch. Vehicles without the aid of bridging or fascines cannot cross the ditch. Infantry take 2 turns to climb in and then out the other side.

S.3 - POSITION DESTRUCTION

The following positions and obstacles may be destroyed or removed as follows (infantry in trenches, buildings, etc must test to escape, see [1.8 - Escaping A Destroyed Vehicle](#) and use the row that best fits the weapon used. Buildings may only be fire at if the player writes in his orders to fire at the building or if fire is taken from the building. Orders to fire at buildings must include location fire is to be done from. Elements ordered to fire at a building will continue to do so until the building is destroyed or their orders are changed.

S.3.1 – Building and Engineered Position Destruction Table

POSITION/OBSTACLE	DESTRUCTION/REMOVAL DETAILS
AT DITCH OR TRENCH	Engineering vehicles or fascines can fill in ditches and trenches. It takes 1 turn to fill one vehicle wide area.
RUBBLE BARRICADE	It takes an engineering vehicle (or AFV with dozer) 5 turns to clear, engineers 15 turns and normal infantry 20 turns. Guns of 100mm or more require 17+ (demolition guns 14+) on a d20 to clear it.
LOG BARRICADE	It takes an engineering vehicle (or AFV with dozer) 3 turns to clear, engineers 9 turns and normal infantry 12 turns. Guns of 100mm or more must score 15+ on a d20 (demo guns 12+) to clear the logs.
SMALL BUILDING	Guns of 100mm or more collapse small buildings on a roll of 18+ on a d20. Demolition guns require 15+. If AHEAD or FAPDS is used see J.10.1 – AHEAD and FAPDS Destruction Table form the required rolls. Note that any calibre of AHEAD or FAPDS can be used.
PILLBOX	Guns of 100mm or more destroy pillboxes on a roll of 20+ on a d20. Demolition guns require 17+. If AHEAD or FAPDS is used see J.10.1 – AHEAD and FAPDS Destruction Table form the required rolls. Note that any calibre of AHEAD or FAPDS can be used.
LARGE BUILDING	Use the destruction values given for small buildings but depending on the size of the building it will need to successfully hit more than once to bring it down. The number of hits needed must be agreed before the game begins.

T. MINES AND BOOBY TRAPS

T.1 - MINES

There are two types of mine, anti-personnel (AP) and anti-tank (AT) and they can be buried, surface laid or scattered. From the late nineties most western nations stopped using AP mines, the exception being the United States.

T.2 - MINELAYING

A Minefield's strength is given as a point value between 1 and 10 for each 5cm by 2cm wide box. It takes an engineer section 3 turns to lay each strength point by hand and a vehicle 1 turn. Double the time taken if the mines are buried. Minelaying-ploughs and bar-minelaying vehicles can only bury mines and scatter-minelaying vehicles can only lay surface mines. Artillery gives an area the size of HE fire and each 500lb bomb the size of a HE munition. The strength laid is per battery/per turn of fire or bomb (see [N.9 - Ammunition Types](#)) and is given on the DATA-SHEET (in brackets after the word ATM or APM).

T.3 - BOOBY-TRAPS

Booby-traps may be used in attack/defence games by the defender if agreed before the game or in competition notes. The position and facing direction should be accurately drawn on a map and they do damage as per a mine (either AT or AP). The types of booby-trap are as follows:

- **TRIPWIRE/SENSOR MINE.** These take 2 turns to set up and go off on a roll of 3+ on a d10 if an element goes within 1cm of it.
- **REMOTE CONTROLLED.** These take 2 turns to set up, the controller must be within 10cm and it goes off on a 2+ if a target moves within 1cm.
- **OFF-ROUTE AT MINE.** These take 3 turns to set-up and are set off by a tripwire on a roll of 3+. They hit the side armour of a vehicle breaking the tripwire and have a CE penetration of 3. In woods they can be set up in trees to hit the roof armour.
- **REMOTE LAW.** These take 1 turn to set-up and are set off by a sensor on a roll of 3+ hitting a target within 5cm. They are standard LAWs and have the appropriate penetration.
- **CLAYMORES.** These take 1 turn to set up and are command or tripwire detonated. They hit targets within a 45° of the direction they face, roll a d20 and it suppresses infantry on a 2+ and kills on an 8+. They suppress soft vehicles on a 2+ and kill on a 10+. They suppress AFVs on a 12+ (they cannot kill an AFV).

T.4 - EFFECTS OF MINES

If an element enters a minefield test for each 10cm (or part of) that it moves in the minefield. Roll a d10 and if the testing element rolls the strength or under it sets off a mine and is suppressed. Then check to see if there is any serious damage by rolling a d10 and checking the following:

T.4.1 – Effect of Mines table

Type of Mine	Killed on						
	Infantry	Soft Vehicle			AFV		
		Normal	With MR	With HMR	Normal	With MR	With HMR
AP	4+	4+	7+	9+	NE	NE	NE
AT	NE	2+	5+	8+	5+	8+	9+

NE = No effect

T.5 - MINE AND BOOBY-TRAP DETECTION

Buried mines and booby-traps can be detected on a roll of 4+ on a d10 by specialist troops or mine detecting vehicles (e.g. DIM), a roll of 7+ if infantry on foot, 8+ if vehicles that moved up to 15cm and vehicles that moved over 15cm cannot spot. Surface mines can be detected on a roll of 2+ on a d10 by specialist mine detecting vehicles (e.g. DIM), a roll of 4+ if infantry on foot, 5+ if vehicles that moved up to 15cm or 7+ if vehicles that moved over 15cm. Mines can be spotted at a maximum of 5cm and the spot is done in any firing phase instead of a normal spot for enemy.

T.6 - MINE AND BOOBY-TRAP CLEARING

Mine and booby-trap clearing is done in the movement phase (2.1) of a player's turn. It takes a turn to remove booby traps and they go off on a 9+ on a d10. The clearing details are as follows:

T.6.1 – Mine Clearing Table

CLEARING METHOD	REDUCED STRENGTH	DETAILS
Mine-rollers, plough or flail	1	The cleared width is 1cm wide and the maximum move in a turn is 15cm.
Dozer blade	2	The cleared width is 1cm and max move is 10cm.
Explosive line charge	0	These are rocket-launched tubes filled with HE and they clear a lane 10cm long by 3cm wide and it takes 1 turn to set up.
Artillery or mortars	-2 per turn	The cleared area is as per a HE fire zone.
Salvo rockets or bombs	-3 per turn	The cleared area is as per a HE fire zone.
Fuel Air Explosive	0	These are either short-range, ground-launched rockets or artillery that release a cloud of fuel, mixed with air and when ignited create a massive overpressure, which detonates mines. The area affected is a 25cm radius.
Engineers	1	The cleared width is 1cm and max move is 2cm.

U. COMBAT DATA-SHEETS

U.1 - INTRODUCTION

You will have noticed that BATTLEGROUP is not full of complicated tables or paragraphs of complex rules. This is because virtually all the information required to play is on a two-sided DATA-SHEET. The DATA-SHEET's are an integral part of the rules and provides the players with the details to get on with playing the game.

U.2 - ORBAT (ORDER OF BATTLE)

There will be several BATTLEGROUP ORBAT publications to supplement these rules. These will contain a Battalion Order of Battle and the DATA-SHEET's for approximately 10 nations in each respective area. The ORBATs will be as follows:

“POST WAR” PERIOD 1950-1967	Northern European front Central European front Southern European front Middle East conflict Rest of the world
“COLD WAR” PERIOD 1968-1983	Northern European front Central European front Southern European front Middle East conflict Rest of the world
“TWIGHLIGHT” PERIOD 1984-1995	Northern European front Central European front Southern European front Middle East conflict Rest of the world
“NEW DAWN” PERIOD 1996-2005	Northern European front Central European front Southern European front Middle East conflict Rest of the world

U.3 - THE DATA-SHEET

Each DATA-SHEET has two, A4 sides of information and is designed to be easily handled during the game (these can be photocopied for players own use). Players will need the DATA-SHEET of both their own forces and their opponents. The information given is as follows:

FRONT PAGE

- PLAYERS TURN SEQUENCE (B.3) – The sequence of play for each player includes the initiative die roll modifier and the suppression removal roll. The opponent's actions are given in Italics.
- MORALE (Section M) – The morale table provides the morale level of the force, the required roll for morale tests and the results if the roll failed.
- OBSERVATION (F.7) – This table gives the distances that a target can be spotted from dependant on their status.
- VISUAL SPOTTING OF ATGMS (H.8) – This table gives the roll required for spotting incoming ATGMs depending on the range.
- ANTI-AIRCRAFT FIRE (Q) – This table provides the effectiveness of any AA system, the minimum and maximum ranges, the system guidance, the “A” column gives the roll needed to ABORT and the “K” column the roll to shoot down.
- ANTI-AIRCRAFT MODIFIERS (Q) – These are the percentage modifiers to the AA roll depending on the target status and the weapon system being used.
- OBSERVATION DISTANCES (F.8) – These are the maximum distances that visual equipment can observe depending on the conditions.
- AIR-TO-AIR COMBAT TABLE (P.9) – This table gives the air-to-air effectiveness.
- REQUESTING ARTILLERY SUPPORT (N.4) – To bring a battery on line use this table to request a fire mission.
- CEP TABLE AND MODIFIERS (N.7) – To work out the deviation and direction of a barrage.
- ARTILLERY TABLE AND MODIFIERS (Section N) – This table gives each battery's details, CEP die, sheaf size depending on the ammunition used and the Fire Number depending on the target. A soft target can either be in the open (O), in cover (C) or have overhead cover (OH) and vehicles use their CE armour value (the value given in brackets). The “S” column gives the roll required on a d20 to suppress a target and the “K” column to kill it. The Area Fire Number die roll modifiers are at the bottom of the sheet.

BACK PAGE

- **VEHICLE STATISTICS** – This table gives each vehicles details starting with the main armament and the ammunition available. The Direct Fire Targeting section give the base roll on a d20 to hit a target (the number in brackets is the roll to hit if the vehicle advanced) depending on range and the “P” column gives the penetration of the round. The Area Fire section give the roll required on a d20 to suppress (the row starting with “S”) or destroy (the row starting with “K”) a soft target and the targets cover status, either in the open (O), cover (C) or in hard cover (H). The armour details are given as front (F), side (S), rear (R) and top (T) and any special armour levels are given underneath in brackets. The vehicle size aspects are given as front or rear (F), side (S) and hull-down (Hd). The vehicles speed is given as road or cross-country (XC) and either moving (the “M” row) or advancing (the “A” row) and any stabilisation has been taken into account. The CM column gives all the vehicles counter-measures and sensors. The night fighting (NF) column gives the gunners (G) and drivers (D) night vision system. The “Notes and other weapons” provide any other details not covered in the previous columns. Finally there is the vehicles point value (PTS).
- **AIRCRAFT STATISTICS** – Most of the aircraft’s details are the same as for vehicles with a few exceptions. The air-to-air rating (AAR) section gives the aircraft’s die to use if using either guns (the “G” column) or missiles (the “M” column). The Area Fire section is for any guns carried (see the “Artillery and rockets” table for the effects of rocket pods). The “STATS” section gives the armour level (A), the evasion value (E) and the IR and radar (R) signature/counter-measures modifiers (given as a % modifier). The helicopters size aspects are given as front or rear (F), side (S) and if a pop-up (PU) is being performed. The speeds are for Nap-Of-the-Earth (NOE), contour (CON) and low level (LOW) or higher.
- **TARGETING MODIFIERS (G)** – This table gives the targeting modifiers for all guns, LAWs, ATGMs, etc depending on target actions and the firer’s status.
- **INFANTRY STATISTICS** – This table provides the infantry elements point’s value, size, equipment and area fire details. The details of any LAWs carried are given on the bottom including type of penetration (e.g. CE), warhead type (e.g. single) and any other details. The “HIT” column gives the roll required on a d20 to hit a target (if the infantry advanced use the number in brackets) and the P column gives the penetration.
- **AREA FIRE MODIFIERS (J)** – These are the Area Fire die roll modifiers.
- **ATGM STATISTICS (H)** – This table gives the ATGMs rate-of-fire (ROF), control (CON), guidance, base chance to hit including minimum and maximum ranges and penetration (PEN), the anti-helicopter effectiveness at NOTE and Contour, the warhead (WH) details and if there is back blast (BB) when fired. The Area Fire section gives the roll on a d20 to suppress a soft target (the roll to kill is in brackets) depending on whether it is in the open, cover or hard cover. Finally there are any other notes, details, nicknames (e.g. “Sagger”), etc.
- **EXITING TABLE (I.6)** – This table gives the roll on a d10 to exit personnel form a destroyed vehicle. The troops either escape suppressed (the “S” column) or fail to get out and are killed (the “K” column).
- **DAMAGE TABLE (I.5)** – This table gives the chance of destroying an armoured target depending on the targets armour and the penetrator used.
- **ERA TABLE (I.4)** – If a target is hit with a CE warhead and is protected by ERA check the warhead type and modify the penetration accordingly.

U.4 - EXAMPLE DATA-SHEET

The following two pages show an example DATA-SHEET for the Australian Army for about 1986.

Australian ~ 1986 (Regular)

PLAYERS SEQUENCE

INITIATIVE TEST - ROLL d8 (REGULAR TROOPS)	
1. PRE-COMBAT PHASE	
1	COMMUNICATIONS - Write orders and comms between units including overwatch.
2	AIRCRAFT ARRIVAL - Test for arrival of aircraft/helicopters and place at entry point.
3	ENEMY ARTILLERY - Opponent spots, requests and plots artillery barrage.
4	ENEMY AREA AA FIRE - Opponent fires off-table AA fire and resolves any CAP.
2. COMBAT PHASE	
1	MOVE ALL UNITS - Move all units including aircraft/helicopters to attack points.
2	ENEMY REACT FIRE - Opponent spots targets and engages, including ATGMs.
3	FIRE ALL UNITS - Spot targets and engage, including react fire at ATGM launchers.
4	MELEE COMBAT - All touching infantry resolve melle combat.
5	MISSILE RESOLUTION - Spot incoming missiles, react and resolve ATGM fire.
6	AIRSTRIKES - Surviving aircraft release ordnance and resolve damage.
7	ENEMY ARTILLERY FIRE - Opponent tests for accuracy and damage from barrage.
8	AIRCRAFT EXIT - Move aircraft to exit point and test any remaining AA fire.
9	COUNTER BATTER FIRE - Test to spot enemy artillery and engage with CB fire.
3. POST-COMBAT PHASE (Both Players)	
1.	SUPPRESSION REMOVAL - Roll d6, remove suppression counter if passed (See Morale below)
2.	MORALE - Test morale of any unit that lost an element or to improve morale level.

WEAPON	Guide	RANGE		TARGET HEIGHT BAND														
		(in cm)		NOE			CON			LOW			MED			HIGH		
		Min	Max	D	A	K	D	A	K	D	A	K	D	A	K	D	A	K
Small arms, LMG	AAA	0	30	92	96	100	89	94	99	92	96	100	-	-	-	-	-	-
Small arms, LMG with TI	AAA	0	30	91	95	99	88	93	98	91	95	99	-	-	-	-	-	-
HMG	AAA	0	50	86	92	98	83	90	97	89	94	99	-	-	-	-	-	-
Redeye	IRH	25	170	80	88	96	77	86	95	74	84	94	80	88	96	-	-	-
RBS-70	OPT	15	250	77	86	95	74	84	94	71	82	93	77	86	95	-	-	-

ANTI-AIRCRAFT DIE ROLL MODIFIERS

TARGET ACTION OR FIRER STATUS	GUIDANCE SYSTEM		
	AAA	OPT	IRH
FIRER SUPPRESSED	-5%	-5%	-
FIRED TO TARGETS FRONT	-	-	-2%
POP-UP WITH NOSE SIGHT	-1%	-1%	-
POP-UP WITH CABIN SIGHT	-2%	-2%	-
POP-UP WITH ROOF SIGHT	-3%	-3%	-1%
POP-UP WITH MAST SIGHT	-5%	-5%	-5%
HOVERED (moved upto 5cm)	+20%	+20%	-
MOVED 51-100cm (inc Exiting)	-2%	-1%	-
MOVED 101-200cm	-4%	-3%	-
MOVED 201cm+ (inc Entering)	-5%	-4%	-
PER POINT OF JAMMING	-	-	-

+/-% TARGETS IR VALUE IF IRH MISSILE (INC IR COUNTER MEASURES)

+/-% TARGETS RADAR VALUE IF RADAR MISSILE (INC RADAR COUNTER MEASURES)

MORALE CHECKS

TYPE AND STATUS (ROLL 2D6)	Supp Remove		% DESTROYED			
	Upto 25	26-50	51-75	76+		
Regular Unit with CO	4+	4	5	7	10	12
Regular Unit without CO		5	7	10	12	
Regular Group with CO	4+	3	4	6	9	11
Regular Group without CO		4	6	9	11	

1st FAILED ROLL HESITATE. Max half move towards enemy. Roll again.

2nd FAILED ROLL HALT. Halt or withdraw to cover. Roll again.

3rd FAILED ROLL WITHDRAW. Pull back to safe position. Roll again.

4th FAILED ROLL RETREAT. Move at full speed to exit table.

OBSERVATION (See R.3 for GSR)

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	T
Camouflaged	50/-	40/-	30/-	10/-	3/-	1/-
In Heavy Cover	50/25	40/20	30/15	10/-	5/-	3/-
In Cover OR M or F in Heavy Cover	70/35	50/25	40/20	20/5	10/2	5/1
In Open OR M or F in Cover OR M & F in H.Cov	150/75	100/50	70/35	50/20	20/5	10/2
M or F in Open OR M & F in Cover	250/125	200/100	150/75	100/40	40/10	20/5
M & F in Open	-/250	250/200	250/150	200/75	100/20	40/10
Fired or used WL at Night	-/250	-/250	-/250	-/250	250/125	250/125

Note: T1 counts "camouflaged, Cover, Heavy cover" as one row down for spotting. M= Moved, F= Fired

If out of arc, moving, in partial smoke or suppressed shift one row up. 60+mm stationary firers count as in partial smoke.

