

Micro Melee GM Charts

Table 1.1—6mm Range Chart

Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd
1	3.3	41	136.7	81	270	121	403.3	161	536.7	201	670
2	6.7	42	140	82	273.3	122	406.7	162	540	202	673.3
3	10	43	143.3	83	276.7	123	410	163	543.3	203	676.7
4	13.3	44	146.7	84	280	124	413.3	164	546.7	204	680
5	16.7	45	150	85	283.3	125	416.7	165	550	205	683.3
6	20	46	153.3	86	286.7	126	420	166	553.3	206	686.7
7	23.3	47	156.7	87	290	127	423.3	167	556.7	207	690
8	26.7	48	160	88	293.3	128	426.7	168	560	208	693.3
9	30	49	163.3	89	296.7	129	430	169	563.3	209	696.7
10	33.3	50	166.7	90	300	130	433.3	170	566.7	210	700
11	36.7	51	170	91	303.3	131	436.7	171	570	211	703.3
12	40	52	173.3	92	306.7	132	440	172	573.3	212	706.7
13	43.3	53	176.7	93	310	133	443.3	173	576.7	213	710
14	46.7	54	180	94	313.3	134	446.7	174	580	214	713.3
15	50	55	183.3	95	316.7	135	450	175	583.3	215	716.7
16	53.3	56	186.7	96	320	136	453.3	176	586.7	216	720
17	56.7	57	190	97	323.3	137	456.7	177	590	217	723.3
18	60	58	193.3	98	326.7	138	460	178	593.3	218	726.7
19	63.3	59	196.7	99	330	139	463.3	179	596.7	219	730
20	66.7	60	200	100	333.3	140	466.7	180	600	220	733.3
21	70	61	203.3	101	336.7	141	470	181	603.3	221	736.7
22	73.3	62	206.7	102	340	142	473.3	182	606.7	222	740
23	76.7	63	210	103	343.3	143	476.7	183	610	223	743.3
24	80	64	213.3	104	346.7	144	480	184	613.3	224	746.7
25	83.3	65	216.7	105	350	145	483.3	185	616.7	225	750
26	86.7	66	220	106	353.3	146	486.7	186	620	226	753.3
27	90	67	223.3	107	356.7	147	490	187	623.3	227	756.7
28	93.3	68	226.7	108	360	148	493.3	188	626.7	228	760
29	96.7	69	230	109	363.3	149	496.7	189	630	229	763.3
30	100	70	233.3	110	366.7	150	500	190	633.3	230	766.7
31	103.3	71	236.7	111	370	151	503.3	191	636.7	231	770
32	106.7	72	240	112	373.3	152	506.7	192	640	232	773.3
33	110	73	243.3	113	376.7	153	510	193	643.3	233	776.7
34	113.3	74	246.7	114	380	154	513.3	194	646.7	234	780
35	116.7	75	250	115	383.3	155	516.7	195	650	235	783.3
36	120	76	253.3	116	386.7	156	520	196	653.3	236	786.7
37	123.3	77	256.7	117	390	157	523.3	197	656.7	237	790
38	126.7	78	260	118	393.3	158	526.7	198	660	238	793.3
39	130	79	263.3	119	396.7	159	530	199	663.3	239	796.7
40	133.3	80	266.7	120	400	160	533.3	200	666.7	240	800

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Table 1.2—10mm Range Chart

Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd
1	2	41	82	81	162	121	242	161	322	201	402
2	4	42	84	82	164	122	244	162	324	202	404
3	6	43	86	83	166	123	246	163	326	203	406
4	8	44	88	84	168	124	248	164	328	204	408
5	10	45	90	85	170	125	250	165	330	205	410
6	12	46	92	86	172	126	252	166	332	206	412
7	14	47	94	87	174	127	254	167	334	207	414
8	16	48	96	88	176	128	256	168	336	208	416
9	18	49	98	89	178	129	258	169	338	209	418
10	20	50	100	90	180	130	260	170	340	210	420
11	22	51	102	91	182	131	262	171	342	211	422
12	24	52	104	92	184	132	264	172	344	212	424
13	26	53	106	93	186	133	266	173	346	213	426
14	28	54	108	94	188	134	268	174	348	214	428
15	30	55	110	95	190	135	270	175	350	215	430
16	32	56	112	96	192	136	272	176	352	216	432
17	34	57	114	97	194	137	274	177	354	217	434
18	36	58	116	98	196	138	276	178	356	218	436
19	38	59	118	99	198	139	278	179	358	219	438
20	40	60	120	100	200	140	280	180	360	220	440
21	42	61	122	101	202	141	282	181	362	221	442
22	44	62	124	102	204	142	284	182	364	222	444
23	46	63	126	103	206	143	286	183	366	223	446
24	48	64	128	104	208	144	288	184	368	224	448
25	50	65	130	105	210	145	290	185	370	225	450
26	52	66	132	106	212	146	292	186	372	226	452
27	54	67	134	107	214	147	294	187	374	227	454
28	56	68	136	108	216	148	296	188	376	228	456
29	58	69	138	109	218	149	298	189	378	229	458
30	60	70	140	110	220	150	300	190	380	230	460
31	62	71	142	111	222	151	302	191	382	231	462
32	64	72	144	112	224	152	304	192	384	232	464
33	66	73	146	113	226	153	306	193	386	233	466
34	68	74	148	114	228	154	308	194	388	234	468
35	70	75	150	115	230	155	310	195	390	235	470
36	72	76	152	116	232	156	312	196	392	236	472
37	74	77	154	117	234	157	314	197	394	237	474
38	76	78	156	118	236	158	316	198	396	238	476
39	78	79	158	119	238	159	318	199	398	239	478
40	80	80	160	120	240	160	320	200	400	240	480

