

## Movement Rates

## MISSION COMMAND

Troops	Terrain	Roads	Clear	Rough	Difficult	Obstacle
Unencumbered foot		5cm	5cm	5cm	2cm	- 2cm
Encumbered foot, manhandled heavy weapons and pack animals		5cm	5cm	2cm	Minimum	- 2cm
Wheeled multi-axle-driven vehicles, half-tracks without tows, jeeps and similar		30cm	25cm	10cm	Impassable	- 5cm
All other wheeled vehicles, and half-tracks if towing loads		30cm	10cm	5cm	Impassable	- 5cm*
Bicycles		10cm	8cm	Minimum	Minimum	- 5cm
Fully tracked AFV	max road speed up to 25 kph 26 – 45 kph Over 45 kph	15cm 20cm 30cm	10cm 15cm 25cm	5cm 10cm 10cm	Impassable Impassable Impassable	- 2cm - 2cm - 2cm
Night, fog, smoke, mist, rain		5cm	5cm	2cm	as above	as above

\* Shallow streams only

Half movement:

- Vehicles loading, unloading, limbering, unlimbering
- Foot entering or leaving aircraft, vehicle or building
- Vehicles reversing, except those towing cannot reverse

Minimum: element can move up to 2cm, but it must expend both its actions as movement actions to do so.

Armoured vehicles may be able to enter built-up areas by using the Vehicles in Buildings specialist action.

90° or more turn by vehicles: reduce move by 2cm.

## Spotting

## MISSION COMMAND

Target	Environment	Open terrain						Partially obscuring*						Obscuring terrain			Con- cealed
		Halted or dug-in		Moving		Halted	Moving		Halted	Moving		Halted	Moving		Slow	Fast	
		Slow	Fast	Slow	Fast		Slow	Fast		Slow	Fast						
Unencumbered foot, trenches, anti-tank ditches and similar		15cm	20cm	25cm	25cm	2cm	8cm	15cm	0	2cm	2cm	0	2cm	2cm	0		
Encumbered foot, including HMG, medium mortars		25cm	25cm	25cm	25cm	5cm	10cm	15cm	0	2cm	2cm	0	2cm	2cm	0		
Fortifications, halted small vehicles, wire, marked mine fields, dragon's teeth		50cm	N/A	N/A	N/A	5cm	N/A	N/A	2cm	N/A	N/A	2cm	N/A	N/A	2cm		
All flak, other vehicles or animal transport		150cm	250cm	250cm	250cm	15cm	25cm	25cm	N/A, 5cm †	N/A, 5cm †	N/A	N/A, 5cm †	N/A, 5cm †	N/A	5cm		
Other heavy weapons, except flak		50cm	75cm	100cm	100cm	5cm	10cm	15cm	0	2cm	2cm	0	2cm	2cm	2cm		
Mortars, anti-tank rifles, small arms, MGs firing		25cm	25cm	N/A	N/A	15cm	25cm	N/A	10cm	15cm	N/A	10cm	15cm	N/A	As for terrain		
All other weapons firing		150cm	250cm	N/A	N/A	75cm	100cm	N/A	25cm	50cm	N/A	25cm	50cm	N/A	As for terrain		

\* Including hull-down vehicles

† Normally N/A as cannot enter, but this applies to dug-in elements and elements behind dense hedges.

## Area Fire Convert to KO for AFVs

Weapon system	Armour	Intensity	
		Standard	Bombardment or direct fire up to 15cm
<b>Gun or howitzer 75mm to 110mm</b> (no effect for light guns and mortars) All <b>fighter and fighter-bomber aircraft with auto-cannon, AT guns or rockets</b> (MGs no effect) – Standard; Side Armour vs vehicles	1-4	18	12
	5-7	20	15
	8+	No effect	20
<b>Gun, mortar or howitzer over 110mm up to &amp; including 155mm</b> <b>Dive, light and medium bomber aircraft</b> – Standard; Side Armour vs vehicles <b>Heavy bomber aircraft</b> – Bombardment; Side Armour vs vehicles	1-4	12	9
	5-7	15	12
	8+	20	15
<b>Larger artillery</b> – Front Armour	1-4	9	all
	5-7	12	9
	8+	15	12

Roll 1d20. Max 1 KO per template. Harassing fire, no effect. Modifications: open-topped vehicles, ground attack aircraft with AT guns: Side Armour; +1 to dice roll with rockets. Except as noted above, guns, mortars and howitzers use Front Armour, aircraft use Side Armour.

