1	100	Phys Da		Aim Time	Balli	stic Da	nta	Rai	nge	in 2	yard	d hex	xes
Pistols				AC Md			10	20	40		100	200	300 400
Lebel M1892	Will more manufacture	L W	9 2.1	1 -17 2 -11	LRN	PEN DC	1.0	.9	.8	.6 1	.5 1	.2 1	.1
Double Action Revolver		RT	12	3 -10 4 -9	*LHP		1.0	.9	.8	.6 1	.5 1	.2	.1
8mm MLe 92 France		ROF Cap	6	5 -8 6 -7	*FMI	DC PEN		1.0	.8	7	.5	.2	1
First introduced into the French army in		AW	.18 HMC		1141)	DC	1	1	1	1	1	1	1
1893, this revolver remained in service through 1945.		KD SAB	2 3			BA TOF	48 1	41 2	33 3	26 6	21 10	12 22	6 37
Walther PP		L W	6 1.7	1 -16 2 -11	FMJ	PEN DC	1.1	.9 1	.7 1	.5 1	.4 1	.1 1	
Automatic Pistol		RT	4	3 -10 4 -9	*JHP		1.0	.9	.7	.5	.4	.1	
32 ACP		ROF	*	5 -8 6 -7	,,,,	DC	2	2	1	1	i	ì	
Germany		Cap AW	.35		*AP	PEN DC	1.5 1	1.3 1	1.1	.7 1	.5 1	.2 1	
First introduced in 1929 as a police pistol, this highly successful weapon was used by the German military.		KD SAB	Mag 2 2			BA TOF	44	35 1	26 3	18 5	13 8	4 19	
Mauser HSc		L W	6 1.5	1 -16 2 -11	FMJ	PEN DC	1.1	1.0	.8 1	.5 1	.4	.1	
Automatic Pistol		RT	4	3 -10 4 -9	*IHP	PEN	1.0	.9	.7	.5	.4	.1	
32 ACP		ROF	*	5 -8	J111	DC	2	2	1	1	1	1	
Germany		Cap AW	.35		*AP	PEN DC	1.5 1	1.4	1.1	.8 1	.5 1	.2 1	
This pistol was introduced in 1938 as a commercial venture and later used by the German Navy and Air Force.		KD SAB	Mag 2 3			BA TOF	44 1	35 1	26	18 5	14 8	4 19	
Walther P38		L	8	1 -17	FMJ	PEN				1.1	.9	.4	.1 .1
Automatic Pistol		W RT	2.4	2 -11 3 -10 4 -9	*IHP	DC	3	3	2	2	1	2	1 1
9mm Parabellum		ROF	*	5 -8 6 -7	JIII	DC	1.9	1.7	1.4	1.1	.8 1	1	1 1
Germany		Cap AW	.38	0 -7	*AP	PEN DC	2.7	2.5	2.1	1.6	1.2	.5 1	.2 .1 1 1
Standard pistol of the German army in WW II. It was adopted in 1938. After the war it was renamed the Walther P1.		KD SAB	Mag 3			BA TOF	45 1	36	27	20	15 6	5 15	0 -3 25 36
Glisenti M10		L	8	1 -17	FMJ	PEN				1.0	.8	.3	.1 .1
Automatic Pistol		W	2.0	2 -11 3 -10	*ILID	DC	2	2	1.2	1 0	1	1	1 1
9mm Glisenti		RT ROF	4	4 -9 5 -8 6 -7	*JHP	DC	1.7 4	3	1.3	1.0	.8 1	.3 1	1 1
Italy		Cap AW	7 .36	0 /	*AP	PEN DC	2.4	2.2	1.9	1.5	1.1	.5 1	.2 .1 1 1
The 9mm Glisenti was the standard Italian pistol round. It was adopted in 1910 and used throughout WW II.		KD SAB	Mag 3 4			BA TOF	46	37	28	21	16 7	7 16	1 -2 27 39
Taisho 14		L	9	1 -17	FMJ	PEN				1.1	.9	.4	.2 .1
Automatic Pistol		W	2.2	2 -11 3 -10	477	DC	2	2	1	1	1	1	1 1
8mm Taisho 14		RT ROF	4 *	4 -9 5 -8	*JHP	PEN DC	1.7	1.6	1.3	1.0	.8 1	.4 1	.2 .1 1 1
Japan		Cap AW	8	6 -7	*AP	PEN DC	2.5	2.3	2.0	1.5	1.2	.5 1	.2 .1
Improved Taisho 04 which retained serious design flaws making reloading slow if not impossible.		KD SAB	Mag 3 3			BA TOF	47 1	40	31 2	24 5	19 7	10 16	4 1 26 38

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the same transfer against a second and a second against a	Physi	20000000	Aim Time	Balli	stic Da	ata	Ra	nge	in 2	varo	d hexes
Pistols Vanis Tana 04			AC Md	T) (I	DEM	10	20	40	70	100	200 300 400
Kenju Type 94	L W	7 1.9	1 -16 2 -11	FMI	PEN DC	1.6	1.5	1.3	1.0	.8 1	3 1 1 1 1
Automatic Pistol	RT	4	3 -10 4 -9	*JHP	PEN		1.4		.9	.7	3 1 1
8mm Taisho 14	ROF		5 -8 6 -7	* 4 10	DC	3	2	2	1	1	1 1 1
Japan This winted was introduced in 1027 to	Cap AW	.32		AP	PEN DC	2.3	2.1	1.8	1.4	1.1	.5 .2 .1 1 1 1
This pistol was introduced in 1937 to supplement the Taisho 14. Of poor quality, a sharp blow can cause it to fire.	KD SAB	Mag 2 3			BA TOF	47 1	39 1	31	24 5	19 7	9 4 1 17 28 40
Tokarev TT33	L W	8 2.0	1 -17 2 -11	FMJ	PEN DC	2.6	2.4	2.0	1.6	1.3	.6 .2 .1 1 1 1
Automatic Pistol	RT	4	3 -10 4 -9	*ILID			2.3	2.0		1.2	
7.62mm Tokarev	ROF	*	5 -8)111	DC	4	4	3	3	2	.5 .2 .1 1 1 1
USSR	Cap AW	8 .39	0 -7	AP	PEN DC	3.7	3.4	2.9	2.3	1.8	.8 .3 .1
Standard pistol of the Russian military. It fires the 7.62mm Tokarev, which is primarily a sub-machinegun round.		Mag 3			BA TOF	46	38	29	22	17 5	8 3 -1 12 20 29
Enfield Revolver #2 Mk1	L	10	1 -16	FMJ	PEN	.9	.8	.7	.5	.4	.2 .1
Double Action Revolver	W	1.9	2 -11 3 -10		DC	1	1	1	1	1	1 1
.380in British Service	RT ROF	12	4 -9 5 -8	LRN	PEN DC	.8 1	.8 1	.6 1	.5 1	.4 1	.2 .1 1 1
United Kingdom	Cap AW	6	6 -7	*LHP	PEN DC	.8 1	.8	.6 1	.5	.4 1	2 .1
This revolver was designed to replace the Webley .45in whose weight and recoil were considered excessive.		3 4			BA TOF	47	39	31	23	18 11	9 4 26 43
Webley Mk6 (6 inch barrel)	L	11	1 -17	LRN	PEN		.9	.8	.6	.5	.2 .1 .1
Double Action Revolver	W	2.7	2 -11 3 -10		DC	1	1	1	1	1	1 1 1
.455in Revolver	RT ROF	12	4 -9 5 -8	*LHP	PEN DC	1.0	.9	.8 1	.6 1	.5 1	.2 .1 .1 1 1 1
United Kingdom	Cap AW	6	6 -7	*FMJ	PEN DC	1.0	1.0	.8	.7 1	.5 1	3 1 1
Durable, well made revolver used throughout WW II and still in service with police and military forces.	Control of the contro	MC 4 5			BA TOF	47	39	31 4	23	18 11	9 4 0 25 42 60
	L	8	1 -18	FMI	PEN	1.6		16		.8	.3 .2 .1
Colt M1911A1 Automatic Pistol	W	3.0	2 -11 3 -10		DC	3	3	2	1	1	1 1 1
45 ACP	RT ROF	4 *	4 -9 5 -8	*JHP	PEN DC	1.5 4	1.4 4	1.2	.9	.7 1	.3 .1 .1 1 1 1
USA	Cap	7	6 -7	*AP	PEN					83	5 2 1
Standard US sidearm since WW I. The M1911A1 was used throughout WW II and is still in service.	AW KD SAB	.7 Mag 5 5			DC BA TOF	3 45 1	3 36 1	2 27 3	1 20 5	1 15 8	1 1 1 5 0 -4 19 31 45
OSS M1942 # 50	L	6	1 -15	FMJ	PEN	1.3	1.2	1.0	.8	.6	.3 .1
Single Shot Pistol	W	1.1	2 -11 3 -10		DC	2	2	2	1	1	1 1
45 ACP	RT ROF	14		*JHP	PEN DC	1.3	1.2	1.0	.8 1	.6 1	.3 .1 1 1
USA	Cap	1		*AP					1.1	.9	4 2
This single shot pistol was mass pro-		.04 Rnd			DC	2,	2	2	1	1	1 1
duced and distributed by the OSS to clandestine forces in occupied countries.	KD SAB	6			BA TOF	45 1	36 2	27 3	19 6	14 9	5 0 20 34