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Table 1.3—12mm Range Chart

Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd
1	1.7	41	69.7	81	137.7	121	205.7	161	273.7	201	341.7
2	3.4	42	71.4	82	139.4	122	207.4	162	275.4	202	343.4
3	5.1	43	73.1	83	141.1	123	209.1	163	277.1	203	345.1
4	6.8	44	74.8	84	142.8	124	210.8	164	278.8	204	346.8
5	8.5	45	76.5	85	144.5	125	212.5	165	280.5	205	348.5
6	10.2	46	78.2	86	146.2	126	214.2	166	282.2	206	350.2
7	11.9	47	79.9	87	147.9	127	215.9	167	283.9	207	351.9
8	13.6	48	81.6	88	149.6	128	217.6	168	282.6	208	353.6
9	15.3	49	83.3	89	151.3	129	219.3	169	287.3	209	355.3
10	17	50	85	90	153	130	221	170	289	210	357
11	18.7	51	86.7	91	154.7	131	222.7	171	290.7	211	358.7
12	20.4	52	88.4	92	156.4	132	221.4	172	292.4	212	360.4
13	22.1	53	90.1	93	158.1	133	226.1	173	294.1	213	362.1
14	23.8	54	91.8	94	159.8	134	227.8	174	295.8	214	363.8
15	25.5	55	93.5	95	161.5	135	229.5	175	297.5	215	365.5
16	27.2	56	95.2	96	163.2	136	231.2	176	299.2	216	367.2
17	28.9	57	96.9	97	164.9	137	232.9	177	300.9	217	368.9
18	30.6	58	98.6	98	166.6	138	234.6	178	302.6	218	370.6
19	32.3	59	100.3	99	168.3	139	236.3	179	304.3	219	372.3
20	34	60	102	100	170	140	238	180	306	220	374
21	35.7	61	103.7	101	171.7	141	239.7	181	307.7	221	375.7
22	37.4	62	105.4	102	173.4	142	241.4	182	309.4	222	377.4
23	39.1	63	107.1	103	175.1	143	243.1	183	311.1	223	379.1
24	40.8	64	108.8	104	176.8	144	244.8	184	312.8	224	380.8
25	42.5	65	110.5	105	178.5	145	246.5	185	314.5	225	382.5
26	44.2	66	112.2	106	180.2	146	248.2	186	316.2	226	384.2
27	45.9	67	113.9	107	181.9	147	249.9	187	317.9	227	385.9
28	47.6	68	115.6	108	183.6	148	251.6	188	319.6	228	387.6
29	49.3	69	117.3	109	185.3	149	253.3	189	321.3	229	389.3
30	51	70	119	110	187	150	255	190	323	230	391
31	52.7	71	120.7	111	188.7	151	256.7	191	324.4	231	392.7
32	54.4	72	122.4	112	190.4	152	258.4	192	326.4	232	394.4
33	56.1	73	124.4	113	192.1	153	260.1	193	328.1	233	396.1
34	57.8	74	125.8	114	193.8	154	261.8	194	329.8	234	397.8
35	59.5	75	127.5	115	195.5	155	263.5	195	331.5	235	399.5
36	61.2	76	129.2	116	197.2	156	265.2	196	333.2	236	401.2
37	62.9	77	130.9	117	198.9	157	266.9	197	334.9	237	402.9
38	64.6	78	132.6	118	200.6	158	268.6	198	336.6	238	404.6
39	66.3	79	134.3	119	202.3	159	270.3	199	338.3	239	406.3
40	68	80	136	120	204	160	272	200	340	240	408

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Table 1.4—15mm Range Chart

Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd	Cm	Yd
1	1.33	41	54.5	81	107.7	121	160.9	161	214.1	201	267.3
2	2.7	42	55.9	82	109.1	122	162.3	162	215.5	202	268.7
3	4.0	43	57.2	83	110.4	123	163.6	163	216.8	203	269.9
4	5.3	44	58.5	84	111.7	124	164.9	164	218.1	204	271.3
5	6.6	45	59.8	85	113.0	125	166.3	165	219.5	205	272.7
6	8.0	46	61.2	86	114.4	126	167.6	166	220.8	206	273.9
7	9.3	47	62.5	87	115.7	127	168.9	167	222.1	207	275.3
8	10.6	48	63.8	88	117.0	128	170.2	168	223.4	208	276.6
9	12.0	49	65.2	89	118.4	129	171.6	169	224.8	209	277.9
10	13.3	50	66.5	90	119.7	130	172.9	170	226.1	210	279.3
11	14.6	51	67.8	91	121.0	131	174.2	171	227.4	211	280.6
12	16.0	52	69.2	92	122.4	132	175.6	172	228.8	212	281.9
13	17.3	53	70.5	93	123.7	133	176.9	173	230.1	213	283.3
14	18.6	54	71.8	94	125.0	134	178.2	174	231.4	214	284.6
15	20.0	55	73.2	95	126.4	135	179.6	175	232.8	215	285.9
16	21.3	56	74.5	96	127.7	136	180.9	176	234.1	216	287.3
17	22.6	57	75.8	97	129.0	137	182.2	177	235.4	217	288.6
18	24.0	58	77.1	98	130.3	138	183.5	178	236.7	218	289.9
19	25.3	59	78.5	99	131.7	139	184.9	179	238.1	219	291.3
20	26.6	60	79.8	100	133.0	140	186.2	180	239.4	220	292.6
21	28.0	61	81.1	101	134.7	141	187.5	181	240.7	221	293.9
22	29.3	62	82.5	102	136	142	188.9	182	242.1	222	295.3
23	30.6	63	83.8	103	137.3	143	190.2	183	243.4	223	296.6
24	31.9	64	85.1	104	138.7	144	191.5	184	244.7	224	297.9
25	33.2	65	86.4	105	140	145	192.9	185	246.1	225	299.3
26	34.6	66	87.8	106	141.3	146	194.2	186	247.4	226	300.6
27	35.9	67	89.1	107	142.7	147	195.5	187	248.7	227	301.9
28	37.2	68	90.4	108	144	148	196.8	188	250	228	303.3
29	38.6	69	91.8	109	145.3	149	198.2	189	251.4	229	304.6
30	39.9	70	93.1	110	146.7	150	199.5	190	252.7	230	305.9
31	41.2	71	94.4	111	148	151	200.8	191	254	231	307.2
32	42.6	72	95.8	112	149.3	152	202.2	192	255.4	232	308.6
33	43.9	73	97.1	113	150.7	153	203.5	193	256.7	233	309.9
34	45.2	74	98.4	114	152	154	204.8	194	258	234	311.2
35	46.5	75	99.8	115	153.3	155	206.2	195	259.4	235	312.6
36	47.9	76	101.1	116	154.7	156	207.5	196	260.7	236	313.9
37	49.2	77	102.4	117	156	157	208.8	197	262	237	315.2
38	50.5	78	103.7	118	157.3	158	210.1	198	263.3	238	316.5
39	51.9	79	105.1	119	158.7	159	211.5	199	264.7	239	317.9
40	53.2	80	106.4	120	160	160	212.8	200	266	240	319.2

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Table 2.2—Command Influence Radius (CIR)

TQR	Command influence	Lieutenant radius	Captain radius	Major radius
1	1 squad	40 yards	70 yards	100 yards
2	2 squads	45 yards	75 yards	105 yards
3	3 squads	50 yards	80 yards	110 yards
4	4 squads	55 yards	85 yards	115 yards
5	5 squads	60 yards	90 yards	120 yards
6	6 squads	65 yards	95 yards	125 yards

NOTE: To convert yards to centimeters, divide the radius listed under each rank by 3.3 if using 6mm miniatures, by 2 if using 10mm, 1.7 for 12mm and by 1.33 for 15mm.

Table 2.3—CIR Conversion

Yards	6mm	10mm	12mm	15mm
40	12.cm	20cm	24cm	30cm
45	13.5cm	22.5cm	27cm	33.8cm
50	15cm	25cm	30cm	37.5cm
55	16.5cm	27.5cm	33cm	41.3cm
60	18cm	30cm	36cm	45cm
65	19.5cm	32.5cm	39cm	48.8cm
70	21cm	35cm	42cm	52.5cm
75	22.5cm	37.5cm	45cm	56.3cm
80	24cm	40cm	48cm	60cm
85	25.5cm	42.5cm	51cm	63.8cm
90	27cm	45cm	54cm	67.5cm
95	28.5cm	47.5cm	57cm	71.3cm
100	30cm	50cm	60cm	75cm
105	31.5cm	52.5cm	63cm	78.8cm
110	33cm	55cm	66cm	82.5cm
115	34.5cm	57.5cm	69cm	86.3cm
120	36cm	60cm	72cm	90cm
125	37.5cm	62.5cm	75cm	93.8cm