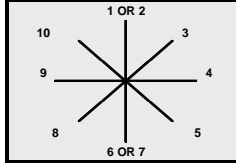
First No roll to spot, spotted on a 6 or over. A 1 is possible friendly fire. 2nd No Auto spot.

VISUAL SPOTTING OF ATGM (roll d10)

OBSERVER STATUS	RANGE (in cm up to and including)				
	10cm	25cm	50cm	100cm	250cm
MOVING	-	10	9	6	4
ADVANCING	-	9	8	5	3
STATIONARY	-	7	6	3	3
ON ATGM OVERWATCH	-	5	4	2	2

DIE ROLL MODIFIERS:
 -2 IF OBSERVER OUT OF ARC
 -2 IF OBSERVER SUPPRESSED

CEP TABLE (d10)



AIR TO AIR COMBAT (ROLL AAR DIE)

DIE ROLL DIFFERENCE	EFFECT ON ENEMY (ROLL AAR DIE)
UP TO 2 OVER	NO DAMAGE
3-4 OVER	ABORT 1 ENEMY AIRCRAFT
5 OR MORE	SHOT DOWN 1 ENEMY AIRCRAFT

DIE ROLL MODIFIER: +2 PER EXTRA AIRCRAFT
 (ALL COMBATANTS ARE PAIRED OFF)

REQUESTING ARTILLERY SUPPORT (ROLL d10)

COMMS	LEVEL OF SUPPORT			REQUEST DIE ROLL MODIFIERS
	DED	DIR	GEN	
STANDARD	2	5	8	-1 PER LEVEL OF RADIO JAM (STD COMMS) -1 OBSERVER UNTRAINED
ABMS	1	3	6	+1 PER EXTRA REQUEST FROM SAME OBS

CB MULTIPLE

RANGE	MULT	RANGE	MULT
0-5km	5cm	21-30km	8cm
6-10km	6cm	31-40km	9cm
11-20km	7cm	41+km	10cm

CEP DIE ROLL MODIFIERS

-1	RANGE 5KM OR LESS	-1	IF USING GSR* OR SAT POS
+1	LONG RANGE ROUND	-2	IF USING LRF* (GSR or LRF)
-3	TARGET IN LOS	-2	PER TURN AT SAME TGT
-3	CB FIRE (CBR or S&F only)	+1	PER 10KM RANGE OVER 10KM

ARTILLERY ROCKETS AND BOMBS (ROLL d20)

BATTERY	Weapon calibre	SP	T o P	CEP DIE	RANGE	AMMO	AF SIZE	VEHICLE CE TOP ARMOUR																	
								INFANTRY						VEHICLE CE TOP ARMOUR											
								OPEN		COVER		OHC		0		1		2		3		4			
2xM125A1 Burst: +2 Other: See Vehicle Notes	81mm M	Y	1	d10	200-3640m	HE	5cm	WIDTH	DEPTH	S	K	S	K	S	K	S	K	S	K	S	K				
								5cm	5cm	10	18	14	20	16	20	9	16	12	20	13	20	14	20	15	20
6xM125A1 Burst: +2 Other: See Vehicle Notes	81mm M	Y	1	d10	200-3640m	HE	15cm	WIDTH	DEPTH	S	K	S	K	S	K	S	K	S	K	S	K				
								15cm	5cm	10	18	14	20	16	20	9	16	12	20	13	20	14	20	15	20
6xLight Gun (M118) Burst: +2 Other: HE,ILL,Wps	105mm GH	-	Inf	d8	17.2km	HE	20cm	WIDTH	DEPTH	S	K	S	K	S	K	S	K	S	K	S	K				
								0cm	0cm	8	17	12	19	14	20	7	15	9	19	11	20	13	20	14	20
6xM198 Burst: +2 Other: HE,ILL,Bes,Wps	155mm GH	-	Inf	d8	24km	HE	25cm	WIDTH	DEPTH	S	K	S	K	S	K	S	K	S	K	S	K				
								15cm	5cm	6	16	10	18	12	19	5	14	7	18	9	19	11	20	13	20
								AB	15cm	4	14	7	16	14	21	2	12	16	21	17	21	18	21	19	21
								ICM	30cm	2	14	6	16	8	17	2	10	7	15	8	16	9	17	10	18
						ATM no SF	30cm	20cm																	

FIRE NUMBER DIE ROLL MODIFIERS

-2	USING MIXED HE/WPS	-2	HELICOPTER AT NOE	+	BATTERIES BURST RATE	+1	PER EXTRA BATTERY/RP/500lb BOMB
-4	USING WHITE PHOS SMOKE	-4	HELICOPTER AT CONTOUR	-3	MIXED HE & BES	+1	VEH MOVING UNDER SMART ROUNDS

Australian ~ 1986 (Regular)

VEHICLE NAME	AMMO TYPE	DIRECT FIRE TARGETING (ROLL d20)										AREA FIRE (ROLL d20)										VEHICLE STATISTICS									CM	NF	NOTES AND OTHER WEAPONS	BMS	CIS	WGT	PTS					
		10cm		25cm		50cm		100cm		250cm		10cm		25cm		50cm		100cm		ARMOUR			SIZE			SPEED																
		HIT	P	HIT	P	HIT	P	HIT	P	HIT	P	O	C	H	O	C	H	O	C	H	F	S	R	T	F	S	Hd	R	X	M								R	X			
Leopard AS.1 (FS) 105mm LZ,HE,Can,ILL,Smk(LFC+)	APFSDS	2(7)	5	3(8)	5	7(12)	4	14(19)	3	22(-)	3	S	3	5	7	6	9	11	10	13	15	3	2	1	1	L	X	M	M	40	30	SD	IR	IR	cMG,pMg,NBC,Sn	-	-	42	12			
M113A1 FSV (Aust) 76mm LPG,HE,Can,ILL,Smk	HEAT/HESH	2(7)	(5)	3(8)	(5)	8(13)	(5)	16(21)	(5)	-	-	K	7	10	12	11	14	16	11	14	16	15	18	20	(5)	(4)	1	1	L	X	M	A	25	20	SD	II	II	cMG,amp (7cm)	-	-	13	6
M113A1 LRV (Aust/IINF/SD) t12.7mm HMG	APDS	2(11)	1	6(16)	1	13(23)	1	-	-	-	-	S	8	11	13	9	12	14	10	13	15	12	15	17	1	1	1	1	L	L	S	M	40	30	SD	II	II	cMG,amp (7cm), 9 Trps	-	-	10	5
M113A1 LRV/GSR (Aust) t12.7mm HMG	APDS	2(11)	1	6(16)	1	13(23)	1	-	-	-	-	K	13	16	18	14	17	19	15	18	20	17	20	22	1	1	1	1	L	L	S	A	20	15	-	IR	cMG,GSR,amp (7cm)	-	-	10	5	
M113A1 p12.7mm HMG	AP	2(11)	1	6(16)	1	13(23)	1	-	-	-	-	S	11	14	16	11	14	16	12	15	17	13	16	18	1	1	1	1	L	L	S	M	40	30	-	IR	amp (7cm),11 Trps	-	-	11	4	
M113A1 (Aust)												K	16	19	21	16	19	21	17	20	22	18	21	23	1	1	1	1	L	L	S	A	20	15	-	IR	cMG,tMG,amp (7cm), 9 Trps	-	-	10	4	
M113A1 LRV (Aust/IIID) t12.7mm HMG	APDS	2(11)	1	6(16)	1	13(23)	1	-	-	-	-	S	8	11	13	9	12	14	10	13	15	12	15	17	1	1	1	1	L	L	S	M	40	30	-	II	cMG,amp (7cm), 9 Trps	-	-	10	4	
M577A1												K	13	16	18	14	17	19	15	18	20	17	20	22	1	1	1	1	X	X	M	A	20	15	-	IR	pMG,amp (7cm),10 Trps	-	-	12	3	
M125A1 p12.7mm HMG	AP	2(11)	1	6(16)	1	13(23)	1	-	-	-	-	S	12	15	17	12	15	17	-	-	-	-	-	-	1	1	1	1	X	X	M	M	40	30	-	IR	81mm MTR,amp (7cm),MTR has HE,III,Wp,Bes	-	-	11	5	
Landrover/106mm RCL 106mm RCL M40A1	HEAT/HESH	3(13)	(5)	7(17)	(5)	14(-)	(5)	-	-	-	-	S	11	14	16	11	14	16	11	14	16	-	-	-	0	0	0	0	M	M	M	M	50	15	-	-		-	-	1	4	
Landrover/Milan												K	16	19	21	16	19	21	16	19	21	-	-	-	0	0	0	0	M	M	M	M	50	15	-	-	MILANx1+5	-	-	1	4	
Landrover/Mg												K	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	M	M	M	M	50	15	-	-	pMG	-	-	1	2	

AIRCRAFT NAME	AMMO TYPE	DIRECT FIRE TARGETING (ROLL d20)										AAR (DIE) G M	AREA FIRE (ROLL d20)										AIRCRAFT STATISTICS									NF	NOTES AND OTHER WEAPONS	BMS	PTS				
		10cm		25cm		50cm		100cm		25cm			50cm		100cm		STATS			SIZE			SPEED																
		HIT	P	HIT	P	HIT	P	HIT	P	O	C		H	O	C	H	O	C	H	A	E	IR	R	F	S	PU	NOE	CON	LOW										
OH-58A Kiowa												S	-	-	-	-	-	-	-	-	-	0	4	0	0	S	S	S	M	50	100	200	-	-	No Sight	-	-	-	11
												K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	25	50	100	-	-		-	-	-	-	

ANTI-TANK GUIDED MISSILES

MISSILE	ROF	CON	GUIDE	TARGETING (AND RANGE) ROLL d20			PEN	NOTE	CON	WH	BB	AREA FIRE S(K)			NOTES
				SHORT	MEDIUM	LONG						O	C	H	
MILAN	1	S	WIR	8 (2-25)	6 (26-75)	7 (76-100)	(6)	-	-	-	-	11(16)	14(19)	16(21)	II Sight

DIRECT FIRE TARGETING MODIFIERS

TARGET ACTION OR FIRER STATUS	GUN/LAW	Milan
FIRER SUPPRESSED	+2	+5
FIRER IS DAMAGED AIRCRAFT	+4	+8
EXTRA LARGE TARGET (X)	-1	-1
MEDIUM TARGET (M)	+2	+2
SMALL TARGET (S)	+4	+4
VERY SMALL (V) OR TINY (T) TARGET	+6	+6
SECOND SHOT AT SAME TARGET	-2	-
PER 10CM TARGET MOVED (OR PART OF)	+2	+1
CAME INTO SIGHT	+2	+2
WENT OUT OF SIGHT/COVER EVADE	+2	+4
TARGET MADE MANOEUVRE EVADE	-	+2
SMOKE EVADE (NO TI OR VIRSS)	+8	+8
SMOKE EVADE (WITH TI)	+2	+2
FLARES/DECOYS/IR JAMMER	+6**	+6
LASER JAMMER, FIRER (LFC+), <= 50CM	+2	+2
AEROSOL CHAFF	-	+2
FIRING INTO WOODS OR BUA#	-	+2
TARGET DUG-IN WITH OVERHEAD COVER##	-	-
PER POINT OF JAMMING	-	-
ANTI-MISSILE DEFENCE (E.G. ARENA)	-	+8

** If dazzlers and firer is using TI, otherwise no effect. # If target is on the edge of the woods or built up area. ## Modifier is cumulative.

INFANTRY ELEMENTS

INF TYPE	AREA FIRE	SZ	AREA FIRE (ROLL d20)										MELEE	SPEED			PTS			
			10cm		25cm		50cm		100cm		M	R		X						
			O	C	H	O	C	H	O	C					H					
A	Full_AR+M72+II	V	S	10	13	15	12	15	17	13	16	18	-	-	-	2d8	M	8	6	2
			K	15	18	20	17	20	22	18	21	23	-	-	-					
B	Full_AR+LMG+M72+CG M2/M3+II	V	S	8	11	13	10	13	15	11	14	16	-	-	-	2d8	M	8	6	3
			K	13	16	18	15	18	20	16	19	21	-	-	-					
C	Full_AR+LMG+M72+II	V	S	8	11	13	10	13	15	11	14	16	-	-	-	2d8	M	8	6	2
			K	13	16	18	15	18	20	16	19	21	-	-	-					
D	Half_AR+LMG+II	V	S	10	13	15	11	14	16	11	14	16	-	-	-	1d8	M	8	6	2
			K	15	18	20	16	19	21	16	19	21	-	-	-					
E	Half_AR+CG M2/M3+II	V	S	12	15	17	13	16	18	13	16	18	-	-	-	1d8	M	8	6	3
			K	17	20	22	18	21	23	18	21	23	-	-	-					
F	Full_AR+M72+CG M2/M3+II	V	S	10	13	15	12	15	17	13	16	18	-	-	-	2d8	M	8	6	3
			K	15	18	20	17	20	22	18	21	23	-	-	-					
H	Half_AR+Redeye+II	S	S	12	15	17	13	16	18	13	16	18	-	-	-	1d8	M	8	6	2
			K	17	20	22	18	21	23	18	21	23	-	-	-					
I	Half_AR+TI+LRF+GSR+OP	T	S	12	15	17	13	16	18	13	16	18	-	-	-	1d8	M	8	6	3
			K	17	20	22	18	21	23	18	21	23	-	-	-					
J	Half_AR+MILAN+II	V	S	12	15	17	13	16	18	13	16	18	-	-	-	1d8	M	8	6	4
			K	17	20	22	18	21	23	18	21	23	-	-	-					
K	Half_AR+RBS-70+II	S	S	12	15	17	13	16	18	13	16	18	-	-	-	1d8	M	8	6	2
			K	17	20	22	18	21	23	18	21	23	-	-	-					

AREA FIRE DIE MODIFIERS

+2	TARGET SOFT VEHICLE
+4	FIRE LAW (AT WARHEAD)
+4	FIRE LAW (HE WARHEAD)
-2	FIRER SUPPRESSED
-2	FIRING FROM FIRING PORTS
-5	FIRER ADVANCED
-2	FIRE LAW AT DIFFERENT TARGET
-4	TARGET HAS BODY ARM'R,FIRER INF W/O AP
+1	FIRER HAS SNIPER VS BODY ARM'R/COVER

HMGs and bigger always count as having AP rounds

EXITING DESTROYED VEHICLES		
WEAPON (ROLL d10)	RESULT	
	S	K
FAE, FLAME	10	1-9
HE, MP, SE	7+	1-6
HEAT, HESH, APDU	5+	1-4
AP	4+	1-3

DAMAGE TABLE				
PEN DIFF	PENETRATOR			
	AP	HEAT	DU	SE
UNDER	S	S	S	S
EQUAL	7+	5+	4+	3+
OVER	K	K	K	K

WARHEAD vs ERA	
WARHEAD TYPE	PENETRATION MODIFIER
SINGLE	-2
PERCURSOR	-1
TANDEM	-

BATTLEGROUP

V. ABBREVIATIONS

(LFC+)	Uses laser in fire control
AA	Anti-aircraft
ATT	Automatic Target Tracker (currently fielded on Merkava III and Japanese Type 90)
AAGM	Anti-aircraft Guided Missile (or SAM)
ABMS	Artillery Battlefield Management System
ACLOS	Automatic Command to Line Of Sight
AOO	Artillery Observation Officer (or OP Observation Post)
AHEAD	Advanced Hit Efficiency And Destruction (KE) ammunition. In essence a round which can be programmed for fire dozens of darts at a given distance from a target in the hope of finding a weak point or cause enough minor damage to make the target a mission kill. These are very effective against hard cover.
ALO	Air Liaison Officer
AMP	Amphibious
AP	Armour Piercing (using KE penetration)
APDS	Armour Piercing Discarding Sabot (KE)
APFSDS	Armour Piercing Fin Stabilised Discarding Sabot (KE)
APFSDSDU	Armour Piercing Fin Stabilised Discarding Sabot Depleted Uranium (KE)
APHE	Armour Piercing High Explosive (KE)
AR	Assault Rifle
ATGM	Anti-Tank Guided Missile
BAR	Bolt Action Rifle
BE	Base Ejection (smoke rounds)
BGHQ	Battlegroup Headquarters (Inc Battalion HQ)
BMS	Battle Management System (the digitisation of the battlefield)
CE	Chemical Energy
CHQ	Company Headquarters
CIS	Commanders Independent Sight
CITV	Commanders Independent Thermal Vision (as CIS but with TI sight)
CG	Chain Gun
FAE	Fuel Air Explosive
FAPDS	Frangible Armour Piercing Discarding Sabot (KE). These rounds shatter if they fail to penetrate their target which can cause the target to be mission killed as it loses secondary equipment. These are very effective against hard cover.
HAR	Heavy Assault Rifle, these tend to be assault rifles with a large ammo drum which in effect gives each squad member a SAW.
HE	High Explosive (used for Area Fire)
HEAT	High Explosive Anti-Tank (using CE penetration)
HESH	High Explosive Squash Head (CE)
HMG	Heavy Machine Gun
HMR	Heavily Mine Resistant
HVAP	High Velocity Armour Piercing
II	Image Intensifier
IR	Infra-Red
IRH	Infra-Red self-Homing
KE	Kinetic Energy
LAR	Laser spot equipped or LFC equipped Assault Rifle
LAW	Light Anti-Tank Weapon
LLTV	Low Light Television
LMG	Light Machine Gun
LPG	Low Pressure Gun
MCLOS	Manual Command to Line Of Sight
MR	Mine Resistant
PASG	Pump action Shotgun, with being very short range these only give a bonus in melee combat.
NBC	Nuclear, Biological and Chemical
RCL	Recoilless Rifle
RHA	Rolled Homogenous Armour
SACLOS	Semi-Automatic Command to Line Of Sight
SAW	Squad Automatic Weapon
SFMG	Sustained Fire Machine Gun
SIR	Scanning Infra-Red (or IIR Imaging Infra-Red)
SP	Self Propelled
TI	Thermal Imager
UAV	Unmanned Aerial vehicle
2IC	Second in command

W.4 - PENETRATION

Weapon penetration depends on a variety of things including the calibre of the round, type of round, the length of the barrel etc. Penetration levels in brackets are for CE rounds.