	Phys	sical ata	Aim Time	Balli	stic D	ata	Ra	nge	in 2	yard	d he	xes
Sub-Machineguns	7	25	AC Md	EM	DENI	10				- 1		300 400
Type 100 / 8mm Taisho 14 / Japan	L W	35 9.2	1 -23 2 -12		PEN DC	2	2	2	1.2	1.0	.4	2 .1 1 1
	RT	8	3 -9 4 -8	*JHP	PEN DC	1.9	1.7	1.5	1.2	.9 1	.4 1	.2 .1 1 1
	ROF		5 -6	*AP	PEN DC					1.4	.6	.3 .1
	Cap	30	7 -4		DC	2	2	2	1	1	1	1 1
	AW	1.2 Mag	8 -3 9 -3		MA	.2	.3	.5	.9	1	3	4 5
This SMG appeared in 1940 and used the underpowered 8mm Taisho 14 round.	KD SAB	3 2	10 -2 11 -1		BA TOF	47 1	40	31	24 4	19 7	10 15	4 1 25 36
Type 100 1944 pattern / 8mm Taisho 14 / Japan	L W	35 9.0	1 -23 2 -12	FMJ	PEN DC	1.9	1.8	1.5	1.2	1.0	.4	2 1 1 1
			3 -9	*JHP	PEN	1.9	1.7	1.5	1.2	.9	.4	.2 .1
The Japanese were very late in developing a sub-machinegun, with production starting	RT ROF	8 *6	4 -8 5 -6	*AP	DC PEN	3 2.7	3 2.5	2.2	2 1.7	1 1.4	.6	1 1 .3 .1
in 1940 with the Type 100. In 1944 an improved model 100 was introduced. This 1944 version was simplified to minimize manufacturing time and costs. The 1944 Type 100 had	Cap	30	6 -5 7 -4		DC	2	2	2	1	1	1	1 1
fixed sights, a very rough finish, and a higher rate of fire than the 1940 version. In all, less	AW	1.2	8 -3		MA	2	1	0	1	2		/ 0
than $30,000\mathrm{Type}100\mathrm{sub}$ -machineguns were made. The weapon was not very successful and suffered from poor quality ammunition which frequently caused jams. The bar	KD	Mag 3	10 -2		MA BA	.2 47	.4 40	.8	24	2 19	4 10	4 1
under the barrel is a bayonet mount.	SAB	2	11 -1		TOF	1	1	2	4	7	15	25 36
PPD 40 / 7.62mm Tokarev / USSR	L W	31 9.8	1 -23 2 -13	FMJ	PEN DC	3.7	3.5	3.0	2.4	1.9 2	.9 1	4 .2
			3 -9	*JHP	PEN	3.6	3.3	2.9	2.3	1.8	.9	.4 .2
The PPD 40 was a well made weapon and was introduced in 1940. It used a 71 round drum	RT ROF	12 *7	4 -8 5 -6	AP	DC PEN		6 4.9	6 4.2	3.4	3 2.7	1 1.3	.6 .3
magazine but had to be replaced by the PPSh 41. Wartime production required a simpler, more easily made weapon. In appearance, the PPD 40 is very similar to the PPSh 41 shown	Cap	71	6 -5 7 -4		DC	4	4	3	2	2	1	1 1
below. Over 5 million PPSh guns were produced by 1945. Some Soviet units were armed exclusively with them. These weapons have been exported in huge numbers to Commu-	ΑŴ	2.4 Drm	8 -3 9 -2		MA	.3	.5	1	2	3	5	8 11
nist countries, including China, and were used in Korea and Vietnam. One item of	KD	3) -2		BA	47	39	30	23	18	8	3 -1
interest is that the 7.62mm Tokarev is essentially a 7.63mm Mauser round.	SAB	2			TOF	0	1	2	3	4	10	17 24
PPSh 41 / 7.62mm Tokarev / USSR	L W	33 9.7	1 -23 2 -13	FMJ	PEN DC	3.6 4	3.3	2.8	2.3	1.8	.8 1	.4 .2 1 1
	RT	12	3 -9 4 -8	*JHP		3.4	3.2		2.2		.8 1	.4 .2 1 1
	ROF		5 -6	AP	PEN	5.0	4.7	4.0	3.2	2.5	1.2	5 .3
	Сар	71	6 -5 7 -4		DC	4	4	3	2	2	1	1 1
	AW	2.4 Drm	8 -3 9 -2		MA	.3	.6	1	2	3	6	9 12
Standard sub-machinegun of the Russian army during WW II.	KD SAB	3			BA TOF	47	39	30	22	18 4	8	3 -1
PPS 43 / 7.62mm Tokarev / USSR	L	33	1 -22	FMI	PEN	122016		13-13			.9	17 25 .4 .2
And a second and a	W	7.7	2 -12 3 -9	*IHP	DC	4	3.3	4 2.9	3	2 1.8	1 9	1 1 .4 .2
	RT	8	4 -7		DC	6	6	6	4	3	1	1 1
	ROF	*6	5 -6 6 -5	AP	PEN DC	5.3	4.9	4.2	3.4	2.7	1.3	.6 .3 1 1
	Cap AW	35 1.2	7 -4 8 -3									
		Mag	9 -2		MA	.3	.5	1	2 23	3 18	5	8 11 3 -1
2nd Russian SMG produced in large numbers in WW II.	SAB	3			BA TOF	47	39	30	3	4	8 10	3 -1 17 24
Lanchester Mk1 / 9mm Parabellum / UK	L W	34 10.8	1 -24 2 -13	FMJ	PEN DC	2.3	2.1	1.8	1.4	1.1	.5 1	.2 .1 1 1
	RT	9	3 -10 4 -8	*JHP	PEN DC	2.2	2.0	1.7 4	1.3	1.0	.4 1	.2 .1 1 1
	ROF		5 -6	*AP	PEN	3.2	3.0	2.5	1.9	1.5	.6	3 .1
	Сар	50	6 -5 7 -4		DC	3	3	2	2	1	1	1 1
	AW	2.0 Mag	8 -3 9 -3		MA	.2	.4	.7	1	2	4	5 7
This sub-machinegun was produced for the Royal Navy in 1941.	KD SAB	3 2	10 -2	100	BA TOF	45 0	36 1	27 2	20 4	15 6	6 13	0 -3 23 32
The out materinegan was produced for the Royal Ivavy III 1741.	LOND	4	ı	I	IOI	U	1	2	4	0 1		-Los OL

		sical ata	Aim Time	Balli	stic D	ata	Ra	nge	in 2	yar	d hexe	S
Sub-Machineguns			AC Md			10	20				200 30	
Owen Mk1 / 9mm Para. / Australia	L W RT	32 10.1	1 -23 2 -13 3 -10 4 -8	*JHP	PEN DC PEN DC	3 2.2 5	3 2.0 4	4	3	1.1 1 1.0 2	1	2 .1 1 1
	ROF Cap AW	34 1.4	5 -7 6 -5 7 -4 8 -4		PEN DC	3.2	3.0	2.5	1.9	1.5 1	1	3 .1 1 1
Heavy but reliable sub-machinegun with top loading magazine.	KD SAB	Mag 3 2	9 -3 10 -2 11 -1		MA BA TOF	.2 45 0	.5 36 1	.9 27 2	2 20 4	2 15 6	5 6 13 2	7 9 0 -3 3 32
MAS 38 / 7.65mm Longue / France	L W	25 6.8	1 -21 2 -11		PEN DC	2	2	1.5	1.1	.9 1	1	
	RT ROF		3 -9 4 -7 5 -6 6 -5 7 -4	*AP	PEN DC PEN DC	1.8 3 2.7 2	1.7 3 2.4 2	1.4 2 2.1 1	1.1 2 1.6 1	.8 1 1.2 1	.4 1 .5 1	1 1
Light weapon with an underpowered cartridge.	AW KD SAB	1.2 Mag 2	8 -3 9 -2		MA BA TOF	.2 47 1	.3 39 1	.6 30 2	1 23 4	2 18 6	3 5 9 3 15 24	000000000000000000000000000000000000000
MP 35/I / 9mm Parabellum / Germany	L W	33 9.7	1 -23 2 -13		PEN DC	3	3	3	1.4	1.1 1	5 .5	2 .1 1 1
	RT ROF		3 -9 4 -8 5 -6 6 -5	*AP	PEN DC PEN DC	2.2 5 3.2 3	4	4	1.3 3 1.9 2	1.0 2 1.5 1	.4 .2 1 .6 .3 1	2 .1 1 1 3 .1 1 1
	Cap AW KD	32 1.3 Mag 3	7 -4 8 -3 9 -2		MA BA	.2	.4 36	.8 27	1 20	2 15	4 6	5 8) -3
Standard sub-machinegun of the Waffen-SS.	SAB				TOF	0	1	2	4	6	13 23	800000000000000000000000000000000000000
MP 38/40 / 9mm Parabellum / Germany	L 2 W RT ROF	25/33 9.5 8 *4	1 -23 2 -13 3 -9 4 -8 5 -6 6 -5		DC	3	2.1 3 2.0 4 3.0 3	3	1.4 2 1.3 3 1.9 2	1.1 1 1.0 2 1.5	.5 .2 1 .4 .2 1 .6 .3	1 1 2 .1 1 1 3 .1
Famous sub-machinegun known as the Schmeisser.	Cap AW KD SAB	32 1.3 Mag 3 3	7 -4 8 -3 9 -2		MA BA TOF	.2 45 0	.3 36 1	.6 27 2	1 20 4	2 15 6	3 5 6 0 13 23	5 6) -3
MAB 38A / 9mm Modello 38A / Italy	L W	38 10.2	1 -23 2 -13	FMJ	PEN DC	3.0	2.8	2.4	1.9	1.5	.7 .3 1	