Table 3.1—Infantry Commands

Scale	Slow/ 10 yards	Standard/ 20 yards	Tactical/ 15 yards	Double Time/ 35 yards	Dash/ 60 yards
6mm	3cm	6cm	4.5cm	10.5cm	18cm
10mm	5cm	10cm	7.5cm	17.5cm	30cm
12mm	6cm	12cm	9cm	21cm	36cm
15mm	7.5cm	15cm	11.3cm	26.3cm	45cm

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Table 3.2—OMR (Action Phases) obstacle movement reduction

Obstacle	Infantry	Vehicles
Hedgerow	2 APs	2 APs*
Creek	1 AP	No Delay
Ditch/Gully	2 APs	1 AP*
Stone Walls	1 AP	1 AP*
Climbing Stairs	2 APs	NA

Table 5.1—ID by Squad

Range	Yards	6mm	10mm	12mm	15mm
Point Blank	0–50	15cm	25cm	30cm	37.5cm
Short	51–100	30cm	50cm	60cm	75cm
Medium	101–200	60cm	100cm	120cm	150cm
Long	201–400	120cm	200cm	240cm	300cm
Extreme	401–800	240cm	400cm	480cm	600cm

Table 5.2—ID by Platoon & Company HQ

Range	Yards	6mm	10mm	12mm	15mm
Point Blank	0–100	30cm	50cm	60cm	75cm
Short	101–300	90cm	150cm	180cm	225cm
Medium	301–500	150cm	250cm	300cm	375cm
Long	501–700	210cm	350cm	420cm	525cm
Extreme	701–900	270cm	450cm	540cm	675cm

Table 5.3—ID Percentage

Target	Range				
	PB	S	M	L	E
Infantry moving	100%	95%	90%	85%	80%
Infantry stationary	90%	85%	80%	75%	70%
Vehicle moving	100%	100%	100%	95%	90%
Vehicle/ATG stationary	100%	100%	95%	90%	85%

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Table 5.4—ID Modifiers

Conditions	Modifier
Looking at Night	-80%
Looking through heavy fog	-60%
Looking through medium fog	-45%
Looking through light fog/dawn or dusk	-30%
Looking through rain	-10%
Observer is moving slow	NA
Observer is moving standard	NA
Observer is stationary, or moving tactical	+10%
Observer is moving double time	-10%
Observer is dashing	NA
Observer is in a moving vehicle	-30%
Target is moving slow	-15%
Target is ¼ concealed	-25%
Target is ½ concealed	-50%
Target is ¾ concealed	-75%
Per obstacle (e.g. tree)	-10%
Moonlight	+10%

Table 6.1—Infantry Small Arms Ranges

Range	Yards	6mm	10mm	12mm	15mm
Point Blank	0–50	15cm	25cm	30cm	37.5cm
Short	51–100	30cm	50cm	60cm	75cm
Medium	101–200	60cm	100cm	120cm	150cm
Long	201–400	120cm	200cm	240cm	300cm
Extreme	401–800	240cm	400cm	480cm	600cm

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Table 6.2—Infantry Attack Modifiers

Conditions	Modifiers
Attacker's FPF	(+)
Target TQR†	(-)
Target is moving slow	-1
Target is moving double time	-2
Target is dashing	-3
Target is a vehicle moving ½	-2
Target is a vehicle moving full	-4
Target is a vehicle	+1
Attacker is moving double time	-5
Point Blank Range	+1
Short Range	0
Medium Range	-1
Long Range	-2
Extreme Range	-3
Attacker Receiving Fire	-1
Target in ¼ Cover*	-2
Target is ½ Cover*	-4
Target is ¾ Cover*	-6

*Based on the given terrain, apply one of these when a unit is suppressed or *taking cover*.

†Do not apply if the target is suppressed.

Table 6.3—Damage

Troop Quality	TQR	Damage Rating					
		12-Man Squad	10-Man Squad	8-Man Squad	6-Man HQ	4-Man Crew	2-Man Crew
Conscript	0	12	10	8	6	4	2
Green	1	13	11	9	7	5	3
Regular	2	14	12	10	8	6	4
Professional	3	15	13	11	9	7	5
Veteran	4	16	14	12	10	8	6
Crack	5	17	15	13	11	9	7
Elite	6	18	16	14	12	10	8

Table 6.4—Casualty Range Modifier (CRM)

Range	Modifier
Point Blank	+2
Short	+1
Medium	0
Long	-1
Extreme	-2

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Table 6.5—TPM

Terrain	Small Arms	12.7mm HMG	2.0cm Cannon	RPG	37-65mm HE	75-90mm HE	95-132mm HE	150-155mm HE
Open*	0	0	0	0	0	0	0	0
Depression	-1	-1	-1	0	0	0	0	0
Shallow Ditch	-2	-1	-1	-1	0	0	0	0
Hedgerow	-3	-2	-2	-2	-1	0	0	0
Trees/Logs	-4	-3	-3	-3	-2	-1	0	0
Rocks/Rubble	-5	-5	-4	-4	-3	-2	-1	0
Foxhole/Trench	-6	-6	-5	-5	-4	-3	-2	-1
Bunker/Sandbags	-7	-6	-5	-4	-4	-3	-2	-1
Wooden Building	-7	-1	0	0	0	0	0	0
Brick Buildings	-8	-7	-6	-7	-5	-4	-3	-2
Concrete Pillbox	-8	-7	-7	-8	-6	-5	-4	-3

*Close assaults on bunkers and pillboxes will use “Open” for the terrain following a hit and add +2 to the d8 die casualty results.

Table 6.6—Disembark & Set-up

Task	Action Phases Required
Disembark from Transport	1
Embark onto Transport	2
Set up medium to heavy MG	3
Set up 50–60mm mortar	4
Set up 3" mortar	5
Set up 80–82mm mortar	6
Set up 4.2" mortar	7
Set up 120mm mortar	8

Table 7.1—AFV Identification Ranges

Range	Yards	6mm	10mm	12mm	15mm
Point Blank	0–100	30cm	50cm	60cm	75cm
Short	101–200	60cm	100cm	120cm	150cm
Medium	201–400	120cm	200cm	240cm	300cm
Long	401–800	240cm	400cm	480cm	600cm
Extreme	801–1600	480cm	800cm	960cm	1,200cm

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Table 7.2—Identification Percentage

Target Conditions	Range				
	PB	S	M	L	E
Infantry moving	100%	95%	90%	85%	80%
Infantry stationary	90%	85%	80%	75%	70%
Vehicle moving	100%	100%	100%	95%	90%
Vehicle/ATG stationary	100%	100%	95%	90%	85%

Table 7.3—Observer Modifiers

Conditions	Modifier
Looking at Night	-80%
Looking Through Heavy Fog	-60%
Looking Through Medium Fog	-45%
Looking Through Light Fog/Dawn or Dusk	-30%
Looking Through Rain	-10%
Observer is not moving	0
Observer is in an AFV moving $\frac{1}{4}$ speed	-10%
Observer is in an AFV moving $\frac{1}{2}$ speed	-20%
Observer is in an AFV moving $\frac{3}{4}$ speed	-30%
Observer is in an AFV moving full speed	-40%
Observer is Buttoned-Up AFV	-40%
Target is $\frac{1}{4}$ concealed	-25%
Target is $\frac{1}{2}$ concealed	-50%
Target is $\frac{3}{4}$ concealed (hull down)	-75%
Per obstacle (e.g. tree)	-10%
Moonlight	+10%

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Table 7.4a—Weapon Ranges for AFV (yards)