## Area Fire Convert to Casualties and KO – Buildings and Fortifications

Weapon system	Structure strength	Intensity	
		Standard	Bombardment or direct fire up to 15cm
<b>Gun, mortar or howitzer 75mm to 110mm</b> (no effect for light guns and mortars) All <b>fighter and fighter-bomber aircraft with auto-cannon, AT guns or rockets</b> (MGs no effect) – Standard Versus <b>V strong</b> – no effect	Light	S5/C7/D9	D auto
	Medium	S15/C18/D20	S12/C15/D18
	Strong	S18/C20	S15/C18/D20
<b>Gun, mortar or howitzer over 110mm up to and including 155mm</b> <b>Dive, light and medium bomber aircraft</b> – Standard <b>Heavy bomber aircraft</b> – Bombardment	Light	D auto	D auto
	Medium	S12/C15/D18	S6/C10/D12
	Strong	S15/C18/D20	S12/C15/D18
	V strong	no effect	S18/C20
<b>Larger artillery</b> <b>Demolitions (engineers)</b> – Bombardment	Light	D auto	D auto
	Medium	S5/C7/D9	D auto
	Strong	S6/C10/D12	S5/C7/D9
	V strong	S12/C15/D18	S6/C10/D12

Roll 1d20. Harassing fire, no effect. S = 1 suppression each vulnerable element. C = 1 suppression each vulnerable element; & 1 casualty to single vulnerable element. D = structural level destroyed; & 1 heavy weapon/AFV KO; & 2 suppressions each vulnerable element, 1 each non-vulnerable; & 1 casualty vulnerable, 1 casualty non-vulnerable; & displaced.

## Ranges for Area Fire

The ranges included below are not theoretical ballistic maxima for the weapons, but 'in-theatre' achieved ranges assuming reasonable barrel life, charge condition, and so on.

Weapon type	Weapon calibre	Maximum ranges
Flak, horizontal ranges (for larger flak, see Guns)	In multiple mounts: 20mm & 30mm in multiple flak mounts	100cm (2,000m)
	37mm to 57mm flak	150cm (3,000m)
Guns (including larger flak guns)	Smaller guns	150cm (3,000m)
	65mm to 76mm infantry guns	175cm (3,500m)
	18 pdr, 25 pdr and 75mm guns	550cm (11,000m)
	76mm to 90mm guns	750cm (15,000m)
	100mm to 150mm guns	1,000cm (20,000m)
	152mm to 155mm guns	1,250cm (25,000m)
	170mm and larger guns, including large naval guns	1,500cm (30,000m)
Howitzers	British close support 95mm tank howitzer	350cm (7,000m)
	150mm infantry howitzers	250cm (5,000m)
	Sturmtiger 380mm howitzer	300cm (6,000m)
	Pack howitzers	375cm (7,500m)
	25 pdr, 105mm and 122mm howitzers	550cm (11,000m)
	5.5" to 7.2" howitzers	750cm (15,000m)
	8" to 210mm howitzers	875cm (17,500m)
240mm and larger howitzers	1,000cm (20,000m)	
Machine guns	Tripod-mounted MG	100cm (2,000m)
Mortars	2" or 5cm mortars	25cm (500m)
	German kz 8cm	65cm (1,300m)
	60mm mortar	90cm (1,800m)
	BR 3"	130cm (2,600m)
	GE 8cm	120cm (2,400m)
	US 81mm	150cm (3,000m)
	Italian 81mm, 107mm and 4.2" mortars	200cm (4,000m)
	120mm mortars	300cm (6,000m)
Recoilless guns	Recoilless guns: 57mm recoilless guns on tripods	200cm (4,000m)
	Recoilless guns: 75mm or larger recoilless guns on tripod or wheeled mounts	375cm (7,500m)
Rocket launchers	Rocket launchers: Single rocket launcher	100cm (2,000m)
	Rocket launchers: Salvo rocket launchers	250cm (5,000m)

## Point-to-point Fire to Hit

To hit: roll 1d20 and modify as given in the top table. Modified score equal or greater than table value is a hit.

+ / -	Reason
+2	Firer is multi-barrel MG or auto-cannon. Opportunity fire: Target is foot moving fast. Target is in wire.
-1	For each suppression marker on the firing element. Opportunity fire: Target came into line of sight during the current turn.
-2	Firer is to move during the current turn. Artillery, except AT guns, may not shoot and move in 1 turn. Firer has been under HE area fire in the previous enemy turn.
-4	Target is hull-down vehicle.