	RT ROF	8 *5	3 -10 4 -8 5 -6 6 -5		PEN DC PEN DC	6	6	2.3 5 3.3 3	1.8 4 2.7 3	1.4 3 2.1 2	.7 .2 1 1.0 .3 1	l 1 5 .2
	Cap AW KD	40 1.6 Mag 4	7 -4 8 -3 9 -3 10 -2		MA BA	.2 46	.4 38	.9 29	2 22	2 17	4 7 7	7 9 2 -2
Standard Italian sub-machinegun of WW II. It used a high-velocity 9mm cartridge.	SAB	3			TOF	0	1	2	3	5	12 20	
MAB 38/42 / 9mm Parabellum / Italy	L W	32 8.1	1 -22 2 -12 3 -9		PEN DC PEN	3	3	3	1.5 2 1.5	1.2 2 1.2	.6 .1 1 .5 .5	1 1
Wartime production of the MAB 38A proved to be too expensive and time consuming. The MAB 38/42 was a simpler version of the MAB 38A and incorporated cost and manufacturing savings. The MAB 38/42 was available only in 9mm Parabellum as the	RT ROF	40	4 -8 5 -6 6 -5 7 -4		DC PEN DC	5	5 3.2 3	4	3	2 1.7 2	1 .8 .4 1	l 1 l .2
complexity of having a special 9mm round for sub-machineguns proved impractical. Both the Germans and Romanians took delivery of this weapon. Later MAB 38/43 and 38/44 versions of this weapon were also made in continuing efforts to cut cost and manufacturing time.	KD SAB	1.6 Mag 4 3	8 -3 9 -2	ngulik tu	MA BA TOF	.2 46 0	.5 38 1	.9 29 2	2 21 4	2 16 6	5 7 2 7 2 13 22	2 -2

Sub-Machineguns	Phy Da	sical ıta	Ai Tir	ne	Balli	stic D					Children in	hex	
Sten Mk2 / 9mm Parabellum / UK	L W	30		-22	FMJ	PEN		2.1	1.8	1.4	1.1	.5 1	300 40 .2 . 1
	RT ROF	7.2 9 *5	3 4 5 6	-12 -9 -7 -6 -5		DC PEN DC PEN DC	5	4	4	3	1 1.0 2 1.5	.4 1 .6	2 1 3
4 760	Cap AW KD	32 1.3 Mag 3	7 8	-4 -3		MA BA	.2	.5	.9	2 20	2 15	5	7 0 -
Standard British sub-machinegun of WW II.	SAB	3				TOF	0	1	2	4	6	13	23 3
Sten Mk3 / 9mm Parabellum / UK #>60	L W	30 7.7	2	-22 -12		PEN DC	3	3	3	2	1.1 1	.5 1	.2 . 1
The Sten sub-machinegun was the standard sub-machinegun of British forces during	RT ROF	9 *5	3 4 5 6	-9 -7 -6 -5		PEN DC PEN DC	5	4	1.7 4 2.5 2	3	1.0 2 1.5 1	.4 1 .6 1	.2 . 1 .3 . 1
WW II. Over 2 million of the Mark 2 were made in three years. Both the Mark 2 and Mar 3 were mass produced. The Mark 3 started production in 1943 and was essentially	k Cap 7 AW	32 1.3	7 8	-4 -3	- 1								
identical to the Mark 2 shown above. The Mark 2 was easily dismantled and ideal for clandestine operations in occupied Europe. The Mark 3 was not as easily dismantled and neither were as popular as the M1A1 Thompson.	KD SAB	Mag 3 3				MA BA TOF	.2 45 0	.4 36 1	.9 27 2	2 20 4	2 15 6	5 6 13	7 0 - 23 3
Thompson M1928A1 / 45 ACP / USA	L W	34 14.8		-26 -16	FMJ	PEN DC	1.7	1.5	1.3	1.0	.8 1	.4 1	.2
750	RT ROF	12 *7	3 4 5 6	-10 -8 -7 -6		PEN DC PEN DC	5	1.5 4 2.2 3	3	2	.8 1 1.1 1	.4 1 .5	.2 1 .2
	Cap AW	100 5.5 Drm	7 8 9 10	-5 -4 -3 -2		MA	.3	.6	1 27	2 20	3	6 5	9 1
First model of the Thompson sub-machinegun with drum magazine.	KD SAB	5	11	-1		BA TOF	45 1	36	3	5	8		30 4
Thompson M1A1 / 45 ACP / USA	L W	32 12.0		-24 -14	FMJ	PEN DC	1.7	1.5	1.3	1.0	.8 1	.4 1	.2 .
	RT	8	4	-10 -8		DC	5	4	1.3	2	.8	.4	.2
\$ 1350	ROF Cap AW	*6 30 2.0	5 6 7 8	-7 -6 -5 -4	*AP	PEN DC	2.3	2.2	1.8	1.4	1.1	.5 1	1
Popular wartime version Thompson sub-machine gun.	KD SAB	Mag 5	9 10 11	-3 -2 -1		MA BA TOF	.3 45 1	.6 36 1	1 27 3	2 20 5	3 15 8	6 5 18	9 1 0 - 30 4
M3A1 / 45 ACP / USA	L	23/30 9.4		-23 -12	FMJ	PEN DC	1.7	1.5	1.3	1.0	.8 1	.4 1	.2 1
	RT ROF	8	3 4 5 6	-9 -8 -6 -5		DC	1.6 5 2.3 3	1.5 4	1.3 3 1.8 2	1.0 2 1.4	.8 1 1.1	.4 1 .5	2 1 .2 1
	Cap AW	30 2.0	7 8	-4 -3									
The M3A1 "grease-gun" was introduced in late 1944.	KD SAB	Mag 5 3				MA BA TOF	.2 45 1	.5 36 1	.9 27 3	2 20 5	2 15 8	5 5 18	7 0 - 30 4
Reising M50 / 45 ACP / USA	L W	36 7.6		-22 -12	FMJ	PEN	1.7	1.6	1.3	1.1	.8 1	.4 1	.2 1
	RT	8	3 4	-9 -8	*JHP	PEN DC					.8	.4	.2
	ROF	*5	5 6	-6 -5	*AP	PEN DC				1.5	1.2 1	.5 1	.2 1
	Cap AW		7 8 9	-4 -3 -2		MA	.3	.7	1	2	3	7	10 1
This sub-machinegun was used in small numbers by the US Marine Corps.	KD SAB	5		-		BA TOF	45 1	36 1	27	20	15	5 18	0

# 100	Phys Da			im me	Balli	stic D	ata	Rai	nge	in 2	yard	d he	xes	
Bolt Action Rifles	Da	la	E 475,000	Md			10		-				300	400
Fusil Mle 34 / Bolt Action Rifle / 7.5mm MAS / France	L W	43 8.1	1 2 3	-12	FMJ	PEN DC	17 7	17 7	15 7	14 7	13 7	9.0 6	6.4 5	4.6 3
	RT ROF	8	4 5	-7 -6	*JHP	PEN DC	16 9	16 9	15 9	13 9	12 8	8.6 8	6.2 7	4.4 5
After WW I, the French decided to replace the old 8mm Mle 86 cartridge with a new 7.5mm Mle 29. A modified and shortened basic Fusil Mle 07/15 rifle was then chambered for the 7.5mm round and renamed the Fusil Mle 34. The Mle 34 was replaced by the MAS	Cap AW	5 .31	6 7 8	-5 -4 -3	AP	PEN DC	24 7	23 7	22 7	20 7	18 7	13 6	9.0 5	6.5 3
36, shown below, and is of interest as the first rifle to chamber the 7.5mm Mle 29. Both the Mle 34 and the MAS 36 were adopted after the successful development of a machine gun chambered to the 7.5mm round.	KD SAB	CS 9 6	9 10 11	-2 -1 0		BA TOF	61 0	53	44 1	37 2	32	23 5	17 9	13 12
MAS 36 / Bolt Action Rifle / 7.5mm MAS / France	L W	40 8.6	2	-23 -12	FMJ	PEN DC	18 8	18 7	17 7	15 7	14 7	9.8	7.0 6	5.1 4
	RT ROF	8	3 4 5	-7 -6	*JHP	PEN DC	18 9	17 9	16 9	14 9	13 8	9.4	6.8 7	4.9 6
	Cap AW	5 .31	6 7 8	-5 -4 -3	AP	PEN DC	26 7	25 7	23 7	21 7	19 7	14 6	9.9 5	7.1 3
After the adoption of the 7.5mm Mle 29 cartridge, the MAS 36 rifle was designed for it. It was adopted in 1935 and was the last bolt action rifle accepted by a major military power.	KD SAB	CS 9 6	9 10 11	-2 -1 0		BA TOF	61 0	53	45 1	37 2	32	23 5	17 8	13 12
Kar 98k / Bolt Action Rifle / 7.92mm Mauser / Germany	L W	44 8.9	1 2	-23 -12	FMJ	PEN DC	18 8	17 8	16 8	15 7	14 7	11 7	8.1	6.2
	RT ROF	8	3 4 5	-9 -7 -6	*JHP	PEN DC	17 9	17 9	16 9	15 9	13 9	10 8	7.8 8	6.0