Weapons	Point Blank	Short	Medium	Long	Extreme
Stielgranate 41	50	100	200	400	800
Raketenwerfer 43	50	100	150	200	250
Bow/Coaxial MGs	75	150	300	600	1200
12.7–28mm	100	250	500	1000	2000
37–47mm	125	350	600	1200	2200
50–57mm (M18)	150	400	700	1400	2400
75–77mm (M20/LG40/7.5cm)	175	450	800	1600	2600
85–95mm	200	500	900	1800	2800
100–155mm (LG40/10.5cm)	225	550	1000	2000	3000

Table 7.4b—Weapon Ranges for AFV (6mm)

Weapons	Point Blank	Short	Medium	Long	Extreme
Stielgranate 41	15cm	30cm	60cm	120cm	240cm
Raketenwerfer 43	15cm	30cm	60cm	120cm	240cm
Bow/Coaxial MGs	22.5cm	45cm	90cm	180cm	360cm
12.7–28mm	30cm	75cm	150cm	300cm	600cm
37–47mm	37.5cm	105cm	180cm	360cm	660cm
50–57mm (M18)	45cm	120cm	210cm	420cm	720cm
75–77mm (M20/LG40/7.5cm)	52.5cm	135cm	240cm	480cm	780cm
85–95mm	60cm	150cm	270cm	540cm	840cm
100–155mm (LG40/10.5cm)	67.5cm	165cm	300cm	600cm	900cm

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Table 7.4c—Weapon Ranges for AFV (10mm)

Weapons	Point Blank	Short	Medium	Long	Extreme
Stielgranate 41	25cm	50cm	100cm	200cm	400cm
Raketenwerfer 43	25cm	50cm	75cm	100cm	125cm
Bow/Coaxial MGs	37.5cm	75cm	150cm	300cm	600cm
12.7–28mm	50cm	125cm	250cm	500cm	1000cm
37–47mm	62.5cm	175cm	300cm	600cm	1100cm
50–57mm (M18)	75cm	200cm	350cm	700cm	1200cm
75–77mm (M20/LG40/7.5cm)	87.5cm	225cm	400cm	800cm	1300cm
85–95mm	100cm	250cm	450cm	900cm	1400cm
100–155mm (LG40/10.5cm)	112.5cm	275cm	500cm	1000cm	1500cm

Table 7.4d—Weapon Ranges for AFV (12mm)

Weapons	Point Blank	Short	Medium	Long	Extreme
Stielgranate 41	30cm	60cm	120cm	240cm	480cm
Raketenwerfer 43	30cm	60cm	120cm	240cm	480cm
Bow/Coaxial MGs	45cm	90cm	180cm	360cm	720cm
12.7–28mm	60cm	150cm	300cm	600cm	1200cm
37–47mm	75cm	210cm	360cm	720cm	1320cm
50–57mm (M18)	90cm	240cm	420cm	840cm	1440cm
75–77mm (M20/LG40/7.5cm)	105cm	270cm	480cm	960cm	1560cm
85–95mm	120cm	300cm	540cm	1080cm	1680cm
100–155mm (LG40/10.5cm)	135cm	330cm	600cm	1200cm	1800cm

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Table 7.4e—Weapon Ranges for AFV (15mm)

Weapons	Point Blank	Short	Medium	Long	Extreme
Stielgranate 41	37.5cm	75cm	150cm	300cm	600cm
Raketenwerfer 43	37.5cm	75cm	150cm	300cm	600cm
Bow/Coaxial MGs	56.3cm	112.5cm	225cm	450cm	900cm
12.7–28mm	75cm	187.5cm	375cm	750cm	1500cm
37–47mm	93.8cm	262.5cm	450cm	900cm	1650cm
50–57mm (M18)	112.5cm	300cm	525cm	1050cm	1800cm
75–77mm (M20)	131.3cm	337.5cm	600cm	1200cm	1950cm
85–95mm	150cm	375cm	675cm	1350cm	2100cm
100–155mm	168.8cm	412.5cm	750cm	1500cm	2250cm

Table 7.5—AFV To Hit

TQ/Rating	Chance to Hit	Target Moving Across	Attacker Moving
Elite/6	90%	-10%	-10%
Crack/5	85%	-15%	-15%
Veteran/4	80%	-20%	-20%
Professional/3	75%	-25%	-25%
Regular/2	70%	-30%	-30%
Green/1	65%	-35%	-35%
Conscript/0	60%	-40%	-40%

Table 7.6—Shots Per Action (S/A)

TQ Projectile	Elite	Crack	Veteran	Pro	Regular	Green	Conscript
28–47mm	6/1	5/1	4/1	3/1	2/1	1/1	1/2
50–60 mm	5/1	4/1	3/1	2/1	1/1	1/2	1/3
75–77mm	4/1	3/1	2/1	1/1	1/2	1/3	1/4
85–90mm	3/1	2/1	1/1	1/2	1/3	1/4	1/5
95–100mm	2/1	1/1	1/2	1/3	1/4	1/5	1/6
122–128mm	1/1	1/2	1/3	1/4	1/5	1/6	1/7
155mm	1/2	1/3	1/4	1/5	1/6	1/7	1/8

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Table 7.7—AFV To Hit Modifiers

Circumstance/Situation	Modifier
Consecutive fire at the same target (TQR \geq 3; professional and up)	+10%
Large vehicle/sandbag emplacement/pillbox	+10%
Increase in range category	-10%
Per obstacle such as a tree	-10%
Small vehicle	-10%
Small AT gun	-10%
Gyro-stabilization	+10%
Canister Shot against infantry	+5%
Main gun optics (German)	+5%
Target is a squad/window/door/embrasure or small feature	-35%
Target is a building/large bunker	+50%
Hull Down	-40%
Called shot (e.g. turret, track)	-40%
Tank Destroyers without a turret	-5%
Medium AT gun	-5%
Shooting at dawn	-10%
Shooting at night	-40%
Shooting in fog	-20%
Changing targets (within the same phase)	-15%

Micro Melee GM Charts

Table 7.8—Hit Location

%	Location	%	Location
1	Turret Ring*	47 – 70	Upper hull/flank/rear
2 – 3	Main Gun**	71 – 82	Lower hull/flank/rear
4 – 19	Lower hull/flank/rear	83 – 84	Bow machine gun†
20 – 42	Turret face/flank/rear	85 – 89	Track**
43	Coaxial machine gun*	90 – 94	Suspension††
44	Periscope**	95 – 98	Bogie/wheel **
45 – 46	Vision slot†	99 – 100	Commander’s cupola

*Count as one half the armor listed for the turret face.

**There is a 35% chance of destruction that increases as the projectile gets larger. See Table 7.21.

†Count as one half the armor listed for the upper hull.

††Use flank armor to determine penetration. From head on, score as track hit.

NOTE: An unbuttoned tank commander will be killed with a hit location of "cupola" and will result in the crew abandoning the vehicle. If the commander is buttoned, make a casualty roll.

