Note on the Small Arms Rounds files: These are not totally finished yet, and may not contain all the different rounds that are fired by the weapons on other of these pages. Terms like Pistol, Revolver, and SMG rounds mean that those rounds are by and large fired by those types of weapons, but other types of rounds may be fired by those weapons and vice-versa. The Small, Medium, and Heavy-Caliber rounds are by and large rifle, automatic rifle, and machinegun rounds.

51mm

HE: Weight: 5.85 kg; Price: $56
HEDP: Weight: 5.85 kg; Price: $56
Smoke: Weight: 5.21 kg; Price: $69
WP: Weight: 5.85 kg; Price: $77

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
51mm	50	180	HE	C7 B16	1C	0	6550
	50	180	HEDP	C5 B14	50C	0	6550
	50	180	Smoke	C1 (B12)	Nil	0	6550
	50	180	WP	C1 B20	Nil	0	6550

70mm LAU-97

Chaff: Weight: 16.8 kg; Price: $195
CHEM: Weight: 17.4 kg; Price: $210
HE: Weight: 17.8 kg; Price: $170

HEAT: Weight: 16.2 kg; Price: $170
HEDP: Weight: 16.2 kg; Price: $170
ICM-DP: Contains 22 submunitions with a penetration of 20. Weight: 17.8 kg; Price: $1000
ILLUM: Weight: 19 kg; Price: $155
WP: Weight: 17.7 kg; Price: $235

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
70mm LAU-97	8	220	Chaff	(B24)	Nil	0	7900
	8	220	CHEM	C2 (B16)	Nil	0	7900
	8	220	HE	C10 B24	3C	0	7900
	8	220	HEAT	C5 B12	80C	0	7900
	8	220	HEDP	C7 B20	40C	0	7900
	8	Nil	ICM-DP	B30	Grenade*	0	7900
	8	Nil	ILLUM	(B660)	Nil	0	7900
	8	220	WP	C2 B30	Nil	0	7900

105mm DGFM

HE FRAG: Weight: 28.5 kg; Price: $240
HE WP: Weight: 28.5 kg; Price: $480
ICM: Weight: 28.5 kg; Price: $1400

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
105mm DGFM	10	280	HE FRAG	C15 B40	1C	0	10100
	10	280	HE WP	C9 B40	1C	0	10100
	10	Nil	ICM	B45	Grenade	0	10100

107mm

HE: Weight: 18.84 kg; Price: $160
HE-LR: Weight: 19 kg; Price: $200
Jammer: Weight: 18.3 kg; Price: $1600
WP: Weight: 18.8 kg; Price: $320

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
107mm	4	270	HE	C15 B38	1C	0	8500
	4	270	HE-LR	C11 B20	1C	0	10000
	4	270	Jammer	(B400)	Nil	0	8500
	4	270	WP	C3 B38	Nil	0	8500

110mm LARS

CHEM: Weight: 31.2 kg; Price: $420
CHEM-LR: Weight: 31.2 kg; Price: $750
FASCAM: Contains 8 antitank mines. Weight: 30.5 kg; Price: $3400
FASCAM-LR: Contains 8 antitank mines. Weight: 30.5 kg; Price: $5800
HE: Weight: 35 kg; Price: $340
HE-LR: Weight: 35 kg; Price: $580

ICM-DP: Contains 65 submunitions with a penetration of 20. Weight: 35.1 kg; Price: $2050
ICM-DP-LR: Contains 65 submunitions with a penetration of 20. Weight: 35.1 kg; Price: $3480
WP: Weight: 35 kg; Price: $470
WP-LR: Weight: 35 kg; Price: $800

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
110mm LARS	2	Nil	CHEM	C3 (B25)	Nil	6000	14000
	2	Nil	CHEM-LR	C3 (B25)	Nil	6000	25000
	2	Nil	FASCAM	B60	Mine*	6000	14000
	2	Nil	FASCAM-LR	B60	Mine*	6000	25000
	2	Nil	HE	C14 B40	1C	6000	14000
	2	Nil	HE-LR	C14 B40	1C	6000	25000
	2	Nil	ICM-DP	B50	Grenade*	6000	14000
	2	Nil	ICM-DP-LR	B50	Grenade*	6000	25000
	2	Nil	WP	C3 B40	Nil	6000	14000
	2	Nil	WP-LR	C3 B40	Nil	6000	25000

122mm
CHEM: Weight: 52.17 kg; Price: $800
FASCAM: Contains 6 antitank and 96 antipersonnel mines. Weight: 58.2 kg; Price: $6500
HE: Weight: 66.83 kg; Price: $650
HE-LR: Weight: 60 kg; Price: $975
ICM-DP: Contains 39 submunitions with a penetration of 22. Weight: 67 kg; Price: $3900
ICM-DP-LR: Weight: 60 kg; Price: $5200
WP: Weight: 66.83 kg; Price: $900
WP-LR: Weight: 60 kg; Price: $1350

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
122mm	7	300	CHEM	C3 (B28)	Nil	0	20850
	7	Nil	FASCAM	B68	Mine*	0	20850
	7	300	HE	C16 B44	1C	0	20850
	7	300	HE-LR	C12 B38	1C	0	30000
	7	Nil	ICM-DP	B55	Grenade*	0	20850
	7	Nil	ICM-DP-LR	B42	Grenade*	0	30000
	7	300	WP	C3 B44	Nil	0	20850
	7	300	WP-LR	C2 B38	Nil	0	30000

127mm South African
CHEM: Weight: 52.8 kg; Price: $645
CHEM-LR: Weight: 61.6 kg; Price: $750
HE: Weight: 54 kg; Price: $525
HE-LR: Weight: 63 kg; Price: $610
ICM-DP: Contains 40 submunitions with a penetration of 23. Weight: 54.1 kg; Price: $3150
ICM-DP-LR: Contains 40 submunitions with a penetration of 23. Weight: 63.1 kg; Price: $3660
WP: Weight: 54 kg; Price: $725
WP-LR: Weight: 63 kg; Price: $840

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
127mmSA	10	Nil	CHEM	C3 (B30)	Nil	8000	22000
	10	Nil	CHEM-LR	C3 (B30)	Nil	8000	36000
	10	Nil	HE	C17 B46	1C	8000	22000
	10	Nil	HE-LR	C17 B46	1C	8000	36000
	10	Nil	ICM-DP	B58	Grenade*	8000	22000
	10	Nil	ICM-DP-LR	B58	Grenade*	8000	36000
	10	Nil	WP	C3 B46	Nil	8000	22000
	10	Nil	WP-LR	C3 B46	Nil	8000	36000

127mm SS-30
CHEM: Weight: 66.5 kg; Price: $810
HE: Weight: 68 kg; Price: $660
WP: Weight: 68 kg; Price: $915

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR

127mm SS-30	4	Nil	CHEM	C3 (B30)	Nil	9000	30000
	4	Nil	HE	C17 B46	1C	9000	30000
	4	Nil	WP	C3 B46	Nil	9000	30000

128mm

CHEM: Weight: 54.64 kg; Price: $840
CHEM-LR: Weight: 55 kg; Price: $1330
HE: Weight: 70 kg; Price: $680
HE-LR: Weight: 71 kg; Price: $1075
WP: Weight: 70 kg; Price: $940
WP-LR: Weight: 71 kg; Price: $1485

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
128mm	6	125	CHEM	C3 (B30)	Nil	0	8550
	6	125	CHEM-LR	C2 (B24)	Nil	0	13500
	6	125	HE	C17 B46	1C	0	8550
	6	125	HE-LR	C13 B35	1C	0	13500
	6	125	WP	C3 B46	Nil	0	8550
	6	125	WP-LR	C2 B35	Nil	0	13500

130mm

CHEM: Weight: 32.3 kg; Price: $395
HE: Weight: 33 kg; Price: $320
HE-LR: Weight: 32.5 kg; Price: $400
WP: Weight: 32.8 kg; Price: $445

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
130mm	5	300	CHEM	C4 (B30)	Nil	0	10500
	5	300	HE	C24 B36	3C	0	10500
	5	300	HE-LR	C18 B28	3C	0	15000
	5	300	WP	C4 B45	Nil	0	10500

130mm Western

CHEM: Weight: 53.8 kg; Price: $660
CHEM-LR: Weight: 62.6 kg; Price: $1030
HE: Weight: 55 kg; Price: $535
HE-LR: Weight: 64 kg; Price: $835
ICM-DP: Contains 40 submunitions with a penetration of 24. Weight: 55.1 kg; Price: $3210
ICM-DP-LR: Contains 40 submunitions with a penetration of 24. Weight: 64.2 kg; Price: $5010
WP: Weight: 54.7 kg; Price: $745
WP-LR: Weight: 63.7 kg; Price: $1160

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
130mmW	10	Nil	CHEM	C4 (B30)	Nil	6000	23000
	10	Nil	CHEM-LR	C4 (B30)	Nil	6000	36000
	10	Nil	HE	C24 B36	3C	6000	23000
	10	Nil	HE-LR	C24 B36	3C	6000	36000
	10	Nil	ICM-DP	B56	Grenade*	6000	23000
	10	Nil	ICM-DP-LR	B56	Grenade*	6000	36000
	10	Nil	WP	C4 B45	Nil	6000	23000
	10	Nil	WP-LR	C4 B45	Nil	6000	36000

140mm Spanish

FASCAM: Contains 7 antitank and 108 antipersonnel mines. Weight: 97 kg; Price: $3400
HE: Weight: 94.6 kg; Price: $340
ICM-DP: Contains 28 submunitions with a penetration of 22. Weight: 97 kg; Price: $2040
Smoke: Weight: 97 kg; Price: $420
WP: Weight: 94 kg; Price: $470

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
140mm Sp	2	Nil	FASCAM	B75	Mine*	6000	28000
	2	Nil	HE	C24 B36	3C	6000	28000

	2	Nil	ICM-DP	B60	Grenade*	6000	28000
	2	Nil	Smoke	C4 (B30)	Nil	6000	28000
	2	Nil	WP	C4 B45	Nil	6000	28000

160mm Brazilian

HE-FRAG: Weight 1000 kg; Price: $5200

DPICM: Contains 52 Antipersonnel and 52 Antiarmor Submunitions Weight 1000 kg; Price $25200

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
160mm Brazilian	6	12000	HE-FRAG	C38 B88	Nil	17C	97887
	6	12000	DPICM	(B65)	Nil	As Submunition	97887

160mm LARS

CHEM: Weight: 112.6 kg; Price: $515

HE: Weight: 115 kg; Price: $415

HEAT: Weight: 104.8 kg; Price: $415

ICM-DP: Contains 50 submunitions with a penetration of 29. Weight: 115.3 kg; Price: $2500

WP: Weight: 114.2 kg; Price: $575

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
160mm LARS	2	300	CHEM	C5 (B34)	Nil	0	30000
	2	300	HE	C30 B40	3C	0	30000
	2	300	HEAT	C20 B32	110C	0	30000
	2	Nil	ICM-DP	B70	Grenade*	0	30000
	2	300	WP	C5 B50	Nil	0	30000

180mm SS-40

CHEM: Weight: 148.8 kg; Price: $680

FASCAM: Contains 9 antitank and 140 antipersonnel mines. Weight: 132.4 kg; Price: $5500

HE: Weight: 152 kg; Price: $550

Cratering: Weight: 138.5 kg; Price: $550

ICM-DP: Contains 20 submunitions with a penetration of 58. Weight: 152.4 kg; Price: $3300

WP: Weight: 150.9 kg; Price: $760

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
180mm SS-40	4	Nil	CHEM	C5 (B34)	Nil	15000	35000
	4	Nil	FASCAM	B100	Mine*	15000	35000
	4	Nil	HE	C34 B45	3C	15000	35000
	4	Nil	Cratering	C26 B34	100C	15000	35000
	4	Nil	ICM-DP	B78	Grenade*	15000	35000
	4	Nil	WP	C5 B58	Nil	15000	35000

214mm

FASCAM: Contains 11 antitank and 166 antipersonnel mines. Weight: 298 kg; Price: $6500

HE: Weight: 275 kg; Price: $650

ICM-DP: Contains 66 submunitions with a penetration of 30. Weight: 276 kg; Price: $3900

WP: Weight: 273 kg; Price: $710

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
214mm	1/2	Nil	FASCAM	B118	Mine*	200	45000
	1/2	600	HE	C40 B54	4C	0	45000
	1/2	Nil	ICM-DP	B90	Grenade*	200	45000
	1/2	600	WP	C6 B70	Nil	0	45000

220mm

CHEM: Weight: 83.2 kg; Price: $1200

FASCAM: Contains 11 antitank and 170 antipersonnel mines. Weight: 92 kg; Price: $11,000

HE: Weight: 85 kg; Price: $1100

ICM-DP: Contains 69 submunitions with a penetration of 32. Weight: 85.2 kg; Price: $6600

WP: Weight: 84.4 kg; Price: $1200

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR

220mm	1	300	CHEM	C6 (B40)	Nil	0	11000
	1	Nil	FASCAM	B124	Mine*	0	11000
	1	300	HE	C26 B38	4C	0	11000
	1	Nil	ICM-DP	B60	Grenade*	0	11000
	1	300	WP	C4 B46	Nil	0	11000

227mm MLRS

CHEM: Weight: 161.5 kg; Price: $1300
FASCAM: Contains 12 antitank mines and 175 antipersonnel mines. Weight: 178.5 kg; Price: $12,000
HE: Weight: 165 kg; Price: $1200
ICM-DP: Contains 72 submunitions with a penetration of 32. Weight: 165.4 kg; Price: $7200
SADARM: Contains 9 submunitions with a penetration of 25. Weight: 165 kg; Price: $18,000
WP: Weight: 163.8 kg; Price: $1300

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
227mm MLRS	2	450	CHEM	C7 (B48)	Nil	0	31600
	2	Nil	FASCAM	B125	Mine*	0	31600
	2	450	HE	C43 B56	4C	0	31600
	2	Nil	ICM-DP	B100	Grenade*	0	31600
	2	Nil	SADARM	B100	Submunition*	0	31600
	2	450	WP	C7 B68	Nil	0	31600

262mm

FASCAM: Contains 24 antitank mines with a penetration of 8. Weight: 464 kg; Price: $38,250
HEDP: Weight: 480 kg; Price: $3825
ICM-DP: Contains 288 submunitions with a penetration of 12. Weight: 480 kg; Price: $22,950

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
262mm	2	400	FASCAM	B100	Mine*	0	50000
	2	400	HEDP	C37 B50	146C	0	50000
	2	400	ICM-DP	B115	Grenade*	0	50000

273mm Type 83

HE: Weight: 505 kg; Price: $3675
ICM-DP: Contains 380 submunitions with a penetration of 20. Weight: 150 kg; Price: $22,000

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
273mm	2	Nil	HE	C51 B68	5C	34000	80000
	2	Nil	ICM-DP	B200	Grenade*	34000	80000

284mm FASCAM

FASCAM: Contains 10 Type 72 antitank mines. Weight: 127 kg; Price: $8500

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
284mm	5	Nil	FASCAM	B50	Mine*	100	3000

300mm Bloc

HE: Weight: 830 kg; Price: $6040
ICM-DP: Contains 72 submunitions with a penetration of 27. Weight: 832 kg; Price: $36,000
RPV: Contains one remotely piloted aircraft with a combat movement of 70. The RPV can remain airborne for 30 minutes, and relays target information by radio to the battalion FDC for use in firing solutions. Any hit destroys one of them, but they are so small that all fire at them is one level more difficult. Weight: 785 kg; Price: $36,000
SADARM: Contains 5 submunitions with a penetration of 32. Weight: 830 kg; Price: $90,000

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
300mmB	2	Nil	HE	C56 B74	5C	20000	70000
	2	Nil	ICM-DP	B132	Grenade*	20000	70000
	2	Nil	RPV	Nil	Nil	20000	70000
	2	Nil	SADARM	B132	Submunition*	20000	70000

300mm SS-60

CHEM: Weight: 582.4 kg; Price: $4690
Cratering: Weight: 543.2 kg; Price: $4330
FASCAM: Contains 16 antitank and 230 antipersonnel mines. Weight: 643.7 kg; Price: $43,300

HE: Weight: 595 kg; Price: $4330
ICM-DP: Contains 33 submunitions with a penetration of 58. Weight: 596.6 kg; Price: $26,000
WP: Weight: 590.7 kg; Price: $6000

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
300mm SS-60	4	Nil	CHEM	C8 (B55)	Nil	20000	60000
	4	Nil	Cratering	C43 B56	167C	20000	60000
	4	Nil	FASCAM	B166	Mine*	20000	60000
	4	Nil	HE	C56 B74	5C	20000	60000
	4	Nil	ICM-DP	B132	Grenade*	20000	60000
	4	Nil	WP	C9 B90	Nil	20000	60000

300mm SS-80
CHEM: Weight: 582.4 kg; Price: $6250
Cratering: Weight: 543.2 kg; Price: $5760
FASCAM: Contains 12 antitank and 172 antipersonnel mines. Weight: 643.7 kg; Price: $57,600
HE: Weight: 595 kg; Price: $5760
ICM-DP: Contains 25 submunitions with a penetration of 58. Weight: 596.6 kg; Price: $34,600
WP: Weight: 590.7 kg; Price: $9000

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
300mm SS-80	4	Nil	CHEM	C6 (B40)	Nil	22000	90000
	4	Nil	Cratering	C32 B42	125C	22000	90000
	4	Nil	FASCAM	B125	Mine*	22000	90000
	4	Nil	HE	C42 B56	5C	22000	90000
	4	Nil	ICM-DP	B100	Grenade*	22000	90000
	4	Nil	WP	C7 B68	Nil	22000	90000

425mm Chinese
FAE: Weight: 765 kg; Price: $11,000

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
425mm	1	50	FAE	C120 B80	175C	100	1000

ATACMS
Block 1 ICM-DP: Contains 644 submunitions with a penetration of 25. Vehicles in the burst radius will suffer 10 attacks each. Weight: 1750 kg; Price: $33,600
Block 1A ICM-DP: Contains 275 submunitions with a penetration of 25. Vehicles in the burst radius will suffer 5 attacks each. Weight: 1750 kg; Price: $54,500
Brilliant: Carries 13 laser-guided submunitions with a penetration of 96, a Concussion of 17, and a Burst Radius of 28. These submunitions attack designated targets as if they were ATGM with a skill roll of 13. Each attacks a different target within the burst radius, overlapping targets only if less than 13 targets are available. Weight: 1485 kg; Price: $84,000 (-/-)

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
ATACMS	1	Nil	Block 1 ICM-DP	B200	Grenade*	15000	185000
	1	Nil	Block 1A ICM-DP	B200	Grenade*	15000	300000
	1	Nil	Brilliant	B275	Submunition*	15000	140000

FROG-7
CHEM: Weight: 2300 kg; Price: $26,000
HE: Weight: 2500 kg; Price: $24,000

Weapon	ROF	DF Range	Round	Damage	Pen	Min Rng	IFR
FROG-7	1	Nil	CHEM	C11 (B75)	Nil	15000	70000
	1	Nil	HE	C76 B102	18C	15000	70000

AUTOCANNON AMMUNITION

20mm General Electric Vulcan

Notes: The M-61 Vulcan was originally designed post-World War 2 as an autocannon to be mounted in high-speed aircraft. Design work began on the weapon and ammunition in 1946; though the ammunition was ready in 1952, a reliable Vulcan was not available until 1959. Ammunition for the M-61 Vulcan is generally used in belts only in ground-mounted applications like the M-163; aircraft and aircraft gun pods generally use drums of linkless ammunition that are sized to carry the maximum amount of ammunition that the aircraft design allows. (Helicopters generally use belted ammunition for their internal guns and gun pods). The figures shown here are primarily for belted ammunition in ground-mount and vehicular applications (and the Phalanx CIWS). The Cobra helicopter is also a user of Vulcan ammunition in its M-197 autocannon. Early in the Vulcan's ammunition development, the Air Force seriously considered using a 27mm round; however, it was decided that a smaller-caliber round would allow for more ammunition carriage and a lighter gun, and that using high-velocity 20mm ammunition would give the Vulcan near-equivalent damaging power.

Though GE invented the Vulcan and developed its ammunition, GE later sold its Armament Systems division to Martin Marietta. Martin later merged with Lockheed, who were later acquired by General Dynamics, who currently build and make parts for the Vulcan and its derivative guns. In addition, there are several foreign license producers, and even more license producers of its ammunition.

Other Names: M-53 API, M-56A3/A4 HEI, M-242 HEI-T, M-246 HEI-T, M-940 MPT-SD, PGU-28A/B SAPHEI

Size: 20x102mm

Weight: 40.05 per case of 100

Price: (API) $322 per case
(HEI) $263 per case
(MPT-SD) $408 per case
(SAPHEI) $524 per case

Magazines:

Per round: 0.32 kg	300-round belt: 96 kg	750-round belt: 240 kg	989-round belt: 317 kg
1000-round belt: 320 kg	1550-round belt: 497 kg		

20mm Hispano-Suiza HS-804

Notes: The HS-804 is an old World War 2 antiaircraft cartridge, originally used by just about every Western nation. Currently, the HS-804 is fired only by a few weapons, most notably antiaircraft and IFV weapons of vehicles of the former Yugoslavia (the "M-55" listed below). The HS-804 is now considered obsolete for most purposes, though it has found some minor use in antimateriel rifles as well as the uses mentioned above. The shells and the guns firing them are light in weight and easy to use. Loading is as simple as loading a machinegun, whether the gun is fed by a belt of magazine. The guns and ammunition is still being produced, primarily in the former Yugoslavia.

Other Names: M-55, Mk 11, Mk 12

Size: 20x110mm

Weight: 43.2 kg per case of 100

Price: (APDS) $369 per case
(API) $347 per case
(HE) $283 per case

Magazines:

Per round: 0.35 kg	10-round drum: 6.02 kg	60-round drum: 32.45 kg	75-round drum: 40.37 kg
75-round belt: 25.92 kg	100-round belt: 34.56 kg	120-round drum: 64.16 kg	140-round belt: 48.38 kg
150-round belt: 51.84 kg	180-round drum: 95.87 kg	200-round belt: 51.84 kg	200-round belt: 69.12 kg

20mm Oerlikon KAA/KAB

Notes: This ammunition was first developed for the KAA autocannon in the 1950s, which was their successor to their 20mm Type S. The KAA was designed primarily to be an AAA gun, and at first only HE ammunition was available, though its use on light AFVs led to the development of an API round. The shells and their guns are light in weight and easy to use, and even fully loaded retain their light weight. Loading is as simple as loading a machinegun, whether the gun is fed by a belt or by a magazine. The guns and ammunition are still being produced.

Size: 20x128mm

Weight: 50.26 kg per case of 100

Price: (API) $393 per case
(HE) $320 per case

Magazines:

Per round: 0.4 kg	8-round drum: 5.77 kg	20-round drum: 13.15 kg	50-round drum: 31.6 kg
75-round belt: 30.2 kg	100-round belt: 40.2 kg	120-round belt: 48.25 kg	

20mm Oerlikon KAD

Notes: Designed for what was originally the Hispano-Suiza HS-820 autocannon, the KAD uses a longer round with more propellant. It was designed primarily as an aircraft cannon, so the first round developed was HEI, followed by APHEI and then API when it began to be used in vehicle mounts. Rounds primarily designed to produce shrapnel fragments (to increase effectiveness against aircraft targets and against personnel in the open) and APDS rounds followed later when the round began to be used by the German Rh-202 autocannon on their armored vehicles. The ammunition is still being produced, despite the falling use of the KAD autocannon, because several German vehicles still use the Rh-202 autocannon as their primary armament, and several aircraft still use the US M-139 autocannon as aircraft armament.

Other Names: HS-820, Rh-202, 20mm M693, Vektor F2

Size: 20x139mm

Weight: 55 kg per case of 100

Price: (AP) $421 per case
(APDS) $492 per case
(APHEI) $492 per case
(API) $462 per case
(HEI) $358 per case
(SHRAP) $465 per case

Magazines:

Per round: 0.44 kg	8-round drum: 6.27 kg	20-round drum: 14.28 kg	50-round drum: 34.32 kg
75-round belt: 30.2 kg	75-round drum: 51.02 kg	100-round belt: 43.67 kg	120-round box: 81.07 kg
140-round belt: 61.14 kg			

23mm ZU-23

Notes: First designed to be fired from the ZU-23-2 antiaircraft autocannon in the late 1950s, this round has since been used by dozens of antiaircraft guns as well as some vehicular autocannons meant for antivehicle/antipersonnel use instead of antiaircraft use. It is also used as helicopter armament on some attack helicopters and in some gun pods for helicopters. The ZU-23 round is essentially an update of the World War 2 VYa round, with a wider variety of updated warheads and using steel casings instead of brass casings. Due to the different loadings of projectiles and different primers the VYa and ZU-23 rounds are not compatible, however. Fired *en masse*, the ZU-23 round can be devastating, but as a single autocannon firing as vehicular armament of helicopter armament, it is a bit lacking in damaging and penetration potential, though range is satisfying.

Other Names: 23mm Type 85

Size: 23x152mm

Weight: 79 kg per case of 100

Price: (APDS-T) $469 per case
(API) $418 per case
(HE) $341 per case
(HVAPI) $704 per case
(HVHE) $457 per case

Magazines:

Per round: 0.63 kg	50-round belt: 31.6 kg	100-round belt: 63.2 kg	

25mm OSCW

Notes: Designed specifically to be fired from Barrett XM-109 Payload Rifle and the OSCW autocannon/grenade launcher (now named the XM-307 ACSW, for Advanced Crew-Served Weapon), the 25mm OSCW round is a stubby, relatively short-range round that can carry a variety of projectile types. Currently, conventional and programmable airburst rounds are available, though weapon and round research continues. As far as I know, the round and the weapons that fire it have had only very limited combat testing, though intensive range and development testing has taken place.

Size: 25x59mm

Weight: 8 kg per case of 22

Price: (HE) $60 per case
(HEDP) $85 per case
(HEAB) $90 per case
(HEDP-AB) $128 per case

Magazines:

Per round: 0.29 kg	22-round cassette: 6.37 kg	74-round cassette: 21.43 kg	

25mm Oerlikon KBA

Notes: The Oerlikon KBA round was originally designed by Eugene Stoner for use in an autocannon that was to arm the US MICV (the vehicle that became the M-2 Bradley). The design of the gun and ammunition was bought out by Oerlikon after the M-242 Bushmaster won that competition, but as a result KBA ammunition is usable by the M-242 Bushmaster as well as its derivative, the GAU-12/U. It can also be fired by the Mauser Mk 25, the Giat M-811, the Aden 25 aircraft cannon, and the various KBA autocannon clones. The KBA round is conventionally primed and uses a lacquered steel case with a belt link locating groove just behind the case shoulder. This special adaptation to belt feed makes reloading the round by other than special equipment difficult, as the groove expands when the round is fired and must be re-done carefully or the reloaded round will jam the weapon.

Other Names: M-242 Bushmaster, GAU-12/U, GAU-22/A, 25M811, Oerlikon IIG, 25mm Type 85

Size: 25x137mm

Weight: 84 kg per case of 100

Price: (AA) $671 per case
(APDS) $833 per case
(APFSDS) $1184 per case
(APFSDSDU) $1535 per case
(API) $730 per case
(FAPDS) $645 per case
(HEI) $599 per case
(SAPHEI) $833 per case

Magazines:

Per round: 0.67 kg	30-round drum: 32.3 kg	40-round belt: 26.9 kg	66-round belt: 44.4 kg
100-round belt: 67.25 kg	500-round drum: 516 kg		

30mm DEFA

Notes: In modern times, when one refers to a 30mm DEFA cannon, one is generally referring to the DEFA 554, the most modern version of the 30mm DEFA autocannon. The 30mm DEFA autocannon is almost exclusively an aircraft cannon, mounted as the internal gun on some fighters, attack aircraft, and helicopters; however, a few antiaircraft guns, like the Giat Type 30 M 781 use the 30mm DEFA round, as well as some antiaircraft guns mounted on ships. 30mm DEFA ammunition is electrically-ignited (the primer is only able to be ignited by an electric charge), and since it is used as an aircraft cannon, is capable of functioning at cyclic rates of up to 2000 rounds per minute through one barrel. Though the guns are not the same, the British 30mm ADEN autocannon uses the same ammunition as the DEFA, leading to the ammunition's alternate name. Though manufactured in several countries, more 30mm DEFA ammunition is produced in South Africa than anywhere else, despite the design being French and France being a major user of the 30mm DEFA's ammunition and autocannon.

Other Names: 30mm ADEN

Size: 30x113mm

Weight: 99.8 kg per case of 100

Price: (APHEI) $635 per case
(API) $573 per case
(HEI) $455 per case
(SAPHEI) $633 per case

Magazines:

Per round: 0.8 kg	100-round belt: 79.87 kg		

30mm 2A42

Notes: The 30mm 2A42 round was introduced in the 1970s specifically for use by armored vehicles, helicopters, and antiaircraft autocannons; until this point, such vehicles were equipped with either lower-caliber autocannons or adapted naval autocannons. The 30mm 2A42 fires percussion-primed ammunition, instead of using the electrical priming of adapted naval guns. As the number of applications and ammunition technology grew, the number of ammunition types grew, and the number of vehicles mounting the 2A42 or its descendants has grown to the point where it is virtually an ubiquitous autocannon in Russian, former Russian, Former Warsaw Pact, and Chinese service, as well as among former Soviet or Chinese client states. Ground vehicles normally use the armor-piercing types, with HE-types as secondary; antiaircraft guns normally use HE or HE-FRAG; helicopters tend to use HE-types, but sometimes use AP types.

Other Names: Shipunov 2A42, 30x165mm, KBP 30x165mm

Size: 30x165mm

Weight: 146 kg per case of 100

Price: (APBC) $635 per case
(APDS) $714 per case
(APFSDS) $1000 per case
(API) $682 per case
(HE-FRAG) $676 per case

(HE) $541 per case

Magazines:

Per round: 1.17 kg	100-round belt: 116.63 kg		

30mm Rarden

Notes: The 30mm Rarden round was developed from the earlier Hispano-Suiza 831-L and the KCB family of ammunition, and has been steadily upgraded over the years to deal with newer threats and give the 30mm L-21A1 autocannon greater capability. It is virtually identical to the 30mm KCB round; the two rounds have virtually the same dimensions and the L-21A1 can also fire KCB ammunition (but not necessarily the other way around; guns designed for KCB ammunition cannot necessarily fire Rarden ammunition). Round dimensions are medium-length for an autocannon round, but propellant charge is decently large and the Rarden ammunition has surprising power and range. (The long barrel helps in this regard.) The L-21A1 Rarden gun is fed by small 3-round clips, which are fed into either side of its dual-feed mechanism.

Other Names: HS-831

Size: 30x170mm

Weight: 43 kg per case of 36

Price: (APDS) $375 per case

(APFSDS) $413 per case

(APSE) $300 per case

(HE) $270 per case

Magazines:

Per round: 1.2 kg	3-round clip: 3.61 kg		

30mm Oerlikon KCA

Notes: The KCA was originally developed as an antiaircraft gun round, but designers were quick to employ it on aircraft, and some time later, on AFVs. Along with its expanding duties, new ammunition was developed for the KCA. Today, the KCA or KCB equips dozens of fighter aircraft, and an increasing number of IFVs, self-propelled antiaircraft guns, ground-mounted antiaircraft guns, and naval gun mounts. The KCB round is virtually identical to the KCA; the KCA uses a brass case, while the KCB uses a steel case. The GAU-8 Avenger autocannon also uses an similar round; however, the round produced for the GAU-8 has a light alloy case to save weight, is electrically-primed, and uses a plastic driving band (as well as a flexible chute feed, like most aircraft). Most guns which can fire KCA can also fire KCB, but few KCA or KCB guns can fire the GAU-8 round. They are, however, the similar in size and weight and are variants of each other, so they are included here together.

Other Names: 30mm Bushmaster II, 30mm Mk 44, 30mm Mk 30 Model F, 30mm MK 30, EMAK 30, 30mm Artemis (and KCB and GAU-8)

Size: 30x173mm

Weight: 153kg per case of 100

Price: (APDS) $1063 per case

(APFSDS) $1172 per case

(APIDU – GAU-8 Only) $1289 per case

(APHE) $851 per case

(API) $934 per case

(HE) $766 per case

(HEI – GAU-8 Only) $766 per case

Magazines:

Per round: 1.22 kg	50-round drum: 96.11 kg	100-round belt: 122.29 kg	125-round belt: 183.44 kg
250-round belt: 305.73 kg			

30mm Praga M-53

Notes: Throughout most of its career, the M-53 round and its associated autocannons were used by self-propelled and ground-mounted antiaircraft guns. However, starting about 20 years ago, Yugoslavia and later the former Yugoslavia (especially Serbia) began mounting the M-53 autocannon, and its improved variant, the M-86 autocannon, on IFVs and scout vehicles. (The M-86 gun also came with a range of improved ammunition, but this was primarily improvements in the fuzes and stability of the warheads and propellant). The rounds are large and powerful, and are quite useful as antivehicle rounds when firing APFSDS ammunition. The round and the original autocannon that fired it was designed in the late 1950s in Czechoslovakia; soon thereafter Yugoslavia adopted it for their 30mm autocannons.

Other Names: 30mm M-86, 30mm Praga

Size: 30x220mm

Weight: 97kg per case of 50

Price: (API) $456 per case

(APFSDS): $746 per case
(HE) $487 per case
(HEI) $487 per case

Magazines:

Per round: 1.56 kg	10-round clip: 15.55 kg	40-round belt: 62.2 kg	50-round magazine: 98.43 kg

35mm Oerlikon KDB

Notes: The KDB was primarily designed for antiaircraft use, but most of the guns that use them have a secondary role as ground-support weapons. Naval use is growing, particularly with the AHEAD antimissile round. The KCB is also beginning to be used in AFV cannons.

The KDB round is a large round which has considerable power, and many AFV cannons which can use the KDB can use the KDC with some adjustments to the breech; most such autocannons have a variable breech for this purpose. Autocannons designed for the KDB typically use a long barrel length to take as much as advantage as possible of the KDB's power. KDB's are almost always fed by belts.

The AHEAD round requires some additional elaboration. Designed for close-range antiship missile defense, the AHEAD round is also useful as an antipersonnel round. The round breaks up into 152 heavy tungsten pellets. When fired against missiles or vehicular targets, the damage is resolved as 17 attacks with a penetration of 3 each, and each cluster requiring its own "to hit" roll. When fired against personnel, the damage is resolved as a claymore mine, but each hit has a penetration of 1-Nil.

Other Names: Oerlikon KDC, 35mm Bushmaster III, 35mm Mk 44
Size: 35x228mm
Weight: 154 kg per case of 56
Price (AHEAD): $1786 per case
(APCI): $548 per case
(APDS): $610 per case
(APFSDS): $867 per case
(APFSDS-T) $1061 per case
(APFSDSDU): $1114 per case
(API): $551 per case
(FAPDS): $473 per case
(HE/HEI): $442 per case
(HEAT): $631 per case
(HEDP): $537 per case
(HEIBF): $354 per case
(HEINF): $369 per case
(SAPHEI): $615 per case

Magazines:

Per round: 2.19 kg	55-round belt:120.6 kg	56-round belt: 122.8 kg	65-round belt: 142.6 kg
100-round belt: 219.4 kg			

37mm M-1939

Notes: This round is essentially a sized-up round from the pre-World War 2 Swedish Bofors antiaircraft gun, a design which was sold to Russia in the 1930s. So far, the 37mm M-1939 is uses exclusively as an antiaircraft gun, both in ground-mount and naval applications, though some experimental antiaircraft vehicles have been equipped with the gun that fires this ammunition. Needless to say, such guns often find themselves used against personnel, soft-skinned vehicles, and light armored vehicles, as well as fortifications. Though it is an elderly design using elderly-design ammunition, it continues to be a common sight throughout the world, and the ammunition now used is basically a modern iteration of the older designs. Unlike most Soviet/Russian designs, the 37mm M-1939 cartridge case is brass, though internally the propellant charge is held together by a cardboard cylinder. In addition, the internal walls of the case are wax-coated. The round has copper driving bands. Ignition is by conventional primer; most guns designed for this round are recoil-operated.

Size: 37x252mm
Weight: 169.3 kg per case of 50
Price: (APFSDS-T) $577 per case
(API) $473 per case
(APHE) $677 per case
(FRAG-HE) $509 per case
(HE) $407 per case
(HVAP) $865 per case

Magazines:

Per round: 2.7 kg	5-round clip: 13.55 kg		

40mm Bofors L/60

Notes: This round was designed for the Bofors L/60 antiaircraft gun, when it was asked by the Swedish Navy to produce a smaller, lighter version of the 57mm gun then in use as an anti-torpedo boat that Finspong (later bought out by Bofors) had designed for the Swedish Navy In 1900. Bofors produced a medium-weight gun, but with then high-velocity ammunition which included a large shell packed with propellant. The ammunition was at first a non-starter, as it used zinc shell cases that left heavy zinc deposits in the barrel, though this problem was later solved through advances in the gun design during development. Current L/60s use brass cases instead of zinc. Rounds are rimmed, allowing them to be fed into a gun by hand-fed clips. Production of both the gun and ammunition continue to this day, making it one of the oldest autocannon designs in existence today. Some 74 countries use or used the L/60, primarily on ships or as AAA guns, though the gun is also in use by the US AC-130 gunships.

Other Names: 40mm QF, 40mm Mark 26, 40mm Type 5

Size: 40x311mm

Weight: 195 kg per case of 40

Price: (APFSDS-T) $960 per case
(APHC-T) $765 per case
(AP) $380 per case
(HE) $380 per case
(MP) $456 per case
(PFHE) $456 per case

Magazines:

Per round: 3.9 kg	4-round clip: 15.6 kg	20-round magazine: 127.8 kg	

40mm Bofors L/70

Notes: Though the Bofors L/60 was an able antiaircraft gun in its time, after World War 2, the increasing speed of jet aircraft meant that the L/60 not only did not fire fast enough, it's rounds didn't have the velocity necessary to do the job. Bofors therefore developed a new 40mm autocannon, around a new shell which had a much heavier propellant charge along with a slightly lighter projectile. The stressing of the new shell also meant that it had the strength to work with a higher cyclic rate of fire than the L/60. The velocity of the L/70 was, in fact, considered incredible at the time for such a large round, and even today it's velocity and hitting power are quite respectable. The first L/70 rounds were used in the Swedish 40mm Ivakan m/48 antiaircraft gun, which began service in 1951. Foreign sales rapidly followed, and thousands have been produced since then. It has also gone on to be used in autocannons not necessarily meant for the antiaircraft role, such as that on the CV-9040, and the German Class 352, Class 333, and Class 332 mine hunting vessels. Of course, there are a plethora of antiaircraft designs using this round. Most guns firing this round are magazine or drum-fed instead of being belt-fed; the weight of a full drum in most cases prevents the drum from being loaded onto the weapon while full of rounds, and therefore the drum must be loaded with mechanical assist or filled with rounds after it is attached to the gun. The rounds are rimmed to facilitate this.

Other Names: 40mm Type A, 40mm Type B, 40mm Mk 3, 40mm SAK-40L/70, 40mm Breda

Size: 40x364mm

Weight: 229 kg per case of 40

Price: (3P) $1243 per case
(APFSDS-T) $1046 per case
(API) $414 per case
(HET) $414 per case
(PFHE) $497 per case

Magazines:

Per round: 4.6 kg	20-round drum: 149.6 kg	24-round drum: 177.6 kg	48-round drum: 345.5 kg
144-round drum: 1017 kg	480-round drum: 3367.7 kg	736-round drum: 5158.6 kg	

57mm S-60

Notes: The 57mm S-60 round was developed just after World War 2, and accepted along with the gun that fired it in 1950. It is still in service in many places worldwide, on ground-mounted antiaircraft guns, self-propelled antiaircraft guns, and naval mountings. Though the 57mm S-60 round was based on both the Bofors 57mm round and the Soviet 57mm round fired by some antitank guns in World War 2, the 57mm S-60 is noticeably weaker than both those rounds. The rounds for this gun have not changed since the early 1960s, with the exception of the addition of the APFSDS round in the early 1970s when the round and gun were being considered for use on a self-propelled light support gun. They have, however, been produced with increasing technological methods, including the late 1990s switch in some countries from steel to brass cases, and the change to non-corrosive primers.

Other Names: 57mm Type 59, 57mm Type 76, MK-781

Size: 57x384mm

Weight: 612.4 kg per case of 50

Price: (AP) $1959 per case
(APCBC) $2100 per case
(APFSDS) $2254 per case
(APHE) $2155 per case
(HE) $1617 per case

Magazines:

Per round: 9.8 kg	4-round clip: 39.2 kg	24-round belt: 235.2 kg	50-round belt: 489.9 kg

60mm HVMS

Notes: This heavy autocannon round was developed specifically for one of IMI's experiments at increasing the firepower of AFVs as well as fire support vehicles. Experimental fittings were made to the M-113 and the Marder, and were apparently successful, but not proceeded with beyond a few prototypes. However, the 60mm HVMS was used by Chile to re-arm some of their Sherman tanks, and they later mated the 60mm HVMS to other vehicles (such as the M-24 Chaffee) and even developed a ground mounting for it. Developed in conjunction with Otobreda of Italy, the 60mm HVMS has, other than Chile, found no commercial success or international interest.

Other Names: 60mm Otobreda HVMS, Oto-Melara T 60/70
Size: 60x410mm
Weight: 579.6 kg per case of 40
Price: (APFSDS-T) $3527 per case
(HE) $1494 per case
(HEAT) $2094 per case
(WP) $2694 per case

Magazines:

Per round: 11.6 kg	40-round linkless-feed magazine: 733.7 kg	40-round belt: 463.7 kg	

75mm ARES CTA

Notes: This round was designed specifically for the ARES XM-274 heavy autocannon, and when ARES's entry in the RDF/LT program fell through, eventually the XM-274 fell through as well, and it has found no real-world users as of yet. In the Twilight 2000 timeline, the gun and its ammunition is used by the LAV-75 light armored gun system. The rounds for the XM-274 used case-telescoped ammunition (CTA), and it was one of the first examples of CTA being used in a modern gun. The warheads for the round are set completely into the brass case and surrounded by propellant, which is designed to fire in a precise pattern to propel the warhead forwards in the same manner as normal ammunition. The 75mm CTA ammunition looks, externally, like a brass case with a flush plastic cap; the CTA ammunition takes up less space than a comparable 75mm round and weighs less than a similar 75mm conventional round. It also simplifies the feed system of the XM-274 and improves its feed reliability. Colored identification bands, caps, and labels identify the type of ammunition present. At first, Only the APFSDS and HE rounds were to be developed; the HEAT and WP rounds were developed later at the request of the US Army to provide greater flexibility in fire support. ARES is still willing to produce this gun system and its ammunition, but they have had no takers so far.

Size: 75x406mm
Weight: 702 kg per case of 36
Price: (APFSDS) $6945 per case
(HE) $4104 per case
(HEAT) $5724 per case
(WP) $7344 per case

Magazines:

Per round: 15.6 kg			

76mm OTO

Notes: The 76mm OTO round was designed for the 76/62mm Allargato dual-purpose automatic naval cannon. Since then, many guns have been designed to use the round; most of these are naval rounds, though a few land-based antiaircraft guns have been designed, as well as an antiaircraft vehicle. (Most land-based designs using this gun have not entered production and were produced as prototypes or trials vehicles only.) Ammunition is produced in many of the countries that use the Otobreda 76 series of autocannons, including some guns that do not have licenses to do so. The 76mm OTO round is huge in size but relatively light in weight compared to other rounds of its class. Most rounds loaded into Otobreda guns these days are HE rounds or HE-FRAG rounds, though use of the PFF round is becoming more common and even the sabot round is routinely carried by naval vessels should they be required. The APFSDS round, however, was primarily designed for land applications, should an antiaircraft gun have to engage light (or even medium) armor. The 76mm OTO round uses electrical ignition for its primer; feed may be from short, medium, or long belts, or via an ammunition drum.

Other Names: 76mm Otobreda, 76mm Oto-Melara, 76mm Breda, 76mm Fajir-27

Size: 76.2x900mm
Weight: 695 kg per case of 45
Price: (APFSDS) $7515 per case
(HE) $5355 per case
(HE-FRAG) $6025 per case
(PFF) $6779 per case

Magazines:

Per round: 12.3 kg	20-round belt: 247 kg	29-round drum: 567 kg	45-round belt: 556 kg
90-round belt: 1111 kg			

Round Types and Special Effects or Rules

APERS: Short for Anti-Personnel, an APERS round (also known, especially in the US, as Tactical Buckshot) is analogous to a huge shotgun round. As such, APERS rounds have a minimum range as well as following the rules of a shotgun round as far as multiple targets in one blast. The **HVCC** (High Explosive Canister Charge) is a high-velocity version of the APERS round, fired from NATO-compatible grenade machineguns and other launchers able to handle a NATO HV round.

Flechette rounds are basically the same idea as APERS rounds, but instead of steel balls, the Flechette round breaks up into lots of small steel or tungsten darts. The darts are small, but being hit by so many flechettes at once is likely to shred opponents. They also have better aerodynamic and penetration properties. Flechette rounds can damage their launcher due to scraping the inside of the barrel's walls; the chance is small, however (GM call here).

Barricade Penetrator: This round can punch through closed windows, wooden doors, drapes, etc. It is a rather long round, being over 15 centimeters long. The penetrator itself is a heavy steel nose. After a short time delay (which may be set to ½ to 3 seconds), a small irritant gas follow-on grenade begins to vent its gas. The round is theoretically capable of causing physical harm if it strikes someone directly; that is the bracketed number on the chart below. Likewise, the first penetration number is against materials or an unlucky light vehicle (it is capable of penetrating a windshield, car door, or damage a radiator), the second is the penetration if a person is hit directly.

Baton: This round consists of special casing with propellant, with the projectile fired being essentially a short length of wood or plastic, striking the target with sort of a low-velocity bullet. Penetration is not only Nil; a heavy coat or suchlike will protect against the Baton.

Irritant Baton: This round looks for the most part like a plastic Baton round; however, the Irritant Baton opens in flight to reveal a petal pattern and a central portion which splats the target with CS or concentrated Capsaicin. In addition to the damage from a Baton round, the target gets a nice dose of irritant; this irritant gas affects only the target.

Beanbag: This is pretty much what it sounds like; when fired, the target is hit by a square bag about the size of a paperback book. The bag is filled with small items that are strong but allow the beanbag to "give" a little. A Beanbag round can be filled with rocks similar to fish tank rocks, plastic pellets, or some type of heavy powder such as iron filings – any such material that has enough weight to fly.

CHEM: This is sort of a catch-all for a variety of soft and hard chemicals, ranging from tactical smoke to colored signal smoke, from irritant gas to lethal chemicals. These rounds typically have Concussion rating that causes actual damage, and a Burst rating that is a measure of the radius of the cloud of chemicals. For the most part, the Twilight 2000 v2.2 rules ably handle the use of smoke and chemicals, but some chemicals and situations require additional elaboration.

Irritant Gas rounds have the standard effects in the Twilight 2000 v2.2 rules if the irritant gas used is CS. If the gas is CN or an equivalent, difficulty rolls are one step harder. If the irritant gas is concentrated capsaicin or an equivalent, difficulty rolls are made at +3. Virtually all military irritant gas rounds are CS-equivalent rounds; police forces also use CS-equivalent rounds, but the use of capsaicin-type rounds is becoming more common in riot control, and police forces rarely have access to CN rounds.

The **Ferret** round was originally meant to provide a round with door penetration; however, it fell into disuse due to poor performance. However, it can still deliver a decent amount of Irritant Gas.

Flash-Bang (sometimes called a Crash-Bang or Stun grenade) is a round designed to stun and distract bad guys in a closed space, so they cannot get shots off at friendlies before the bad guys get killed by the good guys. They were first designed to stun hostage takers; though the grenade will stun the hostages too; they will receive assistance from the rescue force instead of bullets. Though a Flash-Bang can be one big bang and flash, most Flash-Bangs use a string of 3-5 bangs and flashes, as it causes more severe and lengthy confusion to hostage takers or rioters.

The **Fowling Control** round is a very unusual round. It is designed for wildlife officers to catch birds like ducks and geese when a pond or wetlands has become overpopulated with birds. When fired, a weighted net quickly unfolds to trap the birds (hopefully) before they can fly off. The net is strong, yet lightweight and easy to pack in a shell (in a factory). When the Fowling Control round is fired, there will be a bang as the charge throws the net out of the launcher, but this is not harmful under most circumstances. The net has a six-meter diameter, and the net deploys over the course of one second, with a minimum range of ten meters. Of course, this round could be used to capture PCs or NPCs; in this case, the PC or NPC gets a Difficult:Agility roll to avoid being caught. If the roll is missed by two points or one point, the character is only partially caught by the net, with the net entangling three adjoining body parts. Catastrophic Failure has no practical special effects; Outstanding Success has a special effect only if the character is within 2 meters of another friendly character; in this case, the character is able to keep the net off one other character who is within 2 meters.

HE (High Explosive) is a relatively simple round, consisting largely of a warhead with an outer shell and an internal explosive filler. However, there is some fragmentation effect to the explosion. Sometimes, the fragments result from the warhead jacket itself (often specially-scored inside to increase fragmentation), but more normally, the round will have a thickened jacket to produce more and heavier fragments. The **HVHE** round is a high velocity version of this HE round.

FRAG-HE (or simply FRAG) is an HE round with a fragmentation jacket around the warhead explosive, in order to produce more casualties. Unfortunately, the fragmentation jacket tends to suppress the concussive value of the grenade. Sometimes, a Fragmentation round uses fragments embedded directly in the explosive, (usually) with a specially-scored outer warhead wall.

The **Hellhound FRAG-DP** is one of the new generation of medium-velocity grenades that are designed to be fired from some launchers that normally launch 40x46mm low-velocity grenades. However, these rounds can only be fired by launchers which are designed to chamber the longer rounds. A Hellhound FRAG-DP not only has a larger warhead, it has a fragmentation jacket around the warhead. The Hellhound also has a small shaped charged in it, giving it some small antiarmor value.

The unusual Russian round commonly called the **Jumping Frag** is sort of a grenade launcher version of a bounce mine – when the round hits the ground, a secondary charge blows the main charge about 1 meter into the air, where it explodes in the same manner as the typical fragmentation round.

The **HEAB** (High Explosive AirBurst; also called the PP-HE-SD) round can use its full range of features only when fired from a launcher equipped with a special sight module that tells the grenade when to detonate via a radio or laser link. This allows the grenade to detonate in mid-air over an enemy trench, dead space that the enemy may be hiding in, or just beyond a wall that the enemy is behind, for example. Without the proper module, the HEAB round is treated as a simple HE round. The HVHEAB is the same round, packaged to contain a larger high-velocity propellant package.

The **HESH** (High Explosive Squash Head) warhead consists mostly of explosive with a thin warhead shell and a detonator. Damage to armor is a little limited, but usually effective against APCs, IFVs, and light combat vehicles. The HESH round is also useful against building walls and some fortifications.

A **HEAT** (High-Explosive Anti-Tank) round is essentially an HEDP round formed fully into a shaped charge, giving it greatly enhanced penetration against armor. This lessens the amount of explosive for antipersonnel effects. **HEAT-T** is the same round, but with a tandem warhead.

HEDP (High-Explosive, Dual-Purpose) has the explosives inside the warhead shaped differently – the warhead is a shaped charged that allows the round to penetrate light armor. The HEDP round also has some blast and fragmentation value, and is still has excellent antipersonnel effect.

The **HE-HC** (High Explosive Hollow Charge) round, peculiar to the Romanian AGA-40 GMG, is similar in concept to the HEDP round. However, rounds for the AGA-40 are some of the longest grenade launcher rounds out there, and this allows for not only a good-sized shaped charge round (another name for a shaped charge is a hollow charge), it allows for a decent explosive charge and a fragmentation jacket.

ILLUM (Illumination) rounds are essentially very bright flares, designed to light up the battlefield for a short time. These rounds typically have a simple igniter and a thin casing, perforated in many places so that the illumination compound can't simply fall out of the round, but allow the illumination compound to do its job. The illumination compound is usually a metal-based compound which burns at a high temperature and brightness, such as magnesium oxide or aluminum oxide. The ILLUM round is designed to begin burning at the top of the round's arc; it then descends on a small parachute to slow its fall and increase its useful time.

Flares are a subtype of ILLUM rounds that are primarily used for signaling, and are usually not nearly as bright as an illumination round. Flares are almost always colored lights. They too are suspended on a parachute, for the same reasons as above.

Star Clusters are themselves a subtype of flares, as when they burst, they throw off several smaller flares. They too are designed primarily for signaling. I have often heard fellow soldiers say that they look a little like fireworks.

For more information on these types of rounds, See Illumination Devices.

Multiball rounds are sort of a less-than-lethal version of a fragmentation round. Instead of high explosives and steel balls, the Multiball round has explosives and rubber balls inside.

Rubber Pellet rounds are the same basic idea as Multiball rounds, but they use smaller balls of hard rubber, producing a larger fragmentation pattern. **Stingball** rounds are likewise the same as Multiball rounds.

The **Muzzle Blast** round is basically a grenade packed with gunpowder or flash powder; it's a powerful blank round. No warhead is discharged with the Muzzle Blast round; instead, the round causes temporary damage of 3D6 out to 10 meters in an arc of 25 degrees starting at the muzzle of the launcher.

Slugs are what they sound like – a solid lead or steel slug, very much like a shotgun slug. They may sometimes be jacketed, and may sometimes have the slug scored to increase the breakup effects. The slug round behaves essentially like a big shotgun slug instead of a normal grenade round. Sometimes slug-type rounds are used in riot control; these rounds are generally made of rubber, and these use the temporary damage rules.

The **Ballistic** round used by the Polish PALLAD grenade launcher is for the most part like a standard slug round, but the slug is made of hard vulcanized rubber. It still hurts just as much as a Slug round, though when a medic treats the victim, he will find that there is more bruising, and possibly broken or cracked ribs. (This is a GM call.) The Russian **Rubber Slug** round is simply another term for the same thing, as is the 25x40mm **Rubber Ball.**

Thermobaric rounds do their damage by overpressure; this overpressure is usually generated by forming a cloud of highly-

flammable gas or mist, after which a second detonator causes the gas or mist to explode very violently. This kills its victims by massive concussion and secondary flame effects. The description I gave above is a bit windy, since the whole thing takes less than a second for detonation and secondary detonation.

WP (White Phosphorus) rounds have very little concussion effect when they explode, but they do spray the target area with chunks of white phosphorus, which react in a pyrophoric manner with oxygen. They will also react in this manner with even the oxygen inside human issue or blood, and (as per the *Twilight 2000 v2.2* rules) they can continue to cause burning damage until they are burned out or smothered with compounds that do not react with the WP (a type of surgical jelly is designed specifically for this use). The White Phosphorus can also cause fires among flammable materials in the area. Finally, White Phosphorus produces a sense cloud of white smoke, in the same manner as a smoke grenade cloud of the same caliber. (For this reason, they are often used by aircraft or helicopters to mark targets that need a more comprehensive working over.) Eventually, White Phosphorus burns into Red Phosphorus crystals, which are for the most part stable and don't burn unless heated to high temperature.

RP (Red Phosphorus) is more stable than White Phosphorus, and somewhat less destructive in its effects. (However, most of this less-destructive effect is difficult or impossible to simulate using *Twilight 2000 v2.2* rules.) The easiest thing to simulate using T2K rules is that RP does not react so violently to bodily tissues, and the flame damage of a Red Phosphorus fragment is spread over the course of 10 rounds for each fragment. Igniting the Red Phosphorus requires a hotter primer or pre-explosive charge, as Red Phosphorus requires ten times the temperature to ignite into an explosion (30 degrees Celsius vs 300 degrees Celsius for Red Phosphorus). The smoke cloud from Red Phosphorus is thinner and half the duration of White Phosphorus. Other effects are the same as White Phosphorus. As with White Phosphorus, Red Phosphorus turns into stable Red Phosphorus crystals, though this takes only 20-30 minutes.

Categories below are largely generic, instead of referring to the specific round made by one company or another.

Some rounds have a single number in parentheses. The parentheses around the Baton's (and some other rounds) indicate that the damage inflicted by the Baton is temporary damage, with the exception of torso or head hits, which cause permanent damage of 1 point if the chest is struck or 2 points if the target is struck in the head.

25x40mm ATK Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
Door-Breaching (HESH)	0.25 kg	$2	C1 B5 [2]	6C
Flechette	0.15 kg	$4	8	1-Nil
HEAB – Airburst Mode	0.25 kg	$4	C3 B14	Nil
HEAB – Direct Fire	0.25 kg	$4	C1 B6	2C
HEAT	0.25 kg	$6	C1 B7	23C
Non-Lethal – CS	0.24 kg	$2	C2 (B1)	Nil
Non-Lethal – Stingball	0.2 kg	$6	C1 B7	Nil
Non-Lethal – Rubber Ball	0.23 kg	$3	(15)	2-2-2
Thermobaric AB – Airburst Mode	0.29 kg	$12	C8 B37	5C
Thermobaric AB – Direct Fire	0.29 kg	$12	C4 B14	5C

26.5x80mm MM-1 High-Velocity

Round	Round Weight	Round Price	Damage	Penetration
APERS	0.1	$1	1d6x10	Nil
CHEM	0.1	$1	C2 (B1)	Nil
HE	0.1	$1	C1 B8	Nil
HEDP	0.1	$2	C1 B8	3C
ILLUM	0.1	$1	(B75)	Nil
Slug	0.1	$1	3	2-Nil
WP	0.1	$2	C2 B5	Nil

30x29mm Russian Medium Velocity

Round	Round Weight	Round Price	Damage	Penetration
HE	0.34 kg	$2	C2 B9	Nil
HEDP	0.35 kg	$3	C2 B9	4C

30x34mm Russian BS-1 Low Velocity

Round	Round Weight	Round Price	Damage	Penetration
HEAT	0.25 kg	$4	C1 B8	29C

35x50mm Chinese Medium-Velocity

Round	Round Weight	Round Price	Damage	Penetration
HE	0.24 kg	$2	C2 B11	Nil
HEAT	0.24 kg	$6	C2 B9	35C
HEDP	0.24 kg	$4	C2 B11	4C

35x75mm Swiss High-Velocity

Round	Round Weight	Round Price	Damage	Penetration
HE	0.36 kg	$5	C2 B9	21C
ILLUM	0.36 kg	$4	(B110)	Nil

37x46mm South African Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
Baton	0.14 kg	$2	(10)	Nil
CS	0.2 kg	$2	C2 (B2)	Nil
Flash-Bang	0.16 kg	$3	(C5)	Nil
ILLUM	0.2 kg	$2	(B170)	Nil

37x38mm Low-Velocity (Rifled or Non-Rifled) or Arwen

Notes: Grenades in this caliber were first designed (along with their launchers) in the late 1980s; police wanted a different caliber to further distinguish them from the 38mm rounds; 38mm grenade launchers were first meant to be the launchers to fire less-lethal rounds, but later some lethal rounds were developed in this caliber. The grenades such launchers fire will be a bit strange in the hands of a soldier, though Military Police or civilian Police may be familiar with them.

Round	Round Weight	Round Price	Damage	Penetration
Baton	0.13 kg	$2	(8)	Nil
Irritant Baton	0.14 kg	$4	(8) C1 B1	Nil
Barricade Penetrator	0.21 kg	$8	C0 B2 [2]	3 [2-Nil]
Beanbag	0.25 kg	$3	(9)	Nil
Flare, ILLUM, or Star Cluster	0.18 kg	$5	(B170)	Nil
Flash-Bang	0.13 kg	$2	(C4)	Nil
Fowling Control	0.35 kg	$8	Special	Nil
Irritant Gas	0.21 kg	$2	C2 (B2)	Nil
Multiball	0.21 kg	$3	C1 (B9)	Nil
Muzzle Blast	0.22 kg	$4	C2 (B Special)	Nil
Rubber Pellet	0.22 kg	$3	C0 B12	Nil
Smoke	0.22 kg	$2	C0 (B3)	Nil
Short-Range Smoke	0.22 kg	$1	C0 (B3)	Nil
Long-Range Smoke	0.25 kg	$4	C0 (B3)	Nil

38x38mm MM-1 Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
CHEM	0.22 kg	$2	C2 (B2)	Nil
HE	0.22 kg	$2	C3 B12	Nil
HEDP	0.22 kg	$3	C3 B12	5C
ILLUM	0.22 kg	$2	(B175)	Nil
WP	0.22 kg	$5	C2 B8	Nil

38.5x55 Brixia

Notes: This is a modified version of an earlier light mortar shell. The mortar proved to be too light for use as a mortar, but its rounds proved to be adaptable to the MOD.28 carbine-mounted grenade launcher. The rounds for the MOD.28 in fact are a slightly modified form of the Brixia mortar round., complete with stabilizing fins (which do not exit the grenade launcher when fired). In addition, the detonation train does not leave the grenade launcher when fired, and both the fins and the detonation train drop out of a slot in the bottom of the MOD.28. In addition to the HE round, a round in the form of a wooden sabot based on the HE shell was used for training purposes.

Round	Round Weight	Round Price	Damage	Penetration

HE	0.16 kg	$3	C1 B8	Nil

40x44mm PALLAD Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
Ballistic	0.22 kg	$2	5	Nil
CHEM	0.22 kg	$2/$4/$8	C2 (B2)	Nil
FRAG-HE	0.25 kg	$2	C2 B16	Nil
WP	0.25 kg	$5	C2 B8	Nil

40x46mm NATO Low-Velocity

Notes: First designed just before the US involvement in Vietnam, the 40x46mm grenade (known as the 40mm LV or 40mm NATO LV round after the adoption of the 40x53mm High-Velocity grenade designed for use in automatic grenade launchers) was a result of *Project Niblick,* and was adopted in late 1960 for use with the M-79 grenade launcher. The 40x46mm round has an interesting "high-low" firing system – the initial propelling charge used high pressure, which bled into a low-pressure chamber that actually propelled the grenade and lessened the felt recoil. Later, the XM-148 and M-203 grenade launchers were designed to fit under a rifle barrel, and the 40x46mm round has proliferated ever since, as have the different types of rounds available.

Virtually all 40x46 rounds are low-velocity rounds, having an average muzzle velocity of merely 76 meters per second. Recently, as a result of experience in Afghanistan and Iraq, new, longer rounds have become available, with improvements from range and explosive power to innovative designs that employ a parachute-lowered camera to check out a concealed enemy position. Most of these improved rounds are longer than 46mm (most are 51mm long), are actually medium-velocity rounds instead of low-velocity rounds, and will not fit into underbarrel grenade launchers that slide forward to open.

Round	Round Weight	Round Price	Damage	Penetration
APERS	0.12 kg	$2	13	Nil
CHEM	0.22 kg	$2/$4/$6	C2 (B2)	Nil
Ferret	0.17 kg	$4	(B2)	1-Nil
Flash-Bang	0.17 kg	$3	(C5)	Nil
Flechette	0.14 kg	$4	13	1-Nil
HE	0.23 kg	$2	C3 B13	Nil
HEAT	0.23 kg	$6	C2 B10	41C
HEDP	0.23 kg	$4	C3 B13	4C
HEAB	0.24 kg	$6	C5 B15	Nil
ILLUM	0.22 kg	$2	(B195)	Nil
WP	0.22 kg	$5	C2 B8	Nil
Hellhound FRAG-DP	0.23 kg	$12	C3 B20	8C

40x47mm Russian Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
CHEM	0.27 kg	$2/$4/$6	C2 (B2)	Nil
Flash-Bang	0.25 kg	$2	(C7)	Nil
HE	0.25 kg	$2	C3 B13	Nil
HE-FRAG	0.26 kg	$3	C2 B16	Nil
ILLUM	0.27 kg	$2	(B195)	Nil
Jumping FRAG	0.29 kg	$8	C2 B20	Nil
Thermobaric	0.29 kg	$12	C8 B12	9C

40x53mm NATO High-Velocity

Round	Round Weight	Round Price	Damage	Penetration
HVCC	0.32 kg	$8	14	1-Nil
HVHE	0.37 kg	$4	C3 B13	Nil
HVHEDP	0.34 kg	$6	C3 B13	5C
HEAB	0.4 kg	$24	C5 B22	5C

40x74.5mm Romanian High-Velocity

Round	Round Weight	Round Price	Damage	Penetration
HE-FRAG	0.49 kg	$4	C2 B16	Nil
HE-HC	0.49 kg	$6	C3 B12	23C

43x44mm Russian Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration

Baton	0.32 kg	$2	(11)	Nil
CS	0.32 kg	$3	C2 (B2)	Nil
Thermobaric	0.32 kg	$12	C8 B12	9C
Flash-Bang	0.32 kg	$3	(C7)	Nil
FRAG	0.32 kg	$3	C3 B16	Nil
HE	0.32 kg	$3	C4 B13	Nil
HEAT	0.32 kg	$5	C2 B11	45C
ILLUM	0.32 kg	$3	(B225)	Nil
Rubber Slug	0.32 kg	$2	(11)	Nil
Star Cluster	0.32 kg	$3	(B45)	Nil

45x82mm Russian Medium-Velocity

Round	Round Weight	Round Price	Damage	Penetration
APERS	0.65 kg	$7	1d6x12	Nil
Concussion	0.65 kg	$7	C7	Nil
ILLUM	0.65 kg	$7	(B250)	Nil

50x200mm Scorpion RAM

Round	Round Weight	Round Price	Damage	Penetration
HEAT	1.02 kg	$32	C4 B13	55C
HE	1.02 kg	$22	C5 B16	3C
HEDP	1.02 kg	$22	C5 B16	7C
HEAT-T	1.02 kg	$48	C4 B13	44C/55C
HESH	1.02 kg	$44	C5 B16	31C
FRAG	1.02 kg	$22	C4 B20	Nil
Thermobaric	1.02 kg	$88	C10 B12	28C

55x150mm Russian Medium Velocity

Notes: HE rounds of this type produce double concussion damage at double the range underwater. Flare rounds come exclusively in white.

Round	Round Weight	Round Price	Damage	Penetration
HE	0.93 kg	$9	C6 B17	1C
Flare	0.93 kg	$9	(B102)	Nil

Base-Bleed (BB) versions of most these ammo types also exist; these increase indirect fire range by 25%. BB rounds weigh 10% more and cost 15% more.
Rocket-Assisted Projectile (RAP) shells are also available; these increase range by 40%. RAP rounds weigh 15% more and cost 50% more than standard shells.
Extended-Range (ER) rounds increase indirect fire range by 15%. ER rounds cost 5% more and weigh 2% more than standard shells. (Though ER rounds can still be found in circulation, they are largely considered obsolete.)
Hollow-Base (HB) rounds increase range by 8%. They have no increase in weight, but cost 2% more.

BB, RAP, and ER features may be combined together in the same round, with the appropriate increases in range and cost, and the weight increase which is the most. HB rounds may only be used in conjunction with BB and RAP features. (HB shells are also considered obsolete.)

75mm Pack Howitzer

Notes: This is an ancient, World War 2 era field gun still used by many Third World countries. It is inferior to modern howitzers and even some mortars.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
75mm Pack Howitzer	2	160	CHEM	C2 (B5)	Nil	9000	5.98 kg	$85
	2	160	HE	C7 B20	4C	9000	6.04 kg	$85

87.6mm 25-Pounder

Notes: This old British support gun is still in widespread use in Africa, Asia, and Latin America. It is primarily used today as a support weapon, and has limited antiarmor use in a modern context.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
87.6mm 25-Pounder	2	280	AP	19	14/12/10/7	Nil	20.1 kg	$280
	2	105	APERS	20x40D	1-Nil	Nil	14.6 kg	$200
	2	210	CHEM	C2 (B10)	Nil	12300	16.3 kg	$225
	2	210	HE	C10 B20	10C	12300	15.2 kg	$215
	2	210	HEAT	C6 B15	46C	12300	13.6 kg	$215
	2	Nil	ILLUM	(B690)	Nil	12300	17.7 kg	$250

98mm Romanian Howitzer

Notes: This weapon is found only as a Romanian field piece; the Romanians at first designed the 98mm Howitzer to fulfill the European Land Forces treaty adopted after the end of the Cold War, but they decided to keep it as a mountain gun as it is relatively light and can be broken down for easier transport.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
98mm Romanian	2	195	HE OF-402	C17 B25	7C	10800	18 kg	$255
	2	190	HE OF-403	C19 B30	8C	10500	18 kg	$255
	2	195	HEAT	C13 B20	111C	10800	16 kg	$250

105mm L/33 NATO Howitzer

Notes: This is the former standard Western-allied Army howitzer, replaced by the 155mm howitzer. It is found on some older self-propelled howitzers and on some field pieces.