MAIN GUNS

Weapon	Ammo	Pen 10cm	Pen 25cm	Pen 50cm	Pen 100cm	Pen 250cm
130mm	APHE	5	5	4	3	2
	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
125mm (2A26, 2A46)	APFSDS	6	6	5	4	3
	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
125mm (2A26M)	APFSDS	6	6	6	4	3
	HEAT/HESH	(6)	(6)	(6)	(6)	(6)
125mm (2A26M1, KBA3)	APFSDS	7	6	6	5	3
	HEAT/HESH	(6)	(6)	(6)	(6)	(6)
125mm (2A42M1MF)	AHEAD	5	5	4	4	3
	APFSDS	7	7	6	6	3
122mm	APHE	4	4	3	2	1
	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
120mm (L11A5, M256, RM L44)	APDS	5	5	5	4	2
	APFSDS	6	6	6	5	4
	HEAT/HESH	(6)	(6)	(6)	(6)	(6)
120mm (L30A1, CN-120F1, RM L55)	APFSDS	7	7	6	6	4
	HEAT/HESH	(6)	(6)	(6)	(6)	(6)
120mmLt	APFSDS	6	6	6	5	2
	HEAT/HESH	(6)	(6)	(6)	(6)	(6)
115mm (2A20)	APFSDS	5	4	4	3	2
	APHE	4	4	3	3	1
	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
115mm (Royal Ordnance - Egyptian)	APFSDS	6	5	4	3	2
	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
105mm (L7, M68, CN-105-F1)	APDS	4	4	4	3	2
	APFSDS	5	5	4	3	3
105mm Light (CN-105-L48)	APFSDS	4	4	4	2	1
	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
100mm (D10T, D10)	APDS	4	4	3	2	1
	APFSDS	4	4	3	3	1
	APHE	4	3	3	2	1
	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
	HVAP	3	3	2	2	0
90mm (M41, M36A1)	APC	3	2	2	1	1
	APDS	4	3	3	2	1
	APFSDS	4	4	3	3	2
	APHE	3	3	2	2	0
	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
90mm Light (D921-F1)	APFSDS	4	4	3	2	0
	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
90mmHP	APFSDS	5	5	4	3	2
	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
85mm (D-44, D-48)	APDS	3	3	2	2	1
	APHE	3	2	2	2	0
	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
	HVAP	3	2	2	2	0
76mm (17 Pdr, ZIS-3)	APC	2	2	1	1	1
	APDS	3	2	2	1	1
	APFSDS	3	3	2	1	1
	APHE	2	2	1	1	0
	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
	HVAP	2	2	2	1	0
75mm	APC	2	2	2	1	0
	APFSDS	3	3	2	1	1
	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
	HVAP	2	2	2	1	0
75mm/L60	APC	3	2	2	1	1
	APFSDS	3	3	2	1	1
	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
60mm Gun Mortar (HB60)	APFSDS	2	1	1	0	0
	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
60mm HVMS	APFSDS	4	4	3	2	2

Weapon	Ammo	Pen 10cm	Pen 25cm	Pen 50cm	Pen 100cm	Pen 250cm
57mm (S60)	APHE	2	2	2	1	1
40mm (L70)	AHEAD	2	2	1	1	0
	AP	2	2	2	1	1
	APDS	3	3	2	1	1
	APFSDS	3	3	3	2	1
	FAPDS	3	3	2	1	1
37mm	AP	2	2	1	1	1
	APDS	3	2	2	1	1
35mm (KDB)	AHEAD	1	1	1	1	0
	AP	2	2	1	1	1
	APDS	3	2	2	1	1
	APFSDS	3	3	2	2	1
	FAPDS	3	2	2	1	1
30mm (2A42, 2A72)	AP	2	2	1	1	0
	APDS	2	2	2	1	0
	FAPDS	2	2	2	1	0
30mm (L21 RARDEN, M230)	APDS	3	3	2	1	0
	APFSDS	3	3	2	1	1
	APSE	2	1	1	1	0
	FAPDS	3	3	2	1	0
25mm (M242)	AP	2	1	1	1	0
	APDS	2	2	2	1	0
	APFSDS	3	2	2	1	0
23mm (AZP-23)	AP	1	1	1	1	0
	APDS	2	2	1	1	0
20mm (M693-F2)	AP	1	1	1	1	0
	APDS	2	2	1	1	0
12.7mm/14.5mm HMG (M2HB, KVP)	AP	1	1	1	0	0
	APDS	2	1	1	1	0

*Later Russian rounds have a tandem warhead.

OTHER DIRECT FIRE WEAPONS

Weapon	Ammo	Pen 10cm	Pen 25cm	Pen 50cm	Pen 100cm	Pen 250cm
Gun/Howitzer 130mm and over	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
Gun/Howitzer 76-120mm	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
Gun/Howitzer up to 75mm	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
165mm Demolition gun	HEAT/HESH	(6)	(6)	(6)	(6)	(6)
152mm M162 Gun Launcher	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
142mm Demolition gun	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
S0-120 120mm Gun Mortar	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
MECAR 90mm Low Pressure Gun	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
VASELIK 81mm Gun Mortar	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
L5/L20 76mm Low Pressure Gun	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
SPG-9/2A20 73mm Low Pressure Gun	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
WOMBAT 120mm Recoilless Rifle (BB)	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
107mm RCL (BB)	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
Recoilless Rifle 96-107mm (BB)	HEAT/HESH	(4)	(4)	(4)	(4)	(4)
M40A1 106mm Recoilless Rifle	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
M40A2 106mm Recoilless Rifle	HEAT/HESH	(6)	(6)	(6)	(6)	(6)
M67 90mm RCL (BB)	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
Recoilless Rifle 83-95mm (BB)	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
PV1110 90mm Recoilless Rifle (BB)	HEAT/HESH	(5)	(5)	(5)	(5)	(5)
82mmRCL (BB)	HEAT/HESH	(3)	(3)	(3)	(3)	(3)
Recoilless Rifle 58-82mm (BB)	HEAT/HESH	(2)	(2)	(2)	(2)	(2)
75mmRCL (BB)	HEAT/HESH	(2)	(2)	(2)	(2)	(2)
Recoilless Rifle up to & including 57mm (BB)	HEAT/HESH	(1)	(1)	(1)	(1)	(1)
30-40mm Rifle Grenades	HEAT/HESH	(1)	(1)	(1)	(1)	(1)

INFANTRY DIRECT FIRE WEAPONS

Weapon Name	Ammo	Pen	Effective Calibre	Ammo Type	BB?	NF	Vertical	FC	Type	Notes
AB-92	HEAT/HESH	(5)	92	CE	Yes	-	-	BFC	Early LAW	
APILAS	HEAT/HESH	(6)	112	CE	Yes	-	-	BFC	Early LAW	BB, also MP (pen 4)
ARMBURST	HEAT/HESH	(3)	67	CE	No	-	-	BFC	Late LAW	also HE, III
AT-12T	HEAT/HESH	(7)	120	CE	Yes	II	-	BFC	Late LAW	BB, IINF, T WH
B300B	HEAT/HESH	(5)	82	CE	Yes	-	-	BFC	Late LAW	BB, P WH, also HE, III
Bazooka (N)	HEAT/HESH	(3)	89	CE	Yes	-	-	BFC	Early LAW	BB, also HE
Bazooka (O)	HEAT/HESH	(2)	89	CE	Yes	-	-	BFC	Early LAW	BB, also HE
Blindcide	HEAT/HESH	(3)	90	CE	Yes	-	-	OF C	Late LAW	BB, also HE, WPS, ILL
C-90	HEAT/HESH	(5)	90	CE	Yes	-	-	BFC	Early LAW	BB
CG M2/M3	HEAT/HESH	(4)	84	CE	Yes	-	-	BFC	Late LAW	BB, also HE, ILL, BES
CG M2/M3 LFC	HEAT/HESH	(6)	84	CE	Yes	-	-	LFC	Late LAW	BB, T WH
CG S550	HEAT/HESH	(4)	84	CE	Yes	-	-	OF C	Late LAW	BB, also HE, ILL, BES
CG S597	HEAT/HESH	(7)	120	CE	Yes	-	-	BFC	Late LAW	BB
Folgore	HEAT/HESH	(4)	80	CE	Yes	-	-	OF C	Late LAW	BB
LAW-94	HEAT/HESH	(5)	94	CE	Yes	-	-	RFC	Late LAW	BB, Spotting rifle
LRAC	HEAT/HESH	(4)	89	CE	Yes	-	-	OF C	Late LAW	BB, Also HE, ILL, BES
M136 (AT4)	HEAT/HESH	(5)	84	CE	No	-	-	BFC	Late LAW	
M136E2	HEAT/HESH	(5)	84	CE	No	-	-	BFC	Late LAW	T WH
M136E2L	HEAT/HESH	(5)	84	CE	No	-	-	RFC	Late LAW	T WH
M-55	HEAT/HESH	(2)	55	CE	Yes	-	-	BFC	Early LAW	BB
M57	HEAT/HESH	(4)	90	CE	Yes	-	-	BFC	Early LAW	BB
M-65	HEAT/HESH	(4)	89	CE	Yes	-	-	BFC	Early LAW	BB
M67	HEAT/HESH	(4)	90	CE	Yes	-	-	OF C	Late LAW	BB
M72	HEAT/HESH	(3)	66	CE	Yes	-	-	BFC	Early LAW	BB
M72A3	HEAT/HESH	(4)	66	CE	Yes	-	-	BFC	Late LAW	BB
M72A4	HEAT/HESH	(4)	66	CE	Yes	-	-	LFC	Late LAW	BB
M-79	HEAT/HESH	(4)	90	CE	Yes	-	-	BFC	Late LAW	BB
MINIMAN	HEAT/HESH	(4)	74	CE	Yes	-	-	BFC	Early LAW	BB, P WH
MRG-29	FAE	15	105	FAE	Yes	-	-	BFC	Late LAW	BB
P-27	HEAT/HESH	(3)	120	CE	Yes	-	-	BFC	Early LAW	BB
PZF-3	HEAT/HESH	(6)	110	CE	No	-	-	BFC	Late LAW	also HE, BES, IRB.
PZF-3B	HEAT/HESH	(2)	110	CE	No	-	-	BFC	Late LAW	MP WH
PZF-3T	HEAT/HESH	(6)	110	CE	No	II	-	IFC	Late LAW	T WH, IINF

Weapon Name	Ammo	Pen	Effective Calibre	Ammo Type	BB?	NF	Vertical	FC	Type	Notes
PZF-44	HEAT/HESH	(4)	67	CE	No	-	-	BFC	Late LAW	BB
PICKET	HEAT/HESH	(4)	81	CE	Yes	-	-	LFC	Late LAW	BB
PREDATOR	EFP	3	140	KE	No	-	VD	LFC	Late LAW	VD, Other DF vs AMD 2, Soft Launch
RBR-M80	HEAT/HESH	(3)	64	CE	Yes	-	-	BFC	Early LAW	
RPG-16	HEAT/HESH	(4)	85	CE	Yes	-	-	OF C	Late LAW	BB
RPG-16L	HEAT/HESH	(4)	85	CE	Yes	-	-	LFC	Late LAW	BB
RPG-18	HEAT/HESH	(3)	64	CE	Yes	-	-	BFC	Early LAW	BB
RPG-2	HEAT/HESH	(2)	82	CE	Yes	-	-	BFC	Early LAW	BB
RPG-22	HEAT/HESH	(4)	80	CE	Yes	-	-	BFC	Early LAW	BB
RPG-22L	HEAT/HESH	(4)	80	CE	Yes	-	-	RFC	Early LAW	BB
RPG-26	HEAT/HESH	(4)	73	CE	Yes	-	-	BFC	Late LAW	BB, Also MP (pen 3)
RPG-27	HEAT/HESH	(6)	105	CE	Yes	-	-	BFC	Late LAW	BB, T WH, Also MP (pen 2)
RPG-29	HEAT/HESH	(6)	105	CE	Yes	-	-	BFC	Late LAW	BB, T WH, Also MP (pen 3)
RPG-29L	HEAT/HESH	(6)	105	CE	Yes	-	-	RFC	Late LAW	BB, T WH, Also MP (pen 3)
RPG-7	HEAT/HESH	(3)	85	CE	Yes	-	-	BFC	Late LAW	BB
RPG-75	HEAT/HESH	(3)	68	CE	Yes	-	-	BFC	Early LAW	BB
RPG-7V	HEAT/HESH	(3)	85	CE	Yes	-	-	BFC	Late LAW	BB, Also HE, BES
RPG-7VR	HEAT/HESH	(6)	105	CE	Yes	-	-	BFC	Late LAW	BB, T WH
RPO-A	FAE	15	93	FAE	Yes	-	-	BFC	Late LAW	BB
SAKR-7	HEAT/HESH	(5)	85	CE	Yes	-	-	BFC	Late LAW	BB
SARPAC	HEAT/HESH	(3)	68	CE	Yes	-	-	BFC	Early LAW	BB, Also ILL
SEP-DARD	HEAT/HESH	(6)	120	CE	Yes	-	-	BFC	Early LAW	BB
SMAW	HEAT/HESH	(5)	83	CE	Yes	-	-	BFC	Late LAW	BB, Also MP (pen 2 CE & HE)
SPG-82	HEAT/HESH	(2)	82	CE	Yes	-	-	BFC	Early LAW	BB
SRAW	EFP	1	142	KE	Yes	-	-	BFC	Early LAW	BB, Also HE
TBG-7V	FAE	15	105	FAE	Yes	-	-	BFC	Late LAW	BB
TYPE 56	HEAT/HESH	(3)	80	CE	Yes	-	-	BFC	Early LAW	BB, also HE
TYPE 69	HEAT/HESH	(4)	85	CE	Yes	-	-	BFC	Late LAW	BB, also HE, WPS, III
TYPE 70-1	HEAT/HESH	(2)	57	CE	Yes	-	-	BFC	Early LAW	BB
TYPE 79	HEAT/HESH	(2)	62	CE	Yes	-	-	BFC	Early LAW	BB
TYPE 89	HEAT/HESH	(4)	80	CE	Yes	-	-	BFC	Early LAW	BB
WASP	HEAT/HESH	(3)	70	CE	No	-	-	BFC	Early LAW	

ANTI-TANK GUIDED MISSILES

Missile	Year	Control	Guidance	Guidance 2	Min Range	Max Range	Pen	Warhead	TW?	ROF	BB?	NF	Vertical	AH?	HE?	FAE?	Notes
2M2 SHMEL	1960	M	WIR		18	135	(4)		No	1	No	-	-	No	No	No	AT-1 "Snapper"
71A/B TOW	1970	S	WIR		4	185	(6)		No	1	Yes	-	-	No	No	No	
71C ITOW	1982	S	WIR		4	185	(7)	P	No	1	Yes	-	-	No	No	No	
71D TOW-2	1983	S	WIR		4	185	(7)	P	No	1	Yes	-	-	No	No	No	
71E TOW-2A	1987	S	WIR		4	185	(8)	T	No	1	Yes	-	-	No	No	No	
71F TOW-2B	1991	S	WIR		4	185	4	Tw	Yes	1	Yes	-	VA	No	No	No	Twin EFP (KE) warhead
9M11 FALANGA (AT-2)	1964	M	R		30	125	(5)		No	1	No	-	-	No	No	No	AT-2 "Swatter A"
9M111 FAGOT (AT-4)	1973	S	WIR		4	100	(5)		No	1	Yes	-	-	No	No	No	AT-4 "Spigot"
9M111-2 (AT-4B)	1985	S	WIR		4	125	(6)		No	1	Yes	-	-	No	No	No	AT-4B
9M111-M FAKTORIA (AT-4C)	1992	S	WIR		4	125	(6)	T	No	1	Yes	TI	-	No	No	No	AT-4C
9M112 KOBRA (AT-8)	1978	S	R		5	200	(6)		No	1	Yes	-	-	Yes	No	No	AT-8 "Songster"
9M113 KONKURS (AT-5)	1977	S	WIR		5	200	(6)		No	1	Yes	-	-	Yes	No	No	AT-5 "Spandrel"
9M113-M (AT-5B)	1992	S	WIR		4	125	(7)	T	No	1	Yes	TI	-	Yes	No	No	AT-5B
9M114 SKORPION (AT-6)	1973	S	R		20	250	(6)		No	1	Yes	-	-	Yes	No	No	AT-6 "Spiral"
9M114-F1 (AT-6B/F)	1990	S	R		20	300	(7)	FAE	No	1	Yes	-	-	Yes	No	Yes	AT-6B
9M114F1 (AT-9/F)	1991	A	R		25	300	(7)	FAE	No	1	Yes	-	-	Yes	No	Yes	AT-9, JR
9M114-M SHTURM-S (AT-6C)	1992	S	R		20	350	(7)	T	No	1	Yes	-	-	Yes	No	No	AT-6C
9M114-M1 ATAKA-V (AT-9)	1985	A	R		25	300	(7)	T	No	1	Yes	-	-	Yes	No	No	AT-9 "Swinger", JR
9M114-M1/2 KOKON (AT-6B)	1990	S	R		20	300	(7)		No	1	Yes	-	-	Yes	No	No	AT-6B
9M114-M2 (AT-9/H)	1989	A	R		25	300	(7)	HE	No	1	Yes	-	-	Yes	Yes	No	AT-9, JR
9M115 METIS (AT-7)	1979	S	WIR		2	50	(5)		No	1	Yes	-	-	No	No	No	AT-7 "Saxhorn"
9M117 BASNYA (AT-10)	1985	S	L		5	200	(6)		No	1	Yes	-	-	Yes	No	No	AT-10 "Staer"
9M117-M BASNYA-2 (AT-10B)	1990	S	L		5	200	(6)	T	No	1	Yes	-	-	Yes	No	No	AT-10B
9M117-M2 (AT-10B/H)	1991	S	L		5	200	(6)	HE	No	1	Yes	-	-	Yes	Yes	No	AT-10
9M118 SHEKSNA (AT-12)	1985	S	L		5	200	(6)		No	1	Yes	-	-	Yes	No	No	AT-12
9M119 SVIR (AT-11)	1987	A	L		5	200	(7)		No	1	Yes	-	-	Yes	No	No	AT-11 "Sniper"
9M119-M REFLEKS (AT-11B)	1988	A	L		5	250	(7)	T	No	1	Yes	-	-	Yes	No	No	AT-11B, JR
9M119-M1 (AT-11/H)	1991	A	L		5	200	(7)	HE	No	1	Yes	-	-	Yes	Yes	No	AT-11 "Sniper"
9M119-M2 (AT-11B/H)	1994	A	L		5	250	(7)	T,HE	No	1	Yes	-	-	Yes	Yes	No	AT-11B, JR
9M120 VIKHR (AT-16)	1995	S	R		50	500	(8)		No	3M	Yes	-	-	Yes	No	No	AT-16, JR, Ripple fire system
9M120-S (AT-16B)	1999	S	R		50	750	(8)	T	No	3M	Yes	-	-	Yes	No	No	AT-16B, Ripple fire system
9M123-2 KHRIZANTEMA (AT-15)	1996	A	L	M	5	300	(8)	T	No	2M or 2M	Yes	-	-	Yes	No	No	AT-15, JR, 1 L & 1 M controlled
9M123-F2 (AT-15/F)	1997	A	L	M	10	300	(8)	FAE	No	1	Yes	-	-	Yes	No	Yes	AT-15, JR, L or M controlled
9M123-M2 (AT-15/H)	1997	A	L	M	5	300	(8)	HE	No	1	Yes	-	-	Yes	Yes	No	AT-15, JR, L or M controlled
9M131 METIS-F1 (AT-13/F)	1995	A	L		2	80	(7)	FAE,T	No	1	Yes	TI	-	Yes	No	Yes	AT-13 (AT-7M)
9M131 METIS-M (AT-13)	1994	A	L		2	80	(7)	T	No	1	Yes	TI	-	Yes	No	No	AT-13 (AT-7M)
9M131 METIS-M2 (AT-13/H)	1995	A	L		2	80	(7)	HE,T	No	1	Yes	TI	-	Yes	Yes	No	AT-13 (AT-7M)
9M131M METIS-M1 (AT-7V)	2004	S	WIR		2	80	(7)	FAE	No	1	Yes	-	-	No	No	Yes	AT-7V
9M133 KORNET (AT-14)	1994	S	L		5	275	(9)	T	No	1	Yes	TI	-	Yes	No	No	AT-14, JR
9M133-E "KORNET E" (AT-14 PJ)	1999	S	L		50	275	(9)	PJ	No	1	Yes	TI	-	No	No	No	AT-14, JR, PJ instead of AT
9M133-F1 (AT-14/F)	1996	S	L		10	275	(9)	FAE	No	1	Yes	TI	-	Yes	No	Yes	AT-14, JR