	Cap AW	5 .36	6 7 8	-5 -4 -3	AP	PEN DC	25 7	24 7	23 7	21 7	20 7	15 7	12 6	8.7
Standard German rifle of WW II. The Kar 98k appeared in 1935 and was produced throughout the war. It was the last Mauser bolt action military rifle produced and was known for its reliablility.	KD SAB	CS 10 7	9 10 11	-2 -1 0		BA TOF	63 0	55 0	47 1	39 2	35 3	25 6	19 9	15 12
Ge w 33/40 / Bolt Action Rifle / 7.92mm Mauser / Germany	L W	39 8.3		-22 -12	FMJ	PEN DC	16 8	16 7	15 7	14 7	13 7	9.7 7	7.4 6	5.6
The Gew 33/40 was a German adoption of the Czech Carbine 33. It was a short, lightweight rifle primarily issued to mountain troops. It fired the full powered 7.92mm Mauser cartridge, and as a result had high recoil and muzzle blast. The Gew 33 / 40 was	RT ROF	8 3	3 4 5	-9 -7 -6	*JHP	PEN DC	16 9	15 9	15 9	13 9	12 9	9.3 8	7.1	5.4
designed to fill the role of a light rifle much as the M16 replaced the M14 in the US army after WW II. During the war the Germans could not afford to introduce a new rifle cartridge and the standard 7.92mm Mauser was used. Very late in the war, however, the	Cap AW	5 .36	6 7 8	-5 -4 -3	AP	PEN DC	23 7	22 7	21 7	20 7	18 7	14 6	10 6	7.9 4
7.92mm Kurz cartridge was introduced. This was the first short rifle round intended for use in lighter weapons and was the predecessor of the Russian 7.62 \times 39mm round used in the SKS carbine and AK 47.	KD SAB	CS 10 7	9 10 11	-2 -1 0		BA TOF	63 0	55 1	46 1	39	34	25 6	19 9	15 13
Fucile Mod 91 / Bolt Action Rifle / 6.5mm Carcano / Italy #65	L W	51 8.8	2	-23 -12	FMJ	PEN DC	16 7	16 7	15 6	14 6	12 6	9.2 6	6.9 5	5.1
	RT ROF	8	3 4 5	-7 -6	*JHP	PEN DC	16 8	15 8	14 8	13 8	12 8	8.9 7	6.6	4.9
	Cap AW	6	6 7 8	-5 -4 -3	AP	PEN DC	23	22	21 6	19 6	18 6	13 5	9.7 4	7.2
This rifle was originally adopted in 1892, but was used during World War II in several variations. Whatever its wartime value, it is currently most famous as the rifle used in the assassination of President John F. Kennedy.	KD SAB	CS 7 5	9 10 11	-2 -1 0		BA TOF	64	57 1	48 1	41 2	37 3	27 6	22 9	18 13
Arisaka Type 99 / Bolt Action Rifle / 7.7 x 58 mm / Japan	L W	44 9.4	2	-23 -12	FMJ	PEN DC	18 8	18	17 7	16 7	15 7	11 7	8.8	6.8
	RT ROF	8	3 4 5	-7 -6	*JHP	PEN DC	18 9	17 9	16 9	15 9	14 9	11 8	8.4	6.5 7
	Cap AW	5 .35	6 7 8	-5 -4 -3	AP	PEN DC	26 7	25 7	24 7	22 7	21 7	16 7	12	9.6
The Type 99 rifle was essentially a Meiji 38 rechambered for the 7.7×58 mm cartridge. The 7.7×58 mm replaced the 6.5×50 mm round which was used in the Sino-Japanese war in Manchuria.	KD SAB	CS 10 6	9 10 11	-2 -1 0		BA TOF	64 0	56 1	48 1	41 2	36 3	27 6	21 9	17 12

\$150		sical	1	im	Balli	stic Da	ata	Ra	nge	in 2	1/2=	d he	avec.	
Bolt Action Rifles	Da	ıta		me Md			10	20	755 P. S. A.			200		400
Karabin 1938g / Bolt Action Rifle / 7.62mm Mosin-Nagant / USSR	L W	40 8.0		-22 -12	FMJ	PEN DC	23 8	22 8	21 8	20 8	18 8	14 7	11 7	8.9 6
· · · · · · · · · · · · · · · · · · ·	RT ROF	8	3 4 5	-9 -7 -6	*JHP	PEN DC	22 10	21 9	20 9	19 9	18 9	14 9	11 8	8.5 8
This weapon is a shortened version of the Model 1891 on which it was based. Unlike	Cap AW	5 .27 CS	6 7 8 9	-4 -3 -2 -1	AP	PEN DC	32 8	31 8	30 8	28 8	26 7	20 7	16 7	12 6
other European counterparts, the basic Russian rifle cartridge changed little after 1891 and was used throughout WW I and WW II.	KD SAB	12 7	9	-1		BA TOF	64 0	56 0	48 1	41 2	36 2	27 5	21 8	17 11
Karabin 1944g / Bolt Action Rifle / 7.62mm Mosin-Nagant / USSR	L W	40 8.8		-23 -12 -9	FMJ	PEN DC	23 8	22 8	21 8	20 8	18 8	14 7	11 7	8.9 6
	RT ROF	8 3	5 6	-7 -6 -4	*JHP	PEN DÇ	22 10	21 9	20 9	19 9	18 9	14 9	11 8	8.5 8
This weapon was introduced late in the war and is essentially identical to the Karabin 1938g shown above. A folding, cruciform-bladed bayonet was added to the muzzle. Russian bolt action rifles have changed little since the Model 1891. This is in part due to	Cap AW	5 .27 CS	7 8 9	-3 -2 -2	AP	PEN DC	32 8	31 8	30 8	28 8	26 7	20 7	16 7	13 6
the efficiency of the 7.62mm Mosin-Nagant cartridge. This cartridge was introduced in 1891 and is still in use today.	KD SAB	12 7		-1		BA TOF	64 0	56 0	48 1	41 2	36 2	27 5	21 8	17 11
Rifle #4 Mk1 / Bolt Action Rifle / .303 British / UK	L W	44 9.7		-23 -13 -9	FMJ	PEN DC	18 7	17 7	16 7	15 7	13 7	10 6	7.5 6	5.6 4
	RT ROF	8	4 5 6	-8 -6 -5	*JHP	PEN DC	17 9	16 9	15 9	14	13 9	9.6 8	7.2 8	5.4
The Rifle Number 4 was similar to the Short Magazine Lee Enfield used in WW I.	Cap AW	10 1.0 Mag	7 8 9	-4 -3 -2	AP	PEN DC	25 7	24 7	23 7	21 7	19 7	14 6	11 6	7.9 4
The Rifle Number 4 was designed for wartime production and was used throughout WW II. Some of these rifles were made in the USA and in Canada.	KD SAB	10	10 12	-1 0		BA TOF	63 0	55 1	47 1	40 2	35 3	25 6	20 9	16 13
Rifle #5 Mk1 / Bolt Action Rifle / .303 British / UK # 200	L W	40 7.8		-22 -12 -9	FMJ	PEN DC	12 7	12 7	11 7	10 6	9.1	6.6	4.8	3.5
The Rifle Number 5 is a shortened version of the Rifle Number 4 shown above. It was	RT ROF	8	4 5 6	-7 -6 -5	*JHP	PEN DC	12 8	11 8	11 8	9.6 8	8.7	6.4	4.6	3.4
known as the "Jungle Carbine", and was lighter and easier to carry than the full length rifle. The Number 5 had a bell flash hider and was five inches shorter than the standard Number 4. Like all shortened and lightened weapons firing a full sized cartridge, it had	Cap AW	10 1.0 Mag	7 8 9	-4 -3 -2	AP	PEN DC	17 7	17 7	16 6	14 6	13 6	9.4	6.8	5.0 2
a high recoil and muzzle blast. Because of this, it was not particularly popular with the soldiers who used it.	KD SAB	8	10 11	-1 0		BA TOF	63 0	55 1	46	39	34	25 7	19 11	15 16