105mm NATO Powder Charge: Weight: 7 kg; Price: $30

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
105mm NATO L/33	3	100	APERS	20x40D	1-Nil	Nil	17.45 kg	$240
	3	200	CHEM	C3 (B15)	Nil	11500	19.47 kg	$270
	3	200	HE	C22 B35	9C	11500	18.1 kg	$255
	3	200	HEAT	C15 B20	119C	11500	16.23 kg	$255
	3	Nil	ICM-DP	B30	Grenade*	11500	19.05	$1530

	3	Nil	ILLUM	(B1350)	Nil	11500	21.06 kg	$295
	3	200	WP	C3 B30	Nil	11500	19.47 kg	$510

105mm NATO L/37 Howitzer

Notes: This is a light howitzer with a lengthened barrel found on some modernized field pieces.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
105mm NATO L/37	3	125	APERS	20x40D	1-Nil	Nil	17.45 kg	$240
	3	250	CHEM	C3 (B15)	Nil	17200	19.47 kg	$270
	3	250	HE	C22 B35	9C	17200	18.1 kg	$255
	3	250	HEAT	C15 B20	119C	17200	16.23 kg	$255
	3	Nil	ICM-DP	B30	Grenade*	17200	19.05 kg	$1530
	3	Nil	ILLUM	(B1350)	Nil	17200	21.06 kg	$295
	3	250	WP	C3 B30	Nil	17200	19.47 kg	$510

105mm Denel G7 L/52 Gun/Howitzer

Notes: This gun/howitzer was designed specifically for use in the T7 turret system, designed for light and medium vehicles, and meant at first for placement on a Stryker chassis. A G7 ground-mounted version has also been designed. Most of the ammunition is purpose-designed for the G7 and cannot be fired in other 105mm howitzers; the reverse is mostly true, though the G7 is able to fire some standard 105mm rounds. The G7 does not use standard powder charges, instead using unitary charges in combustible plastic-like cases. The rounds designed for the G7 are made so they all have about the same weight (the same in game terms).

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
105mm Denel G7 L/52 Gun/Howitzer	3	410	APDS	53/46/39/25	116/101/86/55	Nil	62.74 kg	$314
	3	410	FRAG-HE	C17 B45	7C	24000	34.51 kg	$339
	3	410	HE	C22 B36	9C	24000	31.37 kg	$272
	3	410	HESH	C15 B10	101C	19500	39.21 kg	$427
	3	410	HEAT	C15 B20	119C	24000	31.37 kg	$387
	3	410	IR ILLUM	B1350	Nil	24000	31.37 kg	$340
	3	410	IR/Visual Smoke	C3 B15	Nil	24000	31.37 kg	$340
	3	410	PFF HE	C11 B54	5C	24000	39.22 kg	$408
	3	410	Visual ILLUM	B1350	Nil	24000	31.37 kg	$272
	3	410	US HE	C22 B36	9C	17500	18.1 kg	$255
	3	410	WP	C3 B30	Nil	17500	19.47 kg	$510

122mm D-30

Notes: This is a light howitzer found on some Russian and Bloc self-propelled howitzers, as well as those of China and some former client states of those nations. It is also found on some field pieces.

122mm Russian Powder Charge: Weight: 10 kg; Price: $40

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
122mm Russian D-30	4	270	CHEM	C3 (B30)	Nil	15000	22.25 kg	$310
	4	270	CLGP	C30 B40	22C (TA)	15000	27 kg	$4000
	4	270	HE	C30 B40	11C	15000	28.5 kg	$400
	4	270	HEAT	C20 B25	139C	15000	26 kg	$400
	4	Nil	ICM	B35	Grenade	15000	28.5 kg	$2200
	4	Nil	ICM-DP	B35	Grenade*	15000	28.3 kg	$2400
	4	Nil	ILLUM	(B1825)	Nil	15000	26.6 kg	$370
	4	270	VHF Jammer	(B700)	Nil	15000	30 kg	$4000
	4	270	WP	C3 B35	Nil	15000	26.1 kg	$800

130mm Gun/Howitzer

Notes: This is an older Russian weapon found on some Bloc and Chinese self-propelled guns, and on some field mountings. It can be used as a howitzer and an antitank gun. It has been largely supplanted by the 152mm gun/howitzer and the 125mm Rapira-3 gun.

130mm Gun/Howitzer Powder Charge: Weight: 21 kg; Price: $52

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
130mm Gun/Howitzer	7	460	APC	29	62/54/46/30	Nil	59.1 kg	$850
	7	460	APFSDS	29	149/130/110/71	Nil	55 kg	$1105
	7	460	APHE	C17 B25	80C	27000	56 kg	$1260
	7	340	CHEM	C3 (B20)	Nil	27000	47.92 kg	$665
	7	340	CLGP	C25 B35	13C (TA)	27000	58.94 kg	$8730
	7	340	HE	C25 B35	13C	27000	59.1 kg	$830
	7	340	HEAT	C17 B25	97C	27000	54.92 kg	$830
	7	340	ICM-DP	B40	Grenade*	27000	58.67 kg	$4980

140mm 5.5-Inch Gun

Notes: This is an old World War 2 British weapon that lives on in some Third World countries. It has almost no antiarmor value and is primarily a support weapon for infantry.

140mm 5.5" Powder Charge: Weight: 23 kg; Price: $55

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
140mm 5.5" Gun	3	240	CHEM	C3 (B25)	Nil	16400	44.4 kg	$620
	3	240	HE	C25 B35	14C	16400	54.8 kg	$550
	3	Nil	ILLUM	(B1765)	Nil	16400	51.1 kg	$505

152mm L/34 Gun/Howitzer

Notes: This was formerly the standard Russian, Chinese, and Bloc howitzer, used on a variety of self-propelled howitzers and field mountings. It is also used by many nations worldwide, especially those with ties or former ties with Russia, China, or Bloc nations. It has mostly been supplanted by 152mm howitzers with longer barrels and more advanced mechanism and shock absorbers.

152mm Gun/Howitzer Powder Charge: Weight: 25 kg; Price: $60

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
152mm L/34 Gun/Howitzer	7	350	APHE	C23 B24	122C	19000	56.38 kg	$1255
	7	260	CHEM	C3 (B30)	Nil	19000	48.25 kg	$675
	7	260	HEAT	C30 B30	175C	19000	53 kg	$595
	7	260	HEI	C24 B45	87C	19000	59.5 kg	$595
	7	Nil	ICM	B60	Grenade	19000	60.73	$3270

	7	Nil	ICM-DP	B60	Grenade*	19000	60.73 kg	$3570
	7	Nil	ILLUM	(B2830)	Nil	19000	55.52 kg	$550
	7	260	Krasnopol CLGP	C46 B45	16C (TA)	20000	50 kg	$5950
	7	Nil	SADARM	B30	Submunition*	19000	60.73 kg	$9000
	7	260	Santimetr CLGP	C30 B30	32C (TA)	19000	49.5 kg	$7150
	7	260	VHF Jammer	(B700)	Nil	19000	59.57 kg	$5950
	7	260	WP	C3 B45	Nil	19000	54.49 kg	$1200

152mm L/53 Gun/Howitzer

Notes: This is one of the standard gun/howitzer lengths found on certain Russian and Bloc pieces such as the 2S19, M-1985, and the 2A65.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
152mm L/53 Gun/Howitzer	7	440	APHE	C23 B24	122C	24000	56.38 kg	$1255
	7	330	CHEM	C3 (B30)	Nil	24000	48.25 kg	$675
	7	330	HEAT	C30 B30	175C	24000	53 kg	$595
	7	330	HEI	C24 B45	87C	24000	59.5 kg	$595
	7	Nil	ICM	B60	Grenade	24000	60.73 kg	$3270
	7	Nil	ICM-DP	B60	Grenade*	24000	60.73 kg	$3570
	7	Nil	ILLUM	(B2830)	Nil	24000	55.52 kg	$550
	7	330	Krasnopol CLGP	C46 B45	16C (TA)	25200	50 kg	$5950
	7	Nil	SADARM	B30	Submunition*	24000	60.73 kg	$9000
	7	330	Santimetr CLGP	C30 B30	32C (TA)	24000	49.5 kg	$7150
	7	330	VHF Jammer	(B700)	Nil	24000	59.57 kg	$5950
	7	330	WP	C3 B45	Nil	24000	54.49 kg	$1200

155mm NATO L/30

Notes: This was an early version of the NATO 155mm howitzer, still used on the M-44. It is lighter and has less recoil than most 155mm howitzers, but has much shorter range.

155mm NATO Powder Charge: Weight: 25 kg; Price: $60 (V/C)

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
155mm NATO L/30 Howitzer	6	250	BONUS	B100	18C	16400	62.6 kg	$5200
	6	250	Chaff-ERFB	(B2945)	Nil	18400	42.84 kg	$645
	6	250	CHEM	C3 (B30)	Nil	14600	44.68 kg	$500
	6	250	CLGP	C48 B50	16C (TA)	14600	43.88 kg	$4400
	6	Nil	FASCAM	(B120)	Mine	14600	46.5 kg	$4400

	6	250	HE or CLGP	C48 B50	16C	14600	43.88 kg	$440
	6	250	HEAT	C32 B30	179C	14600	40 kg	$440
	6	Nil	ICM-DP	B60	Grenade*	14600	46.54 kg	$2420
	6	Nil	ILLUM	(B2945)	Nil	14600	46.75 kg	$405
	6	250	Jammer	(B1700)	Nil	14600	46.26 kg	$4400
	6	250	Ogre ICM-DP	B75	Grenade*	17100	46.54 kg	$2920
	6	Nil	SADARM	B30	Submunition*	14600	47 kg	$6600
	6	250	WP	C3 B45	Nil	14600	44.68 kg	$690

155mm NATO L/33

Notes: This is a version of the 155mm howitzer designed primarily for use on the Israeli L-33. It's lighter weight and lesser recoil makes it ideal for the lighter Sherman chassis that the L-33 uses.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
155mm NATO L/33 Howitzer	7	260	BONUS	B100	18C	22500	62.6 kg	$5200
	7	260	Chaff-ERFB	(B2945)	Nil	25200	42.84 kg	$645
	7	260	CHEM	C3 (B30)	Nil	20000	44.68 kg	$500
	7	260	CLGP	C48 B50	16C (TA)	20000	43.88 kg	$4400
	7	Nil	FASCAM	(B120)	Mine	20000	46.5 kg	$4400
	7	260	HE	C48 B50	16C (TA)	20000	43.88 kg	$440
	7	260	HEAT	C32 B30	179C	20000	40 kg	$440
	7	Nil	ICM-DP	B60	Grenade*	20000	46.54 kg	$2420
	7	Nil	ILLUM	(B2945)	Nil	20000	46.75 kg	$405
	7	260	Jammer	(B1700)	Nil	20000	46.26 kg	$4400
	7	260	Ogre ICM-DP	B75	Grenade*	23400	46.54 kg	$2920
	7	Nil	SADARM	B30	Submunition*	20000	47 kg	$6600
	7	260	WP	C3 B45	Nil	20000	44.68 kg	$690

155mm L/39 NATO

Notes: This was formerly the standard Western howitzer barrel length, found on almost all self-propelled howitzers and field guns in the Western sphere of influence and allied and former allied countries, except for the newest pieces of equipment. It was also found on early versions of the Czech Zuzana. In the early 1990s, it began to be replaced by ordnance with L/45 and later, L/52 barrels.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
155mm NATO L/39 Howitzer	9	280	BONUS	B100	18C	27000	62.6 kg	$5200
	9	280	Chaff-ERFB	(B2945)	Nil	30200	42.84 kg	$645
	9	280	CHEM	C3 (B30)	Nil	24000	44.68 kg	$500
	9	280	CLGP	C48 B50	16C (TA)	24000	43.88 kg	$4400
	9	Nil	FASCAM	(B120)	Mine	24000	46.5 kg	$4400
	9	280	HE	C48 B50	16C	24000	43.88	$440

								kg
	9	280	HEAT	C32 B30	179C	24000	40 kg	$440
	9	Nil	ICM-DP	B60	Grenade*	24000	46.54 kg	$2420
	9	Nil	ILLUM	(B2945)	Nil	24000	46.75 kg	$405
	9	280	Jammer	(B1700)	Nil	24000	46.26 kg	$4400
	9	280	Ogre ICM-DP	B75	Grenade*	28000	46.54 kg	$2920
	9	Nil	SADARM	B30	Submunition*	24000	47 kg	$6600
	9	280	WP	C3 B45	Nil	24000	44.68 kg	$690

155mm NATO L/45

Notes: This is a 155mm NATO howitzer with a longer barrel length (45 times the 155mm caliber of the howitzer, versus the standard 39 caliber length of the standard NATO howitzer. It is used on some modifications of the M109 and some other 155mm howitzers, and several field pieces. Nonetheless, it is largely considered a sort of intermediate barrel length, used to reduce cost, or to reduce weight to allow it to be mounted on lighter chassis while still offering decent range.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
155mm NATO L/45 Howitzer	11	300	BONUS	B100	18C	30400	62.6 kg	$5200
	11	300	Chaff-ERFB	(B2945)	Nil	34000	42.84 kg	$645
	11	300	CHEM	C3 (B30)	Nil	27000	44.68 kg	$500
	11	300	CLGP	C48 B50	16C (TA)	27000	43.88 kg	$4400
	11	Nil	FASCAM	(B120)	Mine	27000	46.5 kg	$4400
	11	300	HE	C48 B50	16C	27000	43.88 kg	$440
	11	300	HEAT	C32 B30	179C	27000	40 kg	$440
	11	Nil	ICM-DP	B60	Grenade*	27000	46.54 kg	$2420
	11	Nil	ILLUM	(B2945)	Nil	27000	46.75 kg	$405
	11	300	Jammer	(B1700)	Nil	27000	46.26 kg	$4400
	11	300	Ogre ICM-DP	B75	Grenade*	31500	46.54 kg	$2920
	11	Nil	SADARM	B30	Submunition*	27000	47 kg	$6600
	11	300	WP	C3 B45	Nil	27000	44.68 kg	$690

155mm NATO L/52

Notes: This is a higher-pressure version of the NATO 155mm howitzer, with a longer barrel length (52 times the 155mm caliber of the howitzer, versus the 39-caliber length of the standard 155mm NATO howitzer). It is used on the newest Western 155mm self-propelled howitzers, such as the M-109A6 Paladin, Israeli Slammer, German PZH-2000, and French Caesar. It is also found on the Chinese PLZ-45.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
155mm NATO L/52 Howitzer	14	330	BONUS	B100	18C	33750	62.6 kg	$5200
	14	330	Chaff-ERFB	(B2945)	Nil	37750	42.84 kg	$645
	14	330	CHEM	C3 (B30)	Nil	30000	44.68 kg	$500
	14	330	CLGP	C48 B50	16C (TA)	30000	43.88 kg	$4400

	14	Nil	FASCAM	(B120)	Mine	30000	46.5 kg	$4400
	14	330	HE	C48 B50	16C	30000	43.88 kg	$440
	14	330	HEAT	C32 B30	179C	30000	40 kg	$440
	14	Nil	ICM-DP	B60	Grenade*	30000	46.54 kg	$2420
	14	Nil	ILLUM	(B2945)	Nil	30000	46.75 kg	$405
	14	330	Jammer	(B1700)	Nil	30000	46.26 kg	$4400
	14	330	Ogre ICM-DP	B75	Grenade*	35000	46.54 kg	$2920
	14	Nil	SADARM	B30	Submunition*	30000	47 kg	$6600
	14	330	WP	C3 B45	Nil	30000	44.68 kg	$690

155mm NATO L/56

This howitzer is employed only on the XM-2001 Crusader self-propelled howitzer; though it is being used for experiments into an even longer piece of 155mm ordnance. It uses a 56-caliber barrel (56 times the 155mm diameter of the howitzer). The reload figure is for a hypothetical stand-alone version.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
155mm NATO L/56 Howitzer	15	340	BONUS	B100	18C	37000	62.6 kg	$5200
	15	340	Chaff-ERFB	(B2945)	Nil	41500	42.84 kg	$645
	15	340	CHEM	C3 (B30)	Nil	33000	44.68 kg	$500
	15	340	CLGP	C48 B50	16C (TA)	33000	43.88 kg	$4400
	15	Nil	FASCAM	(B120)	Mine	33000	46.5 kg	$4400
	15	340	HE	C48 B50	16C	33000	43.88 kg	$440
	15	340	HEAT	C32 B30	179C	33000	40 kg	$440
	15	Nil	ICM-DP	B60	Grenade*	33000	46.54 kg	$2420
	15	Nil	ILLUM	(B2945)	Nil	33000	46.75 kg	$405
	15	340	Jammer	(B1700)	Nil	33000	46.26 kg	$4400
	15	340	Ogre ICM-DP	B75	Grenade*	38500	46.54 kg	$2920
	15	Nil	SADARM	B30	Submunition*	33000	47 kg	$6600
	15	340	WP	C3 B45	Nil	33000	44.68 kg	$690

175mm L/42 NATO

Notes: This is an older howitzer found on the M-107 self-propelled howitzer still found in some Turkish service and other Western-aligned countries. Ammunition has been upgraded over the years, but it still cannot match the range of 155mm howitzers. However, the ammunition has a good throw weight.

175mm NATO Powder Charge: Weight: 43 kg; Price: $105 (C/S)

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
175mm L/42 NATO Howitzer	16	300	CHEM	C3 (B40)	Nil	24000	87.57 kg	$850
	16	300	HE	C61 B55	19C	24000	86 kg	$750
	16	300	HEAT	C40 B35	203C	24000	88 kg	$800
	16	Nil	ILLUM	(B3750)	Nil	24000	82 kg	$850
	16	300	WP	C3 B55	Nil	24000	88 kg	$750

203mm L/25 NATO

Notes: This howitzer is used for heavy bombardment in several countries worldwide, but only on the M-115 towed howitzer. Its short range hampers its utility.

203mm NATO Powder Charge: Weight: 55 kg; Price: $130

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
203mm L/25 NATO Howitzer	12	240	CHEM	C3 (B50)	Nil	16800	97.75 kg	$1095
	12	240	HE	C82 B65	23C	16800	96 kg	$960
	12	Nil	ICM-DP	B50	Grenade*	16800	97.69 kg	$5200
	12	Nil	ILLUM	(B5050)	Nil	16800	102.28 kg	$885
	12	240	WP	C3 B60	Nil	16800	97.75 kg	$1500

203mm L/41 NATO

Notes: This long-range NATO howitzer is still used on the M-110 self-propelled howitzer for when large explosions are needed, such as when destroying enemy minefields. It has been replaced in Western service by the 155mm NATO L/52 howitzers and other howitzers, but is still widely used worldwide. An interesting fate of some of these barrels was to form the bodies of the first 5000-pound bunker buster munitions, used during Desert Storm and for a short time during Operations Iraqi Freedom and Enduring Freedom, with the addition of a hard penetrator nose, a laser seeking head, and fins.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
203mm L/41 NATO Howitzer	25	300	CHEM	C3 (B50)	Nil	21300	97.75 kg	$1095
	25	300	HE	C82 B65	23C	21300	96 kg	$960
	25	Nil	ICM-DP	B50	Grenade*	21300	97.69 kg	$5200
	25	Nil	ILLUM	(B5050)	Nil	21300	102.28 kg	$885
	25	300	WP	C3 B60	Nil	21300	97.75 kg	$1500

203mm L/42 Russian

Guns this size are typically issued at the Corps level or above in Russian service, under the direct control of the commander. They are used for particularly stubborn targets and heavy shelling. They are found only on certain Russian, North Korean, and Chinese self-propelled howitzers.

Weapon	Reload	Range	Round	Damage	Penetration	IFR	Weight	Price
203mm L/42 Russian	25	310	CHEM	C3 (B50)	Nil	37290	155 kg	$1745
	25	310	HE	C82 B65	23C	37290	153 kg	$1530

LARGE-CALIBER AMMUNITION

AP: Armor Piercing, essentially a large bullet with a hardened shell for armor penetration.
APC: Armor Piercing Capped, an AP round with a ballistic cap to cut through the air better and produce more speed. **APDS:** Armor Piercing Discarding Sabot, a round that uses a large explosive charge to propel a smaller penetrator at high speed.
APERS: AntiPERSonnel: A large shotgun-like round to defeat large numbers of enemy infantry.
APFSDS: Armor Piercing Fin Stabilized Discarding Sabot, an APDS round that is stabilized with fins, to produce more speed and a flatter trajectory.
APFSDSDU: Armor Piercing Fin Stabilized Discarding Sabot Depleted Uranium, an APFSDS round made of heavy metal. Note that after 1997, most of these rounds are actually made of tungsten, a metal that gives penetration comparable to depleted Uranium and is much safer and less expensive to produce.
APHE: Armor Piercing High Explosive, a round that attempts to penetrate the target with an explosion.
CHEM: CHEMical, a round filled with either a smoke-producing compound or poison gas.
Flechette: Also known as beehive, this round is similar in concept to APERS, but uses small metal darts instead of steel balls.
FRAG-HE: FRAGmentation-High Explosive, a normal HE round with a jacket of steel balls to produce more casualties among ground personnel.
HE: High Explosive, a hollow round filled with explosive to produce a large explosion
HEAT: High Explosive Anti Tank, a round with an explosive charge specially shaped to produce a plasma jet to burn through armor.
HESH: High Explosive Squash Head, a round filled with plastic explosive. The charge flattens out against the target, breaking off a "scab" inside the target and transferring kinetic energy.
HVAP: High Velocity Armor Piercing, a faster version of the AP round.
HVAPDS: High Velocity Armor Piercing Discarding Sabot, an APDS round propelled by a larger charge than normal, for more speed.
LAHAT: Laser Homing Anti Tank, a guided round that is more accurate at very long ranges than a normal tank round. Use of this round requires a laser rangefinder or designator. The target must be lased until the round strikes it. (Speed: 1500m per phase.) This weapon is fired using Tac Missile skill.
MPAT: Multi Purpose Anti Tank. This weapon may be used against ground targets and helicopters. Ground/air mode is selected by the loader by turning the nose fuze and requires one phase. Ground mode acts like a normal HEAT round. Air mode activates a small radar in the nose of the round.
STAFF: Smart Top-Attack Fire and Forget. This round is treated like a fire-and-forget top attack missile (like Tank Breaker). The firing vehicle must use the laser rangefinder during the phase the STAFF round is fired. This weapon is fired using Tac Missile skill.
TERM-CE: Tank Extended Range Munition-Chemical Energy, a guided HEAT round for long-range shots. Use of this round requires a laser rangefinder or designator. The target must be lased until the round strikes it. (Speed: 1200m per phase.) This is a top-attack weapon. This weapon is fired using Tac Missile skill.
TERM-KE: Tank Extended Range Munition-Kinetic Energy, a guided sabot round for long-range shots. Use of this round requires a laser rangefinder or designator. This round is treated like a fire-and-forget top attack missile (like Tank Breaker). The rangefinder or designator must be used during the phase the round is fired. The TERM-KEs speed is 1500m per phase. This weapon is fired using Tac Missile skill.
TERM-TA: Tank Extended Range Munition-Top Attack. This is a STAFF round with a rocket motor. Use of this round requires a laser rangefinder or designator. This round is treated like a fire-and-forget top attack missile (like Tank Breaker). The rangefinder or designator must be used during the phase the round is fired. The TERM-TAs speed is 1500m per phase. This weapon is fired using Tac Missile skill.
Thermobaric: This is an explosive round based on Fuel-Air Explosive, which saturates the air with gasoline or jet fuel and then ignites it.
WP: White Phosphorus, an explosive round filled with incendiary particles. This round also produces smoke as a side effect.

37mm M-6 AP: Weight 1.6 kg; Price: $250 (R/R)
37mm M-6 APERS: Weight 2.15 kg; Price $275 (R/R)
37mm M-6 HE: Weight 1.6 kg; Price $225 (R/R)

57mm 6-Pounder AP: Weight: 3.4 kg; Price: $530 (R/R)
57mm 6-Pounder APDS: Weight: 3.6 kg; Price: $585 (R/R)
57mm 6-Pounder HE: Weight: 3.6 kg; Price: $530 (R/R)
57mm 6-Pounder HVAP: Weight: 3.6 kg; Price: $530 (R/R)

73mm Russian HEAT: Weight 3kg; Price $650 (-/R)
73mm Russian HE: Weight 3kg; Price $500 (-/R)
75mm French HEAT: Weight 3.2kg; Price $690 (R/R)
75mm French APDS: Weight 3.2kg; Price $585 (R/R)
75mm French HE: Weight 3.2kg; Price $530 (R/R)
75mm French WP: Weight 3.2kg; Price $750 (R/R)

75mm French APERS: Weight 4.3kg; Price $630 (R/R)

76mm Cockerill AP: Weight 3kg; Price $320 (S/-)
76mm Cockerill APERS: Weight 4kg; Price $320 (S/-)
76mm Cockerill CHEM: Weight 3kg; Price $350 (R/-)
76mm Cockerill HE: Weight 3kg; Price $350 (S/-)
76mm Cockerill HESH: Weight 3kg; Price $370 (R/-)

76.2mm 17-Pounder AP: Weight: 9.6 kg; Price: $850 (S/S)
76.2mm 17-Pounder APDS: Weight: 9.6 kg; Price: $940 (S/S)
76.2mm 17-Pounder HE: Weight: 9.6 kg; Price: $850 (S/S)
76.2mm 17-Pounder HVAP: Weight: 9.6 kg; Price: $850 (S/S)

76.2mm D56TM APFSDS: Weight 7kg; Price $800 (R/S)
76.2mm D56TM HEAT: Weight 4kg; Price $750 (R/S)
76.2mm D56TM HE: Weight 6kg; Price $700 (R/S)

85mm Russian APHE: Weight 10kg; Price $900 (-/S)
85mm Russian HEAT: Weight 10kg; Price $700 (-/S)
85mm Russian HE: Weight 7kg; Price $1100 (-/S)
85mm Russian HVAP: Weight: 10kg; Price $1000 (-/S)

90mm French APFSDS: Weight 16kg; Price $660 (R/-)
90mm French HEAT: Weight 17kg; Price $800 (S/R)
90mm French HE: Weight 17kg; Price $675 (S/R)
90mm NATO APFSDS: Weight 16kg; Price $600 (R/R)
90mm NATO APDS: Weight 16kg; Price $550 (R/R)
90mm NATO HEAT: Weight 16kg; Price $650 (R/R)
90mm NATO HEAT-Heavy: Weight 17kg; Price $700 (R/-)
90mm NATO HESH: Weight 16kg; Price $1025 (R/-)
90mm NATO HVAP: Weight 16kg; Price $500 (R/-)
90mm NATO APC: Weight 16kg; Price $375 (R/R)
90mm NATO HE: Weight 16kg; Price $550 (R/R)
90mm NATO WP: Weight 16kg; Price $650 (R/R)
90mm NATO APERS: Weight 20kg; Price $550 (R/-)

100mm D-10 APFSDS: Weight 21kg; Price $675 (-/S)
100mm D-10 HEAT: Weight 22kg; Price $650 (-/S)
100mm D-10 APHE: Weight 21kg; Price $650 (-/S)
100mm D-10 HE: Weight 22kg; Price $650 (-/S)
100mm D-10 APC: Weight 21kg; Price $425 (-/R)
100mm D-10 HVAPDS: Weight 22kg; Price $650 (-/S)
100mm D-10 AP: Weight 21kg; Price $500 (-/R)
100mm D-10 FRAG-HE: Weight 22kg; Price $635 (-/R)

105mm NATO APFSDS: Weight 25kg; Price $600 (S/R)
105mm NATO APFSDSDU: Weight 25kg; Price $1000 (R/R)
105mm NATO APFSDSDU M-900: Weight 25kg; Price $1380 (R/R)
105mm NATO HEAT: Weight 25kg; Price $600 (C/S)
105mm NATO HEAT M-815: Weight 25kg; Price $825 (S/R)
105mm NATO HE: Weight 25kg; Price $650 (R/R)
105mm NATO WP: Weight 25kg; Price $1000 (R/R)
105mm NATO Flechette: Weight 25kg; Price $700 (S/-)
105mm Israeli LAHAT: Weight 25kg; Price $20000 (R/-).
105mm Rifled L-7 APFSDS: Weight 25kg; Price $600 (S/R)
105mm Rifled L-7 APDS: Weight 25kg; Price $575 (S/R)
105mm Rifled L-7 HE: Weight 25kg; Price $650 (R/R)

105mm Rifled L-7 HESH: Weight 25kg; Price $700 (S/R)

115mm U5TS APFSDS: Weight 27kg; Price $800 (-/S)
115mm U5TS HEAT: Weight 25kg; Price $750 (-/S)
115mm U5TS HE: Weight 24kg; Price $700 (-/S)

120mm Rheinmetall APFSDS: Weight 50kg; Price $800 (S/R)
120mm Rheinmetall APFSDSDU: Weight 50kg; Price $1200 (R/R)
120mm Rheinmetall APFSDSDU M-829A3: Weight 50kg; Price $1500 (R/R)
120mm Rheinmetall HEAT: Weight 50kg; Price $800 (C/S)
120mm Rheinmetall HE: Weight 50kg; Price $800 (R/R)
120mm Rheinmetall WP: Weight 50kg; Price $1000 (R/R)
120mm Rheinmetall MPAT: Weight 50kg; Price: $4000 (R/-).
120mm Rheinmetall STAFF (SMart Top Attack Fire & Forget): Weight 50kg; Price $3000 (S/R).
120mm Rheinmetall APERS: Weight 50kg; Price $850 (R/-)
120mm Israeli LAHAT: Weight 50kg; Price $20000 (R/-). .
120mm Raytheon TERM-CE (Tank Extended Range Munition-Chemical Energy): Weight 50kg; Price $30000 (R/-).
120mm Alliant TERM-KE (Tank Extended Range Munition-Kinetic Energy) XM-1007: Weight 50kg; Price $30000 (-/-)
120mm TERM-TA: Weight 50kg; Price $15000 (-/-).

120mm Rifled L-11 APFSDSDU: Weight 50kg, Price $1500 (R/R)
120mm Rifled L-11 APFSDS: Weight 50kg; Price $800 (S/R)
120mm Rifled L-11 HESH: Weight 50kg; Price $1000 (S/R)
120mm Rifled L-11 APDS: Weight 50kg; Price $650 (R/R)

125mm Russian APFSDS: Weight 40kg, Price $800 (R/S)
125mm Russian APFSDSDU: Weight 40kg; Price $1500 (R/R)
125mm Russian HEAT: Weight 40kg; Price $800 (R/S)
125mm Russian HE: Weight 40kg; Price $800 (S/C)
125mm Russian Powder Charge: Weight 25kg; Price $80 (S/C)
125mm Russian Liquid Propellant APFSDS: Weight 22kg; Price $1200 (-/S)

135mm Russian APFSDS: Weight 45kg; Price $950 (-/R)
135mm Russian APFSDSDU: Weight 45kg; Price $1775 (-/R)
135mm Russian HEAT: Weight 45kg; Price $950 (-/R)
135mm Russian HE: Weight 45kg; Price $950 (-/R)
135mm Russian Thermobaric: Weight 45kg; Price $1200 (-/R)
135mm Russian Powder Charge: Weight 27kg; Price $90 (-/R)

140mm NATO APFSDS: Weight 60kg; Price $2000 (-/-)
140mm NATO APFSDSDU: Weight 60kg; Price $3000 (-/-)
140mm NATO HEAT: Weight 60kg; Price $2000 (-/-)
140mm NATO HE: Weight 60kg; Price $2000 (-/-)
140mm NATO WP: Weight 60kg; Price $2500 (-/-)

142mm Demolition Gun HESH: Weight 16kg; Price $1700 (R/R)

152mm Gun/Missile Launcher HEAT: Weight 22kg; Price $2200 (-/-)
152mm Gun/Missile Launcher APERS: Weight 21kg; Price $2400 (-/-)
152mm Gun/Missile Launcher HE: Weight 22kg; Price $2200 (-/-)
152mm Gun/Missile Launcher WP: Weight 22kg; Price $2200 (-/-)

165mm Demolition Gun HESH: Weight 19kg; Price $2000 (R/R)

MORTAR ROUNDS

37mm HE: Weight: 1 kg, 11 kg per case of 10; Price: $15, $150 per case (-/R)

51mm HE: Weight: 0.9 kg, 12 kg per case of 12; Price: $13, $156 per case (S/R)
51mm ILLUM: Weight: 0.8 kg, 10.5 kg per case of 12; Price: $13, $156 per case (R/-)
51mm Smoke: Weight: 0.9 kg, 12 kg per case of 12; Price: $15, $180 per case (S/R)
51mm WP: Weight: 0.9 kg, 12 kg per case of 12; Price: $25, $300 per case (R/-)

60mm HE: Weight: 1.7 kg, 22.5 kg per case of 12; Price: $25, $300 per case (C/S)
60mm ILLUM: Weight: 2.3 kg, 30.4 kg per case of 12; Price: $25, $300 per case (S/R)
60mm Smoke: Weight: 2.25 kg, 30 kg per case of 12; Price: $30, $360 per case (C/S)
60mm WP: Weight: 2.3 kg, 30.4 kg per case of 12; Price: $50, $600 per case (S/R)
60mm WX90 HE: Weight: 2.3kg, 27.6kg per case of 12; Price: $13, $155 per case (-/S)

60mm Gun/Mortar HE: Weight: 1.73kg, 21.6kg per case of 12; Price: $10, $120 per case (S/-)
60mm Gun/Mortar HEAT: Weight: 1.73kg, 21.6kg per case of 12; Price: $10, $120 per case (S/-)
60mm Gun/Mortar WP: Weight: 1.64kg, 20kg per case of 12; Price: $20, $240 per case (S/-)
60mm Gun/Mortar APERS: Weight: 1.18kg, 14.7kg per case of 12; Price: $15, $180 per case (S/-)

81mm 81 HE: Weight: 4.56kg, 14kg per case of 3; Price: $57, $165 per case (-/R)
81mm 81 LP HE: Weight: 4.6 kg, 15 kg per case of 3; Price: $70, $210 per case (R/-)
81mm GAMP: Weight: 8kg, 25kg per case of 3; Price: $7200, $14400 per case (R/-)
81mm HE: Weight: 4.1 kg, 13.5 kg per case of 3; Price: $50, $150 per case (C/S)
81mm ILLUM: Weight: 4.4 kg, 14.5 kg per case of 3; Price: $50, $150 per case (S/R)
81mm Merlin: Weight: 6 kg, 20 kg per case of 3; Price: $3600, $10800 per case (R/-)
81mm Smoke: Weight: 4.3 kg, 14.2 kg per case of 3; Price: $60, $180 per case (C/S)
81mm W87 HE: Weight: 5.72kg, 18kg per case of 3; Price: $65, $190 per case (-/S)
81mm WP: Weight: 4.1 kg, 13.5 kg per case of 3; Price: $100, $300 per case (S/R)

82mm HE: Weight 3.2 kg, 35 kg per case of 10, 17 kg per 5-round clip; Price: $47, $470 per case (S/C)
82mm ILLUM: Weight: 2.95 kg, 32.5 kg per case of 10, 16 kg per 5-round clip; Price: $47, $470 per case (R/S)
82mm M-74 HE: Weight: 3.05kg, 33.5kg per case of 10, 16.75 kg per 5-round clip; Price: $65, $650 per case (R/-)
82mm Smoke: Weight: 3.5 kg, 38 kg per case of 10, 19 kg per 5-round clip; Price: $60, $600 per case (S/C)
82mm WP: Weight: 3.5 kg, 38 kg per case of 10, 19 kg per 5-round clip; Price: $95, $950 per case (R/S)

100mm HE: Weight: 8kg, 25kg per case of 3; Price: $95, $275 per case (-/R)
100mm ILLUM: Weight: 9.05kg, 28.3kg per case of 3; Price: $95, $275 per case (-/R)
100mm Smoke: Weight: 8.46kg, 26.5kg per case of 3; Price: $95, $275 per case (-/R)
100mm WP: Weight: 7.6kg, 23.75kg per case of 3; Price: $190, $550 per case (-/R)

107mm CHEM: Weight: 9.5 kg, 31 kg per case of 3; Price: $90, $270 per case (-/R)
107mm HE-Heavy: Weight: 9 kg, 30 kg per case of 3; Price: $70, $210 per case (-/R)
107mm HE-Light: Weight: 7.9 kg, 26 kg per case of 3; Price: $60, $180 per case (-/R)
107mm ILLUM: Weight: 8.6 kg, 28 kg per case of 3; Price: $70, $210 per case (-/R)
107mm WP: Weight: 9.5 kg, 31 kg per case of 3; Price: $140, $420 per case (-/R)

4.2" CHEM: Weight: 13 kg, 28 kg per case of 2; Price: $125, $250 per case (S/R)
4.2" GAMP: Weight: 17kg, 35kg per case of 2; Price: $2000, $4000 per case (R/-)
4.2" HE: Weight: 12.3 kg, 27 kg per case of 2; Price: $100, $200 per case (C/S)
4.2" ICM-DP: Weight: 13 kg, 28 kg per case of 2; Price: $750, $1500 per case (R/-)
4.2" ILLUM: Weight: 11.8 kg, 26 kg per case of 2; Price: $100, $200 per case (S/R)
4.2" WP: Weight: 13 kg, 28 kg per case of 2; Price: $200, $400 per case (S/R)

120mm CHEM: Weight: 14.3 kg, 31.5 kg per case of 2; Price: $125, $250 per case (S/S)
120mm GAMP: Weight: 24kg, 50kg per case of 2; Price: $3500, $7000 per case (R/-)
120mm HE: Weight: 13 kg, 28.5 kg per case of 2; Price: $100, $200 per case (V/V)
120mm ICM-DP: Weight: 14.5 kg, 32 kg per case of 2; Price: $750, $1500 per case (R/R)
120mm ILLUM: Weight: 14.3 kg, 31.5 kg per case of 2; Price: $100, $200 per case (S/R)
120mm Strix: Weight: 24 kg, 50 kg per case of 2; Price: $5000, $10000 per case (R/-)
120mm WP: Weight: 14.3 kg, 31.5 kg per case of 2; Price: $200, $400 per case (S/S)

160mm CHEM: Weight: 44 kg; Price: $400 (R/R)
160mm HE: Weight: 40 kg; Price: $325 (R/R)
160mm WP: Weight: 44 kg; Price: $650 (R/R)

240mm CHEM: Weight: 143 kg; Price: $2500 (-/R)
240mm GAMP: Weight: 134 kg; Price: $70000 (-/R)
240mm HE: Weight: 130 kg; Price: $2000 (-/R)
240mm HE-RAP: Weight: 143 kg; Price: $4000 (-/R)
240mm ICM: Weight: 145 kg; Price: $15000 (-/R)
240mm WP: Weight: 143 kg; Price: $4000 (-/R)

The magazines presented here are based on *light alloy* magazines. For steel magazines, increase weight by 2%; for plastic or synthetic magazines; decrease weight by 8 percent.

.17 Hornady Magnum Rimfire

Notes: This is a powerful rimfire round, quite adequate for the hunting of small game at up to medium range. It approaches the power of the larger .22 Hornet round, and the velocity is exceptional, as is the penetration for a round of its small size. The .17 Hornady Magnum Rimfire also shoots very flat, and this improves the accuracy of the round. The round has a polymer tip (usually red in color) that causes the round to expand greatly in soft tissue. (Hornady calls this a "V-Max" bullet.) The .17 Hornady Magnum Rimfire round is rapidly picking up steam, and is becoming quite popular, with many pistols, revolvers, and rifles being designed for it.

Twilight 2000 Notes: This round does not exist.

Other Names: .17 Hornady Rimfire Magnum, .17 HMR

Nominal Size: 4.32x27mm

Actual Size: 4.32x26.72mm

Case Type: Necked Rimfire

Weight: 4.88 kg per case of 1000; Price: $80 per case

Magazines:

Per round: 0.004 kg	5-round box: 0.04 kg	9-round box: 0.06 kg	10-round box: 0.07 kg
25-round belt: 0.1 kg	50-round belt: 0.2 kg	100-round belt: 0.39 kg	

.17 Mach 2 Rimfire

Notes: This round was developed by Hornady on the heels of their .17 HMR cartridge, though the .17 Mach 2 is based on a .22 Long Rifle (specifically, the .22 LR cases designed for the Stinger round) case necked down to .17 caliber (roughly 4.5mm). The bullet is also half the weight of the standard .22 Long Rifle round, being only 17 grains in weight, though the propellant charge is the same as a .22 Long Rifle round. The combination of a light bullet and a large propellant charge (relative to the bullet) is how the .17 Mach 2 achieves its high muzzle velocity. (Velocity falls off quickly, however.) It has a much flatter trajectory than the .22 LR out to about 150 meters. The Mach 2 functions well in bolt-action rifles, though due to its high chamber pressure, it is more difficult to make the Mach 2 function properly in a semiautomatic weapon. (Conversion uppers are available; they replace the bolt carrier with a heavier one, and a stronger chamber wall. Kits that change only the barrel are also available, but the round does not cycle as well with a simple barrel change.)

Factory-made .17 Mach 2 rounds are usually loaded with a V-Max-type or NTX bullet. Rounds are made by Hornady, Eley, Speer, Remington, and CCI, though lots are smaller, as the .17 Mach 2 has proved to be nowhere as popular as the .17 HMR round, and both offer similar performance.

Other Names: .17 Hornady Mach 2, .17 HM2

Nominal size: 4.5x15mm

Actual Size: 4.37x18.14mm

Case Type: Necked Rimfire

Weight:

Per round: 0.0022 kg	5-round box: 0.02 kg	10-round box: 0.04 kg	

.22 BB Cap

Notes: This round is one of the oldest self-contained cartridges still available. It is a "gallery" round, designed for indoor shooting at very short-range targets. The round was made by many companies around the world until just before World War 2, but the kind of social shooting that spawned the .22 BB Cap went out of style at that point. Originally, the .22 BB Cap has a round bullet in a short case and was propelled only by the primer, but later designs has a small powder charge and a conical bullet. Today, the round is still occasionally used for indoor shooting, but it is also useful as a pest control round. However, not many firearms are still chambered for the .22 BB Cap, and RWS of Germany is the only company still making the round.

Other Names: .22 Bulleted Breech Cap

Nominal Size: 5.6x7mm

Actual Size: 5.64x7.21mm

Case Type: Straight Rimfire

Weight: 0.23 kg per box of 100; Price: $6 per box

Magazines:

Per round: 0.0014 kg			

.22 CB Cap

Notes: This round is basically a more powerful version of the .22 BB Cap, officially first appearing in ammunition catalogs in 1888, but probably invented before that time. The .22 CB Cap is no more accurate than the .22 Short and slightly less powerful, and it is useful only for gallery shooting or pest control. American companies stopped making the .22 CB Cap in 1942, but European

companies such as CCI occasionally make lots of them, and RWS offers it on a regular basis and lists it in its catalogs.

Other Names: .22 Conical Bullet Cap, 6mm Flobert

Nominal Size: 5.6x10mm

Actual Size: 5.64x10.67mm

Case Type: Straight Rimfire

Weight: 2.63 kg per case of 1000; Price: $40 per case

Magazines:

Per round: 0.0021 kg			

.22 Long

Notes: This is forerunner of the .22 Long Rifle round. The .22 Long round has a smaller bullet than a .22 Long Rifle round, similar to that of the .22 Short bullet, in a case similar to that of the .22 Long Rifle. The propellant charge is smaller than that used in the .22 Long Rifle round, resulting in slightly less power. Many believe that the .22 Long round has basically outlived its usefulness, and should be considered obsolete, but many modern manufacturers still make the round. As with the .22 Short, most bolt-action, pump-action, and lever-action weapons chambered for .22 Long Rifle will also be able to fire the .22 Long round, but most .22 Long Rifle semiautomatics cannot.

Nominal Size: 5.7x14mm

Actual Size: 5.66x15.11mm

Case Type: Straight Rimfire

Weight: 3.25 kg per case of 1000; Price $50 per case

Magazines:

Per round: 0.003 kg	5-round box: 0.03 kg	6-round box: 0.03 kg	7-round box: 0.03 kg
10-round box: 0.05 kg	12-round box: 0.05 kg	20-round box: 0.09 kg	

.22 Long Rifle

Notes: This round was originally developed as a blackpowder cartridge in 1887. It successfully made the jump to smokeless powder, and is now one of the most common rounds in the world. Though today it's most popular use is in target matches and biathlon competitions, it is also one of the most common varmint and small game cartridges. Many a youngster cut his teeth on a .22 Long Rifle-firing rifle, and we even used them for indoor target practice in ROTC. It is, however, unreliable at killing anything larger than a rabbit; if fired out of a pistol-sized weapon, it is even less reliable. Another use is with a silencer (and a very careful aim) for game culling, and as a silenced pistol round for assassination. The main reason that the .22 Long Rifle round (and other rimfire rounds) can be so dangerous is that many people regard .22s as mere playthings, forgetting that any weapon can be lethal.

Nominal Size: 5.7x17mm

Actual Size: 5.66x15.11mm

Case Type: Straight Rimfire

Weight: 3.75 kg per case of 1000; Price $60 per case

Magazine:

Per round: 0.003 kg	2-round box: 0.02 kg	4-round box: 0.02 kg	5-round box: 0.03 kg
5-round clip: 0.02 kg	6-round box: 0.03 kg	7-round box: 0.04 kg	8-round box: 0.04 kg
9-round box: 0.05 kg	10-round box: 0.05 kg	10-round clip: 0.03 kg	10-round cassette: 0.03 kg
11-round box: 0.06 kg	12-round box: 0.06 kg	15-round box: 0.08 kg	16-round box: 0.08 kg
20-round box: 0.1 kg	25-round box: 0.12 kg	28-round box: 0.14 kg	29-round box: 0.14 kg
50-round box: 0.24 kg	50-round helical: 0.29 kg	100-round helical: 0.57 kg	165-round pan: 0.76 kg
176-round pan: 0.81 kg	177-round pan: 0.82 kg	220-round pan: 1.02 kg	275-round pan: 1.27 kg

.22 Extra Long

Notes: This obsolescent round actually predates the .22 Long Rifle round, being introduced in 1880 as a blackpowder round. It was used in several rifles of various types, as well as some Smith & Wesson revolvers, but has not been listed in any major ammunition catalogs since 1935. This round will not chamber in .22 Long Rifle-firing weapons due to the length, but one can usually get .22 Short, .22 Long, or .22 Long Rifle rounds to chamber in weapons designed for the .22 Extra Long cartridge. In power, the .22 Extra Long, if loaded with smokeless powder, exceeds that of the .22 Long Rifle only by a tiny degree.

Nominal Size: 5.6x19mm

Actual Size: 5.66x19.05mm

Case Type: Straight Rimfire

Weight: 0.48 kg per box of 100; Price: $16 per box

Magazines:

Per round: 0.0038 kg			

.22 ILARCO

Notes: The .22 ILARCO was designed in 1987 as an experimental round for the American-180 rimfire submachinegun. It is basically a hot-loaded .22 Long Rifle round, with the heavier bullet of the .22 Winchester Magnum Rimfire round and a strengthened .22 Long Rifle case with much more propellant. This was done to increase the power of the American-180, which could not chamber the longer .22 Winchester Magnum Rimfire round, without having to redesign the action and magazines. The power is almost the same as that of the .22 Winchester Magnum Rimfire. The .22 ILARCO round never went into large-scale production, and the sale of the American-180 patent ensured this. The .22 ILARCO is now a collector's item.

Other Names: .22 Short Magnum Rimfire, .22 Winchester Magnum Rimfire Short

Nominal Size: 5.7x17mm

Actual Size: 5.69x15.11mm

Case Type: Straight Rimfire

Weight: 4.84 kg per box of 100; Price: $15 per box

Magazines:

Per round: 0.0038 kg	165-round pan: 0.86 kg	177-round pan: 0.92 kg	220-round pan: 1.14 kg
275-round pan: 1.43 kg			

.22 Short

Notes: This is the oldest American modern-style cartridge, having been in production since 1857. The round was originally intended for self-defense, but rapidly proved inadequate for that purpose, and was converted to a gallery round – one that is intended for short-range target shooting, mostly indoors. It is still used in some Olympic and other international target competitions. Most bolt-action, pump-action, and lever-action weapons chambered for .22 Long Rifle will also be able to fire the .22 Short round, but most .22 Long Rifle semiautomatics cannot. The .22 Short round is ideal for varmint or small bird hunting, but velocity drops off rapidly after about 50 meters.

Nominal Size: 5.7x11mm

Actual Size: 5.66x10.74mm

Case Type: Straight Rimfire

Weight: 2.75 kg per case of 1000; Price $50 per case

Magazines:

Per round: 0.0022 kg	5-round box: 0.02 kg	6-round box: 0.02 kg	7-round box: 0.03 kg
8-round box: 0.03 kg	10-round box: 0.04 kg	12-round box: 0.05 kg	20-round box: 0.07 kg

.22 Winchester Auto

Notes: This round was used only in the Winchester M-1903 semiautomatic rifle. It had a long life, but was finally dropped from production in the 1970s, even though it was pronounced obsolete in 1932. It was designed at a time when blackpowder rounds were still somewhat common, and meant to be able to be used with nothing but the then-new smokeless powder. It is roughly the same in power with the .22 Long Rifle, but never really offered more than the fact that it used exclusively smokeless powder. It is now almost impossible to find, and the rifle that fires it is a collector's item.

Other Names: .22 Winchester Automatic, .22 Winchester Auto Smokeless

Nominal Size: 5.6x17mm

Actual Size: 5.64x16.89mm

Case Type: Straight Rimfire

Weight: 4.25 kg per box of 100; Price: $14 per box

Magazines:

Per round: 0.0034 kg			

.22 Winchester Magnum Rimfire

Notes: Though many see this round as a magnum version of the .22 Long Rifle, the .22 Winchester Magnum Rimfire round is actually based on the old .22 Winchester Rimfire round. The .22 Winchester Magnum Rimfire was perhaps the first of the "hyper-velocity" rimfire rounds, and quickly became very popular. The magnum loading means that weapons have to be specially modified or designed to fire the cartridge.

Other Names: .22 Magnum, .22 Magnum Rimfire

Nominal Size: 5.7x24.5mm

Actual Size: 5.69x26.72mm

Case Type: Straight Rimfire

Weight: 6.75 kg per case of 1000; Price: $110 per case

Magazine:

Per round: 0.0054 kg	2-round box: 0.03 kg	3-round box: 0.04 kg	4-round box: 0.04 kg
5-round box: 0.05 kg	7-round box: 0.07 kg	9-round box: 0.09 kg	10-round box: 0.09 kg
10-round cassette: 0.07 kg	12-round box: 0.11 kg	15-round box: 0.14 kg	

.22 Winchester Rimfire

Notes: This (not to be confused with the Winchester Magnum Rimfire) round was introduced in 1890 for the Winchester 1890 pump-action rifle. Originally, Winchester used a flat-nosed bullet, and Remington used a round-nosed bullet and called it the .22 Remington Special; later, this distinction was lost as Winchester went to a round-nosed bullet. It was chambered in many pump-action, single-shot, and bolt-action rifles after its introduction, but has long been out of production, except for a special one-time production run in 1986 by Winchester. The Winchester Rimfire has more power than the .22 Long Rifle, but not as much as the .22 Winchester Rimfire Magnum. The .22 Winchester Rimfire will chamber and fire in most weapons that will chamber the .22 Winchester Magnum Rimfire; .22 Short, Long, and Long Rifle round will not work in a .22 Winchester Rimfire weapon, because they are narrower than the .22 Winchester Rimfire and fit too loosely.

Other Names: .22 Remington Special
Nominal Size: 5.7x24mm
Actual Size: 5.69x24.36mm
Case Type: Straight Rimfire
Weight: 6.25 kg per box of 100; Price: $20 per box

Magazines:

Per round: 0.005 kg			

.44 Henry Rimfire

Notes: Though the .44 Henry Rimfire was one of the early cartridges in firearms history (it was developed for the original Henry rifle, and was originally a blackpowder round), it is now considered obsolete for most purposes and is chambered only in a few older revolvers which are no longer in production and in some newer reproductions. It was manufactured from 1860-1934 (with later production using modern propellants as well as blackpowder), but is now in the realm of handloaders, and they find it tricky to load. The .44 Henry Rimfire is not considered a particularly powerful round, and is barely adequate for bringing down even medium game. Large game is definitely out of its class. It's principal advantage is its short length, which allowed a rifle to carry many rounds within the tubular magazines of the lever-action rifles it was primarily chambered in during the late 1800s. The .44-40 Winchester round is a heavily-updated and improved version of the .44 Henry Rimfire round.

Other Names: .44 Henry Flat
Nominal Size: 11.3x22mm
Actual Size: 11.33x22.23mm
Case Type: Straight Rimfire
Weight: 1.97 kg per box of 100; Price: $36 per box

Magazines:

Per round: 0.018 kg			

The magazines presented here are based on *light alloy* magazines. For steel magazines, increase weight by 2%; for plastic or synthetic magazines; decrease weight by 8 percent.

2.7mm Kolibri

Notes: This round was the smallest commercially-manufactured centerfire round ever made. It was used in the Kolibri pistol until 1914, when it was replaced by the 3mm Kolibri round. It is an obsolete round, and a collector's item that in real life would fetch thousands of times the game price shown here. It was designed for ladies' self defense, but the wounds it causes are equally tiny, and it has no real practical value other than target practice. Virtually any 2.7mm Kolibri round today would be handloaded.

Nominal Size: 2.7x9mm
Actual Size: 2.72x9.4mm
Case Type: Straight
Weight: 0.04 per box of 100; Price: $20 per box

Magazines:

Per round: 0.0004 kg	5-round box: 0.004 kg		

3mm Kolibri

Notes: This round, build for a ladies' defense pistol at the turn of the 20th century, is a tiny, low-power round that often does little more than annoying damage. The case is generally so thin that it is impractical to reload them, and the round typically uses an unjacketed lead bullet. These items are now a collectors' item.

Nominal Size: 3x8mm
Actual Size: 3.05x8.13mm
Case Type: Straight
Weight: 0.06 kg per box of 100; Price $20 per box

Magazines:

Per round: 0.0005 kg	5-round box: 0.06 kg		

4.6mm Radway

Notes: Originally designed for use in Heckler & Koch's MP-7 PDW, the 4.6mm Radway round is now also going to be chambered in a new Heckler in Koch pistol, the UCP. The 4.6mm Radway was developed by Heckler & Koch's partners at BAE's Radway Green facilities, based on the 1960s 4.6x36mm *löffelspitz* round developed for the abortive HK-36 assault rifle. The 4.6mm Radway round has high velocity and decent range, but the effectiveness and knockdown power of such a tiny round (the standard round weight is only 2.6 grams) is debatable, even though it has been proven that the 4.6mm Radway round yaws violently upon striking flesh. The standard ball round uses a jacketed lead-antimony alloy bullet, and this is what is referred to for the price below. The German Army does not typically use the standard ball round, using the DM-11 Penetrator instead. The DM-11 Penetrator uses a brass-jacketed steel-cored round that is loaded with a bit more propellant and is a bit more aerodynamically efficient in shape. This results in better penetration and range. German Police often use the Action Law Enforcement round, which is basically the same as the standard ball round but has the harder brass jacket of the DM-11 round. The DM-11 Penetrator has a one-step increase in penetration; The ALE has sort of a "half-step increase (split the difference). The DM-11 round costs 3 times the standard ball ammo cost; the Action Law Enforcement costs twice the standard ball ammunition price.

Twilight 2000 Notes: The 4.6mm Radway round does not exist in the Twilight 2000 timeline.
Other Names: 4.6mm HK PDW
Nominal Size: 4.6x30mm
Actual Size: 4.5x30.07mm
Case Type: Necked
Weight: 8 kg per case of 1000; Price: $380 per case

Magazines:

Per round: 0.007 kg	20-round box: 0.23 kg	40-round box: 0.44 kg	

5mm Bergmann

Notes: This round was designed specifically for use in the then-new Bergmann M1896 pistol. The combination of ammunition of questionable effectiveness and the introduction of a new pistol (though it was light and handy for the time), made it none to popular, and there were surprisingly little built, despite being manufactured until 1917. (There are perhaps only 200 working examples in the world today, and despite their shortcomings, are highly sought-after by collectors.) The round has a significant taper to its case (though in Twilight 2000 v2.2 rules, this would still be considered a straight case), and it fired a small, 35-grain bullet as a velocity of a mere 177 meters per second. This did not lend itself to damaging or penetrative potential, nor did it work for accuracy at anything much beyond short range. Muzzle energy, in fact, was about 60% the muzzle energy of the .25 ACP round. The 5mm Bergman is considered on of the weakest handgun cartridges produced; perhaps the Kolibri rounds are the only ones which are weaker. The

round also tends to become unstable beyond 6 meters, and after that range, tends to keyhole instead of striking nose-first.

Two main versions of the 5mm Bermann were produced: the rimless version, for automatic pistols, and the rimmed version, for revolvers.

But for the semiautomatic pistols for the period, the M1896 was a good choice, especially in the larger chamberings. The 5mm Bergmann-chambered was not seriously-considered by European officers of NCOs, though it has some small success as a ladies defense weapon. More modern designs firing more powerful ammunition were around the corner, and this curtailed sales greatly. The 5mm Bergmann was the least-produced member of the M1896 Bergmann chamberings; today, they will only be found in auctioned or other sold lots of original ammunition, or in the hands of handloaders who have a need to produce such anemic ammunition.

Other Names: 5mm Bergmann #2
Nominal Size: 5x15mm
Actual Size: 5.16x14.99mm
Case Type: Straight
Weight: 0.25 kg per box of 100; Price: $100 per box
Magazines:

Per round: 0.0025 kg	5-round clip: 0.01 kg		

5mm Clement Auto

Notes: This round was first designed for the Clement 1903 subcompact pistol. It has a steeply-conical, bottle-necked which is semi-rimmed, and had a long bullet relative to its size. This long bullet was not properly stabilized by the short barrel of the Clement pistol, and tended to be unstable in flight, sometimes to the point of tumbling. However, if it hit properly, it could do decent damage for its small caliber, as the round, when it hit flesh, would immediately yaw at least 90 degrees. The small caliber, however, severely limited its damaging potential. There was a lot of unburnt powder with the small pistol, leading to a large amount of muzzle flash. Round production was never large, and actual factory lots command a high RL price these days. Handloading is much more common.

Due to the problems with ballistics, Clement changed the caliber of its later pistols to .25 ACP.

Other Names: 5mm Clement, 5mm Charola
Nominal Size: 5x18mm
Actual Size: 5.13x18.03mm
Case Type: Necked
Weight: 3 kg per box of 100; Price: $120 per box
Magazines:

Per round: 0.003 kg	6-round box: 0.03 kg		

5.45mm Russian Short

Notes: Originally developed for the PSM pistol, this cartridge is considered a poor round by most Western experts. It is, however, more effective against body armor than its size and energy would otherwise indicate. The bullet is jacketed, and has a steel front half and lead rear half.

Other Names: 5.45mm Soviet Pistol, 5.45mm Short Russian
Nominal Size: 5.45x18mm
Actual Size: 5.33x17.78mm
Case Type: Necked
Weight: 5 kg per case of 1000; Price $80 per case
Magazines:

Per round: 0.004 kg	8-round box: 0.06 kg	24-round box: 0.16 kg	

5.5mm Velo Dog

Notes: This round was introduced in 1894, designed to be fired from the French Velo Dog revolver. The revolver passed out of favor quickly, but a number of Belgian and German revolvers also chambered the round over the years, and it was manufactured by several countries up to 1940. Today, only Fiocchi of Italy makes the 5.5mm Velo Dog round. It is a round that has little more power than a .22 Long Rifle round; the 5.5mm Velo Dog was designed to do little more than allow bicyclists to scare off aggressive dogs (hence the name).

Other Names: 5.75mm Velo Dog
Nominal Size: 5.5x29mm
Actual Size: 5.72x28.45mm
Case Type: Straight
Weight: 0.68 kg per box of 100; Price: $22 per box
Magazines:

Per round: 0.005 kg			

5.56mm Pindad

Notes: The 5.56mm Pindad round is essentially a shortened 5.56mm NATO round – both in case and bullet. The result is a round that produces decent damage and penetration superior to most pistol rounds, it a manner to other short PDW rounds like the 5.7mm FN and 4.6mm Radway. The 5.56mm Pindad and the pistol (the Pindad PS-01 Serbu) was first shown in prototype form at the 2008 Indo-Defence Expo & Forum, and I have not been able to find out whether it has entered production as of yet. Penetration is exceptional, even in subsonic form, as is range.

A subsonic version of this round exists; triple all prices for this round.

Nominal Size: 5.56x21mm

Actual Size: 5.69x20.86mm

Case Type: Necked

Weight: 0.58 kg per box of 100; Price: $21 per box

Magazines:

Per round: 0.005 kg	12-round box: 0.11 kg	18-round box: 0.16 kg	

5.7mm FN

Notes: This round was developed in the late 1980s by FN for their new P90 Personal Defense Weapon (PDW). It was later chambered in their Five-seveN pistol. It was designed to replace the 9mm Parabellum round in certain applications (such as for rear area troops), but no country has as yet adopted either weapon that fires the round in large numbers. (In fact, most Americans are most likely to see the P-90 PDW on the TV show *Stargate SG-1.)* The bullet is very sharply pointed, and the case resembles that of the .221 fireball. The bullet is very light, but has high velocity, and is known for penetration.

A special armor piercing version, the 5.7mm FN High-Velocity, is also available. Double all costs of ammunition for this round. A subsonic version of the 5.7mm FN round also exists; triple all prices for this round.

Other Names: 5.7x28mm, 5.7x28mm FN, 5.7mm P90

Nominal Size: 5.7x28mm

Actual Size: 5.59x28.7mm

Case Type: Necked

Weight: 8.75 kg per case of 1000; Price: $280 per case

Magazines:

Per round: 0.007 kg	20-round box: 0.23 kg	25-round box: 0.28 kg	50-round box: 0.45 kg

5.8mm Chinese Pistol

Notes: It is a matter of debate whether this round was designed first as a submachinegun or pistol round, but it does seem to have first appeared as a pistol round. It follows the recent trend towards small-caliber, lightweight rounds designed for use in light pistols and PDWs. The 5.8x21mm round is, like those sorts of rounds, is short, necked, and uses a lightweight bullet fired at high velocity to achieve results that such a small round would not normally produce. Like other such rounds, the bullet is sharply-pointed and flies at a very high velocity.

A steel-cored armor-piercing version is also produced; double all costs of ammunition for this round. A subsonic version also exists; triple all costs for this round.

Other Names: DAP92-5.8, QSZ-92-5.8

Nominal Size: 5.8x21mm

Actual Size: 5.74x21.26mm

Case Type: Necked

Weight: 6.05 kg per case of 1000; Price: $220 per case

Magazines:

Per round: 0.006 kg	20-round box: 0.18 kg	50-round helical: 0.43 kg	

6x35mm KAC PDW

Notes: Designed specifically for Knight Armaments' PDW (based on their entry into the US SCAR competition), the KAC PDW round is essentially a blown-out .221 Fireball round with a modified, shorter version of the .243 Winchester round. Though not necessarily meant for long-range shooting, the KAC PDW round does still have decent range, and in close-quarters battle, is quite hard-hitting and penetrative compared to the 5.56mm NATO round. The standard KAC PDW round can also be effectively silenced with the proper silencer.

KAC has plans to produce a true subsonic version of the KAC PDW round; triple all costs for this round. Other plans include a steel-cored AP round (double all costs), and a frangible version (double all costs).

Twilight 2000 Notes: This round does not exist in the Twilight 2000 timeline.

Other Names: 6mm KAC PDW

Nominal Size: 6x35mm

Actual Size: 6.17x35.56mm

Case Type: Necked
Weight: 11.66 kg per case of 1000; Price: $420 per case
Magazines:

Per round: 0.011 kg	20-round box: 0.35 kg	30-round box: 0.51 kg	

6.35mm Tula

Notes: The 6.35mm Tula round was an attempt to produce a round for the TK TOZ pistol with more power than the .25 ACP round. The dimensions are close to the .25 ACP, but the 6.35mm Tula is a much hotter round, with a larger and heavier bullet and a much greater propellant charge. The 6.35mm Tula round was made only for the TK TOZ pistol, and only tiny lots are made these days. Handloading is supposedly much more difficult than one might suppose.
Nominal Size: 6.35x16mm, 6.3mm Tula
Actual Size: 6.39x16.25mm
Case Type: Straight
Weight: 0.46 kg per box of 100; Price: $17 per box
Magazines:

Per round: 0.004 kg	8-round box: 0.06 kg		

6.5mm Bergmann

Notes: Essentially a larger 5mm Bergmann (above), the 6.5mm Bergman reproduced the steeply conical case in a larger size, but with a slight bottleneck, and firing a larger bullet. However, as the standard bullet weight was only 65 grains, muzzle velocity only 216 meters per second, and muzzle energy only 374 newtons, the round also reproduced and anemic performance of the 5mm Bergmann, in a larger form that had more effect and range as a result of the larger round and propellant charge. Unlike the 5mm, the 6.5mm Bergmann round was semi-rimmed, making feed and extraction more reliable. Many notes on the 5mm Bergmann apply the 6.5mm model, though it was a much more common version.
Today, though lots periodically appear at auction or in the hands of individual sellers, many are also handloaded.
Other Names: 6.5mm Bergmann #3
Nominal Size: 6.5x22mm
Actual Size: 6.71x22.1mm
Weight:
Magazines:

Per round: 0.004 kg	8-round box: 0.06 kg		

6.5mm CBJ

Notes: Designed specifically for the SAAB/Bofors CBJ-MS PDW, the 6.5mm CBJ round is a bottle-necked round that is a 9mm-type case necked down to accept a 6.5mm bullet. Unlike most rounds, the primary loading of the 6.5mm CBJ is an armor piercing round. This consists of a polymer- saboted 4mm tungsten penetrator with a very high velocity (higher than most assault rifle rounds) and excellent penetration. The 6.5mm CBJ round also comes in a spoon-nosed jacketed round, again packaged as a saboted 4mm round. Standard ball (upon which the prices below are based) is also available (which is not saboted).
The saboted-tungsten AP rounds as well as the spoon-nosed rounds cost double the prices below.
Twilight 2000 Notes: 6.5mm CBJ ammunition is quite rare, but available in some places in the Twilight 2000 timeline.
Nominal Size: 6.5x25mm
Actual Size: 6.51x25.2mm
Case Type: Necked
Weight: 0.92 kg per box of 100; Price: $34 per box
Magazines:

Per round: 0.008 kg	20-round box: 0.17 kg	30-round box: 0.25 kg	100-round drum: 0.84 kg

6.5mm Mannlicher Pistol

Notes: Not to be confused with Mannlicher's 6.5mm rifle rounds, the 6.5mm Mannlicher Pistol round was designed for use in the Steyr-Mannlicher M1894, one of the first automatic pistols fielded by any army. The armies who used the M1894 (in any of its chamberings) vary, since at that time in Europe, Russia, and the Far East, officers were required to buy their own sidearms, and many NCOs did so as well. The M1894 was also tested by the US Military, in a variety of chamberings, in the beginning of the competitions that resulted in the M1911. The M1894 was, unfortunately not a big seller despite its innovative design; perhaps 100 in each chambering were produced. The 6.5mm Mannlicher round was a rimmed cartridge.
Currently, issue ammunition is quite rare, but does come up for sale in small amounts in auctions or on web sites, or in trade magazines. More likely is handloading.
Other Names: 6.5mm Mannlicher (and 6.5mm Mannlicher M1894), 6.5mm Steyr Pistol, 6.50mm Mannlicher, M1894, 6.5mm M1894, 6.50mm Mannlicher (and 6.50mm Mannlicher M1894)

Nominal Size: 6.5x23mm
Actual Size: 6.76x23.34mm
Case Type: Straight
Weight: 6.7 kg per box of 100: Price: $27 per box
Magazines:

Per round: 0.007 kg	6-round clip: 0.04 kg		

7mm Nambu

Notes: This round was designed to be fired from only one weapon, the Japanese Small Nambu (more commonly known as the Baby Nambu) pistol. It was never an official Japanese service round, nor was the pistol an official sidearm, but it was popular with many high-ranking officers. After World War 2, the Baby Nambus and their ammunition were taken home by US soldiers and Marines as war trophies, but the pistols are now scares and their rounds even scarcer. Virtually any 7mm Nambu round found today would be handloaded, but the gunsmith would have to work almost from scratch. The 7mm Nambu round is not considered an effective self-defense round by Western standards, and might not even be very good against vermin.

Nominal Size: 7x20mm
Actual Size: 7.11x19.81mm
Case Type: Necked
Weight: 0.99 kg per box of 100; Price: $32 per box
Magazines:

Per round: 0.008 kg	7-round box: 0.1 kg		

7.5mm FK

Notes: The 7.5mm FK was introduced by Brno in 2015 to produce a round that could approximate the velocity and ballistics of the .44 Magnum in an automatic pistol, with a round that would operate more efficiently in an automatic pistol. They did so in spades – as of 2017, the 7.5mm FK is believed to be the fastest production handgun round, with a muzzle velocity in some cases and loadings of 762 meter per seconds. (Whether it is or not the fastest handgun round is the current subject of much debate.) Either way, it is a fast round, and betters the ballistics of the .44 magnum, while being even flatter shooting and effective at a longer range (depending on the barrel length of the .44 – the 7.5 FK Field has a barrel length of 6 inches). In striking power, it is more like a .41 Magnum, however. The recoil from the 7.5 FK pistol is very light – something competing cartridges are not known for. So it is not only powerful, it is useful as a defensive cartridge.