Table 7.9—Hull-down Hit Location

Roll	Hit Location	Roll	Hit Location
1	Commander’s cupola	7	Turret face/flank/rear
2	Turret face/flank/rear	8	Turret face/flank/rear
3	Turret face/flank/rear	9	Turret face/flank/rear
4	Turret face/flank/rear	10	Periscope (front or flank)
5	Coaxial machine gun (front or flank)	11	Turret face/flank/rear
6	Turret face/flank/rear	12	Main gun (front or flank)

Micro Melee GM Charts

Table 7.10—Ratios

Pen/AR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00	0.50	0.33	0.25	0.20	0.17	0.14	0.13	0.11	0.10	0.09	0.08	0.08	0.07	0.07
2	2.00	1.00	0.67	0.50	0.40	0.33	0.29	0.25	0.22	0.20	0.18	0.17	0.15	0.14	0.13
3	3.00	1.50	1.00	0.75	0.60	0.50	0.43	0.38	0.33	0.30	0.27	0.25	0.23	0.21	0.20
4	4.00	2.00	1.33	1.00	0.80	0.67	0.57	0.50	0.44	0.40	0.36	0.33	0.31	0.29	0.27
5	5.00	2.50	1.67	1.25	1.00	0.83	0.71	0.63	0.56	0.50	0.45	0.42	0.38	0.36	0.33
6	6.00	3.00	2.00	1.50	1.20	1.00	0.86	0.75	0.67	0.60	0.55	0.50	0.46	0.43	0.40
7	7.00	3.50	2.33	1.75	1.40	1.17	1.00	0.88	0.78	0.70	0.64	0.58	0.54	0.50	0.47
8	8.00	4.00	2.67	2.00	1.60	1.33	1.14	1.00	0.89	0.80	0.73	0.67	0.62	0.57	0.53
9	9.00	4.50	3.00	2.25	1.80	1.50	1.29	1.13	1.00	0.90	0.82	0.75	0.69	0.64	0.60
10	10.00	5.00	3.33	2.50	2.00	1.67	1.43	1.25	1.11	1.00	0.91	0.83	0.77	0.71	0.67
11	11.00	5.50	3.67	2.75	2.20	1.83	1.57	1.38	1.22	1.10	1.00	0.92	0.85	0.79	0.73
12	12.00	6.00	4.00	3.00	2.40	2.00	1.71	1.50	1.33	1.20	1.09	1.00	0.92	0.86	0.80
13	13.00	6.50	4.33	3.25	2.60	2.17	1.86	1.63	1.44	1.30	1.18	1.08	1.00	0.93	0.87
14	14.00	7.00	4.67	3.50	2.80	2.33	2.00	1.75	1.56	1.40	1.27	1.17	1.08	1.00	0.93
15	15.00	7.50	5.00	3.75	3.00	2.50	2.14	1.88	1.67	1.50	1.36	1.25	1.15	1.07	1.00
16	16.00	8.00	5.33	4.00	3.20	2.67	2.29	2.00	1.78	1.60	1.45	1.33	1.23	1.14	1.07
17	17.00	8.50	5.67	4.25	3.40	2.83	2.43	2.13	1.89	1.70	1.55	1.42	1.31	1.21	1.13
18	18.00	9.00	6.00	4.50	3.60	2.57	2.57	2.25	2.00	1.80	1.64	1.50	1.38	1.29	1.20
19	19.00	9.50	6.33	4.75	3.80	3.17	2.71	2.38	2.11	1.90	1.73	1.58	1.46	1.36	1.27
20	20.00	10.00	6.67	5.00	4.00	3.33	2.86	2.50	2.22	2.00	1.82	1.67	1.54	1.43	1.33
21	21.00	10.50	7.00	5.25	4.20	3.50	3.00	2.63	2.33	2.10	1.91	1.75	1.62	1.50	1.40
22	22.00	11.00	7.33	5.50	4.40	3.67	3.14	2.75	2.44	2.20	2.00	1.83	1.69	1.57	1.47
23	23.00	11.50	7.67	5.75	4.60	3.83	3.29	2.88	2.56	2.30	2.09	1.92	1.77	1.64	1.53
24	24.00	12.00	8.00	6.00	4.80	4.00	3.43	3.00	2.67	2.40	2.18	2.00	1.85	1.71	1.60
25	25.00	12.50	8.33	6.25	5.00	4.17	3.57	3.13	2.78	2.50	2.27	2.08	1.92	1.79	1.67
26	26.00	13.00	8.67	6.50	5.20	4.33	3.71	3.25	2.89	2.60	2.36	2.17	2.00	1.86	1.73
27	27.00	13.50	9.00	6.75	5.40	4.50	3.86	3.38	3.00	2.70	2.45	2.25	2.08	1.93	1.80
28	28.00	14.00	9.33	7.00	5.60	4.67	4.00	3.50	3.11	2.80	2.55	2.33	2.15	2.00	1.87
29	29.00	14.50	9.67	7.25	5.80	4.83	4.14	3.63	3.22	2.90	2.64	2.42	2.23	2.07	1.93
30	30.00	15.00	10.00	7.50	6.00	5.00	4.29	3.75	3.33	3.00	2.73	2.50	2.31	2.14	2.00
31	31.00	15.50	10.33	7.75	6.20	5.17	4.43	3.88	3.44	3.10	2.82	2.58	2.38	2.21	2.07

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Table 7.11—Ratios

Pen/AR	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03
2	0.13	0.12	0.11	0.11	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.07
3	0.19	0.18	0.17	0.16	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11	0.11	0.10	0.10
4	0.25	0.24	0.22	0.21	0.20	0.19	0.18	0.17	0.17	0.16	0.15	0.15	0.14	0.14	0.13
5	0.31	0.29	0.28	0.26	0.25	0.24	0.23	0.22	0.21	0.20	0.19	0.19	0.18	0.17	0.17
6	0.38	0.35	0.33	0.32	0.30	0.29	0.27	0.26	0.25	0.24	0.23	0.22	0.21	0.21	0.20
7	0.44	0.41	0.39	0.37	0.35	0.33	0.32	0.30	0.29	0.28	0.27	0.26	0.25	0.24	0.23
8	0.50	0.47	0.44	0.42	0.40	0.38	0.36	0.35	0.33	0.32	0.31	0.30	0.29	0.28	0.27
9	0.56	0.53	0.50	0.47	0.45	0.43	0.41	0.39	0.38	0.36	0.35	0.33	0.32	0.31	0.30
10	0.63	0.59	0.56	0.53	0.50	0.48	0.45	0.43	0.42	0.40	0.38	0.37	0.36	0.34	0.33
11	0.69	0.65	0.61	0.58	0.55	0.52	0.50	0.48	0.46	0.44	0.42	0.41	0.39	0.38	0.37
12	0.75	0.71	0.67	0.63	0.60	0.57	0.55	0.52	0.50	0.48	0.46	0.44	0.43	0.41	0.40
13	0.81	0.76	0.72	0.68	a14/u1	0.62	0.59	0.57	0.54	0.52	0.50	0.48	0.46	0.45	0.43
14	0.88	0.82	0.78	0.74	0.70	0.67	0.64	0.61	0.58	0.56	0.54	0.52	0.50	0.48	0.47
15	0.94	0.88	0.83	0.79	0.75	0.71	0.68	0.65	0.63	0.60	0.58	0.56	0.54	0.52	0.50
16	1.00	0.94	0.89	0.84	0.80	0.76	0.73	0.70	0.67	0.64	0.62	0.59	0.57	0.55	0.53
17	1.06	1.00	0.94	0.89	0.85	0.81	0.77	0.74	0.71	0.68	0.65	0.63	0.61	0.59	0.57
18	1.13	1.06	1.00	0.95	0.90	0.86	0.82	0.78	0.75	0.72	0.69	0.67	0.64	0.62	0.60
19	1.19	1.12	1.06	1.00	0.95	0.90	0.86	0.83	0.79	0.76	0.73	0.70	0.68	0.66	0.63
20	1.25	1.18	1.11	1.05	1.00	0.95	0.91	0.87	0.83	0.80	0.77	0.74	0.71	0.69	0.67
21	1.31	1.24	1.17	1.11	1.05	1.00	0.95	0.91	0.88	0.84	0.81	0.78	0.75	0.72	0.70
22	1.38	1.29	1.22	1.16	1.10	1.05	1.00	0.96	0.92	0.88	0.85	0.81	0.79	0.76	0.73
23	1.44	1.35	1.28	1.21	1.15	1.10	1.05	1.00	0.96	0.92	0.88	0.85	0.82	0.79	0.77
24	1.50	1.41	1.33	1.26	1.20	1.14	1.09	1.04	1.00	0.96	0.92	0.89	0.86	0.83	0.80
25	1.56	1.47	1.39	1.32	1.25	1.19	1.14	1.09	1.04	1.00	0.96	0.93	0.89	0.86	0.83
26	1.63	1.53	1.44	1.37	1.30	1.24	1.18	1.13	1.08	1.04	1.00	0.96	0.93	0.90	0.87
27	1.69	1.59	1.50	1.42	1.35	1.29	1.23	1.17	1.13	1.08	1.04	1.00	0.96	0.93	0.90
28	1.75	1.65	1.56	1.47	1.40	1.33	1.27	1.22	1.17	1.12	1.08	1.04	1.00	0.97	0.93
29	1.81	1.71	1.61	1.53	1.45	1.38	1.32	1.26	1.21	1.16	1.12	1.07	1.04	1.00	0.97
30	1.88	1.76	1.67	1.58	1.50	1.43	1.36	1.30	1.25	1.20	1.15	1.11	1.07	1.03	1.00
31	1.94	1.82	1.72	1.63	1.55	1.48	1.41	1.35	1.29	1.24	1.19	1.15	1.11	1.07	1.03