Missile	Year	Control	Guidance	Guidance 2	Min Range	Max Range	Pen	Warhead	TW?	ROF	BB?	NF	Vertical	AH?	HE?	FAE?	Notes
9M133-M2 (AT-14/H)	1996	S	L		5	275	(9)	HE	No	1	Yes	TI	-	Yes	Yes	No	AT-14, JR
9M14 MALYUTKA (AT-3)	1960	M	W		25	150	(4)		No	1	No	-	-	No	No	No	AT-3 "Sagger", Remote 1cm
9M14-2 (AT-3D)	1992	S	WIR		25	150	(6)	T	No	1	No	-	-	No	No	No	AT-3D
9M14-M (AT-3B)	1963	M	W		25	150	1		No	1	No	-	-	No	No	No	AT-3B, Remote 1cm, Training round KE pen
9M14MB1	1985	S	L		25	150	(5)	P	No	1	No	-	-	No	No	No	Sagger C Copy
9M14-P (AT-3C)	1971	S	WIR		25	150	(6)		No	1	No	-	-	No	No	No	AT-3C, Remote 1cm
9M14-P (AT-3Ci)	1985	S	WIR		25	150	(6)	P	No	1	No	-	-	No	No	No	AT-3C, Remote 1cm
9M14-S (AT-3E)	1997	S	WIR		25	175	(7)	T	No	1	No	-	-	No	No	No	AT-3E
9M177-M SHEKSNA-2 (AT-12B)	1990	S	L		5	200	(6)	T	No	1	Yes	-	-	Yes	No	No	AT-12B
9M177-M2 (AT-12/H)	1991	S	L		5	200	(6)	HE	No	1	Yes	-	-	Yes	Yes	No	AT-12
9M17-M (AT-2 Swatter B)	1967	M	R		25	175	(5)		No	1	No	-	-	No	No	No	AT-2 "Swatter B"
9M17-MP FLEYTA (AT-2C)	1975	S	R	WIR	50	200	(6)		No	1	No	-	-	No	No	No	AT-2C "Swatter D"
9M17-P (AT-2 Swatter C)	1975	M	R		25	175	(5)		No	1	No	-	-	No	No	No	AT-2 "Swatter C"
ADATS	1986	S	L		25	400	(8)		No	1	Yes	-	-	No	No	No	
AGM114A/HLLFIRE	1984	A	L		75	400	(8)	P	No	1*	Yes	-	VD	No	No	No	* May fire 1 missile per designator.
AGM114C/HLLFIRE	1986	A	L		75	400	(8)	P	No	1*	No	-	VD	No	No	No	* May fire 1 missile per designator.
AGM114F/HLLFIRE	1989	A	L		75	400	(9)	T	No	3M/1*	No	-	VD	No	No	No	* May fire 1 missile per designator.
AGM114K/HLLFIRE II	1995	A	L		25	450	(9)	T	No	3M/1*	No	-	VD	No	No	No	* May fire 1 missile per designator.
AGM114L LONGBOW	1998	F	M		25	450	(10)	T	No	16M	No	-	VD	Yes	No	No	
Aries	1996	F	S		3	100	(8)	T	No	1	No	-	-	No	No	No	
AS-11	1963	M	W		25	150	(6)		No	1	Yes	-	-	No	No	No	
Bantam	1963	M	W		15	100	(4)		No	1	No	-	-	No	No	No	Remote 6cm
BILL	1986	S	WIR		8	100	(4)		No	1	No	-	VA	No	No	No	
BILL (TI)	1990	S	WIR		8	100	(4)		No	1	No	TI	VA	No	No	No	
BILL-2	1998	S	L		5	75	(6)	T	No	1	No	TI	VA	Yes	No	No	
BRIMSTONE	2004	F	M		25	450	(10)	T	No	16M	No	-	VD	Yes	No	No	
Chyu-Mat	1988	A	L		4	200	(7)		No	1	Yes	-	-	Yes	No	No	
Cibel 2K	1993	S	WIR		20	150	(5)		No	1	No	II	-	No	No	No	Remote 2.5cm
Cibel 2K (TI)	1995	S	WIR		20	150	(5)		No	1	No	TI	-	No	No	No	Remote 2.5cm
COBRA	1960	M	W		20	80	(4)		No	1	No	-	-	No	No	No	Remote 3cm
COBRA 2000	1965	M	W		20	100	(5)		No	1	No	-	-	No	No	No	Remote 3cm
COPPERHEAD (155mm CLGP)	1984	A	L		0	400	(6)		No	1*	No	-	VD	No	No	No	* May fire 1 missile per designator.
DRAGON	1974	S	WIR		4	50	(5)		No	1	Yes	-	-	No	No	No	
DRAGON ROBOT	1995	A	WIR		4	75	(6)	T	No	2M	Yes	TI	-	No	No	No	Ripple fire system
DRAGON-2	1992	S	WIR		4	50	(6)		No	1	Yes	-	-	No	No	No	
Drakon	1968	M	R		25	225	(6)		No	1	No	-	-	No	No	No	
ENTAC 58	1957	M	W		20	100	(5)		No	1	No	-	-	No	No	No	Remote 5cm
ERYX	1985	S	WIR		2	30	(7)	JR	No	1	No	-	-	No	No	No	Soft Launch

Missile	Year	Control	Guidance	Guidance 2	Min Range	Max Range	Pen	Warhead	TW?	ROF	BB?	NF	Vertical	AH?	HE?	FAE?	Notes
FITOW	1990	S	WIR		4	185	(4)	Tw	Yes	1	Yes	-	VA	No	No	No	
GRAN (120mm CLGP)	2004	A	L		0	400	(5)		No	1*	No	-	VD	No	No	No	* May fire 1 missile per designator.
HJ-73 (Hang Jian)	1975	M	W		15	150	(4)		No	1	No	-	-	No	No	No	
HJ-73C	1985	M	W		15	150	(5)		No	1	No	-	-	No	No	No	
HJ-8 (Type 302)	1985	S	WIR		10	200	(6)		No	1	Yes	-	-	No	No	No	
HJ-8A	1995	S	WIR		10	200	(7)	T	No	1	No	-	-	No	No	No	
HOT	1977	S	WIR		4	200	(7)		No	1	Yes	-	-	No	No	No	
HOT-2	1986	S	WIR		4	200	(8)		No	1	Yes	-	-	No	No	No	
HOT-2MP	1993	S	WIR		4	200	(7)	HE	No	1	Yes	-	-	No	Yes	No	
HOT-2T	1993	S	WIR		4	200	(9)	T+JR	No	1	Yes	-	-	No	No	No	
JAVELIN ATGW	1998	F	S		5	125	(5)	T	No	1	No	TI	VA	No	No	No	VA is optional, Soft Launch
KAM-3D (TYPE 64)	1964	M	W		20	90	(4)		No	1	No	-	-	No	No	No	
KAM-9 (TYPE 79)	1984	S	WIR		4	200	(6)		No	1	Yes	-	-	No	No	No	Remote 2.5cm
Kitolov-2M (122mm CLGP)	2002	A	L		0	400	(5)		No	1*	No	-	VD	No	No	No	* May fire 1 missile per designator.
Krasnopol (152mm CLGP)	2000	A	L		0	400	(6)		No	1*	No	-	VD	No	No	No	* May fire 1 missile per designator.
Kun Wu 1	1979	M	W		15	150	(4)		No	1	No	-	-	No	No	No	
LAHAT	2000	S	L		2	200	(6)		No	1	Yes	-	-	No	No	No	
MAF	1996	A	L		4	150	(7)		No	1	No	TI	-	No	No	No	
MALKARA	1962	M	W		30	200	(7)		No	1	No	-	-	No	No	No	
MAMBA	1972	M	W		15	100	(6)		No	1	No	-	-	No	No	No	Remote 3cm
MAPATS	1984	S	L		4	250	(7)	P	No	1	No	TI	VA	Yes	No	No	
MAPATS-E	1990	S	L		150	250	(7)	PJ	No	1	No	TI	-	No	No	No	PJ instead of AT
MATHAGO A	1978	M	W		16	105	(4)		No	1	No	-	-	No	No	No	Remote 2.5cm
MATHAGO B	1985	M	W		16	150	(4)		No	1	No	-	-	No	No	No	Remote 2.5cm
MILAN	1974	S	WIR		2	100	(6)		No	1	No	II	-	No	No	No	
MILAN-2	1984	S	WIR		2	100	(7)	P	No	1	No	TI	-	Yes	No	No	
MILAN-2T	1993	S	WIR		2	100	(7)	T	No	1	No	TI	-	Yes	No	No	
MILAN-3	1994	S	WIR		2	100	(7)	T+JR	No	1	No	TI	-	Yes	No	No	
Mosquito	1962	M	WIR		18	115	(5)		No	1	No	-	-	No	No	No	
MSS-1	1995	A	L		4	150	(7)		No	1	Yes	-	-	No	No	No	
NAG	1997	A	WIR		10	225	(8)	T	No	1	No	TI	-	No	No	No	
Nimrod	1993	A	L		50	1300	(9)		No	1*	No	-	VD	No	No	No	* 1 missile per designator
NLAW 4	2000	A	F		3	30	(6)	Tw	Yes	1	No	-	VA	No	No	No	Soft Launch
None	0	M			0	0	-		No		No	-	-	No	No	No	
NT-D DANDY	1999	F	S	F	10	500	(6)	T	No	1	Yes	-	VD	No	No	No	FO or SIR (or mix of both),
NT-G GILL	1999	F	S		10	125	(6)	T	No	1	Yes	-	VD	Yes	No	No	
NT-S SPIKE	1999	F	S	F	10	200	(6)	T	No	1	Yes	-	VD	No	No	No	FO or SIR (or mix of both),
SAAB/HLITOW	1998	S	WIR		4	185	(6)		No	1	Yes	II	-	No	No	No	
SHILLELAGH	1967	M	L		25	225	(6)		No	1	No	-	-	No	No	No	
Spaviero	1994	A	WIR		4	150	(6)		No	1	Yes	-	-	No	No	No	
SS-10	1952	M	W		30	80	(4)		No	1	No	-	-	No	No	No	

Missile	Year	Control	Guidance	Guidance 2	Min Range	Max Range	Pen	Warhead	TW?	ROF	BB?	NF	Vertical	AH?	HE?	FAE?	Notes
SS-11 HARPON	1962	M	W		25	150	(6)		No	1	Yes	-	-	No	No	No	
SWINGFIRE	1969	M	WIR		8	200	(7)		No	1	No	-	-	No	No	No	Remote 5cm
SWINGFIRE (TI)	1984	M	WIR		8	200	(7)		No	1	No	TI	-	No	No	No	Remote 5cm
SWINGFIRE-4	1992	S	WIR		8	200	(7)		No	2M	No	TI	-	No	No	No	Ripple fire system
TRIGAT-LR	1998	F	S		25	250	(9)	T+JR	No	1	No	-	VD	No	No	No	
TRIGAT-MR	1997	S	L		3	120	(9)	T+JR	No	1	No	-	-	No	No	No	
VIGILANT	1962	M	W		10	68	(4)		No	1	Yes	-	-	No	No	No	Remote 4cm
ZT-3 Swift	1989	S	L		4	250	(6)		No	1	No	-	-	No	No	No	
ZT-4 Swift	1995	A	L		5	400	(7)	P	No	1	No	-	-	No	No	No	
ZT-4A Swift	1997	A	L		5	400	(7)	T	No	1	No	-	-	No	No	No	

W.5 - DIRECT FIRE TARGETING MODIFIERS/AREA FIRE MODIFIERS in Brackets

The following targeting modifiers are used to find the final roll required to hit a target.

Target Action or Status	Gun	W	WIR	L	R	S	M	F	VA	AuT
Firer suppressed	+2 (-2)	+5 (-3)	+5 (-3)	+5 (-3)	+5 (-3)	-	-	+5 (-3)	-	+2 (-2)
Firer is Damaged Aircraft	+4 (-4)	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	-	-	+8 (-6)	-	+4 (-4)
Extra large target (X)	-1 (+3)	-1 (+3)	-1 (+3)	-1 (+3)	-1 (+3)	-1 (+3)	-1 (+3)	-1 (+3)	-	-1 (+3)
Medium target (M)	+2 (+2)	+2 (+2)	+2 (+2)	+2 (+2)	+2 (+2)	+2 (+2)	+2 (+2)	+2 (+2)	-	+2 (+2)
Small target (S)	+4 (+1)	+4 (+1)	+4 (+1)	+4 (+1)	+4 (+1)	+4 (+1)	+4 (+1)	+4 (+1)	-	+4 (+1)
Very small (V) or Tiny (T) target	+6 (0)	+6 (0)	+6 (0)	+6 (0)	+6 (0)	+6 (0)	+6 (0)	+6 (0)	-	+6 (0)
Second shot at same target	-2 (+1)	-	-	-	-	-	-	-	-	-2 (+1)
Per 10cm target moved (or part of), Not INF on foot	+2 (-1)	+1 (-½)	+1 (-½)	+1 (-½)	+1 (-½)	+1 (-½)	+1 (-½)	+1 (-½)	-	+1 (-½)
Came into sight	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	-	+2 (-1)
Went out of sight/Cover evade	+2 (-1)	+4 (-2)	+4 (-2)	+4 (-2)	+4 (-2)	+4 (-2)	+4 (-2)	+4 (-2)	-	+1 (0)
Target made manoeuvre evade	-	-	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	-	-
Smoke evade (no TI or VIRSS)	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	-	+8 (-6)	-	+8 (-6)
Smoke evade (with TI)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	-	-	+2 (-1)	-	+2 (-1)
Flares/Decoys/IR Jammer	+6** (-3)	+6** (-3)	+6 (-3)	+4 (-2)	+6** (-3)	+6 (-3)	-	+6** (-3)	-	+6** (-3)
Laser Jammer, Firer (LFC+), <= 50cm	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	+2 (-1)	-	-	+3 (-2)
Aerosol Chaff	-	-	+2 (-1)	+2 (-1)	-	-	+6 (-3)	-	-	-
Firing into woods or BUA#	-	+2 (-1)	+2 (-1)	-	+2 (-1)	-	-	+2 (-1)	-	-
Target dug-in with overhead cover###	-	-	-	-	-	-	-	-	+3 (-2)	-
Per point of jamming	-	-	-	-	+2 (-1)	-	+2 (-1)	-	-	-
AMD Type 1 (e.g. Arena)	-	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	+8 (-6)	-	-

VA = VERTICAL ATTACK, VERTICAL DIVE & CLGP MISSILES.

* INCLUDING LAWS, HVM & OTHER DIRECT FIRE WEAPONS.

** ONLY IF DAZZLERS AND FIRER IS USING TI, OTHERWISE NO EFFECT.

BUT IF TARGET IS ON THE EDGE OF THE WOODS OR BUILT UP AREA.

MODIFIER IS CUMULATIVE (e.g. if a wire guided missile with vertical attack warhead fired at a dug-in target with overhead cover in a wood there would be a +2 for the woods and a further +3 for overhead cover).

Once the final modifier is calculated round down the result. So if the total comes to -2 ½ round down to 2.