The round is fairly long, and bottlenecked, and produces about 3915 newtons of force. The 7.5mm FK was designed from the ground up and cannot be handloaded using any existing brass on the market. It would require a LOT of work to reproduce the necessary brass. However, the case width is 10.8 millimeters wide, and necked down to take the (nominal) 7.5mm bullet. Round types available are ball, hollowpoint (both with frangible versions), and a “spoon-tip” which produces +2 points of damage but reduces range by 25%. All bullets are made of a special copper alloy.

The round (and the pistol) were designed at the behest of a private customer in 2010, and it took one year of research to produce the first prototypes. He (or she?) wanted something special in a competition pistol, with a secondary hunting use, so it had to be not only very accurate, it had to produce killing power against small to medium game. The round is CIP registered (the European equivalent of SAAMI) and is registered as a copyrighted proprietary round, currently available in factory loads only from Brno.

Other Names: 7.5 FK
Nominal Size: 7.5x25mm
Actual Size: 7.8x27mm
Case Type: Necked
Weight: 12.9 kg per box of 100; Price: $52 per box
Magazines:

Per round: 0.013 kg	14-round box: 0.3 kg		

7.5mm Norwegian Nagant

Notes: Designed specifically for the m/1883 Nagant revolver that was used by officers until just after World War 2, the 7.5mm Norwegian Nagant was also used by the Swedish m/1887 Nagant copy of the m/1883. Originally designed for use with blackpowder, the round was later loaded with smokeless powder rounds designed by Norma of Sweden. The bullet is usually lubricated to a very slight degree. The case is short and very slightly tapered. The 7.5mm Norwegian Nagant round is obsolete, and is now in the realm of handloaders, with the exception of small quantities of a cousin of these rounds, the 7.5mm Swiss Army, which is made by Fiocchi, and can be fired from revolvers designed for the 7.5mm Norwegian Nagant. Cases can also be made by trimming .32-20 cases to the proper length. Since the round was designed for blackpowder, only a small amount of smokeless powder is safe for use in the 7.5mm Norwegian Nagant.

Other Names: 7.5mm Nagant Revolver, 7.5mm Swedish Nagant
Nominal Size: 7.5x23mm
Actual Size: 8.26x22.61mm

Case Type: Straight
Weight: 1.07 kg per box of 100; Price: $39 per box
Magazines:

Per round: 0.01 kg			

7.5mm Swiss Army

Notes: This round was adopted by the Swiss Army for their revolvers as a blackpowder round in 1882. It was soon converted to a smokeless powder cartridge, and used by the Swiss Army until 1903. Surplus Swiss revolvers were sold on the US market in the 1960s, and a few other weapons were also chambered for the cartridge, but weapons that fire the 7.5mm Swiss Army round are relatively rare.
Other Names: 7.5mm Swiss Army Revolver, 7.5mm Norwegian Revolver
Nominal Size: 7.5x23mm
Actual Size: 8.05x22.61mm
Case Type: Straight
Weight: 1.01 per box of 100; Price: $36 per box
Magazines:

Per round: 0.009 kg			

7.62mm M-48

Notes: Originally designed for use with the VZ-25 submachinegun, the M-48 round was also used for the CZ-52 pistol instead. The dimensions of the M-48 are identical to the 7.62mm Tokarev, but the propellant charge is greater, making it sort of a hotloaded 7.62mm Tokarev. The CZ-52 is one of the few pistols that are actually strong enough to handle the M-48 round, but the actual use of this round with the CZ-52 is rare since shooters tend to complain of the recoil and it does prematurely wear the barrel, frame, and slide.
Other Names: 7.62 Pi
Nominal Size: 7.62x25mm
Actual Size: 7.8x26.64mm
Case Type: Necked
Weight: 16.67 kg per case of 1000; Price: $275 per case
Magazines:

Per round: 0.015 kg	8-round box: 0.19 kg	32-round box: 0.68 kg	

7.62mm Nagant Revolver

Notes: This round was designed specifically for use in the Russian 1895 Nagant revolver, and later used in the Pieper revolver. The round has great velocity, but this has as much to do with the revolver's design as with the round itself. The bullet is light and thus stopping power is not what the velocity would seem to indicate.
Other Names: 7.62mm Russian Nagant Revolver
Nominal Size: 7.62x38mm
Actual Size: 7.49x38.86mm
Case Type: Straight
Weight: 1.71 kg per box of 100; Price: $55 per box
Magazines:

Per round: 0.014 kg			

7.62mm Tokarev

Notes: This cartridge was introduced along with the Tokarev TT-30 pistol in 1930. This cartridge is almost identical to the .30 Mauser round and most weapons chambered for 7.62mm Tokarev will chamber and fire the .30 Mauser round without difficulty, and vice versa. The round has a flat trajectory and, when jacketed, has decent body armor penetration when provided with an adequate-length barrel. Russian-made ammunition is typically steel-cased and not reloadable under most circumstances. However, there is some Western manufacture of the 7.62mm Tokarev round, and these are reloadable.
A subsonic variant of the 7.62mm Tokarev is made for use in silenced pistols. This ammunition has a reduced propellant charge. Multiply all prices by three for this ammunition.
Other Names: 7.62mm Russian Pistol, 7.62mm Russian
Nominal Size: 7.62x25mm
Actual Size: 7.8x26.64mm
Case Type: Necked
Weight: 15.88 kg per case of 1000; Price: $250 per case
Magazines:

Per round: 0.013 kg	7-round box: 0.16 kg	8-round box: 0.18 kg	9-round box: 0.2 kg
10-round box: 0.22 kg	10-round clip: 0.13 kg	18-round box: 0.38 kg	20-round box: 0.42 kg
30-round box: 0.61 kg	32-round box: 0.65 kg	35-round box: 0.71 kg	36-round box: 0.73 kg
40-round box: 0.8 kg	71-round drum: 1.41 kg		

7.62mm Type 64, Type 67 and Type 84

Notes: The 7.62mm Type 62 round was developed in early 1960s specifically to provide a round that could be used in both the then-new Type 64 pistol and its silenced counterpart. The Type 64 round is essentially a .32 ACP round with a very few modifications. The .32 ACP round is semi-rimmed, but the Type 64 round is rimless. The propellant load was also loaded with only about 75% of the .32 ACP's propellant load, therefore ensuring that the Type 64 round would fire a subsonic bullet. Accordingly, the Type 64 round, like many sub-loaded rounds, fires a heavier bullet than the standard .32 ACP bullet.

The Type 67 is a further sub-loaded version of the Type 64, leading to a somewhat quieter weapon when used in a silenced pistol or submachinegun. The bullet is slightly heavier, but range is degraded a bit. Noise is still the same class as for the Type 64, but the GM should lean in the direction of the shooter's quietness in certain circumstances when it is used.

In the early 1980s, the Chinese developed a version of the Type 64 round designed specifically for use by their version of Air Marshals (along with an updated version of the Type 64 pistol) or for aircrews of large aircraft if their planes get boarded on the ground, called the Type 84 round. The Type 84 is very similar to the Type 64, but uses a semi-jacketed frangible bullet instead of the standard FMJ lead bullet of the Type 64 round. This round will not penetrate the skin of the typical airliner at ranges of over 2 meters, and is unlikely to do so at shorter ranges. It retains the subsonic velocity of the Type 64 and Type 67, and is therefore still useable in silenced weapons. Penetration of body armor is less than that of the Type 64 or Type 67, but this is not measurable in *Twilight 2000 v2.2* terms. The Type 84 round costs double the prices listed below.

Other Names: 7.62x17mm, 7.65x17mm, 7.65mm Chinese
Nominal Size: 7.62x17mm
Actual Size: 7.85x17mm
Case Type: Necked
Weight: 7.26 kg per case of 1000; Price: $380 per case
Magazines:

Per round: 0.007 kg	7-round box: 0.09 kg	9-round box: 0.1 kg	20-round box: 0.22 kg
30-round box: 0.32 kg	40-round box: 0.42 kg		

7.63mm Mannlicher

Notes: Originally designed for use in the Model 1900 Mannlicher military pistol (made by Steyr in Austria-Hungary and in Spain), the semi-rimmed 7.63mm Mannlicher round was originally designed to be fed by a stripper clip from the top of that pistol and some other later, similar pistols. This stripper clip is proprietary, and is not removed from the pistol until it is empty or the weapon is to be unloaded, as it helps guide the rounds into the action of the pistols which use it. The 7.63mm Mannlicher round is barely more powerful than the .32 ACP round, and not as useful, given that most weapons designed for it need that proprietary stripper clip.

The 7.63mm Mannlicher round and the pistols which fire it were common on the war surplus market until the late 1950s; they are now mostly collector's items, with ammunition largely the province of handloaders. The 7.63mm Mannlicher round can actually be made by making some modifications to .30 Mauser rounds; the bullet is essentially the same and the case diameter is virtually identical, though the 7.63mm Mannlicher round is much shorter and carries much less propellant.

Other Names: 7.65mm Mannlicher
Nominal Size: 7.63x21mm
Actual Size: 7.82x21.34mm
Case Type: Straight
Weight: 0.9 kg per box of 100; Price: $33 per box
Magazines:

Per round: 0.008 kg	6-round clip: 0.05 kg	8-round clip: 0.07 kg	10-round clip: 0.08 kg

7.63mm Mauser

Notes: Designed by Hugo Borchardt and introduced in 1893, the 7.63mm Mauser round is perhaps better known by the name under which it was introduced, the .30 Mauser. The 7.63mm was designed for the Borchardt automatic pistol, a predecessor of the Luger, and later adopted as the first chambering for the Mauser c/96 pistol. The 7.63mm Mauser is known for it's long-ranged, flat trajectory, but unfortunately also known for a lack of stopping power. Though still made in small lots by Remington and Winchester until recently, the 7.63mm Mauser is primarily made in Portugal by several firms, and exported worldwide by Century International Arms. Further development of this round by the Soviets in the late 1920s resulted in the 7.62mm Tokarev round, and most firearms that can fire the 7.63mm Mauser can fire the 7.62mm Tokarev and vice versa. Performance of the 7.63mm Mauser is in fact virtually identical to the 7.62mm Tokarev round.

Other Names: .30 Mauser, .30 Borchardt, 7.65mm Borchardt, 7.65mm Mauser

Nominal Size: 7.63x25mm
Actual Size: 7.82x24.54mm
Case Type: Necked
Weight: 12.98 kg per case of 1000; Price: $240 per case
Magazines:

Per round: 0.012 kg	7-round box: 0.15 kg	8-round box: 0.17 kg	10-round Clip: 0.12 kg

7.65mm Longue

Notes: This French military pistol cartridge was used from 1935 to 1950, when it was replaced by the 9mm Parabellum. It is still used to a small extent by the French Police. A large number of pistols chambering this cartridge have been sold on the surplus market, and thus the demand for the 7.65mm Longue round lives on. The 7.65mm Longue is slightly more powerful than the .32 ACP round, but it is still a bullet best suited to emergency self defense. As a submachinegun cartridge, it was basically a failure.
Other Names: 7.65mm MAS, 7.65mm French, .32 French Long
Nominal Size: 7.65x19.5mm
Actual Size: 7.85x19.81mm
Case Type: Straight
Weight: 9.63 kg per case of 1000; Price: $150 per case
Magazines:

Per round: 0.008 kg	8-round box: 0.11 kg	20-round box: 0.25 kg	32-round box: 0.39 kg

7.65mm Parabellum

Notes: This round was designed in 1900 for the then-new Luger pistol. It is still chambered primarily in old Lugers, though a variety of pistols throughout the years have been chambered for 7.65mm Parabellum, including some relatively new ones. It is not in current military service, but it is a popular civilian round, particularly in those countries where the use of “military” rounds by civilians is prohibited. It is a small, lightweight cartridge not known for stopping power or velocity, but it generally doesn’t produce much recoil.
Other Names: 7.65mm Luger, .30 Luger
Nominal Size: 7.65x21mm
Actual Size: 7.82x19.05mm
Case Type: Necked
Weight: 11.38 kg per case of 1000; Price: $180 per case
Magazines:

Per round: 0.009 kg	8-round box: 0.13 kg	9-round box: 0.14 kg	12-round box: 0.19 kg
13-round box: 0.2 kg	14-round box: 0.21 kg	15-round box: 0.23 kg	16-round box: 0.24 kg
20-round box: 0.3 kg	32-round box: 0.47 kg	50-round box: 0.72 kg	

8mm Bergman

Notes: The 6.5mm Bergman and pistol had decent success at the time of their introduction, but most shooters of the Bergman M1896 pistols clamored for a larger, more powerful round. The modification of the 6.5mm Bergmann round into the 8mm Bergman round was fairly simple, only requiring a bit of necking out and a new barrel for the pistol and a new clip for loading. The new round was not as tapered as the previous Bergmann rounds and was also not bottlenecked. Despite the call for a larger round, only about 200 Bergman No 4 pistols were made, and this meant that the round was not made in great quantities either. It is notable that the earliest versions were chambered for a (different) 8mm round, but rejected by almost all shooters.
Other Names: 8mm Bergmann #4, 8x22mm Bergmann
Nominal Size: 8x22mm
Actual Size: 8.08x22.99mm
Case Type: Straight
Weight: 0.94 kg per box of 100; Price: $38 per box
Magazines:

Per round: 0.009 kg	5-round clip: 0.05 kg		

8mm Gasser

Notes: This round was designed in 1898 as a new round for the Rast & Gasser revolver. Thereafter, a number of different European revolvers chambered the 8mm Gasser. It was popular in Europe for a time, but never manufactured in the US, and rarely even sold there. It is now considered a quite obsolete round and ammunition is very hard to find. Handloading is often the only way to get 8mm Gasser ammunition these days; the round can be worked up from a .32 Smith & Wesson Long case. However, Fiocchi makes 8mm Gasser rounds in limited quantities.
Other Names: 8mm Rast & Gasser

Nominal Size: 8x26mm
Actual Size: 8.13x26.34mm
Case Type: Straight
Weight: 1.36 kg per box of 100; Price: $44 per box
Magazines:

Per round: 0.011 kg			

8mm Lebel Revolver

Notes: This round was designed for the 1892 French Ordinance revolver, and some other manufacturers also made revolvers in this chambering. Some single-shot rifles were also chambered for the 8mm Lebel Revolver cartridge. It's an average handgun in lethality and stopping power, but is considered obsolete these days, and no longer manufactured. It can be handloaded using .32-20 cases as a starting point, but the .32-20 itself is not a common round. .32 Smith & Wesson ammunition can be fired out of a revolver that is chambered for 8mm Lebel, but the case will bulge slightly when the charge goes off, and accuracy will be poor.

Other Names: 8mm Lebel, 8mm Reglementaire Francaise, 8mm French Ordnance
Nominal Size: 8x27mm
Actual Size: 8.2x27.18mm
Case Type: Straight
Weight: 1.44 kg per box of 100; Price: $46 per box
Magazines:

Per round: 0.012 kg			

8mm Nambu

Notes: This cartridge was used only by Japanese forces. It was introduced in 1904 for use in Japanese service pistols, and used until the end of World War 2. After that war, veterans of the Pacific Theater brought home a lot of Nambu pistols as war trophies (especially US soldiers and Marines), but ammunition for those pistols has been hard to find, since most stocks of that ammunition were destroyed by occupying US troops after World War 2. Genuine Nambu cartridges are even more collector's items than the pistols are, and most of those who actually shoot their Nambu pistols do so with handloaded rounds. In the 1980s, a company in Illinois actually manufactured 8mm Nambu rounds for a short time, but no company has done so in nearly two decades. The round's light powder charge and light bullet limits its effectiveness.

Nominal Size: 8x21mm
Actual Size: 8.13x21.85mm
Case Type: Necked
Weight: 1.14kg per box of 100; Price $36 per box
Magazines:

Per round: 0.009 kg	6-round box: 0.1 kg	8-round box: 0.13 kg	30-round box: 0.44 kg

8mm Roth-Steyr

Notes: This round was designed to be fired from the Roth-Steyr automatic pistol and was never chambered in any other weapon. It was adopted in 1907, and was a popular war trophy to be brought home by Allied troops after World War 2, but the ammunition is now manufactured only by Fiocchi, in small amounts. It is a decent combat round, more powerful than the .32 ACP but less so than the .380 ACP.

Nominal Size: 8x19mm
Actual Size: 8.36x18.8mm
Case Type: Straight
Weight: 1 kg per box of 100; Price: $32 per box
Magazines:

Per round: 0.008 kg	10-round clip: 0.08 kg		

9x21mm

Notes: This round was specifically designed for use in countries where the civilian use of "military" cartridges, such as 9mm Parabellum, is illegal. The 9x21mm round is basically a 9mm Parabellum round with the case lengthened by 2 millimeters, but the round seated more deeply in the case, so the overall dimensions of the round are identical to the 9mm Parabellum. The same magazines, breech faces, feed ramps, etc., that are used for the 9mm Parabellum can also be used for the 9x21mm round. Ballistically, they are virtually identical.

In most of the European Union, the laws in certain countries that generated the 9x21mm round are being changed. It is likely that in the future, the conditions that created the 9x21mm round will disappear, and possibly, the 9x21mm round with it.

Other Names: 9mm IMI
Nominal Size: 9x21mm

Actual Size: 9.02x21.08mm
Case Type: Straight
Weight: 13.5 kg per case of 1000; Price: $220 per case
Magazines:

Per round: 0.011 kg	8-round box: 0.16 kg	10-round box: 0.19 kg	11-round box: 0.2 kg
12-round box: 0.22 kg	13-round box: 0.24 kg	14-round box: 0.25 kg	15-round box: 0.27 kg
16-round box: 0.29 kg	17-round box: 0.3 kg	18-round box: 0.32 kg	21-round box: 0.37 kg
26-round box: 0.45 kg			

9mm Action Express

Notes: This round was designed in 1988 by Action Arms Ltd. It is basically a .41 Action Express round necked down to take a 9mm Parabellum bullet. It is designed to allow 9mm Parabellum pistols and carbines to take a more powerful bullet with a minimum of modifications, or allow .41 Action Express weapons to be taken down to a smaller caliber. The 9mm Action Express has been tested in a number of existing weapons and is offered commercially in a few. It is not being commercially manufactured at present, but is easily handloaded.

Other Names: 9mm AE
Nominal Size: 9x22mm
Actual Size: 9.02x22mm
Case Type: Necked
Weight: 1.4 kg per box of 100; Price: $44 per box
Magazines:

Per round: 0.011 kg	10-round box: 0.2 kg		

9mm Belgian Nagant

Notes: Based on a Hungarian modification of a .380 ACP round, the 9mm Belgian Nagant uses a larger, heavier round than the .380 ACP, but not nearly enough propellant to avoid making the 9mm Belgian Nagant round a much weaker round than the .380 ACP (or for that matter, most other 9mm rounds). The round is also rimmed, as it was designed for a revolver. The 9mm Belgian Nagant round was for a short time considered for use in the Frommer Stop automatic pistol, but the results were unsatisfactory, and the idea dropped quickly. The 9mm Belgian Nagant is considered obsolete, but can be made using .357 Magnum or .38 Special brass.

Other Names: 9mm Nagant, 9mm Frommer
Nominal Size: 9x22mm
Actual Size: 9.47x22.3mm
Case Type: Straight
Weight: 1.39 kg per box of 100; Price: $50 per box
Magazines:

Per round: 0.013 kg			

9mm Browning Long

Notes: This was once a popular handgun cartridge in Europe, but was never used by US handgun manufacturers. It was introduced in 1903 as one of the chamberings for the Browning M-1903 pistol, and thereafter used in several other pistols. In the US, it is sort of a curiosity round, never officially adopted by any manufacturer, but sometimes used in weapons bought from Europe or seized as war trophies. It is a decent combat round, but easily surpassed by more modern rounds. It is basically considered obsolete, but can be handloaded, and is still manufactured in some out-of-the-way areas.

Other Names: 9x20mmSR, 9mm Swedish m/07
Nominal Size: 9x20mm
Actual Size: 9.02x20.32mm
Case Type: Straight
Weight: 1.3 kg per box of 100; Price: $42 per box
Magazines:

Per round: 0.01 kg	7-round box: 0.13 kg	8-round box: 0.15 kg	

9mm Dillon

Notes: Still regarded as a wildcat round, the 9mm Dillon was designed Randy Shelley and Rob Leatham for IPSC competition. Work on the round was completed in 1988, but it was not until 1991, when Rob Leatham began using it for IPSC competition, that the 9mm Dillon gained some sort of semi-acceptance. Nonetheless, the 9mm Dillon remains a rare round, with the pistols firing it even rarer. The 9mm Dillon is essentially a 10mm Colt case necked down to accept a 9mm bullet modified from the .38 Super round. The use of a 10mm case allows the round to produce very high pressures without failing, and the reduced-size round essentially creates a

sabot-like effect.
Other Names: 9x25mm Dillon
Nominal Size: 9x25mm
Actual Size: 9.07x25.15mm
Case Type: Necked
Weight: 1.43 kg per box of 100; Price: $52 per box
Magazines:

Per round: 0.013 kg	17-round box: 0.37 kg		

9mm FAR

Notes: Like the 10mm FAR below, the 9mm FAR is a proprietary Tanfoglio round that was used by only a few of their pistols, primarily in the Force series. Like the 10mm FAR, the 9mm FAR is basically a hotloaded version of a .45 ACP round, with the case necked down to take a 9mm Parabellum bullet. This gives the 9mm FAR excellent stopping power and good penetration, though not equaling the heavier 10mm FAR. The round and the pistols are no longer in production today, and those who have their pistols are generally forced to go to handloaders or handload the rounds themselves.
Nominal Size: 9x24mm
Actual Size: 9.02x23.96mm
Case Type: Necked
Weight: 1.32 kg per box of 100; Price: $50 per box
Magazines:

Per round: 0.012 kg	16-round box: 0.34 kg	17-round box: 0.36 kg	

9mm Glisenti

Notes: This round was first developed for the Italian M-10 Glisenti pistol, and was subsequently chambered in a variety of pistols and submachineguns, as it was the official Italian military pistol cartridge in both World War 1 and World War 2. The size is almost identical to the 9mm Parabellum, but the powder load is not anywhere near as heavy. 9mm Parabellum can often be loaded into a weapon designed for 9mm Glisenti, but this should never be done, because the 9mm Parabellum cartridge is much more powerful and will cause a chamber explosion. The only manufacturer now making the 9mm Glisenti is Fiocchi, but it may be easily handloaded starting with 9mm Parabellum cases.
Nominal Size: 9x19mm
Actual Size: 9.02x19.05mm
Case Type: Straight
Weight: 1.21 kg per box of 100; Price: $38 per box
Magazines:

Per round: 0.01 kg	7-round box: 0.12 kg	8-round box: 0.14 kg	

9mm Largo

Notes: This cartridge was designed in 1910 for the Danish Bergmann-Bayard pistol. The Spanish, however, were the largest users of this round, chambering dozens of pistols and even some submachineguns for the cartridge. This round, however, has never been manufactured in the US, and pistols chambered for the 9mm Largo round in the US and Canada are largely war trophies or military surplus items. It is basically a longer version of the .38 Automatic round. Handloaders will find that virtually any 9mm bullet will work in the 9mm Largo case, but results may vary wildly, of course. The round has a good punch and decent penetration, but tends to produce a lot of muzzle blast and barrel wear.
Other Names: 9mm Bergmann-Bayard, 9mm Bayard Long, 9mm Bayard, 9mm Astra, 9mm Bergmann #6
Nominal Size: 9x23mm
Actual Size: 9.02x23.11mm
Case Type: Straight
Weight: 14.75 kg per case of 1000; Price: $240 per case
Magazines:

Per round: 0.012 kg	7-round box: 0.15 kg	8-round box: 0.17 kg	10-round box: 0.21 kg
16-round box: 0.31 kg	20-round box: 0.39 kg	25-round box: 0.48 kg	30-round box: 0.57 kg
32-round box: 0.6 kg	36-round box: 0.67 kg	40-round box: 0.75 kg	

9mm Makarov

Notes: This cartridge was adopted at the end of World War 2, and has become the standard Russian pistol cartridge. It is also used in several submachineguns. It may have been based on an experimental German cartridge, the 9mm Ultra. It has more power than a .380 ACP, but less than a 9mm Parabellum, and is considered underpowered.

In recent years an attempt has been made to improve this cartridge, primarily for use in submachineguns. This led to the 9mm Makarov Hi-Impulse round. This bullet is mildly pointed (as opposed to the rounded 9mm Makarov bullet), and the round is loaded with more propellant. Triple all prices for this ammunition.

Other Names: 9mm PM, 9x18mm Russian, 9mm Stechkin, 9mm Type 59
Nominal Size: 9x18mm
Actual Size: 9.22x18.03mm
Case Type: Straight
Weight: 12 kg per case of 1000; Price: $190 per case
Magazines:

Per round: 0.01 kg	5-round box: 0.09 kg	6-round box: 0.11 kg	7-round box: 0.12 kg
8-round box: 0.14 kg	10-round box: 0.17 kg	12-round box: 0.2 kg	15-round box: 0.24 kg
18-round box: 0.28 kg	20-round box: 0.31 kg	22-round box: 0.34 kg	25-round box: 0.39 kg
27-round box: 0.42 kg	30-round box: 0.46 kg	32-round box: 0.49 kg	40-round box: 0.61 kg
67-round helical: 1.03 kg			

9mm Mauser

Notes: This round was developed as a alternate round for the Mauser pistol, specifically for export to Africa and South America. The round and the version of the Mauser that chambered it had a short life and were discontinued by Mauser in 1914. It was revived in 1933 for the Swiss Neuhausen submachinegun, and later for the Austrian Steyr-Solothurn. Manufacture then resumed in several countries, most notably in Hungary, where it was used until well after World War 2. However, it is not being manufactured now, and is a collector's item. The 9mm Mauser round is very powerful, much more so than the 9mm Parabellum, and approaching the power of the .38 Super round. Handloaders will discover that they may have to make the cases from scratch or from .357 Magnum rounds, as they are very long cases.

Other Names: 9mm Mauser Pistol
Nominal Size: 9x25mm
Actual Size: 9.02x24.92mm
Case Type: Straight
Weight: 1.58 kg per box of 100; Price: $50 per box
Magazines:

Per round: 0.013 kg	20-round box: 0.42 kg	40-round box: 0.8 kg	

9mm Parabellum

Notes: Besides being the most common pistol cartridge in the world, the 9mm Parabellum is also the most common submachinegun cartridge in the world. It was introduced in 1902 and has been adopted by practically every non-Communist country in the world since then. Though it was quite popular from its inception worldwide, it was not popular in the US until 1951, when the first domestically-built handguns were chambered for it. Lately, however, the 9mm Parabellum round has been criticized for its lack of stopping power; many police departments are moving to .40 or 10mm-firing handguns, and the militaries of several countries are moving back to the .45 ACP round for its special operations forces.

A subsonic version of this cartridge is made for use with silenced weapons. Triple all ammunition costs for this ammunition. An armor-piercing version of the 9mm Parabellum round also exists; double all costs for this round.

Other Names: 9mm Luger, 9x19mm, 9mm Patrone '08
Nominal Size: 9x19mm
Actual Size: 9.02x19.15mm
Case Type: Straight
Weight: 12.25 kg per case of 1000; Price $200 per case
Magazines:

Per round: 0.01 kg	6-round box: 0.11 kg	7-round box: 0.13 kg	8-round box: 0.14 kg
8-round clip: 0.08 kg	9-round box: 0.16 kg	10-round box: 0.17 kg	10-round clip: 0.1 kg
11-round box: 0.19 kg	12-round box: 0.2 kg	13-round box: 0.21 kg	14-round box: 0.23 kg
15-round box: 0.25 kg	16-round box: 0.26 kg	17-round box: 0.28 kg	18-round box: 0.29 kg
19-round box: 0.3 kg	20-round box: 0.32 kg	22-round box: 0.35 kg	24-round box: 0.38 kg
25-round box: 0.4 kg	26-round box: 0.41 kg	28-round box: 0.44 kg	30-round box: 0.47 kg
32-round box, drum, or snail drum: 0.5 kg	33-round box: 0.52 kg	34-round box: 0.53 kg	35-round box: 0.55 kg
36-round box: 0.56 kg	36-round helical: 0.57 kg	40-round box or drum: 0.62	50-round box or drum: 0.77

		kg	kg
50-round helical: 0.79 kg	60-round drum: 0.92 kg	64-round helical: 1 kg	71-round drum: 1.08 kg
100-round helical: 1.56 kg	100-round C-Mag: 1.52 kg	108-round drum: 1.64 kg	

9mm SPS

Notes: Fired by the Russian SPS (formerly P-9 Gurza) pistol, Gepard SMG, and SP-2 SMG, the 9mm SPS round is a long-cased, hotloaded round that has superior penetration, range, and stopping power to most rounds in its class. It is a limited-use round that is not produced in large numbers and is used primarily by military special operations and special police units. The SPS round is produced only by TSNIITOCHMASH in Russia. Three versions are available; the SP-11 standard ball round (less common), and it's armor-piercing counterpart, the SP-10 (considered the standard load). The SP-9 uses a soft lead bullet designed to reduce collateral damage by remaining primarily in the victim with little to no overpenetration; while causing more soft tissue damage. The SP-10 costs double the standard price below.

Other Names: 9mm Gurza, 9mm Gyurza, 9x21mm Russian
Nominal Size: 9x21mm
Actual Size: 9x20.8mm
Case Type: Straight
Weight: 1.45 kg per box of 100; Price: $53 per box

Magazines:

Per round: 0.013 kg	18-round box: 0.39 kg	20-round box: 0.43 kg	22-round box: 0.47 kg
30-round box: 0.63 kg	40-round box: 0.84 kg		

9mm Steyr

Notes: Once the standard Austrian military pistol cartridge, the 9mm Steyr round was designed for use in the Steyr M-1912 pistol. The 9mm Steyr round is very similar in size and appearance to the 9mm Largo round, and can be easily confused. The 9mm Steyr is now making a slow comeback; however, the best source is still handloading, though Fiocchi still manufactures the 9mm Steyr. It is a decent man-stopper, and a good combat pistol round.

Other Names: 9mm Mannlicher
Nominal Size: 9x23mm
Actual Size: 9.02x22.96mm
Case Type: Straight
Weight: 1.46 kg per box of 100; Price: $46 per box

Magazines:

Per round: 0.012 kg	7-round box: 0.15 kg	8-round box: 0.17 kg	8-round clip: 0.09 kg
11-round box: 0.22 kg	18-round box: 0.35 kg	32-round box: 0.6 kg	

9mm Ultra

Notes: This round was first introduced for the Walther PP Super pistol in 1972. It was designed specifically for the West German Police, and was not available on the open market until 1975. Since then, many pistols have been chambered for 9mm Ultra, especially after surplus West German Police pistols were sold after they discontinued the use of the round. The 9mm Ultra round was meant to allow the German Police to continue to carry the light, handy pistols they favored yet have a more powerful cartridge, but this experiment was not successful, as the 9mm Ultra really demands a heavier weapon or acceptance of a lot of recoil and muzzle blast. (German Police eventually realized they might as well carry 9mm Parabellum weapons.) The round is slightly more effective than the .380 ACP, and slightly less effective than the 9mm Parabellum. Several European manufacturers still make the 9mm Ultra.

Other Names: 9mm Police, 9x18mm Police
Nominal Size: 9x18mm
Actual Size: 9.02x18.29mm
Case Type: Straight
Weight: 8.05 kg per case of 1000; Price: $190 per case

Magazines:

Per round: 0.009 kg	7-round box: 0.12 kg	8-round box: 0.13 kg	13-round box: 0.2 kg

9mm Ultra

Notes: The 9mm Ultra round was designed specifically for the West German police of the time (early to mid-1970s), as at the time, they were prohibited from using military cartridges. It was based on a round developed for the Luftwaffe in 1936, but did not see much use. It later saw some sales on the international market, again in countries whose governments did not allow civilians to use military rounds. The Ultra, just a bit shorter than the 9mm Parabellum and with the same bullet, was meant to near-duplicate the characteristics of the 9mm Parabellum round. More effective than the .32 or .380 ACP carried by most police of the time, the pistols

firing the 9mm Ultra were not as heavy or bulky than one firing 9mm Parabellum. However, as the terrorist threat began ramping up in the 1990s, most police began carrying more powerful 9mm Parabellum pistols. Despite the common nominal size, 9mm Makarov-firing pistols cannot chamber the 9mm Ultra, and vice-versa.

Quite a few pistols in this chambering were produced in the 1870s, 1980s, and 1990s; the West German police used it in the Walther PP Super when they used a 9mm Ultra sidearm, and Bernardelli, Benelli, SIG Sauer, Walther, and Star, amongst others. But when interest waned, it waned quickly. The West Germans started phasing the cartridge out in the late 1980s, and soon thereafter, it was a rare choice to civilians as well, and production of the round was almost stopped. Today, despite the hundreds of thousands produced. The round is not an easy find, especially in the Western Hemisphere and the Far East. American companies do not manufacture is, and only GECO and Hirtenberger in Europe make it, and they make only small lots. Most 9mm Ultra rounds were fired in firearms training and practice, many were also destroyed.

Nominal Size: 9x18mm
Actual Size: 9.02x18.29mm
Case Type: Straight
Weight: 0.93 kg per box of 100; Price: $37 per box

Magazines:

Per round: 0.009 kg	7-round box: 0.12 kg	8-round box: 0.13 kg	12-round box: 0.19 kg
13-round box: 0.2 kg			

9mm Winchester Magnum

Notes: The 9mm Winchester Magnum appears to have been introduced in 1977, though a decade later it was still an extremely rare round, and it was not listed in Winchester catalogs until 1988. It was not chambered in many weapons, most notably handguns like the Wildey, Coonan, and AMT Automag III, and single shot weapons like certain Thompson/Center handguns. It looks similar to the 9mm Mauser round, but is much bigger, and more powerful than even that round. Unfortunately, factory rounds are difficult to find today, though handloads can be made from .357 Magnum rounds.

Nominal Size: 9x29mm
Actual Size: 9.02x29.46mm
Case Type: Straight
Weight: 1.89 kg per box of 100; Price: $60 per box

Magazines:

Per round: 0.015 kg	7-round box: 0.19 kg	8-round box: 0.22 kg	

10mm Auto

Notes: This cartridge was developed in 1983 for the Bren-Ten pistol. The ammunition is literally chock-full of propellant and is almost like a wildcat round. The 10mm Colt rivals the power of the .41 Magnum, and even approaches the .357 Magnum under some circumstances. Stopping power and body armor penetration are excellent, but recoil with the round is typically high. In addition, the long round requires a handgun with a large grip, making things difficult for small hands.

Other Names: 10mm Automatic, 10mm Colt, 10mm Colt Automatic, 10mm Bren-Ten
Nominal Size: 10x25mm
Actual Size: 10.16x25.15mm
Case Type: Straight
Weight: 20.38 kg per case of 1000; Price: $330 per case

Magazines:

Per round: 0.016 kg	7-round box: 0.21 kg	8-round box: 0.23 kg	9-round box: 0.26 kg
10-round box: 0.28 kg	11-round box: 0.31 kg	12-round box: 0.33 kg	14-round box: 0.38 kg
15-round box: 0.41 kg	17-round box: 0.46 kg	20-round box: 0.53 kg	28-round box: 0.73 kg
30-round box: 0.78 kg	32-round box: 0.83 kg		

10mm FAR

Notes: A proprietary Tanfoglio round, the 10mm FAR was chambered in very few pistols, primarily in their Force line of pistols. It did not sell well and the pistols and ammunition are rare today. It's sort of a .45 ACP round necked down to 10mm, though it is also more hot-loaded than the .45 ACP and has superior stopping power and penetration. The round and the pistols are no longer in production today, and those who have their pistols are generally forced to go to handloaders or handload the rounds themselves.

Nominal Size: 10x24mm
Actual Size: 10.16x23.96mm
Case Type: Necked
Weight: 1.76 kg per box of 100; Price: $63 per box

Magazines:

Per round: 0.016 kg	11-round box: 0.31 kg		

10mm Magnum

Notes: The 10mm Magnum round is essentially a 10mm Auto cartridge with a stretched case, more propellant, and a somewhat heavier bullet (though of the same size as the 10mm Auto's bullet). The idea was partially experimentation, but also partially to approximate .41 Magnum performance in a cartridge suitable for automatic pistols. The 10mm Magnum round is in fact much more powerful than the 10mm Colt, but it was also basically a limited-production niche round – the only production weapon to fire it was a version of AMT's Automag produced by IAI, the Automag IV. Most other weapons to fire the 10mm Magnum are specially modified versions of existing pistols and revolvers, done by tinkering gunsmiths. Ammunition was once made in small lots by Sierra, but production ended over a decade ago, and the 10mm Magnum is very much the realm of handloaders these days.

Nominal Size: 10x32mm
Actual Size: 10.16x31.8mm
Case Type: Straight
Weight: 2.27 kg per box of 100; Price: $82 per box
Magazines:

Per round: 0.021 kg	7-round box: 0.26 kg		

10mm Wildey Magnum

Notes: Not to be confused with the new 10mm Magnum round, the 10mm Wildey uses a case as long as the .357 Peterbilt, but larger to use a proprietary 10mm bullet which is longer than that used on the 10mm Colt or 10mm Magnum. It essentially starts with the .45 Winchester Magnum case, and necks it down to 10mm, leaving a round with a bottlenecked design. One commentator says that Wildey would "stuff insane amounts of powder into handgun cases." It is also said that the 10mm Wildey gives at least three times the power of a 10mm Colt round.

Though it is no longer in production and hasn't been since the mid-1990s, cases and primers can still be bought from Starline Brass. (This brass and the primers can also be used to handload the .338 Spectre round.) Molds are sold to make the proprietary 10mm bullet. Originally, AMT, Irwindale Arms Incorporated, and High Standard made factory rounds of 10mm Wildey; however, the round was never made in large amounts and is difficult to find today. Most Wildey shooters decided to go with the more powerful Wildey concoctions, and so the 10mm Wildey and the pistol firing it did not sell well. Today, it is an obsolete round, and most 10mm Wildey rounds are the province of handloaders.

Other Names: 10mm Wildey, .41 Wildey Magnum
Nominal Size: 10x33mm
Actual Size: 10.16x32.89
Weight: 2.13 kg per box of 100; Price $85 per box
Magazines:

Per round: 0.021 kg	7-round box: 0.27 kg		

10.4mm Italian Ordnance

Notes: Originally developed for the Model 1874 service revolver, the 10.4mm Italian Ordnance was also used in the Bodeo M-1889 (also known as the Glisenti Revolver). It was found as a blackpowder and a smokeless powder round. They were common war trophies in World Wars 1 and 2, along with the ammunition for them, but today, the ammunition is available only in small amounts from Fiocchi.

Other Names: 10.4mm Italian Revolver, 10.35mm Italian Revolver, 10.35mm Glisenti
Nominal Size: 10.4x23mm
Actual Size: 10.72x22.61mm
Case Type: Straight
Weight: 2.04 kg per box of 100; Price: $66 per box
Magazines:

Per round: 0.016 kg			

10.6mm German Ordnance

Notes: Primarily produced for the Models 1879 and 1883 Reichsrevolver (and therefore often called the 10.6 Reichsrevolver), this round was produced in that late 1800s period when it was felt that handguns were best made to fire high-caliber, low-velocity ammunition. This was because the gunpowders available at the time generally had less power than today's ammunition, leading to the mistaken belief that it was best to make the ammunition to fire larger calibers. However, most firearms manufacturers had already begun to realize that such large calibers were unnecessary, and the 10.6mm German Ordnance round was essentially obsolete even as it was being introduced. The 10.6mm German Ordnance round is believed to be a development of the .44 Russian round.

Other Names: 10.6mm Reichsrevolver (or Reichs Revolver), 10.6mm Service Ordnance, 10.55mm German
Nominal Size: 10.6x25mm

Actual Size: 10.43x24.64mm
Case Type: Straight
Weight: 1.85 kg per box of 100; Price: $67 per box
Magazines:

Per round: 0.017 kg			

11.35mm Schouboe Auto

Notes: This round was designed by Danish Army officer Jens Torring Schouboe specifically for use in his Model 1907 pistol. He wanted to design a more powerful version of his .32 ACP Model 1903 firing the then-new .45 ACP round, but found that the Model 1903 did not scale up well to handle the more powerful round, and therefore designed a custom round for it, working with the designers at the German firm of DWM. The odd caliber of course doomed the design from the start, and only 50 Model 1907s were built. Today, the 11.35mm Schouboe Auto round is almost impossible to find; most such rounds today are handloaded only by very skilled handloaders, and there are few Model 1907s left to fire them. The bullets are very light at 55 grains, since they have a wooden core with a thin steel jacket. This greatly limits penetration, but the bullet flies far and flat and the pistol is quite accurate. Furthermore, the round has only 10.4 grains of powder in it, a very light load to match the light bullet and further decrease stress on the mechanism and frame. Later iterations of this round used a thicker aluminum alloy jacket for the bullet instead of steel, making the bullet heavier, but not really increasing performance.

Other Names: 11.35mm Dansk Schouboe, 11.35mm DRS Schouboe, .45 Schouboe
Nominal Size: 11.35x18mm
Actual Size: 11.35x18.14mm
Case Type: Straight
Weight: 0.4 kg per box of 100; Price: $74 per box
Magazines:

Per round: 0.004 kg	6-round box: 0.12 kg		

12.3mm UDAR

Notes: The 12.3mm UDAR round is similar in many respects to the 12.5mm DOG round, as both revolvers were designed for the same purpose. The UDAR round is much longer than the DOG round, but slightly smaller in caliber, and is also a necked-down 32-gauge brass shell round. Costs below are for a standard ball round. The low-recoil ball round costs 1.2 times normal, AP costs double, and irritant gas triple. Other round types are normal cost.

Twilight 2000 rounds: The UDAR round is very rare in the Twilight 2000 timeline.
Nominal Size: 12.3x50mm
Actual Size: N/A
Case Type: Necked
Weight: 6.35 kg per box of 100; Price: $238 per box
Magazines:

Per round: 0.059 kg			

12.5mm DOG

Notes: Designed specifically for the Russian DOG-1 revolver, the 12.5mm DOG cartridge is a huge round made by converting 32-gauge brass shotshells and necking them down to take the 12.5mm round. Despite the large side of the cartridges, the weight and size of the various rounds fired give the 12.5mm DOG a relatively short effective range. The 12.5mm DOG round comes in several different types; the costs below are for a standard ball round. An armor piercing round in this caliber costs double; an irritant gas round costs triple. Other rounds are normal cost.

Twilight 2000 Notes: This round does not exist in the Twilight 2000 timeline.
Nominal Size: 12.5x35mm
Actual Size: N/A
Case Type: Necked
Weight: 4.73 kg per box of 100; Price: $172 per box
Magazines:

Per round: 0.043 kg			

12.5mm Gnom

Notes: Used only by the OTs-20 Gnom special purpose revolver, this is another round made from a modified 32-gauge brass shotshell. It is, however, longer and slightly more powerful than the 12.5mm DOG cartridge. It fires some of the same sort of rounds as the 12.5mm DOG, but with a bit more power (unfortunately, not necessarily measurable in game terms, except for the buckshot round). Like the DOG, the heavy size and weight of the rounds and loads gives the 12.5mm Gnom cartridge a relatively short range, though the extra propellant in the cartridge and the longer length of the barrel of the revolver that fires it make it more effective. The

costs below are for a standard ball round or buckshot round; AP rounds cost twice as much.

Twilight 2000 Notes: This is an extremely rare round in the Twilight 2000 timeline.

Nominal Size: 12.5x40mm

Actual Size: N/A

Case Type: Necked

Weight: 5.4 kg per box of 100; Price: $196 per box

Magazines:

Per round: 0.049 kg			

.22 TCM

Notes: The .22 TCM (Tuason Craig Micromagnum) round is the brainchild of Craig Tuason, a gunsmith and handloader known variant chamberings in standard pistol designs and wildcat cartridges. The inspirations for the round are said to be the 5.7mm FN and .224 BOZ – to put rifle-like power in a handgun cartridge. It is a proprietary bottlenecked cartridge whose parent cartridge is the 5.56mm NATO, but in which the case has been cut down to about half its normal length. Before the round reached SAAMI qualification and mainstream status, it was known as the .22 Micro-Mag. The round also uses a much smaller bullet than its parent cartridge, less than a third the size of the 5.56mm's bullet. The .22 TCM trades bullet mass for increased velocity and lowered recoil, and is essentially hotloaded for its size. The .22 TCM keeps the same shoulder as the 5.56mm NATO, and the round is about the same length as a .38 Super round. The round normally feeds from magazines designed for .38 Super rounds. The standard bullet for the .22 TCM is a 40-grain jacketed hollowpoint (39 grains for the .22 TCM 9R round). Muzzle velocity in the standard loading is over 640 meters per second; at 25 meters, the striking power is 1780 newtons. The .22 TCM, when used in most of the pistols designed for it, unfortunately produces high muzzle flash, and is called by some firearms experts as the "flamethrower.)

A variant of the .22 TCM, the .22 TCM 9R, has a shorter, more deeply-seated bullet, which was designed specifically for Glock pistols modified to take the .22 TCM round. It was designed to take the smaller grips of 9mm Glocks, and be used in a minimally-modified 9mm Glock pistol. It has the same overall length as a 9mm Parabellum round, and can feed from 9mm Glock magazines.

Currently, the .22 TCM is used in a few RIA, Armscor, and Glock modifications, both pistols and rifles. Most of the factory ammunition is made by Armscor in the Philippines. Most pistols which shoot the .22 TCM round are modified 1911s; many of these are modified from 9mm Parabellum-firing 1911s, and is most cases, the .22 TCM-firing handgun is sold with a 9mm-parts-swap kit included. SAAMI certification for the .22 TCM round is a very recent thing (as of Dec 2017), and handloading information about the round is scarce.

Other Names: .22 Micro Mag

Nominal Size: 5.56x26mm

Actual Size: 5.69x25.86mm

Weight: 660 kg per case of 1000; Price $260 per case

Magazines:

Per round: 0.006 kg	5-round box: 0.07 kg	18-round box: 0.2 kg	

.25 ACP

Notes: This is one of the primary cartridges of those infamous "Saturday Night Specials" that criminals and punks like so much. It was introduced in 1908 with the Colt Vest Automatic Pistol, and in Europe with the FN-Browning Baby. Since then, over a dozen companies have made pistols chambered for this round. The velocity of the .25 ACP is surprising, however, it also has surprisingly little stopping power, due to the light weight of its bullet. Though it is good for little more than a backup or self-defense weapon, it is better than nothing at all.

Other Names: .250 Automatic Colt Projectile, .25 Auto, .25 Automatic, 6.35mm Auto

Nominal Size: 6.35x15.5mm

Actual Size: 6.38x15.75mm

Case Type: Straight

Weight: 5 kg per case of 1000; Price $80 per case (C/S)

Magazines:

Per round: 0.004 kg	5-round box: 0.04 kg	6-round box: 0.05 kg	7-round box: 0.05 kg
8-round box: 0.06 kg	9-round box: 0.06 kg	10-round box: 0.07 kg	

.25 NAA

Notes: This round was designed in 1999 specifically for the North American Arms (NAA) Guardian series of pocket pistols. The idea was simple: to put more power into the .25 ACP cartridge. JB Wood therefore used a .32 ACP case and necked it down to take the .25 ACP's bullet. The result provides somewhat more power than a .25 ACP, but subtracts slightly from the range in the short barrels of the NAA Guardian. (A longer barrel might yield better results.) The ammunition is made by Cor-Bon, but was not produced commercially until 2002.

Twilight 2000 Notes: This cartridge is not available in the Twilight 2000 timeline.

Nominal Size: 6.35x17mm
Actual Size: 6.38x17.27mm
Case Type: Necked
Weight: 6.88 kg per case of 1000; Price: $110 per case
Magazines:

Per round: 0.006 kg	6-round box: 0.06 kg		

.30 Wildey Magnum

Notes: A rare chambering in a rare pistol, the parent case of the .30 Wildey Magnum is variously said to be the .30 Carbine (possible), .30 Mauser (also possible), and the .32 ACP (impossible). It is also just as likely that the cases were made specifically for this round. If this is the case, handloading would be very difficult, since the handloader would have to find a case that could be properly modified, or form them from scratch – and in any case this would be a lot of trial-and-error work. On the other hand, one does from time to time see these rounds offered for sale on the internet. The .30 Wildey Magnum uses a case almost as long as the .357 and .44 Magnum, with a hotload of propellant pushing a 7.85mm bullet. The .30 Wildey Magnum is a very fast round with a lot of energy and capable of easily defeating most body armor and even in some cases putting a crack in an engine block. Unfortunately, factory loadings of this round are no longer being made, and they were considered a bit small by most Wildey prospective buyers of the time, even though they are essentially equal to a .357 Magnum round.

Other Names: .30 Wildey, .30 Magnum
Nominal Size: 7.62x33mm
Other Names: 7.85x32.89mm
Case Type: Straight
Weight: 1.27 per box of 100; Price $51 per box
Magazines:

Per round: 0.013 kg	7-round box: 0.16 kg		

.32 ACP

Notes: The .32 ACP round was introduced in 1899 for use in John Browning's first successful automatic pistol design. However, the .32 ACP did not really come into its own until Colt license-produced another John Browning design, the M-1903 Pocket Hammerless. Since then, it has become one of the most popular pistol cartridges ever produced, though interest has steadily waned since the end of World War 2 in favor of larger-caliber rounds. Nonetheless, virtually every pistol company that now exists or has ever existed has at some time or another produced a pistol chambered for .32 ACP, and some revolvers have also been chambered for the round. In Europe, the .32 ACP round is still relatively popular; however, in the US, the .32 ACP is usually relegated to backup or self-defense weapons. .32 ACP is considered pretty much the minimum-power round for any serious self-defense potential. Several different loadings of the .32 ACP are made, and it is still a very common factory-made cartridge worldwide; it is also easy to handload, as brass and bullets are readily available.

A subsonic version of the .32 ACP round is made for special applications (generally for use in silenced weapons). Triple all costs for this version of the .32 ACP.

Other Names: 7.65mm Browning, 7.65mm Automatic, .32 Auto, .32 Automatic, 7.65mm Auto
Nominal Size: 7.65x17mm
Actual Size: 7.85x17.27mm
Case Type: Straight
Weight: 7.37 kg per case of 1000; Price: $130 per case
Magazines:

Per round: 0.067 kg	5-round box: 0.07 kg	6-round box: 0.08 kg	7-round box: 0.09 kg
8-round box: 0.1 kg	9-round box: 0.11 kg	10-round box: 0.12 kg	11-round box: 0.13 kg
12-round box: 0.14 kg	13-round box: 0.15 kg	15-round box: 0.17 kg	20-round box: 0.22 kg
33-round box: 0.35 kg			

.32 H&R Magnum

Notes: This round was introduced in 1984 for use in H&R's Model 504, 532, and 586 revolvers. It was soon followed by a number of other companies, and became popular. Though H&R went out of business in the late 1980s (it returned in 2000, but is not producing handguns), Federal produces factory loads for .32 H&R Magnum. The .32 H&R Magnum is basically longer version of the .32 Smith & Wesson Long. (Revolvers chambered for the .32 H&R Magnum will also accept .32 Smith & Wesson and .32 Smith & Wesson Long.) It is a decently-powered round, more powerful than the .38 Special round.

Other Names: .32 Harrington & Richardson Magnum
Nominal Size: 7.9x27mm
Actual Size: 7.92x27.43mm
Case Type: Straight

Weight: 13.5 kg per case of 1000; Price: $220

Magazines:

Per round: 0.011 kg	4-round box: 0.09 kg		

.32 Long Colt

Notes: This is simply a longer version of the .32 Short Colt round, developed at the same time, and using the same bullet. The notes are basically the same as the .32 Short Colt, though it is a little more effective. Chilean and Indian police still use revolvers that fire this round.

Other Names: .320 Revolver
Nominal Size: 8x23mm
Actual Size: 7.95x23.37mm
Case Type: Straight
Weight: 11.63 per case of 1000; Price: $190 per case

Magazines:

Per round: 0.009 kg			

.32 NAA

Notes: Similar in concept to the .25 NAA round, the .32 NAA is made by necking down a .380 ACP case to accept a .32 ACP bullet. It was made specifically for the NAA Guardian and has not as yet been chambered in any other weapons. The ammunition is made by Cor-Bon. It is a bit more powerful than the .32 ACP round, yet produces less recoil, and approaches the power of the .380 ACP cartridge.

Nominal Size: 7.65x17mm
Actual Size: 7.85x17.27mm
Case Type: Necked
Weight: 10.5 kg per case of 1000; Price: $170 per case

Magazines:

Per round: 0.008 kg	6-round box: 0.09 kg		

.32 Short Colt

Notes: This round was originally a blackpowder round introduced in 1875. The .32 Short Colt was actually more popular in Europe in its blackpowder form, where a large number of revolvers were chambered for it. The round has decent stopping power, but accuracy is not good. Winchester was still manufacturing this round until recently, though some Cowboy Shooting enthusiasts have demanded its return. It is easily handloaded starting with a number of similar rounds, like the .32 Smith & Wesson Short or .32 Smith & Wesson Long.

Other Names: .320 Revolver, .32 Police Positive
Nominal Size: 8x16mm
Actual Size: 7.95x16mm
Case Type: Straight
Weight: 8 kg per case of 1000; Price: $130 per case

Magazines:

Per round: 0.006 kg			

.32 Smith & Wesson

Notes: This is a very old cartridge, originally a blackpowder round, which appeared in 1878. It is largely a revolver round, and is almost never found in other types of firearms. It is small, light, cheap, and, you basically get what you pay for, as it is considered minimal for self-defense.

Other Names: .32 Smith & Wesson Short, DWM202, GR930
Nominal Size: 7.65x16mm
Actual Size: 7.92x15.5mm
Case Type: Straight
Weight: 7.63 kg per case of 1000; Price: $120 per case

Magazines:

Per round: 0.006 kg			

.32 Smith & Wesson Long

Notes: This cartridge was designed as a revolver round in 1903. It then had a flat-nosed bullet, and was called the .32 Colt New Police. Later the bullet was given its present ogive profile. The primary use these days for the .32 Smith & Wesson Long cartridge is

in free pistol target shooting. It is the smallest revolver cartridge that is considered adequate for US police officers.
Other Names: .32 Colt New Police, .32-44 Target, GR-391, 7.65x32mmR
Nominal Size: 7.65x24mm
Actual Size: 7.92x23.62mm
Case Type: Straight
Weight: 11.63 kg per case of 1000; Price: $190 per case
Magazines:

Per round: 0.009 kg	5-round box: 0.09 kg	6-round box: 0.1 kg	10-round box: 0.16 kg

.35 Smith & Wesson Auto

Notes: The .35 Smith & Wesson Auto was an unusual chambering even for its time (1910s-1920s), and public interest in the round was never high. Perhaps it's best known use is in the Smith & Wesson Clement designs, an early Smith & Wesson automatic pistol design. The pistol and the round never sold well; the .32 ACP version of the Clement pistol was much more popular and made a decent amount of sales, and was also sold until 1936, unlike the .35 Smith & Wesson-firing model, which ended production in 1924 due poor sales. The .35 version of the Clement appeared about a decade before the .32 ACP-firing Clement, and the Clement in .35 caliber was designed to compete with the Colt M1903 Pocket Hammerless and M1908 .380 ACP designs, amongst other similar pistols.

From the name, one might think that the .35 Smith & Wesson Auto would fall in bullet size between the .32 ACP and .380 ACP; however, this was a marketing ploy, and the actual bullet caliber was more like .31 caliber. The .35 Smith & Wesson Auto also did not perform as well as the .32 ACP pistols that the Clement was trying to replace; in addition, the RL price of the time was higher than the .32 ACP. Factory rounds for the .35 Smith & Wesson Auto have not been made in a very long time, though every so often some such factory ammunition appears in auction or private sales, particularly on the internet. However, in the late 00's an outfit called Buffalo Arms made small lots of .35 Smith & Wesson Auto ammunition. Handloaders do not often handle the round, since the .35 Clement pistol is rare and most examples are now shot out or otherwise not in firing condition. The round is now considered long obsolete, and original factory loads fetch a high price in sales.

Other Names: .35 Clement, .35 Smith & Wesson
Nominal Size: 8.89x25mm
Actual Size: 7.85x24.84mm
Weight: 0.96 per box of 100; Price $38 per box
Magazines:

Per round: 0.01 kg	7-round box: 0.12 kg		

.38 AMU

Notes: The .38 AMU (Army Marksmanship Unit) was designed by the AMU to chamber in the Smith & Wesson 52-A pistols they had Smith & Wesson specifically design for them. The round, like the pistol, is designed to be hyper-accurate as short ranges (about 25 meters max) and to have a flat trajectory and low recoil. The .38 AMU's parent case is the .38 Special; The round was clipped slightly, made rimless, and hotloaded. The rounds were each handloaded to a specific set of parameters, and the AMU eventually found a standard bullet, bullet weight, and propellant charge. This round was designed in 1958 because of the "staking effect" created by loading a rimmed round in a magazine. (This was well before pistols like the Desert Eagle that could take rimmed rounds.)

The ammunition for this pistol is so rare that only going to handloaders can give you the rounds, and they will probably charge a pretty penny for it. AMU-handloaded rounds are essentially nonexistent these days; the AMU later entered into a contract with Remington to produce limited lots of the cartridge, but these rounds are few and far between. Most of this ammunition was shot by the AMU, so not many factory or AMU-handloaded rounds exist these days.

Nominal Size: 9x29mm
Actual Size: 9.07x29mm
Weight: 1.5 kg per box of 100; Price $60 per box
Magazines:

Per round: 0.015 kg	8-round box: 0.12 kg		

.38 Casull

Notes: This round was designed to provide a cartridge equal to the .357 Magnum, while fitting in a 1911-type frame. In this case Dick Casull succeeded: in 1998, he created the .38 Casull round. It uses what looks like a .45 ACP case necked down to .38 caliber, but is actually a new case that takes advantage of the necked design. So far, only the CA-3900 fires the .38 Casull.

Nominal Size: 9x24mm
Actual Size: 9.09x23.88mm
Case Type: Necked
Weight: 1.55 kg per box of 100; Price: $50 per box
Magazines:

Per round: 0.012 kg	8-round box: 0.22 kg		

.38 Long Centerfire

Notes: This round began as a blackpowder rimfire cartridge that was quickly replaced by a centerfire round, and was therefore renamed .38 Long Centerfire. It was chambered in a number of single shot rifles and a few revolvers, but by 1900, was considered obsolete, even in its smokeless powder form. It began to be manufactured again in very small lots (at first after the 1993 film *Tombstone* for the reproduction of the 1873 Colt used in that movie), and is now still made (again, in *very* small lots) for the Cowboy Shooting crowd, mostly in the form of empty cases. The .38 Long Centerfire is also easily handloaded.

Other Names: .38 Long CF
Nominal Size: 9x26mm
Actual Size: 9.53x26.16mm
Case Type: Straight
Weight: 1.86 kg per box of 100; Price: $60 per box

Magazines:

Per round: 0.015 kg			

.38 Long Colt

Notes: The official US military handgun cartridge before the advent of the M-1911A1 and the .45 ACP round, the .38 Long Colt was also in common use by police forces in the late 19th and early 20th centuries. This means that quite a few weapons chambered for .38 Long Colt are still around. Ballistically, the .38 Long Colt is almost the equal of the .38 Special. Some old .38 Long Colt-firing revolvers will also chamber .38 Special or .357 Magnum cartridges, but this is a sign of extreme wear and these weapons should not be fired, especially with .357 Magnum ammunition. (This would probably destroy the revolver and injure the firer and anyone nearby.) Remington is now manufacturing .38 Long Colt ammunition again, as is Black Hills ammunition, in response to the demands of the Cowboy Shooting enthusiasts.

Nominal Size: 9x26mm
Actual Size: 9.07x26.16mm
Case Type: Straight
Weight: 16.88 per case of 1000; Price: $270 per case

Magazines:

Per round: 0.014 kg			

.38 Smith & Wesson

Notes: This old round was first designed for Smith & Wesson's hinged-frame revolvers in 1877. The .38 Smith & Wesson has been used all over the world, once being the most prevalent handgun cartridge in the world. It is well-suited to lightweight pocket revolvers, with relatively little recoil. At short range, the stopping power is excellent, but range falls off rapidly. Remington still manufactures .38 Smith & Wesson ammunition.

Other Names: .38 Webley, .38 Colt New Police, .38 Super Police, .38 Smith & Wesson Short, DM203, GR932, .380/200
Nominal Size: 9x20mm
Actual Size: 9.12x19.81mm
Case Type: Straight
Weight: 13 kg per case of 1000; Price: $210 per case

Magazines:

Per round: 0.01 kg			

.38 Special

Notes: This round was developed for the Smith & Wesson Military & Police revolver of 1902. It was originally a military-only cartridge, replacing the unsatisfactory .38 Long Colt. The police soon picked up on it, and it became the most common police revolver round for many decades. It is considered one of the best handgun cartridges ever made, with a combination of range, low recoil, and with proper barrel length, ability to penetrate body armor. It should be noted that any revolver that is chambered for the .357 Magnum cartridge can also chamber and fire the .38 Special cartridge (but not vice versa); the bullets and shells are the same size, but shorter.

Other Names: .38-44 Target, .38-44 High Velocity, .38 Smith & Wesson Special, .38 Colt Special
Nominal Size: 9x29mm
Actual Size: 9.07x29.46mm
Case Type: Straight
Weight: 19 kg per case of 1000; Price: $300 per case

Magazines:

Per round: 0.015 kg	10-round box: 0.27 kg	16-round box: 0.4 kg	33-round box: 0.8 kg

.38 Super

Notes: This round was introduced in 1929 to improve upon the .38 Automatic round. It is almost identical to the older round, but uses a more powerful propellant loading. It was a curiosity for many decades, but then many manufacturers at once seemed to pick up on the virtues of the round and began chambering pistols for them. The .38 Super has a flat trajectory at most ranges and performs better than a 9mm Parabellum round at the same ranges. It penetrates body armor better than a .45 ACP, but has inferior stopping power in most cases.

Other Names: .38 Super Automatic, .38 Super ACP
Nominal Size: 9x23mm
Actual Size: 9.09x22.86mm
Case Type: Straight
Weight: 14.88 kg per case of 1000; Price: $240 per case

Magazines:

Per round: 0.012 kg	7-round box: 0.15 kg	8-round box: 0.17 kg	9-round box: 0.19 kg
10-round box: 0.21 kg	12-round box: 0.24 kg	15-round box: 0.3 kg	16-round box: 0.32 kg
30-round box: 0.57 kg			

.40 Smith & Wesson

Notes: This round began as an experiment of a joint venture between Winchester and Smith & Wesson in 1989. The FBI was working with 10mm Colt-firing pistols and felt that while the stopping power and penetration of the 10mm cartridge was excellent, the round was too big and hot for everyday use, especially by female agents. They were therefore looking for a smaller round with comparable power. The power of the .40 Smith & Wesson rivals that of the .45 ACP, but the chamber pressures can be so great that a pistol has to be made especially to withstand it.

Other Names: .40 Smith & Wesson Auto
Nominal Size: 10x21mm
Actual Size: 10.16x21.59mm
Case Type: Straight
Weight: 17.5 kg per case of 1000; Price $280 per case

Magazines:

Per round: 0.014 kg	5-round box: 0.14 kg	6-round box: 0.16 kg	7-round box: 0.18 kg
8-round box: 0.2 kg	9-round box: 0.22 kg	10-round box: 0.24 kg	11-round box: 0.27 kg
12-round box: 0.29 kg	13-round box: 0.31 kg	14-round box: 0.33 kg	15-round box: 0.35 kg
16-round box: 0.37 kg	22-round box: 0.5 kg	25-round box: 0.57 kg	30-round box: 0.67 kg
35-round box: 0.78 kg			

.41 Action Express

Notes: The .41 Action Express round is a magnum-type round developed to give 9mm handguns much more power without having to do a large amount of modifications to them. The first factory loads were made in Israel in 1986. Handloading the .41 Action Express is difficult, since the case cannot be readily formed by modifying any other cases, though with extensive work, a .41 Magnum case can be used. The performance of the .41 Action Express round is similar to that of the .41 Magnum, though it is more pleasant to shoot and it is primarily a pistol rather than a revolver round.

Other Names: .41 AE, 10.4mm Action Express, 10.4mm AE
Nominal Size: 10.4x22mm
Actual Size: 10.41x22mm
Case Type: Straight
Weight: 18.75 kg per case of 1000; Price: $300 per case

Magazines:

Per round: 0.015 kg	6-round box: 0.17 kg	7-round box: 0.19 kg	8-round box: 0.22 kg
9-round box: 0.24 kg	10-round box: 0.26 kg	11-round box: 0.28 kg	12-round box: 0.31 kg
15-round box: 0.38 kg	20-round box: 0.49 kg	28-round box: 0.67 kg	32-round box: 0.77 kg

.41 Long Colt

Notes: Originally a blackpowder round designed for the Colt Lightning revolver, the .41 was for a while at the end of the 19th and early 20th centuries chambered in several revolvers, and was soon made into a smokeless propellant round. However, no production revolvers have been chambered for .41 Long Colt since the early 1930s. The .41 Long Colt is a lengthened .41 Short Colt round, designed at the same time as that round. The .41 Long Colt was quite popular during the time it and its revolvers were produced, but

it has long been obsolete. Stopping power (with smokeless powder) almost matches the .38 Special round, though it uses a slow, heavy bullet, and does not have the .38 Special's range or accuracy. Except for a small batch Winchester made in 1970, the .41 Long Colt has been out of production, and is in the realm of handloaders today.

Nominal Size: 10.2x29mm
Actual Size: 10.19x28.7mm
Case Type: Straight
Weight: 2.06 kg per box of 100; Price: $75 per box

Magazines:

Per round: 0.019 kg			

.41 Magnum

Notes: This has been a controversial cartridge since its inception in 1964. Many wonder what the need is for this round, since we already have the .357 Magnum and .44 Magnum. Greater stopping power can be put into the .357 Magnum by using heavier bullets, and the .41 Magnum cannot hope to approach the .44 Magnum in power or range. However, some people want something bigger than the .357, but do not want to have to deal with the blast and recoil of the .44 Magnum. The .41 Magnum is for them. However, it was never a very popular round, and few guns chamber it today.

Other Names: .41 Remington Magnum
Nominal Size: 10.4x31.8mm
Actual Size: 10.41x32.51mm
Case Type: Straight
Weight: 27.63 kg per case of 1000; Price: $440 per case

Magazines:

Per round: 0.022 kg	7-round box: 0.28 kg	9-round box: 0.35 kg	

.41 Short Colt

Notes: This round was developed in 1877 for use in Colt's new double-action revolver, and it was later used in half a dozen other revolvers. It is basically a longer version of the .41 Short Colt, and was originally a blackpowder round. Conversion to smokeless powder came later. It was popular for many years, though it's performance is not that different from the .38 Special round, and it eventually became obsolete in favor of that round. Though Winchester produced a small run in 1970, there has been no large-scale manufacturing of the .41 Long colt in decades, and most such rounds today are handloaded. Some were produced in the mid-1990s after the movie *Tombstone*, but this was a very small number.

Nominal Size: 10.2x29mm
Actual Size: 10.19x18.7mm
Case Type: Straight
Weight: 1.34 kg per box of 100; Price: $49

Magazines:

Per round: 0.019 kg			

.44 AMP

Notes: This round was developed in 1971 specifically for the AutoMag 44, later marketed by High Standard, then AMT. At the time, no one could figure out how to reliably make an automatic pistol function using .44 Magnum ammunition. This special round was therefore created; it was made by simply cutting off .30-06 or 7.62mm NATO cases until they were 1.3 inches and then trimming. After the demise of the pistol, ammunition was for a time made in Mexico, then in Sweden. However, no one now, other than handloaders, is making the .44 AMP (AutoMag Projectile) round.

Other Names: .44 AutoMag Projectile
Nominal Size: 10.9x32.9mm
Actual Size: 10.9x32.97mm
Case Type: Straight
Weight: 3.08 kg per box of 100; Price $98 per box

Magazines:

Per round: 0.025 kg	7-round box: 0.32 kg		

.44 Colt

Notes: This was originally a blackpowder cartridge used as a standard service round by the US Army in the early 1870s. The round was later used with smokeless powder, and loaded commercially until 1940. The Revolvers that fire this round have become very rare, and original rounds in this caliber even rarer. Most rounds of this type are handloaded, usually for SASS shooters. It has pretty decent power for a handgun cartridge.

Nominal Size: 10.9x28mm

Actual Size: 11.25x27.94mm
Case Type: Straight
Weight: 2.78 kg per box of 100; Price: $88 per box
Magazines:

Per round: 0.022 kg			

.44 Magnum

Notes: This cartridge was a joint development of Smith & Wesson and Remington, designed for a new heavy-frame revolver. It was meant to beat the .357 Magnum in power, in a case of pure one-upsmanship. It proved to be enormously popular, and was for a while the most powerful handgun round. Police like is for its ability to penetrate body armor and vehicles, hunters like it (in rifles) for its range and ability to bring down big game. However, most police and civilians shy away from .44 Magnum handguns due to their power and recoil.