Pattern 1914 / Bolt Action Rifle / .303 British / UK	L W	46 9.0		-23 -12 -9	FMJ	PEN DC	24 8	23 8	22 8	20 8	18 8	14 7	11 7	8.1 6
When first introduced, the Short Magazine Lee Enfield rifle met with a storm of criticism. As a result the British began development of another rifle, based on a Mauser action. This	RT ROF	8	4 5 6	-7 -6 -5	*JHP	PEN DC	23 10	22 9	21 9	19 9	18 9	14 9	10 8	7.8
rifle went to trials in 1913 but was not produced. In 1914 however, wartime rifle production needs could not be met by Lee Enfield, so this rifle was re-intoduced as the Pattern 1914. It was actually made in the USA by Remington and Winchester. After WW	Cap AW	.35 CS	7 8 9	-4 -3 -2	AP	PEN DC	33	32 8	31 8	28 8	26 7	20 7	15 6	11 6
I the Pattern 1914 rifles were put into storage. In 1940, they were returned to service as Rifles Number 3. They were primarily used by the Home Guard.	KD SAB	12 7	11 13	-1 1		BA TOF	63	56 0	47	40 2	35 2	26 5		16 11
M1903 A4 / Sniper Rifle / 30 ' 06 Springfield / USA	L W	43 9.7		-22 -11 -7	FMJ	PEN DC	23 8	23 8	21 8	20 8	18 8	14 7	10 7	7.7 6
	RT ROF	16 3	4 5 6	-5 -4 -2	*JHP	PEN DC	22 10	22 10	20 9	19 9	17 9	13 9	9.8	7.4 8
This was the standard sniper's rifle version of the M1903 rifle. It was equipped with	Cap AW	.07 Rnd	7 8 9	0 1 2	AP	PEN DC	33	32 8	30 8	28 8	25 7	19 7	14	11 6
permanent telescope mounts and had no conventional sights. The Weaver Model 330C was the standard telescopic sight.	KD SAB	12 7	10	3 4	ni le	BA TOF	69 0	61 0	52 1	45 2	40 2	30 5	24 8	20 11

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Semi-Automatic and Automatic Rifles	Da	ata		me Md			10	20	40		-	200		400
MP 43 (Stg 44) / Semi-Automatic Rifle / 7.92mm Kurz / Germany	L W	37 12.4	0.39	-25 -15 -10		DC	9.3	8.9 6	6	6	6.4	4	2.8 3 2.7	1.8 2 1.8
	RT ROF	8 *4	4 5	-10 -8 -6 -5	*JHP AP	DC PEN DC	8.9 8 13 6	8.5 8 13 6	7.9 8 12 6	6.9 7 10 6	6.1 7 9.0 5	6	4 3.9 2	2.6
	Cap AW	30 2.1 Mag	6 7 8 9	-3 -4 -3 -2		MA	.2	.5	1	2	3	5	7	10
This weapon used a short 7.92mm cartridge.	KD SAB	6	10			BA TOF	58 0	.9 1	40 1	32 2	27	17 7	12 11	8
Gew 41 / Semi-Automatic Rifle / 7.92mm Mauser / Germany \$200	L W	44 11.7	2	-24 -14 -10	FMJ	PEN DC	19 8	19 8	18 8	17 8	15 7	12 7	8.9 6	6.9
	RT ROF	8	4 5	-8 -6	*JHP	PEN DC	19 9	18 9	17 9	16 9	15 9	11 8	8.6	6.6
	Cap AW	10 .7	6 7 8	-5 -4 -3	AP	PEN DC	27 8	27 8	25 7	23 7	21 7	16 7	13 6	9.6
The Walther Gew41 was developed during the war and was primarily used on the Russian front. Production ended in 1943 when the Gew 43 went into production. Although out of production after 1943, the Gew 41 remained in use through the war.	KD SAB	CS 11 6	9 10 11	-2 -1 0		BA TOF	62 0	55 0	46 1	39 2	35 3	25 5	19 8	16 12
FG 42 / Automatic Rifle / 7.92mm Mauser / Germany	L W	37 11.1	2	-24 -14		PEN DC	19 8	18	17 8	16 7	15 7	11 7	8.5	6
	RT ROF	8 *6	3 4 5	-9 -8 -6		PEN DC PEN	18 9 26	17 9 25	16 9 24	15 9 22	14 9 21	11 8 16	8 12	6.3 7 9.2
	Cap AW	20 2.1	6 7 8	-5 -4 -3		DC	8	7	7	7	7	7	6	6
The FG 42 was produced for the Luftwaffe paratroops and appeared in Italy and France. The magazine fed from the left side and it had a bipod and integral bayonet.	KD SAB	Mag 11 6	9 10 11	-2 -1 0		MA BA TOF	.7 62 0	55	3 46 1	39	34	13 25 5	19 9	15 12
Gew 43 / Semi-Automatic Rifle / 7.92mm Mauser / Germany #250	L W	44 10.1	2	-23 -13 -9	FMJ	PEN DC	18 8	17 8	16 8	15 7	14 7	11 7	8.1	6.2
	RT ROF	8	3 4 5	-7 -6	*JHP	PEN DC	17 9	17 9	16 9	15 9	13 9	10 8	7.8	6.0
	Cap AW	10 1.1	6 7 8	-5 -4 -3	AP	PEN DC	25 7	24 7	23 7	21 7	20 7	15 7	12 6	8.7
The Gew 43 replaced the Gew 41 and was generally used for sniping. It was encountered in small numbers on both fronts, and always as a specialist's weapon. The Gew 43 had a number of improvements over the Gew 41, including a removeable box magazine.	KD SAB	Mag 10 6	9 10 11	-2 -1 0		BA TOF	62 0	55 0	46 1	39 2	34	25 6	19 6	15 12
SKS / Semi-Automatic Rifle / 7.62 x 39mm / USSR 9/75	L W	40 8.6	2	-23 -12	FMJ	PEN DC	12 7	12 7	11 7	9.4 6	8.4	5.6 5		2.6
	RT ROF	9	3 4 5	-9 -7 -6	*JHP	PEN DC	11 8	11 8	10 8	9.0	8.0	5.4 7		2.5
	Cap AW	10 .62	6 7 8	-5 -3 -3	AP	PEN DC	17 7	16 7	15 6	13 6	12 6	8.0 5		3.6
The SKS was the first weapon to use the short 7.62×39 mm round which was later used in the AK 47. This round may have been produced as early as 1943, but it is questionable whether this weapon saw action in WW II.	KD SAB	CS 7 5	9 10	-2 -1		BA TOF	58 0	49 1	40 1	33 2	28 3	18 6		14
AVS 36 / Automatic Rifle / 7.92mm Mosin-Nagant / USSR	L W	50 10.7	2	-24 -13		PEN DC	24 8	23 8	22 8	21 8	19	15 7	12 7	6
	RT ROF	8 *5	3 4 5	-9 -8 -6		PEN DC PEN	23 10 33	10 33	21 9 31	20 9 29	18 9 27	14 9 21	11 8 17	8.9
	Cap AW	15 1.6	6 7 8	-5 -4 -3		DC	8	8	8	8	8	7	7	(
The Simonova AVS 36 was the first automatic rifle adopted by the Russian army. It had a number of design flaws and was replaced in 1938 by the Tokarev SVT 38. The AVS 36 was capable of fully automatic fire.	KD SAB	Mag 12	9 10 12	-2 -1 0		MA BA TOF	.6 63 0	1 56 0	3 48 1	5 41 2	6 36 2	13 27 5	19 21 8	26 17 11

Semi-Automatic and Automatic Rifles	Phy:	sical ıta	Ti	im me Md	Balli	stic Da	ata 10	Ra 20		in 2 70				400
SVT 40 / Semi-Automatic Rifle / 7.62mm Nagant / USSR	L W	48 9.2	100	-23 -12 -9	FMJ	PEN DC	24 8	23 8	22 8	21 8	19 8	15 7	12 7	9.4
	RT ROF	8	4 5	-7 -6	*JHP	PEN DC	23 10	23 10	21 9	20 9	19 9	15 9	12 8	9.0 8
	Cap AW	10 1.1	6 7 8	-5 -4 -3	AP	PEN DC	34 8	33 8	31 8	29 8	27 8	21 7	17 7	13 6
The SVT 40 is a sturdier version of the SVT 38 and essentially identical. The SVT 40 were issued mainly to NCOs, and a few were used as sniping weapons. A few of these weapons were modified for automatic fire.	KD SAB	Mag 12 7	9 10 11			BA TOF	63 0	56 0	48 1	41 2	36 2	27 5	21 8	17 11