W.6 - EXAMPLES OF ARMOUR VALUES

All vehicles have been given a numbered armour class for their front, sides, rear and top aspects. The following table gives the armour classes with some examples. The basic armour class can be improved against CE attack using special armour, the modifiers are also provided.

ARMOUR CLASS	ESTIMATED ARMOUR LEVEL	WEAPON REQUIRED TO PENETRATE	VEHICLE TYPE (KE Armour value)
0	NO ARMOUR	All	SOFT VEHICLE (Jeep)
1	UPTO 50mm RHA	HMG/20mm Autocannon	APC (M113, BTR-80 etc)
2	51-125mm RHA	30-45mm Autocannon	MICV (M2A2, BMP-3)
3	126-250mm RHA	85-100mm	1950-69 MBT (M60, T-55)
4	251-500mm RHA	100-115mm	1970-85 MBT (M1, T-72)
5	501-750mm RHA	120-125mm	1986-95 MBT (M1A1, T-80)
6	751-1000mm RHA	120-125mm Long barrel	1996+ MBT (M1A2, T-90)
7	1001-1250mm RHA	CE warhead of 100mm	NONE
8	1251-1500mm RHA	CE warhead of 125mm	NONE
9	1501-1750mm RHA	CE warhead of 150mm+	NONE
10	1751-2000mm RHA	LGB, Large Missile	NONE
ARMOUR MODIFIER	SPECIAL ARMOUR	SPECIAL ARMOUR EXPLANATION	
-	NONE	Basic steel or aluminium armour.	
+1	SPACED	Outer layer of armour using the air gap to dissipate the molten jet.	
+2	LAMINATE	Light layers of composite materials or multi-spaced armour. E.g. Russian "combination K"	
+3	COMPOSITE	Composite materials or inert inter layers. E.g. British "Chobham" armour.	
+4	HEAVY COMPOSITE	The latest passive inter-layers or depleted uranium mesh. E.g. U.S. M1A1 (HA) with DU armour.	
-	ROOF ARMOUR	Any special armour on top of an AFV (including ERA) adds to the armour class when attacked by artillery fire, top attack ATGMs or bombs.	
E	ERA	Early Explosive Reactive Armour (ERA) only has an effect against CE rounds	
H	HEAVY ERA	The latest heavy ERA (i.e. Kontakt-5) has 25-35mm RHA and affects all rounds (this has been taken into account in the KE armour class).	
MR	MINE RESISTANT	The vehicle under body has increased armour or ERA to overcome mines.	

Note; RHA is Rolled Homogenous Armour.

W.7 - AREA FIRE NUMBERS

The area fire effectiveness of an element depends on its weapons, which are all used by firing in the general direction of a soft target. Firstly work out the point value of ALL the weapons at each range band and then convert that number into the base chance to suppress or destroy the target.

BASE INFANTRY STRENGTH OR WEAPON SYSTEM	RANGE (UP TO & INC)			
	10cm	25cm	50cm	100cm
FULL INFANTRY SECTION WITH PISTOLS	2	0	0	0
FULL INFANTRY SQUAD WITH ASSAULT RIFLES	4	2	1	0
FULL INFANTRY SQUAD WITH H.ASSAULT RIFLES	6	6	6	0
FULL INFANTRY SQUAD WITH L.ASSAULT RIFLES	4	3	2	0
FULL INFANTRY SQUAD WITH RIFLES	3	2	2	0
FULL INFANTRY SQUAD WITH SMG'S	4	1	0	0
HALF INFANTRY SECTION WITH ASSAULT RIFLES	2	1	1	0
HALF INFANTRY SECTION WITH H.ASSAULT RIFLES	3	3	3	0
HALF INFANTRY SECTION WITH L.ASSAULT RIFLES	2	2	1	0
HALF INFANTRY SECTION WITH PISTOLS	1	0	0	0
HALF INFANTRY SECTION WITH RIFLES	2	1	1	0
HALF INFANTRY SECTION WITH SMG'S	2	1	0	0
MAIN GUN FIRING CANISTER ROUND	6	0	0	0
MAIN GUN FIRING HE ROUND	4	4	4	3
MAIN GUN FIRING HEAT/HESH ROUND	3	3	3	2
MAIN GUN FIRING PROXIMITY FUSED HE ROUND	3	6	6	6
AUTO FIRING HE ROUNDS/CHAIN GUN FIRING AP	5	4	4	1
AUTO/CHAIN FIRING PROXIMITY ROUND (e.g. AHEAD)	3	6	6	5
AUTOCANNON FIRING AP ROUNDS	4	3	3	1
CHAIN GUN FIRING HE ROUNDS	6	5	5	2
GATLING GUN FIRING AP ROUNDS	6	5	5	3
GATLING GUN FIRING HE ROUNDS	7	6	6	4
12.7/14.5mm HEAVY MACHINEGUN	3	3	2	1
SUBSEQUENT WEAPON MODIFIERS				
AUTOMATIC GRENADE LAUNCHER (AGS-17)	4	3	3	2
AUTOMATIC GRENADE LAUNCHER WITH LFC	5	4	4	3
FLAMETHROWER	7	0	0	0
LAW FIRING FAE ROUND (RPO-A)	0	9	9	0
LIGHT MACHINEGUN (M60, Pivot MG)	2	2	2	0
MINIGUN (5.56-7.62mm)	5	3	3	1
MORTAR 83mm & OVER	0	4	4	4
MORTAR UP TO & INC 82mm	0	3	3	3
SQUAD ASSAULT WEAPON (E.g. M249)	2	1	1	0
SUSTAINED FIRE MACHINEGUN (Vehicle co-ax MG)	3	2	2	1

AREA FIRE TARGETING

Using the AREA FIRE NUMBER work out the effectiveness for the different range bands.

FINAL NUMBER	TARGET STATUS					
	IN OPEN		IN COVER		HEAVY COVER	
	S	K	S	K	S	K
1	13	18	16	21	18	23
2	12	17	15	20	17	22
3	11	16	14	19	16	21
4	10	15	13	18	15	20
5	9	14	12	17	14	19
6	8	13	11	16	13	18
7	7	12	10	15	12	17
8	6	11	9	14	11	16
9	5	10	8	13	10	15
10	4	9	7	12	9	14
11	3	7	5	10	7	12
12	2	5	3	8	5	10
13+	2	3	3	6	4	8

MODIFIERS: -1 PER EXTRA BARREL (AFTER FIRST)
 -1 IF VETERAN/ELITE
 +1 IF MILITIA/CONSCRIPT

W.8 - MORALE

The die roll required to pass a morale test depend on the percentage losses and whether the commander is still alive and/or in command control. The morale scores are as taken from the following table:

MORALE LEVEL	PERCENTAGE LOSSES			
	25%	26-50%	51-75%	76%+
MILITIA with CO	6	8	10	11
MILITIA without CO	8	10	12	12
CONSCRIPT with CO	5	7	9	11
CONSCRIPT without CO	6	8	11	12
REGULAR with CO	4	5	7	10
REGULAR without CO	5	7	10	12
VETERAN with CO	3	4	6	9
VETERAN without CO	4	5	8	11
ELITE with CO	2	3	5	8
ELITE without CO	3	4	7	10

MODIFIER: -1 For Battalion or higher level commanders.

W.9 - ARTILLERY EFFECTIVENESS

The artillery effectiveness number is worked out from the following table:

CALIBRE	AMMUNITION	INFANTRY						VEHICLE CE ROOF ARMOUR									
		OPEN		COVER		OHC		0		1		2		3		4	
		S	K	S	K	S	K	S	K	S	K	S	K	S	K	S	K
UPTO 82mm	HE	10	18	14	20	16	20	9	16	12	20	13	20	14	20	15	20
	AIRBURST	8	16	11	18	18	21	5	14	18	21	19	21	20	21	20	21
83-129mm	HE	8	17	12	19	14	20	7	15	9	19	11	20	13	20	14	20
	AIRBURST	6	15	9	17	16	21	3	13	17	21	18	21	19	21	20	21
130-155mm	HE	6	16	10	18	12	19	5	14	7	18	9	19	11	20	13	20
	AIRBURST	4	14	7	16	14	21	2	12	16	21	17	21	18	21	19	21
156mm+	HE	4	15	8	17	10	18	3	13	6	17	7	18	9	19	11	20
	AIRBURST	2	13	5	15	12	20	2	11	15	21	16	21	17	21	18	21
SPECIAL ROUNDS		S	K	S	K	S	K	S	K	S	K	S	K	S	K	S	K
BOMBLET (ICM)		2	14	6	16	8	17	2	10	7	15	8	16	9	17	10	18
MINELET*/HEAT		10	19	15	20	16	20	3	12	5	14	6	15	7	16	8	17
SMART ROUNDS		16	20	18	20	19	20	6	14	2	10	3	12	4	13	5	14
FUEL AIR EXPLOSIVE		2	4	2	6	2	7	2	5	2	18	2	18	2	18	2	18

* Scatter mines with top attack ability.

MODIFIERS: -1 Multi-Barrel Rocket Launcher firing HE, Airburst or FAE.
 -3 SSM firing HE.
 -1 Rocket Pod rounds 68-79mm firing HE.
 -2 Rocket Pod rounds 80mm+ firing HE.

W.10 - CEP DIE

Cross refer the battery's fire control system with the positioning system to give the CEP die.

FIRE CONTROL SYSTEM	POSITIONING SYSTEM		
	SATELLITE	OTHER	NONE
ADVANCED	d4 (d5)	d5 (d6)	d6 (d8)
STANDARD	d5 (d6)	d6 (d8)	d8 (d10)
NONE	d6 (d8)	d8 (d10)	d10 (d12)

The number in brackets is for rockets.

W.11 - SHEAF SIZE

The size of the barrage zone depends on the number of weapons firing, the calibre and any special rounds.

CALIBRE	No OF GUNS	WIDTH	DEPTH
UP TO 99mm	1-2	5cm	5cm
	3-4	10cm	5cm
	5-6	15cm	5cm
	7+	20cm	10cm
100-154mm	1-2	10cm	5cm
	3-4	15cm	5cm
	5-6	20cm	10cm
	7+	25cm	15cm
155mm+	1-2	15cm	5cm
	3-4	20cm	10cm
	5-6	25cm	15cm
	7+	30cm	20cm

Notes: If firing bomblet, minelet or smart rounds add 5cm to width and depth.
Rocket zones depend on type and number.

W.12 - ANTI-AIRCRAFT FIRE

The following table provides the base percentage chance of aborting or shooting down an aircraft. The minimum/maximum ranges, fire control radar modifiers, etc vary between different systems.

WEAPON SYSTEM	RANGE		GEN	TARGET ALTITUDE									
	MIN	MAX		NOTE		CONTOUR		LOW		MEDIUM		HIGH	
				A	K	A	K	A	K	A	K	A	K
Small arms, LMG	-	30	-	96	00	94	99	96	00	-	-	-	-
12.7/14.5mm HMG	-	50	-	92	98	90	97	94	99	-	-	-	-
20-25mm Auto	-	75	-	90	97	88	96	90	98	94	99	-	-
26-39mm Auto	-	100	-	88	96	86	95	88	97	92	98	-	-
40-50mm Auto	-	150	-	86	95	84	94	86	96	90	97	-	-
51mm+ Auto	-	200	-	84	94	82	93	84	95	88	96	-	-
Gun up to 90mm	-	250	-	94	99	92	98	90	97	94	99	96	00
91-105mm Gun	-	300	-	96	00	92	98	90	97	92	98	94	99
106-130mm Gun	-	400	-	96	00	94	99	90	97	90	97	94	99
131mm+ Gun	-	500	-	96	00	94	99	92	98	90	97	92	98
MANPAD	-	-	1 st	88	96	86	95	84	94	88	96	-	-
	-	-	2 nd	86	95	84	94	82	93	86	95	-	-
	-	-	3 rd	84	94	82	93	80	92	84	94	-	-
SHORAD*	-	-	1 st	90	97	86	95	82	93	86	94	-	-
	-	-	2 nd	88	96	84	94	80	92	82	93	-	-
	-	-	3 rd	86	95	82	93	78	91	80	92	-	-
AREA SAM#	-	-	1 st	-	-	90	97	86	95	84	94	82	93
	-	-	2 nd	-	-	84	94	82	93	80	92	78	91
	-	-	3 rd	-	-	80	92	76	90	76	90	74	89

* Including Short Range Air-to-Air Missiles (but they cannot fire at NOTE targets)

Including Medium and Long Range Air-to-Air Missiles

MODIFIERS: -1% Per extra barrel (after the first) or chain gun.
 -2% Gatling gun.
 -1% If using acquisition only RADAR or TI.
 -1% Per Fire Control Radar level.
 -2% Air Defence Alerting Device (ADAD).
 +1% Militia/Conscript (guns and command guide missiles only).
 -1% Veteran/Elite (guns and command guide missiles only).

RANGE: The range for missile systems depends on the specific missile system. The range for direct fire weapons is increased by 50% if gun has fire control system.

ANTI-AIRCRAFT MODIFIERS

The following table provides the modifiers for all AA fire:

FIRER STATUS	GUIDANCE SYSTEM				
	AAA	OPTICAL*	RADIO	IRH	RADAR**
FIRER SUPPRESSED	-5%	-5%	-5%	-	-
FIRED TO TARGETS FRONT	-	-	-	-2%	-
TARGET ACTION	AAA	OPTICAL*	RADIO	IRH	RADAR**
POPPED UP WITH NOSE SIGHT	-1%	-1%	-1%	-	-
POPPED UP WITH CABIN SIGHT	-2%	-2%	-2%	-	-
POPPED UP WITH ROOF SIGHT	-3%	-3%	-3%	-1%	-1%
POPPED UP WITH MAST SIGHT	-5%	-5%	-5%	-5%	-5%
TARGET MOVEMENT	AAA	OPTICAL*	RADIO	IRH	RADAR**
HOVERED (MOVED UP TO 5cm)	+20%	+20%	+20%	-	-
MOVED 51-100cm (inc EXITED TABLE)	-2%	-1%	-1%	-	-
MOVED 101-200cm	-4%	-3%	-3%	-	-
MOVED 201cm+ (inc ENTERED TABLE)	-5%	-4%	-4%	-	-

*OPTICAL includes Laser/Fibre-Optic guided missiles using optical back up and RADAR command guided.

**RADAR is radar self homing (fire & forget) missiles.

OTHER MODIFIERS

-2% PER POINT OF JAMMING (RADAR OR RADIO ONLY)

+/-% TARGETS IR VALUE IF IRH MISSILE (INC IR COUNTER MEASURES)

+/-% TARGETS RADAR VALUE IF RADAR MISSILE (INC RADAR COUNTER MEASURES)

W.13 - VEHICLE SPEED

The following provides details of how each vehicles speed was worked out;

- MOVING ROAD SPEED = take the AFVs known road speed, reduce it to 60% (a reduction of 20% for the scale 50cm=1km and a further 20% for being in a war zone) and round it up or down to the nearest 5.
- MOVING CROSS COUNTRY (XC) SPEED = take the AFVs known XC speed* and reduce it to 60%.
- ADVANCING SPEED = Take the road or XC speed and reduce it by 20% if the vehicle has 3 axis stabilisation, 30% for 2 axis, 40% for 1 axis and 50% for unstabilised.

*If the XC speed is not published reduce a tracked vehicles road speed by 25% if it has a high off road capability, 33% for standard vehicles and 50% if it has a poor XC performance. A wheeled vehicles road speed should be reduced by 50% if it has a high off road capability, 66% for standard vehicles and 80% if it has a poor XC performance.

X. COUNTERS

The following SUPPRESSED, FIRER and TARGET MARKERS should be photocopied, cut out and mounted on cardboard.

S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19

The following MORALE MARKERS should be photo-copied, cut out and mounted on cardboard.

HESITATE	HESITATE	HESITATE	HESITATE	HESITATE
HESITATE	HESITATE	HESITATE	HESITATE	HESITATE
HALT	HALT	HALT	HALT	HALT
HALT	HALT	HALT	HALT	HALT
WITHDRAW	WITHDRAW	WITHDRAW	WITHDRAW	WITHDRAW
WITHDRAW	WITHDRAW	WITHDRAW	WITHDRAW	WITHDRAW
RETREAT	RETREAT	RETREAT	RETREAT	RETREAT
RETREAT	RETREAT	RETREAT	RETREAT	RETREAT

Y. Weather

Weather Type	d6 roll	Temp Roll	Ground Effect	Air Effect	Spotting	Notes
Dusty	1-6	Any	Good Going	All	Normal	See Dusty special rules below. 1
Clear	1	Any	Good Going	All	Normal	See Dusty special rules below. 1
	2-5	Any	Normal	All	Normal	
	6	1-4	L.Snow	2-6	Normal	See Freezing Temperature Rules below. 2
	6	5-8	Normal	3-6	Mist	3
O.cast	6	9-12	Poor Going	2-6	Normal	Ground is still soaked from earlier rain. 4
	1-4	Any	Normal	All	Overcast	5
	5-6	1-4	L.Snow	2-6	Normal	See Freezing Temperature Rules below. 2
	5-6	5-8	Normal	5-6	Fog	6
L.Rain	5-6	9-12	Poor Going	2-6	Overcast	Ground is still soaked from earlier rain. 7
	1-3	Any	Normal	2-6	Light Rain	8
	4-6	1-4	L.Snow	3-6	Light Rain	See Freezing Temperature Rules below. 9
	4-6	5-12	Poor Going	3-6	Light Rain	Ground is still soaked from earlier rain. 10
Rain	1-2	Any	Normal	3-6	Rain	11
	3-5	Any	Poor Going	4-6	Rain	12
	6	Any	Poor Going	4-6	Rain	Flooding (see below for rule) 12
H.Rain	1	Any	Normal	4-6	Heavy Rain	13
	2-4	Any	Poor Going	5-6	Heavy Rain	14
	5-6	Any	Poor Going	5-6	Heavy Rain	Flooding (see below for rule) 14
Storm	1-3	Any	Normal	5-6	Heavy Rain	13
	4-5	Any	Poor Going	6	Heavy Rain	Flooding (see below for rule) 14
	6	Any	Bad Going	6	Heavy Rain	Flooding (see below for rule) 15
L.Snow	1-3	Any	Normal	2-6	Light Snow	See Freezing Temperature Rules below. 16
	4-6	Any	L.Snow	2-6	Light Snow	See Freezing Temperature Rules below. 17
Snow	1-2	Any	Normal	3-6	Snow	See Freezing Temperature Rules below. 18
	3-4	Any	L.Snow	3-6	Snow	See Freezing Temperature Rules below. 19
	5-6	Any	Snow	3-6	Snow	See Freezing Temperature Rules below. 20
H.Snow	1	Any	Normal	4-6	Heavy Snow	See Freezing Temperature Rules below. 21
	2	Any	L.Snow	4-6	Heavy Snow	See Freezing Temperature Rules below. 22
	3-4	Any	Snow	4-6	Heavy Snow	See Freezing Temperature Rules below. 23
	5-6	Any	H.Snow	5-6	Heavy Snow	See Freezing Temperature Rules below. 24

In freezing temperature - all rivers, streams and marshes will be frozen. Roads will be dangerous at speeds above advance if the roads aren't gritted. If travelling at "move" speed then apply paragraph E4 and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. On the next turn roll a d10 again and use the rules relating to movement definition relating to Streams/ditches.