A subsonic version of the .44 Magnum cartridge is made. These rounds are for specialist applications with silenced rifles, and few guns use them. Triple all ammunition prices for these rounds.

Other Names: .44 Remington Magnum
Nominal Size: 11.2x32.8mm
Actual Size: 10.9x32.77mm
Case Type: Straight
Weight: 30.63 kg per case of 1000; Price $490 per case
Magazines:

Per round: 0.025 kg	3-round box: 0.16 kg	8-round box: 0.35 kg	

.44 Smith & Wesson American

Notes: Introduced in 1869, the .44 S&W American was one of the earliest centerfire revolver cartridges. It was first designed for blackpowder, but during most of its lifespan it was manufactured in smokeless powder. Few revolvers were actually designed for the .44 S&W American, but the enormous popularity of the Colt Single Action Army revolver ensured that it stuck around until 1940, and many still handload it today. The bullet is almost identical to the .44 S&W Russian, but slightly larger and heavier, and the cases can be made by reworking .44 Magnum cases. Suitable primers are still made. Most loads are low-powered as the revolvers for which it was designed are largely blackpowder revolvers, and power is similar to the .41 Long Colt.

Nominal Size: 11x23mm
Actual Size: 11.02x23.11mm
Case Type: Straight
Weight: 1.94 kg per box of 100; Price: $70 per box
Magazines:

Per round: 0.018 kg			

.44 Smith & Wesson Russian

Notes: This round was designed by Smith & Wesson for the revolvers it sold to the Russian military in 1870. A civilian version of this revolver was sold starting in 1878. It was originally a blackpowder round, but made the transition to smokeless powder. It was a favorite handgun round of Buffalo Bill Cody. It was a decent handgun round, but made obsolete by the .44 Special round, which is better suited to modern propellants. A weapon chambered for .44 Special or .44 Magnum will also fire the .44 Smith & Wesson Russian. It can be easily handloaded starting with .44 Special cases, and Fiocchi and Black Hills sell it.

Other Names: .44 Short, .44 Russian, DWM242, GR960
Nominal Size: 11.2x25mm
Actual Size: 10.9x24.64mm
Case Type: Straight
Weight: 2.3 kg per box of 100; Price: $74 per box
Magazines:

Per round: 0.018 kg			

.44 Special

Notes: The .44 Special round was originally a blackpowder cartridge, that went smokeless after the introduction of smokeless powder. The smokeless propellant, with its greater powder, enabled it to achieve greater power than the .44 Smith & Wesson Russian round it replaced. A variety of American, Spanish, and other European revolvers were chambered for the .44 Special shortly after its introduction in 1907, but interest waned until the past few decades. It is a very accurate cartridge, but was never developed to its potential until recently. A revolver that can fire .44 Magnum cartridges can also fire .44 Special cartridges (but not vice versa).

Other Names: .44 Smith & Wesson Special, GR-964
Nominal Size: 11.2x29.5mm

Actual Size: 10.9x29.46mm
Case Type: Straight
Weight: 27.5 kg per case of 1000; Price: $440 per case
Magazines:

Per round: 0.022 kg			

.44 Webley

Notes: This round was designed for the Webley RIC (Royal Irish Constabulary) revolver in 1868. As with many rounds of this period, it was originally designed to use blackpowder, but was later converted for use with smokeless powder. It was, for a time, quite popular for use in pocket revolvers and other self-defense weapons. It is a short-range round with decent stopping power due to its large, heavy bullet. The round is long obsolete, the original cartridges collectors' items, and any new rounds found today probably handloaded.

Other Names: .442 RIC, .442 Revolver Centerfire, 10.5x17Rmm, .442 Kurz, DWM 221
Nominal Size: 10.5x17mm
Actual Size: 11.07x17.53mm
Case Type: Straight
Weight: 1.69 kg per box of 100; Price: $54 per box
Magazines:

Per round: 0.014 kg			

.44 Wildey Magnum

Notes: The .44 Wildey Magnum is a .475 Wildey Magnum that is necked down to accept a roughly .44 caliber bullet; the bullet is proprietary and take special molds to produce. The bullet is a rounded FMJ round, and is intended for metallic target shooting and for tagging or knocking over heavy targets. The .44 Wildey was basically lost amongst all the calibers once available in the Wildey, and did not sell well. The .44 Wildey Magnum is sometimes confused with the .44 AutoMag (.44 AMP) round, though they have somewhat different measurements, differences in propellant loads (the .44 Wildey is "hotter") and differences in bullet size and weight. The round has excellent damaging and penetration capabilities.

Other Names: 11mm Wildey Magnum, .44 Wildey
Nominal Size: 11x30mm
Actual Size: 11.38x30.23mm
Case Type: Necked
Weight: 3.07 kg per box of 100; Price: $123 per case
Magazines:

Per round: 0.031 kg	7-round box: 0.39 kg		

.45 ACP

Notes: This round was developed by John Browning himself in 1905 and was adopted as the official US military pistol cartridge in 1911, along with the M-1911 pistol. Despite having fairly high recoil and being difficult to master, the .45 ACP round is the preferred pistol round of Western special operations forces, due to its knockdown power. It is, unfortunately, a heavy, slow round with little ability to penetrate body armor, but the even the blunt trauma will produce significant wounds. Lately, interest has spiked in revolvers firing the .45 ACP round. The .45 is also the preferred pistol round of US Special Operations forces, due to the high stopping power and the fact that it is naturally subsonic and is therefore quieter when used in a silenced weapon.

A rimmed version of the .45 ACP also exists, called the .45 AutoRim. Costs and weights are identical to the .45 ACP round for game purposes, although there are no High-Lethality and Extreme High-Lethality versions of the .45 AutoRim.

The military uses several special versions of the .45 ACP round. The .45 High-Lethality Round is packed with a bit more propellant and has a pointed bullet for more range, power, and penetration. The .45 Extreme-Lethality Round is a virtual wildcat round packed with as much propellant at possible, using a lighter steel-cored bullet for even more increased power and penetration. The .45 High-Lethality Round costs 30 times normal; the .45 Extreme-Lethality Round costs 45 times normal. They are normally available only in 100-round box form. The High-Lethality round has a one-step increase in penetration and one-point increase in damage; the Extreme Lethality round has a two-step increase in penetration and a two-point increase in damage. Note that only certain very well-constructed weapons can fire the High-Lethality and Extreme High-Lethality rounds; most of these are military.

Other Names: .45 Colt Automatic Pistol, .45 Automatic Colt Projectile, .45 Automatic, .45 Auto, .45 Auto Colt, 11.43x23mm Norwegian Colt
Nominal Size: 11.43x23mm
Actual Size: 11.48x22.81mm
Case Type: Straight
Weight: 23.63 kg per case of 1000; Price $380 per case
Magazines:

Per round: 0.019 kg	5-round box: 0.18 kg	6-round box: 0.21 kg	7-round box: 0.24 kg
8-round box: 0.27 kg	9-round box: 0.3 kg	10-round box: 0.33 kg	12-round box: 0.39 kg
13-round box: 0.42 kg	14-round box: 0.44 kg	15-round box: 0.47 kg	16-round box: 0.5 kg
18-round box: 0.56 kg	20-round box: 0.62 kg	25-round box: 0.76 kg	27-round Taylor Drum: 0.82 kg
30-round box: 0.91 kg	36 round box: 1.08 kg	40-round drum: 1.2 kg	50-round drum: 1.49 kg
60-round drum: 1.78 kg	100-round drum: 2.93 kg	108-round drum: 3.16 kg	

.45 GAP

Notes: The .45 GAP cartridge was actually not invented by Glock, as many people think, but by Winchester. It was, however, invented at the request of Glock in 2003, for a then-pending pistol which shortly became the Glock 37. It essentially allows virtually the same performance as the .45 ACP round, but in a smaller package; this is because while the .45 GAP round is about 3.18mm shorter than the .45 ACP round, it contains the same bullet and about the same propellant charge. (The .45 ACP case has always had more room for propellant than is actually loaded within the case; if you shake a .45 ACP round near your ear, you can actually hear that there isn't really much propellant in the case, relative to the length of the case.)

AP rounds are available for the .45 GAP cartridge (known as LEO, or Law-Enforcement-Only rounds); these are made only by Winchester, and cost 10 times the normal costs listed below. Frangible bullets also exist for the .45 GAP; these are normal cost. Except for the AP rounds, Speer and Hodgdon make .45 GAP rounds.

Twilight 2000 Notes: The .45 GAP does not exist in the Twilight 2000 timeline (nor does any weapon which fires it).

Other Names: .45 Glock Auto Pistol

Nominal Size: 11.43x19mm

Actual Size: 11.48x19.05mm

Case Type: Straight

Weight: 17.38 kg per case of 1000; Price: $320 per case

Magazines:

Per round: 0.016 kg	6-round box: 0.18 kg	7-round box: 0.2 kg	8-round box: 0.23 kg
9-round box: 0.25 kg	12-round box: 0.32 kg	15-round box: 0.4 kg	

.45 Hirtenberger

Notes: The .45 Hirtenberger was developed for only one purpose – to provide a .45 ACP-like round that could be used by Italian civilians. Italy has very strict laws against civilians using firearms that fire "military" rounds, so from mid-1985 and mid-1987, Hirtenberger Munitions of Austria produced this round. The .45 Hirtenberger round was produced by shortening a .45 ACP case just enough to satisfy Italian law. The bullet is essentially the same as a .45 ACP round, but as the case is a little shorter and pressures a little higher, the muzzle velocity is just a little higher (a little over 10 meters per second higher). Performance is therefore almost identical to that of the .45 ACP round. The .45 Hirtenberger was not a sales success, was not produced in large lots, and is not being produced now, so it is a rather rare cartridge these days. It is, however, easily made by handloaders.

Other Names: .45 HP, .45 Hirtenberger Patronen

Nominal Size: 11.4x21.7mm

Actual Size: 11.48x30.99mm

Case Type: Straight

Weight: 2.57 kg per box of 100; Price: $103 per case

Magazines:

Per round: 0.026 kg	13-round box: 0.57 kg		

.45 Long Colt

Notes: This is a very old cartridge, introduced in 1873 for Colt's Peacemaker single-action revolver. The cartridge (and the revolver) were adopted by the US Army in 1875, and remained the official military handgun cartridge until 1892. The .45 Long Colt was originally a blackpowder cartridge that was later converted to smokeless powder. There is a certain amount of romance associated with the round, given its reputation as the round that "won the West." The .45 Long Colt is still a favorite of American revolver aficionados, especially in replicas of Old West revolvers. The stopping power of the cartridge is greater than that of the .45 ACP.

Other Names: .45 Colt

Nominal Size: 11.43x33mm

Actual Size: 11.53x32.77mm

Case Type: Straight

Weight: 34.25 kg per case of 1000; Price: $550 per case

Magazines:

Per round: 0.027 kg			

.45 S&W Schofield

Notes: This is a very old cartridge first developed for the US Army's Smith & Wesson Schofield revolver. It was used until 1892, when replaced by a .38 Special-firing revolver. The round was loaded commercially until about 1940, then discontinued by virtually all manufacturers; in 1997, the cartridge was again loaded commercially by Black Hills Ammunition in response to demand from Cowboy Shooting enthusiasts. The .45 Smith & Wesson Schofield was designed because the .45 Long Colt did not fit into the new revolver (it was too long). Revolvers that fire .45 Long Colt can almost always fire .45 Smith & Wesson Schofield, but the reverse is almost never true. Handloaders who load the .45 Smith & Wesson cartridge should remember that the round was designed for blackpowder, so only a small amount of smokeless powder should be used in the .45 Smith & Wesson Schofield round.

Twilight 2000 Notes: Factory-made rounds are not available.

Other Names: .45 Smith & Wesson Schofield, .45 Smith & Wesson

Nominal Size: 11.5x28mm

Actual Size: 11.53x27.94mm

Case Type: Straight

Weight: 2.91 kg per box of 100; Price: $94 per box

Magazines:

Per round: 0.023 kg			

.45 Super

Notes: Developed in 1988 by the *Gun World* magazine editor Dean Grennell, the .45 Super is essentially a hot-loaded .45 ACP round using stronger brass. The .45 ACP's dimensions were chosen to fit properly in the M-1911's operating system and to fit the relatively low efficiency of smokeless powder at the time; with modern propellants, the case of the .45 ACP does in fact contain a lot of empty room when it contains a standard-power propellant load. As .45 ACP brass is relatively thin-walled, Grenell chose to work from the .451 Detonics round, which was also built for a more powerful propellant load but has almost the same dimensions as the .45 ACP round. Though almost any pistol designed for .45 ACP can chamber the .45 Super, this can be anywhere from unwise to dangerous – at a minimum, you will dramatically shorten the life of the action of the pistol, and at worst, cause a chamber explosion. At present, only two companies, both in the US, make factory-loaded .45 Super ammunition.

Other Names: .45 Super Auto

Nominal Size: 11.43x23mm

Actual Size: 11.48x22.73mm

Case Type: Straight

Weight: 2.07 kg per box of 100; Price: $75 per box

Per round: 0.019 kg	7-round box: 0.24 kg	8-round box: 0.27 kg	13-round box: 0.41 kg

.45 Webley

Notes: The .45 Webley originated as a blackpowder round in about 1874, but did not appear in catalogs until 1876. It is similar to the .450 Revolver case, but is longer. A revolver designed for the .450 Revolver round will generally be able to fire .45 Webley ammunition (and vice versa). Late in the round's history, it was changed to smokeless powder. The last known manufactured ammunition was made in 1939 by Winchester. Any present today is handloaded or a collector's item.

Nominal Size: 11.5x21mm

Actual Size: 11.48x20.83mm

Case Type: Straight

Weight: 2.15 kg per box of 100; Price: $68 per box

Magazines:

Per round: 0.017 kg			

.45 Wildey Magnum

Notes: The .45 Wildey Magnum is a .475 Wildey Magnum necked down to take a bullet slightly larger than a .45-caliber bullet. The round has not been made in recent years, though sometimes small lots will come up for sale (once again, check the internet!) Once, Lyman made the Wildey chamberings, but they are not anymore and haven't for nearly 10 years. Hawk Bullets also made some complete rounds in small lots, and reportedly still does. Though brass is available through Starline, and bullets are available through Hawk Bullets, dies and forming tools are very hard to find today. Even reloading info and cartridge loading data are hard to come by. Propellant loading data available ranges from 19-23 grains, and bullet weights range from 185-265 grains. The .45 Wildey Magnum is probably the rarest of the Wildey rounds.

Other Names: .45 Wildey

Nominal Size: 11.43x33mm

Actual Size: 11.46x32.89mm

Case Type: Necked
Weight: 3.39 kg per box of 100; Price $136 per box
Magazines:

Per round: 0.034 kg	7-round box: 0.43 kg		

.45 Winchester Magnum

Notes: This cartridge was first introduced in 1979. Winchester didn't do anything with it, but Wildey chambered for its heavy Magnum semiautomatic pistol, and Thompson/Center put it in one of their Contender single-shot target/hunting pistols. The .45 Winchester Magnum is basically a long version of the .45 ACP round, with appropriate increases in power and penetration. It remains, however, a rare chambering.
Nominal Size: 11.6x30mm
Actual Size: 11.46x30.43mm
Case Type: Straight
Weight: 3.14 kg per box of 100; Price: $100 per box
Magazines:

Per round: 0.025 kg	6-round box: 0.028 kg	8-round box: 0.36 kg	12-round box: 0.51 kg

.50 Action Express

Notes: This round was developed in 1988 by Action Arms for a new version of the Desert Eagle heavy pistol. The round was designed to allow IMI to adapt the Desert Eagle to the new cartridge with as little modification of the pistol as possible, so it was based on the .44 Magnum round. It is a powerful magnum round that has almost too much power for a handgun; handguns chambered for .50 Action Express are necessarily huge.
Other Names: .50 AE
Nominal Size: 12.7x34mm
Actual Size: 12.7x32.64mm
Case Type: Straight
Weight: 41.38 kg per case of 1000; $660 per case
Magazines:

Per round: 0.033 kg	5-round box: 0.32 kg	7-round box: 0.42 kg	10-round box: 0.58 kg
14-round box: 0.78 kg			

.50 GI

Notes: This round is an original design of Guncrafter industries, a relatively new firearms company in Huntsville, Arkansas. It was meant to bring .50-caliber performance to the M-1911-type weapon, and is therefore very close in size and shape to the .45 ACP round – short and fat; in fact, the rim is rebated and the same diameter as that of a .45 ACP round, making conversions of weapons rather easy. The .50 GI round was designed from the ground up, however, and is not just a sized-up .45 ACP round. The walls or the cartridge are thinner but made of stronger metal, and it was designed to operate at lower pressures and lower velocities than the .45 ACP round. It provides striking power slightly greater than the .45 ACP however. Right now, since the company is just starting up, the round and the pistol which fires it (the Guncrafter Industries Model 1) are relatively rare; time will tell whether this is just another interesting M-1911 variant, or something which is more widely accepted.
Twilight 2000 Notes: This round does not exist.
Other Names: .50 Guncrafter Industries
Nominal Size: 12.7x23mm
Actual Size: 13.08x22.81mm
Case Type: Straight
Weight: 3.06 kg per box of 100; Price: $96 per box
Magazines:

Per round: 0.025 kg	7-round box: 0.31 kg		

.224 BOZ

Notes: The .224 BOZ round is a little-known and little-used round; Civil Defence Supply in England, who makes the round and the weapons which fire them, has seen little sales for these products. Only two weapons are designed to fire the round, a modified Glock 20 pistol (the G-224) and a modified MP-5 submachinegun (the MP5-224). The .224 BOZ is a 10mm Colt round necked down very heavily to accept a 5.56mm NATO armor-piercing bullet, and is quite hot-loaded. The round is powerful and produces high chamber pressures in the weapons involved, so much so that they need to be strengthened to handle the wear and tear that firing the .224 BOZ produces (especially in the Glock 20 frames and the MP-5 chambers and barrel extensions). The round offers high penetration and damage similar to an assault rifle, even when fired from a G-224. Though it has been tested by military and police forces, no orders beyond rounds for test models for various agencies have been produced as of yet. It is conceivable that the .224 BOZ could be easily

handloaded, though no call for this has arisen; problems with civilians getting AP bullets could also be a problem. The .224 sort of resembles a short magnum round for a rifle, though it is much shorter than any short magnum round. CDS absolutely refuses to sell the rounds, its modified weapons for the .224 BOZ round, or any of the tooling or dies for the rounds or weapons, to civilians, and they check police and military concerns very closely. However, the round is in fact more powerful than the typical pistol or submachinegun round, and has more penetration than most magnum rounds.

Twilight 2000 Notes: The .224 BOZ is a very rare round in the Twilight 2000 timeline, as are the weapons which fire it. Most of the few such weapons in use are firing handloaded rounds.

Nominal Size: 5.56x23mm
Actual Size: 5.69x23mm
Case Type: Necked
Weight: 0.64 kg per box of 100; Price: $56 per box
Magazines:

Per round: 0.006 kg	10-round box: 0.1 kg	12-round box: 0.12 kg	20-round box: 0.19 kg
30-round box: 0.28 kg			

.224 Harvey Kay-Chuk

Notes: The .224 Harvey Kay-Chuk is the product of firearms expert Jim Harvey, who developed it in 1956. It is still considered a wildcat, though it does have broad appeal among a lot of handgun hunters, due to its flat trajectory, low recoil, and surprising power for its size. Few revolvers have been designed for the .224 Harvey Kay-Chuk, and the round was never produced in anything but a few small lots; it is probable that even the standard 100-round box lots I use as a standard are not available. The case is based on the .22 Remington Jet, along with one of the lighter versions of the .22 Jet's bullets.

Nominal Size: 5.7x33mm
Actual Size: 5.69x33.51mm
Case Type: Necked
Weight: 0.94 kg per box of 100; Price: $17 per box
Magazines:

Per round: 0.009 kg			

.224V

Notes: Though currently fired only by the Swiss ASAI MTE-V and MTE-VA pistols, the .224V round was actually developed in the Czech Republic by the Caliber Prague Organization. The .224V round is essentially a 7.62mm Tokarev round necked down to accept a shortened 5.56mm NATO bullet. The intent was to provide PDW-type ammunition that combined the flat trajectory of the 7.62mm Tokarev round with the low recoil and higher penetration of a 5.56mm bullet, and also to increase the muzzle velocity due to using a relatively large powder charge to fire a smaller bullet. Though the rounds and the pistols are still being shopped around, they have yet to see any large sales. (The market is getting more and more glutted with PDW-type designs, so the future of this round may be in doubt.)

Other Names: 5.56V
Twilight 2000 Notes: The .224V round is not available in the Twilight 2000 timeline.
Nominal Size: 5.56x23.5mm
Actual Size: 5.69x23.5mm
Case Type: Necked
Weight: 4.8 kg per box of 100; Price: $19 per box
Magazines:

Per round: 0.005 kg	16-round box: 0.13 kg	26-round box: 0.2 kg	

.320 Revolver

Notes: Though the .32 Short and Long Colts are often called .320 Revolver in Britain, this .320 Revolver round is actually the round that inspired the .32 Short and Long Colt rounds, and is considered the *real* .320 Revolver cartridge. It was first used in the Webley revolver in 1870 as a blackpowder round, but was later chambered in several European pocket revolvers. It is no longer being manufactured by any big companies, though until recently Fiocchi offered it. It has ballistics and effects similar to the .32 Short Colt – reasonable for self-defense, but not accurate.

Nominal Size: 8x16mm
Actual Size: 8.05x15.75mm
Case Type: Straight
Weight: 0.8 kg per box of 100; Price: $26 per box
Magazines:

Per round: 0.006 kg			

.327 Federal

Notes: The .327 Federal is a new magnum round introduced in 2007 by Ruger for use in a new version of its SP-101 revolver. The idea was to produce a round which improves on the .32 H&R Magnum, and possibly to provide a round with the power of a .357 Magnum in a smaller package with less kick. The .327 Federal is an improvement on the .32 H&R Magnum, but does not achieve the goal of providing .357 Magnum power. Since its introduction, several other revolvers have been designed to fire the .327 Federal round, most notably the Charter Arms Patriot, which is currently chambered only for .327 Federal; some gunsmiths have also chambered the .327 Federal in other revolvers on an experimental basis with good results. The .327 Federal is the same diameter as the .32 H&R Magnum, but with a stretched case that holds more propellant. The bullets themselves are the same as in the .32 H&R Magnum. Recoil is not nearly that of the .357 Magnum if fired from a revolver of the same size and weight, but is more than that of the .32 H&R Magnum. Performance is, in fact, similar to that of the .32-20 Winchester rifle round in a revolver. Though it has not been done yet, it is believed that it is only a matter of time before lever-action rifles and carbines are offered chambered for .327 Federal. .327 Federal ammunition is currently made by Federal Cartridges, Ruger, and Fiocchi.

Twilight 2000 Notes: The .327 Federal does not exist in the Twilight 2000 timeline.

Other Names: .327 Federal Magnum

Nominal Size: 8x30mm

Actual Size: 7.92x30.43mm

Case Type: Straight

Weight: 15 kg per case of 1000; Price: $240 per case

Magazines:

Per round: 0.012 kg			

.350 Legend

Notes: The .350 was designed specifically for hunting deer – specifically, for hunting deer with a handgun in states that have restrictive requirements for using straight-walled centerfire cartridges when hunting. The .350 Legend is essentially a long-cased magnum round with a heavy powder load and a long bullet. The .350 Legend was designed from scratch and has no parent cartridge, but cases can be formed from .223 Remington/5.56mm NATO cases by trimming them and necking them out. Because of this, .350 Legend cartridges will fit into AR-15 magazines, and though there are currently no .350 Legend longarms produced so far (as of December 2023), it is possible that there will be AR-15-based .350 Legend-firing rifles in the future.

Twilight 2000 Notes: The .350 Legend round does not exist in the Twilight 2000 timeline.

Other Names: .350 LGND, 9x43mmRB

Nominal Size: 9x43mm

Actual Size: 9.07x43.43mm

Case Type: Straight

Weight: 2.42 kg per box of 100; Price: $90 per box

Magazines:

Per round: 0.022 kg			

.356 TSW

Notes: The .356 TSW round was introduced in 1995, and was designed by Lew Horton and Team Smith & Wesson specifically for IPSC competition. It was designed to provide a cartridge with ballistics superior to the .357 SiG and .357 Magnum rounds (but not necessarily more power). It is essentially a hotloaded 9mm-class round – many say unnecessarily so. The only production handgun to use the .356 TSW cartridge was Smith & Wesson Super 9 version of the Model 900 series. The round failed in the sales department quickly; reasons cited were its hot loading and that the round was not marketed to shooters that might have liked it the best – hunters.

Other Names: .356 Team Smith & Wesson

Nominal Size: 9x21.5mm

Actual Size: 9.04x21.48mm

Case Type: Straight

Weight: 1.21 kg per box of 100; Price: $44 per box

Magazines:

Per round: 0.011 kg	15-round box: 0.28 kg		

.357 AMP

Notes: This is a .44 AMP case necked down to .357 caliber. It was not as popular as the .44 AMP round-firing Automag, and it did not appear until 1973. The rounds were manufactured in the US for a while, then in Mexico and Sweden, but are now made only by handloaders or special orders. Like the .44 AMP, the .357 AMP is quite a bit more powerful than its .357 Magnum counterpart. As a pistol hunting round, the .357 AMP is pretty good, but it's a bit overpowered for self-defense (though it will bring a man down pretty easily).

Other Names: .357 Auto Magnum Projectile, .357 AutoMag, .357 Auto Magnum

Nominal Size: 9x33mm
Actual Size: 9.07x32.97mm
Case Type: Necked
Weight: 2.11 kg per box of 100; Price: $68 per box
Magazines:

Per round: 0.017 kg	7-round box: 0.22 kg		

.357 Magnum

Notes: This lengthened, hot-loaded .38 Special cartridge was introduced in 1935 by Smith & Wesson for its heavy-frame revolvers. It was the most powerful handgun cartridge in the world until the advent of the .44 Magnum in 1955. Virtually every revolver maker has chambered a revolver for the .357 Magnum round, and some semiautomatic pistols are also made to fire it. It rivals the .38 Special for ubiquity in police revolvers. It can also be used in rifles, where it has brought down game as big as grizzly bears. Some countries' special operations forces still use revolvers chambered for the .357 Magnum round, considering them to be superior to pistols.

Other Names: .357 Smith & Wesson Magnum
Nominal Size: 9x33mm
Actual Size: 9.07x32.77mm
Case Type: Straight
Weight: 21.13 kg per case of 1000; Price $340 per case
Magazines:

Per round: 0.017 kg	5-round box: 0.16 kg	7-round box: 0.22 kg	9-round box: 0.27 kg

.357 Maximum

Notes: This round is the result of a collaboration between Remington and Ruger in 1983. The first weapon to chamber the round was a modified Ruger Blackhawk revolver, followed by a Dan Wesson design and the Thompson/Center Contender single-shot target/hunting pistol. The .357 Maximum is basically a longer version of the .357 Magnum cartridge, with appropriate increases in propellant and power. The first weapons to fire the round were modified from .357 Magnum-firing weapons, but it was found that even these tough weapons could not handle the new round and wore out quickly. A weapon therefore has to be designed specifically to fire the .357 Maximum. It has been said that the best application of the .357 Maximum would be in a rifle, but none have as of yet been designed to fire it.

Other Names: .357 Remington Maximum, .357 SuperMag
Nominal Size: 9x40mm
Actual Size: 9.07x40.39mm
Case Type: Straight
Weight: 2.61 kg per box of 100; Price: $42 per box
Magazines:

Per round: 0.021 kg			

.357 Peterbilt

Notes: The .357 Peterbilt round uses a .357 Magnum bullet in a Super Magnum case, nearly 40 millimeters long, and packed with propellant. (Most Wildey rounds are essentially cut-down rifle cartridges.) The round and the Wildey firing it were introduced in the late 1980s when there was a revival of the Wildey Survivor pistol, and buyers requested a greater variety of chamberings. Like the Wildey Survivor itself, the .357 Peterbilt round found a niche among shooters who like powerful handgun cartridges in a "gee-whiz" sort of factor, and amongst handgun hunters. Like most Wildey-designed ammunition, the .357 Peterbilt uses a rebated rim, allowing the pistol firing it to use a somewhat smaller bolt face, bolt, and feed ramp. Alas, the round is no longer in active manufacture, and hasn't been in active manufacture in about 15 years; Wildey no longer makes the Survivor in this chambering, and like the round itself, hasn't in about 15 years. However, there is still a decent amount of .357 Peterbilt ammunition out there, and it comes up for sale every so often. Handloading is also possible.

Other Names: .357 Wildey, .357 Wildey Magnum
Nominal Size: 9x38mm
Actual Size: 9.09x38mm
Weight: 1.97 kg per box of 100; Price: $79 per box
Magazines:

Per round: 0.02 kg	7-round box: 0.25 kg		

.357 SiG

Notes: This is a .40 Smith & Wesson case necked down to accept a 9mm bullet. The idea was to achieve .357 Magnum ballistics (but not necessarily power) from semiautomatic pistols. It is a compact round that offers good performance in a small package.

These rounds tend to be loaded with a large amount of propellant, and this gives them their high velocity. The .357 SiG round is slowly becoming more popular in the world, and some police departments have adopted it.

Nominal Size: 9x22mm
Actual Size: 9.07x21.97mm
Case Type: Necked
Weight: 14.25 kg per case of 1000; Price $230 per case (S/R)

Magazines:

Per round: 0.011 kg	7-round box: 0.15 kg	9-round box: 0.18 kg	10-round box: 0.2 kg
12-round box: 0.23 kg	13-round box: 0.25 kg	14-round box: 0.27 kg	15-round box: 0.29 kg

.380 ACP

Notes: This round was introduced in the Colt Pocket Automatic series in 1908. Several governments have adopted it as their official military pistol cartridge, and many others have adopted it as a secondary standard. Virtually all pistol manufacturers have, at one time or another, chambered a pistol to fire the .380 ACP round. It has more stopping power and range than the .32 ACP, but is in essence an overgrown version of the .32 ACP. It is considered the minimum pistol cartridge for offensive work.

Other Names: 9mm Short, 9mm Kurz, 9x17mm, 9mm Browning Short, .380 Automatic Colt Projectile, .380 Auto, .380 Automatic
Nominal Size: 9x17mm
Actual Size: 9.04x17.27mm
Case Type: Straight
Weight: 11.13 kg per case of 1000; Price: $180 per case

Magazines:

Per round: 0.009 kg	5-round box: 0.09 kg	6-round box: 0.1 kg	7-round box: 0.11 kg
8-round box: 0.13 kg	9-round box: 0.14 kg	10-round box: 0.16 kg	11-round box: 0.17 kg
12-round box: 0.18 kg	13-round box: 0.2 kg	14-round box: 0.21 kg	15-round box: 0.22 kg
16-round box: 0.24 kg	17-round box: 0.25 kg	18-round box: 0.26 kg	19-round box: 0.28 kg
20-round box: 0.29 kg	22-round box: 0.32 kg	30-round box: 0.43 kg	32-round box: 0.45 kg
36-round box: 0.51 kg	40-round box: 0.56 kg	60-round drum: 0.84 kg	108-round drum: 1.49 kg

.380 British Service

Notes: The .380 British Service round is a slightly modified version of the .38 Smith & Wesson round, developed in 1922 primarily to take advantage of smokeless powder and to fit the unique dimensions of British service revolvers of the time. Another major difference was that the .380 British Service used a heavier bullet of a softer lead alloy; later this was issued with a lighter jacketed bullet and called the .380 Revolver IIz round. Measurements are only minimally different from the .38 Smith & Wesson round, but enough that the two are not interchangeable.

Other Names: .38/200, .380/200 Revolver Mk I, .38 British, .380 British Revolver, .380 Revolver Ml IIz,
Nominal Size: 9x20mm
Actual Size: 9.09x19.38mm
Case Type: Straight
Weight: 1.11 kg per box of 100; Price: $40 per box

Magazines:

Per round: 0.01 kg			

.380 Revolver

Notes: This round was designed for the Webley revolver after it was discovered that most people simply couldn't handle the recoil and power of the .455 Webley Mk I, and that such a powerful cartridge was not necessarily needed in a handgun cartridge (or so it was thought at the time). It was designed in 1868 as a blackpowder round, then changed to smokeless powder. The .38 Short Colt is largely a copy of the .380 Revolver round, and most revolvers designed for the .380 Revolver round will also chamber and fire the .38 Short Colt without a problem. Currently, the only company loading the .380 Revolver round is Fiocchi.

Other Names: .380 Webley Revolver
Nominal Size: 9x18mm
Actual Size: 9.53x17.78mm
Case Type: Straight
Weight: 1.26 kg per box of 100; Price: $40 per box

Magazines:

Per round: 0.01 kg			

.400 Cor-Bon

Notes: This is a .45 ACP cartridge necked down to 40 caliber. It was designed partially to boost .40-caliber performance; however, the main reason it was designed is that most existing .40 and .45 Caliber pistols can be modified to fire .400 Cor-Bon simply by changing the barrel and feed ramp. The .400 Cor-Bon produces a round of higher power than .40 caliber rounds, with less recoil than the .45 ACP. It is an excellent self-defense round, approaching the 10mm Colt in stopping power.

Nominal Size: 10x23mm
Actual Size: 10.1x22.8mm
Case Type: Necked
Weight: 18.25 per case of 1000; Price: $290 per case

Magazines:

Per round: 0.015 kg	7-round box: 0.19 kg	10-round box: 0.26 kg	

.440 Cor-Bon

Notes: This relatively-new cartridge was designed in 1997 by necking down a .50 Action Express cartridge to .429 caliber. It is designed more for pistol hunting than anything else, but lends itself to self-defense in heavier weapons such as the Tromix Jackhammer due to the lower recoil than the .50 Action Express and superior stopping power than other pistol cartridges normally used in submachineguns. The ballistics are comparable to those of the .454 Casull.

Nominal Size: 10.9x33mm
Actual Size: 10.9x32.51mm
Case Type: Necked
Weight: 30.38 kg per case of 1000; Price: $490 per case

Magazines:

Per round: 0.024 kg	7-round box: 0.31 kg	10-round box: 0.42 kg	15-round box: 0.61 kg

.445 SuperMag

Notes: Designed by Elgin Gates and later popularized in Dan Wesson's revolver designs, the .445 SuperMag is still considered a semi-wildcat round today. Dan Wesson is the only one who has designed a production revolver firing the .445 SuperMag, though some tinkerers have modified weapons to fire the round. The .445 SuperMag is essentially a stretched .44 Magnum round, using the same bullets. Starline is the only company that ever produced lots of cases, and that was some time ago. Every so often, a company will produce small lots of .445 SuperMag, with the latest being the Dan Wesson company (under the CZ-USA umbrella), but it is by no means a cartridge in large-scale production. The .445 SuperMag produces a large amount of muzzle blast and recoil, and revolvers designed for it are generally large and heavy.

Nominal Size: 11x41mm
Actual Size: 10.97x40.64mm
Case Type: Straight
Weight: 3.38 kg per box of 100; Price: $123 per box

Magazines:

Per round: 0.031 kg			

.450 Revolver

Notes: This was the British Army's first centerfire revolver cartridge, adopted in 1868. It was originally a blackpowder cartridge, but was later adapted for smokeless powder. It was never a satisfactory military round, but had a surprisingly long period of use, still being used in reserve weapons until World War 1. The .450 Revolver round can be fired from revolver designed for .455 Webley ammunition without a problem (but not vice versa). It has long been considered obsolete, but Fiocchi still makes lots of this ammunition from time to time.

Other Names: .450 Adams, .450 Webley Revolver, .450 Short, .450 Colt, .450 Mk III
Nominal Size: 11.5x17mm
Actual Size: 11.56x17.53mm
Case Type: Straight
Weight: 1.84 kg per box of 100; Price: $58 per box

Magazines:

Per round: 0.015 kg			

.451 Detonics Magnum

Notes: Introduced in 1983, the .451 Detonics Magnum round was designed to allow a 1911-type pistol to take a more powerful round with performance similar to the .45 Winchester Magnum; the .45 Winchester Magnum itself is too long to fit into a 1911-type pistol without redesigning the weapon to the point that you essentially have a new pistol. Pistols firing the .451 Detonics Magnum (primarily certain limited-production Detonics pistols of the 1980s and early 1990s), however, do require some modification (primarily

to chamber length and some strengthening), and pistols that can chamber the .45 ACP cannot chamber the .451 Detonics Magnum (though pistols chambered for the .451 can chamber the .45 ACP round). The .451 Detonics Magnum round also uses a case with thicker walls and a greater propellant charge. Bullets for the .451 Detonics Magnum are also lighter than the typical 230-grain .45 ACP bullet. The .451 Detonics Magnum is no longer being manufactured (and never were in large quantities), except by handloaders.

Other Names: .451 Detonics, .451 Det/Mag
Nominal Size: 11.43x24mm
Actual Size: 11.48x24.08mm
Case Type: Straight
Weight: 2.19 kg per box of 100; Price: $80 per box

Magazines:

Per round: 0.02 kg	6-round box: 0.22 kg	7-round box: 0.26 kg	8-round box: 0.29 kg

.454 Casull

Notes: This round was developed in 1957 for Dick Casull's 454 Casull revolver. The round is essentially a stretched .45 Long Colt round. This round has not been chambered in many revolvers and is still a rather rare round. It is easily more powerful than the .45 Long Colt round, and is even more powerful than the .44 Magnum. The bullets are unusually hard and have good penetrative power. A revolver that is chambered for the .454 Casull round can also fire .45 Long Colt ammunition; however, the cylinders must be carefully cleaned before firing .454 Casull again, or the revolver can be damaged beyond repair due to fouling.

Nominal Size: 11.5x35mm
Actual Size: 11.48x35.31mm
Case Type: Straight
Weight: 3.65 kg per box of 100; Price: $116 per box

Magazines:

Per round: 0.029 kg			

.455 Webley Automatic

Notes: This is a semi-rimmed round adapted from the Webley revolver rounds, and first used in the 1912 Webley self-loading pistol. It is a low velocity round (even lower than that of the .45 ACP), and has a very blunt nose that cause it to lose speed quickly. It was retired from British service (along with the pistol that fired it) at the end of World War 1. Though many of the pistols were sold on the surplus market all over the world, very little of the ammunition exists today, and most of it is handloaded.

Other Names: .455 Webley Auto
Nominal Size: 11.5x24mm
Actual Size: 11.56x23.62mm
Case Type: Straight
Weight: 2.48 kg per box of 100; Price: $80 per box

Magazines:

Per round: 0.02 kg	7-round box: 0.25 kg		

.455 Webley Revolver Mk I

Notes: This round was designed by the British in 1892 to replace several older revolver rounds. It was at first designed to be a blackpowder round, but in 1894 was re-designed to use smokeless powder. The last company to commercially load this round was Colt in 1930, until Fiocchi began offering the round again in recent years. As a revolver round, it has basically adequate stopping power despite its low velocity.

Twilight 2000 Notes: Factory-made rounds are not available.
Other Names: .455 Enfield, .455 British Service, .455 Colt, .455 Revolver Mk I
Nominal Size: 11.5x22mm
Actual Size: 11.56x22.1mm
Case Type: Straight
Weight: 2.33 kg per box of 100; Price: $74 per box

Magazines:

Per round: 0.019 kg			

.455 Webley Revolver Mk II

Notes: This is an updated version of the .455 Webley Revolver Mk I (a round originally designed for blackpowder). It was used until World War 2, then the revolvers that fired them were sold on the open market at cut-rate prices. The .455 Webley Revolver Mk II is a very low-velocity round that does not have much striking power despite its large size. Fiocchi still makes the cartridge, but it is essentially obsolete except to collectors.

Other Names: .455 Revolver Mk II

Nominal Size: 11.5x19mm
Actual Size: 11.53x19.56mm
Case Type: Straight
Weight: 2.04 kg per box of 100; Price: $66 per box
Magazines:

Per round: 0.016 kg			

.460 Rowland

Notes: The .460 Rowland was designed specifically to out-perform the .45 Super round yet be usable in 1911-type pistols with only a small conversion kit, and to have the power of a .44 Magnum round in a cartridge designed for a semiautomatic pistol. (Clark Custom Guns does caution that not all 1911-type pistols are suitable for conversion to .460 Rowland.) Designed by John Rowland in 1996, Rowland contracted with Clark Guns to develop the conversion kit utilizing the .460 Rowland round. Some gunsmiths have also independently developed conversions to allow the .460 Rowland to be fired from the Ruger Blackhawk and Smith & Wesson 25 and 625 revolvers, and a Mech-Tech kit exists to convert a .460 Rowland-firing 1911 into a carbine. Complete cartridges, bullets, and brass are primarily made by Georgia Arms and sold through Clark Custom Guns; .460 Rowland brass is also available from Starline; bullets are also available from Remington, Sierra, Speer, and Hornady. Though case length is longer, the complete cartridge is the same length as that of the .45 ACP.

Twilight 2000 Notes: The .460 Rowland is an extremely rare custom round in the Twilight 2000 timeline, fired from a few custom-built pistols.

Nominal Size: 11.68x25mm
Actual Size: 11.46x24.38mm
Case Type: Straight
Weight: 2.21 kg per box of 100; Price: $80 per box
Magazines:

Per round: 0.02 kg	7-round box: 0.26 kg	8-round box: 0.29 kg	

.460 Smith & Wesson Magnum

Notes: The .460 Smith & Wesson Magnum is essentially a longer, blown-out version of the .454 Casull round; physically, it dwarfs that round. It was designed primarily for use in handgun hunting, and can take down even large game such as an elk or bear. Revolvers that can fire the .460 S&W Magnum can usually also fire the .454 Casull round and the .45 Long Colt round, but the reverse is not usually true – the pressures produced by the .460 round are much too high for anything but a specially-designed weapon to handle. The .460 Smith & Wesson Magnum is even close to the .500 Smith & Wesson Magnum for stopping power, range, and penetration, and revolvers designed for the .500 S&W Magnum round can often be easily converted to fire .460 S&W Magnum. The .460 S&W Magnum is so powerful that Smith & Wesson absolutely insists that a revolver chambered for it be fired with the shooter using ear protection – the sound is so loud that it can damage hearing within firing a few rounds. Today, most major ammunition makers produce versions of the .460 Smith & Wesson Magnum.

Twilight 2000 Notes: The .460 Smith & Wesson Magnum does not appear in the Twilight 2000 timeline.
Other Names: .460 Smith & Wesson, .460 S&W Magnum, .460 S&W
Nominal Size: 11.5x45mm
Actual Size: 11.53x45.47mm
Case Type: Straight
Weight: 47.5 kg per case of 1000; Price: $760 per case
Magazines:

Per round: 0.035 kg			

.475 Linebaugh

Notes: This round was produced by John Linebaugh in 1988 in the never-ending quest to develop the world's most powerful handgun cartridge. (It was, for a short time.) The .475 Linebaugh is based on a cut-down .45-70 Government cartridge, with a heavy bullet and chock-full of propellant. Its best use is hunting, self-defense against large animals, target shooting, and for bragging rights. Only the company of Buffalo Bore produces factory lots, but not in large quantities.

Nominal Size: 12x38mm
Actual Size: 12.07x38.1mm
Case Type: Straight
Weight: 4.36 kg per box of 100; Price: $140 per box
Magazines:

Per round: 0.038 kg			

.475 Wildey Magnum

Notes: This round was the second cartridge designed to be chambered in the huge Wildey Magnum pistol, after the .45 Winchester Magnum. It is based on the .284 Winchester rifle cartridge, shortened greatly and necked out to handle the large-caliber bullet involved. The .475 Wildey Magnum is best used as a hunting and target-shooting cartridge; the heavy recoil and questionable accuracy unless carefully aimed mean that it is not truly useful as a defensive or offensive weapon, though the round could probably bring down Andre the Giant. Manufactured lots are available in the US, in small numbers.

Other Names: .475 Wildey
Nominal Size: 12x33mm
Actual Size: 12.07x32.89mm
Case Type: Straight
Weight: 3.76 kg per box of 100; Price: $120 per box

Magazines:

Per round: 0.03 kg	7-round box: 0.43 kg		

.476 Enfield

Notes: This British military revolver round had a relatively short military history, from 1881 to 1891, when it was replaced by the first of the .455 Webley rounds. The Mk III version is the version of the .476 Revolver round that used smokeless powder; earlier marks used blackpowder. It too was an unsatisfactory round and quickly became obsolete, and the province of handloaders.

Other Names: .476 Enfield Mk III, .476 Eley, .455/476, .476 Revolver
Nominal Size: 12x22mm
Actual Size: 11.99x22.1mm
Case Type: Straight
Weight: 2.5 kg per box of 100; Price: $80 per box

Magazines:

Per round: 0.02 kg			

.480 Ruger

Notes: This round was originally designed to be chambered in a special 50th-anniversary Ruger Super Redhawk to bear Bill Ruger's name. The round itself was an experiment and not intended to break any power records – it basically falls between the .44 Magnum and .454 Casull in terms of power. It was more intended to offer a power increase over the .44 Magnum, but without the recoil increase of the .454 Casull. The case is a cut-down and modified .45-70 round.

Twilight 2000 Notes: This round does not exist.
Nominal Size: 12x32mm
Actual Size: 12.07x32.64mm
Case Type: Straight
Weight: 37.38 kg per case of 1000; Price: $600 per case

Magazine:

Per round: 0.03 kg			

.500 Linebaugh

Notes: This was another result of John Linebaugh's search for the most powerful handgun cartridge possible. It is based on the .348 Winchester case, cut down and necked up to .50 caliber. It was originally designed to be fired from a modified Ruger Bisley revolver, but has since been chambered in other revolvers. The .500 Linebaugh is so powerful that it can even take down African game with the proper revolver (and if you can get close enough). It will kill most North American animals straight away. Handloading this round can be a problem due to the dearth of .348 Winchester cartridges.

Nominal Size: 13x36mm
Actual Size: 12.95x35.81mm
Case Type: Straight
Weight: 4.72 kg per box of 100; Price: $150 per box

Magazines:

Per round: 0.038 kg			

.500 Maximum

Notes: John Taffin says that with the .500 Maximum, cartridge manufacturers have indeed come up with the biggest and most powerful (and legal) cartridge available for a handgun. The .500 Maxiumum, as one of its alternate names would indicate, a stretched and strengthened version of the .500 Linebaugh (already a powerful cartridge). The power and recoil is, to say the least, heavy, and assuming you can get close enough, the round could easily take down even huge game like an Elephant (or obliterate a human head…). The .500 Maxium is largely handloaded, though manufactured cartridges are available in small lots. Cases are generally re-formed .348 Winchester rifle rounds, though Ben Forkin also makes fully formed brass suitable for the .500 Maximum, and the heavier

bullets useable in the .500 Linebaugh will work in the .500 Maximum.
Twilight 2000 Notes: The .500 Maximum is not available in the Twilight 2000 timeline.
Other Names: .500 Linebaugh Long
Nominal Size: 13x41mm
Actual Size: 12.95x40.89mm
Case Type: Straight
Weight: 4.74 kg per box of 100; Price: $$172 per box
Magazines:

Per round: 0.043 kg			

.500 Smith & Wesson Magnum

Notes: Developed by Cor-Bon for Smith & Wesson, the .500 Smith & Wesson was introduced along with its Model 500 X-Frame revolver in 2003. The round is perhaps the most powerful handgun round in the world today, though newer loads such as the .500 Wyoming Express have also been given that title. The .500 Smith & Wesson makes a .44 Magnum round look like a pipsqueak by comparison; it's a massive round over 2 inches long with a round over a half an inch in diameter, and very thick cartridge walls. Handguns designed for the .500 Smith & Wesson are usually equipped with rather large muzzle brakes to help tame the massive recoil, and are usually built on massive frames (Smith & Wesson used it's X-Frame, which is otherwise used only by the Smith & Wesson 460XVR). More recently, some manufacturers have been making carbines and rifles chambered for .500 Smith & Wesson.
Twilight 2000 Notes: The .500 Smith & Wesson Magnum round does not exist in the Twilight 2000 timeline.
Other Names: .500 Smith & Wesson, .500 Magnum
Nominal Size: 13x41mm
Actual Size: 12.7x41.28mm
Case Type: Straight
Weight: 45.98 kg per case of 1000; Price: $840 per case
Magazines:

Per round: 0.042 kg			

.500 Smith & Wesson Special

Notes: Shooters really liked the new .500 handguns chambering the .500 Smith & Wesson Magnum cartridge, and they wanted to keep the power of that round – but for many shooters, even experienced ones, repeated shooting of the .500 Smith & Wesson Magnum, to attain and keep proficiency with the revolver, was a bit overwhelming, and the real-life cost of the .500 Smith & Wesson Magnum round is also an issue. Smith & Wesson kept getting requests for a less powerful version of the .500 Smith & Wesson Magnum, and some handloaders were actually making them. In 2004, Smith & Wesson asked Cor-Bon to design such a round, which they called (in the usual pattern) the .500 Smith & Wesson Special. It is essentially the same bullet(s) as found in a .500 Smith & Wesson Magnum, but put into a shorter case and using less propellant. Unlike the .38 Special and .44 Special, though, the .500 Special came *after* the .500 Magnum instead the .500 Magnum being developed from it. The result is a .500 round which has power similar to the .357 Magnum – much easier on the shooter. Smith & Wesson and some other manufacturers have hinted that they may develop some revolver designed only for the .500 Special round (and not the capable of firing the .500 Magnum), but none have confirmed this as of yet.
Twilight 2000 Notes: the .500 Smith & Wesson Special round does not exist in the Twilight 2000 timeline.
Other Names: .500 Special
Nominal Size: 13x37mm
Actual Size: 12.7x37.11mm
Case Type: Straight
Weight: 47 kg per case of 1000; Price: $750 per case
Magazines:

Per round: 0.038 kg			

.500 Wyoming Express

Notes: Not to be outdone in the power department by the .500 Smith & Wesson Magnum, the .500 Wyoming Express was designed by the armorers at Freedom Arms specifically for its Model 83 revolver. The cartridge features thick walls and is belted to make sure headspacing is correct in the Model 83 revolver. The .500 Wyoming Express was designed on a computer in order to get the optimum combination of powder capacity, case volume, bullet weight, and pressure capability – and then it was tweaked further through testing. Freedom Arms does not recommend hotloading or reduced loadings, as these can damage the revolver firing the round. It also does not recommend loading the .500 Wyoming Express with excessively light or heavy bullets, as the same can result.
Twilight 2000 Notes: The .500 Wyoming Express does not exist in the Twilight 2000 timeline.
Other Names: .500 WE
Nominal Size: 12.7x35mm
Actual Size: 12.7x34.8mm

Case Type: Straight
Weight: 3.88 kg per box of 100; Price: $141 per box
Magazines:

Per round: 0.035 kg			

.510 GNR

Notes: The .510 GNR round was designed in 2007 as a participant in the never-ending competition for the biggest, baddest handgun and cartridge. Though it is not a physically huge round, it has great power due to the heavy bullet it uses and the sheer amount of propellant it is loaded with, as well as its huge caliber. It was designed by Gary Reeder, the famed firearms expert and designer (GNR = Gary N. Reeder). The caliber is so big, for example, that it is illegal in California and some other jurisdictions in both the US and some other countries that otherwise allow for powerful rounds. (A bit of an overreaction in my book – I don't think the average person needs to own a cannon, but even an above-average crook isn't going to be using something like a Reeder 510 Hunter either.) As with most such rounds, its best use is in handgun hunting, and the .510 GNR is quite adept at that – even a short-barreled Reeder 510 Hunter can bring down medium game, and a longer-barreled one can take down large game like charging bears. So far, the only weapon chambered for the .510 GNR is the Reeder 510 Hunter, and only Reeder makes the ammunition.

Twilight 2000 Notes: The .510 GNR is not available in the Twilight 2000 timeline.
Nominal Size: 13x33mm
Actual Size: 12.98x33.27mm
Case Type: Straight
Weight: 3.87 kg per box of 100; Price: $141 per box
Magazines:

Per round: 0.035 kg			

The magazines presented here are based on *light alloy* magazines. For steel magazines, increase weight by 2%; for plastic or synthetic magazines; decrease weight by 8 percent.

4mm Ubüngsmunition

Notes: This very small-caliber round is a type of round known as a "gallery cartridge" – designed to be used at indoor, short-range target ranges designed for casual use instead of being a "real" rifle round. The small case has no actual propellant, so to speak; instead, it uses an overly-large primer (for the size of the round) to fire the small, lightweight bullet. It does little actual damage and virtually no penetration, and it deliberately designed to have neither. This sort of "gallery shooting" went largely out of style before World War 1, and therefore few rifles today are chambered for it. No major company produces large lots of 4mm Ubüngsmunition, as there is little market for it; most such rounds are handloaded, though some small lots are produced by minor companies in Europe. For the most part, however, it is in disuse, and if you shoot someone with it, you'll probably just piss them off.

Other Names: 4mm M-20
Nominal Size: 4x10mm
Actual Size: 4.04x10.07mm
Case Type: Straight
Weight: 0.11 kg per box of 100; Price: $4 per box

Magazines:

Per round: 0.001 kg			

5.45mm Kalashnikov

Notes: This cartridge was the subject of a great deal of controversy when first encountered during the Soviet invasion of Afghanistan. The bullet is designed to be unstable in flesh; underneath its highly-pointed jacket, there is a steel core with a short lead filler and an air space in the nose. The bullet is long and thin, and aerodynamically efficient, giving good range. A subsonic version of this round exists; triple the costs for this round.

Twilight 2000 Notes: The helical magazine is not found in the Twilight 2000 timeline.
Other Names: 5.45mm Soviet, .21 Genghis (though not in the Twilight 2000 timeline)
Nominal Size: 5.45x39mm (some sources say 5.45x39.5mm)
Actual Size: 5.61x39.65mm
Case Type: Necked
Weight: 12.25 kg per case of 1000; Price: $200 per case

Magazines:

Per Round: 0.01 kg	5-round box: 0.1 kg	10-round box: 0.17 kg	20-round box: 0.32 kg
30-round box: 0.47 kg	40-round box: 0.62 kg	45-round box: 0.7 kg	60-round box: 0.92 kg
75-round drum: 1.15 kg	90-round drum: 1.37 kg	96-round box: 1.46 kg	100-round helical: 2 kg

5.56mm IOFB

Notes: Designed specifically for India's Zittara High-Power SMG (itself derived from the Israeli Tavor MTAR-21 short assault rifle), the 5.56mm IOFB is a close to a direct copy of Colt's 5.56mm MARS round – a shortened 5.56mm NATO round with a heavier bullet. The IOFB 5.56mm round as well as the carbine that fires it are rare in Indian service (used primarily by special operations units), and unknown elsewhere. IOFB in India produces the rounds themselves.

Twilight 2000 Notes: The 5.56mm IOFB round is not available in the Twilight 2000 timeline.
Other Names: 5.56mm MINSAS, 5.56mm INSAS
Nominal Size: 5.56x30mm
Actual Size: 5.69x30mm
Case Type: Necked
Weight: 0.84 kg per box of 100; Price: $30 per box

Magazines:

Per round: 0.008 kg	30-round box: 0.23 kg		

5.56mm NATO

Notes: This cartridge first appeared in 1957 for use in the then-experimental AR-15. The round was meant to be approximately the same size and performance as the .222 Remington, but have a higher velocity, especially at long range. When the M-16 was forced upon US forces by Robert McNamara, the US then decided to introduce the cartridge to NATO and strongly urge its adoption as standard assault rifle cartridge for the alliance. There were teething problems with the cartridge, mainly because the US Department of Defense, in an attempted cost-saving gesture, used a cheaper propellant than was specified by Remington. This helped lead to extensive fouling problems with the then-new M-16. This was quickly rectified. The original military cartridge, the M-193, was replaced by the SS-109 round which uses a fast-twist barrel and a heavier bullet with more propellant.

A subsonic version of this round exists; triple costs for this version. The Mk 262 heavy-bullet, higher-charge version costs twice as much as the standard rounds; the round causes the same damage as the standard bullet for game purposes, but penetration is increased by one level (penetration becomes 1-1-Nil).

Other Names: .223 Remington
Nominal Size: 5.56x45mm
Actual Size: 5.69x44.7mm
Case Type: Necked
Weight: 14.25 kg per case of 1000; Price: $230 per case

Magazines:

Per round: 0.011 kg	2-round box: 0.06 kg	3-round box: 0.08 kg	4-round box: 0.09 kg
5-round box: 0.11 kg	6-round box: 0.13 kg	7-round box: 0.15 kg	8-round box: 0.16 kg
9-round box: 0.18 kg	10-round box: 0.2 kg	12-round box: 0.23 kg	15-round box: 0.29 kg
20-round box: 0.37 kg	22-round box: 0.41 kg	25-round box: 0.46 kg	30-round box: 0.55 kg
30-round clip: 0.34 kg	35-round box: 0.64 kg	40-round box: 0.72 kg	42-round box: 0.76 kg
50-round box or drum: 0.9 kg	50-round belt: 0.57 kg	75-round drum: 1.33 kg	90-round drum or MWG: 1.59 kg
100-round drum or C-Mag: 1.77 kg	100-round belt: 1.14 kg	150-round belt: 1.71 kg	200-round belt: 2.28 kg
250-round belt: 2.85 kg	1000-round cassette: 11.4 kg		

5.6mm Kalashnikov

Notes: Developed by the Soviets around 1964 for use as a varmint and competition round, the 5.6mm Kalashnikov round is basically a 7.62mm Kalashnikov case necked down to take a variant of the .22 Long Rifle bullet (one that is somewhat longer and has a Spitzer point). This essentially makes the round a small-caliber short magnum round. (The 5.6mm Kalashnikov round also became the parent rounds for the .22 PPC and 6mm PPC cartridges, many years later.) The first 5.6mm Kalashnikov rounds were not actually made in the Soviet Union, however – they were introduced through Finland, where Sako began producing them for rifles they had bought from the Soviets. Original Soviet-made cartridges had the same steel cases and Berdan primers as the 7.62mm Kalashnikov rounds, but Finnish-made rounds and recent Russian versions use lacquered brass cases and non-corrosive primers. The 5.6mm Kalashnikov round is quite flat-shooting at short and medium ranges, and has surprising range and knockdown power for its size and weight (comparable to the 5.56mm NATO round). Currently, the round is quickly picking up popularity in Europe, and in North America to some extent. There are several Russian manufacturers that make factory loads, and Sako and Lapua of Finland also make them. In addition, there are large amounts of older 5.6mm Kalashnikov rounds still available.

Other Names: 5.6x39mm, .220 Russian, .220 Sako, 5.6x39mm Lapua, Lapua 5.6mm Russian, 5.6mm Short
Nominal Size: 5.6x39mm
Actual Size: 5.66x38.65mm
Case Type: Necked
Weight: 10.67 kg per case of 1000; Price: $190 per case

Magazines:

Per round: 0.01 kg	3-round box: 0.07 kg	10-round box: 0.17 kg	30-round box: 0.47 kg

5.6x50mm Magnum

Notes: This is a European small-caliber magnum round developed in Germany in 1968. It is basically a rimmed version of the .222 Remington Magnum with a longer case, and has more power than that round. It is designed primarily for single-shot or double rifles, though Krico does make some bolt-action rifles that chamber it. The round was designed for deer hunting, but most Americans would consider it a varmint cartridge. The 5.6x50mm Magnum is rare outside of Europe.

Other Names: 5.6x50Rmm Magnum
Nominal Size: 5.6x50mm
Actual Size: 5.69x50.04mm
Case Type: Necked
Weight: 15.88 kg per case of 1000; Price: $250 per case

Magazines:

Per round: 0.013 kg	3-round box: 0.09 kg		

5.6mm RWS

Notes: This round was developed by RWS of Germany in 1964 for deer hunting. It was designed to satisfy the minimum legal requirements (in Germany) for remaining energy at 200 meters when hunting deer, but otherwise be a lightweight cartridge. It is in the same class as the .220 Swift round, and would be classed as a varmint round in the US. This round is reasonably popular in Europe, but almost unknown in North America or South America.

Other Names: 5.6x57mm RWS, 5.6x57Rmm RWS
Nominal Size: 5.6x57mm
Actual Size: 5.69x56.9mm
Case Type: Necked
Weight: 18.13 kg per case of 1000; Price: $290 per case

Magazines:

Per round: 0.015 kg	3-round box: 0.1 kg	4-round box: 0.12 kg	5-round box: 0.14 kg

5.6mm Vom Hofe

Notes: This round was introduced in 1937 by E.A. Vom Hofe for his line of Mauser-based rifles. Some of these rifles were exported to the US between World War 1 and 2, and Stoeger Arms made rifle in this chambering starting in 1962. The round is no longer made in Europe, but the cases and bullets are manufactured in the US by Old Western Scrounger and Huntington's Sporting Supply, and the bullets are also made by Hornady. Complete cartridges are not being manufactured right now. It is considered a long-range varmint round in North America, but a medium-game round in Europe.

Other Names: 5.6mm Vom Hofe Super Express
Nominal Size: 5.6x61mm
Actual Size: 5.77x60.71mm
Case Type: Necked
Weight: 1.99 kg per box of 100; Price: $64 per box

Magazines:

Per round: 0.016 kg	15-round box: 0.21 kg	30-round box: 0.4 kg	

5.7mm MMJ

Notes: The 5.7mm MMJ round was developed in the early 1960s and introduced in 1963 specifically for one of the Johnson Guns version of M-1 Carbine. The idea was to develop a round which was lighter than the .30 Carbine round, for use in a version of the M-1 Carbine meant to be a survival rifle or hikers' carry rifle. The 5.7mm MMJ is basically a .30 Carbine round necked down to .22 caliber. The 5.7mm MMJ round has a high velocity and with its pointed bullet, gives performance all out of proportion to its size and weight. It is capable of taking down animals the size of deer with proper shot placement, but against larger animals inflicts damage only sufficient to scare them away (to possibly bleed out later). The 5.7mm MMJ, however, did not prove to be popular at the time of its introduction, and most weapons chambered for it since then have been custom builds. However, every so often, a manufacturer (most recently, Fulton Armory with a re-make of the Johnson PM-30 Spitfire) makes a rifle chambered for the 5.7mm MMJ round, to the cartridges for it remain in the supply chain.

Other Names: .22 Spitfire, 5.7mm Johnson, 5.7mm Spitfire
Nominal Size: 5.7x33mm
Actual Size: 5.69x32.77mm
Case Type: Necked
Weight: 10.38 kg per case of 1000; Price: $170 per case

Magazines:

Per round: 0.008 kg	15-round box: 0.21 kg	30-round box: 0.4 kg		

5.7mm VEC

Notes: In 1991, the Austrian sporting-rifle manufacturer Voere, already known for quality hunting and target rifles, took a big chance – designing a rifle that uses caseless ammunition for sale to the general market. In addition, the VEC ammunition is not fired using a conventional primer and firing pin; instead, it is electrically ignited, using a pair of 15-volt batteries. Though the rifle and its ammunition are still for sale, this bold venture has consistently lost money for Voere, though Voere has doggedly kept the rifle and ammunition in low-rate production; it is doubtful that Voere's investment will ever pay off. The resulting ammunition is very lightweight, but appeals primarily to the progressive and "gee-whiz" crowds. The 5.7mm VEC rounds and its 6mm cousin remain rather rare rounds.

Nominal Size: 5.7x26mm
Actual Size: N/A
Case Type: Necked Caseless (Electronic Ignition)
Weight: 0.58 kg per box of 100; Price: $84 per box

Magazines:

Per round: 0.005 kg	5-round box: 0.05 kg		

5.8mm Chinese

Notes: Though they came late to the game, in the early 1970s, the Chinese realized that small high-velocity projectiles were advantageous in many respects – they were lighter and more ammunition could be carried, and a rifle designed for them could be made much smaller. Given the right bullet and powder loadings, they could even prove superior in penetration. Typical Chinese bureaucracy and resistance to change took over, however, and it was not until the early 1990s that the 5.8mm Chinese round would first appear, along with a modified Type 81 to fire it for testing purposes.

Since then, a number of small arms have been developed for the new cartridge, and it looks as if China will almost totally replace assault rifles and automatic rifles with ones firing this new round, along with certain sniper rifles and machineguns. The 5.8mm Chinese is for the most part an ordinary type of small-caliber round, with a brass case and a lead bullet which is coated first with steel, then with a copper outer coating. Towards the front of the bullet is also a steel core, with a tip cavity and a rear section of lead to increase damaging potential.

There is a further special type of the 5.8mm round, designed specifically for the Type QJY-88 GPMG and the Type QBZ-95 Sniper Rifle variant. This is a round using a heavier bullet with a more substantial steel core and a heavier propellant loading. This version is available at twice the standard cost. Damage is the same as the standard bullet in game terms, but penetration is increased by one level.

Other Names: 5.8x42mm, DBP-87
Nominal Size: 5.8x42mm
Actual Size: N/A
Case Type: Necked
Weight: 12.21 kg per case of 1000; Price: $220 per case

Magazines:

Per round: 0.011 kg	10-round box: 0.19 kg	30-round box: 0.53 kg	75-round drum: 1.3 kg
200-round belt: 2.22 kg			

6mm Freres

Notes: This is a very recent German development. It appears to be a necked-down 9.3x62mm cartridge, all the way down to 6mm. It is the first new 6mm civilian round to appear in Europe in a long time, and is almost unknown in the US. It is a magnum round able to deliver a decent blow at long range, outperforming the .243 Winchester or even the 6mm Remington.

Twilight 2000 Notes: This round does not exist.

Other Names: 6mm Freres Magnum, 6x62mmR Freres

Nominal Size: 6x62mm

Actual Size: 6.17x61.47mm

Case Type: Necked

Weight: 23 kg per case of 1000; Price: $370 per case

Magazines:

Per round: 0.018 kg	5-round box: 0.18 kg		

6mm Lee Navy

Notes: This round was first introduced for use in the Winchester 1895 Lee Straight Pull bolt-action rifle used by the US Navy in the late 19th century and early 20th century. It was also used in the Colt-Browning M-1895 machinegun, also used by the US Navy (in this caliber). No 6mm Lee Navy ammunition has been factory-loaded since 1935; this is not so much a fault of the round as it is the propellant, which was not suited for such an advanced-design round.

Other Names: .236 Navy

Nominal Size: 6x60mm

Actual Size: 6.2x59.69mm

Case Type: Necked

Weight: 2.25 kg per box of 100, 5.63 kg per case of 250, belted; Price: $72 per box, $180 per 250-round belt

Magazines:

Per round: 0.018 kg	250-round belt: 4.5 kg		

6x47mm Lapua

Notes: Essentially a 6.5x47mm Lapua round necked down to 6mm, this round takes advantage of the hardness of Lapua cases in general and the 6.5x47mm case in particular. The strong case allows the 6x47mm Lapua to take a high-pressure loading – in a way, it's a hotloaded round. The 6x47mm Lapua, though not as well known as some of the comparable cartridges (6mm Norma Benchrest, 6mm Dasher, or even some 6.5mm loads), has performance that out-does many similar-sized rounds. Though cases have been available for a few years, complete rounds are only slowly becoming available in reasonable-sized lots.

Twilight 2000 Notes: The 6x47mm Lapua is not available in the Twilight 2000 timeline.

Other Names: 6x47mm, 6mm Lapua BR, 6mm Lapua Magnum

Nominal Size: 6x47mm

Actual Size: 6.17x45.97mm

Case Type: Necked

Weight: 1.51 kg per box of 100; Price: $55 per box

Magazines:

Per round: 0.014 kg			

6mm Mauser

Notes: Despite having the same measurements, and being almost identical to the 6mm Remington, the two rounds are not interchangeable due to differences in the shoulder angle. The 6mm Mauser is basically a 7mm Mauser round necked down to take a 6.2mm bullet. The 6mm Remington is a fine hunting cartridge, provided you do not hunt anything heavier than medium game. As a military cartridge, it is unspectacular, but adequate, unless the opponent is wearing body armor.

Other Names: 6.2x57mm RWS

Nominal Size: 6x57mm

Actual Size: 6.17x56.64mm

Case Type: Necked

Weight: 21.13 per case of 1000; Price: $340 per case

Magazines:

Per round: 0.017 kg			

6mm Norma Benchrest

Notes: This round is designed for bench rest shooting, where the rifle is locked into an ultra-stable mount and shot to achieve as much range and accuracy as possible. However, Norma quickly realized the long-range potential for the cartridge and some companies decided to chamber some rifle for it. It has basically failed as a bench rest round, but it is more popular as a long range game round, and the round retains a great amount of speed even after 1000 meters.

Other Names: 6mm Norma BR

Nominal Size: 6x39mm

Actual Size: 6.4x39.3mm

Case Type: Necked

Weight: 1.58 kg per box of 100; Price: $50 per box

Magazines:

Per round: 0.013 kg	3-round box: 0.08 kg	10-round box: 0.22 kg	

6mm PPC

Notes: The 6mm PPC round is basically a larger version of the .22 PPC. The case is virtually the same, with the case necked out to 6mm and shortened somewhat. Like the .22 PPC, it is based on the .220 Russian cartridge, which is a necked-down 7.62mm Kalashnikov round. The 6mm PPC round is known for its uniform acceleration and velocity, which contributes to accuracy. It is currently not a common cartridge, but interest is picking up.