M1 Carbine / Semi-Automatic Rifle / .30 M1 Carbine / USA # 200	L W	36 5.9	2	-21 -11	FMJ	PEN DC	6.8	6.4	5.8 5	4.9	4.2 4	2.4	1.4	.8 1
	RT ROF	8 *	3 4 5 6	-9 -7 -6 -4	*JHP	PEN DC	6.5	6.2	5.5 7	4.7	4.0 6	2.3	1.3 2	.8 1
	Cap AW	15 .77	7 8	-3 -2	*AP	PEN DC	9.6 6	9.1 5	8.1 5	6.9 4	5.9 4	3.4	2.0 1	1.1
More M1 Carbines were produced in WW II than any other American weapon. It was designed as a light weapon for use by machine-gunners, mortarmen, and officers. Extremely popular, it was used throughout WW II and the Korean War.	KD SAB	Mag 5 4	9 10 11	-1		BA TOF	55 0	46 1	37 1	29 2	24 3	14 8	8 13	5 18
M2 Carbine / Semi-Automatic Rifle / .30 M1 Carbine / USA	L W	36 6.3	2	-21 -11		PEN DC	6	6.4	5	5	4.2	2	1.4	.8 1
	RT ROF	8 *8	3 4 5	-7 -6		PEN DC PEN	7 9.6	6.2 7 9.1	5.5 7 8.1	4.7 7 6.9	4.0 6 5.9	2.3 3 3.4	1.3 2 2.0	.8 1 1.1
The M2 Carbine is identical to the M1 Carbine shown above and was capable of fully	Cap AW	30 1.5	6 7 8			DC	6	5	5	4	4	2	1	1
automatic fire. A selective fire switch was added to the left side of the weapon. The data for the M2 includes a 30 round magazine. This magazine can also be used with the M1 and changes only the weapon weight.	KD SAB	Mag .5 4	9 10 11	-1		MA BA TOF	.6 55 0	1 46 1	2 37 1	4 29 2	6 24 3	12 14 8	17 8 13	23 5 18
M1 Garand / Semi-Automatic Rifle / 30 ' 06 / USA #400	L W	44 10.0	2	-23 -13	FMJ	PEN DC	22 8	21 8	20 8	18 8	17 7	13 7	9.3 6	6.9 6
	RT ROF	7	3 4 5	-8 -6	*JHP	PEN DC	21 9	20 9	19 9	18 9	16 9	12 8	8.9	6.6 7
	Cap AW	8 .52	6 7 8	-4 -3	AP	PEN DC	31 8	30 8	28 8	26 7	24 7	18 7	13 6	9.7 6
The M1 Garand was the first self loading weapon accepted for military service. It entered service in 1936 and by 1941 was the standard US infantryman's weapon. The M1 Garand automatically ejects its ammo clip and single rounds cannot be fed to top off the clip.	KD SAB	Cp 11 6	9 10 12	-1		BA TOF	62 0	54 0	45 1	38 2	33 2	24 5	18 8	14 11
M1E7 / Sniper Rifle / 30 ' 06 Springfield / USA 700	L W	46 11.6	2	-23 -13	FMJ	PEN DC	23 8	23 8	21 8	20 8	18 8	14 7	10 7	7.7 6
	RT ROF	8	3 4 5	-5 -4	*JHP	PEN DC	22 10	22 10	20 9	19 9	17 9	13 9	9.8 8	7.4
	Cap AW	8 .52	6 7 8	0 1	AP	PEN DC	33 8	32 8	30 8	28 8	25 7	19 7	14 6	11 6
The M1E7 is a sniper version of the M1 Garand. It was equipped with telescopic sights and a flash hider. Ballistic data is for a streamlined bullet rather than the standard flat based Ball M2. Magazine feed is identical to the M1 Garand.	KD SAB	Cp 12 6	9 10 12	3		BA TOF	69 0	61 0	52 1	44 2	40 2	30 5	24 8	20 11
BAR A2 / Automatic Rifle / 30 ' 06 Springfield / USA	L W	48 19.7	2	-27 -17	1138	PEN DC	20 8	19 8	18 8	16 7	15 7	11 7	6	6.0
	RT ROF	8 *4	3 4 5 6	-7		PEN DC PEN DC	19 9 28 8	18 9 27 8	17 9 25 7	16 9 23 7	14 9 21 7	11 8 16 6	7.8 8 11 6	5.7 7 8.4 5
	Cap AW	20 1.8 Mag	7 8 9	-4		MA	.3	.5	1	2	3	5	8	10
The Browning Automatic Rifle served as a light machine-gun through WW II and the Korean war. It is heavy and has limited magazine capacity, but is very robust and reliable.	KD SAB	10	11 13	-1		BA TOF	62 0	54	45 1	38	33	24 5	18	90003300000

Machine Guns		sical ata	Aim Time	Balli	stic D			nge					
M1924/29 / Light Machine Gun 7.5mm Mle 29 / France	L W RT ROF		1 -28 2 -18 3 -11 4 -9 5 -7 6 -6	*JHP	PEN DC PEN DC PEN DC	18 8 18 9 26 7	18 7 17 9 25 7	17 7 16 9 23 7	70 15 7 14 9 21 7	14 7	9.8 6	7.0 6	5
Standard French machine gun	Cap AW KD SAB	25 1.9 Mag 9 3	7 -5 8 -4 9 -3 11 -1 13 1		MA BA TOF	.2 61 0	.4 53 0	.8 44 1	1 37 2	2 32 2	4 23 5	6 17 8	
MG 34 / Light Machine Gun / 7.92mm Mauser / Germany	L W RT ROF	50	1 -30 2 -20 3 -14 4 -9 5 -8 6 -6 7 -5	*JHP	PEN DC PEN DC PEN DC	18 8 18 9 26 8	18 8 17 9 25 7	17 8 16 9 24 7	16 7 15 9 22 7	14 7 14 9 20 7	11 7 11 8 15 7	8.4 6 8.0 8 12 6	
Introduced in 1936, it served throughout the war and was available in many configurations; as a bipod mounted light machine gun, tripod mounted anti-aircraft weapon, and tripod mounted heavy machine gun.	KD SAB	3.2 Blt 11 3	8 -4 9 -3 10 -2 11 -1		MA BA TOF	.3 62 0	.7 55 0	1 46 1	2 39 2	3 34 3	7 25 5	10 19 9	
MG 42 / Light Machine Gun / 7.92mm Mauser / Germany The MG 42 replaced the MG 34 and was designed for ease of production. It was one of		48 28.7 12 *10	1 -30 2 -20 3 -14 4 -9 5 -7 6 -6	*JHP	PEN DC PEN DC PEN DC	18 8 18 9 26 8	18 8 17 9 25 7	17 8 16 9 24 7	16 7 15 9 22 7	14 7 14 9 20 7	11 7 11 8 15 7	8.4 6 8.0 8 12 6	(
the best machine guns of the war. The MG 42 replaced the MG 34 on the manufacturing line, but the MG 34s in service were never withdrawn. The MG 42 is essentially identical in appearance to the MG 34 shown above and was one of the first belt fed light machine guns. It normally fed from 50 round belts and barrel changes were made after every 250 rounds. Five 50 round belts were normally linked together for sustained fire.	AW	50 3.2 Blt 11 3	7 -5 8 -4 9 -3 10 -2 11 -1		MA BA TOF	.5 62 0	1 55 0	2 46 1	4 39 2	5 34 3	10 25 5	15 19 9	
Modello 37 Machine Gun 8mm Modello 35 Italy	L W RT ROF	50 79.2 8 *4	1 -37 2 -27 3 -21 4 -17 5 -12 6 -9 7 -7	*JHP	PEN DC PEN DC PEN DC	21 8 21 9 30 8	21 8 20 9 29 8	20 8 19 9 28 8	18 8 17 9 26 8	17 8 16 9 24 7	13 7 12 9 18 7	9.7 7 9.3 8 14 6	
Standard machine gun of the Italian army. It fed from a metal strip.	KD SAB	1.8 MS 12 2	8 -6 9 -5		MA BA TOF	.2 63 0	.2 55 0	.4 47 1	.6 40 2	.9 35 2	2 26 5	3 20 8	
Kikanju 11 Light Machine Gun 6.5mm Meiji 30 (RL) Japan	L W RT ROF	44 23.9 16 *4	1 -29 2 -19 3 -12 4 -9 5 -7 6 -6 7 -5	*JHP	PEN DC PEN DC PEN DC	17 7 16 8 24 6	17 7 16 8 23 6	16 7 15 8 22 6	15 6 14 8 21 6	14 6 13 8 19 6	11 6 10 7 15 6	8.5 5 8.1 7 12 5	(