When there is snow on the ground the player with the smaller force will roll a d6 against the following table.

Roll d6	Urban Road	Major Road	Minor Road
1	Cleared & Gritted	Cleared & Gritted	Cleared & Gritted
2	Cleared & Gritted	Cleared & Gritted	Cleared & Gritted
3	Cleared & Gritted	Cleared & Gritted	Cleared
4	Cleared & Gritted	Cleared	Cleared
5	Cleared	Cleared	Blocked with Snow
6	Blocked with Snow	Blocked with Snow	Blocked with Snow

Die Roll modifiers

L.Snow on ground = -1

H.Snow on Ground = +1

Temperature Roll 1 = +1 (Player with Higher S numbers d12 Roll)

Temperature Roll 4 = -1 (Player with Higher S numbers d12 Roll)

Dazzle – the player facing the sun will have to roll on the observation table even if the item being observed would normally be automatically visible at that range. The danger of friendly fire is increased to a roll of 1 or 2 on the d10. The sun rises in the East and sets in the West. Dazzle occurs for the first hour after sunrise and the hour before sun set if there is no cloud

Orientation - Roll d12. If a Warsaw Pac army involved then that player (if two the one with the highest initiative) is due North on 1-3, East 4-10, South 11-12. Otherwise, highest initiative player is due North on 1-3, West 4-9, South 10-12.

Wind - Speed roll d6. 1 none, 2-5 normal, 6 strong all smoke ineffective (blown away)

Wind - Direction 1 North, 2 North East, 3 East, 4 South East, 5 South, 6 South West, 7 West, 8 North West gives the direction the wind is blowing towards.

Y0 - Good terrain, normal, dusty

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
CLEAR DAYLIGHT	250cm	-	-	-	-	300cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	50/-	40/-	30/-	10/-	3/-	1/-
IN HEAVY COVER	50/25	40/20	30/15	10/-	5/-	3/-
IN COVER	70/35	50/25	40/20	20/5	10/2	5/1
IN OPEN OR MOVED IN COVER	150/75	100/50	70/35	50/20	20/5	10/2
FIRED OR MOVED IN OPEN	250/125	200/100	150/75	100/40	40/10	20/5
FIRED AND MOVED	300/250	300/200	300/150	200/75	100/20	40/10
FIRED (OR USING WL) AT NIGHT	200/200	200/200	200/200	200/200	200/200	200/125

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Dusty - All Vehicles produce Smoke Generator (SG) like dust trail.

This counts as partial smoke for spotting.

Strong wind reduce trail by half, normally 30cm in strong wind 15cm.

Movement

Good terrain - The element can use 90% of its road speed cross country.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Example :-

Normal movement of 40 RS becomes 90%(36) so XC speed would be 36cm

If no night vision aids them

Normal movement of 40 RS becomes 90%(36) -50%(18) so XC speed would be 18cm.

Y1 - Light Snow, Normal, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
CLEAR DAYLIGHT	250cm	-	-	-	-	300cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	50/-	40/-	30/-	10/-	3/-	1/-
IN HEAVY COVER	50/25	40/20	30/15	10/-	5/-	3/-
IN COVER	70/35	50/25	40/20	20/5	10/2	5/1
IN OPEN OR MOVED IN COVER	150/75	100/50	70/35	50/20	20/5	10/2
FIRED OR MOVED IN OPEN	250/125	200/100	150/75	100/40	40/10	20/5
FIRED AND MOVED	300/250	300/200	300/150	200/75	100/20	40/10
FIRED (OR USING WL) AT NIGHT	200/200	200/200	200/200	200/200	200/200	200/125

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.

- Is within a partial smoke screen (and observer is without TI).
- The observer is moving.
- The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.

If travelling at "move" speed then -10% on a road and -25% if cross-country

and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14
Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat)

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Y2 - Normal, Mist

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
MIST	50cm	8cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	50/-	40/-	30/-	10/-	3/-	1/-
IN HEAVY COVER	50/25	40/20	30/15	10/-	5/-	3/-
IN COVER	50/35	50/25	40/20	20/5	10/2	5/1
IN OPEN OR MOVED IN COVER	50/50	50/50	50/35	50/20	20/5	10/2
FIRED OR MOVED IN OPEN	50/50	50/50	50/50	50/40	40/10	20/5
FIRED AND MOVED	50/50	50/50	50/50	50/50	50/20	40/10
FIRED (OR USING WL) AT NIGHT	8/8	8/8	8/8	8/8	8/8	8/8

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.

- The observer is suppressed.

Mist – Roll d10 at the start of each turn. On a roll of 1-3 the mist clears. When Mist clears the weather becomes clear and aircraft become available, but any ground conditions remain the same.

Movement

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.

Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm.

Y3 - Poor terrain, Normal

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
CLEAR DAYLIGHT	250cm	-	-	-	-	300cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	50/-	40/-	30/-	10/-	3/-	1/-
IN HEAVY COVER	50/25	40/20	30/15	10/-	5/-	3/-
IN COVER	70/35	50/25	40/20	20/5	10/2	5/1
IN OPEN OR MOVED IN COVER	150/75	100/50	70/35	50/20	20/5	10/2
FIRED OR MOVED IN OPEN	250/125	200/100	150/75	100/40	40/10	20/5
FIRED AND MOVED	300/250	300/200	300/150	200/75	100/20	40/10
FIRED (OR USING WL) AT NIGHT	200/200	200/200	200/200	200/200	200/200	200/125

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.

Out-of-arc of the observer.

Is within a partial smoke screen (and observer is without TI).

The observer is moving.

The observer is suppressed.

Movement

Poor terrain = 50% of cross-country speed.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Example :-

Normal movement of 40 XC becomes 50%(20) so XC speed would be 20cm

If no night vision aids them

Normal movement of 40 XC becomes 50%(20) -50%(10) so XC speed would be 10cm.

Y4 - Normal, Overcast

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI

DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	50/-	40/-	30/-	10/-	3/-	1/-
IN HEAVY COVER	50/25	40/20	30/15	10/-	5/-	3/-
IN COVER	70/35	50/25	40/20	20/5	10/2	5/1
IN OPEN OR MOVED IN COVER	150/75	100/50	70/35	50/20	20/5	10/2
FIRED OR MOVED IN OPEN	250/125	200/100	150/75	100/40	40/10	20/5
FIRED AND MOVED	250/250	250/200	250/150	200/75	100/20	40/10
FIRED (OR USING WL) AT NIGHT	200/200	200/200	200/200	200/200	200/200	200/125

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Note:- Aircraft and helicopters can only fly at contour or below in overcast weather conditions.

Movement

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.

Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y5 - Normal, Fog

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm
FOG	2cm	3cm	NP	NP	NP	NP

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	3/-	3/-	3/-	3/-	3/-	1/-
IN HEAVY COVER	3/3	3/3	3/3	3/-	5/-	3/-
IN COVER	3/3	3/3	3/3	3/3	3/2	3/1
IN OPEN OR MOVED IN COVER	3/3	3/3	3/3	3/3	3/3	3/2
FIRED OR MOVED IN OPEN	3/3	3/3	3/3	3/3	3/3	3/3
FIRED AND MOVED	3/3	3/3	3/3	3/3	3/3	3/3
FIRED (OR USING WL) AT NIGHT	3/3	3/3	3/3	3/3	3/3	3/3

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).

- The observer is moving.
- The observer is suppressed.

Fog – Roll d10 at the start of each turn. On a roll of 1-3 fog becomes mist. When fog becomes mist and aircraft/Helicopters are not available roll a d6 to see if they become available, on a 3-6 they become available.
On changing to mist use Normal,mist charts(3).

Movement

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.
Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y6 - Poor terrain, Overcast

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	50/-	40/-	30/-	10/-	3/-	1/-
IN HEAVY COVER	50/25	40/20	30/15	10/-	5/-	3/-
IN COVER	70/35	50/25	40/20	20/5	10/2	5/1
IN OPEN OR MOVED IN COVER	150/75	100/50	70/35	50/20	20/5	10/2
FIRED OR MOVED IN OPEN	250/125	200/100	150/75	100/40	40/10	20/5
FIRED AND MOVED	250/250	250/200	250/150	200/75	100/20	40/10
FIRED (OR USING WL) AT NIGHT	200/200	200/200	200/200	200/200	200/200	200/125

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Note:- Aircraft and helicopters can only fly at contour or below in overcast weather conditions.

Movement

Poor terrain = 50% of cross-country speed.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.
Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes 50%(20) -25%(5) so XC speed would be 15cm

If no night vision aids them

Normal movement of 40 XC becomes 50%(20) -50%(10) so XC speed would be 10cm.

Y7 - Normal, Light Rain

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
LIGHT RAIN	100cm	10cm	NP	NP	50cm	25cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	25/-	20/-	15/-	5/-	1.5/-	0.5/-
IN HEAVY COVER	25/12.5	20/10	15/7.5	5/-	2.5/-	1.5/-
IN COVER	35/17.5	25/12.5	20/10	10/2.5	5/1	2.5/0.5
IN OPEN OR MOVED IN COVER	75/37.5	50/25	35/17.5	25/10	10/2.5	5/1
FIRED OR MOVED IN OPEN	100/62.5	100/50	75/37.5	50/20	20/5	10/2.5
FIRED AND MOVED	100/100	100/100	100/75	100/37.5	50/10	20/5
FIRED (OR USING WL) AT NIGHT	50/50	50/50	50/50	50/50	50/50	50/50

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country. Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y8 - Light Snow, Light Rain, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
LIGHT RAIN	100cm	10cm	NP	NP	50cm	25cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	25/-	20/-	15/-	5/-	1.5/-	0.5/-
IN HEAVY COVER	25/12.5	20/10	15/7.5	5/-	2.5/-	1.5/-
IN COVER	35/17.5	25/12.5	20/10	10/2.5	5/1	2.5/0.5
IN OPEN OR MOVED IN COVER	75/37.5	50/25	35/17.5	25/10	10/2.5	5/1
FIRED OR MOVED IN OPEN	100/62.5	100/50	75/37.5	50/20	20/5	10/2.5
FIRED AND MOVED	100/100	100/100	100/75	100/37.5	50/10	20/5
FIRED (OR USING WL) AT NIGHT	50/50	50/50	50/50	50/50	50/50	50/50

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.

- Is within a partial smoke screen (and observer is without TI).
- The observer is moving.
- The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.

If travelling at "move" speed then -10% on a road and -25% if cross-country

and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14
Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat)

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Y9 - Poor terrain, Light Rain

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
LIGHT RAIN	100cm	10cm	NP	NP	50cm	25cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	25/-	20/-	15/-	5/-	1.5/-	0.5/-
IN HEAVY COVER	25/12.5	20/10	15/7.5	5/-	2.5/-	1.5/-
IN COVER	35/17.5	25/12.5	20/10	10/2.5	5/1	2.5/0.5
IN OPEN OR MOVED IN COVER	75/37.5	50/25	35/17.5	25/10	10/2.5	5/1
FIRED OR MOVED IN OPEN	100/62.5	100/50	75/37.5	50/20	20/5	10/2.5
FIRED AND MOVED	100/100	100/100	100/75	100/37.5	50/10	20/5
FIRED (OR USING WL) AT NIGHT	50/50	50/50	50/50	50/50	50/50	50/50

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.

- The observer is suppressed.

Movement

Poor terrain = 50% of cross-country speed.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.
Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes 50%(20) -25%(5) so XC speed would be 15cm

If no night vision aids them

Normal movement of 40 XC becomes 50%(20) -50%(10) so XC speed would be 10cm.

Y10 - Normal, Rain

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
RAIN	50cm	8cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	16/-	13/-	10/-	3/-	3/-	-/-
IN HEAVY COVER	16/8	13/6	10/5	3/-	5/-	1/-
IN COVER	23/11	16/8	13/6	6/2	3/1	2/-
IN OPEN OR MOVED IN COVER	50/25	50/15	23/12	16/6	6/2	3/1
FIRE OR MOVED IN OPEN	50/41	50/50	50/25	33/13	13/3	6/2
FIRE AND MOVED	50/50	50/50	50/50	50/25	33/6	13/3
FIRE (OR USING WL) AT NIGHT	8/8	8/8	8/8	8/8	8/8	8/8

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.
Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y11 - Poor terrain, Rain

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
RAIN	50cm	8cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	16/-	13/-	10/-	3/-	3/-	-/-
IN HEAVY COVER	16/8	13/6	10/5	3/-	5/-	1/-
IN COVER	23/11	16/8	13/6	6/2	3/1	2/-
IN OPEN OR MOVED IN COVER	50/25	50/15	23/12	16/6	6/2	3/1
FIRED OR MOVED IN OPEN	50/41	50/50	50/25	33/13	13/3	6/2
FIRED AND MOVED	50/50	50/50	50/50	50/25	33/6	13/3
FIRED (OR USING WL) AT NIGHT	8/8	8/8	8/8	8/8	8/8	8/8

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

Poor terrain = 50% of cross-country speed.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.

Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes 50%(20) -25%(5) so XC speed would be 15cm

If no night vision aids them

Normal movement of 40 XC becomes 50%(20) -50%(10) so XC speed would be 10cm.

Y12 - Normal, Heavy Rain

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
HEAVY RAIN	50cm	5cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	12.5/-	10/-	7.5/-	2.5/-	0.75/-	-/-
IN HEAVY COVER	12.5/6	10/5	7.5/4	2.5/-	1.25/-	-/-
IN COVER	17/8	12.5/8	10/5	5/1.25	2.5/0.5	1.25/-
IN OPEN OR MOVED IN COVER	37.5/19	50/17	17/8	12.5/5	5/1.25	2.5/0.5
FIRED OR MOVED IN OPEN	50/31	50/25	37.5/19	25/10	10/2.5	5/1.25
FIRED AND MOVED	50/50	50/50	50/37.5	50/19	25/5	10/2.5
FIRED (OR USING WL) AT NIGHT	5/5	5/5	5/5	5/5	5/5	5/5

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country. Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y13 - Poor terrain, Heavy Rain

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
HEAVY RAIN	50cm	5cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	12.5/-	10/-	7.5/-	2.5/-	0.75/-	-/-
IN HEAVY COVER	12.5/6	10/5	7.5/4	2.5/-	1.25/-	-/-
IN COVER	17/8	12.5/8	10/5	5/1.25	2.5/0.5	1.25/-
IN OPEN OR MOVED IN COVER	37.5/19	50/17	17/8	12.5/5	5/1.25	2.5/0.5
FIRED OR MOVED IN OPEN	50/31	50/25	37.5/19	25/10	10/2.5	5/1.25
FIRED AND MOVED	50/50	50/50	50/37.5	50/19	25/5	10/2.5
FIRED (OR USING WL) AT NIGHT	5/5	5/5	5/5	5/5	5/5	5/5

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

Poor terrain = 50% of cross-country speed.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country. Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes 50%(20) -25%(5) so XC speed would be 15cm

If no night vision aids them

Normal movement of 40 XC becomes 50%(20) -50%(10) so XC speed would be 10cm.

Y14 - Bad terrain, Heavy Rain

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
HEAVY RAIN	50cm	5cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	12.5/-	10/-	7.5/-	2.5/-	0.75/-	-/-
IN HEAVY COVER	12.5/6	10/5	7.5/4	2.5/-	1.25/-	-/-
IN COVER	17/8	12.5/8	10/5	5/1.25	2.5/0.5	1.25/-
IN OPEN OR MOVED IN COVER	37.5/19	50/17	17/8	12.5/5	5/1.25	2.5/0.5
FIRED OR MOVED IN OPEN	50/31	50/25	37.5/19	25/10	10/2.5	5/1.25
FIRED AND MOVED	50/50	50/50	50/37.5	50/19	25/5	10/2.5
FIRED (OR USING WL) AT NIGHT	5/5	5/5	5/5	5/5	5/5	5/5

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

Bad terrain = 10% of cross-country speed.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country. Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes 10%(4) -25%(1) so XC speed would be 3cm

If no night vision aids them

Normal movement of 40 XC becomes 10%(4) -50%(2) so XC speed would be 2cm.