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Table 7.12—Penetration Probability (Eastern Theater)

Ratio	Penetration Probability	Ratio	Penetration Probability
0.78 and below	0%	1.03	66%
0.79	1%	1.04	72%
0.80	1%	1.05	76%*
0.81	1%	1.06	80%*
0.82	1%	1.07	84%*
0.83	1%	1.08	87%*
0.84	1%	1.09	90%*
0.85	2%	1.10	93%*
0.86	2%	1.11	94%*
0.87	4%	1.12	95%*
0.88	5%	1.13	96%*
0.89	6%	1.14	98%*
0.90	7%	1.15	98%*
0.91	10%	1.16	99%*
0.92	13%	1.17	99%*
0.93	16%	1.18	99%*
0.94	20%	1.19	99%*
0.95	24%	1.20	99%*
0.96	28%	1.21	99%*
0.97	34%	1.22	100%*
0.98	39%	1.23	100%*
0.99	44%	1.24	100%*
1.00	50%	1.25	100%*
1.01	56%	1.26 and above	100%
1.02	61%	-	-

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Table 7.13—Penetration Probability (West European/Pacific Theater)

Ratio	Penetration Probability
0.88 and less	0%
0.89	1%
0.90	1%
0.91	1%
0.92	2%
0.93	4%
0.94	7%
0.95	11%
0.96	16%
0.97	23%
0.98	31%
0.99	40%
1.00	50%
1.01	60%
1.02	69%
1.03	77%
1.04	84%
1.05	89% *
1.06	93% *
1.07	96% *
1.08	98% *
1.09	99% *
1.10	99% *
1.11	99% *
1.12 to 1.25	100% *
1.26 and above	100%

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Table 7.14—Damage and Casualty Percentages

Caliber	Casualty Percentage
7.62–7.92mm (Rifle Bullet)	25%
12.7–25mm	35%
28mm	40%
37–47mm (AT Grenades)	45%
50–57mm	55%
60mm (Bazooka)	60%
75–82mm (PIAT)	65%
85–95mm (Püppchen/Panzerschreck)	75%
100–155mm (Stielgranate 41/Panzerfaust)	85%

Table 7.15—Hit Location for Wheeled Vehicles

Die Roll	Location (Front/Rear)	Die Roll	Location (Flank)
1	Engine/Cargo*	1	Engine
2	Engine/Cargo	2	Engine
3	Engine/Cargo*	3	Cab
4	Engine/Cargo	4	Cab
5	Cab	5	Cargo*
6	Cab	6	Cargo
7	Cab	7	Tire
8	Tire	8	Suspension
9	Suspension	9	Tire
10	Tire	10	Cargo*

*If a wagon or gun is in tow, score this as the hit location. Towed objects will be destroyed on a roll equal to or less than the projectile's *casualty percentage*. An HE round will automatically destroy any towed object.

Table 7.16—AT Gun Movement by Crew

Gun Caliber	Movement	Unlimber Time
20–37mm (including Püppchen)	45 yards/°	6 action phases
40–57mm	30 yards/°	8 action phases
75–76mm	15 yards/°	10 action phases
85–100mm	Cannot Move	12 action phases

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Table 7.17—Anti-Tanks Guns Data

Gun	Nat.	Caliber	Weight	Traverse	Elevation	Crew	Penetration AP/APCBC				
							PB	S	M	L	E
PaK 41	Ger	28mm	1390kg	45° L 45° R	-8° to +28°	3	8	8	7	6	3
PaK 35/36	Ger	37mm	328kg	29.5° L 29.5° R	-8° to +25°	3	6	5	5	3	3
PaK 38	Ger	50mm	830kg	32.5° L 32.5° R	-8° to +27°	5	10	8	7	4	2
PaK 40	Ger	75mm	1,425kg	32.5° L 32.5° R	-5° to +22°	5	15	13	12	9	7
PaK 43/41	Ger	88mm	5,000kg	30° L 30° R	-8° to +40°	5	23	22	20	18	15
Flak 18/36/37	Ger	88mm	7,407kg	360°	-3° to +85°	6	16	15	14	12	10
2-Pounder	UK	40mm	830kg	360°	-13° to +15°	4	8	6	5	3	2
6-Pounder/M1	UK/US	57mm	1,110kg	45° L 45° R	-5° to +15°	5	14	11	10	7	4
17-Pounder	UK	76.2mm	3,048kg	30° L 30° R	-6° to +16.5°	5	20	18	15	11	7
25-Pounder	UK	88mm	1829kg	360°	-5° to +45°	6	10	9	7	4	3
M3A1	US	37mm	410kg	30° L 30° R	-10° to +15°	5	8	6	5	4	2
3" Gun M5	US	76.2mm	2,005kg	22.5° L 22.5° R	-5° to +30°	5	13	12	11	9	7
M-42	USSR	45mm	625kg	30° L 30° R	-8° to +25°	3	8	6	5	4	3
ZiS 2	USSR	57mm	1,150kg	30° L 30° R	-8° to +25°	5	13	11	10	7	4
ZiS 3	USSR	76.2mm	1,200kg	27° L 27° R	-5° to +37°	5	8	7	6	5	5
M1944 (BS-3)	USSR	100mm	3,650kg	29° L 29° R	-5° to +45°	8	20	17	16	12	9
Type 94	Jap.	37mm	324 kg	30° L 30° R	-10° to +35°	8	5	4	3	2	1
Type 1	Jap.	47mm	800kg	30° L 30° R	-8° to +25°	8	7	6	6	5	3
Cannone da M35	Italy	47mm	277kg	31° L 31° R	-15° to +56°	5	6	4	4	3	1
Raketenwerfer 43 (Püppchen)	Ger.	88mm	123kg	30° L/R	-18° to +15°	2	23	23	23	23	23
M18 RCL	US	57mm	n.a.	Shoulder	Shoulder	2	8	8	8	8	8
M20 RCL	US	75mm	52kg	30° L/R	-10° to +35°	3	10	10	10	10	10
LG40 RCL	Ger	75mm	147kg	40° L/R	-20° to +42°	3	5	5	5	5	5
LG40 RCL	Ger	105mm	408kg	30° L/R	-15° to +40°	3	12	12	12	12	12