Introduced in 1922, this MG was used through- out WW II.	AW KD SAB	2.2 Hop 8 3	8 -3 9 -2 10 -2 11 -1		MA BA TOF	.2 64 0	.3 58 1	.6 50 1	1 44 2	2 39 3	3 30 6	5 25 9	
Type 96 Light Machine Gun 6.5mm Meiji 30 (RL) Japan	L W RT ROF	42 21.5 8 *5	1 -28 2 -18 3 -11 4 -9 5 -7 6 -6 7 -5	FMJ *JHP AP	DC	18 7 18 8 26 7	18 7 17 8 25 7	17 7 16 8 24 7	16 7 15 8 23 6	15 6 14 8 21 6	12 6 11 8 17 6	9.3 6 8.9 7 13 5	
The Type 96 used a 30 round magazine rather than Hopper.	AW	2.0 Mag	8 -4 9 -3 11 -1 13 1		MA BA TOF	.2 64 0	.5 58 1	.9 50 1	2 44 2	2 39 3	5 30 6	7 25 9	

Court boy 2 of small re-		ysical ata	Aim Time	Ball	istic D	ata	Ra	nge	in 2	yar	d he	exes	
Machine Guns		ata	AC Md	_		10		40		100			400
Type 92	L W	46 123.8	1 -40 2 -30	FMJ	PEN DC	18 8	17 7	16 7	15 7	14 7	11 7	8.3	6.4
Machine Gun	RT	8	3 -24 4 -20	*JHP	PEN DC	17 9	17	16 9	15 9	13	10	7.9	6.1
7.7mm Shiki 99	ROI		5 -17 6 -14		PEN	25	24	23	21	20	15	12	7 9.0
Japan	Cap		7 -9		DC	7	/	/	/	/	6	6	5
The most widely used Japanese machine gun of WW II.	KD SAE	MS 10	11 -4		MA BA TOF	.2 63 0	.2 55 1	.2 47 1	.3 40 2	.4 35 3	.9 26 6	1 21 9	2 17 13
Type 99	L	46	1 -29	FMJ	PEN	17	17	16	14	13	10	7.9	6.0
Light Machine Gun	W	24.8	2 -19 3 -12	*JHP	DC PEN	7 16	7 16	7 15	7 14	7 13	7 9.8	6 7.5	4 5.8
7.7mm Shiki 99 Japan	RT ROI		4 -9 5 -7 6 -6 7 -5	AP	DC PEN DC	9 24 7	9 23 7	9 22 7	9 20 7	9 19 7	8 14 6	8 11 6	6 8.5 4
Light machine gun designed for the 7.7 mm Shiki 99.	AW KD SAB	2.4 Mag 10	8 -4		MA BA TOF	.4 63 0	.7 55 1	1 47 1	3 40 2	4 35 3	7 26 6	11 20 9	14 16 13
PM 1910	L	44	1 -40	FMJ	PEN	25	25	24	22	20	16	13	10
Machine Gun	W	136.0	2 -30 3 -25	*IHP	DC PEN	8 24	8 24	8 23	8 21	8 20	7 15	7 12	7 9.6
7.62mm Mosin-Nagant	RT ROF	12	4 -20 5 -17		DC PEN	10 36	10 35	10 33	9	9	9 23	9	8
USSR	Cap	250	6 -15 7 -10		DC	8	8	8	8	8	7	7	6
This water - cooled ma-	AW		8 -8 9 -7		MA	.2	.2	.2	.3	.5	1	1	2
chine gun was in service from 1910 to 1943.	KD SAB	12	11 -4 13 1		BA TOF	63	56	48	41	36	27	21	17 10
DP / Light Machine Gun / 7.62mm Mosin-Nagant / USSR	L	51	1 -28	FMJ	PEN	24	24	22	21	19	15	12	9.4
	W	22.8	2 -18 3 -12	*JHP	DC PEN	8 23	8 23	8 22	8 20	8 19	7 15	7	6 9.0
	RT ROF	10 *5	4 -9 5 -7	AP	DC PEN	10 34	10 33	9 32	9 29	9 27	9 22	8 17	8
	Сар	47	6 -6 7 -5		DC	8	8	8	8	8	7	7	6
	AW	3.3 Pan	8 -4 9 -3		MA	.3	.7	1	2	3	7	10	13
The DP was the standard light MG from 1928 to the 1950s.	KD SAB	12	10 -2 12 0		BA TOF	63 0	56 0	48 1	41 2	36 2	27 5	21 8	17 11
SG 43M	L	44	1 -39	FMJ	PEN	22	21	20	19	17	14	11	8.3
Machine Gun	W	113.5	2 -29 3 -23	*JHP	DC PEN	8 21	8 20	· 8	8 18	8 17	7 13	7 10	6 8.0
7.62mm Mosin-Nagant	RT ROF	12 *5	4 -19 5 -16		DC PEN	9 31	9	9 28	9 26	9 25	9 19	8 15	8 12
USSR	Сар		6 -12 7 -9		DC	8	8	8	8	7	7	6	6
Introduced in 1943,	AW		8 -7 9 -6		MA	.2	.2	.2	.4	.5	1	2	2
this medium MG replaced the PM 1910.	KD SAB	12	1000		BA TOF	63 0	56 0	48	41 2	36 2	27 5	21 8	17 11
DPM / Light Machine Gun / 7.62mm Mosin-Nagant / USSR	L W	50 29.1	1 -30 2 -20	FMJ	PEN DC	24 8	24 8	23 8	21 8	20 8	15 7	12 7	9.5
	RT	10	3 -14 4 -10	*JHP		23 10	23 10	22	20	19	15 9		9.1
	ROF		5 -8 6 -6	AP	PEN DC	34	33	32	30	28	22	17 7	13
	Cap	47	7 -5	ja.	DC	0	0	0	0	0	/	/-	б
4	AW	3.3 Pan	8 -4 9 -3		MA	.3	.6	1	2	3	6	8	11
AL CONTRACTOR OF THE CONTRACTO	KD	12	10 -2 12 0		BA TOF	63	56	48	41	36	27	21 8	17 11

mand hours to a course that the state of the			sical	Aim		listic D	ata	Ra	nge	in 2	var	d he	xes	
Machine Guns		טנ	ata	Time AC M			10	20	-			200		400
DShK / Heavy Machine Gun / 12.7 x 107mm / USSR	I V		62 173.5	1 -4 2 -3 3 -2		J PEN DC PEN	43 10 41	42 10 40	41 10 39	38 10 37	36 10 35	30 10 29	25 10 24	21 10 20
		RT ROF	12 *5	4 -20 5 -1: 6 -1-	7 AI	DC PEN DC	10 61 10	10 59 10	10 57 10	10 54 10	10 51 10	10 42 10	10 35 10	10 29 10
		Cap	50 13.5 Blt	7 -1	5	MA	.2	.3	.5	.9	1	3	4	5
Standard Russian heavy machine gun.		CD SAB	46 2	103 11 -	3	BA TOF	63	56 0	48	41 2	36	26 5	21	17
Vickers Mk1	I		46	1 -38	200	J PEN	18	18	17	16	14	11	8.6	6.6
Machine Gun	V		95.0	2 -23	2 *JHI	DC PEN	8 18	8 17	7 16	7 15	7 14	7 11	8.2	6.3
.303 British Mk8z		RT ROF	12 *4	4 -13 5 -13	5 Al	DC PEN	9 26	9 25	9 24	9	9 20	8 16	8 12	9.3
UK		Cap	250 15.0	6 -10 7 -8 8 -7	3	DC	7	7	7	7	7	6	6	6
Adopted in 1912, it remained in service into the mid 1960s.		CD SAB	Blt 10 1	9 -6 11 -4 13	1	MA BA TOF	.2 63 0	.2 55 0	.2 47 1	.3 40 2	.5 35 3	.9 26 6	1 20 9	16 12
Bren Mk1	I.		45 24.1	1 -29		J PEN	18	17	16 7	15	13 7	10	7.5	5.6
Light Machine Gun	***************************************			3 -12	2 *JHI	DC PEN	7 17	16	15	7 14	13	9.6	7.2	5.4
303 British		RT ROF	8 *4	4 -9 5 -1	AI		25	9 24	23	9 21	9 19	8 14	8	7.9
UK		Cap	30 2.2	6 -6 7 -5 8 -4	5	DC	7	7	7	7	7	6	6	4
Reliable light machine gun developed in the 1930s.		D AB	Mag 10 3	9 -3 11 -3 13		MA BA TOF	.2 62 0	.4 55 1	.8 47 1	2 39 2	2 35 3	4 25 6	6 20 9	10
M1919 A4	L		41	1 -30		J PEN	22	21	20	18	17	13	9.3	6.9
Machine Gun	V		76.5	2 -20 3 -2	*JHI	DC PEN	8 21	8 20	8 19	8 18	7 16	7 12	8.9	6.1
30 ' 06 Springfield \$ 2.8	50 R	T ROF	12 *4	4 -16 5 -12	AI	DC PEN	9 31	9 30	9 28	9 26	9 24	8 18	8 13	9.
USA	C	Cap	250	6 -9		DC	8	8	8	7	7	7	6	
Standard US anti-aircraft, tank, and infantry machine gun of WW II.	K	AW CD AB	15.5 Blt 11	8 -6 9 -4 10 -3 12 -3	3	MA BA TOF	.2 62 0	.2 54 0	.3 45 1	.4 38 2	.6 33 2	1 24 5	2 18 8	1.
M1919 A6 / Machine Gun / 30 ' 06 Springfield / USA	L		53	1 -30		PEN	22	21	20	18	17		9.3	
	V		48	2 -23	3	DC PEN	8 21	8	8	8	7	7	6	(
*** Toologo 200 200 200 200 200 200 200 200 200 20	1000	T	12 *4	4 -12	2	DC PEN	9	20 9 30	19 9 28	18 9 26	16 9 24	12 8 18	8.9 8 13	9.