Firer	Ranges (cm) up to >>>										
	5	15	25	35	50	60	75	100	150	250	
Small arms (assault elements)	3	12									
Small arms (excl assault elements)	4	10	18								
LMG, any bipod or pivot-mounted MG	5	9	15								
Tripod, wheeled, turret or multi-flak MG or HMG	4	6	9	11	15						
Bazooka, PIAT or Panzerfaust type	5										
AT close assault (< 2cm only)	8/11*										
2" / 5cm mortar (vs 1 element only)	N/A	12	15								
Anti-tank rifle	3	7	11	15	19						
Recoilless gun	3	6	9	12	15	17					
20mm to 40mm flak / auto-cannon	5	7	10	12	15	17	19				
Guns less than 25 calibres long and all howitzers except 380mm	3	5	7	10	12	15	17				
Longer guns up to 57mm calibre	3	4	6	8	10	12	15	17			
Longer guns up to 85mm calibre	3	4	5	6	7	9	10	12	15		
Longer guns > 85mm calibre	3	3	4	5	6	7	8	9	12	19	
Petard mortar	4	15									
380mm rocket launcher in Sturmtiger	9	12	15	17	18	19	20	20	20	20	
Man-pack flame thrower	4										
Vehicle flame thrower	4	12									

\* First number elite or veteran engineers, second number other eligible troops.

## Foot: Convert Hit to Casualty

Firer	Target	Fortified	In good cover	Foot in no cover or in light cover	Moving in no cover (opp fire only)	Heavy weapons in no or light cover	Soft vehicles, flak or animal transport
Small arms up to 5cm		17	9	4	2	3	5
Any MG up to 5cm		19	15	9	4	6	4
Small arms or any MG > 5cm		No casualty	19	16	11	14	9
Auto-cannon, aircraft AT gun		No casualty	16	14	9	12	3
2", 50mm or 60mm mortar		No casualty	18	16	12	14	9
3", 80mm, 81mm, or 82mm mortar		Area Fire	17	11	N/A	6	7
4.2", 105 to 120mm mortar		Area Fire	15	9	N/A	6	4
155mm or larger mortar		Area Fire	12	8	N/A	5	4
Anti-tank rifle within 15cm		19	19	18	16	15	3
Bazooka, PIAT, Panzerfaust, Panzerschreck		15	17	15	17	17	4
75mm recoilless gun, aircraft rockets		12	17	15	9	9	5
105mm or larger recoilless gun		9	15	12	5	5	4
Petard mortar or 380mm in Sturmtyger		Area Fire	6	5	4	4	3
Flamethrower		4	12	6	17	12	9
37mm to 57mm gun w HE, 17 pdr		No casualty	19	17	12	12	5
Gun/how'r 110 to 155mm, bombs on dive, light and medium bomber aircraft		Area Fire	12	9	4	4	3
Heavier artillery, heavy rocket or heavy bomber		Area Fire	9	5	N/A	3	3
Salvo rocket launcher		Area Fire	9	5	N/A	3	2
Other gun/how'r up to 110mm < 15cm range		Area Fire	15	12	5	5	3
Other gun/how'r up to 110mm > 15cm range, bombs on fighter-bomber aircraft		Area Fire	17	15	12	12	5