Table 7.18—HMG & Flak Guns

Gun	Hit Dice	Rounds per Second	Penetration				
			PB	S	M	L	E
M2 HB (12.7mm)	d10	10/rps	2	2	2	1	-
DShK 1938 (12.7mm)	d10	10/rps	2	2	2	1	-
Breda M1931 (13.2mm)	d8	8/rps	2	2	2	2	-
Hotchkiss Mle 1930-35 (13.2mm)	d10	10/rps	2	1	1	-	-
Besa HMG (15mm)	d8	8/rps	2	2	2	1	-
2.0cm Flak 30	d10*	5/rps	5	4	3	2	1
2.0cm Flak 38	d8	8/rps	5	4	3	2	1
2.0cm Flakvierling	3d10	30/rps	5	4	3	2	1
3.7cm Flak 18	d6*	3/rps	6	5	5	4	2
3.7cm Flak 36/37	d6*	3/rps	6	5	5	4	2
3.7cm Flak 43	d4	4/rps	6	5	5	4	2

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Table 7.19a—Hand-Held AT Ranges (yards)

Weapons	Ranges				
	Point Blank	Short	Medium	Long	Extreme
Boys AT Rifle	50	100	200	500	750
Degtyarev PTRD	50	100	250	500	650
Simonov PTRS	125	250	500	1000	1600
PzB 39	50	100	200	500	750
PIAT	15	25	50	75	100
M9 Bazooka	25	50	100	200	300
Panzerschreck	25	50	100	150	200
Panzerfaust 30	6	12	18	24	30
Panzerfaust 60	12	24	36	48	60
Panzerfaust 100	20	40	60	80	100
AT rifle grenades	15	25	50	75	100

Table 7.19b—Hand-Held AT Ranges (6mm)

Weapons	Ranges				
	Point Blank	Short	Medium	Long	Extreme
Boys AT Rifle	15cm	30cm	60cm	150cm	225cm
Degtyarev PTRD	15cm	30cm	75cm	150cm	195cm
Simonov PTRS	37.5cm	75cm	150cm	300cm	480cm
PzB 39	15cm	30cm	60cm	150cm	225cm
PIAT	4.5cm	7.5cm	15cm	22.5cm	30cm
M9 Bazooka	7.5cm	15cm	30cm	60cm	90cm
Panzerschreck	7.5cm	15cm	30cm	45cm	60cm
Panzerfaust 30	1.8cm	3.6cm	5.4cm	7.2cm	9cm
Panzerfaust 60	3.6cm	7.2cm	10.8cm	14.4cm	18cm
Panzerfaust 100	6cm	12cm	18cm	24cm	30cm
AT rifle grenades	4.5cm	7.5cm	15cm	22.5cm	30cm

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Table 7.19c—Hand-Held AT Ranges (10mm)

Weapons	Ranges				
	Point Blank	Short	Medium	Long	Extreme
Boys AT Rifle	25cm	50cm	100cm	250cm	375cm
Degtyarev PTRD	25cm	50cm	125cm	250cm	325cm
Simonov PTRS	62.5cm	125cm	250cm	500cm	800cm
PzB 39	25cm	50cm	100cm	250cm	375cm
PIAT	7.5cm	12.5cm	25cm	37.5cm	50cm
M9 Bazooka	12.5cm	25cm	50cm	100cm	150cm
Panzerschreck	12.5cm	25cm	50cm	75cm	100cm
Panzerfaust 30	3cm	6cm	9cm	12cm	15cm
Panzerfaust 60	6cm	12cm	18cm	24cm	30cm
Panzerfaust 100	10cm	20cm	30cm	40cm	50cm
AT rifle grenades	7.5cm	12.5cm	25cm	37.5cm	50cm

Table 7.19d—Hand-Held AT Ranges (12mm)

Weapons	Ranges				
	Point Blank	Short	Medium	Long	Extreme
Boys AT Rifle	25cm	50cm	100cm	250cm	375cm
Degtyarev PTRD	25cm	50cm	125cm	250cm	325cm
Simonov PTRS	62.5cm	125cm	250cm	500cm	800cm
PzB 39	25cm	50cm	100cm	250cm	375cm
PIAT	7.5cm	12.5cm	25cm	37.5cm	50cm
M9 Bazooka	12.5cm	25cm	50cm	100cm	150cm
Panzerschreck	12.5cm	25cm	50cm	75cm	100cm
Panzerfaust 30	3cm	6cm	9cm	12cm	15cm
Panzerfaust 60	6cm	12cm	18cm	24cm	30cm
Panzerfaust 100	10cm	20cm	30cm	40cm	50cm
AT rifle grenades	7.5cm	12.5cm	25cm	37.5cm	50cm

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Table 7.19e—Hand-Held AT Ranges (15mm)

Weapons	Ranges				
	Point Blank	Short	Medium	Long	Extreme
Boys AT Rifle	37.5cm	75cm	150cm	375cm	562.5cm
Degtyarev PTRD	37.5cm	75cm	150cm	375cm	487.5cm
Simonov PTRS	93.75cm	187.5cm	375cm	750cm	1200cm
PzB 39	37.5cm	75cm	150cm	375cm	562.5cm
PIAT	11.25cm	18.75cm	37.5cm	56.25cm	75cm
M9 Bazooka	18.75cm	37.5cm	75cm	150cm	225cm
Panzerschreck	18.75cm	37.5cm	75cm	112.5cm	150cm
Panzerfaust 30	4.5cm	9cm	13.5cm	18cm	22.5cm
Panzerfaust 60	9cm	18cm	27cm	36cm	45cm
Panzerfaust 100	15cm	30cm	45cm	60cm	75cm
AT rifle grenades	11.25cm	18.75cm	37.5cm	56.25cm	75cm

Table 7.19f—AT Rifle Penetration

Weapons	Penetration				
	Point Blank	Short	Medium	Long	Extreme
Boys AT Rifle	2	2	1	1	-
Degtyarev PTRD	4	4	3	2	1
Simonov PTRS	5	4	3	1	-
PzB 39	3	2	2	1	-

Table 7.20—RPG Penetration Characteristics

HEAT	Penetration
M9 Bazooka (60mm)	12
Panzerfaust (150mm)	20
Panzerschreck (88mm)	23
Raketenwerfer 43	23
PIAT (82mm)	10
Stielgranate 41	15
GewPzGr 61	13
GewPzGr 46	9
U.S. M9A1 HEAT	5
Type 2b AT grenade	5
British No. 68	5

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Table—7.21 Close Assault “Hit”

Die Roll	Results
1	There is explosive damage and the vehicle is destroyed.
2	The engine is on fire. The crew surrenders.
3	The crew is disabled, but the vehicle can be recovered.
4	The vehicle is immobilized. The crew must check morale.
5	The crew is incapacitated for one d6 phases
6	The suspension is damaged. Reduce speed by ½.