Y15 - Normal, Light Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
LIGHT SNOW	100cm	10cm	NP	NP	50cm	25cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	25/-	20/-	15/-	5/-	1.5/-	0.5/-
IN HEAVY COVER	25/12.5	20/10	15/7.5	5/-	2.5/-	1.5/-
IN COVER	35/17.5	25/12.5	20/10	10/2.5	5/1	2.5/0.5
IN OPEN OR MOVED IN COVER	75/37.5	50/25	35/17.5	25/10	10/2.5	5/1
FIRED OR MOVED IN OPEN	100/62.5	100/50	75/37.5	50/20	20/5	10/2.5
FIRED AND MOVED	100/100	100/100	100/75	100/37.5	50/10	20/5
FIRED (OR USING WL) AT NIGHT	50/50	50/50	50/50	50/50	50/50	50/50

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country. Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y16 - Light Snow, Light Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
LIGHT SNOW	100cm	10cm	NP	NP	50cm	25cm
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	25/-	20/-	15/-	5/-	1.5/-	0.5/-
IN HEAVY COVER	25/12.5	20/10	15/7.5	5/-	2.5/-	1.5/-
IN COVER	35/17.5	25/12.5	20/10	10/2.5	5/1	2.5/0.5
IN OPEN OR MOVED IN COVER	75/37.5	50/25	35/17.5	25/10	10/2.5	5/1
FIRED OR MOVED IN OPEN	100/62.5	100/50	75/37.5	50/20	20/5	10/2.5
FIRED AND MOVED	100/100	100/100	100/75	100/37.5	50/10	20/5
FIRED (OR USING WL) AT NIGHT	50/50	50/50	50/50	50/50	50/50	50/50

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.

If travelling at "move" speed then -10% on a road and -25% if cross-country

and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14

Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat)

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Y17 - Normal, Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
SNOW	50cm	8cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	16/-	13/-	10/-	3/-	3/-	-/-
IN HEAVY COVER	16/8	13/6	10/5	3/-	5/-	1/-
IN COVER	23/11	16/8	13/6	6/2	3/1	2/-
IN OPEN OR MOVED IN COVER	50/25	50/15	23/12	16/6	6/2	3/1
FIRED OR MOVED IN OPEN	50/41	50/50	50/25	33/13	13/3	6/2
FIRED AND MOVED	50/50	50/50	50/50	50/25	33/6	13/3
FIRED (OR USING WL) AT NIGHT	8/8	8/8	8/8	8/8	8/8	8/8

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.

Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y18 - Light Snow, Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
SNOW	50cm	8cm	NP	NP	NP	NP

MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	16/-	13/-	10/-	3/-	3/-	-/-
IN HEAVY COVER	16/8	13/6	10/5	3/-	5/-	1/-
IN COVER	23/11	16/8	13/6	6/2	3/1	2/-
IN OPEN OR MOVED IN COVER	50/25	50/15	23/12	16/6	6/2	3/1
FIRED OR MOVED IN OPEN	50/41	50/50	50/25	33/13	13/3	6/2
FIRED AND MOVED	50/50	50/50	50/50	50/25	33/6	13/3
FIRED (OR USING WL) AT NIGHT	8/8	8/8	8/8	8/8	8/8	8/8

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.

If travelling at "move" speed then -10% on a road and -25% if cross-country

and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14
Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat)

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Y19 - Snow, Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
SNOW	50cm	8cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm

DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm
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TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	16/-	13/-	10/-	3/-	3/-	-/-
IN HEAVY COVER	16/8	13/6	10/5	3/-	5/-	1/-
IN COVER	23/11	16/8	13/6	6/2	3/1	2/-
IN OPEN OR MOVED IN COVER	50/25	50/15	23/12	16/6	6/2	3/1
FIRED OR MOVED IN OPEN	50/41	50/50	50/25	33/13	13/3	6/2
FIRED AND MOVED	50/50	50/50	50/50	50/25	33/6	13/3
FIRED (OR USING WL) AT NIGHT	8/8	8/8	8/8	8/8	8/8	8/8

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.

If travelling at "move" speed then -10% on a road and -25% if cross-country

and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14
Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat).

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Y20 - Normal, Heavy Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
HEAVY SNOW	50cm	5cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	12.5/-	10/-	7.5/-	2.5/-	0.75/-	-/-
IN HEAVY COVER	12.5/6	10/5	7.5/4	2.5/-	1.25/-	-/-
IN COVER	17/8	12.5/8	10/5	5/1.25	2.5/0.5	1.25/-
IN OPEN OR MOVED IN COVER	37.5/19	50/17	17/8	12.5/5	5/1.25	2.5/0.5
FIRED OR MOVED IN OPEN	50/31	50/25	37.5/19	25/10	10/2.5	5/1.25
FIRED AND MOVED	50/50	50/50	50/37.5	50/19	25/5	10/2.5
FIRED (OR USING WL) AT NIGHT	5/5	5/5	5/5	5/5	5/5	5/5

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

If night use the worst case between night and weather.

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Weather - Moving in this weather costs -10% on a road and -25% if cross-country.

Infantry are unaffected if using night vision equipment and -25% without

Example :-

Normal movement of 40 XC becomes -25%(10) so XC speed would be 30cm

If no night vision aids them

Normal movement of 40 XC becomes -50%(20) so XC speed would be 20cm

Y21 - Light Snow, Heavy Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
HEAVY SNOW	50cm	5cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	12.5/-	10/-	7.5/-	2.5/-	0.75/-	-/-
IN HEAVY COVER	12.5/6	10/5	7.5/4	2.5/-	1.25/-	-/-
IN COVER	17/8	12.5/8	10/5	5/1.25	2.5/0.5	1.25/-
IN OPEN OR MOVED IN COVER	37.5/19	50/17	17/8	12.5/5	5/1.25	2.5/0.5
FIRED OR MOVED IN OPEN	50/31	50/25	37.5/19	25/10	10/2.5	5/1.25
FIRED AND MOVED	50/50	50/50	50/37.5	50/19	25/5	10/2.5
FIRED (OR USING WL) AT NIGHT	5/5	5/5	5/5	5/5	5/5	5/5

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.
 If travelling at "move" speed then -10% on a road and -25% if cross-country
 and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14
Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat).

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Y22 - Snow, Heavy Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
HEAVY SNOW	50cm	5cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	12.5/-	10/-	7.5/-	2.5/-	0.75/-	-/-
IN HEAVY COVER	12.5/6	10/5	7.5/4	2.5/-	1.25/-	-/-
IN COVER	17/8	12.5/8	10/5	5/1.25	2.5/0.5	1.25/-
IN OPEN OR MOVED IN COVER	37.5/19	50/17	17/8	12.5/5	5/1.25	2.5/0.5
FIRED OR MOVED IN OPEN	50/31	50/25	37.5/19	25/10	10/2.5	5/1.25
FIRED AND MOVED	50/50	50/50	50/37.5	50/19	25/5	10/2.5
FIRED (OR USING WL) AT NIGHT	5/5	5/5	5/5	5/5	5/5	5/5

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.
 If travelling at "move" speed then -10% on a road and -25% if cross-country

and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14
Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat).

Night - Moving at night costs -10% of the speed if using night vision aids (including white lights) and -50% if not.

Y23 - Heavy Snow, Heavy Snow, Freezing

VISIBILITY CONDITION	VISUAL EQUIPMENT					
	NONE	WL	IR	II	LLTV	TI
HEAVY SNOW	50cm	5cm	NP	NP	NP	NP
MOONLIT NIGHT	5cm	10cm	50cm	100cm	150cm	200cm
MOONLESS NIGHT	1cm	10cm	50cm	50cm	50cm	200cm
DAWN/DUSK/OVERCAST	12.5cm	-	25cm	50cm	50cm	250cm

TARGET STATUS	TARGET SIZE					
	X	L	M	S	V	OP
CAMOUFLAGED	12.5/-	10/-	7.5/-	2.5/-	0.75/-	-/-
IN HEAVY COVER	12.5/6	10/5	7.5/4	2.5/-	1.25/-	-/-
IN COVER	17/8	12.5/8	10/5	5/1.25	2.5/0.5	1.25/-
IN OPEN OR MOVED IN COVER	37.5/19	50/17	17/8	12.5/5	5/1.25	2.5/0.5
FIRED OR MOVED IN OPEN	50/31	50/25	37.5/19	25/10	10/2.5	5/1.25
FIRED AND MOVED	50/50	50/50	50/37.5	50/19	25/5	10/2.5
FIRED (OR USING WL) AT NIGHT	5/5	5/5	5/5	5/5	5/5	5/5

The following points apply:

- The First Number is the distance in cm that you can try to spot by rolling a d10 and scoring 6 or over. A 1 is possible friendly fire (See section F.9 friendly fire). The second number is the distance to automatically spot at.
- If spotter is using TI then a camouflaged target (except if Thermal Camouflage is used), a target in heavy cover or a target in cover counts as one row down for spotting.
- Target fired includes small arms, flares and missiles but NOT missiles/LAWs without back-blast.
- Shift one row up if.
 - Out-of-arc of the observer.
 - Is within a partial smoke screen (and observer is without TI).
 - The observer is moving.
 - The observer is suppressed.

Movement

In freezing temperature - all rivers, streams and marshes will be frozen, -50% off cross-country whilst on them.

Roads will be dangerous at speeds above advance if the roads aren't gritted.

If travelling at "move" speed then -10% on a road and -25% if cross-country

and at any bend roll a d10 on a 1 or 2 any wheeled vehicle will skid off the road, on a 1 to 3 a tracked vehicle will skid off. For each vehicle, which skid off the road, roll a d10 next turn. Tracked vehicles get stuck on a roll of 1-2 and wheeled on a 1-4. If stuck, test again next turn and if the roll fails again the vehicle is stuck permanently

Snow - The following table shows the movement rate in snow. Note that you need to check your vehicles Move and advance speeds separately on this table see the example below.

ELEMENT	MOVE SPEED		ADVANCE SPEED	
	ROAD	XC	ROAD	XC
INFANTRY	3*	3	2*	2
INFANTRY + HVY WPNS	2*	2	-	-
SKI TROOPS (No Hvy Wpns)	20^	20	10*	10
SKI TROOPS (Hvy Wpns)	15^	15	-	-
Tracked XC Speed 35	14*	14	14*	14
Tracked XC Speed 30	12*	12	12*	12
Tracked XC Speed 25	10*	10	10*	10
Tracked XC Speed 20	8*	8	8*	8
Tracked XC Speed 15	6*	6	6*	6
Tracked XC Speed 10	4*	4	4*	4
Tracked XC Speed 5	2*	2	2*	2
Wheeled XC Speed 35	11*	11	11*	11
Wheeled XC Speed 30	9*	9	9*	9
Wheeled XC Speed 25	8*	8	8*	8
Wheeled XC Speed 20	6*	6	6*	6
Wheeled XC Speed 15	5*	5	5*	5
Wheeled XC Speed 10	3*	3	3*	3
Wheeled XC Speed 5	2*	2	2*	2

* Troops and vehicles move at normal road speed on a road if it has been cleared of snow.

^ Ski Troops move at 7/5 when on a cleared road and advance at 3/-. When skiing up hill reduce speed by 5cm per turn. When skiing down hill increase it by 5cm. (The top contour of a hill is flat).

Z. Order of Battle

Z.0 British - Main Force -1989 (Veteran)



Command Group

1 BGHQ	CO	1 x Sultan(4) + Cg.A(5) & 1 x Challenger 1 (1986)(21) & 1 x Ferret 2/3(4)
	AOP HQ	1 x Sultan(4) + C.AOOg.B(4)

46 [3]

Main Force

>3 Tank Companies	CHQ 3 Platoons 279	2 x Challenger 1 (1986)(19) 4 x Challenger 1 (1986)(18) [9]
>2 Tank Companies	CHQ 3 Platoons 249	2 x Chieftain 12(17) 4 x Chieftain 12(16) [8]
>3 Infantry Companies	CHQ 3 Platoons 110	2 x Fv432 (IID)(3) + Cg.A(3) & 1 x Ferret 2/3(4) 1 x Fv432 (IID)(3) + Ig.C(4) & 3 x Fv432 (IID)(3) + Ig.D(4) [4]
>2 Infantry Companies	CHQ 3 Platoons 183	2 x MCV-80 Warrior(8) + Cg.A(3) 1 x MCV-80 Warrior(8) + Ig.C(4) & 3 x MCV-80 Warrior(8) + Ig.D(4) [6]
>1 Engineer Troop	THQ Section Section	1 x Spartan(4) + Ig.A(2) & 2 x Ferret 2/3(4) 3 x Chieftain AVLB(4) 3 x Centurion AVRE(8)

55 [2]

Close Support

>4 Mortar Sections	Section	2 x Fv432(M)(4)	9	[0]
>3 AT Sections	Section	1 x Ferret 2/3(4) + Ig.A(2) & 2 x Fv432 (IID)(3) + 2 x Ig.E(4)	31	[1]
>4 SR Recce Sections	Section	2 x Scimitar(7)	15	[1]
>2 SHORAD Sections OR	Section Section	1 x Spartan(4) + 2 x Ig.F(2) 2 x Spartan ADAD(5)	9 11	[0] [0]
>1 SHORAD Section	Section	2 x TR1(4)	9	[0]

Artillery Support

>2 AOP per Battery		1 x Spartan(4) + AOOg.B(3)	8	[0]
>1 AOP per Battery		1 x Gazelle(15) + AOOg.B(3)	20	[1]
>3 Dedicated Batteries	Battery	1 x Fv432 (IID)(1) + Cg.A(1) & 8 x Abbot (7)	67	[2]
>1 Direct Battery	Battery	1 x Fv432 (IID)(1) + Cg.A(1) & 8 x M109A1 (11) Per Shot ICM +19 Per Shot Per Shot ATM (not sensor fused) +32	74	[2]
>1 Battery	Battery	1 x Fv432 (IID)(1) + Cg.A(1) & 4 x M110 (12) with Radar	21	[1]

Air Support

>2 Flights	Flight	2 x Lynx AH.3 (TOW 2A)(22)	48	[2]
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Other Possible Command Groups

1 BGHQ	CO	1 x Sultan(4) + Cg.A(5) & 1 x Challenger 1 (1991)(22) & 1 x Ferret 2/3(4)
	AOP HQ	1 x Sultan(4) + C.AOOg.B(4)

47 [3]

Other Possible Main Forces

>3 Tank Companies	CHQ 3 Platoons 295	2 x Challenger 1 (1991)(20) 4 x Challenger 1 (1991)(19) [10]		
>2 Infantry Companies	CHQ 3 Platoons 187	1 x MCV-80 Warrior (D.Storm)(9) + Cg.C(5) 1 x MCV-80 Warrior (D.Storm)(9) + Ig.C(4) & 3 x MCV-80 Warrior (D.Storm)(9) + [6] Ig.D(4)		

Notes

1. The command group MUST be purchased and used on table.
2. The Battalion CO is the command group in the Sultan and the 2IC is in the Challenger Mk 1.
3. All artillery batteries and their command elements are located off table and AOOs on table.
4. A maximum of 2 AOPs may be bought per battery.
5. Elements listed in the Other Command Groups and Other Main Forces sections of the list can be used with opponents/organisers agreement.
6. Radio and/or radar jamming can be bought for 5 points per jam level up to a maximum of level 5



Z.1 French - Armoured -1986 (Regular)

Command Group

BGHQ	CO AOP HQ	2 x AMX-10P(6) + Cg.A(5) 1 x AMX-10P(6) + C.AOOg.B(3)	31	[2]
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Main Force

> 3 Tank Companies	CHQ 4 Platoons 174	1 x AMX-30B2(11) & 1 x AMX-30D(3) 4 x AMX-30B2(10) [6]		
> 3 Tank Companies	CHQ 4 Platoons 174	1 x AMX-30 (APFSDS)(11) & 1 x AMX-30D(3) 4 x AMX-30 (APFSDS)(10) [6]		
> 3 Infantry Companies	CHQ 4 Platoons Platoon 177	1 x AMX-10P(6) + Cg.C(3) 1 x AMX-10P(6) + Ig.C(2) & 2 x AMX-10P(6) + Ig.D(4) 4 x AMX-10P(6) + 2 x Ig.E(4) [6]		
> 3 Infantry Companies	CHQ Section 3 Platoons Section 105	1 x VAB-VCI (HMG)(4) + Cg.A(3) 2 x VAB PM81(4) 1 x VAB-VCI (HMG)(4) + Ig.C(2) & 2 x VAB-VCI (HMG)(4) + Ig.D(4) 2 x VAB-VCI (HMG)(4) + 2 x Ig.E(4) [4]		
> 3 Engineer Company	CHQ 2 Sections 2 Sections 2 Sections	1 x VAB-VCI (HMG)(4) + Cg.A(3) 1 x VAB-GENIE(4) + Ig.C(2) & 1 x VAB-GENIE(4) + Ig.F(2) 2 x AMX-30EBG(6) 2 x GILLOIS(1)	59	[2]

Close Support

> 2 Mortar Companies	Company	1 x VAB-VCI (HMG)(4) + Cg.A(3) & 6 x VAB-VCI (HMG)(4) + Ig.K(2)	43	[1]
> 4 AT Sections	Section	2 x VAB-VCAC(6)	12	[0]
> 1 SR Recce Platoon	PHQ 3 Sections Section	1 x VBL(5) + Cg.L(3) & 1 x VBL(5) + Ig.G(3) 1 x VBL(5) + Ig.L(2) & 1 x VBL(5) + Ig.H(3) 2 x VBLM(6)	73	[2]
> 2 SHORAD Sections	Section	2 x AMX-30 ROLAND(4)	8	[0]
> 1 SHORAD Section	Section	3 x AMX-13DCA(5)	15	[1]

Artillery Support

> 2 AOP per Battery		1 x VBL(5) + AOOg.J(3)	8	[0]
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> 2 AOP per Battery		1 x Gazelle(15) + AOOg.J(3)	18	[1]
> 4 Dedicated Batteries	Battery	1 x VAB-VCI (HMG)(1) + Cg.A(1) & 1 x VAB-VCI (with Attila)(1) & 6 x GCT (12) Per Shot ICM +25	75	[3]
> 1 CB Battery	Battery	1 x VAB-VCI (HMG)(1) + Cg.A(1) & 6 x GCT (10) with Radar Per Shot ICM	18 +7	[1]

Air Support

> 3 Flights	Flight	2 x Gazelle (HOT)(18)	36	[1]
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Notes