## Point-to-point Conversion to KO: Part 1 of 2

Weapon	AC of target	1	2	3	4	5	6	7	8	9	10
AT close assault fire at < 2cm		10	12	14	14	14	16	NE	NE	NE	NE
0.50", 12.7mm, 13mm, 14.5mm and 15mm HMG		11 at 0-15cm	NE	NE	NE	NE	NE	NE	NE	NE	NE
Boys (0.55"), 7.92mm, 12.7mm, 14.5mm & 20mm AT rifles		11 at 25-50cm	11 at 0-25cm 19 at 25-50cm	NE	NE	NE	NE	NE	NE	NE	NE
GE 28mm cone bore		KO at 0-25cm	KO at 0-25cm	KO at 0-25cm	11 at 0-15cm	15 at 0-15cm	NE	NE	NE	NE	NE
Bazooka, sticky bomb		6	6	6	10	16	NE	NE	NE	NE	NE
Panzerschreck, PIAT, Panzerfaust		6	6	6	8	11	19	NE	NE	NE	NE
All flamethrowers		4	6	8	10	12	14	17	18	19	20
All 20mm auto-cannon , Polish Nkm wz.38 FK 20mm HMG and French 37mm L21		11 at 15-25cm	15 at 0-15cm	19 at 0-5cm	NE	NE	NE	NE	NE	NE	NE
All 30mm auto cannon		11 at 25-50cm	7 at 0-15cm	15 at 0-5cm	NE	NE	NE	NE	NE	NE	NE
BR 3" close support tank howitzer		11	11	15	19	19	19	NE	NE	NE	NE
75 / 105mm recoilless gun		3	7	11	15	19	NE	NE	NE	NE	NE
German 37mm L45, French 25mm and 37mm L33, British 3 pdr, Italian 37mm		KO	11 at 25-50cm 15 at 50-75cm 19 at 75-100cm	11 at 0-15cm	15 at 0-5cm	NE	NE	NE	NE	NE	NE
German 50mm L42, British 2 pdr, Polish, Czech, US 37mm, French 47mm		KO	11 at 50-75cm 15 at 75-100cm	15 at 15-35cm	11 at 0-15cm 15 at 15-25cm	19 at 0-5cm	NE	NE	NE	NE	NE
German 75mm L24 and infantry gun, Italian 75mm L18, Russian 76mm L16. All pack howitzers		KO	KO	11 at 25-75cm 19 at 75cm+	15 at 0-25cm	NE	NE	NE	NE	NE	NE
German 50mm L60, Italian 47mm		KO	KO	11 at 50-75cm 15 at 75-100cm	15 at 15-35cm	11 at 0-15cm 15 at 15-25cm	NE	NE	NE	NE	NE

NE = No effect; KO = Knocked out.

## Point-to-point Conversion to KO: Part 2 of 2

Weapon	1	2	3	4	5	6	7	8	9	10
BR Ordnance QF 75mm	KO	KO	KO	11 at 25cm+	11 at 25-50cm	NE	NE	NE	NE	NE
British 18 pdr, Italian 75mm L27, US 75mm L31 or 40, German, French, Polish, US 75mm field guns	KO	KO	KO	11 at 50cm+	11 at 25-50cm 15 at 50-100cm	19 at 0-25cm	NE	NE	NE	NE
German, French, Italian and US 105mm, British 95mm and 25 pdr howitzers, Russian 122mm L23	KO	KO	KO	KO	11 at 25-50cm 15 at 50cm+	11 at 0-25cm 15 at 25cm+	19 at 0-25cm	NE	NE	NE
British 6 pdr	KO	KO	KO	KO	11 at 50-100cm	11 at 0-25cm 15 at 25-50cm	15 at 0-25cm 19 at 25-50cm	19 at 0-5cm	NE	NE
German 75mm L43, 46 or 48, British 77mm, Italian 75mm L46, US 76mm L52, US 3" L50	KO	KO	KO	KO	7 at 75cm+	11 at 25-50cm	7 at 0-25cm 15 at 25-50cm	15 at 0-25cm	NE	NE
German 150mm L12 and infantry howitzer, Russian 152mm. All other medium artillery pieces	KO	KO	KO	KO	KO	11 at 50cm+	11 at 25cm+	11	15	19
German 88mm L56, Italian 90mm L53 Russian 100mm L54, US 90mm L53	KO	KO	KO	KO	KO	7 at 75cm+	11 at 25-75cm 15 at 75cm+	7 at 0-25cm 15 at 25-50cm	15 at 0-25cm	NE
GE 75mm L70, BR 17pdr	KO	KO	KO	KO	KO	7 at 100cm+	11 at 50-100cm 15 at 100cm+	3 at 0-25cm 11 at 25-75cm	11 at 0-25cm	NE
Russian 122mm L43	KO	KO	KO	KO	KO	KO	11 at 100cm+	11 at 50-100cm 15 at 100cm+	3 at 0-25cm 11 at 25-75cm	19 at 0-25cm
GE 128mm L55	KO	KO	KO	KO	KO	KO	KO	11 at 75cm+	7 at 50-100cm	19 at 0-25cm
GE 88mm L71, L73	KO	KO	KO	KO	KO	KO	KO	KO	11 at 75cm+	15 at 0-25cm
Petard Mortar, or 380mm howitzer of Sturmtyger	KO	KO	KO	KO	KO	KO	KO	KO	KO	KO

NE = No effect; KO = Knocked out.