Nominal Size: 6x38mm

Actual Size: 6.17x38.1mm

Case Type: Necked

Weight: 1.43 kg per box of 100; Price: $46 per box

Magazines:

Per round: 0.011 kg	6-round box: 0.13 kg	10-round box: 0.2 kg	

6mm Remington

Notes: The 6mm Remington is a cartridge that was originally introduced as the .244 Remington in 1955. The .244 Remington used bullets of 55-90 grains and was designed for a weapon with rifling of a 1 in 12 twist. However, many shooters wanted to use heavier bullets of up to 105 grains, and the 1 in 12 twist would not properly stabilize those bullets for flight. The 100-grain-range, in particular, was a problem – sometimes the bullets properly stabilize with the 1 in 12 twist, sometimes not. Therefore, Remington designed a new round for use with a heavier bullet and a 1 in 9 twist in the rifling. To avoid confusion, these rounds were re-designated 6mm Remington. This change occurred in 1963, and the original .244 Remington rounds are a rarity these days, as are the rifles that fire them.

Other Names: .244 Remington (see Notes)

Nominal Size: 6x57mm

Actual Size: 6.17x56.64mm

Case Type: Necked

Weight: 21.13 kg per case of 1000; Price: $340 per case

Magazines:

Per round: 0.017 kg	3-round box: 0.11 kg	4-round box: 0.14 kg	

6mm VEC

Notes: A somewhat larger cousin of the 5.7mm VEC caseless round listed above, the story of the 6mm VEC is essentially the same as the story behind the 5.7mm VEC round, and I invite you to scroll up to that round for more detail. Like the 5.7mm VEC round, the 6mm VEC is caseless with electronic ignition and rather rare, though still in production by Voere.

Other Names: 6mm UCC, 6mm Usel Caseless Cartridge
Nominal Size: 6x27mm
Actual Size: N/A
Case Type: Necked Caseless (Electronic Ignition)
Weight: 0.065 kg per box of 100; Price: $96 per box

Magazines:

Per round: 0.006 kg	5-round box: 0.058 kg		

6.5mm-06 Ackley Improved

Notes: After World War 2, large amounts of 6.5mm rifles of various countries ended up on the military surplus market. While these rifles were plentiful after World War 2, the ammunition for them had largely been expended in the war and was not easily found. On the other hand, large amounts of .30-06 Springfield cases were available, especially after NATO made the 7.62mm NATO round standard. The natural solution was to neck down the .30-06 to accept a 6.5mm bullet. Ackley made the most viable of these rounds.

The problem that Ackley encountered for many years was the propellant available at the time; they simply burned to fast to really make the conversion work well enough, which basically made Ackley's 6.5mm-06 no better than most of the .25-caliber-based rifle rounds at the time. It was actually a couple of decades before such powders became available; today, the newest version of the 6.5mm-06 Ackley, the 6.5mm-06 Ackley Improved, easily surpasses such rounds. The 6.5mm-06 Improved has turned into a flat-shooting, high-velocity round with considerable stopping power and penetration.

Other Names: .257 Ackley Improved (not correct, but common), 6.5mm-06 Ackley (totally incorrect, but also common), 6.5mm-06 Wildcat
Nominal Size: 6.5x64mm
Actual Size: 6.71x63.5mm
Case Type: Necked
Weight: 2.48 kg per box of 100; Price: $90 per box

Magazines:

Per round: 0.023 kg			

6.5mm Arisaka

Notes: This round was originally developed for an 1897 Japanese rifle that was found to be unsafe and was quickly discontinued. It only later that is was chambered in the 38th Year Rifle. This rifle was seized in large numbers during and after World War 2 as war trophies and also sold on the open market as a surplus rifle. Until recently, Norma sold ammunition for the rifle, and steel-cased ammunition of this type is still sold by China. The case is short and the powder charge small, but it is an efficient round. It is still quite a good killing round, whether against antelopes, deer, elk, or humans.

Other Names: 6.5x55mm Japanese, 6.5x55mm Arisaka
Nominal Size: 6.5x55mm
Actual Size: 6.65x50.8mm
Case Type: Necked
Weight: 22 kg per case of 1000; Price: $350 per case

Magazines:

Per round: 0.018 kg	5-round clip: 0.09 kg	30-round box: 0.85 kg	40-round box: 1.11 kg

6.5-08 A-Square

Notes: The story of this round involves a bit of politics. A-Square appears to be the first to invent this round, necking down the .308 Winchester (7.62mm NATO) round to approximately 6.5mm size. They submitted their new round to the appropriate agencies, but the paperwork dragged. A few months later, Remington came up with basically the same round, calling it the .260 Remington, and SAAMI (the ammunition governing body) decided to go with the Remington claim. This has gone back and forth through the years, but it does seem that A-Square had the round first. The 6.5-08 A-Square performs best in long-range target shooting, especially since such shooting requires a lot of practice and the 6.5-08 A-Square is known for less barrel wear than most equivalent cartridges. It is also quite appealing to those who hunt up to big North American game and prefer a light rifle with lower recoil.

Other Names: .260 Remington
Nominal Size: 6.5x64mm
Actual Size: 6.71x63.5mm
Case Type: Necked
Weight: 28.13 kg per case of 1000; Price: $450 per case

Magazines:

Per round: 0.023 kg			

6.5mm Carcano

Notes: This was one of the official Italian rifle and light/medium machinegun cartridges until the end of World War 2. I was first designed in 1891 for the Italian version of the Mannlicher rifle. It is similar to the 6.5mm Mannlicher-Shoenauer in ballistic performance, but does not quite have the same punch. These cartridges are no longer mass-produced, but can be handloaded starting with 6.5mm Mannlicher-Schoenauer cases.

Other Names: 6.5x52mm Italian, 6.5x52mm Mannlicher-Carcano
Nominal Size: 6.5x52mm
Actual Size: 6.73x52.07mm
Case Type: Necked
Weight: 2.31 kg per box of 100; Price: $74 per box

Magazines:

Per round: 0.019 kg	5-round clip: 0.09 kg	6-round clip: 0.11 kg	50-round strip-feed box: 1.52 kg

6.5mm Creedmoor

Notes: The 6.5mm Creedmoor was introduced in 2007 as a modification of the .30 TC, which is itself a modification of the .308 Winchester. It was designed by Hornady, and designed specifically for target shooting in competitions, though it is gaining popularity as a long-range hunting round. In addition, special operations forces of several countries have reportedly been experimenting with the 6.5mm Creedmoor as a sniper round. The 6.5mm Creedmoor offers ballistics and power similar to the 6.5-284 Norma or the 6.5mm Remington Magnum, though it is designed for shorter-action bolt-action rifles. The 6.5mm Creedmoor also functions well in modified AR-10 platforms. (Long-range competition shooter Ray "RayDog" Sanchez has described the 6.5mm Creedmoor as "boringly accurate" out to 1000 meters.) Muzzle velocity is high (893 meters per second) and it retains high velocity for much of its flight, out to 1200 meters.

Factory rounds for the 6.5mm Creedmoor are currently made by Hornady and Lapua. However, when handloading, high-pressure propellant loads are not recommended for Hornady or Starline brass, due to the high possibility for blown cases. Lapua brass does not have this problem. The 6.5mm Creedmoor round functions well with a suppressor. Recoil is generally less than comparable rounds (though not measurable by Twilight 2000 v2.2 rules). Recommended bullet weights by competition shooters and hunters are 150-180 grains, though bullet weights for the 6.5mm Creedmoor range from 95 to 180 grains.

Other Names: 6.5 Creedmoor, 6.5 CM, 6.5 CRDMR
Nominal Size: 6.5x47mm
Actual Size: 6.72x48.8mm
Case Type: Necked
Weight: 173 kg per case of 1000; Price $350 per case

Magazines:

Per round: 0.017 kg	5 round box: 0.17 kg	10-round box: 0.3 kg	20-round box: 0.57 kg

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6.5mm Daudeteau

Notes: The 6.5mm Daudeteau round was – well, part of deceptive trade practices. For years, Daudeteau tried to sell his design for rifles and proprietary ammunition to the French Army, with virtually no success, though the rifles and ammunition were used by the French Navy and Marines operating in Indochina, where they hoped that guerillas who captured the rifles could not use without a large amount of modification due to the proprietary ammunition they chambered. Some were sold to other countries in small numbers, but the largest amount were used by the Uruguayan Army. The countries that used the Daudeteau rifles were locked into using the proprietary ammunition – and Daudeteau lowballed the cost of their rifles and, after initial shipments of ammunition with the rifles, overcharged on the ammunition. Most countries, after a while of this abuse, replaced their Daudeteau rifles with other, more common rifles which were just as inexpensive as the Daudeteau and fired ammunition which could be bought at a competitive price elsewhere. Those armies generally took a loss on the cost of their Daudeteau rifles and ammunition, though some equipped reserve and Home Guard-type units; they simply couldn't get anyone else to buy the rifles and ammunition, and Daudeteau would not give a refund on what was outdated technology. Today, only handloaded examples of the 6.5mm Daudeteau round exists, and many Daudeteau rifles were later rechambered for more common ammunition, and have gained a small following as hunting rifles.

Nominal Size: 6.5x54mm
Actual Size: 6.71x53.6mm
Case Type: Necked
Weight: 19 kg per box of 100; Price: $76 per box
Magazines:

Per round: 0.019 kg	5 round clip: 0.1 kg		

6.5mm Dutch Mannlicher

Notes: This is basically an earlier, rimmed version of the 6.5mm Mannlicher-Schoenauer cartridge, used by the Dutch and Romanians in their Mannlicher rifles. Ballistically, it is virtually identical to the 6.5mm Mannlicher-Schoenauer, and it was once loaded by many companies in the US and Europe. It was dropped as a military cartridge after World War 2, and the rifles that fired it began showing up on the surplus market. However, no major company now makes this round.

Other Names: 6.5mm Romanian Mannlicher, 6.5x53mmRmm, .256 Mannlicher
Nominal Size: 6.5x53mm
Actual Size: 6.68x53.34mm
Case Type: Necked
Weight: 2.34 kg per box of 100; Price: $74 per box
Magazines:

Per round: 0.019 kg	5 round clip: 0.09 kg	250-round belt: 4.68 kg	

6.5mm Greek Service

Notes: When the French introduced the smokeless-powder 8mm Lebel round in the late 1800s, Steyr saw an opening for them to introduce their own rifle firing a smokeless powder round. They introduced this, the Mannlicher-Schoenauer, in 1900 at the World Fair. At first there was little interest in the design, other than some hunting rifle makers, but the Greeks went in for the new rifle and ammunition in a big way, and became the first military users of the Mannlicher-Schoenauer series and its ammunition. They were the only country to use the Mannlicher-Schoenauer with the original 6.5mm round. The round not only has a reputation as a man-stopper, it was used as a hunting round, and in the hands of hunters like Ernest Hemmingway, even brought down smaller elephants. (Despite this, the 6.5mm Greek Service round was *not* recommended for African hunting.)

Despite the round nose of the round, the 6.5mm Greek Service is ballistically-efficient and (depending on the eyesight of the shooter) can produce hits at 2000 meters. At 500 meters, consistent hits can be made. The bullet also retains energy for a long distance, and had a relatively flat trajectory for the time. The rifle was fed by an internal rotary magazine, but the magazine was fed by stripper clips.

Other Names: 6.5mm Greek Mannlicher, 6.5x53mm Greek Mannlicher, 6.5x54mm Greek Mannlicher, 6.5mm Mannlicher-Schoenauer, .264 Mannlicher
Nominal Size: 6.5x54mm
Actual Size: 6.65x53.7mm
Case Type: Necked
Weight:
Magazines:

Per round: 0.019 kg	5 round clip: 0.09 kg	25-round strip: 0.47 kg	

6.5mm Grendel

Notes: Though the earliest forms of the 6.5mm Grendel appeared in 2000, it was not released by Alexander Arms until 2003, specifically for use with part of their family of AR-15 clones. Designed by Bill Alexander himself, the 6.5mm Grendel is essentially a brass version of the 7.62mm Kalashnikov case necked down to 6.5mm, blowing out the shoulder, and changing the primer. As the bullet is relatively long, the 6.5mm Grendel is a good replacement for the 5.56mm NATO round in most weapons, and has in fact been evaluated by US special operations troops with good marks. Alexander Arms is the primary source for the 6.5mm Grendel round, as well reloading dies and brass.

Twilight 2000 Notes: The 6.5mm Grendel does not exist in the Twilight 2000 timeline.
Nominal Size: 6.5x39mm
Actual Size: 6.71x38.23mm
Case Type: Necked
Weight: 15.29 kg per case of 1000; Price: $280 per case
Magazines:

Per round: 0.014 kg	5-round box: 0.14 kg	8-round box: 0.2 kg	10-round box: 0.24 kg
16-round box: 0.37 kg	17-round box: 0.39 kg	18-round box: 0.41 kg	25-round box: 0.56 kg
28-round box: 0.63 kg			

6.5mm Mannlicher-Schoenauer

Notes: This round was developed for use in the 1903 Greek version of the Mannlicher rifle. It was also a popular sporting cartridge, used in several rifles in the US and Europe. In fact, until about 1940, virtually every major US ammunition manufacturer made this round. It is now made only in Europe, particularly by RWS. It is a very good cartridge for hunting, as it is unusually quiet when fired despite its velocity.

Other Names: 6.5mm Greek Mannlicher, DWM477, Roth 632
Nominal Size: 6.5x55mm
Actual Size: 6.65x53.7mm
Case Type: Necked
Weight: 23.38 kg per case of 1000; Price: $370 per case
Magazines:

Per round: 0.019 kg			

6.5x54mm Mauser

Notes: This round was introduced in 1900 and was designed to be fired from short-action Mauser carbines of the period. It only enjoyed a short period of popularity, as the better 6.5x54mm Mannlicher-Shoenauer showed up soon afterward and displaced the 6.5x54mm Mauser cartridge and the rifles that fired it. Handloading is relatively simple, which is good, for it has been a while since it has been manufactured.

Nominal Size: 6.5x54mm
Actual Size: 6.71x53.85mm
Case Type: Necked
Weight: 2.38 kg per box of 100; Price: $76 per box
Magazines:

Per round: 0.019 kg	10-round box: 0.33 kg		

6.5x57mm Mauser

Notes: This is basically a necked down version of the 7mm Mauser round, developed in 1893. It was never used as a military cartridge, but was popular with hunters, and it influenced the design of many similar rounds of other countries, such as the 6.5mm Swedish. The round is still popular in Europe, but virtually unknown in North America.
Other Names: 6.5mm RWS, 6.5x57mm RWS, 6.5x57Rmm RWS, 6.5x57Rmm Mauser, 6.5mm Mauser
Nominal Size: 6.5x57mm
Actual Size: 6.71x56.64mm
Case Type: Necked
Weight: 25 kg per case of 1000; Price: $400 per case
Magazines:

Per round: 0.02 kg	3-round box: 0.13 kg	4-round box: 0.17 kg	5-round box: 0.2 kg
5-round clip: 0.1 kg			

6.5-284 Norma

Notes: For most of its lifetime, the 6.5-284 Norma was a wildcat round, made by handloaders. In a way, it is one of the earliest "short magnums," being a .284 Winchester case shortened and necked down to 6.5mm. It was meant to be a short-range medium-game round for use in lighter rifles, but it was quickly discovered that the 6.6-284 Norma had much better range than the designers had hoped for; in addition, the 6.5-284 Norma also produces relatively little barrel wear compared to other rounds of its class. Ballistics are similar to those of the .270 Winchester, though the lighter bullet is more susceptible to wind deflection. It has only been recently (since about 2005) that Hornady has been producing both empty cases and small lots of complete ammunition in 6.5-284 Norma. It should be noted that while dimensions of the 6.6x284 Norma and the 6.5mm Remington Magnum are virtually identical, headspace and neck angle are not, and they are not interchangeable.
Nominal Size: 6.5x55mm
Actual Size: 6.71x55.12mm
Case Type: Necked
Weight: 2.15 kg per box of 100; Price: $78 per box
Magazines:

Per round: 0.02 kg			

6.5mm Remington Magnum

Notes: This round was an innovation when it was introduced in 1966; it may indeed may be one of the first "short magnum" type cartridges. It is a .350 Remington Magnum case necked down to .264 caliber, and was designed specifically for use in Remington's Model 600 bolt-action carbine. The problem was not the 6.5mm Remington Magnum cartridge; the problem was the Remington 600 carbine, whose 18-inch barrel did not utilize the power of the round properly. For a short time, the longer-barreled Ruger 77 was also chambered for this round, but the 6.5mm Remington Magnum has not been manufactured in a long time, and no current rifles chamber the round. In a proper-length barrel, the 6.5mm Remington Magnum is adequate for hunting all North American game.
Nominal Size: 6.5x55mm
Actual Size: 6.71x55.12mm
Case Type: Necked
Weight: 3.05 kg per box of 100; Price: $78 per box
Magazines:

Per round: 0.025 kg			

6.5x65mm RWS

Notes: Introduced by RWS in 1988. The case is similar to, but not based upon, the 9.3x62mm Mauser, but it is longer and of course fires a smaller bullet. Essentially a magnum round, the performance of the 6.5x65mm RWS is roughly the same as the 6.5mm Remington Magnum, and it can take medium and some large North American and European game at decent ranges. Generally, Europeans prefer the lighter 108-grain bullet, while Americans and Canadians normally choose the 127-grain bullet, but both have high velocity and are soft-point bullets. Rimmed and rimless cases are made. RWS is, unfortunately, the only known manufacturer of factory loads and cases.
Other Names: 6.5x65mmRmm RWS (in its rimmed form)
Nominal Size: 6.5x65mm
Actual Size: 6.71x65mm
Case Type: Necked
Weight: 25.3 kg per case of 1000; Price: $460 per case
Magazines:

Per round: 0.023 kg	3-round box: 0.16 kg		

6.5x68mm RWS

Notes: This round was developed by RWS of Germany in 1939. It was originally chambered in Mauser-type rifles, but later was chambered in Mannlicher-Schoenauer-type rifles. It was also chambered in Vom Hofe rifles, as well as a few American-made rifles. It is a powerful round, close in performance to many magnum loads, but the bullet is light and this limits striking power. The speed of the round is such that it is capable of downing an animal as large as a grizzly bear if shot placement is right, but for the most part, it is best used as a long-range varmint round. Until recently, it was listed for sale in Hirtenberger and RWS catalogs.
Other Names: 6.6mm RWS, 6.5x68Rmm RWS, 6.5x68mm Schuler, 6.5mm Vom Hofe Express
Nominal Size: 6.5x68mm
Actual Size: 6.71x67.56mm
Case Type: Necked
Weight: 29.88 kg per case of 1000; Price: $480 per case
Magazines:

Per round: 0.024 kg	3-round box: 0.16 kg	4-round box: 0.2 kg	5-round box: 0.23 kg

6.5mm Sauer

Notes: This round was introduced before the turn of the 20th century as a blackpowder round, and was later made into a smokeless powder round. It was developed primarily for single-shot rifles, being rimmed, but was also chambered in a very few bolt-action weapons. It does not have a lot of power and is regarded as being best for target shooting or small-game hunting. It is no longer being manufactured, and finding or even making a suitable case and bullet is also problematic.
Nominal Size: 6.5x48mm
Actual Size: 6.6x47.75mm
Case Type: Necked (actually tapered)
Weight: 2.04 kg per box of 100; Price: $66 per box
Magazines:

Per round: 0.016 kg			

6.5mm Swedish

Notes: This round was developed in 1894 for use in Swedish versions of Mauser rifles and carbines. It is based on the 1893 Spanish Mauser round. The Swedes at one point chambered virtually all of its rifles and medium and light machineguns for this round, and it remained in active service until just a couple of decades ago. It was also a popular hunting round in Europe and the US, and remains so. The bullet is boat-tailed and of advanced design for its period, and its stopping power is excellent, more than adequate for medium game and people.
Other Names: 6.5x55mm Swedish. 6.5mm Swedish Mauser, 6.5mm Krag-Jorgensen, 6.5mm Norwegian,
Nominal Size: 6.5x55mm
Actual Size: 6.71x54.86mm
Case Type: Necked
Weight: 24.25 kg per case of 1000; Price: $390 per case

Magazines:

Per round: 0.019 kg	3-round box: 0.13 kg	4-round box: 0.16 kg	5-round box: 0.19 kg
5-round clip: 0.1 kg	7-round box: 0.25 kg	10-round box: 0.34 kg	50-round belt: 0.97 kg
100-round belt: 1.94 kg	250-round belt: 4.85 kg		

6.8mm SPC

Notes: Though the US military (and particularly SOCOM) has been looking for a more effective round to at least partially replace the 5.56mm NATO round since before the Vietnam War, it was not until the US invasion of Afghanistan that the search kicked into high gear. SOCOM wanted a round that only had more range, but more striking power and better terminal ballistics. Several different rounds had been tried over the years, and more were conceived during the Afghanistan and Iraq conflicts. (In fact, the search for a SOCOM 5.56mm NATO replacement is officially still ongoing.) The leading contender in this search, however, seems to be the 6.8mm SPC (Special Purpose Cartridge). This round is sort of a sized-up 5.56mm cartridge; in fact, by modifying the follower and magazine lips, the 6.8mm SPC can be used in 5.56mm NATO magazines. There are already several companies which produce rifles chambered for the round, and many more produce upper receivers for the 6.8mm SPC cartridge which are compatible with AR-15, M-16, and M-4-type rifles (of course, the new round requires a new barrel, modified bolt carrier group, and a rear sight compatible with the 6.8mm SPC round). The future of the 6.8mm SPC is still uncertain, but looks good, at least for SOCOM and certain other specialist applications.

A subsonic version of the 6.8mm SPC exists; triple all prices listed below.

Twilight 2000 Notes: The 6.8mm SPC round does not exist in the Twilight 2000 timeline.

Other Names: 6.8mm Special Purpose Cartridge

Nominal Size: 6.8x43mm

Actual Size: 6.8x44.7mm (provisional)

Case Type: Necked

Weight: 19.5 kg per case of 1000; $620 per case

Per round: 0.016 kg	5-round box: 0.15 kg	8-round box: 0.22 kg	10-round box: 0.27 kg
16-round box: 0.41 kg	18-round box: 0.46 kg	25-round box: 0.63 kg	28-round box: 0.7 kg
36-round box: 0.93 kg			

6.8mm Fury

Notes: The 6.8mm Fury is a relatively new round (about five years) developed in response to the US Army's Small Arms Ammunition Configuration Study, which arose as the Army grudgingly admitted that the M4 and its 5.56mm cartridge was not doing the job against near-peer body armor, such as that fielded by China and Russia. This originally led to the 6.8mm SPC round (above), but many soldiers in the test program questioned the range of the 6.8mm SPC, particularly when paired with modern optics. This led to tests with other rounds such as the 6.5mm Grendel, and eventually led to the SIG-designed 6.8mm Fury. The Fury is essentially a necked-down 7.62mm NATO round which has been hotloaded and using a new bullet. The Fury round unfortunately requires that magazines and belts be designed specifically for the Fury round, and it is much heavier than the lightweight 5.56mm NATO round. The 6.8mm Fury uses a hybrid case, with a base and primer cup made of stainless steel and the majority of the case made of brass, with a locking washer to mate the two parts of the case.

The 6.8mm Fury may be thought of as a magnum version of the 6.8mm SPC round. Ballistics of the 6.8mm Fury and 6.5mm Creedmoor are similar at short to medium range, but the 6.8mm Fury far outranges the 6.5mm Creedmoor. The 6.8mm Fury was designed originally as a cartridge for SIG's CROSS rifle, and later for a variant of the MCX called the MCX SPEAR, before it was offered to the US Army. The civilian Fury round is not hotloaded as the military Fury round, and uses a heavier bullet. The cases are also not hybrid cases, being made totally of brass. However, for *Twilight 2000* game purposes, the two rounds are identical.

Twilight 2000 Notes: the 6.8mm Fury does not exist in the Twilight 2000 timeline.

Other Names: .277 Fury, .277 SIG Fury, 6.8mm SIG Fury

Nominal Size: 6.8x51mm

Actual Size: 7.06x51.18mm

Case Type: Necked

Weight: 25.27 kg per case of 1000; $800 per case

Magazines:

Per round: 0.02 kg	5-round box: 0.15 kg	10-round box: 0.27 kg	20-round box: 0.53 kg
100-round belt: 2 kg	200-round belt: 4 kg		

7x64mm Brenneke

Notes: This is another old round, developed Wilhelm Brenneke in Germany in 1917. It is almost unknown in the US, but is a quite common civilian cartridge in Europe, taking the place of the 7mm Remington Magnum there. The 7x64mm Brenneke does not quite match the power of the 7mm Remington Magnum cartridge, however, and the 7x64mm Brenneke is best for hunting medium game at long range.

Other Names: 7x64mm, 7mm Brenneke, 7x65Rmm (in its rimmed version)

Nominal Size: 7x64mm

Actual Size: 7.21x63.75mm

Case Type: Necked

Weight: 32.5 kg per case of 1000; Price: $520 per case

Magazines:

Per round: 0.026 kg	2-round box: 0.14 kg	3-round box: 0.17 kg	4-round box: 0.21 kg
5-round box: 0.25 kg	5-round clip: 0.13 kg	7-round box: 0.33 kg	10-round box: 0.45 kg

7mm Dakota

Notes: Like most of Dakota Arms' proprietary rounds, the 7mm Dakota is a magnum cartridge based on the .404 Jeffery case. This, of course, means the 7mm Dakota's case is rather large in diameter, which normally means that a rifle chambered for 7mm Dakota can carry one less round in its magazine than a comparable 7mm round. It also creates a round with a lot of room for propellant pushing a relatively light bullet, giving it surprising power. The 7mm Dakota uses a heavier bullet than the 7mm Remington Magnum, yet has more range and damaging potential (unfortunately not enough extra power for game purposes); it is, in fact, almost as powerful as the 7mm STW cartridge (though the 7mm Dakota does not require a long action). It is noteworthy that most rifles chambered for 7mm Remington Magnum can easily be modified to fire 7mm Dakota instead.

Other Names: 7mm Dakota Magnum

Nominal Size: 7x64mm

Actual Size: 7.21x63.5mm

Case Type: Necked

Weight: 2.99 kg per box of 100; Price: $109 per box

Magazines:

Per round: 0.03 kg	4-round box: 0.22 kg		

7mm Mauser

Notes: This is one of the oldest cartridges still in use, being developed as a military round by Mauser in 1892. Since the Spanish military was the first to officially adopt the round, it is also commonly known as the Spanish Mauser round. Though a few American rifles chamber the 7mm Mauser round, the cartridge is much more common in European rifles. It proved to be a mediocre military round, but it has proved to be an excellent round for the hunting of small to medium game. It has had some success against bigger animals, but it considered inadequate for that purpose by most hunters. It was once discontinued by almost all major ammunition manufacturers, but the round came back after World War 2 due to the influx of surplus military rifles into the civilian market.

Other Names: 7x57mm, 7mm Spanish Mauser, 7mm M-1893

Nominal Size: 7x57mm

Actual Size: 7.21x56.9mm

Case Type: Necked

Weight: 29 kg per case of 1000; Price: $460

Magazines:

Per round: 0.023 kg	3-round box: 0.16 kg	4-round box: 0.19 kg	5-round box: 0.23 kg
5-round clip: 0.12 kg	10-round box: 0.4 kg	10-round clip: 0.23 kg	20-round box: 0.76 kg
25-round box: 0.94 kg	30-round box: 1.11 kg	30-round strip: 0.9 kg	40-round box: 1.47 kg
249-round “belt”: 6.35 kg			

7mm-08 Remington

Notes: This round was introduced in 1980; it is a 7.62mm NATO (.308 Winchester) case necked down to accept a 7mm bullet. The bullet is a direct copy of the 7mm/308, which was a wildcat round popular for many years before 1980. The more-pointed bullet design allows for more downrange velocity than the 7.62mm NATO round, and, in many cases, greater range.

Nominal Size: 7x52mm
Actual Size: 7.21x51.82mm
Case Type: Necked
Weight: 26.5 kg per case of 1000; Price: $420 per case

Magazines:

Per round: 0.021 kg	4-round box: 0.17 kg	5-round box: 0.21 kg	10-round box: 0.37 kg

7mm Remington Magnum

Notes: This cartridge was introduced in 1962 for the Remington 700 rifle. Several other rifle manufacturers picked it up also. The 7mm Remington Magnum has its roots in wildcat experimenting, especially with the .275 H&H Magnum cartridge. The 7mm Remington Magnum is considered a good big-game cartridge.

Nominal Size: 7x63mm
Actual Size: 7.21x63.5mm
Case Type: Necked
Weight: 32.38 kg per case of 1000; Price: $520 per case

Magazines:

Per round: 0.026 kg	3-round box: 0.17 kg	4-round box: 0.21 kg	5-round box: 0.25 kg
6-round box: 0.29 kg	7-round box: 0.33 kg	10-round box: 0.45 kg	

7mm Remington Short-Action UltraMag

Notes: This round was introduced in 2001 to directly compete with the 7mm Winchester Short Magnum round, and their ballistic performance, penetration, range, and terminal performance are almost identical. The 7mm RSAUM can easily out-do the older 7mm Remington Magnum round. The Remington round is a bit shorter than the Winchester round, but uses a similar amount of propellant and the same bullets as the Winchester round. The Remington designers used their own .300 Remington UltraMag case as a base, shortening it and necking it down. It should be noted that while the 7mm RSAUM will chamber in a rifle chambered for 7mm Winchester Short Magnum, NEVER do this – it generally causes a chamber explosion and damage to the bolt itself (and possibly injury to the shooter).

Twilight 2000 Notes: This cartridge does not exist in the Twilight 2000 timeline.
Other Names: 7mm RSAUM, 7mm Remington Short-Action Ultra Magnum, 7mm Short-Action UltraMag (or Ultra Magnum), 7mm SAUM
Nominal Size: 7x52mm
Actual Size: 7.21x51.69mm
Case Type: Necked
Weight: 23.21 kg per case of 1000; Price: $420 per case

Magazines:

Per round: 0.021 kg			

7mm Remington UltraMag

Notes: Introduced in 1999, this cartridge essentially takes a modified .300 Remington UltraMag case and necks it down to take a 7mm bullet. This leads to a long-ranged round with decent damaging potential and excellent penetration, in addition, Frank Barnes calls it “flattest-shooting factory big-game cartridge on the planet.” It also tends to keep its energy and velocity much longer than comparable rounds. It can easily take down any North American or European small-to-medium game, and even some large game with a well-placed shot.

Twilight 2000 Notes: This cartridge does not exist in the Twilight 2000 timeline.
Other Names: 7mm UltraMag (or Ultra Mag), 7mm RUM.
Nominal Size: 7x72mm
Actual Size: 7.21x72.39mm
Case Type: Necked
Weight: 3.26 kg per box of 100; Price: $118 per case

Magazines:

Per round: 0.03 kg	3-round box: 0.2 kg	4-round box: 0.24 kg	5-round box: 0.3 kg

7mm STW

Notes: This round was originally designed as a wildcat round by Layne Simpson of *Shooting Times* magazine. (STW stands for Shooting Times Western.) It is based on an 8mm Remington Magnum case, necked down, and allows for rechambering of existing 7mm Remington Magnum rifles to fire it. It was also designed to fit inside existing 7mm Remington Magnum internal magazines of Remington 700 rifles. It was adopted as a standard cartridge in 1996, and factory loadings commenced. The 7mm STW produces impressive velocities and power, but barrels firing 7mm STW can be quite limited in life.

Other Names: 7mm Shooting Times Westerner
Nominal Size: 7x72mm
Actual Size: 7.21x72.39mm
Case Type: Necked
Weight: 3.7 kg per box of 100; Price: $118 per box

Magazines:

Per round: 0.03 kg			

7mm TCU

Necked: This cartridge was developed by Wes Ugalde for Thompson/Center for use in the single-shot Contender pistol. It is basically a .223 Remington (5.56mm NATO) case necked up to .284-caliber. It is popular for target shooting, but is also a creditable varmint round, and in the right circumstances and with a good shot can bring down a deer. It is not recommended that military cases be used for handloading this round; only civilian .223 cases should be used.

Other Names: 7mm T/CU, 7mmx223
Nominal Size: 7x44mm
Actual Size: 7.21x44.2mm
Weight: 2.25 kg per box of 100; Price: $72 per box

Magazines:

Per round: 0.018 kg			

7x66mm Vom Hofe

Notes: This round was designed shortly after World War 2 for Swedish Vom Hofe rifles. It was once loaded by DWM of Germany, but is not now being commercially manufactured. Though the bullet is small, the velocity is extremely fast, and only its light weight prevents it from penetrating better. Nonetheless, the 7x66mm Vom Hofe is an excellent hunting cartridge for all but large game.

Other Names: 7x66mm Vom Hofe Super Express, 7mm Super Express, 7.6x66mm Vom Hofe, 7mm Vom Hofe
Nominal Size: 7x66mm
Actual Size: 7.21x65.53mm

Case Type: Necked
Weight: 3.35 kg per box of 100; Price: $108 per box
Magazines:

Per round: 0.027 kg			

7-30 Waters

Notes: This is a comparatively new cartridge, developed in 1984. It was designed for high-velocity, short-range lever-action rifles and carbines, and has a rounded nose to facilitate loading and chambering in such rifles. The rounded nose does spoil ballistics somewhat, though. It is also known for its light recoil.
Nominal Size: 7x52mm
Actual Size: 7.21x51.82mm
Case Type: Necked
Weight: 2.65 kg per box of 100; Price $85 per box
Magazines:

Per round: 0.021 kg			

7mm Weatherby Magnum

Notes: This round is based on the .300 H&H Magnum (like most Weatherby designs), actually being a .270 Weatherby Magnum necked up. Unlike most Weatherby cartridges, there is a good selection of factory loads and it is more common than most Weatherby ammunition. Like most high-velocity cartridges, the 7mm Weatherby Magnum can be hard on the barrel, and does not perform well in short barrels.
Nominal Size: 7x65mm
Actual Size: 7.21x64.77mm
Case Type: Necked
Weight: 3.3 kg per box of 100; Price: $106 per box
Magazines:

Per round: 0.026 kg			

7mm Winchester Short Magnum

Notes: This was introduced in 2001 to give those who prefer the 7mm cartridge Magnum performance in a short action rifle. It is basically a .300 Winchester Short Magnum case, necked down. It has ballistics basically similar to the 7mm Remington Magnum, but in a shorter cartridge.
Twilight 2000 Notes: This round does not exist in the Twilight 2000 timeline.
Other Names: 7mm WSM, 7mm Short Magnum
Nominal Size: 7x53mm
Actual Size: 7.21x53.34mm
Case Type: Necked
Weight: 34.06 kg per case of 1000; Price: $550 per case
Magazines:

Per round: 0.027 kg	3-round box: 0.16 kg		

7.35mm Carcano

Notes: This round was designed to replace the 6.5mm Carcano round, which had been found to be inadequate in World War 1. Unfortunately, the round was developed during a time before World War 2 when Italy was involved in various military adventures and converting all the Carcano rifles to use this round, as well as trying to supply the new round to troops, became a logistical nightmare, and it was quickly withdrawn from service. The Finns did use some of the rifles converted to the 7.35mm Carcano round against the Russians, and results were good. The rifles and ammunition eventually showed up as war surplus weapons and were sold on the civilian market. It's a decent hunting and man-killing round, but it hasn't been manufactured in a while, and generally handloads are the best source.
Other Names: 7.35mm Italian Carcano
Nominal Size: 7.35x51mm
Actual Size: 7.57x51.05mm
Case Type: Necked
Weight: 2.88 kg per box of 100; Price: $92 per box
Magazines:

Per round: 0.023 kg	6-round clip: 0.14 kg		

.17 CCM

Notes: Introduced in 1992 specifically for the Cooper Model 38 Centerfire Sporter rifle, the .17 CCM (Cooper Centerfire Magnum) round is a necked-down version of one of Cooper's other proprietary rounds, the .22 CCM. At first, Cooper Arms manufactured the round in small lots itself, but in 1993 an agreement was reached with Fiocchi of Italy to produce the round. (Fiocchi cases tend to be stronger, and loaded with more propellant along with a heavier bullet.) It does, however, remain a rather rare round, primarily since so few rifles chamber the .17 CCM (and most of them are handmade by individual gunsmiths). The .17 CCM was designed primarily to be a superior varmint round with long range and a flat trajectory through most of its range. It also has a low noise and firing signature, and has very low recoil. Unfortunately, like most light bullets, it is quite sensitive to wind and this can limit its range in some cases.
Twilight 2000 Notes: The agreement with Fiocchi was never reached in the Twilight 2000 timeline, which just makes the .17 CCM even more rare.
Other Names: .17 Cooper, .17 Cooper Magnum, .17 Cooper Centerfire Magnum
Nominal Size: 4.3x30mm
Actual Size: 4.39x29.46mm
Case Type: Necked
Weight: 0.5 kg per box of 100; Price: $18 per box
Magazines:

Per round: 0.005 kg			

.17 Mach IV

Notes: This cartridge was designed to be chambered in small-caliber, short action rifles and also to compete directly against the .17 Remington cartridge. It did not compete against the .17 Remington successfully (mostly due to a much higher price for the round since it was not produced in the numbers the .17 Remington cartridge was), but does have a number of advantages over that round. One is speed – some loadings can generate almost 1200 meters per second. This gives the .17 Mach IV surprising power for its size. Despite this, the firing signature and report is much less than the .17 Remington, and almost as low as a .22 Long Rifle round's report and firing signature. Until recently, the .17 Mach IV was listed as a wildcat round and was mostly the province of handloaders and a few small-scale manufacturers; however, Berger Bullets is now producing reasonable factory loadings of the .17 Mach IV, and the round is slowly gaining popularity.
Nominal Size: 4.4x36mm
Actual Size: 4.37x35.56mm
Case Type: Necked
Weight: 0.58 kg per box of 100; Price: $21 per box
Magazines:

Per round: 0.005 kg			

.17 Remington

Notes: Introduced in 1971 for Remington's Model 700 series, the .17 Remington is one of the smallest centerfire rounds produced in commercial lots. The .17 Remington is basically a 5.56mm NATO (.223 Remington) round necked down to accept the smaller bullet; the shoulder is also moved back slightly. It is basically a varmint round, and not very useful for larger game. It does, however, offer a very flat trajectory as well as minimal ricocheting and recoil. The high velocity and large amount of propellant (relative to the bullet) tend to lead to rapid barrel wear and fouling.
Nominal Size: 4.4x46mm

Actual Size: 4.37x45.47mm
Case Type: Necked
Weight: 8.5 kg per case of 1000; Price $140 per case
Magazines:

Per round: 0.007 kg			

.17/223 Remington

Notes: The “Remington” moniker of this round is sort of a misnomer; the .17/223 is actually a wildcat round made by taking a .223 Remington (5.56mm NATO) case and necking it down to accept a .172-caliber round. Designed around 1968 (in a series of wildcat experiments with a variety of .22-caliber-type rifle cases and a .172-caliber bullet), the .17/223 is basically a sort “semi-magnum” round due to the large percentage of necking down of the round. The .17/223 led almost directly to the .17 Remington cartridge, but does have a bit more power than the .17 Remington. The .17/223 does have its limitations – a rifle chambered for it requires a special cleaning rod and bore brush, and it is quite sensitive to load and bullet weight variations. Nonetheless, the .17/223 is essentially a varmint round with a bit more power than the average .17-caliber round. The .17/223 is still considered a wildcat round, with no company making it in any but tiny numbers. Most .17/223s are therefore made by handloaders.

Other Names: .17/223
Nominal Size: 4.4x45mm
Actual Size: 4.37x44.7mm
Case Type: Necked
Weight: 0.74 kg per box of 100; Price: $27 per box
Magazines:

Per round: 0.007 kg			

.17 Tactical

Notes: The .17 Tactical is basically one step above a wildcat round, with some ammunition manufacturers such as Lapua making small lots of it. It is a 5.56mm NATO case necked down to accept a .17 bullet. It offers few advantages over the .17 Remington bullet, other than the easier availability and cheaper cost (until recently) of the 5.56mm/.223 cases, and the ability to use AR-15-type magazines (if a semiautomatic rifle were to be developed in this caliber). Most .17 Tactical production is in the hands of handloaders.

Nominal Size: 4.4x45mm
Actual Size: 4.37x44.7mm
Case Type: Necked
Weight: 0.84 kg per box of 100; Price: $27 per box
Magazines:

Per round: 0.007 kg			

.17 VarTag

Notes: Like the .20 VarTag (below), the .17 VarTag is based is based on the .221 Fireball case, but this time necked down to .17 caliber; again, you get a short, fat case which is essentially a short magnum round. Bullet development was a little easier, as suitable .17 Remington bullets were available. As with the .20 VarTag, the .17 VarTag is a long-range, flat-shooting round which can be chambered in most short-action rifles, delivering power like the .17/223 and 5.56mm NATO, with less propellant than most rounds of its caliber, and causing less barrel wear. Nonetheless, acceptance has been slow, and limited to one production rifle and some custom conversions.

Other Names: .20 Vartag (incorrectly), .17 VT
Nominal Size: 4.4x35mm
Actual Size: 4.37x35.56mm
Case Type: Necked
Weight: 0.53 per box of 100; Price: $24 per box
Magazines:

Per round: 0.005 kg			

.20 Tactical

Notes: Seeming big brother to the .17 Tactical, the .20 Tactical actually came first, with the .20 Tactical being a 5.56mm case necked down to take a .204 Ruger bullet. The idea was to develop a handloading that would put the inexpensive .204 bullets in the then-inexpensive 5.56mm/.223 cases, before the price of 5.56mm/.223 cases went up. Again, Lapua makes small amounts of it, though it is mostly in the realm of handloaders. Power falls somewhere between the .203 Ruger and the 5.56mm NATO round.

Nominal Size: 5x45mm
Actual Size: 5.18x44.7mm
Case Type: Necked
Weight: 1.18 kg per box of 100; Price: $38 per box
Magazines:

Per round: 0.009 kg			

.20 VarTarg

Notes: Released in 1995, the .20 VarTarg (Varmint/Target) is based on the .221 Fireball case, necked down to .20 caliber; the result is a short, fat case, looking similar to the 6mm PPC round and what is basically a small “short magnum” round. Early development of the .20 VarTarg was problematic, as the lightest usable bullets at the time were 36-grain bullets, and jacketed versions were not available. Later, Hornady started to make its 33-grain .20-caliber V-Max bullets, which were perfect for the .20 VarTarg, and later its 32-grain and 40-grain V-Max bullets that were an even better fit. The result is a long-range, flat-shooting round that can be chambered in short-action rifles, yet deliver power comparable to rounds like the .220 Swift and .219 Zipper. The .20 VarTarg also requires less propellant than most rounds of its caliber, and causes less barrel wear.

Other Names: .20 Vartag (incorrectly), .20 VT
Nominal Size: 5x35mm
Actual Size: 5.08x35.56mm
Case Type: Necked
Weight: 0.79 kg per box of 100; Price: $29 per box
Magazines:

Per round: 0.007 kg			

.22 CCM

Notes: The .22 CCM (Cooper Centerfire Magnum) is sort of a resurrection of Maynard’s old .22 Extra Long Centerfire cartridge, brought up to modern standards. The bullet size and case size are almost identical, in fact. Power-wise, the .22 CCM falls somewhere between the .22 Winchester Magnum Rimfire and the .22 Hornet – the .22 CCM may in many ways be thought of as a .22 Winchester Magnum Rimfire that it is possible to reload and easier to handload. It is, however, not a particularly powerful round, and is not useful for much more than varminting, which may be why it was never a very popular round.

Other Names: .22 Cooper, .22 Cooper Magnum, .22 Cooper Centerfire Magnum
Nominal Size: 5.6x30mm
Actual Size: 5.69x29.46mm
Case Type: Straight
Weight: 0.66 kg per box of 100; Price: $24 per box
Magazines:

Per round: 0.006 kg			

.22 K-Hornet

Notes: A wildcat version of the .22 Hornet devised by Lysle Kilbourn in 1940, the .22 K-Hornet is essentially a highly-modified .22 Hornet round. The case of the .22 Hornet was "blown out" by giving it a longer straight portion of the body, a sharp shoulder, and a much shorter neck. (The bullet is the same as that of a standard .22 Hornet.) The modifications to the case allow for more propellant, and this results in what is essentially a magnum version of the .22 Hornet. Only a very few small manufacturers make "factory" loads, so the .22 K-Hornet is pretty much still the province of handloaders; fortunately, the cases are easily made from .22 Hornet or .218 Bee cases, and the bullets and propellant are identical to those used by the .22 Hornet. Several companies make rifles designed to take the higher chamber pressures the .22 K-Hornet generates, and virtually all of these rifles can also use the .22 Hornet round interchangeably with the .22 K-Hornet. The .22 K-Hornet, is admirably suitable for varmints and small game, and has excellent range for its class. In fact, stopping power is on power with many modern assault rifles, and penetration meets (or with sufficient barrel length, exceeds) the penetration of those assault rifles.

Other Names: .22 Kilbourn Hornet, .22 Hornet Magnum
Nominal Size: 5.6x36mm
Actual Size: 5.66x35.31mm
Case Type: Necked
Weight: 1.03 kg per box of 100; Price: $38 per box

Magazines:

Per round: 0.009 kg			

.22 Hornet

Notes: This round was based on the black powder .22 Winchester Centerfire round. It is a high-velocity round designed for varmint and small game shooting. The Hornet tends to be the subject of a lot of "wildcatting" (custom loadings for conventional rounds). Due to the amount of powder that is in a standard loading, the Hornet does not do well with heavy bullets. It should be noted that the .22 Hornet is a rimmed round.

Other Names: 5.6x35mmR, 5.6x36mmR, .22 M-65
Nominal Size: 5.6x36mm
Actual Size: 5.66x35.56mm
Case Type: Necked
Weight: 11.13 kg per case of 1000; Price $180 per case

Magazines:

Per round: 0.009 kg	3-round box: 0.06 kg	4-round box: 0.07 kg	5-round box: 0.09 kg
10-round box: 0.16 kg			

.22 Nosler

The .22 Nosler was designed to put a .223 Remington (5.56 NATO) round in a smaller, yet more energetic package. The .22 Nosler round can be used in weapons for the .223 Remington/5.56mm NATO with minimal modifications, as the bolt face is the same diameter and the gas system does not require excessive modifications. Nosler suggests that an upper receiver/barrel swap will be all that is required for an AR-15-type rifle to fire the .22 Nosler cartridge, as the bolt carrier group would suffice, and .22 Nosler rounds fit well into an AR-15/M16 magazine. A magazine designed for 6.8mm SPC would produce an even better fit. .22 Nosler is considered by Nosler as a Custom round, though several bolt-action and autoloading rifles are chambered for it.

Nominal Size:5.7x48mm
Actual Size: 5.69x44.7mm
Case Type: Necked
Weight: 3.42 kg per case of 100; Price: $46 per box

Per round: 0.011 kg	5-round box: 0.55 kg	10-round box: 0.85 kg	20-round box: 1.45 kg
30-round box: 2.06 kg			

.22 PPC

Notes: This round was developed in 1974 as a wildcat benchrest round based on the .220 Russian round (itself a necked-down version of the 7.62mm Kalashnikov round). It remained a wildcat round for almost 15 years, but in 1987 Sako developed a rifle and commercial loads, and in 1993, Norma also developed manufactured loads in .22 PPC. Ruger also chambered versions of its M-77 series for .22 PPC in 1993. The combination of a large case and small bullet produce a high-velocity round with good range.

Nominal Size: 5.7x39mm
Actual Size: 5.69x38.61mm
Case Type: Necked
Weight: 12.25 kg per case of 1000; Price: $200 per case

Magazines:

Per round: 0.01 kg	5-round box: 0.1 kg	6-round box: 0.11 kg	

.22-250 Remington

Notes: This cartridge was developed in 1965 to be one of the calibers for the Remington 700 rifle. The .22-250 actually began life as a wildcat round, based on the .250 Savage, but it became so popular so fast that it became a de facto standard rifle round. It is a well-balanced round that has a reputation for great accuracy.

Other Names: .22 Varminter, .22 Wotkyns Original Swift
Nominal Size: 5.7x49mm
Actual Size: 5.69x48.51mm
Case Type: Necked
Weight: 15.38 kg per case of 1000; Price $250 per case

Magazines:

Per round: 0.01 kg	3-round box: 0.08 kg	4-round box: 0.1 kg	5-round box: 0.12 kg

.22 Remington Auto

Notes: Virtually identical to the .22 Winchester Auto, this round was first designed for the Remington Model 16 semiautomatic rifle. It has been described by ammunition expert Frank Barnes as "an example of senseless jealous rivalry;" it was designed for the same purpose as the .22 Winchester Auto and for the same type of weapon, and was used only in the Model 16. The round was discontinued in 1928, and is very hard to find these days.

Other Names: .22 Remington Automatic
Nominal Size: 5.6x17mm
Actual Size: 5.66x16.84mm
Case Type: Straight Rimfire
Weight: 4.25 kg per box of 100; Price: $14 per box

Magazines:

Per round: 0.0034 kg			

.22 Remington Jet

Notes: This round was developed from wildcat rounds such as the Harvey .22 Kay-Chuk and others that were based on the .22 Hornet. It was developed for revolvers, but the only revolver ever chambered for it was the Smith & Wesson 53. Occasionally, rifles are found chambered for the .22 Remington Jet (normally lever-action or break-open rifles). The .22 Remington Jet is designed for hunting and to provide a flat trajectory for at least 100 meters. This round is no longer commercially manufactured, but can be handloaded using .357 Magnum rounds as a starting point.

Other Names: .22 Remington Jet Magnum, .22 Centerfire Magnum, .22 Jet, .22 Remington Magnum
Nominal Size: 5.6x32mm
Actual Size: 5.66x32.51mm
Case Type: Necked

Weight: 10.25 kg per box of 100; Price: $32 per box

Magazines:

Per round: 0.008 kg			

.22 Savage High-Power

Notes: This round was designed by Charles Newton in 1912 and at first called the .22 Imp. Only one rifle by Savage was chambered in the US for the round, though it had somewhat more success in England, as well in various custom-made rifles, especially shotgun-rifle combinations. The .22 Savage High Power is basically a necked-down .25-35 case. No rifle has been produced in North America to chamber this round since 1930, though the occasional European rifle can still be found for it, and Norma still produces .22 Savage High-Power ammunition. Complaints about the round include low accuracy against small game and poor penetration against larger game, but this may be due to the poor quality of ammunition in the early part of the 20th century. The .22 Savage High-Power round has been rendered obsolete by rounds such as the .222 Remington and .225 Winchester.

Other Names: .22 High-Power, .22 Imp, 5.6x52Rmm

Nominal Size: 5.6x52mm

Actual Size: 5.79x52.07mm

Case Type: Necked

Weight: 1.71 kg per box of 100; Price $54 per box

Magazines:

Per round: 0.014 kg			

.22-250 Remington

Notes: This round was a wildcat cartridge (called the .22 Varminter or .22 Wotkyns Original Swift) for several years before Remington introduced it as a factory cartridge in 1965; they chambered versions of their Model 700 and Model 40XB rifles in .22-250 Remington. When the wildcat version first appeared is subject to some debate, though most attribute it to quintet of designers working on it from 1934-37. Currently, rifles chambered for .22-250 Remington appear everywhere in the world, and cartridges, cases, and bullets are made by several companies.

The .22-250 Remington is based on the semi-wildcat .250-3000 Savage round, necked down to .22 caliber. The .22-250 Remington is considered by some as sort of designed as a hotloaded round; the case design certainly lends itself to high pressures and powerful loads. The .22-250 Remington is considered one of the best varmint rounds around, and it has a long range and high accuracy. Power is primarily suited for light game, but some shooters also find its accuracy lends the .22-250 Remington to benchrest shooting.

A variant of the .22-250 was built specifically for the Remington 700 EtronX rifle. The EtronX uses electric primer ignition, and uses a different sort of primer composition that will not work in standard rifles (and vice versa). The round is available only in 100-round box lots (the second set of information below) and is more expensive per round. EtronX rounds to not exist in the Twilight 2000 timeline, and the EtronX rifle does not use magazines.

Other Names: .22 Varminter, .22 Wotkyns Original Swift

Nominal Size: 5.7x48mm

Actual Size: 5.68x48.61mm

Case Type: Necked

Weight: 13.53 kg per case of 1000; Price: $250 per case; (EtronX) Weight: 1.35 kg per box of 100; Price: $50 per box.

Magazines:

Per round: 0.012 kg	3-round box: 0.08 kg	4-round box: 0.1 kg	5-round box: 0.12 kg
10-round box: 0.21 kg			

.25 Krag

Notes: The .25 Krag is based on what may just be the oldest wildcat round still in existence – so old, in fact, that today it is not certain who was the first to come up with it. It was first listed in the book *The Bullet's Flight from Powder to Target* in 1909, but may have first been designed as much as a decade before that. The .25 Krag is essentially a .30-40 Krag round necked down to take a .257-caliber bullet, with very few other changes being made to the case except what is necessary to seat the bullet, and shortened somewhat. (A longer version of the .25 Krag also exists.) The specifications of early versions varied wildly and quite often, one handloader's .25 Krag round could not be chambered in another handloader's .25 Krag rifle. Ackley finally standardized the specifications and started making factory loads, but even Ackley has never manufactured this round in any large numbers. Thus, a lot of handloads of the .25 Krag are still out there.

In general, the .25 Krag is capable of tremendous velocities, has a flat trajectory, good range, and makes a good varmint round that is also capable of taking down larger targets. Though it has been for the most part overshadowed by newer .257-caliber rifle rounds, there is still enough of an interest in the .25 Krag to keep it going. The .25 Krag is a rimmed round, and this makes it's most common use in single-shot and double rifles.

Other Names: .25 Ackley Krag, .25 Ackley Krag Short, .25 Krag Niedner

Nominal Size: 6.5x57mm

Actual Size: 6.53x56.9mm

Case Type: Necked

Weight: 2.1 kg per box of 100; Price: $76 per box

Magazines:

Per round: 0.019 kg			

.25 Remington

Notes: This round is basically a rimless version of the .25-35 Remington cartridge, designed for use in semiautomatic rifles, but later used in all types of rifles except single-shot and double rifles. It was introduced in 1906, but no major company has produced it since 1950, and no rifles have been chambered for it since 1942. The .25 Remington is barely adequate for medium game, but is a decent varmint cartridge. It does suffer from a range problem due to its round-nosed bullet.

Other Names: .25-30 Remington

Nominal Size: 6.5x52mm

Actual Size: 6.53x51.82mm

Case Type: Necked

Weight: 2.18 kg per box of 100; Price: $70 per box

Magazines:

Per round: 0.017 kg	5-round box: 0.17 kg		

.25-06 Remington

Notes: The .25-06 was originally a cartridge made by wildcatters since at least the 1920s, and it finally became a mainstream round when Remington decided to standardize and manufacture it in 1969. Remington kept almost exactly to AO Niedner's original wildcat design, which is a .30-06 Springfield cartridge necked down to accept a .25 caliber bullet. Since 1969, virtually every manufacturer of bolt-action rifles does or has at one time offered rifles chambered for the .25-06, and its popularity has only recently begun to waver. It's ballistics and performance approach that of the larger 6mm Remington round, mostly due to the amount of propellant that backs the relatively light bullet (some loadings have muzzle velocities of almost 1130 meters per second). The .25-06 is still considered one of the best varmint rounds out there, it can often take down up to medium-sized game, and as an antipersonnel round almost matches the 7.62mm Kalashnikov round! Factory loads are still by Federal, Winchester, and Remington, in several bullet weights and types and propellant loads.

Other Names: .25-06, .25-06 Niedner

Nominal Size: 6.35x63.5mm

Actual Size: 6.53x63.25mm

Case Type: Necked

Weight: 23.32 kg per case of 1000; Price: $420 per case

Magazines:

Per round: 0.021 kg	3-round box: 0.14 kg	4-round box: 0.17 kg	5-round box: 0.21 kg
10-round box: 0.37 kg			

.25 Winchester Super Short Magnum

Notes: One of the latest of the "fat magnums," the .25 Winchester Super Short Magnum was introduced in 2005 – to some criticism that the round was simply superfluous. The .25 WSSM is intended to be a long-range varmint cartridge with the power to also take down some medium-sized game. The .25 WSSM is also meant to increase the power of .25-caliber rifle cartridges while reducing some of the recoil. Like the other members of the Super Short Magnum family, the .25 WSSM is intended for use in short-action rifles, and essentially puts magnum-level propellant into a shorter case. The wide base also results in more even propellant ignition. The .25 WSSM delivers surprising range and power while maintaining a relatively flat trajectory through most of its range. Though complete cartridges are made only by Winchester, they also offer unprimed cases and primers for handloaders.

Twilight 2000 Notes: This round does not exist in the Twilight 2000 timeline.

Other Names: .25 WSSM

Nominal Size: 6.35x42mm

Actual Size: 6.52x42.42mm

Case Type: Necked

Weight: 19.53 kg per case of 1000; Price: $350 per case

Magazines:

Per round: 0.018 kg	3-round box: 0.11 kg	5-round box: 0.16 kg	

.25-20 Winchester

Notes: This is a very old cartridge, developed for the original Winchester M-1892 lever-action rifle. It is basically a necked-down .32-20 Winchester round. It achieved quick popularity. It was once the most popular of varmint and small-game cartridges, until introduction of rounds like the .22 Hornet and .218 Bee. With the growing interest in the Old West and Cowboy Shooting, the .25-20 is again growing in popularity. The flat-nosed bullet, though it feeds well in lever-action rifles, has serious range limitations due to poor aerodynamics, and bullet expansion can ruin the meat of small game.

Other Names: .25-20 Winchester Centerfire

Nominal Size: 6.35x34mm

Actual Size: 6.53x33.78mm

Case Type: Necked

Weight: 14.13 kg per case of 1000; Price: $230 per case

Magazines:

Per round: 0.011 kg	3-round box: 0.07 kg	4-round box: 0.09 kg	10-round box: 0.2 kg

.25-35 Winchester

Notes: Developed by Winchester specifically for its original Model 94 lever-action rifle in 1895, the .25-35 was developed from the start to use smokeless powder, one of the first cartridges in the US designed to do so. Marlin and Savage quickly built rifles chambered for the .25-35, and in Europe several single-shot and double rifles also chambered the .25-35. However, few rifles have been chambered for the .25-35 since World War 2 in Europe, and even fewer in the US. Stopping power is poor, and penetration is not very good either; in the US, it is illegal to use on medium game since it does not produce enough of a wound to quickly stop such game (though they will eventually die slowly and painfully). The .25-25 can't match modern .25-caliber-type rifle cartridges, and is considered virtually obsolete today. Some wildcatters have devised more effective hotloads for the .25-35, but these have to be specially-made with thicker brass cases. Today, Winchester is the only company who still manufactures the .25-35, and the future of the .25-25 is uncertain since Winchester has left the US for Belgium.

Other Names: .25-35 Winchester Centerfire

Nominal Size: 6.5x52mm

Actual Size: 6.53x51.82mm

Case Type: Necked

Weight: 19.14 kg per case of 1000; Price: $350 per case

Magazines:

Per round: 0.017 kg			

.26 BSA

Notes: The Birmingham Small Arms company introduced this proprietary round for its bolt-action rifles based on the 1914 Enfield military rifle in 1921. It was a relatively advanced design for its time, putting a relatively small bullet into a large case; they are based on Eley cases, necked down. The round has very high velocity, but the light bullet tends to overpenetrate and therefore is not really suitable for hunting. Today, the round is considered obsolete and though the cases are relatively easy for handloaders to make from existing cases, the bullets usually have to be custom cast.

Other Names: .26 Rimless Belted Nitro Express

Nominal Size: 6.6x60mm

Actual Size: 6.78x66.04mm

Case Type: Necked

Weight: 2.98 kg per box of 100; Price: $96 per box

Magazines:

Per round: 0.024 kg	5-round clip: 0.12 kg		

.204 Ruger

Notes: This cartridge was introduced in 2004 by Ruger specifically for varminting and target shooting. Though not high on the power scale, it is an excellent round for its designed purposes, as it is flat-shooting, accurate at relatively long ranges, and has little recoil. The .204 Ruger is not only the first .20-caliber rifle cartridge to be produced on a large scale, it also fires its round at very high velocities – speeds of nearly 1300 meters per second have been recorded for production cartridges, with even higher speeds having been recorded for wildcat .204s. The .204 Ruger is based on the .222 Remington Magnum case, necked down, shortened a bit, and with the shoulder angle increased. About a dozen manufacturers make rifles in this caliber today, and cartridges are made by Hornady, Remington, and Winchester.

Twilight 2000 Notes: The .204 Ruger does not exist in the Twilight 2000 timeline.

Nominal Size: 5.2x47mm

Actual Size: 5.18x46.74mm

Case Type: Necked

Weight: 10.89 kg per case of 1000; Price: $200 per case

Magazines:

Per round: 0.01 kg	4-round box: 0.08 kg	10-round box: 0.17 kg	

.218 Bee

Notes: Originally designed for use in the Winchester Model 65 lever-action rifle, the .218 Bee was at first hailed for its superior striking power and range to the .22 Hornet. The problem with the round is that striking power, however; when used against its intended targets (small game), it can ruin much of the meat upon a hit, especially when non-jacketed rounds are used. It can also be inaccurate, especially when handloaded or used with non-manufactured quality rounds: due to the small size of the bullet and heavy propellant load, small imperfections can have drastic results. The .218 Bee has, for the most part, been replaced by superior cartridges like the .223 Remington (5.56mm NATO) and .22-250 Remington.

Nominal Size: 5.7x35mm

Actual Size: 5.69x34.29mm

Case Type: Necked

Weight: 10.88 kg per case of 1000; Price: $170 per case

Magazines:

Per round: 0.009 kg	3-round box: 0.06 kg	5-round box: 0.08 kg	

.219 Donaldson Wasp

Notes: A few months after the .219 Zipper was introduced, the .219 Donaldson Wasp round appeared. It is essentially a wildcat variation of the .219 Zipper that as achieved "almost-mainstream" status; there are several companies which make cases for the round, but few that actually make complete .210 Donaldson Wasp rounds, and it is primarily the purview of handloaders to this day. The .219 Donaldson starts with a standard .219 Zipper case, but the case is shortened, given a longer neck, and blown out. The .219 Donaldson Wasp is a rimmed round, and is therefore primarily used in single-shot and double rifles; it is especially popular in

benchrest target matches. Though few companies actually make rifles chambered for the .219 Donaldson Wasp, many shooters will rechamber rifles for it, due to its accuracy. Making a .219 Donaldson Wasp case, however, takes a lot of skill, and most shooters will instead go for rifles with more readily-available rounds and/or cases.

Nominal Size: 5.7x43mm
Actual Size: 5.69x43.43mm
Case Type: Necked
Weight: 1.21 kg per box of 100; Price: $44 per box
Magazines:

Per round: 0.011 kg			

.219 Zipper

Notes: This round was introduced in 1937, but never gained any real popularity, and Winchester and Remington, the last two companies making the .219 Zipper, finally dropped manufacture of the round in 1962. The .219 Zipper is a rimmed cartridge designed primarily for lever-action rifles, but it is not an accurate round without the use of a telescopic sight, and it loses velocity fast due to the round-nosed bullet. There is some controversy as to whether Winchester ever really put in the work necessary to make the .219 Zipper a truly effective round, but this is moot now.

Nominal Size: 5.7x49mm
Actual Size: 5.69x49.28mm
Case Type: Necked
Weight: 1.56 kg per box of 100; Price: $50 per box
Magazines:

Per round: 0.013 kg			

.220 Swift

Notes: This cartridge was introduced in 1935 as a new chambering for the Winchester Model 54 rifle. Winchester no longer makes rifles in this chambering, but several others do, including Savage, and Ruger. The .220 Swift began as a .250-3000 Savage round necked down to .22 caliber, but final production was based on the 6mm Lee Navy cartridge. The .220 Swift round is one of the highest velocity rounds in the world, capable of as much as 1340 meters per second depending upon the bullet and propellant used. During much the .220 Swift's early history, this high velocity tended to wear out barrels fast, but since World War 2, barrels have been getting better, and this is not much of a problem any more. The wound track of a .220 Swift can be erratic, however, and many US states will not allow the .220 Swift to be used on big game on the grounds of cruelty.

A variant of the .220 Swift was built specifically for the Remington 700 EtronX rifle. The EtronX uses electric primer ignition, and uses a different sort of primer composition that will not work in standard rifles (and vice versa). The round is available as the same cost as a standard .220 Swift round. EtronX rounds are not available in the Twilight 2000 timeline.

Nominal Size: 5.7x56mm
Actual Size: 5.69x55.88mm
Case Type: Necked
Weight: 1.78 kg per box of 100; Price: $56 per box
Magazines:

Per round: 0.014 kg			

.220 Weatherby Rocket

Notes: The .220 Weatherby Rocket was developed in 1943 by Roy Weatherby himself. It was never a very popular round, and as of 2007 neither loaded .220 Weatherby Rocket rounds nor empty cases are being made. (Factory loads were always rare, in any case.) The .220 Weatherby Rocket was devised essentially as an experiment, and it served as the predecessor to the rest of the Weatherby ammunition line, though in of itself the .220 Weatherby Rocket has had extremely little use in rifles (whether production, modified, or handmade). The .220 Weatherby Rocket was based on the .220 Swift case, and actually offers little more in power, range, or penetration over the .220 Swift, though it does extract somewhat easier due to the shape of the modified case. The .220 Weatherby Rocket does, however, remain the province of handloaders; though there are recommended specifications published by Weatherby, no one is actually making any factory loads these days (and few factory loadings were ever made at any time). The Twilight 2000 prices below may be in boxes of 100, but actually quantities available at one time should probably be much lower, and prices higher.

Other Names: .220 Swift Improved, .220 Rocket
Nominal Size: 5.7x56mm
Actual Size: 5.69x56.13mm
Case Type: Necked
Weight: 1.57 kg per box of 100; Price: $57 per box
Magazines:

Per round: 0.014 kg			

.221 Fireball

Notes: This round was designed specifically for the Remington XP-100 target pistol. It is still largely used by single-shot target pistols, but was briefly considered for the abortive "Arm Gun" submachinegun. It is basically a shortened version of the .222 Remington, and is designed to expand quickly upon impact with flesh.

Other Names: .221 Remington Fireball
Nominal Size: 5.56x31mm
Actual Size: 5.69x35.56mm
Case Type: Necked
Weight: 11.25 kg per case of 1000; Price $180 per case
Magazines:

Per round: 0.009 kg	20-round box: 0.3 kg	30-round box: 0.43 kg	

.222 Remington

Notes: The .222 Remington was originally developed in 1950 for the Remington 722 bolt-action rifle. It quickly became popular with target shooters and varmint hunters, though by the early 1990s it had lost most of that popularity to the .223 Remington (civilian version of the 5.56mm NATO) round. It is basically a scaled-down .30-06 Springfield round. In many countries where civilian use of military rounds is prohibited, the .222 Remington round often stands in for the 5.56mm NATO round in civilian rifles and civilianized military rifles.

Nominal Size: 5.56x43mm
Actual Size: 5.69x43.18mm
Case Type: Necked
Weight: 13.75 kg per case of 1000; Price: $220 per case
Magazines:

Per round: 0.011 kg	3-round box: 0.07 kg	4-round box: 0.09 kg	5-round box: 0.11 kg
6-round box: 0.12 kg	10-round box: 0.19 kg	25-round box: 0.44 kg	

.222 Remington Magnum

Notes: Now considered obsolete, the .222 Remington Magnum began as an experimental military cartridge in the mid-1950s. The US military found it unsatisfactory, but Remington marketed it for a short time as a commercial cartridge for the Model 722 and Model 700 rifles. This round also did not find favor with the shooting public, and at present, no major company makes the .222 Remington cartridge. (Most .222 Remington Magnum rounds found today are either very old or handloaded.) It should be noted that a 5.56mm NATO round can be chambered and fired in a rifle designed for .222 Remington Magnum, but the gap in headspace can result in a chamber explosion.