1. The command group MUST be purchased and used on table.
2. The Battalion CO and 2IC are the commands groups in the AMX10P each must be clearly marked.
3. All artillery batteries and their command elements are located off table and AOPs on table.
4. Attila is an early form of ABMS, if the attilla vehicle with a battery is destroyed that battery reverts to GENERAL support.
5. The Milan from the VBLM may be dismounted and added to any available full section. However the section must stay with the vehicle if they wishes to reload.
6. A maximum of 2 AOPs may be bought per battery.
7. Radio and/or radar jamming can be bought for 5 points per jam level up to a maximum of level 4

Z.2 Soviet - Tank -1986 (Regular)



Command Group

BGHQ	CO AOP HQ Section	1 x BMP-1Ksh(4) + Cg.A(5) & 1 x T-80BV(19) 1 x ARCV-2(3) + C.AOOg.B(4) 2 x BRDM-2(5)	45	[3]
> 3 BHQ	CO Section	1 x BMP-1Ksh(4) + Cg.A(5) & 1 x BMP-1Ksh(4) + Ig.C(4) 2 x BRDM-2(5)	27	[1]

Main Force

> 3 Tank Companies	CHQ 3 Platoons 191	1 x T-80BV(20) 3 x T-80BV(19) [6]		
> 3 Tank Companies	CHQ 3 Platoons 131	1 x T-62MV(14) 3 x T-62MV(13) [4]		
> 2 Rifle Companies	CHQ Section 3 Platoons Section 164	1 x BMP-1K(6) + Cg.C(5) & 1 x BMP-1(8) + Ig.I(1) 1 x BMP-1(8) + Ig.D(2) + Ig.E(2) & 1 x BMP-1(8) + 2 x Ig.F(3) 3 x BMP-1(8) + Ig.C(4) 1 x BMP-1(8) + Ig.G(2) [5]		
> 2 Rifle Companies	CHQ Section 3 Platoons Section 181	1 x BMP-2(9) + Cg.C(5) & 1 x BMP-2(9) + Ig.J(2) 1 x BMP-2(9) + Ig.D(2) + Ig.E(2) & 1 x BMP-2(9) + 2 x Ig.F(3) 3 x BMP-2(9) + Ig.C(4) 1 x BMP-2(9) + Ig.G(2) [6]		
> 1 Engineer Company	CHQ Platoon 2 Platoons Platoon	1 x UAZ469(2) + Cg.D(3) & 1 x UAZ469(2) + Ig.D(2) 4 x TMM(1) 3 x BTR-60PB(5) + Ig.A(2) 2 x AMC(4)	63	[2]

Close Support

> 1 SR Recce Company	CHQ 2 Platoons 2 Platoons 140	1 x BMP-2(9) + Cg.A(4) & 1 x BRDM-2U(3) + Ig.H(2) 1 x BMP-2(9) + Cg.C(5) & 2 x BMP-2(9) + Ig.C(4) 1 x BRDM-2(6) & 3 x BRDM-2(5) [5]		
> 2 A/T Platoons	Platoon	3 x T-80BV(19)	57	[2]
> 4 SHORAD Sections	Section	2 x ZSU-23-4(5)	10	[0]
> 1 Area AD Company	CHQ	1 x BRDM-2(6) & 1 x BRDM-2(5)		

	4 Sections	1 x BRDM-2U(3) + Ig.A(2) & 1 x SA-11(3)	43	[1]
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Artillery Support

> 1 AOP per Battery		1 x ARCV-2(3) + AOOg.B(3)	6	[0]
> 2 Dedicated Batteries	Battery	1 x ARCV-2(1) + Cg.A(1) & 6 x SO-122 (2S1) (6)	36	[1]
> 3 General Batteries	Battery	1 x ARCV-2(1) + Cg.A(1) & 6 x SO-152 (2S3) (7) Per Shot ICM	15 +4	[1]
> 1 General Battery	Battery	1 x UAZ469(1) + Cg.A(1) & 6 x BM-27 (14) Per Shot ICM Per Shot Per Shot ATM (not sensor fused) +12	25 +6	[1]
> 1 CB Battery	Battery	1 x UAZ469(1) + Cg.A(1) & 6 x BM-27 (14) with Radar Per Shot ICM Per Shot Per Shot ATM (not sensor fused) +12	25 +6	[1]

Air Support

> 1 Flight	Flight	2 x Mi-24 HIND D(25)	50	[2]
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Notes

1. The command group MUST be purchased and used on table.
2. The Battalion CO is the command group in the BMP-1Ksh and must be clearly marked.
3. Only one type of tank may be used per BHQ.
4. One BHQ must be fielded for every 3 or part 3 companies used.
5. Each BHQ fielded must have at least 1 company attached.
6. Artillery batteries and Area AD and their command elements are located off table.
7. All Close and Air support are attached to the BGHQ.
8. Radio and/or radar jamming can be bought for 5 points per jam level up to a maximum of level 5

Z.3 Soviet - Cat 1 Motor Rifle -1986 (Regular)



Command Group

BGHQ	CO AOP HQ Section	1 x BMP-1Ksh(4) + Cg.A(5) & 1 x BMP-1Ksh(4) + Ig.C(4) 1 x ARCV-2(3) + C.AOOg.B(4) 2 x BRDM-2(5)	34	[2]
> 3 BHQ	CO Section	1 x BMP-1Ksh(4) + Cg.A(5) & 1 x BMP-1Ksh(4) + Ig.C(4) 2 x BRDM-2(5)	27	[1]

Main Force

> 2 Tank Companies	CHQ 3 Platoons 248	1 x T-80BV(20) 4 x T-80BV(19) [8]		
> 2 Tank Companies	CHQ 3 Platoons 170	1 x T-62MV(14) 4 x T-62MV(13) [6]		
> 6 Rifle Companies	CHQ Section 3 Platoons Section 164	1 x BMP-1K(6) + Cg.C(5) & 1 x BMP-1(8) + Ig.I(1) 1 x BMP-1(8) + Ig.D(2) + Ig.E(2) & 1 x BMP-1(8) + 2 x Ig.F(3) 3 x BMP-1(8) + Ig.C(4) 1 x BMP-1(8) + Ig.G(2) [5]		
> 6 Rifle Companies	CHQ Section 3 Platoons Section 181	1 x BMP-2(9) + Cg.C(5) & 1 x BMP-2(9) + Ig.J(2) 1 x BMP-2(9) + Ig.D(2) + Ig.E(2) & 1 x BMP-2(9) + 2 x Ig.F(3) 3 x BMP-2(9) + Ig.C(4) 1 x BMP-2(9) + Ig.G(2) [6]		
> 1 Engineer Company	CHQ Platoon 2 Platoons Platoon	1 x UAZ469(2) + Cg.D(3) & 1 x UAZ469(2) + Ig.D(2) 4 x TMM(1) 3 x BTR-60PB(5) + Ig.A(2) 2 x AMC(4)	63	[2]

Close Support

> 1 SR Recce Company	CHQ	1 x BMP-2(9) + Cg.A(4) & 1 x BRDM-2U(3) + Ig.H(2)		
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	2 Platoons 2 Platoons 140	1 x BMP-2(9) + Cg.C(5) & 2 x BMP-2(9) + Ig.C(4) 1 x BRDM-2(6) & 3 x BRDM-2(5) [5]		
> 3 A/T Platoons	Platoon	1 x BRDM-2(5) & 3 x BRDM-2/AT-3C(5)	20	[1]
> 4 SHORAD Sections	Section	2 x ZSU-23-4(5)	10	[0]
> 1 Area AD Company	CHQ 4 Sections	1 x BRDM-2(6) & 1 x BRDM-2(5) 1 x BRDM-2U(3) + Ig.A(2) & 1 x SA-11(3)	43	[1]

Artillery Support

> 1 AOP per Battery		1 x ARCV-2(3) + AOOg.B(3)	6	[0]
> 2 Dedicated Batteries	Battery	1 x ARCV-2(1) + Cg.A(1) & 6 x SO-122 (2S1) (6)	36	[1]
> 3 General Batteries	Battery	1 x ARCV-2(1) + Cg.A(1) & 6 x SO-152 (2S3) (7) Per Shot ICM	15 +4	[1]
> 1 General Battery	Battery	1 x UAZ469(1) + Cg.A(1) & 6 x BM-27 (14) Per Shot ICM Per Shot Per Shot ATM (not sensor fused) +12	25 +6	[1]
> 1 CB Battery	Battery	1 x UAZ469(1) + Cg.A(1) & 6 x BM-27 (14) with Radar Per Shot ICM Per Shot Per Shot ATM (not sensor fused) +12	25 +6	[1]

Air Support

> 1 Flight	Flight	2 x Mi-24 HIND D(25)	50	[2]
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Notes

1. The command group MUST be purchased and used on table.
2. The Battalion CO is the command group in the BMP-1Ksh and must be clearly marked.
3. Only one type of tank may be used per BHQ.
4. One BHQ must be fielded for every 3 or part 3 companies used.
5. Each BHQ fielded must have at least 1 company attached.
6. Artillery batteries and Area AD and their command elements are located off table.
7. All Close and Air support are attached to the BGHQ.
8. Radio and/or radar jamming can be bought for 5 points per jam level up to a maximum of level 4

Z.4 US - Armoured -1989 (Regular)

Command Group

1 BGHQ	CO Section AOP HQ	1 x M577A1(3) + Cg.A(6) & 1 x M1A1 Abrams(23) 2 x HMMVW(2) + Ig.F(2) 1 x M577A1(3) + C.AOOg.B(4)		
			47	[3]



Main Force

>4 Tank Companies	CHQ LAD	2 x M1A1 Abrams(21) 1 x M88A1(4)	46	[2]
OR	CHQ LAD	2 x M1A1 HA Abrams(22) 1 x M88A1(4)	48	[2]
2-3 Tank Platoons	Platoon	4 x M1A1 Abrams(20)	80	[3]
OR	Platoon	4 x M1A1 HA Abrams(21)	84	[3]
>2 Mech Companies	CHQ LAD	2 x M2A1(I) Bradley(12) + Cg.C(4) 1 x M578(4)	36	[1]
OR	CHQ LAD	2 x M2A2 Bradley(13) + Cg.C(4) 1 x M578(4)	38	[1]
2-3 Mech Platoons	Platoon	1 x M2A1(I) Bradley(12) + Ig.C(3) & 3 x M2A1(I) Bradley(12) + Ig.D(5)	66	[2]
OR	Platoon	1 x M2A2 Bradley(13) + Ig.C(3) & 3 x M2A2 Bradley(13) + Ig.D(5)	70	[2]
>1 Engineer Company	CHQ Platoon	2 x M113A3(6) + Cg.C(4) 1 x M113A3(6) + Ig.D(5) & 3 x M113A3(6) + Ig.C(3) & 1 x M173(0)		
	Platoon	1 x M113A3(6) + Ig.C(3) & 2 x M60AVLB(3)	73	[2]
>4 Mortar Sections	Section	2 x M125A3(5)	10	[0]

>3 A/T Sections	Section	2 x M901A1(7)	14	[0]
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Close Support

>1 SR Recce Platoon	PHQ 3 Sections 120	1 x M3A2 Bradley(14) + Cg.E(4) 2 x M3A2 Bradley(14) + Ig.E(3) [4]		
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2-3 Section	Section	2 x M3A2 Bradley(14) + Ig.E(3)	34	[1]
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>2 SHORAD Sections	Section	2 x HMMVW(2) + Ig.F(2)	8	[0]
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>1 SHORAD Section	Section	2 x M48A2 Imp Chap(2)	4	[0]
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>2 SHORAD Sections	Section	2 x M163A2 (APDS)(6)	12	[0]
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Artillery Support

>2 AOP per Battery		1 x M981 FISTV(4) + AOOg.B(3)	7	[0]
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>1 AOP per Battery		1 x OH-58D Kiowa(15) + AOOg.B(3)	18	[1]
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>3 Dedicated Batteries	Battery	1 x M577A1(1) + Cg.A(1) & 8 x M109A5 (12) Per Shot ICM +30 Per Shot Per Shot ATM (not sensor fused) +48	96	[3]
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>1 General Battery	Battery	1 x M577A1(1) + Cg.A(1) & 4 x MRLS (32) Per Shot ICM Per Shot Per Shot ATM (not sensor fused) +15	40 +7	[1]
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>1 CB Battery	Battery	1 x M577A1(1) + Cg.A(1) & 4 x M110 (12) with Radar	19	[1]
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Air Support

>2 Attack Platoons	Flight	2 x AH-1S Cobra (Tow 2A)(21) & 2 x OH-58D Kiowa(15)	72	[2]
OR	Flight	2 x AH-64A Apache (Hellfire-C)(24) & 2 x OH-58D Kiowa (Stinger)(16)	80	[3]
OR	Flight	2 x AH-64A Apache (Hellfire-C/RP)(26) & 2 x OH-58D Kiowa (Stinger)(16)	84	[3]
OR	Flight	2 x AH-64A Apache (RP)(28) & 2 x OH-58D Kiowa (Stinger)(16)	88	[3]

Other Possible Main Forces

>2 Mech Companies	CHQ LAD	2 x M2A2 Bradley (Gulf War)(14) + Cg.C(4) 1 x M578(4)	40	[1]
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2-3 Mech Platoons	Platoon	1 x M2A2 Bradley (Gulf War)(14) + Ig.C(3) & 3 x M2A2 Bradley (Gulf War)(14) + Ig.D(5)	74	[2]
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Other Possible Close Support

>2 SHORAD Sections	Section	2 x M2A2 Bradley (Gulf War)(14) + Ig.F(2)	32	[1]
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>1 SR Recce Platoon	PHQ 3 Sections 120	1 x M3A2 Bradley (FS)(14) + Cg.E(4) 2 x M3A2 Bradley (FS)(14) + Ig.E(3) [4]		
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2-3 Section	Section	2 x M3A2 Bradley (FS)(14) + Ig.E(3)	34	[1]
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Other Possible Air Support

>1 Attack Platoons	Flight	2 x AH-64A Apache (Hellfire-F)(24) & 2 x OH-58D Kiowa (Stinger)(16)	80	[3]
OR	Flight	2 x AH-64A Apache (Hellfire-F/RP)(26) & 2 x OH-58D Kiowa (Stinger)(16)	84	[3]
OR	Flight	2 x AH-64A Apache (RP)(28) & 2 x OH-58D Kiowa (Stinger)(16)	88	[3]

Notes

1. The command group MUST be purchased and used on table.
2. The Battalion CO is the command group in the M577 and the 2IC is in the M1.
3. All artillery batteries and their command elements are located off table and AOOs on table.
4. LD's may target for Hellfire or Copperhead but not both at the same time.
5. A maximum of 2 AOPs may be bought per battery.
6. All M1s within company must be of the same type.
7. All M2s within company must be of the same type.
8. All M3s within platoon must be of the same type.
9. Elements listed in the Other Main Forces, Other Close Support and Other Air Support sections of the list can be used with opponents/organisers agreement.
10. MRLS Batteries get 1 free Shot of ICM. All others must be paid for.
11. Radio and/or radar jamming can be bought for 5 points per jam level up to a maximum of level 5

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Command Group

BGHQ	CO	1 x M577A1(3) + Cg.A(6) & 1 x Marder A1(9) + Ig.B(3) & 1 x Leopard 2A4(18)		
	AOP HQ	1 x M577A1(3) + C.AOOg.C(3)	45	[3]

Main Force

> 2 Panzer Companies	CHQ 4 Platoons 307	1 x Leopard 2A4(19) 4 x Leopard 2A4(18) [10]		
> 2 Panzer Companies	CHQ 4 Platoons 222	1 x Leopard 1A5(14) 4 x Leopard 1A5(13) [7]		
> 3 Panzer Gr Companies	CHQ 3 Platoons 141	1 x Marder A1(9) + Cg.C(3) & 1 x Marder A1(9) + Ig.D(3) 3 x Marder A1(9) + Ig.F(4) [5]		
> 2 Panzer Gr Companies	CHQ 3 Platoons	1 x M113A1G(4) + Cg.C(3) & 1 x M113A1G(4) + Ig.D(3) 1 x M113A1G(4) + Ig.F(4) & 2 x M113A1G(4) + Ig.E(5)	92	[3]
> 2 Engineer Platoons	Platoon	1 x TPZ-1 Fuchs(4) + Eg.C(2) & 2 x TPZ-1 Fuchs(4) + Eg.G(3) & 1 x Leopard AEV(4) & 1 x Leopard AVLB(4)	28	[1]

Close Support

> 2 AT Platoons	Platoon	4 x Jaguar 2 (TI)(8)	32	[1]
> 3 SR Recce Sections	Section	2 x Luchs (TI)(5)	10	[0]
> 3 SHORAD Sections	Section	2 x Gepard (1986)(7)	14	[0]

Artillery Support

> 2 AOP per Battery		1 x Jeep(2) + AOOg.H(3)	5	[0]
> 2 Dedicated Batteries	Battery	1 x M113A1G(1) + Cg.A(1) & 6 x M113/120 (W.Germany) (7)	46	[2]
> 2 Direct Batteries	Battery	1 x M113A1G(1) + Cg.A(1) & 6 x M109A3G (11) Per Shot ICM +14 Per Shot Per Shot ATM (not sensor fused) +24	50	[2]
> 1 General Battery	Battery	1 x M113A1G(1) + Cg.A(1) & 8 x LARS (8) Per Shot ICM Per Shot Per Shot ATM (not sensor fused) +12	28 +6	[1]
> 1 CB Battery	Battery	1 x M113A1G(1) + Cg.A(1) & 6 x M109A3G (11) with Radar Per Shot ICM Per Shot Per Shot ATM (not sensor fused) +12	21 +7	[1]

Air Support

> 2 Flights	Flight	2 x BO-105P(17)	34	[1]
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Notes

1. The command group MUST be purchased and used on table.
2. The Battalion CO is the command group in the M577A1, the Marder and Leopard are security troops.
3. All artillery batteries and their command elements are located off table and AOOs on table.
4. All Close and Air Support is attached to the BGHQ.
5. The Milan from the Marder A1 may be dismounted and added to any available full section. However the section must stay with the vehicle if they wish to reload.
6. A maximum of 2 AOPs may be bought per battery.
8. Radio and/or radar jamming can be bought for 5 points per jam level up to a maximum of level 4