Table 8.1—Artillery

Projectile Caliber	TQR						
	0	1	2	3	4	5	6
50mm/2" mortar	5	7	8	10	12	14	15
60mm mortar	5	5	7	9	11	13	15
75mm–76.2mm (3" mortar)	0	2	5	8	10	12	14
80–82mm mortar/rocket	-2	0	2	7	9	11	13
85–90mm	-5	-2	0	5	8	10	12
105mm/4.2" mortar	-6	-5	-2	2	7	9	11
120mm mortar/132mm rocket	-7	-6	-5	0	5	8	10
150/155mm	-8	-7	-6	-2	2	7	9

Table 8.2—High Explosive Direct & Indirect Fire (yards)

Projectile Caliber	Blast Radius	Damage Die	Damage Index	Distance Dice	
				Direct	Indirect
20–28mm	NA	d4	NA	NA	NA
37–40mm	12	d6	150	d4	NA
45–47mm	15	d6	175	d6	NA
50mm/2"	18	d6	200	d8	d20
57–65mm	20	d8	250	d10	d20
75mm–77mm	23	d8	300	d12	d20+d4
80–82mm	25	d10	350	d12	d20+d6
85–90mm	28	d10	400	2d8	3d10
95–105mm/4.2"	30	d12	450	2d8	3d12
120mm–128mm	40	d12	500	d20	2d20
132mm	45	d12	500	NA	2d20+d6
150–155mm	50	d20	550	d20+d4	3d20

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Table 8.3—Blast Radius and Distance Dice Conversion (6mm)

Yards	Cm	Yards	Cm
1	.3	26	7.8
2	.6	27	8.1
3	.9	28	8.4
4	1.2	29	8.7
5	1.5	30	9
6	1.8	31	9.3
7	2.1	32	9.6
8	2.4	33	9.9
9	2.7	34	10.2
10	3	35	10.5
11	3.3	36	10.8
12	3.6	37	11.1
13	3.9	38	11.4
14	4.2	39	11.7
15	4.5	40	12
16	4.8	41	12.3
17	5.1	42	12.6
18	5.4	43	12.9
19	5.7	44	13.2
20	6	45	13.5
21	6.3	46	13.8
22	6.6	47	14.1
23	6.9	48	14.4
24	7.2	49	14.7
25	7.5	50	15

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Table 8.4— Blast Radius and Distance Dice Conversion (10mm)

Yards	Cm	Yards	Cm
1	.5	26	13
2	1	27	13.5
3	1.5	28	14
4	2	29	14.5
5	2.5	30	15
6	3	31	15.5
7	3.5	32	16
8	4	33	16.5
9	4.5	34	17
10	5	35	17.5
11	5.5	36	18
12	6	37	18.5
13	6.5	38	19
14	7	39	19.5
15	7.5	40	20
16	8	41	20.5
17	8.5	42	21
18	9	43	21.5
19	9.5	44	22
20	10	45	22.5
21	10.5	46	23
22	11	47	23.5
23	11.5	48	24
24	12	49	24.5
25	12.5	50	25

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Table 8.5— Blast Radius and Distance Dice Conversion (12mm)

Yards	Cm	Yards	Cm
1	.6	26	15.6
2	1.2	27	16.2
3	1.8	28	16.8
4	2.4	29	17.4
5	3	30	18
6	3.6	31	18.6
7	4.2	32	19.2
8	4.8	33	19.8
9	5.4	34	20.4
10	6	35	21
11	6.6	36	21.6
12	7.2	37	22.2
13	7.8	38	22.8
14	8.4	39	23.4
15	9	40	24
16	9.6	41	24.6
17	10.2	42	25.2
18	10.8	43	25.8
19	11.4	44	26.4
20	12	45	27
21	12.6	46	27.6
22	13.2	47	28.2
23	13.8	48	28.8
24	14.4	49	29.4
25	15	50	30

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Table 8.6—Blast Radius and Distance Dice Conversion (15mm)

Yards	Cm	Yards	Cm
1	.75	26	19.5
2	1.5	27	20.25
3	2.25	28	21
4	3	29	21.75
5	3.75	30	22.5
6	4.5	31	23.25
7	5.25	32	24
8	6	33	24.75
9	6.75	34	25.5
10	7.5	35	26.25
11	8.25	36	27
12	9	37	27.75
13	9.75	38	28.5
14	10.5	39	29.25
15	11.25	40	30
16	12	41	30.75
17	12.75	42	31.5
18	13.5	43	32.25
19	14.25	44	33
20	15	45	33.75
21	15.75	46	34.5
22	16.5	47	35.25
23	17.25	48	36
24	18	49	36.75
25	18.75	50	37.5

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Table 8.7—Target Conditions

Factors	Modifier
Pilot's TQR	(-1 to -6)
Target is a bunker/stationary structure	-10
Target is a large vehicle	-8
Target is a medium vehicle	-6
Target is a small vehicle	-4
Attacking with bomb	-3
Attacking with 20-37mm auto cannon	-2 each gun
Target is infantry*	-1
Attacking with MG	-1 each gun
Anti-aircraft fire from rifles	+1
Target is a moving vehicle	+2
Anti-aircraft machine gun	+1 each gun
Anti-aircraft 2.0cm Flak	+2 each gun
Anti-aircraft 3.7cm Flak	+4 each gun
Anti-aircraft 40mm Bofors	+5 each gun

Table 8.8—Close Air Support Results

Die Roll	Results
1-below	Attack is on target (roll 1d12 for direction and 1d20 for distance)
2	Attack is off target by 30 yards/roll direction dice
3	Attack is off target by 40 yards /roll direction dice
4	Attack is off target by 50 yards /roll direction dice
5	Attack is off target by 60 yards /roll direction dice
6	Attack is off target by 70 yards /roll direction dice
7	Attack is off target by 80 yards /roll direction dice
8	Attack is off target by 90 yards /roll direction dice
9	Attack is off target by 100 yards /roll direction dice
10	Ordnance is a dud
11	Off course (abort attack and try again)
12	Weapon malfunction (bombs won't drop/guns won't fire); RTB
13	Intense ground fire (abort attack and RTB)
14	Engine stalls (roll d6 against pilot's TQR to pull out of stall)
15	Light ground fire (use results for number 18)
16	Medium ground fire (use results for number 19)
17	Heavy ground fire (use results for number 20)
18	Pilot is wounded (abort attack and RTB)
19	Engine is on fire (pilot must bail out/roll d6 against pilot TQR)
20-above	Plane is shot down (roll d6 against pilot TQR)

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Table 8.9—Asset Availability by Level

HQ Level	Asset	Availability	Delay
Platoon	2", 5.0cm, 60mm (mortars)	60%	d6
Company	3", 81mm (mortars)	70%	d8
Battalion	4.2", 105mm, 120mm, 132mm, 150mm, 155mm	80%	d10