Nominal Size: 5.7x47mm
Actual Size: 5.69x46.99mm

Case Type: Necked
Weight: 1.49 kg per box of 100; Price: $48 per box
Magazines:

Per round: 0.012 kg	3-round box: 0.08 kg	6-round box: 0.13 kg	

.223 Winchester Super Short Magnum

Notes: This cartridge was introduced in 2002 as a solution to the problem of putting Magnum power into a short-action rifle. It is a short cartridge, but it is also a very fat one; this allows the use of Magnum-levels of propellant, but keeps the round short. This produces a round with a lot of power for the size of its bullet.
Twilight 2000 Notes: This round does not exist in the Twilight 2000 timeline.
Other Names: .223 WSSM
Nominal Size: 5.7x42mm
Actual Size: 5.69x42.42mm
Case Type: Necked
Weight: 20.25 kg per case of 1000; Price: $330 per case
Magazines:

Per round: 0.016 kg	10-round box: 0.24 kg		

.224 Weatherby Magnum

Notes: This round was the product of a long research process, beginning with the .220 Weatherby Rocket wildcat round, progressing to the .224 Varmintmaster, and ending up with the .224 Weatherby Magnum. The main delay in introduction of the round was the lack of a suitable rifle to fire the round. It eventually ended up in a reduced-action Weatherby Mark V, but this rifle is no longer built, and the .224 Weatherby Magnum basically died with it. The .224 Weatherby Magnum is a varmint cartridge with excellent range and a case that stands up to repeated reloading, but the Weatherby Mark V was an expensive rifle and one could buy rifles chambered for rounds with comparable performance and costing much less.
Nominal Size: 5.7x49mm
Actual Size: 5.69x48.77mm
Case Type: Necked
Weight: 1.55 kg per box of 100; Price: $50 per box
Magazines:

Per round: 0.012 kg			

.225 Winchester

Notes: The .225 Winchester was introduced in 1964. Versions of the Winchester Model 70 were chambered to fire the .225 Winchester (replacing the .220 Swift in the Winchester Model 70), but the .225 Winchester simply did not gain any real popularity in a time where the .22-250 Remington round produced nearly identical performance and was already firmly established. Only Winchester still makes this round in small amounts, but the rifle it was designed for was only on the market for 8 years. Handloaders can easily make this round by necking down a .30-30 Winchester case to the dimensions of the .225 Winchester bullet and shortening it somewhat.
Nominal Size: 5.7x49mm
Actual Size: 5.69x49.02mm
Case Type: Necked
Weight: 1.56 kg per box of 100; Price: $50 per box
Magazines:

Per round: 0.013 kg	4-round box: 0.1 kg		

.240 Weatherby Magnum

Notes: This cartridge was added to Weatherby's ammunition line to provide a 6mm-range cartridge and round out the line. It uses a belted case, a rarity these days, and is fired only from the Weatherby Mark V rifle or custom rifles. It is a fast round with excellent striking power. The ammunition, however, is difficult to find and is hard to handload.
Nominal Size: 6x64mm
Actual Size: 6.17x63.5mm
Case Type: Necked
Weight: 2.38 kg per box of 100; Price: $76 per box
Magazines:

Per round: 0.019 kg			

.243 Winchester

Notes: This round was developed in 1955 by Winchester for their M-70 and M-88 rifles. The popularity of the new round quickly took off and a large number of companies began chambering rifles for it, and it is now chambered for more rifles than any other with the exception of the .30-06 Springfield round. The round can be used for anything from varmints to medium game such as deer and antelopes. The .243 Winchester does, however, have a reputation for erratic performance, especially when handloaded.
A variant of the .243 was built specifically for the Remington 700 EtronX rifle. The EtronX uses electric primer ignition, and uses a different sort of primer composition that will not work in standard rifles (and vice versa). The round is available only in 100-round box lots (the second set of information below) and is more expensive per round. EtronX rounds to not exist in the Twilight 2000 timeline, and the EtronX rifle does not use magazines.
Nominal Size: 6x52mm
Actual Size: 6.17x52.07mm
Case Type: Necked
Weight: 19.5 kg per case of 1000; Price: $310 per case; (EtronX) Weight: 1.95 kg per box of 100; Price: $62 per box
Magazines:

Per round: 0.016 kg	3-round box: 0.1 kg	4-round box: 0.13 kg	5-round box: 0.15 kg
6-round box: 0.18 kg	10-round box: 0.27 kg	20-round box: 0.51 kg	

.243 Winchester Super Short Magnum

Notes: Like the .223 Winchester Super Short Magnum, this round was designed to solve the problem of putting Magnum loads into rifles with short actions. It was introduced in 2002, and brings a new level of accuracy and range to the .243 Winchester round. It was designed for long-range varmint hunting, but has enough power to bring down much larger game.
Twilight 2000 Notes: This round does not exist.
Other Names: .243 WSSM
Nominal Size: 6x42mm
Actual Size: 6.17x42.42mm
Case Type: Necked
Weight: 17.46 kg per case of 1000; Price: $313 per case
Magazines:

Per round: 0.016 kg	3-round box: 0.09 kg	5-round box: 0.14 kg	10-round box: 0.25 kg

.244 Remington

Notes: Introduced by Remington in 1955 for its Model 722 rifle, the .244 Remington is essentially the .257 Roberts case necked down to 6mm. However, the .244 Remington is actually a "wildcat gone commercial;" the Remington cartridge is based on a wildcat called the .243 Rockchucker, which preceded the .244 Remington by several years. Remington is the only firm to have actually made factory ammunition in .244 Remington, though Remington was accompanied by a few European rifle makers in chambering the round. Balistically, the .244 Remington is almost identical to the .243 Winchester round; it is also close to the 6mm Remington round.

.244 Remington-chambered rifles used a light, 75-90-grain bullet, along with a slow twist rate of rifling. The .244 Remington was never a popular round; buyers found it superfluous in the face of the .243 Winchester, while handloaders and wildcatters were disappointed when they tried heavier bullets in the .244 Remington. The case had a large enough propellant load to fire heavier bullets, and could take an even larger propellant load; the problem was the slow rifling twist rate, which could not stabilize heavier or faster bullets. Remington's answer was to retool the .244 Remington-chambered rifles, giving them a faster twist rate; they then retooled the .244 Remington for a heavier bullet and larger propellant load, and call it the 6mm Remington round. Ironically, the .244 Remington round can be fired from 6mm Remington-chambered rifles and it performs quite well, though the reverse is not true – the 6mm Remington can be fired from .244-chambered rifles, but it will perform poorly.

Nominal Size: 6x57mm
Actual Size: 6.17x56.64mm
Case Type: Necked
Weight: 1.86 kg per box of 100; Price: $68 per box
Magazines:

Per round: 0.017 kg			

.250 Savage

Notes: This was designed as a high-velocity round for the Model 99 lever-action rifle. It was introduced in 1915, and at that time, the 3000 feet per second velocity was truly phenomenal. The cartridge is known for its flat trajectory, outstanding accuracy, and stopping power. Though it has since been largely replaced by newer rounds, many maintain that the .250 Savage is superior to most of the rounds in its size that came later.

Other Names: .250-3000 Savage
Nominal Size: 6.35x49mm
Actual Size: 6.53x48.51mm
Case Type: Necked
Weight: 20.25 kg per case of 1000; Price: $320 per case
Magazines:

Per round: 0.016 kg	4-round box: 0.13 kg	5-round box: 0.16 kg	

.256 Newton

Notes: This round was designed by Charles Newton for use in his bolt-action rifle line. It was introduced in 1913, manufactured by Western Cartridge for Newton, but the cartridge failed when his company did, and by 1938, the .256 Newton was no longer being manufactured. The .256 Newton is based on a necked-down .30-06 case, and can be easily handloaded, if you can find a rifle to shoot it out of. Today, the .256 Newton is largely a wildcat round, with a few custom rifles chambered for it. It is adequate for small and medium game, but cannot match most modern cartridges in the same size range.

Other Names: 6.5mm Newton
Nominal Size: 6.5x62mm
Actual Size: 6.71x62mm
Case Type: Necked
Weight: 2.74 kg per box of 100; Price: $88 per box
Magazines:

Per round: 0.022 kg	5-round clip: 0.11 kg		

.256 Winchester Magnum

Notes: Though this was announced as a handgun cartridge, it was used only in one handgun, a single-shot Ruger Hawkeye in 1961. It was thereafter used as a rifle cartridge, but not many weapons actually use the round. The .256 Winchester Magnum is actually a necked-down .357 Magnum round. It is far more effective than most rounds of its size, but it was nonetheless discontinued in the early 1990s by Winchester.

Nominal Size: 6.5x33mm
Actual Size: 6.53x33.02mm
Case Type: Necked
Weight: 13.88 kg per case of 1000; Price: $220 per case
Magazines:

Per round: 0.011 kg	7-round box: 0.14 kg	15-round box: 0.29 kg	30-round box: 0.53 kg

.257 Roberts

Notes: This cartridge was introduced by Remington in its Model 30 bolt-action rifle. It was quickly picked up by Winchester and several other companies for their rifles. Though as of late most US manufacturers have ceased making rifles for it, Ruger continues to chamber the Model 77 for the .257 Roberts. It is basically a necked-down 7mm Mauser cartridge. The .257 Roberts is praised for being useful for anything from varminting to medium game hunting; it has even been known to take down the occasional bear. Most manufacturers tend to under-load the .257 Roberts, however, and this limits its velocity at longer ranges.

Nominal Size: 6.5x57mm
Actual Size: 6.53x56.64mm
Case Type: Necked
Weight: 23.75 kg per case of 1000; Price $380 per case
Magazines:

Per round: 0.019 kg	4-round box: 0.16 kg	5-round box: 0.19 kg	

.257 STW

Notes: Designed by Layne Simpson of *Shooting Times* magazine as a wildcat experiment, the .257 STW was one of many rounds Mr. Simpson developed by necking down the 8mm Magnum case. The result is, as with other such STW rounds, basically a .257 magnum rifle round. Mr. Simpson found (at the time) that the .257 STW round tended to cause a lot of fouling in the barrel (even to the extent of stripping off some of the copper from the jacket of the bullet as it traveled down the barrel), that the barrels the round was fired through tended to wear rather rapidly, and that the .257 bullets available tended to be less accurate than desired due to an unpredictable trajectory (primarily due to the damage they sustained traveling down the barrel).

In 2004, however, Chuck Taylor, a noted gunsmith and handloader, did some more work on the .257 STW. He used barrels of more modern materials and with better bore chroming; but more importantly, he used more modern bullets and propellant. The bullet he chose was a 115-grain Barnes Triple-Shock, coated with a moly coating (Mr. Taylor recommends a Ms. Moly coating), though Barnes says that the Triple-Shock bullet did not need the coating. He coupled these with IMR-made propellant and Remington-made 7mm STW cases which had already been necked down to .257. Mr. Taylor therefore improved the .257 STW to a point where it became a viable round (though it remains a wildcat cartridge), with surprising power and penetration, excellent range, and flat shooting characteristics. However, the .257 STW has yet to attain any sort of "mainstream" status, and remains primarily the province of handloaders (though Remington does make some cases for it).

Twilight 2000 Notes: .257 STW rounds will be of the unsuccessful types that Layne Simson originally came up with.
Other Names: .257 Shooting Times Westerner, 6.5mm STW or Shooting Times Westerner (though both are considered incorrect)
Nominal Size: 6.5x72mm
Actual Size: 6.53x72.39mm
Case Type: Necked
Weight: 2.66 kg per box of 100; Price: $97 per box
Magazines:

Per round: 0.024 kg			

.257 Weatherby Magnum

Notes: This round was one of the first designed by Roy Weatherby, designed in 1944 (a year before he went into the firearms business). He began manufacturing the round commercially in 1948. It is especially useful for long-range varmint hunting, but also has the power to bring down most North American big game, up to animals the size of an antelope or black bear. However, successful hunting of larger animals with the .257 Weatherby Magnum generally requires heavier bullets, which can lead to premature barrel wear. The .257 Weatherby Magnum also loses velocity quickly when fired from barrels shorter than 26 inches (660mm).

Nominal Size: 6.5x65mm

Actual Size: 6.53x64.77mm
Case Type: Necked
Weight: 2.71 kg per box of 100; Price: $86 per box
Magazines:

Per round: 0.022 kg	3-round box: 0.15 kg		

.264 Winchester Magnum

Notes: Introduced by Winchester in 1958, the .264 Winchester Magnum is basically a smaller version of the .458 Winchester Magnum round. It was the first North American 6.5mm round manufactured since 1913. The .264 Winchester Magnum is not a common chambering, however, and is only found in a few rifles, such as the Winchester M-70, Remington 700, and Ruger M-77. The .264 Winchester Magnum is a fast, powerful round, but the rifling twist rate recommended by Winchester is not fast enough to stabilize bullets of more than 140 grains weight, so most rounds of this chambering are lighter. The .264 Winchester can also be very hard on a barrel, like most high-velocity rounds, and does not work well in shorter barrels.

Other Names: 6.5mm Winchester Magnum
Nominal Size: 6.5x64mm
Actual Size: 6.71x64.01mm
Case Type: Necked
Weight: 28.25 kg per case of 1000; Price: $450 per case
Magazines:

Per round: 0.023 kg			

.270 Weatherby Magnum

Notes: Though many think that the .270 Weatherby Magnum was developed from the .300 Weatherby Magnum, it was actually the .270 that came first, in 1943. It is based on a necked-down .300 H&H Magnum case. The .270 Weatherby Magnum simply did not become well-known until after the .300 Weatherby Magnum. The .270 Weatherby Magnum is useful against both North American and African big game. However, like all high-velocity cartridges, it can be hard on the barrel, and time should be given for barrel cooling after several shots.

Nominal Size: 7x65mm
Actual Size: 7.04x64.77mm
Case Type: Necked
Weight: 3.15 kg per box of 100; Price: $100 per box
Magazines:

Per round: 0.025 kg	5-round box: 0.025 kg		

.270 Winchester

Notes: Introduced in 1925 for the Model 54 bolt-action rifle, the .270 Winchester quickly became wildly popular. The .270 Winchester is basically a .30-06 Springfield case necked down to a smaller bullet. It remains one of the most popular civilian rounds in the world. The .270 Winchester is known for a combination of range and stopping power, and can be even be used for varmint hunting when loaded with a light bullet. One criticism of the round is that the gunshots produced are very loud, scaring game for follow-up shots or shots at second targets.

Nominal Size: 6.9x64mm
Actual Size: 7.04x64.52mm
Case Type: Necked
Weight: 31.38 kg per case of 1000; Price: $500 per case
Magazines:

Per round: 0.025 kg	3-round box: 0.17 kg	4-round box: 0.21 kg	4-round clip: 0.1 kg
5-round box: 0.25 kg	7-round box: 0.32 kg		

.270 Winchester Short Magnum

Notes: This round was introduced in 2001 to provide Magnum performance in a short action rifle. It is basically a smaller version of the .300 Winchester Short Magnum (in fact, it is a .300 Winchester Short Magnum necked down to .277 caliber). It is a short, fat case containing Magnum levels of propellant, with excellent striking power and range.

Twilight 2000 Notes: This round does not exist.
Other Names: .270 WSM
Nominal Size: 6.9x53mm
Actual Size: 7.04x53.34mm
Case Type: Necked
Weight: 32.5 kg per case of 1000; Price: $525 per case
Magazines:

Per round: 0.026 kg	3-round box: 0.16 kg		

.280 Ackley

Notes: Introduced by Nosler for its limited-edition custom rifle in 2006, the .280 Ackley is an improved version of the .280 Remington round (and thus often called the .280 Ackley Improved). The .280 Ackley is essentially a specialty round made for Nosler exclusively by Midway USA, using heavier bullets than is normal for the .280 Remington as well as a higher load of different propellant than the .280 Remington. Stronger cases are also used. This basically turns the .280 Remington into a magnum round, with much better range, and penetration, as well as a bit more stopping power (unfortunately, not for the most part able to be simulated in the *Twilight 2000* rules). In addition, the .280 Ackely uses AccuBond bullets which also improve the penetration and damaging potential (again, not able to be simulated with the game rules). Though the .280 Ackley is basically the same size as the .280 Remington (and most rifles chambered for the .280 Ackley can also fire .280 Remington, though *not* vice-versa, and with a loss of accuracy and extraction reliability), the shoulder angle is very different and the straight portion of the case is longer, with a shorter neck.

Twilight 2000 Notes: The .280 Ackley is not available in the Twilight 2000 timeline.
Other Names: .280 Ackley Improved, .280 Remington Ackley Improved
Nominal Size: 7x65mm
Actual Size: 7.21x64.52mm
Case Type: Necked
Weight: 2.76 kg per box of 100; Price: $105 per box
Magazines:

Per round: 0.028 kg			

.280 British

Notes: This was an experimental round designed for the post-World War 2 British service rifle competition. Work began on the round shortly after the end of World War 2 in 1945, and continued until 1951. The .280 British round is a very good round, with excellent range and ballistic properties and good damaging and armor-penetrating properties. The leading rifle developed for it, the EM-2, was also a sound design. However, the round and rifles developed for it (there was even a version of the FAL experimentally chambered for the .280 British), were eventually rejected due to political pressure from the United states, who wanted a common round for all NATO rifles and light machineguns, and decided that the 7.62x51mm round was the only acceptable round for the purpose (at the time). This round is virtually unknown these days, as are the weapons that fire it.

Nominal Size: 7x43mm
Actual Size: 7.19x43.43mm
Case Type: Necked
Weight: 2.2 kg per box of 100; Price: $70 per box
Magazines:

Per round: 0.018 kg	20-round box: 0.58 kg		

.280 Remington

Notes: This round was introduced in 1957. Sales of the round and the rifles chambered for it did not take off as well as expected, and in 1979 Remington changed the name to something it hoped was more catchy – 7mm Express Remington. This name change only confused consumers, and Remington went back to the .280 Remington name in 1980. The .280 Remington is a necked down .30-06 with some other changes in the brass, very similar to the wildcat 7mm-06 round. The .280 Remington is a bit more powerful than the .270 Winchester, and a little more versatile, but not as popular.

Other Names: 7mm Express Remington
Nominal Size: 7x65mm
Actual Size: 7.21x64.52mm
Case Type: Necked
Weight: 32.88 kg per case of 1000; Price: $530 per case

Magazines:

Per round: 0.026 kg	4-round box: 0.22 kg	5-round box: 0.26 kg	10-round box: 0.46 kg
20-round box: 0.86 kg			

.284 Winchester

Notes: This round was introduced in 1963 by Winchester for its Model 88 and Model 100 rifles, both of which were discontinued long ago. For a short time, Savage and Browning also offered rifles in this chambering, but they too have been discontinued. No major ammunition manufacturers now make the .284 Winchester round. The .284 Winchester basically duplicates the ballistics of the .280 Remington round in a shorter cartridge, and has decent range and striking power.

Nominal Size: 7x55mm
Actual Size: 7.21x55.12mm
Case Type: Necked
Weight: 2.81 kg per box of 100; Price: $90 per case

Magazines:

Per round: 0.023 kg	3-round box: 0.15 kg	4-round box: 0.19 kg	

The magazines presented here are based on *light alloy* magazines. For steel magazines, increase weight by 2%; for plastic or synthetic magazines; decrease weight by 8 percent.

7.5mm MAS

Notes: This cartridge was adopted by the French in 1929 after the shortcomings of the 8mm Lebel round became obvious to even the most thick-headed French military officials. It was originally designed for use in light machineguns and semiautomatic rifles, but was eventually type-standardized in French service for use in sniper rifles and bolt-action rifles. Several civilian rifles are also chambered for it. Most 7.5mm MAS ammunition is military surplus; civilian loads were never manufactured in great quantity. The 7.5mm MAS round is basically in the same class as the 7.62mm NATO round and offers similar performance.

Other Names: 7.5x54mm French MAS, 7.5mm French, 7.5mm Mle 1929
Nominal Size: 7.5x54mm
Actual Size: 7.82x53.59mm
Case Type: Necked
Weight: 32.13 kg per case of 1000; Price $510 per case

Magazines:

Per round: 0.026 kg	4-round box: 0.21 kg	5-round clip: 0.13 kg	25-round box: 1.04 kg
100-round belt: 2.57 kg	250-round belt: 6.43 kg		

7.5mm Mle 1924

Notes: This round was the predecessor to the 7.5 MAS round. It produces basically the same ballistics as the shorter 7.5mm MAS and the same damaging and penetration effects (though it has slightly less range). The reason it was replaced by the French in their service rifles is because it looks nearly identical to the 8mm Mauser round, especially in the heat of battle. There were many accidents, minor and major, when French troops in World War I put captured 8mm Mauser ammunition into their rifles. The round would chamber in their rifles (though it would seem to be a bit of a tight fit), but firing the 8mm Mauser in a rifle designed for 7.5mm Mle 1924 could result in things like a stuck bullet in the barrel, a blown bolt, or a burst barrel, amongst other possibilities. The 7.5mm Mle 1924 round was therefore not replaced due to any lack of performance or defect, but instead due to grunt mentality.

Other Names: 7.5x57mm MAS
Nominal Size: 7.5x57mm
Actual Size: 7.82x56.57mm
Case Type: Necked
Weight: 299 kg per case of 1000; Price: $540 per case

Magazines:

Per round: 0.027 kg	3-round clip: 0.08 kg	5-round clip: 0.14 kg	25-round box: 1.1 kg

7.5mm Swiss

Notes: This is a very old cartridge, one of the oldest still in military use. The original 7.5mm Swiss round was designed in 1889 to use semi-smokeless powder, but was later modified to use increasingly modern propellants. The round is still being manufactured in Switzerland as well as by Norma, and has been in the past manufactured in several places in the world as diverse as the US and Japan. Ballistically, it performs similarly to the 7.62mm NATO round, and is a decent military round as well as civilian hunting round.

Other Names: 7.5mm Swiss Service, 7.5mm Schmidt-Rubin, 7.5mm M-1911
Nominal Size: 7.5x55mm
Actual Size: 7.81x55.4mm
Case Type: Necked
Weight: 33.13 kg per case of 1000; Price: $530 per case

Magazines:

Per round: 0.027 kg	3-round box: 0.18 kg	4-round box: 0.22 kg	5-round box: 0.26 kg
6-round box: 0.3 kg	10-round box: 0.46 kg	12-round box: 0.54 kg	20-round box: 0.87 kg
24-round box: 1.03 kg	30-round box: 1.27 kg	50-round belt: 1.33 kg	250-round belt: 6.63 kg

7.62mm Czech

Notes: This round was developed by Czechoslovakia shortly after World War 2 for use in the CZ-52 assault rifle and the M-52 light machinegun. It was used for a number of years, but the Russians forced the 7.62mm Kalashnikov and 7.62mm Nagant rounds on the Czechs in the 1960s and they re-chambered the M-52 assault rifle to use the 7.62mm Kalashnikov round. The chances of finding a 7.62mm Czech round outside of a museum or collector's hands is virtually nil today.

Other Names: 7.62mm Czech Short, 7.62mm M-52
Nominal Size: 7.62x45mm
Actual Size: 7.81x44.92mm

Case Type: Necked
Weight: 2.69 kg per box of 100; Price: $86 per box
Magazines:

Per round: 0.022 kg	10-round box: 0.38 kg		

7.62mm WT

Notes: The 7.62mm WT (Wilson Tactical) round was designed to be able to fit into magazines designed for the 5.56mm NATO round, with minimum modification to the magazine. Magazines for the 5.56mm NATO round require little modification to use with the 7.62mm WT round. The other consideration when the 7.62mm WT round was designed was to provide a round and a rifle which, with little modification, would provide more stopping power and modification, especially in a short barreled rifle. The bullet used in the 7.62mm WT is the same as that of a 7.62mm NATO round, and the 7.62mm WT is a bit hot-loaded for a round of its case length. The gas pressure is sufficient to allow the use of a very low-profile gas block when used on an AR platform, and the gas pressure also gives the AR platform somewhat less hiccups than one firing 5.56mm NATO. The shooting public in the US has been very favorable, but sales data from other countries is still being analyzed to reveal a trend one way or the other. In the US, there is also a lot of police interest in the 7.62mm WT round and the rifles that fire it. In addition, some states in the US won't allow the 7.62mm WT cartridge to be used for hunting, which is probably a giant sales killer in those states.

Twilight 2000 Notes: The 7.62mm WT round is not available in the Twilight 2000 timeline (nor are the rifles that fire it).
Other Names: 7.62mm Wilson Tactical
Nominal Size: 7.62x40mm
Actual Size: 7.82x40.03mm
Case Type: Necked
Weight: 21.12 kg per case of 1000; Price: $380 per case
Magazines:

Per round: 0.019 kg	5-round box: 0.19 kg	10-round box: 0.33 kg	20-round box: 0.63 kg
30-round box: 0.92 kg	40-round box: 1.22 kg	45-round box: 1.36 kg	

7.62mm Howa

Notes: The 7.62mm Howa was based directly on the 7.62mm NATO cartridge – the case is in fact identical, though the bullet is lighter. When the Japanese designed their Type 64 battle rifle, their soldiers were still of significantly smaller stature than their US and NATO counterparts. It was decided to design a cartridge that could be used interchangeably with the 7.62mm NATO cartridge, but did not have the recoil of the 7.62mm NATO. (The designers were also perhaps overcompensating a bit.) This led to the Howa cartridge for the Type 64 battle rifle – a round with about 10% less propellant, along with a bullet somewhat lighter than standard for 7.62mm NATO. A gas regulator must be adjusted to fire 7.62mm NATO rounds. This round was not used with other Japanese weapons chambered for 7.62mm NATO.

Other Names 7.62mm Type 64
Nominal Size: 7.62x51mm
Actual Size: 7.82x51.05mm
Case Type: Necked
Weight: 27.84 kg per case of 1000; Price: $446 per case
Magazines:

Per round: 0.23 kg	20-round box: 0.74 kg		

7.62mm Kalashnikov

Notes: This is perhaps the most ubiquitous assault rifle cartridge in the world. It was developed in 1943, but did not come into widespread use until the advent of the AK-47 assault rifle. It is also used in literally hundreds of AK clones, light machineguns and squad automatic weapons, and even a few civilian rifles. Most 7.62mm Kalashnikov ammunition has a steel case and a corrosive Berdan primer, making reloading close to impossible. Western and some Eastern-manufactured ammunition is made to more advanced standards and can be reloaded. Today, 7.62mm Kalashnikov is manufactured all over the world, even in the US. It is a round of decent killing power, but penetration can be lacking and accuracy at long range iffy. This round was replaced in the Russian military by the 5.45mm Kalashnikov, but many units of late have begun switching back to the 7.62mm Kalashnikov for its greater damaging potential.

A subsonic version of the 7.62mm Kalashnikov round exists. Triple the ammunition cost.
Other Names: 7.62x39mm Russian, 7.62mm Russian Short, 7.62mm Soviet M-43, 7.62mm obr 43 g
Nominal Size: 7.62x39mm
Actual Size: 7.9x38.65mm
Case Type: Necked
Weight: 23.63 kg per case of 1000; Price: $380 per case
Magazines:

Per round: 0.019 kg	5-round box: 0.18 kg	10-round box: 0.33 kg	10-round clip: 0.19 kg
15-round box: 0.47 kg	20-round box: 0.62 kg	25-round box: 0.76 kg	30-round box: 0.91 kg
40-round box: 1.2 kg	45-round box: 1.34 kg	60-round box: 1.78 kg	75-round drum: 2.21 kg
90-round box: 2.64 kg	100-round belt: 1.89 kg	100-round drum: 2.93 kg	101-round drum: 2.96 kg

7.62mm Nagant

Notes: This rifle was adopted for Russian service along with the M-1891 Mosin-Nagant rifle. It has been standard issue among the Russian military and former Russian client states for over a century. Its primary use today is in medium machineguns and sniper rifles, though some civilian rifles are chambered for it. Like many Russian rounds, the 7.62mm Nagant Rifle round uses a steel case and a corrosive Berdan primer, making reloading the spent case almost impossible. However, more standard cases were made by Remington until about 1950, and more recently by Norma and Lapua. The 7.62mm Nagant round is roughly in the same class as the .30-06 Springfield, but offers somewhat better range. It remains one of the few rimmed military cartridges in standard issue by any military.

A subsonic version of the 7.62mm Nagant round exists. Triple all costs for this subsonic version.

Other Names: 7.62x54Rmm Russian, 7.62x53Rmm Russian, 7.62mm Mosin-Nagant, 7.62mm Russian Rimmed, 7.62mm M-1891, 7.62mm Nagant Rifle

Nominal Size: 7.62x54mm

Actual Size: 7.87x53.6mm

Case Type: Necked

Weight: 32.63 kg per case of 1000; Price: $520 per case

Magazines:

Per round: 0.03 kg	5-round box: 0.25 kg	5-round clip: 0.13 kg	10-round box: 0.45 kg
15-round box: 0.65 kg	20-round box: 0.85 kg	47-round pan: 1.93 kg	50-round drum: 2.05 kg
50-round belt: 1.31 kg	75-round drum: 3.05 kg	100-round belt: 2.61 kg	200-round belt: 5.22 kg
250-round belt: 6.53 kg			

7.62mm NATO

Notes: This cartridge began as the round submitted by the US for the NATO Small Arms Trials in the early 1950s. It is basically a shortened version of the .30-06 Springfield cartridge, but without taking out much of the propellant. Though other countries submitted ammunition which was sometimes more advanced than the 7.62mm NATO round, the US basically used its influence to bully the rest of NATO into submission to accept the 7.62mm NATO round (then called the T-65). The 7.62mm NATO is no longer the standard NATO rifle cartridge, but remains a standard in medium machineguns and sniper rifles worldwide. It has also become a popular hunting round, able to take down medium and sometimes large game at fairly long ranges.

A very rare SLAP (Saboted Light Armor Penetrator) version of the 7.62mm NATO round exists; multiply all costs of the ammunition by five. A subsonic version of this round also exists; triple all costs of ammunition for the subsonic version. A Japanese variant of the 7.62mm NATO round is called the 7.62mm Howa; this round has a propellant charge reduced by 10%. Reduce all prices for this ammunition by 3%, as well as the weights of the ammunition. The 7.62mm CETME round is similar and has the same weights and costs to the 7.62mm Howa round (for game purposes).

Other Names: .308 Winchester

Nominal Size: 7.62x51mm

Actual Size: 7.82x51.05mm

Case Type: Necked

Weight: 30.63 kg per case of 1000; Price: $490 per case of 1000, $735 per 1500-round belt, $1960 per 4000-round belt

Magazines:

Per round: 0.025 kg	2-round box: 0.13 kg	3-round box: 0.16 kg	4-round box: 0.2 kg
5-round box: 0.24 kg	6-round box: 0.28 kg	7-round box: 0.31 kg	8-round clip: 0.2 kg
9-round box: 0.39 kg	10-round box: 0.43 kg	12-round box: 0.5 kg	15-round box: 0.61 kg
20-round box: 0.8 kg	25-round box: 0.99 kg	30-round box: 1.18 kg	49-round belt: 1.2 kg
50-round box or drum: 1.93 kg	50-round belt: 1.23 kg	70-round drum: 2.68 kg	100-round belt: 2.45 kg
125-round drum: 4.74 kg	200-round belt: 4.9 kg	250-round belt: 6.13 kg	1000-round belt: 24.5 kg
1500-round belt: 36.75 kg	4000-round belt: 98 kg		

7.62mm Oberndorf Subsonic

Notes: This is a special round designed specifically for a special sniper rifle – the Heckler & Koch SL-9SD, a silenced sniper rifle version of the SL-9 (civilian version of the G-36 assault rifle). This round, produced only in very small lots for certain customers (mostly US, NATO, and other special operations units of friendly countries), uses what amounts to a heavy but shortened hollow-point bullet loosely-based on the 7.62mm NATO bullet, packed into a shorter case which is sub-loaded (having less propellant than is normal for a round of its size. This makes this round subsonic (and quieter when fired through a silencer), while still having decent damaging qualities. Range is of course necessarily limited, but since the propellant load is just short of what would normally be required to make it supersonic, the reduction in range is not as much as one might think. The 7.62mm Oberndorf Subsonic round is, of course, strictly limited in its sales, and the average individual or even soldier or police officer cannot get wither the round or the rifle that fires it.

Twilight 2000 Notes: This round is not available in the Twilight 2000 timeline.

Other Names: 7.62mm Oberndorf

Nominal Size: 7.62x37mm

Actual Size: 7.82x37.04mm

Case Type: Necked

Weight: 1.78 kg per box of 100; Price: $108 per box

Magazines:

Per round: 0.018 kg	10-round box: 0.31 kg		

7.62mm Short CETME

Notes: The 7.62mm Short CETME round was essentially a development round used during the design process of the CETME-58 battle rifle; After developing their own version of a short 8mm Mauser round, it looked like NATO was going to adopt a 7.62mm round, but the design of what would become the 7.62mm NATO round had not yet been finalized. CETME, like a lot of European companies and countries, realized a full-power rifle cartridge would simply be too much in a light rifle with selective fire capability, and decided to use a light version of the 7.62mm bullet from the US T-65 round combined with a shorter case containing less propellant. This was the 7.62mm Short CETME round. A few versions of the CETME battle rifle were built to test the round, and reportedly the Spanish, Portuguese, and Germans were quite interested in it. Unfortunately, the US used their new-found post-World War 2 political clout to force their T-65 round on NATO, which became the 7.62mm NATO round, and CETME was forced to chamber their new battle rifle for the 7.62mm round, which ended the development of the 7.62mm Short CETME round. Today, the round and rifles which fire it are the province of museums and are not found even in collectors' hands. Of course, there is no need to reload the round, and the statistics below are for completeness and game purposes only.

Other names: 7.62mm CETME Intermediate

Nominal Size: 7.62x40mm

Actual Size: 7.82x40.02mm

Case Type: Necked

Weight: 2.11 kg per box of 100; Price: $77 per box

Magazines:

Per round: 0.019 kg	20-round box: 0.63 kg		

7.65mm Mauser

Notes: Originally designed in 1889 for the Belgian-pattern Mauser, this round was later for use in Turkey. However, its widest use was in South America, particularly Argentina, where it was chambered in their Mauser rifles and some machineguns. Some sporting rifles were also designed to fire this caliber in the US, South America, and Europe. The round was once very popular, but that popularity faded after World War 2. Recently, a lot of Argentine-pattern Mausers have shown up on the world surplus market, and the cartridge is having some renewed success. The 7.65mm Mauser is regarded as one of the best Mauser cartridges, and is an excellent hunting cartridge for up to medium game. Cases are made by several American manufacturers, primers by a few more, and complete cartridges by some European manufacturers.

Other Names: 7.65mm Argentine Mauser, 7.65mm Belgian Mauser, 7.65mm Turkish Mauser

Nominal Size: 7.65x53mm

Actual Size: 7.9x53.1mm

Case Type: Necked

Weight: 32.5 kg per case of 1000; Price: $520 per case

Magazines:

Per round: 0.026 kg	5-round box: 0.25 kg	5-round clip: 0.13 kg	25-round box: 1.05 kg
30-round box: 1.25 kg	40-round box: 1.65 kg		

7.7mm Type 99

Notes: This round was adopted by the Japanese in 1939 for use in World War II when their previous exploits in China suggested that their 6.5mm round did not have enough punch. It was produced specifically for the new Arisaka Type 99 rifle, a modification of

the previous 6.5mm-firing weapon. It is ballistically quite similar to the .303 British round, and even uses the same bullets. While Japanese World War 2 ammunition was never of good quality, modern Type 99 ammunition made by Norma is a great improvement over the Japanese ammunition. However, this ammunition is only made in small quantities, primarily for war relics as no rifles were built after World War 2 chambering the 7.7mm round.

A semi-rimmed version of this ammunition was also manufactured during World War 2; this was primarily for Japanese machineguns. It is extremely rare, as war ammunition was mostly used up or destroyed after World War 2. Some handloads may be found; most of them are modified .303 British rounds, and made for firing from war trophies and relics.

Other Names: .31 Japanese, 7mm Japanese Rimless, 7.7x58mm Arisaka; (Rimmed Versions) 7.7mm Type 92, 7.7x58SR, 7.7mm Japanese Semi-Rim

Nominal Size: 7.7x58mm

Actual Size: 7.9x57.91mm

Case Type: Necked

Weight: 3.12 kg per box of 100; Price: $114 per box

Magazines:

Per round: 0.028 kg	5-round clip: 0.14 kg		

7.92mm CETME

Notes: During the development of the CETME-58 battle rifle in the early-to mid-1950s, several cartridges were tried, including a few intermediate cartridges. One of these was the 7.92mm CETME; based on the 8mm Mauser and 8mm Kurz cartridges (with a touch of the US T-65 round, which eventually became the 7.62mm NATO round), it was essentially a somewhat longer version of the 8mm Kurz round with a different weight of bullet and more propellant. The CETME battle rifle chambered in 7.92mm CETME was in fact manufactured in limited quantities and even issued to some Spanish troops for advanced field testing, where it proved to be a popular chambering. Unfortunately, politics (especially the tremendous post-World War 2 political might of the US) intervened, and eventually, most of the 7.92 CETME-chambered rifles were re-chambered for the 7.62mm NATO cartridge, much to the chagrin of Spanish troops and much of Western Europe. The surviving rifles chambered for 7.92mm CETME are now the province of military museums, as are any surviving factory-produced 7.92mm CETME rounds; none are being made today by either factories or (to my knowledge) by handloaders. The boxed loads and magazine weights below are presented for completeness and game purposes only.

Other Names: 7.92mm CETME Intermediate

Nominal Size: 7.92x40mm

Actual Size: 8.2x40.03mm

Case Type: Necked

Weight: 2.32 per box of 100; Price: $84 per box

Magazines:

Per round: 0.021 kg	20-round box: 0.69 kg		

7.92mm Maroczek

Notes: This is essentially a Polish modification of the 7.92mm Patronen round, and the difference is that the 7.92mm Maroczek round is hot-loaded and has even greater muzzle velocity than the 7.92mm Patronen round. However, this hot of a round led to extreme barrel wear, with the Poles experiencing barrels shot out after as little as 200 rounds. The 7.92mm Maroczek round is tungsten-cored, a holdover from when the rifle was meant to be an antitank rifle. The Poles, however, realized that its effectiveness against armor was essentially nil and used it primarily as a long-range antipersonnel sniper rifle or as an antimateriel rifle used to destroy small or delicate pieces of enemy gear, such as radios and rangefinders. The use of the round and its rifle for the most part ended when the Poles were conquered by the Nazis, though there was some possible use by resistance fighters and in the Warsaw Ghetto to harry the Nazis. Today, any such rounds will probably be handloaded.

Nominal Size: 7.92x92mm

Actual Size: 8.2x92mm

Case Type: Necked

Weight: 4.96 kg per case of 100; Price: $204 per box

Magazines:

Per round: 0.053 kg	10-round box: 0.89 kg		

7.92mm Patronen

Notes: The 7.92 Patronen round was designed in the early 1940s for use against light tanks, light combat vehicles, and unarmored vehicles. It was designed specifically for use in the PzB-38 and PzB-39 antimaterial rifles, and essentially was a 13mm TuF shell necked down to take an 8mm Mauser bullet. The round has a very high muzzle velocity, with the combination of large case with lots of propellant and a small bullet giving performance and antiarmor capabilities similar to that of a sabot round. The bullet contained a small capsule of tear gas behind the tungsten carbide nose, which was supposed to help disable the crew; in practice, the amount of tear gas is so small as not to be noticed by any potential target. The round also has tracer material in the tail.

It became quickly apparent that the rifle and the 7.92mm Patronen round was supremely ineffective against all but the thinnest

armor, and production stopped in 1942. The PzB-39 remained in the Nazi inventory for use as a long-range sniper rifle until 1944, when the rifle and the round were phased out of service. Today, the only 7.92mm Patronen rounds found will be war trophies/museum pieces and handloaded examples.

Other Names: Patrone 318 SmK-Rs-L'spur, Patrone 318, Patrone 318 SmKH-Rs-L'spur, 7.92mm Patronenkasten
Nominal Size: 7.92x94mm
Actual Size: 8.2x92mm
Case Type: Necked
Weight: 4.86 kg per box of 100; Price: $194 per box

Magazines:

Per round: 0.048 kg			

8mm Austrian Service

Notes: This cartridge was originally designed for the 1888 Mannlicher straight-pull rifle, and later used for other such rifles and the Austrian version of the Schwarzlose machinegun. It was also a popular hunting round in Europe at one point, with some Mauser and Mannlicher-Schoenauer rifles being chambered for it. It has always been uncommon in North America, however, and virtually unknown anywhere else. The round is still being commercially manufactured in Europe by Hirtenberger. It has good power for use against most medium game as well as people.

Other Names: 8x50mmR, 8mm Austrian Mannlicher
Nominal Size: 8x50mm
Actual Size: 8.2x50.29mm
Case Type: Necked
Weight: 33.25 kg per case of 1000; Price: 530 per case

Magazines:

Per round: 0.027 kg	5-round clip: 0.13 kg	250-round belt: 6.65 kg	

8mm Breda

Notes: This round was designed for use by a few World War 2 Italian machineguns, such as the Breda Model 35 and Fiat-Revelli Model 1935 and was never used for anything else. It was designed mainly to replace the 6.5mm Carcano in machineguns, as that light rifle round was inadequate for machineguns. It is a significantly better round than the 6.5mm Carcano, and comes close in power to the .300 Winchester Magnum. It has not been manufactured since World War 2, and as no civilian or other military rifles were ever chambered for it, is of little interest to handloaders, so the ammunition is virtually impossible to find today.

Other Names: 8x59mm Breda, 8x59mm Italian
Nominal Size: 8x59mm
Actual Size: 8.28x59.18mm
Case Type: Necked
Weight: 3.99 kg per box of 100; Price: $128 per box

Magazines:

Per round: 0.032 kg	20-round strip: 0.84 kg	50-round belt: 1.6 kg	

8mm Brenneke

Notes: These rounds were developed in 1912 by Wilhelm Brenneke himself, for use in Mauser-pattern rifles. The 8mm Brenneke is basically a smaller version of the 9.3x62mm Brenneke round. The round has plenty of punch and can handle most medium game, and some large game.

Other Names: 8x64mmJ Brenneke, 8x64mmS Brenneke
Nominal Size: 8x64mm
Actual Size: 8.2x65.02mm
Case Type: Necked
Weight: 42.88 kg per case of 1000; Price: $690 per case

Magazines:

Per round: 0.034 kg	5-round box: 0.33 kg		

8mm Danish Krag

Notes: This round was designed for use in the 1889 Danish version of the Krag-Jorgensen rifle. It originally used a much heavier bullet when the cartridge used a round-nosed bullet, but a lighter bullet was designed when the round was switched to a spitzer (pointed-nosed) bullet. It was once a popular civilian hunting cartridge as well as a common military round in Scandinavia, and was regarded as one of the better military rounds of the time. It has not, however, been commercially loaded in about a half a century and even handloads are scarce these days.

Other Names: 8x58mmR

Nominal Size: 8x58mm
Actual Size: 8.18x57.91mm
Case Type: Necked
Weight: 3.8 kg per box of 100; Price: $122 per box
Magazines:

Per round: 0.03 kg			

8mm Hungarian Mannlicher

Notes: Originally developed in 1930 for the Solothurn machinegun, design of this round actually started back in the mid-1920s to replace the somewhat-deficient 8mm Austrian Service round. The Hungarians also chambered their pre-World War 2 service rifles for it. It was never used in any sporting rifles, and it virtually disappeared after World War 2, since the Nazis forced the 8mm Mauser round on the Hungarians starting in 1940. Handloading is problematic since bullets of this size are not generally available and usually must be custom-cast.

Other Names: 8x56Rmm, 8mm Austrian-Hungarian Mannlicher, 8mm M-1931, 8mm Solothurn, 8mm Hungarian M-31
Nominal Size: 8x56mm
Actual Size: 8.33x56.13mm
Case Type: Necked
Weight: 3.83 per box of 100; Price: $122 per box
Magazines:

Per round: 0.031 kg	5-round clip: 0.15 kg		

8mm Kurz

Notes: This was the first assault rifle round, an intermediate-sized rifle round for use in what was then the new weapon class of assault rifles. It had a long development for ammunition, taking nearly a year starting in 1940, and was first used in combat on the Russian Front in 1942. The advent of this round and the rifles that fired it had a profound effect on weapon development; virtually all infantry rifles now issued are assault rifles. Unfortunately, no weapons to fire the 8mm Kurz round were built after World War 2, and ammunition was made for only a few years after that war in East Germany. The 8mm Kurz is basically a chopped version of the standard 8mm Mauser round.

Other Names: 7.92mm Kurz
Nominal Size: 7.92x33mm
Actual Size: 8.2x33.02mm
Case Type: Necked
Weight: 2.18 kg per box of 100; Price: $70 per box
Magazines:

Per round: 0.017 kg	30-round box: 0.84 kg		

8mm Lebel

Notes: This round, though the same size as the 8mm Austrian Service, will not fit in rifles chambered for the 8mm Austrian service (and vice versa), due to the great differences in case shape. It originally used a round-nosed heavy bullet when introduced in 1886, but was switched to a spitzer bullet in 1898. Though inadequacies of the widely-rimmed round showed up as early as World War 1 (particularly in semiautomatic and automatic weapons), it was used until shortly after World War 2 as a military round, and as a hunting round even after that. The shape of the cartridge makes it difficult to manufacture, and even more difficult for handloaders to make from scratch. Today, the 8mm Lebel round is difficult to find.

Other Names: 8x50mmR Lebel, 8mm Lebel Rifle
Nominal Size: 8x50mm
Actual Size: 8.2x50.29mm
Case Type: Necked
Weight: 3.33 kg per box of 100; Price: $106 per box
Magazines:

Per round: 0.027 kg	3-round clip: 0.08 kg	5-round clip: 0.13 kg	20-round box: 0.87 kg
24-round strip: 0.84 kg	30-round strip: 1.04 kg	100-round belt: 2.66 kg	249-round “belt”: 6.62 kg
250-round belt: 6.65 kg			

8mm Mauser

Notes: This is one of the world’s great rifle cartridges, having been used by dozens of countries, including Germany, Czechoslovakia, Poland, and China. Although it is almost universally known as the 8mm Mauser or 7.92mm Mauser cartridge, it is not in fact a Mauser design, having been designed by the German Infantry Board Commission at Spandau Arsenal. It was not even

actually designed for a Mauser rifle; the Gew 88 is actually a modified Mannlicher design. The original bullet had a rounded nose; when this was changed to a pointed nose, velocity of the round jumped and it began to outperform comparable rounds of the time. Due to the vast numbers of rifles (mostly civilian today) that fire this round, the 8mm Mauser is still being produced worldwide.

Other Names: 7.92mm Mauser, 7.9x57mmJ, 7.9x57mmJS, 8mm German Mauser, 7.92x57mm, 8x57mm, 8x57mmI, 8x57mmS, 8mmJRS (in its rimmed form).

Nominal Size: 7.92x57mm

Actual Size: 8.2x57mm

Case Type: Necked

Weight: 37.63 kg per case of 1000; Price: $600 per case

Magazines:

Per round: 0.03 kg	2-round box: 0.16 kg	3-round box: 0.2 kg	5-round box: 0.29 kg
5-round clip: 0.15 kg	10-round box: 0.52 kg	10-round clip: 0.3 kg	20-round box: 0.98 kg
25-round box: 1.21 kg	25-round strip: 0.98 kg	30-round box: 1.45 kg	40-round box: 1.91 kg
50-round belt: 1.51 kg	75-round drum: 3.52 kg	100-round belt: 3.01 kg	200-round belt: 6.02 kg
250-round belt: 7.53 kg			

8x51mm Mauser

Notes: This round was introduced in 1888, and designed for the short-action Mauser rifles of the period. It is basically a shorter version of the standard 8mm Mauser round. It was popular at the time, but was replaced by the 8x56mm Mannlicher Schoenauer, and later other rounds, reaching the peak of its popularity before World War 1. It was not well known in North America. It is about in the same class as the .30-30 Winchester. It is not now being produced commercially. The bullet was relatively heavy at 227 grains. The round was originally designed for rifles with 7.9mm lands and 8.1mm grooves diameter; this was changed 1894 to a 7.9mm lands and 8.2mm grooves dimensions to reduce wear on the bore of the barrel. The round was not otherwise changed, and is essentially the same round as before.

Nominal Size: 8x51mm

Actual Size: 8.03x50.29mm

Case Type: Necked

Weight: 3.19 kg per box of 100; Price: $102 per box

Magazines:

Per round: 0.026 kg	4-round clip: 0.1 kg	5-round box: 0.25 kg	

8mm Mauser M/88

Notes: The predecessor and parent cartridge of the 8mm Mauser round we all know so well and love, the 8mm Mauser M/88 bears the same relationship the US .30-03 round has with the .30-06 – it is a lower-tech round with a round-nosed bullet, a different propellant load, and somewhat different dimensions. It was one of the first smokeless powder rounds developed, and first used in the Prussian Gew 88 rifle. It was also one of the first rounds in the trend towards smaller-caliber, more powerful cartridges. Further attempts at improving the round resulted in the now-common 8mm Mauser round. For Twilight 2000 v2.2 purposes, the 8mm M/88 round is almost identical in stats to the 8mm Mauser, with only minor differences.

Nominal Size: 7.92x57mm

Actual Size: 8.22x57mm

Case Type: Necked

Weight: 33.22 kg per case of 1000; $600 per case

Magazines:

Per round: 0.03 kg	5-round clip: 0.15 kg		

8mm Remington Magnum

Notes: This round was developed in 1978 as a chambering for the Remington 700 BDL rifle. It is based on a blown-out version of the .375 H&H Magnum case, and required that the Remington 700 BDL be redesigned for the chambering. The 8mm Magnum is similar to several other designs of the period and earlier, ranging from 8x68mmS to 8mm PMM, as well as several wildcat cartridges. It was the first 8mm Magnum cartridge developed by an American company, however. It is easy for handloaders to produce the 8mm Remington Magnum using any one of several existing cases. Unfortunately, the results produced by the 8mm Remington Magnum do not really justify the extra weight and recoil, when the .338 Winchester Magnum or .340 Weatherby Magnum will produce similar results. The 8mm Remington Magnum was not, therefore, a very successful round.

Nominal Size: 8x72mm

Actual Size: 8.2x72.39mm

Case Type: Necked

Weight: 4.78 kg per box of 100; Price: $152 per box

Magazines:

Per round: 0.038 kg			

8x60mm RWS

Notes: After World War 1, German civilians were forbidden by the Treaty of Versailles to own hunting weapons in a military caliber (such as 8mm Mauser). A new round with similar ballistics was therefore devised by RWS, and the rifles modified in a simple procedure to take the new round. Later, it became an popular hunting round in Europe., outclassing the 8mm Mauser and .30-06 Springfield. It is still manufactured by RWS.

Other Names: 8x60mmJ Mauser, 8x60mmS Mauser
Nominal Size: 8x60mm
Actual Size: 8.08x60.07mm
Case Type: Necked
Weight: 38.5 kg per case of 1000; Price: $620 per case

Magazines:

Per round: 0.031 kg	4-round box: 0.25 kg	5-round box: 0.3 kg	5-round clip: 0.15 kg

8x68mm RWS

Notes: This round was first designed in late 1938. It is basically a “sub-magnum” cartridge, not quite as powerful as an actual magnum round, but still plenty powerful. It actually outclasses rounds such as the .300 H&H Magnum, .300 Weatherby, or .300 Winchester Magnum. It is quite popular in Europe, but almost unknown in North or South America.

Other Names: 8x68mmS RWS
Nominal Size: 8x68mm
Actual Size: 8.2x67.31mm
Case Type: Necked
Weight: 44.38 kg per case of 1000; Price: $710 per case

Magazines:

Per round: 0.036 kg	3-round box: 0.24 kg	4-round box: 0.29 kg	5-round box: 0.35 kg

8x75mm RS

Notes: This round was developed sometime around 1910, and is basically a 9.3x74mmRmm case necked down to accept an 8mm bullet. It was designed to provide what was essentially at the time an 8mm Magnum cartridge for African hunting. At the time of the 8x75mm RS’s inception, there was a lot of competition between the British and Germans in the big-game rifle and ammunition arena; while the Germans made the better rifles, the British always seemed to stay just ahead in the ammunition power arena; the 8x75mm RS was Germany’s attempt at the time to produce an 8mm Magnum round for use in express and bolt-action rifles. Confusion arose over the years as two bullet diameters were actually used, one which was .318 caliber and one which was .323 caliber; while the .323 caliber bullet will fit into the breech of a rifle designed for .318 caliber, the bullet usually either gets stuck in the barrel or causes a barrel rupture. Rimmed and rimless versions were produced. Eventually, the .318 caliber bullet was standardized. Ballistics and power of both versions are similar to those of the later .375 H&H Magnum round. Factory production of this round today is only in small lots; the 8.75mm RS round seems to be primarily in the hands of handloaders.

Other names: 8x75mm, 8x75mmRmm (for rimmed versions), 8x75mm Magnum, 8x75mmRmm Magnum (for rimmed versions), 8x75mm JRS
Nominal Size: 8x75mm
Actual Size: (Standard) 8.08x74.68mm, (Non-Standard) 8.2x74.68mm
Case Type: Necked
Weight (Standard Version Only): 4.21 kg per box of 100; Price: $153 per box

Magazines:

Per round: 0.038 kg			

8.6mm Blackout

Notes: The 8.6mm Blackout round was designed to deliver high energy downrange to a good distance while delivering a subsonic bullet velocity (though supersonic loadings of the 8.6mm Blackout exist, using lighter bullets traveling at a higher velocity). The magazines used by the 8.6mm Blackout loading are 7.62mm NATO or 6.5mm Creedmoor cartridges, and 8.6mm Blackout can use most of these magazines without modification. In fact, all that is required for a 7.62mm-firing AR-10-type rifle to fire 8.6mm Blackout is to change the barrel, as that round is designed to use the same base as the 7.62mm/.308 cartridge. The base cartridge for the 8.6mm Blackout is the 6.5mm Creedmoor, with the case necked out and shortened.

Twilight 2000 Notes: The 8.6mm Blackout round does not exist in the Twilight 2000 timeline.
Other Names: 8.6mm BLK, 8.6mm Creedmoor (rare)
Nominal Size: 8.6x43mm

Actual Size: 8.58x42.8mm
Case Type: Necked
Weight: 2.72 kg per box of 100; Price: $124 per box

Per round: 0.025 kg	5-round box: 0.24 kg	10-round box: 0.43 kg	20-round box: 0.81 kg

9mm Mauser Rifle

Notes: Though the primary cartridge for most German Mauser rifles was the 8mm Mauser round, Mauser also developed a family of cartridges after the introduction of the original 8mm Mauser in 1888, based on that original 8mm round, primarily by necking the 8mm case up or down. One of these was the 9mm Mauser Rifle round. For a short time, the 9mm Mauser Rifle round was used in military rifles, but its most common use throughout its history has been as a hunting round in Europe and to a lesser extent the US and Canada. A good number of rifles had 9mm Mauser Rifle chamberings, and it was factory-loaded in the US and Europe until 1938. However, the 9mm Mauser Rifle round has long been considered obsolete, and presently no companies are producing factory cartridges. The 9mm Mauser Rifle cartridge is in the same class as the .358 Winchester in all categories except for range, but with a pointed-nose bullet instead of the original round-nosed bullets, it produces decent penetration and damage within its range. The 9mm Mauser Rifle round is essentially the province of handloaders these days. A rimmed version of this round was also made for use in express-type rifles.

Other Names: 9x57mm Mauser, 9x57mm, 9x57Rmm (for the rimmed version)
Nominal Size: 9x57mm
Actual Size: 9.04x56.9mm
Case Type: Necked
Weight: 4.02 kg per box of 100; Price: $146 per box
Magazines:

Per round: 0.037 kg			

9mm Russian Rifle

Notes: This cartridge was designed for the first version of the Medved hunting rifle (essentially a Dragunov action put into a conventional stock). It is not known exactly when this cartridge was introduced, but it was probably in the late 1960s (given when the SVD was introduced). Soviet civilian hunters wanted to use at least a version of an SVD for hunting, but wanted their version chambered for the Finnish 9.3x54Rmm Sako cartridge so they could take down larger animals, but the Dragunov's designers could not make that round fit into the Medved/Dragunov's action (despite the Sako round and the 7.62 round being *nominally* the same length, the Sako round is longer by enough that it doesn't fit into a Dragunov action). The Soviet government also decided that the Dragunov's action would not be *that* heavily-modified in order to fit the Sako round. Therefore, the 7.62mm Nagant cartridge was simply necked up to take a .35-caliber bullet, with an appropriate increase in propellant to compensate for the increase in bullet weight. The 9mm Russian Rifle round is apparently being manufactured only in small amounts, even in Russia, and the Medveds chambered for it haven't been made in decades. The 9mm Russian Rifle round was always rare outside of Russia itself, and is even rare inside of Russia now, though for a while it was a popular hunting round.

Other Names: 9mm Russian, 9x54Rmm, 9x53Rmm, 9mm Izhmash (or Izhmash Rifle), 9mm Medved
Nominal Size: 9x54mm
Actual Size: 8.89x53.6mm
Case Type: Necked
Weight: 3.66 kg per box of 100; Price: $133 per box
Magazines:

Per round: 0.033 kg	4-round box: 0.13 kg		

9mm SP-5 Complex

Notes: This is actually a set of several related cartridges, designed by the Russians in the mid to late 1980s for use in certain special applications, particularly in silenced weapons and those with very short barrels. All are essentially necked-up 7.62mm Kalashnikov rounds, loaded with heavy bullets and low levels of propellant, ensuring their bullets are subsonic but hard-hitting. This allows them to be used in silenced weapons, which is in fact the most common use for SP-5 Complex cartridges. There are currently three known types of rounds in this set: the SP-5 ball round, essentially a normal jacketed lead bullet; the SP-6 AP bullet, with a steel core; and the PAB-9, with a somewhat denser steel core that produces a bit better penetration.

Some of the weapons which fire these rounds have been offered for export, though it is not known how many sales have taken place. The cartridges and the weapons are produced only in Russia and not common even inside of Russia itself. The prices below are for standard SP-5 ball ammunition; for SP-6, double the prices, and for PAB-9, triple the prices shown below.

Nominal Size: 9x39mm
Actual Size: 9.2x38.5mm
Case Type: Necked
Weight: 2.82 kg per box of 100; Price: $306 per box
Magazines:

Per round: 0.026 kg	10-round box: 0.45 kg	20-round box: 0.84 kg	

9.3mm Brenneke

Notes: This was Wilhelm Brenneke's largest and most powerful cartridge. Brenneke was a designer of high-velocity ammunition for rifles in the early 20th century, and many of his cartridges are similar to those of his contemporary, Charles Newton. Brenneke's rounds have been much more long lived, however, and many rifles are still chambered for them to this day. The 9.3mm Brenneke is a large cartridge which propels a bullet that is heavy and has a lot of power, almost magnum-class.

Other Names: 9.3x64mm Brenneke
Nominal Size: 9.3x64mm
Actual Size: 9.27x64mm
Case Type: Necked
Weight: 5.4 kg per box of 100; Price: $172 per box

Magazines:

Per round: 0.043 kg	3-round box: 0.31 kg	4-round box: 0.36 kg	5-round box: 0.42 kg

9.3x62mm Mauser

Notes: This round dates from 1905, developed by Otto Bock to give Mauser users an adequate cartridge for African game, though it was soon being used on larger European game. Rifles were chambered in this caliber in the US until about 1940, but no major US manufacturer makes rifles for it now (though some smaller manufacturers, such as A-Square do). It is a quite common chambering in Europe, and many European rifle manufacturers make rifles for the 9.3x62mm Mauser. Ammunition is easy to find in Europe, and somewhat less easy in North America.

Other Names: 9.3mm Mauser
Nominal Size: 9.3x62mm
Actual Size: 9.27x61.47mm
Case Type: Necked
Weight: 51.88 kg per case of 1000; Price: $830 per case

Magazines:

Per round: 0.042 kg	2-round box: 0.23 kg	3-round box: 0.3 kg	4-round box: 0.37 kg
5-round box: 0.43 kg	10-round box: 0.76 kg		

9.3x74Rmm

Notes: This rimmed rifle round was Germany's answer to high-power cartridges in the early 1900s such as some of the Nitro Express rounds. It is a powerful round that has performance similar to the .375 Flanged Nitro Express round – good for virtually any game on Earth, including elephants with a well-placed shot. Rifles are still made for this round (typically single-shot or double-barreled rifles due to the rimmed round), and ammunition is still made by RWS and Norma.

Nominal Size: 9.3x74mm
Actual Size: 9.27x74.42mm
Case Type: Necked
Weight: 62.75 kg per case of 1000; Price: $1000 per case

Magazines:

Per round: 0.052 kg			

9.3x66mm Sako

Notes: Introduced in 2002, the 9,3x66mm Sako was designed specifically for use in Sako's Model 75 family of hunting rifles. The 9.3x66mm Sako has more power and penetration than the 9.3x62mm Mauser, but can't quite match the 9.3mm Brenneke for range or the .375 H&H Magnum for power; it is an "in-between" cartridge. Sako has developed several bullets for this cartridge, including blunt and spitzer bullets, and jacketed and bare lead rounds; Nosler-partition rounds are also included. The 9.3x66mm Sako remains, however, a limited-production round.

Twilight 2000 Notes: The 9.3x66mm Sako is not available in the Twilight 2000 timeline.
Nominal Size: 9.3x66mm
Actual Size: 9.27x65.44mm
Case Type: Necked
Weight: 4.86 kg per box of 100; Price: $88 per box

Magazines:

Per round: 0.044 kg	5-round box: 0.43 kg		

9.3mm Sauer

Notes: This is a rimmed round designed for use in single-shot and double-barreled rifles. Very little is known about this round and its history today, and it is a very rare round today. The round has good stopping power, but only average penetration. Rifles that fire this round are scarce; casings are largely handmade, though bullets suitable for this round are made by Barnes and Speer.

Other Names: 9.3x72Rmm
Nominal Size: 9.3x72mm
Actual Size: 9.27x71.88mm
Case Type: Straight
Weight: 4.88 kg per box of 100; Price: $156 per box

Magazines:

Per round: 0.039 kg			

9.3mm SN

Notes: This round (also commonly known as the 9mm SN) was developed after Russian experience in Afghanistan Chechnya, where they discovered that the 7.62mm Nagant round fired by most of their sniper rifles, even the AP version, simply didn't have the range for use in very open environments or the punch for effective countersniper or general sniping work in built up areas. There is some controversy as to the origins of the round; some sources say it is a wholly indigenous development, some say it is based on the .338 Lapua Magnum, and some say it is based on either the 9.3mm Sako or 9x64mm Brenneke round. In fact, the exact caliber is also in question; some sources give it a nominal size of 9x64mm, others give it a nominal size of 9.3x64mm. My research so far seems to lean towards the nominal size of 9.3x64mm, and that is how I have treated it below. Either way, the round seems to fall in performance between the .338 Lapua Magnum and the 9.3x64mm Brenneke rounds, and in addition the bullet is steel-cored to give it excellent armor penetration, in addition to being rather heavy. (API and Tracer versions are also available). The only known rifle at present to be chambered for 9.3mm SN is the SVDK, a modification of the SVD Dragunov. The 9.3mm SN seems at present to be a dedicated sniper round manufactured only in small lots and both the round and rifle are not in general issue at present.

Twilight 2000 Notes: The 9.3mm SN round does not exist in the Twilight 2000 timeline.
Other Names: 9.3x64mm Russian, 9.0mm SN, 9.3mm Russian, 9x64mm, 9x64mm Russian
Nominal Size: 9.3x64mm (but see above)
Actual Size: 9.45x63.76mm (Provisional; also, see above)
Case Type: Necked
Weight: 4.92 kg per box of 100; Price: $179 per box

Magazines:

Per round: 0.045 kg	10-round box: 0.78 kg		

9.3mm Swiss

Notes: Primarily a round meant for target shooting, the 9.3mm Swiss round is known for its sharply pointed bullet. The chambering is rare in the US, but better-known in Europe. However, the 9.3mm Swiss is still mostly the province of collectors and they are not manufactured by any large companies at present, though Barnes and Speer make the bullets and some other small companies still make the cases.

Nominal Size: 9.3x53mm
Actual Size: 9.27x53.34mm
Case Type: Necked
Weight: 4.5 kg per box of 100; Price: $144 per box

Magazines:

Per round: 0.036 kg			

9.5mm Mannlicher

Notes: This round was introduced in 1910 for the Mannlicher-Schoenauer rifle of the period. No current rifles are chambered for this round, since the round is difficult to handload or even machine-manufacture due to the strange headspace, and mistakes are easy to make (and can be fatal to the shooter). Nonetheless, the round performs well on thick-skinned game, as long as the game is not too dangerous (due to short range). The round was an almost exclusively European round and was seldom seen in North America, though it could be encountered in Africa in the hands of European hunters. It is rarely found today, and there are no major manufacturers making it.

Other Names: 9.5mm Mannlicher-Schoenauer, 9.5x57mm MS, .375 Rimless Nitro Express, 9.5x56mm, 9.5x56.7mm
Nominal Size: 9.5x57mm
Actual Size: 9.63x57.15mm
Case Type: Necked
Weight: 5.2 kg per box of 100; Price: $166 per box

Magazines:

Per round: 0.042 kg			

.30 Blaser

Notes: This is a magnum round designed in 1990 by Blaser Rifle Works and RWS for use in single-shot and double-barreled break-open rifles. It is rimmed, so it is not really meant for other types of rifles. It uses fairly heavy bullets and has velocity that falls between the .30-06 Springfield and .300 H&H Magnum. This makes it good for most game of up large size as well as a good man-stopper.

Other Names: .30R Blaser
Nominal Size: 7.62x68mm
Actual Size: 7.82x68.07mm
Case Type: Necked
Weight: 40.88 kg per case of 1000; Price: $650 per case

Magazines:

Per round: 0.033 kg			

.30 Carbine

Notes: This cartridge grew out of the 1940 recommendation by the US Ordnance Department that a light carbine would have great advantages over the M-1911 pistol in some circumstances. This led to the M-1 Carbine series, and the ammunition developed for it, the .30 Carbine cartridge. It is a modification of the .32 Winchester Self Loading design. The best use for the .30 Carbine cartridge turns out to be not killing people, but varminting and small game hunting.

Other Names: .30 M-1 Carbine
Nominal Size: 7.62x33mm
Actual Size: 7.82x32.08mm
Case Type: Straight
Weight: 15.38 kg per case of 1000; Price: $250 per case

Magazines:

Per round: 0.012 kg	7-round box: 0.16 kg	15-round box: 0.31 kg	30-round box: 0.59 kg
40-round box: 0.78 kg			

.30-06 JDJ

Notes: This is basically a .30-06 Springfield round redesigned for use in the Thompson/Center Encore single-shot pistol. It has since been chambered in a few custom rifles and at least one commercial rifle, but its primary use is still in the Encore. The .30-06 JDJ actually holds more powder than the .30-06 Springfield due to the case design. It is an excellent hunting round, slightly better than comparable rounds, but takes a specially-modified or designed weapon to fire it due to the neck design.

Nominal Size: 7.62x62mm
Actual Size: 7.82x62.36mm
Case Type: Necked
Weight: 3.75 kg per box of 100; Price: $120 per box

Magazines:

Per round: 0.03 kg			

.30-40 Krag

Notes: This round was the first “small-bore” cartridge used by the US military, being adopted in 1892. It was also one of the first military rounds to use modern (i.e. smokeless) propellant. The cartridge virtually disappeared after 1936, until 1973, when Ruger began chambering some of its falling-block single-shot rifles for .30-40 Krag. This stimulated new interest in the round, but it remains a relatively rare round these days.

Other Names: .30 Army
Nominal Size: 7.62x59mm
Actual Size: 7.82x58.67mm
Case Type: Necked
Weight: 3.53 kg per box of 100; Price: $112 per box

Magazines:

Per round: 0.028 kg	4-round box: 0.23 kg	5-round clip: 0.14 kg	250-round belt: 7.05 kg

.30 Newton

Notes: Originally designed in 1913 for Fred Adolph, the .30 Newton was at first called the Adolph Express. When Charles Newton began producing his own rifles, he changed the name to .30 Newton. The rounds were manufactured for Newton by Western Cartridge. Unfortunately, when Newton’s company failed, the cartridge did too, and Western Cartridge did not make any .30 Newton cartridges after 1938. Richard Speer made cases for the round for a time after World War 2, but also stopped. The round is adequate for virtually any sort of North American game, if you can find it or a rifle firing it.

Other Names: .30 Adolph Express
Nominal Size: 7.8x64mm
Actual Size: 7.82x64mm
Case Type: Necked
Weight: 3.84 kg per box of 100; Price: $122 per box
Magazines:

Per round: 0.031 kg	5-round clip: 0.15 kg		

.30 Pedersen

Notes: Just prior to the US intervention into World War 1, the US Army studied French and British tactics, and especially, their successes and failures. The US Army quickly realized what everyone else already knew – that the most dangerous time for a soldier was when he came out of the trenches to advance across the "No Man's Land" between the friendly trench and the objective enemy trench. As friendly troops rushed across the intervening terrain, covering fire had to be lifted and shifted, and was therefore noticeably sparse in the area of the actual advance. The idea of the Pedersen Device was born from these studies; this was a parts kit to be dropped into a very-slightly modified M-1903 rifle (there were also plans for the device to be used with the M-1917, British Enfield, and Mosin-Nagant rifles, though these never materialized), turning it into a high-capacity semiautomatic rifle. Along with the Pedersen Device, Pedersen also designed a new round; though based on the .30-06 Springfield, it was vastly modified. The caliber remained the same, but the new round used a much shorter and lighter bullet, along with a shorter case containing less propellant, minimizing recoil during sustained fire. It has been rumored that the case was a longer version, necked down version of the .32 ACP round; it has been equally rumored that the case is a cut-down .30-06 Springfield case. No sources I have found seem to agree in this regard.

Regardless of which is true, the .30 Pedersen round does resemble a rather short .30-06 Springfield bullet in a long .32 ACP case. The Pedersen Device was to be first fielded during the planned Spring Offensive of 1919, but the Germans surrendered and the Offensive never happened, and the rifles were quickly converted back to standard M-1903s. The cuts made in the receiver for the extraction of the rounds mystified many troops for decades; it was not until after World War 2 that the existence of the Pedersen Device was finally made public.