## Reaction Test adjustments

Roll 1d10 (or 1d20 & ignore 10s column on the number; 10 and 20 = 10) and modify as follows:

<b>-4</b>	Group is not elite & is out of command.	<b>+1</b>	Orders require an advance.	
	Group is raw.		Any enemy can be seen retreating (Reaction Test result of -5 or worse) by the testing group.	
<b>-3</b>	Orders permit any form of withdrawal.	<b>+1</b>	Each enemy AFV seen by an element of the group to be knocked out within 25cm during last 2 turns (1 friendly, 1 enemy).	
	Under fire from AFV within 15cm during enemy turn just ended or previous friendly turn.		All elements in partial cover or concealed.	
<b>-2</b>	Group is carrying out a 'retreat' reaction (including Self-preservation action).	<b>+2</b>	At least 50% of group is hull-down AFVs.	
	Each element in group eliminated since start of game (includes foot elements traded down for losses).		All elements in good cover or in field fortifications.	
	Under fire during previous friendly turn or during enemy turn just finished from previously unlocated element or elements.		Higher level command element is within 15cm.	
	Under fire from point nearer friendly base line than group's own most advanced element.		Group is veteran.	
<b>-1</b>	Enemy infantry known to be within 5cm of group and were advancing when last seen.	<b>+3</b>	All elements in permanent fortifications.	
	Group contains AFV within 5cm of any of: woods, buildings, at night, in fog, in falling snow, and no friendly infantry within 5cm.		<b>+4</b>	Group is elite.
	Group is green.			
	Group contains soft vehicles or animals in the open.			
<b>-1</b>	For each element in group currently suppressed.			
	Group is elite and out of command.			
	Friendly element(s) (including in testing group), other than empty soft vehicles or animals, moved away from any enemy within 15cm for any reason during last friendly turn.			
<b>-1</b>	Under attack during previous enemy turn from salvo rockets, salvo mortars, flamethrowers or aircraft.			

## Reaction Test effects

Note: The results of a Reaction Test only affect elements of the reacting group that are directly aware of at least 1 of the trigger events (see page 63).

	Effect
6+	<b>Obey orders</b>
1 to 5	<b>Halt or move to cover:</b> Elements may either remain stationary (not an action) or take a first action to move to any cover that they can reach with 1 Move action without going closer to any located enemy. Affected elements may then carry out 1 action, excluding a Move action.
0 to -4	<b>Cease fire and retire:</b> Elements may not shoot. Infantry support elements and non-AFV heavy weapons may, and other element types must, move to a position at least 5cm, and up to a maximum of 2 movement rates (ignoring suppression), away from all located enemy troops within 25cm. If this move is impossible, and there are enemy troops within 5cm, affected elements surrender. If this move is impossible, and there are no enemy troops within 5cm, affected elements remain in place. Moving troops count as moving slowly. If there are no located enemy troops within 25cm, this move is optional.
-5 to -10	<b>Retreat:</b> Elements within 5cm of enemy AFV surrender. All others must move 2 full movement rates (ignoring suppression) away from all located enemy troops within 25cm; equipment and weapons can be carried. Transport can pick up troops and load equipment. Moving troops count as moving fast. The retreat continues until a new reaction result applies. If they are fired upon, affected elements will ignore Reaction Test effects except for worse ones. If this move is impossible, and there are enemy troops within 5cm, affected elements will surrender. If this move is impossible, and there are no enemy troops within 5cm, affected elements will remain in place and attempt to rally next turn. If there are no located enemy troops within 25cm, this movement is optional.
-11 or less	<b>Rout:</b> As Retreat, except that no new Reaction Test can be taken, and the retreat cannot be halted, except by surrender. All non-AFV heavy weapons and equipment are abandoned.

## Anti-aircraft Fire To Hit

Firer \ Target	Dive-bomber	Low altitude	Medium altitude	High altitude
Small arms and MGs	18	19	N/A	N/A
20mm to 30mm cannon	15	17	N/A	N/A
31mm to 57mm flak	15	17	18	N/A
More than 57mm flak	15	17	18	19

AA adjustments: + 2 for multi-barrelled weapons; integrated or coherent infantry elements, use 2d20 as if 2 MGs were firing.

## Anti-aircraft Fire Convert to Damaged / Destroyed

Firer \ Target	Fighter, fighter-bomber, dive- or light bomber	Medium aircraft	Heavy aircraft
Small arms and MGs	18 / -	19 / -	20 / -
20mm to 30mm cannon	15 / 18	16 / 19	17 / 20
31mm to 57mm flak	14 / 17	15 / 18	16 / 19
More than 57mm flak	13 / 16	14 / 17	15 / 18