1		Сар	250 15.5	6 -7 7 -6 8 -4	5	DC	8	8	8	7	7	7	6	
Developed in 1943, the M1919 A6 is a modified M1919 A4. A shoulder stock and were added.	d bipod K	D AB	Blt 11 3	9 -3 10 -2 11 -3	3	MA BA TOF	.2 62 0	.4 54 0	.7 45 1	1 38 2	2 33 2	4 24 5	5 18 8	14
M2HB / Heavy Machine Gun / .50in Browning / USA	L		65	1 -4		PEN	49	48	47	45	43	36	31	26
			157.5	2 -3:	*JHI	DC PEN	10 47	10 46	10 45	10 43	10 41	10 35	10 30	10 25
		T OF	12 *4	4 -21 5 -18	AI AI	DC PEN	10 69	10 68	10 66	10 63	10 60	10 51	10 44	10 32
		Cap	110	6 -16 7 -12		DC	10	10	10	10	10	10	10	1
		W	28.8 Blt	8 -9)	MA	.2	.3	.6	1	1	3	4	(
Standard U.S. heavy machine gun		D AB	50	11 -4 13 -		BA TOF	64	57	49	42	37	28	23	19
	13	AD	2	13 -	1	TOF	U	U	1	1	2	4	,	

	Physical Data	Aim Time	Ballistic Data Target Range	Explosive Data Range from Burst in Hexes							
Explosive Weapons		AC Md	40 70 100 400	C 0 1 2 3 5 10							
Sturmpistole / Flare & Grenade Launcher / Germany The Sturmpistole is a modified flare pistol with a rifled bore sleeve, a folding stock, and aiming sights. Data shown to the right is for the pistol loaded with a Panzerwurfkorper 42 antitank grenade. The 42 grenade is a modified Number 61 antitank rifle grenade. It is muzzle loaded, arms immediately after firing, and is impact detonated.	L 12/23 W 6.8 RT 8 Cap 1 AW HC 1.3	1 -22 2 -11 3 -9 4 -7 5 -5 6 -4	HC PEN 900 DC 10 HE PEN 2.9 DC 10	PEN 900 2.7 2.7 2.6 2.5 2.3 DC 10 4 4 3 3 3 BSHC *5 6 1 -3 -6 -9 BC 12K 654 165 50 25 11 4 PEN 2.9 2.4 2.4 2.2 2.1 1.9 DC 10 3 3 3 3 3 BSHC *3 4 0 -4 -7 -11							
High Explosive (HE) data is for the pistol loaded with a Wurfkorper 361 grenade. The 361 consists of a Number 39 egg grenade mounted on a plastic tube containing the propellant charge. The grenade is muzzle loaded, has a four second (2 phase) fuse, and a Maximum Range (MR) of about 40 hexes.	HE .9 MR HC 30 HE 40		AOI 1 BA 4 TOF 16	BC 8K 517 137 42 21 9 3							
Panzerschreck / 88mm Rocket Launcher / Germany The Panzerschreck was a German copy of the US bazookas which were captured in North Africa. Its 88mm rocket contained a hollow charge explosive, and while not as effective as the US bazooka, it was far better than the anti-tank rifles it replaced. The Panzerschreck is handled by a two man team.	L 64 W 27.3 RT 10 Cap 1 AW 7.3	1 -29 2 -19 3 -13 4 -9 5 -8 6 -6 7 -5 8 -4 9 -3 10 -2 11 -2 12 -1	HC PEN 920 920 920 920 DC 10 10 10 10 BA 13 5 0 -19 TOF 4 7 11 50	PEN 920 2.5 2.4 2.3 2.3 2.1 DC 10 4 4 4 4 3 BSHC *7 9 2 -2 -5 -8 BC 14K 733 181 54 27 12 4							
Panzerfaust / 48mm Recoilless Gun / Germany The Panzerfaust was a one shot disposable anti-tank weapon developed near the end of the war. It was not a rocket launcher, but actually a recoilless gun. Explosion of a black powder charge in the launch tube drove the bomb out the front of the tube. The blast was driven out the back of the tube providing the recoilless effect.	L 32 W 9.5	1 -23 2 -12 3 -9 4 -8 5 -6 6 -5 7 -4 8 -3	HC PEN 17H DC 10 AOI 1 BA 2 TOF 14	PEN 17H 7.7 7.6 5.8 DC 10 8 8 7 BSHC 34 -3 -8 -12 BC 16T 5K 552 170 82 34 11							
PIAT / Anti-Tank Bomb Launcher / UK The Projector, Infantry, Anti-Tank weapon or PIAT is a spigot launcher using a steel rod to launch a bomb which is loaded into the muzzle tray. The propellant charge which launches the bomb drives the rod back, cocking it for the next shot.	L 39 W 35.0 RT 16 Cap 1 AW 3.0	3 -15 4 -10 5 -8 6 -7 7 -6 8 -5 9 -4 10 -3	AOI 1 BA 4 -4 TOF 11 20	PEN 640 2.5 2.4 2.3 2.3 2.1 DC 10 4 4 4 4 3 BSHC *3 3 0 -5 -8 -12 BC 14K 733 181 54 27 12 4							
M9A1 Bazooka / 2.36 inch Rocket Launcher / USA The Bazooka fired a 60mm fin stabilized rocket with a hollow charge explosive. The rocket was loaded by an assistant into the rear of the launch tube and connected to an electric firing wire. When the trigger was pressed, two batteries in the pistol grip electrically fired the rocket motor. The bazooka was one of the most effective infantry anti-tank weapons of the war. After the war, a 3.5 inch Super-Bazooka saw service in Korea.	L 54 W 16.7 RT 10 Cap 1 AW 3.4	2 -16 3 -10 4 -8 5 -7 6 -6 7 -5 8 -4 9 -3 10 -2 11 -1	AOI 1 1 BA 12 5 0 -19 TOF 4 7 11 50	PEN 14H 1.5 1.5 1.4 1.4 1.2 1.0 DC 10 2 2 2 2 2 2 2 2 BSHC *11 14 3 0 -3 -7 -12 BC 5K 368 103 32 17 7 2							

	Call ye mitorial	Explos	Explosion Data					Target Range From Burst in 2 Yard Hexes												
Grenades / Explosives	Physical Data		C 0 1			2	3	4	5	6	7					16	20	25	30	40
37M46 Fragmentation Grenade France	Length 3.9 Weight 1.2 Arm Time 5 Fuse 2 Range 14	DC BSHC BC	2.7 10 *4 71H	3	3	3 -4	1.6 3 -7 20	1.5 2 -9 12	1.4 2 -10 9	6	5	4	3	2	2	1	1	1	1	
OF 37 Blast Grenade France	Length 3.9 Weight .6 Arm Time 5 Fuse 2 Range 19	BSHC BC	2.7 10 *7 71H	5	5 2	1.0 4 -2 38	.8 3 -5 20	.7 3 -7 12	.6 3 -8 9	.5 2 -10 6	5	4	3	2	2	1	1	1	1	
Defensive Fragmentation Grenade France	Length 4.3 Weight 1.6 Arm Time 5 Fuse 2 Range 12	DC BSHC BC	2.5 10 *3 54H	1.2 2 3 384	1.2 2 0 107	1.2 2 -5 33	1.1 2 -8 17	1.1 2 -10 11	7	6	4	4	2	2	1	1	1	1		
Gr 24 Blast Grenade Germany	Length 14 Weight 1.3 Arm Time 4 Fuse 2 Range 17	DC BSHC BC	3.4 10 *2 13K	2.7 4 2 693	2.6 4 -1 173	2.5 4 -6 52	2.4 4 -9 26	16	11	9	7	5	4	3	2	2	1	1	1	
M 91 Fragmentation Grenade Japan	Length 4.5 Weight 1.2 Arm Time 3 Fuse 4 Range 14	DC BSHC BC	2.4 10 *3 50H	2	1.2 2 0 103	1.2 2 -5 32	1.1 2 -8 17	1.1 2 -10 10	7	5	4	3	2	2	1	1	1	1		
F 1 Fragmentation Grenade USSR	Length 4.9 Weight 1.3 Arm Time 3 Fuse 2 Range 13	DC BSHC BC	2.4 10 *2 47H	2 2	1.1 2 -1 99	1.0 2 -6 31	1.0 2 -9 16	10	7	5	4	3	2	2	1	1	1	1		
RDG 33 Fragmentation Grenade	Length 11 Weight 1.6 Arm Time 4 Fuse 2 Range 14	DC BSHC BC	2.7 10 *4 67H	1.8 3 4 445	1.8 3 0 121	1.7 3 -4 37	1.6 3 -7 19	1.6 2 -9 12	8	6	5	4	3	2	2	1	1	1	1	
RPG 40 Anti-Tank Grenade USSR	Length 6.5 Weight 2.4 Arm Time 4 Fuse I Range 12	DC BSHC BC	7.3 10 *1 71K	7.2 7 1 24H	7.1 7 -3 445	6.9 7 -8 116	57	35	24	18	14	11	8	6	5	4	3	2	1	1
RG 42 Fragmentation Grenade	Length 4.8 Weight 1.0 Arm Time 3 Fuse 2 Range 15	DC BSHC BC	3.0 10 *3 91H	3	2.1 3 0 143	2.0 3 -5 44	3	1.9 3 -10 14	10	7	6	5	3	2	2	2	1	1	1	
# 36M Fragmentation Grenade	Length 3.5 Weight 1.7 Arm Time 3 Fuse 2 Range 12	DC BSHC BC	2.5 10 *3 54H	1.2 2 3 384	2	1.2 2 -5 33	1.1 2 -8 17	1.1 2 -10 11	7	6	4	- 4	2	2	1	1	1	1		
M 2 Fragmentation Grenade	Length 4.5 Weight 1.3 Arm Time 3 Fuse 2 Range 13	DC BSHC BC	2.3 10 *2 43H	1.0 2 2 335	1.0 2 -1 95	1.0 2 -6 30	1.0 2 -9 15	10	7	5	4	3	2	2	1	1	1	1		
Mk A3 Blast Grenade USA	Length 5.3 Weight 1.0 Arm Time 3 Fuse 2 Range 15	DC BC	3.8 10 20K	928	218	63	32	20	14	10	8	6	4	3	3	2	1	1	1	