Today, if you have intact .30 Pedersen ammunition, consider yourself lucky; those bullets are worth a fortune in real life. If you have yourself an intact Pedersen Device, you can call yourself astoundingly lucky; virtually all of them were destroyed between World War 1 and 2, usually by melting them down. The weight and price below are given for game purposes only; the actual chance, whether in game or real-life terms, that one would actually find either a Pedersen Device or the ammunition are virtually nil.

However, in an interesting turn of events, the French became very interested in the .30 Pedersen round. In fact, the French 7.65mm Longue round is an almost exact copy of the .30 Pedersen round!

Other Names: .30 M-1918, .32 Pedersen (though this is considered incorrect)
Nominal Size: 7.62x20mm
Actual Size: 7.82x19.81mm
Case Type: Straight
Weight: 8.36 kg per box of 100; Price: $30 per box
Magazines:

Per round: 0.008 kg	40-round box: 0.48 kg		

.30 Remington

Notes: The .30 Remington cartridge was introduced in 1908 as a rimless version of the .30-30 Winchester cartridge, specifically for use in its then-new Model 8 semiautomatic rifle. Since then, several other rifles by Remington and other companies have chambered the .30 Remington round, but the last rifle to be built to chamber this round was manufactured just after World War 2. A lot of confusion arose when the Remington Model 8 in .30 Remington was introduced – they were marked as firing ".30-30 Remington" caliber, which led to a lot of inexperienced shooters becoming frustrated when they bought and then tried to load .30-30 Winchester rounds into their Model 8s! The .30 Remington cartridge is virtually identical in performance to the .30-30 Winchester; however, the .30 Remington has a slight edge in range over the .30-30 Winchester round. Theoretically, the .30 Remington should be easier to handload, but handloading data is scarce for the .30 Remington, and most handloaders tend to under-load the case with propellant.

Factory-made .30 Remington rounds were actually available until the early 21st century, and the most of the rifles chambered for it are still quite serviceable, but most of these factory tend to *also* be under-loaded with propellant, unless made by Remington itself or under direction from Remington. Since the round was factory loaded until recent years, .30 Remington is still easy to find, whether under-loaded or not.

Other Names: .30-30 Remington
Nominal Size: 7.8x51.56mm
Actual Size: 7.8x51.56mm
Case Type: Necked
Weight: 30.8 kg per case of 1000; Price: $390 per case
Magazines:

Per round: 0.02 kg	5-round box: 0.19 kg		

.30 Remington AR

Notes: This cartridge was designed in 2008 to fill a perceived gap in hunting rounds between the .223 Remington and the .308 Winchester. The design was the product of experts from several companies who did not wish to be identified; the work was done under the name of "Freedom Group." Since then, some company names disclosed include Remington, Bushmaster, and DPMS; there are others. However, it is manufactured only by Remington. The .30 Remington AR was designed specifically for the AR platform, and the first rifle chambered for it was the Remington R-15. The .30 Remington AR's parent case was the .450 Bushmaster; magazines and rifles for it are specifically modified for the round. Muzzle velocity is high at 850 meters per second. The .30 Remington AR has a rebated rim, enabling it to be used with an AR-10 bolt and bolt carrier group. The round has proven itself effective on small to medium-sized game, but it has not yet caught on with the civilian public.

Other Names: .30 Rem AR, .30 RAR
Nominal Size: 7.62x39mm
Actual Size: 7.82x38.86mm
Cased Type: Necked
Weight: 18.7 kg per box of 100; Price: $75 per box

Magazines:

Per round: 0.019 kg	4-round box: 0.15 kg		

.30-03 Springfield

Notes: This round was designed to replace the .30-40 Krag as standard US military cartridge when the Krag rifle was replaced by the M-1903. The .30-03 Springfield featured a longer case than the .30-40 Krag with more modern propellant and more velocity than the .30-40 Krag. It is based on Mauser round designs of the period. However, the US military was slow to modernize, with the .30-03 Springfield and the M-1903 rifle being adopted slowly. Meanwhile, the rest of the world was moving to pointed, aerodynamic spitzer bullets (the .30-03 Springfield uses a round-nosed bullet), and even better propellant. The .30-03 Springfield thus became rapidly obsolete for military purposes, replaced by the .30-06 Springfield only three years later. It was however, for a time, chambered in a version of Winchester's Model 1895 lever-action rifle, the blunt-nosed bullet being ideal for a lever-action weapon. Nowdays, .30-03 Springfield is quite rare; the round is very difficult to handload due to the lack of suitable cases to modify (a .30-06 Springfield case will not work for this purpose).

Nominal Size: 7.62x64mm
Actual Size: 7.82x64.52mm
Case Type: Necked
Weight: 3.88 kg per box of 100; Price: $124 per box

Magazines:

Per round: 0.031 kg	5-round clip: 0.16 kg		

.30-06 Springfield

Notes: This round is a modification of the earlier .30-03 Springfield cartridge. The biggest change in producing the .30-06 was the new, streamlined, lightweight spitzer bullet. The first rifle to be chambered for the .30-06 was the Springfield M-1903 military rifle, and its use grew by leaps and bounds, eventually becoming the standard US military rifle and light machinegun round as well as a wildly popular civilian round both in the US and other parts of the world. It is one of the most versatile rounds in the world, with the ability to take down everything from small game to medium-large game to of course, man.

Other Names: 7.62x63mm, .30 Government M'06, .30 US Service, .30 Browning
Nominal Size: 7.62x63mm
Actual Size: 7.82x63.2mm
Case Type: Necked
Weight: 38 kg per case of 1000; Price: $610 per case

Magazines:

Per round: 0.03 kg	2-round box: 0.16 kg	3-round box: 0.2 kg	4-round box: 0.25 kg
4-round clip: 0.12 kg	5-round box: 0.3 kg	5-round clip: 0.15 kg	7-round box: 0.39 kg
8-round clip: 0.24 kg	10-round box: 0.53 kg	10-round clip: 0.3 kg	20-round box: 0.99 kg
30-round box: 1.46 kg	30-round strip: 1.19 kg	32-round box: 1.55 kg	47-round pan: 2.25 kg
100-round belt: 3.04 kg	250-round belt: 7.6 kg		

.30-378 Weatherby Magnum

Notes: This round was originally developed specifically for 1000-yard benchrest competitions. It was created by necking down the .378 Weatherby to .30 caliber. The round was manufactured in very small amounts until 1996, when Weatherby asked Norma to manufacture the round, and it was factory-standardized in 1998. The .30-378 Weatherby Magnum is very handloader-friendly, easy to

produce and wildcat. Though light bullets exist for this cartridge, the .30-378 does best with bullets greater than 200 grains in weight. The round is, however, known to wear out barrels very fast.

Other Names: .30-378 Weatherby
Nominal Size: 7.8x74mm
Actual Size: 7.82x73.66mm
Case Type: Necked
Weight: 4.46 kg per box of 100; Price: $138 per box

Magazines:

Per round: 0.035 kg			

.30-30 Winchester

Notes: This round was the first small-bore smokeless powder cartridge; it was designed for the original Winchester 1894 lever-action rifle. Many other companies have picked up on it over the years; it is very nearly the ideal lever-action rifle centerfire cartridge, and also works well in bolt-action, break-open, pump-action, and even some semiautomatic rifles. One of the attractions of the .30-30 Winchester is that it performs well in short carbines and light rifles. It is a good round for use against medium game as well as people, but the velocity can fall off dramatically due to its blunt-nosed design.

Other Names: .30-30 Winchester Centerfire, .30 Winchester, 7.62x51Rmm
Nominal Size: 7.62x51.56mm
Actual size: 7.82x51.56mm
Case Type: Necked
Weight: 31 kg per case of 1000; Price $400 per case

Magazines:

Per round: 0.02 kg	3-round box: 0.13 kg	4-round box: 0.16 kg	5-round box: 0.19 kg

.30-338 Winchester Magnum

Notes: Originally a wildcat round developed specifically for 1000-yard benchrest competitions, the .30-338 Winchester Magnum has recently been used in a number of custom and semi-commercial rifles. It is a .338 Winchester Magnum necked down to accept a .30-caliber bullet. It almost exactly duplicates the ballistics of the .308 Norma Magnum, and it is possible that Winchester would have offered the .30-338 Winchester Magnum as a mainstream round if Norma hadn't beaten them to it. It is a quite powerful round for its size.

Nominal Size: 7.62x64mm
Actual Size: 7.82x63.5mm
Case Type: Necked
Weight: 3.81 kg per box of 100; Price: $122 per box

Magazines:

Per round: 0.031 kg			

.30-40 Krag

Notes: The .30-40 Krag, adopted by the US Army for their version of the Danish Krag rifle in 1892, was one of the first smokeless powder cartridges fielded by any army in the world. In fact, though civilian weapons and rounds usually lead the way in design, the first civilian smokeless powder rifle round would not appear until 1895 (a version of the .30-30). The .30-40 Krag was also chambered in civilian rifles in 1893 in several Remington and Winchester rifles. The .30-40 Krag, though it enjoyed a US military yse of only 10 years, has far outlived its military use; rifles are still sold that are chambered for it. This is because the .30-40 Krag has decent range and good stopping power on medium and semi-large game. The .30-40 Krag does not have the power of the .30-06 or 7.62mm NATO/.308 Winchester, but it has slightly less kick (not quantifiable in game terms, unfortunately), and a flatter trajectory. It is also flexible in its propellant load and bullet weight; many wildcats have been based on the .30-40 Krag.

Other Names: .30 Army, .30 USA
Nominal Size: 7.62x59mm
Actual Size: 7.82x58.67mm
Case Type: Necked
Weight: 31.02 kg per case of 1000; Price: $560 per case

Magazines:

Per round: 0.028 kg	4-round box: 0.23 kg	5-round clip: 0.14 kg	

.32 Remington

Notes: This round was introduced specifically for the Remington Model 8 semiautomatic rifle, and is basically a rimless version of the .32 Winchester Special. It was later chambered in a variety of Remington pump-action and bolt-action rifles, but it was discontinued long ago. It basically duplicates the .32 Winchester Special's ballistics and damaging potential.

Nominal Size: 8x52mm
Actual Size: 8.13x51.82mm
Case Type: Necked
Weight: 3.36 kg per box of 100; Price: $108 per box
Magazines:

Per round: 0.027 kg	5-round box: 0.26 kg		

.32-20 Winchester

Notes: This very old round was introduced in 1882 by Winchester for its Model 73 lever-action rifle. It quickly gained popularity both as a rifle and revolver round. Most American firearms manufacturers have probably chambered a rifle or revolver for the round at one point or another in their history. The .32-20 Winchester successfully made the leap to modern propellants, Remington and Winchester still offer both cases and manufactured ammunition. The .32-30 is not a very powerful round, but is popular with farmers, ranchers, trappers, and varmint hunters. One can hunt small game with the round while being reasonably sure that you will not destroy too much meat.

Other Names: .32-20 Winchester Centerfire, .32-20 WCF, .32 Winchester
Nominal Size: 8x34mm
Actual Size: 7.92x33.53mm
Case Type: Straight
Weight: 16.5 kg per case of 1000; Price: $260 per case
Magazines:

Per round: 0.013 kg	3-round box: 0.09 kg		

.32-40 Winchester

Notes: This round was introduced in 1884 as a blackpowder match-quality round. It later made the jump to smokeless powder, but was never really popular except as a starting point for wildcatters. The .32-40 Winchester has been long out of production by most major companies, but Winchester manufactured a few lots temporarily in early 1980s for its John Wayne Commemorative Rifle. Today, few manufactured rounds exist, though handloading is fairly easy using a number of cases as a starting point.

Other Names: .32-40, .32-40 Ballard
Nominal Size: 8x54mm
Actual Size: 8.13x54.1mm
Case Type: Necked
Weight: 3.51 per box of 100; Price: $112 per box
Magazines:

Per round: 0.028 kg	5-round box: 0.27 kg		

.32 Winchester Self-Loading

Names: The fortunes of this round rose and fell with the Winchester Model 1905 semiautomatic rifle for which it was designed – the rifle was discontinued in 1920, and the .32 Winchester Self-Loading round with it. It is probably a smaller version of the .35 Winchester Self-Loading round (though this is not certain). .32 Winchester Self-Loading round's main claim to fame however, is that it was the cartridge upon which the .30 Carbine round was based. The .32 Winchester Self-Loading is virtually impossible to find these days, and can probably be found only in handloaded form. The round was never popular; neither range nor damaging potential are exceptional.

Other Names: .32 Winchester Self-Loading Rifle, .32 WSL
Nominal Size: 8x33mm
Actual Size: 8.13x32.51mm
Case Type: Straight
Weight: 1.69 kg per box of 100; Price: $54 per box
Magazines:

Per round: 0.014 kg	5-round box: 0.13 kg	10-round box: 0.24 kg	

.32 Winchester Special

Notes: This round was one of the original smokeless powder designs. It was introduced in 1902 for the Winchester 1894 lever-action rifle. Because of the rimmed design, it has never been used in anything but lever-action and single-shot rifles. Until recently, Federal, Remington, and Winchester made factory loads in .32 Winchester Special, but this has since stopped. The flat-nosed bullet does not lend itself well to ballistics, and the case design does not allow much variation in propellant load, but modern loads can easily beat out the .30-30. It can also be used as a blackpowder cartridge.

Nominal Size: 8x52mm
Actual Size: 8.15x51.82mm

Case Type: Necked
Weight: 33.75 kg per case of 1000; Price: $540
Magazines:

Per round: 0.027 kg			

.33 BSA

Notes: This round was introduced in 1921 by Birmingham Small Arms company for its sporting rifle based on the 1914 Enfield rifle. It was not a popular cartridge, and it was quickly discontinued. The problem with the round is its light bullet; it tends to lose velocity rapidly and fail to penetrate properly on heavy and even medium game. Handloaders using heavier bullets had better luck, but this was a rare modification that tended to rapidly wear out the rifle. This is now an extremely rare cartridge, the province of a few handloaders.

Other Names: .33 Belted Rimless, .330 BSA
Nominal Size: 8.38x61mm
Actual Size: 8.59x60.96mm
Case Type: Necked
Weight: 4.41 kg per box of 100; Price: $142 per box
Magazine:

Per round: 0.035 kg	5-round clip: 0.18 kg		

.33 Newton

Notes: This proprietary round was, like the .30 and .35 Newton, was developed by Charles Newton in the early 20th century for Newton's short-lived series of rifles. It has the same history as the Newton rifle and the other Newton cartridges – introduced in 1915, and finally disappearing in 1936 after Newton went out of business after three tries at building and re-building his company. It is essentially a necked-up .30 Newton cartridge, and is really not must different in size than the .35 or .30 Newton cartridges. It also suffered from the same shortcomings as the other Newton rounds – too powerful for North American or European game, and too powerful for the light weight of the rifle Newton developed. The .33 Newton round today is pretty much only going to be found handloaded – and few people, if any, are handloading any of the Newton cartridges these days.

Nominal Size: 9x64mm
Actual Size: 8.59x64mm
Case Type: Necked
Weight: 3.27 kg per box of 100; Price: $119 per box
Magazines:

Per round: 0.03 kg	5-round clip: 0.15 kg		

.35 Newton

Notes: This is another proprietary cartridge used by Charles Newton for his short-lived rifles. It was introduced in 1915 (manufactured for Newton by Western Cartridge), but withdrawn in 1936 after Newton went out of business for the last time. It is basically a necked-up .30 Newton. The .35 Newton round is really too powerful for hunting in North America, and is better used against African game. The Newton rifles were also too light for the power of the cartridge. Virtually the only way to get a .35 Newton round these days is through handloading, which is described as extremely difficult.

Nominal Size: 9.09x64mm
Actual Size: 9.09x64mm
Case Type: Necked
Weight: 3.65 kg per box of 100; Price: $133 per box
Magazines:

Per round: 0.033 kg	5-round clip: 0.17 kg		

.35 Remington

Notes: This is an old round first introduced for the Remington 8 semiautomatic rifle in 1906. For a while, it was a rather popular round, with about a dozen rifles chambered for it. However, Marlin is currently the only company that chambers rifles for it, and Remington's XP-100 and Thompson/Center's single-shot handguns also fire the .35 Remington. .35 Remington ammunition is still being made, but not in the numbers it once was. The .35 Remington has better striking power than the .30-30 Winchester, due to the heavier bullet, but the range is not exceptional.

Other Names: .35-30 Remington
Nominal Size: 9x49mm
Actual Size: 9.09x48.77mm
Case Type: Necked
Weight: 3.95 per box of 100; Price: $126 per box

Magazines:

Per round: 0.032 kg	4-round box: 0.26 kg	5-round box: 0.31 kg	

.35 Whelan

Notes: There is some controversy as to whether Colonel Townsend Whelan actually was involved in the creation of this round, or James Howe simply named the round after Colonel Whelan, who was a noted gun authority at the time. It began as a wildcat round that was simply a necked up .30-06 Springfield round, without any other significant changes. Ackley later improved the round, changing the case to eliminate headspace problems, underpowering in the propellant charge, and poor ballistics. Though Remington chose to manufacture the earlier, inferior version in 1987, they later switched to the improved version. The .35 Whelan is good for hunting game on the smallish-side of medium up to large North American game, and is easily handloaded.

Nominal Size: 9x64mm
Actual Size: 9.09x63.5mm
Case Type: Necked
Weight: 5.15 kg per box of 100; Price: $164 per box

Magazines:

Per round: 0.041 kg			

.35 Winchester

Notes: This round was introduced in 1903 as a new chambering for Winchester's Model 1895 lever-action rifle. It was later put into some bolt-action rifles. Winchester discontinued manufacture of the round in 1936, but it was listed for sale as late as 1962 in a British ammunition catalog. The .35 Winchester is based on a necked-up version of the .30-40 Krag case. The round is useful against almost all North American game, but many newer cartridges are better in range and stopping power.

Nominal Size: 9x61mm
Actual Size: 9.09x61.21mm
Case Type: Necked
Weight: 4.96 kg per box of 100; Price: $158 per box

Magazines:

Per round: 0.004 kg	5-round clip: 0.2 kg		

.35 Winchester Self-Loading

Notes: This round was designed for use in the Winchester Model 1905 semiautomatic rifle. The Model 1905 was the only firearm to use the .35 Winchester Self-loading round, and the round is so poor that when the round was discontinued in 1920, with the rifle itself following soon thereafter. It is effective against small game, and marginally effective against medium game, but only at short ranges. It is underpowered and it was also too expensive at the time it was offered for sale. It is an interesting note that most revolvers chambered for .357 Magnum/.38 Special can also chamber and fire the .35 Winchester Self-Loading round without a problem, though why one would want to do this is unknown since the .357 Magnum and .38 Special rounds are both more effective. Any .35 Winchester Self-Loading rounds in existence today are probably handloads.

Other Names: .35 WSL, .35 Winchester Auto
Nominal Size: 9x29mm
Actual Size: 8.92x28.96mm
Case Type: Straight
Weight: 1.81 kg per box of 100; Price: $58 per box

Magazines:

Per round: 0.015 kg	5-round box: 0.14 kg	10-round box: 0.25 kg	

.38-50 Ballard

Notes: Though long considered obsolete for most purposes, the rifles chambered for the .38-50 Ballard can still be found from time to time. The .38-50 Ballard was introduced in 1876 as a blackpowder round, but later made the transition to smokeless powder after the cases were strengthened by making the walls thicker (the so-called "Everlasting" case). The .38-50 Ballard was for the most part replaced by a later version in 1884 (the .38-55 Ballard). Though Lyman makes small quantities of these cartridges as factory loads, for the most part the .38-50 Ballard is in the realm of handloaders. It should be noted that bullet molds for this round must be ordered or made very carefully, as most rifle-caliber ".38" rounds use a bullet that is actually .375 caliber, while the .38-50 Ballard uses a bullet that is .379-caliber and is a bit longer than the average .38-caliber rifle bullet. Modern cases for the .38-55 Ballard (available from several sources) can be used for reloading, suitably trimmed in length. The .38-50 Ballard round is quite similar to its later descendant in performance, especially when loaded with heavier bullets than an equivalent .38-55 Ballard rifle.

Other Names: .38-50 Ballard Perfection, .38-50 Everlasting
Nominal Size: 9.65x51mm
Actual Size: 9.55x50.8mm

Case Type: Straight
Weight: 3.2 kg per box of 100; Price: $116 per box
Magazines:

Per round: 0.029 kg			

.38-55 Ballard

Notes: The .38-55 Ballard was originally developed in 1884 as a target-shooting cartridge, based on the earlier .38-50 Ballard cartridge. The .38-55 was dropped from most ammunition catalogs and rifle chamberings around 1940 when Winchester stopped making the Model 94 lever-action rifle in .38-55 Ballard (which they called .38-55 Winchester), and Winchester stopped producing factory loads in 1970. In the late 1990s Winchester reintroduced a .38-55 Ballard chambering for the Model 94, and a few other modern rifles are also now chambered for this round; Winchester is therefore again producing the .38-55 Ballard round, both in smokeless powder and blackpowder versions (the statistics below are for the smokeless powder version, but both rounds are designed to produce equivalent ballistics). The .38-55 Ballard is a hard-hitting round capable of taking down medium and some large North American and European game, but as current smokeless powder factory lots are not recommended for use in antique rifles, lots of handloaders are also making the .38-55 Ballard. As with the .38-50 Ballard, molds must be made or chosen carefully, as the bullet is not what is normally considered a ".38" caliber rifle bullet.

Twilight 2000 Notes: In the Twilight 2000 timeline, factory-made case lots are rare and rather old; in addition, the cost of this round should be doubled for the Twilight 2000 timeline, and the GM should use box lots.

Other Names: .38-55 Winchester, .38-55 Perfection, .38-55 Everlasting, .38-55 Winchester & Ballard
Nominal Size: 9.65x54mm
Actual Size: 9.55x53.85mm
Case Type: Straight
Weight: 33.99 kg per case of 1000; Price: $620 per case
Magazines:

Per round: 0.031 kg			

.38-72 Winchester

Notes: This round was designed specifically for the Winchester Model 1895 lever-action rifle. The cartridge was considered obsolete along with the rifle and discontinued in 1936. It was never really a popular cartridge. It was advertised by Winchester as being a very powerful .38 caliber cartridge; it was, in fact, only moderately powerful, and is ballistically only a mediocre round. Handloading is very difficult, and very few cartridges of this type exist today.

Nominal Size: 9.5x65mm
Actual Size: 9.6x65.53mm
Case Type: Straight
Weight: 4.74 kg per box of 100; Price: $152 per box
Magazines:

Per round: 0.038 kg	5-round clip: 0.19 kg		

.300 Blackout

Notes: Though there is military and police interest in the .300 Whisper cartridge, an unnamed US military customer approached AAC in 2006, asking AAC if they could come up with a round to handle perceived shortcomings with the .300 Whisper round. Some of these shortcomings included lack of full suppressor compatibility, lower than expected lethality, and less quietness when suppressed than expected. AAC has been cagey about who this customer is, and even other ammunition companies do not want to talk about it. The .300 Blackout round can, with heavy bullets, deliver effective suppression at subsonic velocities or, with lighter bullets, deliver supersonic rounds with lethality and range similar to that of the 7.62mm Kalashnikov round. Robert Silvers of AAC came up with the round, but was reportedly working on the .300 Blackout before the 2006 request for it. The .300 Blackout is essentially an improved .300 Whisper round. Right now, Remington makes the actual ammunition.

Other Names: .300 AAC Blackout, .300 AAC-BLK, .300 BLK
Nominal Size: 7.62x35mm
Actual Size: 7.85x34.75mm
Case Type: Necked
Weight: 2.1 kg per case of 100; Price: $67 per case
Magazines:

Per round: 0.017 kg	5-round box: 0.16 kg	10-round box: 0.29 kg	20-round box: 0.55 kg
30-round box: 0.81 kg			

.300 Dakota

Notes: This round is based on the .404 Jeffrey case, shortened to create a cartridge of .30-06 length, and a large rim. It is, of

course, necked down to 7.62mm. The result is a relatively short magnum cartridge that duplicates the performance of some longer magnums.

Other Names: .300 Dakota Magnum
Nominal Size: 7.62x65mm
Actual Size: 7.82x64.77mm
Case Type: Necked
Weight: 3.89 kg per box of 100; Price: $124 per box

Magazines:

Per round: 0.031 kg			

.300 Fireball

Notes: The .300 Fireball was based on the .221 Fireball; however, instead of being based on the .223 Remington, the .300 Fireball was based on the .300 Whisper round, shortened, given a lighter bullet, and a heavy charge of propellant, like the .221 Fireball. This gives the .300 Fireball superior range, muzzle velocity, speed, and a flatter trajectory than the .308 Winchester. However, the .300 Fireball has not yet received SAAMI certification, and is considered a wildcat round, with few rifles chambered for it as of yet. The .300 Fireball can be used with standard AR-15 magazines (with a new follower and a lesser capacity); it can also be used with 7.62mm Kalashnikov magazines (though not drums) without a new follower. The rifle in question must be designed for the magazines in question. The .300 Fireball does well with a suppressor, particularly with a sub-load.

Other Names: 300/221 Fireball
Nominal Size: 7.62x40mm
Actual Size: 7.59x40.33mm
Case Type: Necked
Weight: 18.2 kg per box of 100; Price: $730 per box

Magazines:

Per round: 0.018 kg	3-round box: 0.12 kg	5-round box: 0.18 kg	7-round box: 0.23 kg
10-round box: 0.32 kg	15-round box: 0.46 kg	20-round box: 0.6 kg	22-round box: 0.65 kg
30-round box: 0.87 kg			

.300 H&H Magnum

Notes: This round was introduced by Holland & Holland in 1925 as Holland's Super 30, and it was quickly picked up by the US firm of Western Cartridge Co. It remained, however, a rare and exotic round until about 1935, when Ben Comfort won the Wimbledon Cup Match with a rifle chambered for the .300 H&H Magnum, and it then became an "overnight" sensation. British, American, and European rifles chambered for the cartridge proliferated, and it is still one of the standard chamberings for European rifles, though it is now a rather rare American chambering. The .300 H&H Magnum has a lot of power and is not generally used for game smaller than antelope. It has suffered in comparison to the .300 Winchester Magnum and .300 Weatherby Magnum, due to the heavier weight of the ammunition and similar striking power.

Other Names: .300 Holland & Holland Magnum, .300 H&H Super, Holland's Super 30
Nominal Size: 7.8x72mm
Actual Size: 7.82x72.39mm
Case Type: Necked
Weight: 43.5 kg per case of 1000; Price: $700 per case

Magazines:

Per round: 0.035 kg	4-round box: 0.29 kg	5-round box: 0.34 kg	

.300 Pegasus

Notes: Introduced in 1994, the .300 Pegasus is essentially a beltless version of the .378 Weatherby Magnum round necked down to .300. This gives the .300 Pegasus bullet phenomenal velocity, though the choice of bullets is small – a selection of 150-grain and 180-grain bullets. The rifle to fire the .300 Pegasus must be chosen with care and have rather strong innards – the .300 Pegasus develops over 62,000 psi of chamber pressure. The .300 Pegasus shoots flat and has great penetration and striking power, even at the long ranges that the round can deliver.

Nominal Size: 7.62x76mm
Actual Size: 7.82x75.95mm
Case Type: Necked
Weight: 4.02 kg per box of 100; Price: $146 per box

Magazines:

Per round: 0.037 kg			

.300 Remington Short-Action UltraMag

Notes: This round was introduced in 2001 as a competitor to Winchester's .300 Short Magnum. It is the same basic idea, being a short, fat cartridge with much more propellant than is normal for a cartridge of its length. It is uses a bullet similar to that of the .308 Winchester (7.62mm NATO), and may be thought of as a "wildcat" 7.62mm NATO cartridge. Right now, not many rifles chamber it, but popularity is growing.

Twilight 2000 Notes: This round does not exist.

Other Names: .300 RSAUM, .300 Short Action UltraMag, .300 SAUM

Nominal Size: 7.62x51mm

Actual Size: 7.82x51.18mm

Case Type: Necked

Weight: 38.4 kg per case of 1000; Price: $490 per case

Magazines:

Per round: 0.031 kg	5-round box: 0.27 kg	9-round box: 0.39 kg	

.300 Savage

Notes: Once a very popular cartridge, the .300 Savage was introduced in 1920 for the Savage 99 lever-action rifle. The .300 Savage was meant to produce ballistics similar to that of the .30-06 Springfield, but in a medium-length cartridge. Savage and Remington chambered several rifles for the .300 Savage over the years, but it fell out of favor when the .308 Winchester (7.62mm NATO) cartridge was introduced. However, since so many rifles chambered for the .300 Savage cartridge still exist, ammunition is still being made.

Nominal Size: 7.62x48mm

Actual Size: 7.82x47.5mm

Case Type: Necked

Weight: 28.5 kg per case of 1000; Price: $460 per case

Magazines:

Per round: 0.023 kg	4-round box: 0.19 kg	5-round box: 0.22 kg	

.300 Remington Short-Action UltraMag

Notes: The Remington Short-Action UltraMag was introduced in 2001, pretty much for no other reason than to compete with the .300 Winchester Short Magnum round, in their rifles and as many other manufacturer's rifles as possible. Therefore, the performance of the Remington and Winchester rounds is virtually identical. The Short-Action round is, like the .300 Remington UltraMag round, is based on a necked-down and shortened .404 Jeffery round, and is basically a shorter version of the .300 Remington UltraMag, and produces similar performance in a shorter rifle action.

Twilight 2000 Notes: This round does not exist in the Twilight 2000 timeline.

Other Names: .300 RSAUM, .300 Short-Action Ultra-Magnum/UltraMagnum, .300 SAUM

Nominal Size: 7.8x52mm

Actual Size: 7.82x51.82mm

Case Type: Necked

Weight: 27.39 kg per case of 1000; Price: $500 per case

Magazines:

Per round: 0.025 kg	10-round box: 0.43 kg	20-round box: 0.82 kg	

.300 Remington UltraMag

Notes: This round was introduced in 1999. It began a trend towards big, beltless magnum rounds. The .300 UltraMag retains more energy throughout its flight than either the .300 Weatherby Magnum or the .300 Winchester Magnum. The case is based on a necked-down .404 Jeffery case, with a rebated rim. It has been known to achieve a 100% kill rate against game as big as moose.

Twilight 2000 Notes: This round does not exist.

Other Names: .300 UltraMag (or UltraMagnum), .300 Ultra Magnum, .300 Remington Ultra Magnum

Nominal Size: 7.8x72mm

Actual Size: 7.82x72.26mm

Case Type: Necked

Weight: 43.4 kg per case of 1000; Price: $1380 per case

Magazines:

Per round: 0.035 kg	3-round box: 0.23 kg		

.300 Weatherby Magnum

Notes: This round is Weatherby's most popular cartridge. It was developed in 1944, and first sold commercially in 1948. The .300 Weatherby Magnum is one of the most popular chamberings for custom rifle makers, and other rifle manufacturers have offered the

chambering on and off, but only Weatherby offers rifles chambered for the .300 Weatherby Magnum on a regular basis. Ammunition is a bit easier to find, being made by Weatherby, Norma, Remington, and PMC. The .300 Weatherby Magnum can be difficult to work with; it's high-velocity round leads to a lot of barrel wear, it doesn't function well in shorter barrels, and recoil can be stiff. It is, however, a powerful and effective cartridge.

Nominal Size: 7.8x72mm
Actual Size: 7.82x71.76mm
Case Type: Necked
Weight: 43.13 kg per case of 1000; Price: $690 per case
Magazines:

Per round: 0.035 kg	3-round box: 0.23 kg	4-round box: 0.28 kg	5-round box: 0.34 kg

.300 Whisper

Notes: The .300 Whisper was originally conceived as a .308 round that would work well with silencers and suppressors, as in its original configuration and loadings, is natively subsonic, but heavy and with decent penetration. Since then, some supersonic loadings have been design, but it retains it's original design of a relatively short case firing a long, heavy, boattailed bullet. The .300 Whisper was the result of experimentation by JD Jones, known to many as the "mad scientist of ammunition," and known for wildcat rounds that almost always result in performance increases. The .300 Whisper was based on several rounds used by metallic silhouette shooters, and proved capable of punching through thick steel targets (like those used by metallic silhouette shooters…) at short to medium ranges.

A secondary consideration was the ability to use rifle rounds in short-barreled rifles and submachineguns; this is part of the reason why the round was kept short.

During development, the .300 Whisper was sometimes known as the .300/221, as the round a modified .221 Fireball case to fire a .308 bullet. The .300 Whisper had a lot of growing pains, something Mr. Jones still smiles about. Fitting the .308 bullet into a .221 Fireball case, in particular, produced many cracked case heads, tilted case heads, split cases, and bulged shoulders.

In the past few years, interest in the .300 Whisper took off, including some military and police interest. The US military in particular were, and reportedly still are, interested in the .300 Whisper for Special Operations use.

In the end, major manufacturers like Winchester and Nosler became interested enough to mass-produce the .300 Whisper.

Nominal Size: 7.62x35mm
Actual Size: 7.82x34.02mm
Case Type: Necked
Weight: 2.04 kg per case of 100; Price: $65 per case
Magazines:

Per round: 0.016 kg	5-round box: 0.16 kg	10-round box: 0.28 kg	20-round box: 0.53 kg
30-round box: 0.78 kg			

.300 Winchester Magnum

Notes: This round was first introduced in 1963 for the Winchester M-70 bolt-action rifle, and most American and European sporting rifle manufacturers have since chambered rifles for it. It is also slowly becoming a replacement round in some countries for the 7.62mm NATO round for sniping purposes. It is a round with excellent range and decent hitting power, though some studies suggest that it is not the best round for penetrating body armor.

Nominal Size: 7.62x66mm
Actual Size: 7.82x66.55mm
Case Type: Necked
Weight: 40 kg per case of 1000; Price: $640 per case
Magazines:

Per round: 0.032 kg	2-round box: 0.17 kg	3-round box: 0.21 kg	4-round box: 0.26 kg
5-round box: 0.31 kg	6-round box: 0.36 kg	7-round box: 0.41 kg	8-round box: 0.46 kg
9-round box: 0.51 kg	10-round box: 0.56 kg	20-round box: 1.05 kg	

.300 Winchester Short Magnum

Notes: This round, introduced in 2000, was one of the first rounds to feature the short, fat case to allow magnum performance in a short-action rifle. It virtually duplicates the velocity of a .300 Winchester Magnum round while delivering somewhat better performance and utilizing some 10% less propellant. The cartridge draws upon decades of wildcat experiments, but is an original Winchester design. It should be noted that while the .300 Winchester Short Magnum will sometimes chamber in a rifle designed to fire .300 RSAUM ammunition, doing so will almost invariably lead to a chamber explosion, as the headspace is different.

Twilight 2000 Notes: This round does not exist in the Twilight 2000 timeline.
Other Names: .300 WSM

Nominal Size: 7.62x53mm
Actual Size: 7.82x53.34mm
Case Type: Necked
Weight: 35.2 kg per case of 1000; Price: $510 per case
Magazines:

Per round: 0.026 kg	3-round box: 0.19 kg	5-round box: 0.28 kg	10-round box: 0.51 kg

.303 British

Necked: One of the longest-lived military cartridges in history, the .303 British round was adopted in 1888 and remained in British military service until replaces by the 7.72mm NATO round in 1957. Originally a blackpowder round, the .303 British successfully made the leap to smokeless powder. The .303 British is the round that gave rise to the term “Dum-Dum Bullet;” a British Army captain perfected an expanding for use against Indian tribesmen, primarily by cutting away the bullet jacket to expose the lead core. When this was declared illegal for war use, the bullet was changed so that it was literally too long for its weight, so it would tumble upon impact with flesh. The jacketed bullets still tend to break up on impact, causing further damage to an enemy or game. The .303 British round is still being made in the US and by Norma of Sweden.

Other Names: 7.7x56Rmm, .303 Lee-Enfield, 7mm Type 897, 7mm Arisaka
Nominal Size: 7.7x56mm
Actual Size: 7.9x56.13mm
Case Type: Necked
Weight: 34.38 kg per case of 1000; Price: $550 per case
Magazines:

Per round: 0.028 kg	5-round box: 0.27 kg	5-round clip: 0.14 kg	10-round box: 0.48 kg
25-round box: 1.11 kg	30-round box: 1.32 kg	40-round box: 1.74 kg	47-round pan: 2.04 kg
97-round pan: 4.14 kg	250-round belt: 6.88 kg		

.303 Savage

Notes: The .303 Savage was originally designed for a military cartridge competition in 1895. It failed in that regard, but it was used as one of the chamberings for the Savage Model 1899 lever-action rifle, and was later chambered in the Savage 99 rifle. After World War 2, Savage decided to drop this round, and production has never resumed commercially. The .303 Savage is similar in appearance to the .30-30 Winchester, but they are not interchangeable, and the .303 Savage round is more powerful than the .30-30 Winchester. The .303 Savage is, however, ballistically quite inferior to the .30-30 Winchester due to its blunt nose; Savage never tried pointed bullets in the round, though many wildcatters have in the intervening years. The British call this round the .301 Savage.

Other Names: .301 Savage
Nominal Size: 7.62x51mm
Actual Size: 7.9x51.18mm
Case Type: Necked
Weight: 3.14 kg per box of 100; Price: $100 per box
Magazines:

Per round: 0.025 kg			

.307 Winchester

Notes: This cartridge was developed in 1980, made for the Winchester M-94XTR rifle. The “.307” measurement is somewhat of a misnomer; the .307 Winchester round is actually a rimmed version of the .308 Winchester (7.62mm NATO in the Twilight 2000 game) with a slight difference in cartridge length. The rimmed cartridge works better than the 7.62mm NATO round in a lever-action rifle. It is actually possible to chamber and fire 7.62mm NATO cartridges in some rifles designed for the .307 Winchester round; however, this is considered a dangerous and unsafe practice.

Nominal Size: 7.6x51mm
Actual Size: 7.82x51.31mm
Case Type: Necked
Weight: 30.75 kg per case of 1000; Price: $490 per case
Magazines:

Per round: 0.025 kg			

.308 Marlin Express

Notes: Essentially meant to be a ballistic match for the 7.62mm NATO/.308 Winchester round but with a little hotter performance, the .308 Marlin Express is also meant to be a round which will feed reliably in virtually all lever-action rifles (most lever-actions have to be specially-designed to be able to fire something like the 7.62mm NATO and most other pointed bullets). Marlin teamed up with

Hornady on this one; Hornady designed what was essentially a semi-rimmed version of the 7.62mm NATO/.308 Winchester round, with Hornady's patented spire-pointed flex-tip LEVERevolution tip. (This is a pointed round, but has a semi-flexible synthetic "ballistic cap," eliminating the danger of one round setting off another inside a tubular magazine.) The .308 Marlin Express round actually is factory-loaded with 2 grains less propellant than a standard civilian .308 Winchester round, but the design of the round is such that the ballistics are virtually identical, and it actually slightly out-ranges and hits harder than the 7.72mm NATO/.308 Winchester. The .308 Marlin Express and the rifles which fire it are only now (as of mid-February 2007) becoming available, and the only company that makes the round is Hornady.

Twilight 2000 Notes: the .308 Marlin Express round in not available in the Twilight 2000 timeline.

Nominal Size: 7.8x50mm

Actual Size: 7.82x48.39mm

Case Type: Necked

Weight: 25.52 kg per case of 1000; Price: $460 per case

Magazines:

Per round: 0.023 kg			

.308 Norma Magnum

Notes: The .308 Norma Magnum was introduced in Sweden in 1960; it was basically a commercial version of a wildcat round, and at the time no commercially-manufactured rifles were chambered for it. Manufactured rifles came later, but today, the .308 Norma Magnum is largely a round for custom rifles (though a few commercial rifles are chambered for it). It is ballistically almost identical to the .30-338 wildcat round (a necked-down .338 Winchester Magnum). The .308 Norma Magnum is adequate for most North American and European game and does well against most African game as well.

Nominal Size: 7.62x65mm

Actual Size: 7.82x65mm

Case Type: Necked

Weight: 39 kg per case of 1000; Price: $620 per case

Magazines:

Per round: 0.031 kg	3-round box: 0.21 kg	4-round box: 0.26 kg	5-round box: 0.3 kg
10-round box: 0.54 kg			

.325 Winchester Short Magnum

Notes: Introduced in 2005, the .325 Short Magnum round was designed to bridge the gap between the .300 Winchester Short Magnum round and heavier magnum rounds, as well as to provide a larger-caliber short magnum round capable of downing the largest North American game. Damage and penetration are similar to the .338 Winchester Magnum, while range potential is greater, and a shorter case and action can be used. This allows for an overall more compact and lighter rifle with excellent stopping power. Trajectory tends to be quite flat, even at medium-long ranges. The .325 Winchester Short Magnum is capable of downing even some of the smaller African animals and most game and predators found in Europe, to say nothing of a human being.

Twilight 2000 Notes: The .325 Winchester Short Magnum round does not exist in the Twilight 2000 timeline.

Other Names: .325 WSM

Nominal Size: 8.25x53mm

Actual Size: 8.2x53.34mm

Case Type: Necked

Weight: 38.8 kg per case of 1000; Price: $665 per case

Magazines:

Per round: 0.028 kg	4-round box: 0.23 kg	5-round box: 0.31 kg	

.330 Dakota

Notes: This is basically a necked-down and shortened .404 Jeffrey case, to accept a .338 bullet. It is, however, more effective than the .338 Winchester Magnum, and most rifles that are chambered for the .338 Winchester Magnum can be converted to fire .330 Dakota.

Other Names: .330 Dakota Magnum

Nominal Size: 8.38x65mm

Actual Size: 8.61x65.28mm

Case Type: Necked

Weight: 4.75 kg per box of 100; Price: $76 per box

Magazines:

Per round: 0.038 kg			

.338 A-Square

Notes: This design was created in 1978 by necking down a .378 Weatherby Magnum to take a .338 caliber bullet. The idea was to produce a medium game cartridge with a flat trajectory at most ranges. Most rifles with 3.65-inch bolt actions can be easily modified to accept this cartridge. The ballistics are good, but the .338 A-Square does have some difficulty at feeding from all but specially-modified magazines. The round is normally manufactured only by A-Square, and only in small numbers.

Nominal Size: 8.6x72mm

Actual Size: 8.58x72.39mm

Case Type: Necked

Weight: 5.24 kg per box of 100; Price: $168 per box

Magazines:

Per round: 0.042 kg			

.338-06 A-Square

Notes: This round has its genesis in a long-time wildcat round developed in 1945 called the .333 OKH, which was a .30-06 Springfield case necked up and elongated to accept a .333-caliber bullet. Though a very good cartridge, the .333 OKH suffered from the relative scarcity of decent .333 bullets. When Winchester introduced their .338 Magnum cartridge, several individuals individually got the idea of further necking up the base .30-06 case to accept the bullet of the .338 Winchester Magnum. Thus, the .338-06 A-Square cartridge is essentially a wildcat that went mainstream, becoming a factory-made round in 1998. The difference between the performance of the original .333 OKH round and the .338-06 A-Square is close to indistinguishable, both being powerful, hard-hitting rounds.

Twilight 2000 Notes: The .338-06 A-Square round does not exist as a factory loading in the Twilight 2000 timeline, though it is a fairly common wildcat round. (In the Twilight 2000 timeline, the .338-06 is sold only in small amounts for at least double the prices below.)

Nominal Size: 8.58x63mm

Actual Size: 8.58x63.35mm

Case Type: Necked

Weight: 40.26 kg per case of 1000; Price: $1460 per case

Magazines:

Per round: 0.037 kg	4-round box: 0.3 kg		

.338 Federal

Notes: The .338 Federal round is a necked-up .308 Winchester/7.62mm NATO round that is hotloaded to make it into what is essentially a sort of short magnum round. Unlike an actual short magnum round, the .338 Federal has the advantage of not needing a widened magazine, and it therefore will fit into most standard-type magazines. The .338 Federal cartridge uses a long, lightweight bullet that gives it a flat trajectory and excellent range and penetration. Though the .338 Federal has yet to achieve much market penetration (and very few rifles are factory-chambered for it), it is still a very new cartridge and it shows signs of picking up interest.

Twilight 2000 Notes: The .338 Federal is not available in the Twilight 2000 timeline.

Other Names: .338 Federal Magnum

Nominal Size: 8.6x51mm

Actual Size: 8.58x51.05mm

Case Type: Necked

Weight: 25.96 kg per case of 1000; Price: $940 per case

Magazines:

Per round: 0.024 kg	4-round box: 0.21 kg		

.338 Lapua Magnum

Notes: Though perfected by Lapua of Finland, the development of this round actually began in 1983 with experiments by the Research Armament Company in the US to develop a new, long-range sniping round. The round is essentially a necked-down .416 Rigby case to accept a .338 bullet, and hot-loaded to produce high velocities. The round is very effective in penetrating both body armor and light vehicle armor, and has a satisfying range, and more military and police agencies are picking up rifles chambered for the .338 Lapua Magnum than ever before.

Other Names: 8.58x71mm Finnish

Nominal Size: 8.58x71mm

Actual Size: 8.61x69.2mm

Case Type: Necked

Weight: 50.38 kg per case of 1000; Price: $810 per case

Magazines:

Per round: 0.04 kg	3-round box: 0.27 kg	4-round box: 0.33 kg	5-round box: 0.39 kg
8-round box: 0.58 kg	10-round box: 0.7 kg		

.338 Remington UltraMag

Notes: One of the most power .338-caliber rounds available, the .338 Remington UltraMag is, like most of the Remington UltraMag series, is wider than the standard .338 Magnum case, to contain more propellant. The result is a round which delivers some 25% more muzzle energy than the .338 Winchester Magnum and has a much flatter trajectory. The .338 Remington UltraMag was introduced in 2002, along with the rest of the Remington UltraMag family. It is easily capable of taking down North American and European game, even at long ranges, and with proper shot placement, is even suitable for African game. Not to mention what it would do to a person…

Twilight 2000 Notes: The .338 Remington UltraMag is not available in the Twilight 2000 timeline.

Other Names: .338 Remington Ultra Magnum (or UltraMagnum), .338 UltraMag (or Ultra Magnum, or UltraMagnum), .338 RUM

Nominal Size: 8.58x72mm

Actual Size: 8.58x70.1mm

Case Type: Necked

Weight: 44.55 kg per case of 1000; Price: $810 per case

Magazines:

Per round: 0.045 kg	4-round box: 0.33 kg		

.338 Spectre

Notes: The .338 Spectre round was designed by AR-15-clone manufacturer Teppo Jutsu to provide a round able to bridge the gap between overgrown pistol rounds like the .50 Beowulf and rifle rounds like the 7.62mm Kalashnikov. The round was designed to be used in an AR-15-type platform, and use a variety of commercially-available AR-15, 7.62mm Kalashnikov, 7.62mm WT and 6.8mm SPC magazines. The bolt has a rim size the same as the 6.8mm SPC, and the round has a rebated rim. The parent cartridge is the 10mm Magnum, and the .338 Spectre is subsonic in most of its iterations. At short and medium ranges, the ballistics are similar to the .357 Maximum round, but the .338 Spectre offers more range, damaging power, and penetrating power. The .338 Spectre can be used with 9mm suppressors without modification to the barrel or suppressor.

Though currently the only rifle which fires the .338 Spectre round is Teppo Jutsu's AR-15-based Spectre, Teppo Jutsu hopes to chamber the round in other rifles in the future, including Ruger's Mini-14, the AK and the Thompson/Center Encore. Factory rounds are currently made only by Teppo Jutsu themselves and by Southern Ballistic Research.

Other Names: .338 Teppo Jutsu

Nominal Size: 8.6x39mm

Actual Size: 8.58x39.65mm

Case Type: Necked

Weight: 22.9 kg per box of 100; Price: $92 per box

Magazines:

Per round: 0.023 kg	3-round box: 0.15 kg	4-round box: 0.19 kg	5-round box: 0.22 kg
6-round box: 0.26 kg	8-round box: 0.33 kg	10-round box: 0.4 kg	13-round box: 0.5 kg
15-round box: 0.57 kg	20-round box: 0.75 kg	24-round box: 0.89 kg	30-round box: 1.1 kg
40-round box: 1.45 kg			

.338-378 Weatherby Magnum

Notes: the .338-378 was originally a wildcat round known as the .338-378 Keith-Thompson, and was designed specifically by the great ammunition expert Elmer Keith. The round was designed specifically to fire heavy bullets at long ranges. Keith used the .378Weatherby Magnum case as a basis, and necked it down to deliver a heavy version of a .338-caliber bullet. Weatherby eventually chambered rifles for the round in 1999 as well as manufacturing factory loads, with the round becoming commonly known as the ".338-378 Weatherby Magnum," though ".338-378 KT" is more proper nomenclature. Velocity of the .338-378 is fantastic for the weight of its bullets – with the lightest 250-grain bullet, it can easily exceed 917 meters per second.

Twilight 2000 Notes: Factory .338-378 cartridges do not exist in the Twilight 2000 timeline, but there are plenty of wildcatters out there still making the round (which is known exclusively as the ".338-378 KT" in the Twilight 2000 timeline), and Elmer Keith, who survived the Twilight War, has set up a small-scale production line for the round. They will only be found in boxed versions, and at double the prices (divided by 10) found below.

Other Names: .338-378 KT, .338-378 Weatherby

Nominal Size: 8.58x74mm

Actual Size: 8.58x73.66mm

Case Type: Necked

Weight: 46.86 kg per case of 1000; Price: $850 per case

Magazines:

Per round: 0.043 kg			

.338 Winchester Magnum

Notes: This round is basically a .458 Winchester Magnum round necked down to .338. It was introduced for Winchester's Model 70 Alaskan rifle, but has since been picked up for chambering in several other rifles. It is a very flat-shooting round, and can take down something as big as a grizzly bear or a moose. Though it is not as popular as other Magnum loads, it is nonetheless fairly common worldwide.

Nominal Size: 8.58x63mm
Actual Size: 8.58x63.25mm
Case Type: Necked
Weight: 45.75 kg per case of 1000; Price: $730 per case

Magazines:

Per round: 0.037 kg	3-round box: 0.25 kg	4-round box: 0.3 kg	5-round box: 0.36 kg
5-round clip: 0.18 kg	8-round box: 0.53 kg		

.340 Weatherby Magnum

Notes: This round was developed to compete with the .338 Winchester Magnum in 1962. It has a larger case and higher velocity than the .338 Winchester Magnum, and the striking power is impressive. Like most Weatherby Magnums, barrel wear can be a problem and the round performs best in barrels of at least 26 inches. The .340 Weatherby Magnum can handle all North American game and most African game as well. However, the cases wear out fast and are good only for a few reloads.

Nominal Size: 8.5x72mm
Actual Size: 8.59x71.63mm
Case Type: Necked
Weight: 5.19 kg per box of 100; Price: $166 per box

Magazines:

Per round: 0.042 kg			

.348 Winchester

Notes: This round was developed for the Model 71 lever-action rifle in 1936. Few other commercially-made rifles were ever chambered for this cartridge, and the cartridge stopped manufacture in 1958. This might have doomed the cartridge, but public interest kept it alive in small amounts, and then in 1987 the Japanese marketed a reproduction of the Winchester Model 71, and Remington decided to manufacture the .348 Winchester round again in small numbers. The .348 Winchester was basically made obsolete by later cartridges, particularly the .358 Winchester, and the .348 Winchester also formed the basis for several improved cartridges.

Nominal Size: 8.8x57mm
Actual Size: 8.84x57.4mm
Case Type: Necked
Weight: 4.4 kg per box of 100; Price: $140 per box

Magazines:

Per round: 0.035 kg			

.350 Remington Magnum

Notes: The .350 Remington Magnum was introduced in 1965, but by 1971, manufacture of the round had been discontinued by Remington as it was none too popular. However, Remington decided to re-introduce the round in 2002 for its Model 673 bolt-action rifle, but this rifle is no longer manufactured. The round has had a sort of checkered sales history, but is still being manufactured by Remington. The case is only medium sized, but is a bit fat, allowing for magnum performance. The round is able to duplicate .35 Whelan ballistics, but from a much shorter barrel, and is therefore useful in carbine-sized rifles. Its large cross-section limits magazine capacities, however.

Nominal Size: 9x55mm
Actual Size: 9.09x55.12mm
Case Type: Necked
Weight: 5.59 kg per box of 100; Price: $144 per box

Magazines:

Per round: 0.038 kg			

.350 Rigby

Notes: The .350 Rigby comes in two versions, rimmed and rimless, with the rimmed version generally being known as the .350 No. 2. Both are essentially variants of the earlier .400/350 Rigby round, with the rimmed version being developed first for use in express rifles, and the rimless version a couple of months later, both in 1908. Both are essentially smaller versions of the .400/350, and

therefore the cases are essentially variants of the old .400 Purdey case, necked down, shortened somewhat, and using a lighter bullet but using more propellant (and smokeless powder). Both are quite capable of bringing down North American and most European game, and some even used it on smaller African and Asian game *usually loaded with bullets heavier than the standard 225-gran bullet). Performance and ballistics fall between the .35 Whelan and .375 H&H Magnum. Complete factory-made .350 Rigby cartridges are no longer made, but Barnes and Speer make the bullets, and cases are easily modified from 9.3x74Rmm cases. However, the .350 Rigby is basically a handloader's cartridge today.

Other Names: .350 Rigby Magnum, .350 No. 2 (in its rimmed form).
Nominal Size: 8.89x70mm
Actual Size: 9.09x69.85mm
Case Type: Necked
Weight: 4.98 kg per box of 100; Price: $181 per box
Magazines:

Per round: 0.045 kg			

.351 Winchester Self-Loading

Notes: This round was designed to replace the deficient .35 Winchester Self-Loading cartridge when the Model 1905 rifle was upgraded to the Model 1907 rifle. It was also used, to a very limited extent, as a military round by the French in World Wars 1 and 2. The Model 1907 and the .351 Winchester Self-Loading cartridge were discontinued in 1957. The .351 Winchester Self-Loading cartridge has more power than the .357 Magnum, but the blunt-nosed bullet limits its range in a rifle. Most .351 Winchester Self-Loading rounds found today are probably handloads, though some carefully stored original rounds may exist, and it is still being loaded by local ammunition makers in Latin America.

Other Names: .351 WSL, .351 Winchester Auto
Nominal Size: 9x35mm
Actual Size: 8.91x35.05mm
Case Type: Straight
Weight: 2.19 kg per box of 100; Price: $70 per box
Magazines:

Per round: 0.018 kg	5-round box: 0.17 kg	10-round box: 0.31 kg	

.356 Winchester

Notes: This was another cartridge developed by Winchester for use with its Model 94XTR lever-action carbine. The round was introduced in 1983. It was named so to eliminate confusion with the .358 Winchester, but the .356 Winchester is a similar, though rimmed round. It is possible to chamber and fire .358 Winchester ammunition from rifles designed for the .356 Winchester, but this is considered unsafe and dangerous.

Nominal Size: 9x51mm
Actual Size: 9.09x51.31mm
Case Type: Necked
Weight: 4.16 kg per box of 100; Price $134 per box
Magazines:

Per round: 0.033 kg			

.358 Winchester

Notes: This predecessor of the .356 Winchester is basically necked-up 7.62mm NATO case. Though many European rifles are built to chamber the round, few American rifles do anymore, though rifles chambering the .358 Winchester round were once more common. Though it is considered by many to be one of the best non-magnum rifle rounds ever designed, it can be inaccurate at short ranges.

Nominal Size: 9x51mm
Actual Size: 9.09x51.05mm
Case Type: Necked
Weight: 4.14 kg per box of 100; Price: $132 per box
Magazines:

Per round: 0.033 kg	4-round box: 0.27 kg		

.358 Norma Magnum

Notes: This round was developed by Norma of Sweden in 1959, but first introduced in the US. It was sort of a quasi-wildcat round at first; no rifles were manufactured to chamber the round, but several custom rifles were, and it was a year later before manufactured rifles were available to take the .358 Norma Magnum. It is nearly identical in performance to the wildcat .35-338 round (a .338 Winchester Magnum necked up to .35 caliber), though it is not related to that round. It delivers performance comparable to the .375

H&H Magnum. It is overpowered for the North American hunting market, except perhaps against the Kodiak Bears of Alaska. The .358 Norma Magnum simply lost out to other rounds, particularly newer ones, delivering better performance or were not so overpowered.

Nominal Size: 9x64mm
Actual Size: 9.09x64mm
Case Type: Necked
Weight: 5.19 kg per box of 100; Price: $166 per box

Magazines:

Per round: 0.042 kg	5-round box: 0.41 kg		

.375 A-Square

Notes: This modified .378 Weatherby Magnum was designed to allow .378 Weatherby Magnum performance in a bolt action of 3.65 inches length. The result was successful at duplicating the .378 Weatherby Magnum for the most part, with only a modest loss of performance. It is easily handloaded, and is capable of handling most of the world's medium to large game.

Nominal Size: 9.5x72mm
Actual Size: 9.53x72.39mm
Case Type: Necked
Weight: 6.45 kg per box of 100; Price: $206 per box

Magazines:

Per round: 0.052 kg			

.375 CheyTac

Notes: The .375 CheyTac is essentially a .408 CheyTac necked down to accept a .375 bullet. The case. Like the .408 CheyTac, has thicker walls than the average round, something that is inherited from the .408 CheyTac, which was based on a modified from the rare .400 Taylor Magnum. Like the .408, factory-made .375 CheyTac rounds are made from a proprietary copper/nickel alloy, and are designed to be low-drag, with a low ballistic coefficient and designed to remain supersonic in excess of 2000 meters. The typical .375 CheyTac bullet is 375 grains and remains supersonic out to 2230 meters. Some handloads of the .375 CheyTac use very long bullets with a sort of hot load and allows for a flat trajectory over longer ranges – but unless handloaded just right, the bullet tends to destabilize during flight and leads to shorter ranges than expected and keyholing in as little as 300 meters. Another variant, with specially-designed bullets called .375 Viking bullets, have a supersonic range of 3090 meters when everything is going right, but field testing found that almost all shots resulted in unstable flight and according to Oklahoma State Trooper Terry Holstine, "is useless at any velocity or range." Thus, factory rounds appear to be the best fit for the rifles that fire the round; such rounds are currently manufactured by MTM, Peterson, and DTC, along with small lots by Cheyenne Tactical themselves. A proper .375 CheyTac round has a flat trajectory allowed by its long supersonic flight, is armor-piercing, and causes a pretty good amount of damage. The .375 CheyTac is not, however, recognized by SAAMI (sort of like if your breed of dog is not recognized by the AKA), so there is no international standard on size or loadings of the .375 CheyTac. However, the round was designed on computer and heavily tested before being offered to the military, police, or civilians. Tampering with the specs of the round is not recommended, but many handloaders still do.

Other Names: .375 MTM, .375 Cheyenne Tactical, .375 CheyTac DTC, .375-408 CheyTac, .375 SnipeTac, .375 SOE
Nominal Size: 9.5x77mm
Actual Size: 9.5x80.01mm
Case Type: Necked
Weight: 56.7 kg per box of 100; Price: $227 per box

Magazines:

Per round: 0.057 kg	5-round box: 0.56 kg	7-round box: 0.73 kg	

.375 Dakota

Notes: Like most Dakota proprietary rounds, the .375 Dakota is based on the .404 Jeffery case, shortened and necked-down, and with an enlarged rim. The idea was to develop a magnum cartridge with performance similar to that of the .375 H&H Magnum, but short enough to be used in actions designed for the .30-06 Springfield cartridge and similar-sized rounds. The cartridge can be used in modified versions of such actions, but this generally requires that the rifle have a slightly smaller magazine capacity (or a larger magazine). Penetration and stopping power are similar to that of the .375 H&H Magnum, though accuracy is somewhat better and the trajectory a bit flatter. The .375 Dakota is generally capable of taking down virtually game in the world.

Other Names: .375 Dakota Magnum
Nominal Size: 9.5x65mm
Actual Size: 9.53x65.28mm
Case Type: Necked
Weight: 5.13 kg per box of 100; Price: $186 per box

Magazines:

Per round: 0.047 kg			

.375 Flanged Nitro Express

Notes: This round was introduced in 1899 primarily for use in single-shot and double-barreled break-open rifles, though BSA did make a variation of the Lee-Enfield Mk I chambering the .375 Flanged Nitro Express round. It should not be confused with the similarly-named .375 Flanged Magnum round. The round is easily handloaded; this is good, because it has not been manufactured in a very long time. The round does have good striking power, and is adequate for game up to North American big game size.

Other Names: .375 Flanged Nitro Express 2 1/2", .370 Flanged

Nominal Size: 9.5x63.5mm

Actual Size: 9.53x63.5mm

Case Type: Straight

Weight: 4.53 kg per box of 100; Price $144 per box

Magazines:

Per round: 0.036 kg	4-round box: 0.3 kg		

.375 H&H Magnum

Notes: This was originally developed by the British firm of Holland & Holland in 1912. It is a belted, magnum cartridge that has formed the basis of endless wildcat cartridges and handloadings. It is now fired by many American and European rifles, especially those made for big game. It has long been considered the best cartridge for hunting in Africa, being powerful without producing an enormously heavy weapon to fire it. It is also popular with Alaskan hunters and wilderness guides.

Other Names: .375 Holland & Holland Magnum, .375 Flanged Magnum, .375 Belted Rimless Magnum, .38-55 Winchester

Nominal Size: 9.5x73mm

Actual Size: 9.53x72.39mm

Case Type: Necked

Weight: 6.45 kg per box of 100; Price: $206 per box

Magazines:

Per round: 0.052 kg	3-round box: 0.35 kg	4-round box: 0.43 kg	4-round clip: 0.21 kg
5-round box: 0.5 kg			

.375 JRS

Notes: This round is an 8mm Remington Magnum necked up to .375 caliber. It is easily handloaded, using a variety of cases; this is good, because the .375 JRS has been for many years the province of wildcatters, with A-Square only since 1990 offering commercial loads. The .375 JRS is a bit more powerful than the .375 H&H Magnum, and the .375 JRS is ballistically most similar to the .375 Weatherby Magnum.

Other Names: .375 JRS Magnum

Nominal Size: 9.5x72mm

Actual Size: 9.53x72.14mm

Case Type: Necked

Weight: 6.44 kg per box of 100; Price: $206 per box

Magazines:

Per round: 0.052 kg			

.375 Remington UltraMag

Notes: Introduced in 2002, the .375 Remington UltraMag is considered one of the most powerful .375 magnum chamberings commercially available. It is based on the other members of the Remington UltraMag cartridge family, and is essentially a modified .300 UltraMag case with extra propellant and necked out to take the .375-caliber bullet. This cartridge delivers more stopping power than the .375 H&H Magnum, and yet has much better range and a flatter trajectory. The .375 Remington is easily capable of taking down the largest North American and European game (not to mention people), and in the hands of a good shot, can even stop African and Alaskan animals in their tracks.

Twilight 2000 Notes: The .375 Remington UltraMag round is not available in the Twilight 2000 timeline.

Other Names: .375 Remington Ultra Magnum (or UltraMagnum), .375 UltraMag (or Ultra Magnum, or UltraMagnum), .375 RUM

Nominal Size: 9.5x72mm

Actual Size: 9.55x72.39mm

Case Type: Necked

Weight: 57.09 kg per case of 1000; Price: $1040 per case

Magazines:

Per round: 0.052 kg	4-round box: 0.43 kg		

.375 Weatherby Magnum

Notes: This round was developed in 1944 and was first chambered in a rifle in 1945. There are several similar rounds, both wildcat and commercial, but this does not mean that the .375 Weatherby Magnum can be loaded into rifles not designed for it. Manufacture continued until about 1953, but Weatherby no longer makes this round. It has slightly more power than the .375 H&H Magnum, but is identical for Twilight 2000 purposes. The .375 Weatherby Magnum is, in fact, a blown out .375 H&H Magnum case with a bit more propellant. The .375 Weatherby Magnum was re-introduced in Finland in 2001, and limited quantities are being manufactured again.

Nominal Size: 9.5x73mm
Actual Size: 9.53x72.39mm
Case Type: Necked
Weight: 6.45 kg per box of 100; Price: $206 per box

Magazines:

Per round: 0.052 kg			

.375 Whelan

Notes: Still listed as a wildcat cartridge as of early 2007 in most publications, the .375 Whelan round was not actually by Townsend Whelan, but named in his honor. The .375 Whelan was actually developed by the late gunsmith LR “Bob” Wallack in 1951, based on a necked-up .30-06 Springfield case. There are actually two versions of this round; one has 17.5-degree shoulder angle, and the newer and more popular version has a 40-degree shoulder angle (and is also known as the Improved case). The Improved case allows for slightly more propellant and better headspace control, and most rifles chambered for the .375 Whelan round are designed for this Improved case. Though it does not have quite the power of the .375 H&H Magnum round, it is still quite efficient against North American big game, and also doesn’t have quite the recoil of an equivalent rifle chambered for .375 H&H Magnum. Though Ackley makes factory loads of the .375 Whelan in very small numbers, this round is still mostly the province of handloaders.

Other Names: .375 Ackley Improved, .375 Whelan Improved (in its newer version), .375-06
Nominal Size: 9.5x64mm
Actual Size: 9.53x63.5mm
Case Type: Necked
Weight: 4.98 kg per box of 100; Price: $181 per box

Magazines:

Per round: 0.045 kg			

.375 Winchester

Notes: This round was introduced in 1978 as a new round for the Model 94 Big Bore lever-action carbine. The case is based on the .38-55 case, though it is shorter and the case is stronger and heavier. The bullets are large and heavy, as is the propellant charge. The .375 Winchester is designed for hunting in heavy cover and vegetation and is also designed to compete with rounds like the .35 Remington and .444 Marlin in lever-action rifles. The .375 Winchester uses a large, flat-nosed bullet that has poor aerodynamics, and the velocity tends to fall off fast.

Nominal Size: 9.5x51mm
Actual Size: 9.53x51.31mm
Case Type: Straight
Weight: 3.66 kg per box of 100; Price: $118 per box

Magazines:

Per round: 0.029 kg			

.378 Weatherby Magnum

Notes: This round was introduced in 1953 to replace the .375 Weatherby Magnum. Despite the similarity to the .375 Weatherby Magnum (and several other rounds, most notably the .416 Rigby), the .378 Weatherby is a belted round not related to any other round of the time. In its first field testing in 1953, Roy Weatherby himself killed an elephant with the .378 Weatherby Magnum in one shot. The .378 Weatherby Magnum is noted for its penetration and damaging potential; it is even capable of penetrating light armored vehicles.

Nominal Size: 9.5x74mm
Actual Size: 9.53x74.17mm
Case Type: Necked
Weight: 6.61 kg per box of 100; Price: $212 per box

Magazines:

Per round: 0.053 kg			

The magazines presented here are based on *light alloy* magazines. For steel magazines, increase weight by 2%; for plastic or synthetic magazines; decrease weight by 8 percent.

10.3mm Swiss

Notes: Originally designed for single-shot target rifles in the late 1800's, the 10.3mm Swiss was originally a blackpowder round for a very short time, but quickly switched over to smokeless powder. A rimmed cartridge, the 10.3mm Swiss is little more than a very-slightly modified version of the British .450/400 2 3/8" Blackpowder Express round. (The Swiss round uses a bit more propellant and a heavier bullet.) The 10.3mm Swiss round is adequate for virtually all North American and European game, and is also a good man-stopper. The round is primarily still popular in Switzerland and Germany (and in one isolated Swiss canton, is the *only* legal hunting round). The 10.3mm Swiss is still manufactured in Switzerland and Germany by RWS.

Other Names: 10.3x60Rmm, 10.3x60mm Rimmed
Nominal Size: 10.3x60mm
Actual Size: 10.54x59.94mm
Case Type: Necked
Weight: 57.53 kg per case of 1000; Price $1050 per case

Magazines:

Per round: 0.052 kg			

10.75x68mm Mauser

Notes: This is a magnum Mauser rifle round that was introduced in the early 1920s and is still listed in RWS catalogs. The round was also once made by Kynoch of England, and rifles were made by Mauser, Browning, and Dumoulin for the 10.75x68mm Mauser. Old Western Scrounger and Barnes make bullets for the round. It is a fairly powerful round, but due to the blunt-nosed shape, penetration is only average. The round is also a softpoint, and cannot be counted upon to hold together inside the target; this is another strike against it as far as hunters are concerned (though it may be a plus when used on people).

Nominal Size: 10.75x68mm
Actual Size: 10.77x67.82mm
Case Type: Necked
Weight: 77.25 kg per case of 1000; Price: $1240 per case

Magazines:

Per round: 0.062 kg	4-round box: 0.51 kg		

11mm Gras Smokeless

Notes: Designed by Captain Basile Gras of the French Army, he 11mm Gras was one of the first smokeless powder rounds; however, being based on a blackpowder round, the dimensions of the 11mm Gras still approximated the 11mm Gras blackpowder round. The 11mm Gras was also one of the last rounds to use a large-caliber bullet in the rifles designed for it; European rifle design was already trending toward smaller-caliber rounds in the neighborhood of 6.5-8mm or so. However, the 11mm Gras-firing rifles solved (temporarily) the problem that to a large extent caused the French loss in the Franco-Prussian War – the use of a technologically-inferior rifle by the French Army.

The case of the 11mm Gras Smokeless was somewhat improved from its blackpowder counterpart, but still essentially used a linen cartridge – stiffened with what was basically papier-mache into a hardened case that could be easily handled by troops, though inclement weather could melt them if not protected from the elements. The primer was inserted into the further-stiffened base of the round. Though some small amounts of original 11mm Gras Smokeless ammunition come to the auction circuit every so often, most such rounds are handloaded (and this quite the handloading project is you use the original case type, so many replace them with brass).

Other Names: 11mm Gras, 11mm French Gras
Nominal; Size: 11x60mm
Actual Size: 11.3x59.44mm
Case Type: Necked
Weight: 5.96 kg per box 0f 100; Price: $238 per box

Magazines:

Per round: 0.06 kg	8-round box: 0.86 kg	50-round belt: 2.98 kg		

12.7mm Russian

Notes: Originally developed for the abortive Russian DK heavy machinegun in the early 1920s, this round came into its own just before and during World War 2 with its use in the DShK machinegun and aircraft armament. It is one of the longest-lived round still in use, being used to this day in helicopter armament and ground weapons like the DShK, NSV, and Kord machineguns, as well as in several antimaterial and heavy sniping rifles. It is based heavily on the old German 13mm TuF round. The 12.7mm Russian is normally steel cased, but brass cases are becoming more and more common of late. It also normally uses corrosive Berdan primers, making long-term storage a problem, but more modern primers have also become more common lately. Use in sniper and antimaterial rifles is problematic due to accuracy (the rounds normally available are designed for machineguns and not precision shooting), but better-qualities rounds are becoming available, as are Western-made rounds. The standard ball ammunition is like many Russian rounds: there is a space in front of the round to aid in balancing of the bullet and increase damage when it hits (and also reflects the poor method of jacketing in Russian-made bullets).

A steel cored (or tungsten-cored) armor-piercing (AP) round is available; double all prices for this round. The Russians are also making what they are calling "match-quality ammunition" for the 12.7mm Russian round; it is not up to the quality that Western shooters would call match quality, but it is better than standard 12.7mm Russian rounds. Triple all prices for this ammunition.

Other Names: 12.7x107mm, 12.7x108mm, 12.7mm Soviet, 12.7mm ComBloc, 12.7mm Russian Machinegun, 12.7mm Soviet Machinegun, 12.7mm DShK, 12.7mm Type 54
Nominal Size: 12.7x107mm
Actual Size: 12.95x105.9mm
Case Type: Necked
Weight: 165 kg per case of 1000 (loose or belted); Price: $7500 per case

Magazines:

Per round: 0.15 kg	2-round box: 0.78 kg	3-round box: 1.01 kg	5-round box: 1.47 kg
10-round box: 2.61 kg	10-round drum: 2.67 kg	16-round box: 3.99 kg	50-round belt: 7.5 kg
60-round belt: 9 kg	70-round belt: 10.5 kg	100-round belt: 15 kg	

13mm T-Patrone

Notes: Designed specifically for the T-Gew Model 1918 antitank rifle, the 13mm T-Patrone was later (for a short time) adopted for use on Nazi and pre-Nazi aircraft. The round was effective, for a very short time, against the tanks of the period, but quickly became obsolete (like most antitank rifle rounds), and was a better antimateriel and long-range sniping round. Nonetheless, it quickly became a rather rare round, and today is found only as a rather rare handload, with the rifles and machineguns to fire rarer still. The 13mm T-Patrone is essentially a greatly-enlarged version of the 8mm Mauser cartridge, using the same bullet shape (but not the same bullet); in addition, the 13mm T-Patrone bullet is a steel-cored AP round.

Other Names: 13x92mmSR T-Patrone, 13x92SR
Nominal Size: 13x92mm (some sources say 13x94mm)
Actual Size: Unknown
Case Type: Necked
Weight: 13.43 kg per box of 100; Price: $1222 per box

Magazines:

Per round: 0.122 kg			

13.2mm Hotchkiss

Notes: The 13.2mm Hotchkiss was first used on the M1930 Hotchkiss antiaircraft machinegun in the inter-war period; however, it was originally designed at an antitank rifle round, until it became obvious that the round would be ineffective against even the tanks of the 1920s and 1930s. The round is essentially a modification of the .50 BMG round – necked out to take the 13.2mm projectile and slightly drawn out. Though there were several users in many European countries, perhaps the largest user was Japan, where the Hotchkiss machinegun, in anywhere from single to quad mounts, on almost every Japanese ship of World War 2 and the inter-war period. Despite the intended use as an antiarmor weapon, and its arming of several armored cars of the inter-war period, it's most common use was in antiaircraft machineguns. The round had the potential to hit hard, and have excellent speed and range – but was also unstable and this could affect damaging and armor-penetrating capabilities, as well as range. A proper ground or vehicular mount was never devised, contributing to its inaccuracy rumors. Dispersion in bursts was also a problem, again probably due to the instability of the round. Another complaint, this time as an antiaircraft weapon defending land targets, was that the 13.2mm bullets falling down after missing their targets could hurt personal and civilians on the ground, and that the round, unlike the 20mm rounds, did not have a self-destruct feature. This contributed to its primary use on ships. (As a further note, the Finns managed to perfect a 13.2mm Hotchkiss-firing heavy sniper rifle, but they dropped in favor of the L39 20mm rifle. However, they had no complaints about the 13.2mm round.)

Other Names: 13.2mm Breda, 13.2mm M1930
Nominal Size: 13.2x99mm
Actual Size: 13.49x99.14mm
Case Type: Necked
Weight: 155.9 kg per case of 1000; Price: $7090 per case

Magazines:

Per round: 0.142 kg	10-round box: 2.47 kg	15-round strip: 2.13 kg	20-round strip: 2.83 kg
20-round box: 4.63 kg	30-round strip: 4.25 kg	30-round box: 6.8 kg	

14.5mm KPV

Notes: Like many such large-caliber rounds of the period, the 14.5mm KPV round was designed in 1941 for antitank rifles, which by then were already obsolete. After World War 2, however, it was picked up for use in a newly-designed heavy machinegun meant for mounting in armored vehicles – the KPV machinegun. In this role, though ineffective against tanks, it has proven quite useful against personnel, thin-skinned vehicles, and even some lightly-armored vehicles. In addition, since the early 1980s an increasing number of antimaterial rifles have been chambered for this round. While most Russian, Chinese, and former Pact-made ammunition in this caliber is made for use in the KPV and is not really of a quality necessary for sniping, increasingly there are Western or Eastern European companies who are making quantities of quality 14.5mm ammunition for this purpose.

A steel-cored (or rarely, tungsten-cored) armor-piercing (AP) version of this round exists; double all prices for this round.
Other Names: 14.5x115mm Antitank, 14.5x114mm 14.5mm M-1941, 14.5mm Russian Machinegun, 14.5mm Type 56, 14.5mm Vladimirov
Nominal Size: 14.5x115mm (some sources say 14.5x114mm)
Actual Size: 14.5x114.3mm
Case Type: Necked
Weight: 207.58 kg per case of 1000 (loose or belted); Price: $9440 per case

Magazines:

Per round: 0.189 kg	3-round box: 1.27 kg	5-round box: 1.84 kg	5-round clip: 0.94 kg
10-round box: 3.29 kg	10-round belt: 1.89 kg	16-round box: 5.02 kg	80-round belt: 15.1 kg
100-round belt: 18.87 kg			

15mm Mauser

Notes: This is a relatively rare round, since it was developed at the beginning of World War 2 and used only for a short period of time as an aircraft gun in early versions of the Me-109 fighter. An extremely few small (but rather heavy) arms have been developed over the years which fire the round, and some companies still manufacture very small lots of it, but it is still rather rare. It is usually found these days unbelted, but original lots of the 15mm Mauser were usually belted for use in aircraft. The 15mm Mauser gun was quickly found to be wanting (at least by the Nazis) as an aircraft gun, and it was replaced in less than a year as an aircraft gun by weapons firing 20mm ammunition. The 15mm Mauser was produced in a standard ball version, an armor-piercing version, a ball tracer, and an AP tracer. AP versions cost double the standard cost for the 15mm Mauser round.

Other Names: MG-151/15 (though this is actually the name of the gun which fired it).
Nominal Size: 15x96mm
Actual Size: Unknown
Case Type: Necked
Weight: 20.1 kg per box of 100; Price: $848 per box

Magazines:

Per round: 0.17 kg	16-round box: 4.51 kg		

15.2mm Steyr AMR

Notes: This round has seen a long development period (along with the single weapon designed to fire it, the Steyr IWS-2000 antimaterial rifle), beginning in 1988. It began as a tungsten-cored 15mm AP round, went to a 14.5mm SLAP round, and is now a 15.2mm SLAP round. The case is of

conventional brass bottle-necked design, while the sabot is of a synthetic material. The penetrator itself is a 5.5mm tungsten dart with an extremely flat trajectory, high velocity, and developing considerably muzzle and terminal energy. It is capable of penetrating light armored vehicles easily as well as destroying equipment (and people), and also causes considerable fragmentation behind the armor plate or item it penetrates. Currently, the fate of the round is tied to the rifle which fires it; while it is rumored to be used by some special operations units, Steyr is still finding official sales elusive.

Other Names: 15.2mm IWS-2000
Nominal Size: 15.2x169mm
Actual Size: 16.56x169.91mm (Case and neck)
Case Type: Necked
Weight: 16.5 kg per box of 100; Price: $3638 per box
Magazines:

Per round: 0.15 kg	5-round box: 1.47 kg	8-round box: 2.15 kg	10-round box: 2.61 kg

.38-40 Winchester

Notes: This round was developed way back in 1874 as a blackpowder round. It made the jump to modern propellants shortly thereafter. It is a .44-40 round necked down to a bullet that is actually .401 caliber. It is primarily a round for lever-action rifles and revolvers. No rifles have been chambered for this caliber by major manufacturers since 1937, though it was once a very popular medium-power cartridge. Present factory loads are designed for revolvers, and handloading is necessary for full performance in rifles. The .38-40 Winchester is best used as a varmint round, as its range is unspectacular and its striking power not great.

Other Names: .38-40 Winchester Centerfire, .38-40 WCF
Nominal Size: 10x33mm
Actual Size: 10.18x33.02mm
Case Type: Necked
Weight: 3.36 kg per box of 100; Price: $108 per box
Magazines:

Per round: 0.027 kg			

.40 BSA

Notes: Like the .33 and .26 BSA rounds, the .40 BSA round was introduced in 1921 by BSA for its sporting rifle based on the 1914 Enfield rifle. Essentially a larger version of the other two BSA proprietary cartridges, it suffered from the same deficiencies, and was also withdrawn quickly (along with the rifle that fired it). It is now the province primarily of handloaders.

Other Names: .40 Belted Rimless, .400 BSA
Nominal Size: 10.16x61mm
Actual Size: 10.39x60.96mm
Case Type: Necked
Weight: 5.69 kg per box of 100; Price: $207 per box
Magazines:

Per round: 0.052 kg	5-round Clip: 0.26 kg		

.40-50 Sharps Straight

Notes: Introduced in 1879, this was the smallest round Sharps made. It is almost exclusively a blackpowder round, but Cordite propellant versions have been made through the years, almost always handloaded and loaded very lightly due to the thin walls of the case. No one makes this round anymore, except for handloaders, but cases are made by Buffalo Arms, and serviceable cases can also be made from the .30-40 Krag case. The bullet of this round is normally paper-patched.

Nominal Size: 10.2x48mm
Actual Size: 10.24x47.75mm
Case Type: Straight
Weight: 3.47 kg per box of 100; Price: $126 per box
Magazines:

Per round: 0.032 kg			

.40-60 Marlin

Notes: The .40-60 Marlin is an old cartridge that began life as a blackpowder cartridge and later switched to modern propellants, and few rifles are chambered for .40-60 Marlin today. It was originally designed for the Marlin 1881 and 1895 lever-action rifles; they used the same basic design as the Winchester 1893 and 1894, but used a chamber which was larger and longer. The .40-60 Marlin appears to be the same case as that of the .40-65 Winchester, but with a different powder loading and heavier bullet. Therefore, the .40-60 Marlin and .40-65 Winchester are interchangeable in most rifles, though a Marlin rifle's performance will suffer if firing a .40-65 Winchester and vice versa. Take care not to mix up the .40-60 Marlin and .40-60 Winchester; they are nearly the same dimensions, but neither will cycle in rifles designed for the other. The .40-60 Marlin is now manufactured on an on-off basis for rifles designed for it and still in use, like the Colt New Lightning. However, handloading can be done using trimmed .45-70 cases and most .40-caliber rifle bullets of 260 grains in weight.

Nominal Size: 10x54mm
Actual Size: 10.24x53.59mm
Case Type: Straight
Weight: 4.41 kg per box; Price: $141 per box
Magazines:

Per round: 0.035 kg			

.40-60 Maynard

Notes: This round was designed specifically for the Maynard Model 10, 12, and 13 Hunting rifles and the Model 15 and 16 Target rifles. It was originally a long-range blackpowder round, but some were later loaded with a lighter charge of Cordite. Unfortunately, the performance of the .40-70 Maynard was almost identical to the similar Marlin, Sharps, and Winchester rounds of the time, and therefore never had a chance to become popular or widely-used. No one makes cases, bullets, or complete rounds of this type anymore, but cases can be made from .303 British cases, and bullets handmade.

Other Names: .40-60 Maynard 1882
Nominal Size: 10.6x70mm

Actual Size: 10.59x69.85mm
Case Type: Straight
Weight: 5.41 kg per box of 100; Price: $196 per box
Magazines:

Per round: 0.049 kg			

.40-60 Winchester Centerfire

Notes: Largely considered obsolete, the .40-60 Winchester Centerfire round is still chambered in a limited quantity of rifles. Therefore, small lots are still being made by Winchester as well as some other manufacturers. The round is bottlenecked and carries a fairly heavy bullet, giving it decent power though deficient penetration. The .40-60 Winchester Centerfire round was originally a blackpowder round that later was used with modern propellants, and was popular in its day, though it was later surpassed by the .45-70 Government round and other rounds.
Other Names: .40-60 Winchester
Nominal Size: 10.3x48mm
Actual Size: 10.26x47.5mm
Case Type: Necked
Weight: 4.91 kg per box of 100; Price: $79 per box
Magazines:

Per round: 0.039 kg	11-round box: 0.74 kg		

.40-65 Winchester

Notes: This round was originally introduced in 1887 as the .40-65 Winchester & Marlin; it could be had in both blackpowder and modern propellant loadings. It's first use was in the Winchester 1886 rifle; Marlin did not have a rifle for the round until 1895. The .40-65 Winchester round was produced in large numbers at first, but these number steadily decreased; it's last catalog listing by any major ammunition manufacturer was by Winchester in 1935. Today, small lots are manufactured by several ammo manufacturers, primarily to satisfy the owners of rifles that chamber the .40-65 Winchester. In real-like costs, this means that the round is expensive. Handloading can be done using .45-70 Government cases as a start and using 260-grain or 300-grain .40-caliber rifle bullets.
Other Names: .40-65 Winchester & Marlin
Nominal Size: 10.3x53mm
Actual Size: 10.31x53.34mm
Case Type: Straight
Weight: 4.45 kg per box of 100; Price: $142 per box
Magazines:

Per round: 0.036 kg			

.40-70 Sharps Straight

Notes: This is an update of an earlier blackpowder round, the .40-65 Sharps. It's essentially the same case with a larger powder load; at it's introduction, it was, in fact a blackpowder load, though it later made the jump to smokeless powder. Sharps, Remington and Winchester all made single-shot rifles around the time of the cartridge's introduction, though currently only Shiloh Sharps makes rifles chambered in .40-70 Sharps Straight. Ballistically, it's about equivalent to a dozen rounds of about the same caliber and powder load, though the heavy 330-grain and 370-grain bullets means that damage is only average and penetration a little deficient. The round-nosed soft-lead bullets don't help with penetration. Small lots are made by several small ammunition manufacturers, but handloaders often find the making of .40-70 Sharps Straight rounds difficult.
Nominal Size: 10.2x48mm
Actual Size: 10.24x47.75mm
Case Type: Straight
Weight: 3.94 kg per box of 100; Price: $126 per box
Magazines:

Per round: 0.032 kg			

.40-70 Winchester

Notes: This is another round first designed for use in the Winchester 1886 rifle, but later chambered in other rifles, most notably those of Marlin. It was introduced in 1895 as a modern-propellant cartridge, but failed to gain a wide following and was never produced at more than a low rate through the years. Winchester, the last major ammunition company to produce it, dropped it in 1935, at which point Winchester was producing only small numbers of the .40-70 round. The .40-70 round is basically a necked-out version of Winchester's .38-40 round, using a larger, heavier bullet with a propellant charge virtually unchanged from that of the .38-40; it packed, however, a powerful punch, though a strong recoil. The .40-70 round is sometimes confused with the .40-72 round, but the .40-72 Winchester will not chamber in a weapon chambered for .40-70 and vice versa. Handloaders can make .40-70 cases from .45-70 cases, though the neck would be short and close attention to detail will be required; a better bet is raw .45 Basic cases. Attention must also be made to the fact that the bullet is a bit larger than .40-caliber.
Nominal Size: 10.3x61mm
Actual Size: 10.29x60.96mm
Case Type: Necked
Weight: 6.34 kg per box of 100; Price: $203 per box
Magazines:

Per round: 0.051 kg			

.40-72 Winchester

Notes: This was another round specifically designed for the Winchester 1895 lever-action rifle, and it was discontinued when the rifle was in 1936. It was never a popular round, and not nearly as powerful as company literature would seem to indicate. Like the .38-72, it is very difficult to handload, and very rare these days.
Nominal Size: 10.3x66mm
Actual Size: 10.31x66.04mm
Case Type: Straight
Weight: 5.51 kg per box of 100; Price: $176 per box
Magazines:

Per round: 0.044 kg	5-round clip: 0.22 kg		

.40-82 Winchester

Notes: Introduced in 1885 for a Winchester single-shot rifle of the time, the .40-82 was also used in the Winchester 1886 lever-action rifle. It began as a blackpowder round, but was popular enough at the time to make the jump to smokeless powder. However, its popularity slowly waned, and by 1935, Winchester, the last major ammunition maker to make the .40-82, had dropped from its catalog. Today, rifles chambered for .40-82 are seldom encountered and the rounds are made in very small lots when they are manufactured at all. The .40-82 is, therefore, more in the realm of handloaders. Handloaders find making the .40-82 difficult, with a procedure similar to that of the .40-70 Winchester. Nonetheless, the .40-82 packs a decent punch, adequate for most North American game as well as human beings.

Other Names: .40-82 Winchester Centerfire, .40-82 WCF
Nominal Size: 10.3x61mm
Actual Size: 10.31x60.96mm
Case Type: Necked
Weight: 6.36 kg per box of 100; Price: $204 per box

Magazines:

Per round: 0.051 kg			

.40-90 Sharps Straight

Notes: Oddly, though this cartridge was introduced in 1885, and Sharps rifles were chambered for it, it did not appear in any Sharps catalogs until recent Shiloh Sharps catalogs. Though Winchester made case lots in its time, currently only small lots are made by small ammunition manufacturers. The .40-90 Sharps Straight case was a type of case called an “Everlasting” case, meaning basically that it was up to today’s standards and able to take repeated reloadings. The case walls were, in fact, so heavy that powder loads were reduced over similar-sized rounds. Handloaders will find that the .40-90 Ballard cases are virtually identical except for the length. Performance and penetration were average for such a round, as was range.

Other Names: .40-90 Sharps
Nominal Size: 10.2x83mm
Actual Size: 10.24x82.55mm
Case Type: Straight
Weight: 6.8 kg per box of 100; Price: $218 kg per box

Magazines:

Per round: 0.054 kg			

.44-40 Winchester

Notes: This is a very old cartridge that was originally designed for the Winchester Model 1873 lever-action rifle. Virtually every American firearms manufacturer has offered a weapon in this caliber at some point in its history. It is said that the round has killed more game and people than any other in American history. This round was originally a blackpowder round, but it has not been loaded with black powder in some time (except by certain firearms enthusiasts). The round has decent range, but the trajectory is not very flat at ranges above 100 meters.

Other Names: .44 Winchester Centerfire, .44 Winchester
Nominal Size: 10.8x33.8mm
Actual Size: 10.9x33.27mm
Case Type: Straight
Weight: 31 kg per case of 1000; Price: $500 per case

Magazines:

Per round: 0.025 kg			

.44-77 Sharps & Remington

Notes: The .44-77 Sharps & Remington round was originally a blackpowder round, but did not stay that way for long, as modern propellants became available fairly soon thereafter and it was converted to this propellant. Introduced specifically for the Model 1869 Sharps rifle, it was soon adapted to a number of other rifles and became a popular target round in the late 1800s and early 1900s (in fact, it was used more for target shooting than hunting). Though it is not confirmed, the .44-77 is said to be a combination of a modified .42 Russian case and a .43 Spanish bullet; the case is slightly necked (bottlenecked) and the bullet is flat-nosed. Remington still makes factory loads for this round, but it is still a rather rare round.

Other Names: .44-77, .44-70, or .44-75 Sharps (or Sharps & Remington), 2 ¼” Sharps, .44-77 Remington-Hepburn, No.3 Remington
Nominal Size: 10.9x57mm
Actual Size: 11.33x57.15mm
Case Type: Necked
Weight: 6.34 kg per box of 100; Price: $230 per box

Magazines:

Per round: 0.058 kg			

.45 Raptor

Notes: Introduced in 2014, the .45 Raptor was designed to solve perceived deficiencies with rounds like the .450 Bushmaster, .458 SOCOM, and .50 Beowulf – most notably to provide a flatter trajectory and better ballistic coefficient than those rounds. The bullet is markedly lither than the bullets of the aforementioned rounds, and therefore achieves higher velocities, but at the cost of bullet stability. However, rifles designed or modified to chamber the .45 Raptor can reliably feed and use hollow-point bullets, something most rifles cannot do. The round is basically an elongated pistol cartridge, like the .50 Beowulf. The .45 Raptor has a very flat trajectory out to about 200 meters. The round is considered proprietary; North American Sportsman has a trademark on the term “Raptor” as it relates to ammunition. Factory bullets are still made in small lots and have bullets ranging from 160-325 grains.

The .45 Raptor mimics the size of the .460 Smith & Wesson Magnum; in fact, loading dies and brass from the .460 S&W Magnum can be used to form the .45 Raptor case, and .460 S&W Magnum bullets can be used in handloading the .45 Raptor. The .45 Raptor uses a rimless design that allows it to feed reliably in semiautomatic rifles. Rifles can be modified by installing a new barrel and extension, and modifying the magazines by shortening the follower and installing an insert that includes the feed ramp. Curved magazines currently cannot be used with the .45 Raptor, and available inserts do not fit in curved magazines. Magazine capacity is not altered.

Nominal Size: 11.5x46mm
Actual Size: 11.68x45.72mm
Weight: 39.2 kg per box of 100; Price: $157 per case

Magazines:

Per round: 0.039 kg	5-round box: 0.38 kg	10-round box: 0.68 kg	20-round box: 1.28 kg

.45-70 Government

Notes: This round was developed for the US military and adopted by them in 1873. After its replacement by the .30-40 Krag in 1892, its popularity took off as a civilian cartridge, especially in single-shot rolling-block-type rifles. The .45-70 also continued in US military service well beyond 1900. American companies stopped producing the .45-70 in the 1930s, leaving it in the hands of handloaders, but recently it has staged a comeback with the popularity of Cowboy shooting, and factory loads are being made again. The unfortunate problem with the .45-70 is range and its curving trajectory beyond 150 meters.

Other Names: .45 Government, .45-70-330, .45-70-350, .45-70-405, .45-70-500
Nominal Size: 11.6x54mm
Actual Size: 11.63x53.47mm
Case Type: Straight
Weight: 56.75 kg per case of 1000; Price: $910 per case

Magazines:

Per round: 0.045 kg			

.45-75 Winchester Centerfire

Notes: The .45-75 Winchester Centerfire was introduced along with the Winchester 1876 lever action rifle; the rifle was itself an enlarged version of the Winchester 1873 rifle. The cartridge is a bottlenecked case that was shorter and fatter than the .45-70 Government. The round has more power than the ,45-70 Government, though it does not have the range of that cartridge. The round was designed to protect homesteads from robbers, and was therefore designed to be a man-killer from its inception. The action of the Winchester 1876 was not particularly strong, so the .45-75 Winchester was usually :sub-loaded" at its inception; later versions have full-power .45-75 Winchester Centerfire rounds. The round is considered inferior for African game, but adequate for North American game; Teddy Roosevelt is said to have favored the ,45-75 Winchester Centerfire round against Grizzlies, as its rifle allows for quick follow-up shots.

Other Names: .45-75 Winchester, .45-75 Winchester Centennial
Nominal Size: 11.5x48mm
Actual Size: 11.53x48.01mm
Case type: Necked
Weight: 6.26 kg per box of 100; Price: $100 per box

Magazines:

Per round: 0.05 kg	8-round box: 0.72 kg		

.45-90 Sharps

Notes: This is one of several rounds developed for .45-caliber Sharps rifles, in various case lengths. The .45 Sharps rounds typically used soft lead bullets and blackpowder charges; however, more modern bullets and loads were developed later on at various points in history. This round is primarily used today by the Cowboy Shooting enthusiasts; most are handloaded, though every so often some company makes some factory loads.

Other Names: .45-90 Sharps Straight
Nominal Size: 11.6x53mm
Actual Size: 11.63x53.34mm
Case Type: Straight
Weight: 5.66 kg per box of 100; Price: $182 per box

Magazines:

Per round: 0.045 kg			

.45-90 Winchester

Notes: The .45-90 Winchester is sort of an attempt to make the .45-70 Government cartridge more powerful; the case is longer, the propellant charge larger, and the bullet lighter by a very small amount. However, damage and penetration are about the same as the .45-70, and range is even less, by a small amount. This is probably why the .45-90, introduced in 1886, was not chambered in many rifles, and why production stopped not long after the switch to modern propellants. Today, only small runs are made by smaller ammunition manufacturers, and by handloaders.

Other Names: .45-90 Winchester Centerfire, .45-90 WCF
Nominal Size: 11.6x61mm
Actual Size: 11.61x60.96mm
Case Type: Straight
Weight: 6.45 kg per box of 100; Price: $206 per box

Magazines:

Per round: 0.052 kg			

.45-100 Sharps

Notes: This is basically a longer version of the .45-90 Sharps round, and the comments for the .45-90 Sharps apply to the .45-100.
Other Names: .45-100 Sharps (Straight)
Nominal Size: 11.6x66mm
Actual Size: 11.63x66.04mm
Case Type: Straight
Weight: 7.01 kg per box of 100; Price: $224 per box

Magazines:

Per round: 0.056 kg			

.45-110 Sharps

Notes: This is basically a longer version of the .45-90 Sharps round, and the comments for the .45-90 Sharps apply to the .45-110.
Other Names: .45-110 Sharps (Straight)
Nominal Size: 11.6x70mm
Actual Size: 11.63x69.85mm

Case Type: Straight
Weight: 7.43 kg per box of 100; Price: $238 per box
Magazines:

Per round: 0.059 kg			

.45-120 Sharps

Notes: Though in some ways this round may be thought of as a longer version of the .45-90 Sharps, the .45-120 actually has thicker walls to contain the much more powerful propellant charge. The round did not have a particularly long lifetime, since the Sharps Rifle Company failed in 1881, though several other rifles were chambered for the round. Most rounds after that point were handloaded, but in 1991-1992 the Eldorado Cartridge Company made a run of cases and factory loads, primarily for the Cowboy Shooting enthusiasts. It is rare to find a .45-120 Sharps round using modern propellants, though it is not unknown. Even in blackpowder form, it is a quite powerful round for a straight-walled cartridge.

Other Names: .45-120 Sharps (Straight), .45-120 Sharps 3 1/4”
Nominal Size: 11.6x82mm
Actual Size: 11.63x82.55mm
Case Type: Straight
Weight: 8.78 kg per box of 100; Price: $280 per box
Magazines:

Per round: 0.07 kg			

.50 Browning Machinegun

Notes: This round was originally designed as an antitank rifle round in 1918. The antitank rifle was quickly dropped, but John Browning designed a heavy machinegun around it instead. This weapon and several other companion pieces, as well as several other machineguns firing the same round, have formed the mainstay of Western heavy machineguns ever since. The .50 Browning Machinegun round is a huge, cigar-sized round that is effective against personnel and light armored vehicles. Recently, the round has been used in heavy sniper and antimaterial rifles, to great effect. It is also regarded as a quasi-sporting round, normally used in long-range target competitions. It can be used to take down everything from people to aircraft.

A SLAP (Saboted Light Armor Penetrator) version of the .50 Browning Machinegun round is available. Double all prices for this round. A match-quality round is also available; multiply all prices for this round by five. A subsonic version of this cartridge is available; triple all prices.

Other Names: .50 M-2, 12.7x99mm
Nominal Size: 12.7x99mm
Actual Size: 12.96x99.1mm
Case Type: Necked
Weight: 163.38 kg per case of 1000; Price: $6450 per case, $9675 per 1500-round belt
Magazines:

Per round: 0.131 kg	2-round box: 0.68 kg	3-round box: 0.88 kg	5-round box: 1.28 kg
7-round box: 1.68 kg	10-round box or drum: 2.28 kg	11-round box: 2.48 kg	16-round box: 3.48 kg
20-round box: 4.28 kg	105-round belt: 13.72 kg	110-round belt: 14.38 kg	300-round belt: 39.21 kg
400-round box: 52.28 kg	1500-round Belt: 196.05 kg		

.50 Beowulf

Notes: The .50 Beowulf is a large, straight-walled round with a rebated rim; some say the .50 Beowulf looks like a long, fat pistol round. It is, in fact, a larger cousin to the .50 Action Express round. The genesis of the .50 Beowulf was during Operation Iraqi Freedom; US troops had a hard time to stop cars with drivers bent on martyrdom and filled with explosives. The standard US GI round, the 5.56mm NATO, was completely inadequate to stop a charging car; even 7.62mm NATO rounds had trouble. Bill Alexander of Alexander Arms therefore designed a large, powerful, heavy round which could be fired from modified M16s (and fit in their magazines), but reliably cause stopping damage to engine blocks and fire through firewalls and dashboards to kill the driver within. Though the .50 Beowulf was never adopted by US troops, a few prototypes were sent to Iraq, where they got good reviews from the troops manning barricades. The rebated rim of the .50 Beowulf is sized to fit rifles designed for 5.56mm, 7.62mm Kalashnikov, and 6.5mm Grendel rounds. Smaller rounds require a change in bolts, as the standard bolt face size used on .50 Beowulf rifles is the same as the 7.62mm Kalashnikov. The .50 Beowulf is rated for full-automatic fire. The .50 Beowulf has poor performance at long to extreme ranges; however, it was not designed as a standard combat round, meant only to stop vehicles and suicide bombers at short to medium ranges, where its superior stopping and penetrative powers excel. Reportedly, special operations forces had had some use of rifles firing the round, noting its ability to fire through walls and doors.

The .50 Beowulf is a proprietary caliber, made only by a few manufacturers licensed by Alexander Arms, and fired only in rifles whose makers have such a license or pay royalties to Alexander Arms. Alexander Arms licensees have to swear a secrecy agreement about the round, and this reluctance to divulge information about the round is a constant irritation to writers, handloaders and weapon designers. Normal bullet weights range from 300 and 500 grains, with 400-grain rounds preferred by Alexander Arms for their finished rifles. Information about dimensions, case lengths, amount of powder used with different-weight bullets, and suchlike is all difficult to come by.

The .50 Beowulf is now gaining acceptance for use as a sporting round, able to stop the largest of North American animals like the Grizzly Bear, Moose, and Polar Bear. At short to medium range, the .50 Beowulf duplicates the ballistics of the .45-70 Government, though in a much shorter-action format. It is more powerful than most rifled slugs or sabot slugs utilized by shotgun hunters.

Nominal Size: 12.7x42mm
Actual Size: 12.7x42.04mm
Case Type: Straight
Weight: 48.1 kg per box of 100; Price: $192 per box
Magazines:

Per round: 0.048 kg	7-round box: 0.62 kg	10-round box: 0.84 kg	12-round box: 0.99 kg
16-round box: 1.28 kg			

.50 DTC-EDM Spec

Notes: The .50 DTC-EDM originated as a French round that was designed to comply with European legislation which bans all rifles that fire .50 BMG. Since the nominal diameter of the round is .510, EDM hit upon this round to skirt the law in some jurisdictions like California which ban .50 caliber weapons. Due to a loophole in the laws in almost all of these jurisdictions, the .50 BMG and other .50/12.7mm are illegal, but a .510 round is not, giving shooters a .50-caliber-like round is a somewhat different package. (It is unlikely that if these bans were not in place in Europe and the US that the .50 DTC-EDM round would have ever been designed.) The .50 DTC-EDM uses the same bullet as the .50 BMG round, but the case

dimensions are different, most notably in the thicker case walls which give the .50 DTC-EDM its extra diameter in a legal sense. In addition, there are minor differences in case length and the shoulder angle. In fact, .50 DTC-EDM cases can be made by shortening and then fire-forming .50 BMG cases. However, rifles designed for the .50 BMG cannot safely fire .50 DTC-EDM rounds and vice versa.

Other Names: .510 DTC Europ, .50 DTC Europe
Nominal Size: 12.95x97mm
Actual Size: 12.96x96.8mm
Case Type: Necked
Weight: 12.77 kg per box of 100; Price: $639 per box
Magazines:

Per round: 0.128 kg	5-round box: 1.25 kg		

.50-70 Government

Notes: This cartridge was the standard US Army round from 1866-73, and was originally a blackpowder round. It is a centerfire round which is a modified form of the .50-60-400 Joslyn Rimfire round, and was the first centerfire round used by the US military. It was replaced in the US military by the .45-70 Government round in 1873, but continued to be used by some civilians until the turn of the 20th century, as it is quite effective on buffalo and other large game. Some collectors still use the round, but it is always found as a handload as no company currently manufactures the .50-70 Government, and haven't since the 1940s. However, with the rise of Cowboy Action shooting, cases are starting to be manufactured again, along with weapons which chamber the round, and it probably won't be long before complete rounds are again manufactured.

Other Names: .50-70 Musket
Nominal Size: 13x44mm
Actual Size: 13x43.69mm
Case Type: Straight
Weight: 5.1 kg per box of 100; Price: $186 per box of 100
Magazines:

Per round: 0.046 kg			

.50-70 Maynard

Notes: The .50-70 Maynard round (at that time called the .50-70 Sharps) was introduced in 1872 along with three longer versions of the cartridge (.50-90, .50-100, and .50-110). It was a blackpowder round at the time, but soon converted to modern propellants. It was designed specifically for buffalo hunting, and meant to be the short-range version of the .50-70 family. Production of the round was later taken over by the Maynard company, but was discontinued in the mid 20th century. Currently, about the only way to get a .50-70 Maynard round is to find someone who handloads it or do it yourself; though cases are still manufactured and readily available, complete rounds are not.

Other Names: .50-70 Sharps, Big Fifty, Poison-Slinger
Nominal Size: 13x48mm
Actual Size: 13.06x47.75mm
Case Type: Straight
Weight: 5.63 kg per box of 100; Price: $204 per box
Magazines:

Per round: 0.051 kg			

.50-90 Sharps

Notes: Essentially the same round as the .50-110 Sharps listed below but with a shorter case and less propellant; the .50-90 Sharps was also originally a blackpowder round, later switched to smokeless propellant. It was originally designed for buffalo hunting. (Though the .50-110 was also designed for buffalo hunting, it was somewhat delayed in mass production, and by the time the .50-110 arrived on the scene in large numbers, the heyday of buffalo hunting was over.) The .50-90 uses the same bullet as the .50-110. As with the .50-110, the .50-90 is not available in factory loads, except by special order from Sharps, but bullet molds are made by Lyman, and cases are available from several companies.

Other Names: Big Fifty, Poison-Slinger
Nominal Size: 13x63.5mm
Actual Size: 12.93x63.5mm
Case Type: Straight
Weight: 7.34 kg per box of 100; Price: $267 per box
Magazines:

Per round: 0.067 kg			

.50-95 Winchester Centerfire

Notes: The .50-95 Winchester Centerfire was originally introduced as a chambering option for the Winchester 1876 Centennial rifle, and was the largest chambering for that particular rifle. It was introduced in 1879. It proved to be less than popular, and had a rather short production span. The .50-95 Winchester Centerfire did gain a small following among buffalo hunters of the period, though it is only a marginal round for taking down buffalo, though it is quite capable of taking down a man. Today, only a very few rifles are chambered in this caliber (such as Chaparral's Reproduction of the Winchester 1873), and only small lots are made by manufacturers. The .50-95 Winchester Centerfire round is more in the realm of handloaders these days, using shortened .348 Winchester shells or shells from the .50-90 Sharps.

Other Names: .50-95 Winchester, .50-95 Winchester Express
Nominal Size: 13x49mm
Actual Size: 13.03x49.28mm
Case Type: Straight
Weight: 6.58 kg per box of 100; Price: $210 per box
Magazines:

Per round: 0.053 kg			

.50-110 Sharps

Notes: Introduced along with two shorter rounds (the .50-90 and .50-100) in 1872, the .50-110 Sharps and its shorter relatives were designed to be more powerful version of the .50-70 Sharps (.50-70 Maynard, above), and meant specifically for long-range buffalo hunting. It was originally a blackpowder round, but was later offered in limited quantities with Cordite propellant. This round is not available in factory loads, except by special

order from Sharps, but bullet molds are made by Lyman, and cases are available from several companies.
Other Names: Big Fifty, Poison-Slinger
Nominal Size: 13x73mm
Actual Size: 12.93x72.9mm
Case Type: Straight
Weight: 8.51 kg per box of 100; Price: $310 per box
Magazines:

Per round: 0.077 kg			

.55 Boys

Notes: The .55 Boys originated, like the .50 Browning Machinegun round, as an antitank round in between World War 1 and 2, to be used with an experimental antitank rifle by Captain Boys of the British Small Arms Committee. Needless to say, the rifle which became the Boys Antitank Rifle was basically obsolete before design work on it even began in the mid-1930s, as was the .55 Boys round in its intended purpose, and it was replaced by the PIAT in 1940. Though essentially useless in its intended role, the .55 Boys did make an admirable manstopper, though actual sniping and antimaterial use of the Boys Antitank Rifle was in fact quite small.

The .55 Boys uses a belted cartridge (one of the few to actually be used by modern military forces of any country); the bullet used a steel-cored copper-jacketed bullet. The .55 Boys round is believed to have been adapted from an unspecified high-power civilian hunting rifle cartridge of the period (though some say it is a modified .50 Browning Machinegun round), which is the probable reason for it being a belted round. However, the design of this belted round allowed the .55 Boys to be loaded with a large propellant charge and withstand very high pressures. Later, a tungsten-cored version with the bullet jacked inside hard plastic was developed, giving the round even greater penetration (though still basically useless against most armored vehicles); this round was known as the W Mk 2 ACPR .55 round. This round, if you can find it, will cost five times the normal *Twilight 2000 v2.2* price listed below.

Like the rifle itself, .55 Boys rounds are as scarce as hens' teeth. Most .55 Boys ammunition found today is handloaded (almost always modified from .50 Browning Machinegun brass), and is almost always of the steel-cored variety (or even without the steel core). Modern analogues of the ACPR round are next to impossible to find handloaded. Original .55 Boys ammunition (as with the rifle and even the magazines) will fetch extremely high real-life prices on the international market (hundreds of times greater than the *Twilight 2000* price presented here).

Other Names: .55 Boyes (an incorrect, but common misspelling), .55 Mk 1, .55 Mk 2 (in the case of the ACPR round).
Nominal Size: 13.9x99mm
Actual Size: 14.3x97.79mm
Case Type: Necked
Weight: 17.28 kg per box of 100; Price: $1572 per box
Magazines:

Per round: 0.157 kg	5-round box: 1.53 kg		

.56-50 Spencer

Notes: One of the oldest rifle cartridges in existence, the .56-50 Spencer is an improved and lengthened form of the .56-46 Spencer, which was designed for the Spencer Carbine (which arrived too late for the Civil War). This version of the Spencer cartridge was first fielded shortly after the Civil War as a blackpowder round, but was later switched to Cordite for a propellant. It, along with rifles firing the .56-50 and 56-52 Spencer, was issued widely to US troops fighting Native American tribes in the West. The rifles did were not in US military service for long, but they remained popular in civilian hands until the early 1920s, and factory-made rounds were made by Springfield and Remington until at least 1920. Taylor's & Company currently loads small lots of both blackpowder and smokeless powder versions of the .56-50 Spencer, for use in its replicas and for use by Cowboy Shooting enthusiasts and collectors. Handloaded versions are just as common however. The .56-50 Spencer is considered a decent deer-hunting cartridge, but was never really considered an adequate man-stopper.

Other Names: .56-50 Spencer & Remington, .56-50 Springfield, .56-50 Sharps
Nominal Size: 14.2x26mm
Actual Size: 13x26.29mm
Case Type: Straight
Weight: 3.07 kg per box of 100; Price: $112 per box
Magazines:

Per round: 0.028 kg			

.400 Jeffery

Notes: Designed by Jeffery in 1902, the .400 Jeffery was a longer, improved version of an older blackpowder round, the .450-400 Nitro Express 3 1/4-inch. It was designed exclusively for modern propellants, and never used blackpowder propellant. It was a very popular round until the advent of the .375 H&H Magnum, which offers similar performance in a lighter round. The .400 Jeffery, however, does offer slightly better performance than the .375 H&H Magnum, especially in the area of damaging potential. Like most of the heavy rounds of this period, the .400 Jeffery was designed for hunting large African game, and is generally overpowered for even large game on other continents. Currently, A-Square is the only company still manufacturing .400 Jeffery ammunition, though bullets are still available from Barnes and Woodleigh, and cases are available from Bertram which can be used to form a .400 Jeffery case with little difficulty. Rifles which fire the round are, however, becoming more and more scarce.

Other Names: .400 Jeffery Nitro Express, .450/400 3-inch Nitro Express
Nominal Size: 10.16x76mm
Actual Size: 10.41x76.2mm
Case Type: Necked
Weight: 7.14 kg per box of 100; Price: $650 per box
Magazines:

Per round: 0.065 kg			

.400 Pondoro

Notes: Invented by John Howard "Pondoro: Taylor to provide a cartridge with the power of the .416 Rigby but with less kick, the .400 Pondoro is essentially a necked-down version of the .416 Rigby. The result is a round that has the sheer power of the .416 Rigby while keeping the range and flat trajectory. Recoil is only a little less than the .416 Rigby, and legible in most cases in game terms. The .400 Pondoro is perfectly adequate for most African game, and some North American game. It is certainly a man-stopper. Though small lots are made by manufacturers now and again, most work on the .400 Pondoro is done by handloaders.

Nominal Size: 10.2x76mm

Actual Size: 10.16x76.2mm
Case Type: Necked
Weight: 7.73 kg per box of 100; Price: $247 per box
Magazines:

Per round: 0.062 kg			

.401 Winchester Self-Loading

Notes: This round was developed to be fired from the Winchester Model 1910 rifle, a modification of the Model 1907. The cartridge was discontinued by Winchester in 1936, but other companies continued to make the .401 Winchester Self-Loading until after World War 2. The .401 Winchester Self-Loading is the most powerful of Winchester's "Self-Loading" line of cartridges, and the only one of them useful against medium game. It can be a bit tricky to handload, but not too difficult.
Other Names: .401 WSL, .401 Winchester Auto
Nominal Size: 10.3x63mm
Actual Size: 10.31x63.5mm
Case Type: Straight
Weight: 5.3 kg per box of 100; Price: $170 per box
Magazines:

Per round: 0.042 kg	4-round box: 0.35 kg		

.404 Dakota Magnum

Notes: Developed from the .404 Jeffery cartridge, the .404 Dakota Magnum has a different case shape than the .404 Jeffery and is loaded a bit more heavily then the .404 Jeffery – yielding more velocity at a lower chamber pressure than the round the .404 Dakota Magnum was actually meant to compete with, the .416 Rigby. This makes it an excellent big-game hunting cartridge, for large game all over the world. It is found mostly as a proprietary cartridge in Dakota rifles, though some other makes of rifle also fire it. The round is readily available from Dakota Arms.
Other Names: .404 Dakota
Nominal Size: 10.26x73mm
Actual Size: 10.72x72.9mm
Case Type: Necked
Weight: 81.63 kg per case of 1000; Price: $3270 per case
Magazines:

Per round: 0.065 kg			

.404 Jeffrey

Notes: This round was introduced in 1909, and was extremely popular for decades. It slowly declined in popularity over more decades, and almost disappeared completely. In 1993, Dynamit Nobel decided to manufacture the .404 Jeffrey again, and Ruger chambered a version of its M-77 rifle for it. A Canadian company named NASS also announced plans to manufacture the .404 Jeffrey, along with Dakota Arms in the US, and with Norma, RWS, and Bertram making cases. The .404 Jeffery was designed specifically for bolt-action rifles. Modern loads generally use heavier bullets and more propellant than the original specifications called for. It is a good general purpose game cartridge, able to take down medium and heavy game, but is overpowered for light game.
Other Names: .404 Rimless Nitro Express, 10.75x73mm
Nominal Size: 10.75x73mm
Actual Size: 10.72x72.9mm
Case Type: Necked
Weight: 81.63 kg per case of 1000; Price: $3270 per case
Magazines:

Per round: 0.065 kg	4-round box: 0.54 kg	5-round box: 0.64 kg	

.405 Winchester

Notes: This round was developed for the Winchester Model 1895 lever-action rifle, and that rifle was first chambered for the .405 Winchester in 1904. It was also chambered in a few other rifles, and Theodore Roosevelt was said to be quite fond of this round and Model 1895 rifle. Winchester stopped producing the round in 1936, but A-Square recently began producing it in small amounts. The .405 Winchester is perhaps the most powerful rimmed cartridge ever produced, and one of the most powerful straight-walled cartridges. The bullet is short, fat, and round-nosed, and loses velocity rapidly, making for poor range and penetration relative to its size. Handloading is said to be very difficult.
Nominal Size: 10.5x65mm
Actual Size: 10.46x65.53mm
Case Type: Straight
Weight: 5.63 kg per box of 100; Price: $180 per box
Magazines:

Per round: 0.045 kg	5-round clip: 0.23 kg		

.408 CheyTac

Notes: Designed specifically for use with Cheyenne Tactical's LRRS-Intervention heavy sniper rifle series (introduced in 2001), the .408 CheyTac is essentially a British .505 Gibbs case necked down to accept a smaller bullet along with a slight redesign of the case itself. This was done for the same reasons such a thing is normally done, in order to put a heavy propellant charge behind a smaller bullet, producing a faster bullet with a flatter trajectory and greater range and penetration. Cheyenne Tactical is also reputedly trying to sell a redesign of the M-60 GPMG chambered for this round. The round falls in power approximately in between the 7.62mm NATO and .50 Browning Machinegun, without being unduly heavy. The cases are actually made by a small German company named THEIS, while the bullets are made by Lost River High Energy Technologies of Idaho. (Sierra is also soon going to be making these bullets in two weights.)
Though not currently available, steel-cored AP ammunition is projected for the .408 CheyTac round. Double all prices for this type of round.
Twilight 2000 Notes: The .408 CheyTac round does not exist in the Twilight 2000 timeline.
Other Names: .408 Cheyenne Tactical
Nominal Size: 10.4x80mm
Actual Size: 10.36x80.01mm
Case Type: Necked

Weight: 16.5 kg per box of 100; Price: $1500 per box
Magazines:

Per round: 0.15 kg	5-round box: 1.47 kg		

.416 Barrett

Notes: The .416 Barrett started as a wildcat redesign of the .50 BMG round, at the request of the Crane NSWC at the behalf of SEAL teams and Coast Guard interdiction shooters. The round was progressively modified for superior speed, range, damage potential, and armor penetration, as well as being able to keep supersonic speeds for as long as possible during its flight, producing a flatter trajectory than a .50 BMG. The .416 Barrett was initially available only in the Barrett Model 99 rifle, but the Model 82A1 was quickly redesigned to fire the new round, and now several other rifles chamber the .416 Barrett. The .416 Barrett uses a 398-grain solid brass boattail spitzer bullet, which contributes to its ballistics. At 1737 meters, the .416 Barret round is still supersonic at 960 meters per second. The SEALs have reportedly used M-99 and M-82A1 rifles to achieve hits at 2286 meters, though the performance that the SEALs get out of their equipment is classified.

An improved version of the .416 Barrett, the .416 Barrett MSG, is a very low-drag extreme range bullet with a low ballistic coefficient and a 424-grain bullet of solid brass, using a radical LD Haack profile in the nose area. Velocities at 1737 meters of 1032 meters per second have been achieved, but the MSG round is still being tested.

Other Names:
Nominal Size: 10.6x83mm
Actual Size: 10.57x83.06mm
Case Type: Necked
Weight: 7.29 kg per box of 100; Price: $365 per box
Magazines:

Per round: 0.073 kg	10-round box: 1.27 kg		

.416 Hoffman

Notes: This round began as a wildcat round in the late 1970s, and was later adopted by A-Square as a proprietary cartridge. It is based on a necked-up and improved .375 H&H Magnum case. It basically duplicates the .416 Taylor and .416 Rigby, having the same weight of bullet and fractionally more powder, though the case in not as wide as those two rounds.

Nominal Size: 10.6x72mm
Actual Size: 10.57x72.39mm
Case Type: Necked
Weight: 7.94 per box of 100; Price: $636 per box
Magazines:

Per round: 0.064 kg			

.416 Howell

Notes: The .416 Howell has had an interesting story and development. It began as a Winchester version of the .416 Taylor round, and is thus basically a beltless .416 Taylor with some minor dimensional differences. Winchester planned to introduce the round in 1979, but it never got off the ground; some say it was because Winchester felt that it could not compete with the .416 Remington Magnum round. An independent gunsmith, however, took the round and placed it into limited production – however, the .416 Howell is still primarily in the realm of handloaders these days. The .416 Howell basically duplicates the .416 Remington Magnum, though higher pressures generally lead to a flatter-shooting, longer-ranged round.

Other Names: .416 Howell Magnum, .416 Winchester Express
Nominal Size: 10.6x64mm
Actual Size: 10.57x63.5mm
Weight: 6.93 kg per box of 100; Price: $223 per box
Magazines:

Per round: 0.045 kg			

.416 Remington Magnum

Notes: This round was introduced in 1988, and was the first American dangerous game cartridge since the .458 Winchester Magnum. It is basically an 8mm Remington Magnum necked up to .416 caliber, and uses very heavy bullets of 300-400 grains. (One unusual bullet for the .416 Remington Magnum is the 400-grain solid; it is literally a solid brass bullet instead of being a lead bullet with a brass jacket.) The .416 Remington has proved to be an unexpectedly popular round, and is produced in large numbers for a surprising amount of rifles. The power and penetration of a rifle firing .416 Remington Magnum is exceptional, but the recoil is too.

Nominal Size: 10.6x72mm
Actual Size: 10.57x72.39mm
Case Type: Necked
Weight: 79.38 kg per case of 1000; Price: $3230 per case
Magazines:

Per round: 0.064 kg	5-round box: 0.62 kg		

.416 Rigby

Notes: Until recently, only about 10,000 rifles total had been made to chamber this exotic cartridge – that's 10,000 rifles, not 10,000 types of rifles. In 1992, Ruger added a .416 Rigby-firing rifle to its product line, and then some other companies took up the cartridge. The cartridge was designed with African hunting in mind, and despite its blunt-nosed profile, it is capable of taking down large animals and even penetrating light armor.

Other Names: .416 Rigby Magnum
Nominal Size: 10.2x74mm
Actual Size: 10.57x73.66mm
Case Type: Necked
Weight: 8.08 kg per box of 100; Price: $646 per box
Magazines:

Per round: 0.065 kg	5-round box: 0.63 kg		

.416 Taylor

Notes: This round, introduced in 1972, is a .458 Winchester Magnum round necked down to .416 caliber, or a .338 Winchester Magnum necked up to .416 caliber. It was rumored that Remington would make the first commercial lots, but A-Square did that instead. It is ballistically similar to the .416 Rigby cartridge, and can handle the same sort of game – able to handle most African game, and blow away most North American or European game.

Other Names: .416 Taylor Magnum
Nominal Size: 10.6x64mm
Actual Size: 10.57x63.5mm
Case Type: Necked
Weight: 69.63 kg per case of 1000; Price: $1110 per case
Magazines:

Per round: 0.056 kg			

.416 Weatherby Magnum

Notes: This is a relatively recent Weatherby development, being introduced in 1989 on the heels of the .416 Remington Magnum. The .416 Weatherby Magnum is based on a larger version of the .378 Weatherby Magnum case, and of course, has more propellant and power than the .416 Remington Magnum (but not enough to really show up in game terms in most cases, except as more recoil).

Nominal Size: 10.6x74mm
Actual Size: 10.57x74.17mm
Case Type: Necked
Weight: 8.14 per box of 100; Price: $652 per box
Magazines:

Per round: 0.065 kg			

.425 Express

Notes: This round was designed by Cameron Hopkins and Whit Collins as a project to be featured in the May 1988 issue of *Guns Magazine.* The original rifle to fire the .425 Express was designed by John French, based on a Ruger M-77 action. The round itself is a .300 Winchester Magnum case, shortened somewhat and then necked out to the .425 Express bullet's dimensions. It is more powerful than the .375 H&H Magnum, but less than the .458 Winchester Magnum, and fills the gap neatly, yielding excellent power and range. Since its debut, it has proven itself on African game as well as in North America and Australia. The round was at first available only as a handload (being essentially a wildcat at its inception), but is now available from A-Square.

Nominal Size: 10.8x65mm
Actual Size: 10.74x64.82mm
Case Type: Necked
Weight: 6.46 kg per box of 100; Price: $234 per box
Magazines:

Per round: 0.059 kg			

.444 Marlin

Notes: The .444 Marlin round was introduced in 1964. The first rifle to chamber it was the Marlin 336 lever-action rifle, but the Marlin 444 is where it got its fame. The .444 Marlin is basically a stretched .44 Magnum round. At short ranges, the .444 Marlin can be quite powerful, but the straight-walled cartridge and the flat nosed-profile do not lend it to long range.

Nominal Size: 11.3x55mm
Actual Size: 10.9x54.86mm
Case Type: Straight
Weight: 51.25 kg per case of 1000; Price $820 per case
Magazines:

Per round: 0.041 kg			

.450 Ackley Magnum

Notes: This round was one of the largest cartridges that Parker Ackley ever designed. He used a full-length H&H case and necked it up to .45 caliber. The resulting case carries a large amount of propellant and a heavy, round-nosed bullet, but the necking-up process resulted in an almost-straight case with a very miniscule neck. Ackley produced the cartridges in his own company for a while, but in 1995, factory loads became available from A-Square. The round is powerful enough, and the case shaping process weakens the case enough, so that reloading the case is often impossible or even dangerous.

Other Names: .450 Ackley
Nominal Size: 11.6x72mm
Actual Size: 11.63x72.39mm
Case Type: Straight
Weight: 76.88 kg per case of 1000; Price: $1230 per case
Magazines:

Per round: 0.062 kg			

.450 Bushmaster

Notes: The .450 Bushmaster was designed by Tim LeGendre of LeMag Firearms, an outfit that primarily makes custom, unusual, and customized rifles to order. The round, at first a wildcat round, received SAAMI certification and was licensed out to Bushmaster Firearms, who have larger facilities for the production of ammunition and rifles. It is designed to be used in standard M16 and AR-15 magazines, using a new follower and spring and in an AR-15 upper with a minimum of modifications (primarily to the bolt and barrel). The round was designed to adhere to Jeff Cooper's "Thumper" concept, and is capable of bringing down most North American game and threat animals. LeGendre developed a limited-run round called the .45 Professional, but Hornady, another licensee of the ammunition, wanted to shorten the case to offer more flexibility in bullet design, shrinking the case by 19.5mm.

The .450 Bushmaster uses a high-pressure case, with an ample dose o f propellant and heavy .452 bullets. The trajectory is very flat out to 200 meters, but it is not meant to engage long or extreme-range targets. Factory rounds are now made by Bushmaster, Hornady, and Remington.

Nominal Size: 11.4x43mm
Actual Size: 11.48x43.18mm
Case Type: Straight
Weight: 4.47 kg per box of 100; Price $$179 per box

Magazines:

Per round: 0.047 kg	4-round box: 0.37 kg	5-round box: 0.44 kg	9-round: 0.71 kg

.450 AHR

The .450 AHR round appears to be a lengthened and blown-out ,400/.450 Nitro Express 2 3/8" case, made to produce a "more magnum" round that still has manageable recoil, though it failed in that respect in the rifles it was chambered for. Unfortunately, documentation on the .450 AHR round is quite rare, even on American Hunting Rifles own web site. It appears to not be produced by any manufacturer other than AHR, and is the primarily the province of handloaders. It has sufficient power to take down African game, moose, grizzlies and polar bears, light vehicles, helicopters, etc.

Other Names: .450 AHR Magnum. .450 American Hunting Rifles (rare)
Nominal Size: 11.4x73mm
Actual Size: : 11.38x73.36mm
Case Type: Necked
Weight: 9.33 kg per box of 100; Price: $373 per box
Magazines:

Per round: 0.075 kg			

.450 Dakota Magnum

Notes: This was the first Dakota design which was not based upon the .404 Jeffery case; the .450 Dakota Magnum is .416 Rigby case necked up to take a .450 bullet. The round is meant to be powerful, and can drive a 500-grain bullet at 747 meters per second without undue pressure in the chamber. Ballistically, the .450 Dakota Magnum is very similar to the .460 Weatherby Magnum, but Dakota does not recommend loading the round to the point that the .460 Weatherby Magnum is typically loaded, because such hotloads can make extraction difficult. It is also similar to, but slightly more powerful than, the .458 Winchester Magnum. The typical bullet used is round-nosed and solid. Like most proprietary Dakota rounds, the .450 Dakota Magnum is produced only by Dakota Arms, and is almost never chambered in anything but Dakota's rifles.

Other Names: .450 Dakota
Nominal Size: 11.6x73mm
Actual Size: 11.63x72.9mm
Case Type: Necked
Weight: 85.1 kg per case of 1000; Price: $3870 per case
Magazines:

Per round: 0.077 kg	4-round box: 0.64 kg		

.450 Howell

Notes: the .450 Howell is basically a necked-up version of the .416 Howell, and shares that rounds interesting development. The result is a round that is exceptional in power and range, but was never picked up for manufacture by any major company except in minor lots. The .450 Howell is therefore primarily in the hands of handloaders, though some rifles have been chambered for this round. The .450 Howell is the equal of any African game, and some tough-to-get North American or South American game.

Other Names: .450 Howell Magnum
Nominal Size: 11.6x64mm
Actual Size: 11.63x63.5mm
Case Type: Necked
Weight: 8.44 kg per box of 100; Price: $338 per box
Magazines:

Per round: 0.068 kg			

.450 Marlin

Notes: This round is one of the newest Marlin cartridges, announced at the 2000 SHOT Show. It is the first new Marlin cartridge since 1964's .444 Marlin, and was introduced to produce a magnum cartridge for the Model 1895 lever-action rifle. (This round also required the designing of a modified version of the Model 1895 that could take the high chamber pressures developed by the .450 Marlin.) The .450 Marlin was developed from scratch, though many have questioned why Marlin could not have sped up the development process by simply lengthening and increasing the propellant charge of the .45-70 Government case, but Marlin nevertheless decided to make the .450 Marlin from scratch. The .450 Marlin is nevertheless a powerful loading, quite capable of stopping any North American large game in its tracks.

Twilight 2000 Notes: The .450 Marlin round (and the rifle which fires it) is not available in the Twilight 2000 timeline.
Nominal Size: 11.6x54mm
Actual Size: 11.63x53.09mm
Case Type: Straight (Tapered)
Weight: 49.61 kg per case of 1000; Price: $900 per case
Magazines:

Per round: 0.045 kg	4-round box: 0.37 kg		

.450 Nitro Express No. 2

Notes: This round is an improved version of an earlier round, the .500/450 Magnum Express. The .450 Nitro Express No. 2 uses a longer case than its predecessor, but the same weight of bullet (normally a 480-grain soft-point). The round was designed for use primarily in single-shot and double-barrel Express rifles, and is almost never found in any other sort of rifle. The longer case was used to reduce the chamber pressure, and not to allow the loading of more propellant. The round has a thick rim to aid in extraction. Many rifles chambered for .450 Nitro Express No. 2 are still around, but the rounds for them are rare as few companies manufacture them.

Other Names: .450 No. 2 Nitro Express, .450 Nitro Express 3 1/2-inch, .450 Nitro Express
Nominal Size: 11.6x89mm
Actual Size: 11.63x88.9mm
Case Type: Necked
Weight: 10.38 kg per box of 100; Price: $944 per box
Magazines:

Per round: 0.094 kg			

.450 Rigby

Notes: A relatively new round, the .450 Rigby was not introduced until 1995, and is therefore Rigby's newest production cartridge. It was designed specifically for hunting large game in Africa, but will also make a mess of whatever person it hits, and is even capable of penetrating light armor. The bullet is large and heavy at 480 grains, and may be soft-nosed or solid. The case is basically necked-up .416 Rigby case, with a sharp shoulder.

Twilight 2000 Notes: An incredibly rare round in the Twilight 2000 timeline, the .450 Rigby is mostly found in Britain and Some parts of Africa, and almost always handloaded.

Nominal Size: 11.6x74mm

Actual Size: 11.63x73.66mm

Case Type: Necked

Weight: 8.72 kg per box of 100; Price: $794 per box

Magazines:

Per round: 0.079 kg			

.450-400 Nitro Express 2 3/8"

Notes: This round started out as a blackpowder cartridge in 1880. It is a necked-down version of the older .450 Nitro Express 2 3/8-inch round. By 1899, modern propellant version were available. The .450-400 Nitro Express 2 3/8" developed far less chamber pressure than older designs, leading to lighter rifles to fire it. Various different variations on this theme developed, using different case lengths, some of which succeeded, and some of which didn't. This round is no longer factory-produced, though many people do handload it.

Other Names: .450-400 2 3/8" BPE, .450-400 2 3/8" Nitro for BP

Nominal Size: 10.3x60mm

Actual Size: 10.34x60.45mm

Case Type: Necked

Weight: 5.59 kg per box of 100; Price: $204 per box

Magazines:

Per round: 0.051 kg			

.450-400 Nitro Express 3 1/4"

Notes: Basically a longer version of the .450-400 Nitro Express 2 3/8", this round also started as a blackpowder round, but soon switched to modern propellants. There are actually two versions of this round, with different case thicknesses. When the .450-400 3 1/4" round was switched to Cordite propellants, it was discovered that the earlier, thinner case would often not extract properly (particularly in a dirty or even slightly-corroded chamber), causing the rim to stick in the chamber and pull off the round when extracted, leaving a ring of jagged brass in the chamber. As with the 2 3/8" round, the .450-400 3 1/4" is no longer factory-produced.

Other Names: .450-400 3 1/4" BPE Nitro for Black

Nominal Size: 10.3x82mm

Actual Size: 10.29x82.55mm

Case Type: Necked

Weight: 7.55 kg per box of 100; Price: $686 per box

Magazines:

Per round: 0.069 kg			

.458 Lott

Notes: This round was developed after Jack Lott, armed with a .458 Winchester Magnum-firing rifle, was rammed (non-fatally) by an African buffalo after he had already shot it twice. In 1971, he designed what was essentially an improved version of the .458 Winchester Magnum, with a longer case containing more propellant and a heavier bullet. The .458 Lott was considered a wildcat round until 2002, when Hornady began manufacturing factory loads. Before that point, most rifles firing .458 Lott were hand-made or modified from existing rifles. It should be noted that most rifles that are chambered for .458 Lott can also fire .458 Winchester Magnum ammunition. The .458 Lott is a hard hitting round with excellent penetration, though range suffers from its round-nosed bullet.

Twilight 2000 Notes: Factory loads are not available; all .458 Lott ammunition is handloaded.

Nominal Size: 11.6x71mm

Actual Size: 11.63x71.12mm

Case Type: Straight

Weight: 7.55 per box of 100; Price: $242 per box

Magazines:

Per round: 0.06 kg			

.458 SOCOM

Notes: The .458 SOCOM round was developed by Teppo Jutsu as a result of an informal conversation with some members of for special operations community (reportedly members of Delta). Delta operators were dismayed by the apparent inability of the 5.56mm round to drop Somali fighters hopped on adrenaline and khatt, a local plant with large amounts of natural stimulants. Delta expressed their wish to have a round that would bring down such fighters, but could be used with their M16-based weapons with a minimum of modifications.

The .458 SOCOM is a highly-modified 7.62mm Kalashnikov case, operating at low pressure and with a heavy bullet with AP qualities and a tendency to flatten upon entering a human body. The round was first developed into an intermediate round informally called 9mm PPC (which later became a rare round called .358 CQB), and the .338 Specter. In addition, experience with the non-standard .458 Barnes used in Vietnam was also drawn upon. M16-type weapons that have been modified to fire 7.62mm Kalashnikov were already common on the marketplace, and finding a company that would make a special version for special ops would be easy to find. (Teppo Jutsu, in fact, was the first in line for such weapons.) The round will fit in AR-15/M-16 magazines, at a reduced capacity, and with a modified follower.

An armor-piercing version of the .458 SOCOM exists; double all prices below. The .458 SOCOM is naturally subsonic with 500-600-grain bullet weights, so no special subsonic version exists; the .458 SOCOM, in fact, works well with a suppressor. Standard bullet weights can range from 250-600 grains; the most common weights are 250-350 grains. The .458 SOCOM has similar ballistics to the .45-70 Government at short to medium ranges, but velocity falls off quickly beyond this range. The .458 has not received SAAMI certification; despite this, a large number of companies produce factory loads, including Trident, Black Butterfly, Southern Ballistic Research, Cor-Bon, XCaliber, and Buffalo Bore. Several smaller manufactures also make small lots of .458 SOCOM. Magazines are modified 7.62mm Kalashnikov magazines; any such magazine will work, except drums, and require only that the follower be changed.

Nominal Size:11.6x40mm

Actual Size: 11.63x40.7mm
Case Type: Necked
Weight: 4.32 kg per box of 100; Price $173 per box
Magazines:

Per round: 0.043 kg	3-round box: 0.29 kg	4-round box: 0.36 kg	5-round box: 0.42 kg
7-round box: 0.55 kg	10-round box: 0.75 kg	14-round box: 1.02 kg	15-round box: 1.08 kg
20-round box: 1.41 kg	27-round box: 1.88 kg		

.458 Winchester Magnum

Notes: This round was introduced in 1956 for a version of the M-70 called the African. It has since become a very popular cartridge, though limited by its size and power and the rifles necessary to chamber it. Though round-nosed, it is capable of taking down elephants and penetrating light armored vehicles and engine blocks.
Other Names: .458 Winchester Belted Magnum
Nominal Size: 11.6x63.5mm
Actual Size: 11.63x63.5mm
Case Type: Straight
Weight: 6.75 kg per box of 100; Price: $216 per box
Magazines:

Per round: 0.054 kg	4-round box: 0.45 kg	5-round box: 0.53 kg	

.460 Alliance

Notes. The .460 Alliance round. Some naysayers say it's just a redressed .458 SOCOM round, but Alliance Armament did not have a license to use the .458 SOCOM in its rifles. The more likely story is that it uses the same bullet as a .460 S&W Magnum, with a blown-out .300 SAUM parent case, with a propellant charge similar to its .300 SAUM parent. The .460 Alliance was designed, at first as an experiment, as a big-bore round for 7.62mm AK-type rifles. (They have since begun to sell these rifles.) It was designed to be superior in power and ballistics to rounds like the .458 SOCOM and .50 Beowulf, with a magnum-level amount of propellant and a longer case. It was designed primarily for North American game at short to medium-ranges, though some have taken the AK-derived rifles to Africa and have had considerable success. At those ranges, the trajectory is flat and the round can virtually ignore brush, branches, etc. The round is not fast, but it is heavy and armor-penetrating; a typical bullet and muzzle velocity are 400 grains at 488 meters per second.

A secondary consideration was for use in military units where the primary rifle is an AK but need some shooters with a higher-level of firepower, much like the AR-15/M16-type weapons firing .458 SOCOM or .50 Beowulf. In such cases, it produces similar results, penetrating deeply into engine blocks or dashboards to kill the driver behind it.

A dedicated AP version of the already armor-piercing .460 Alliance is available; double all prices below. The .460 Alliance is designed to be loaded into 7.62mm Kalashnikov magazines, with the change of the follower, except for drums. Magazine capacity is, of course, smaller. In most circles, the .460 Alliance is still considered a wildcat round, though Alliance is making lots of them.
Nominal Size: 11.7x41mm
Actual Size: 11.68x41.14 kg
Case Type: Straight
Weight: 35.3 kg per box of 100; Price: $141 per box
Magazines:

Per round: 0.0035 kg	2-round box: 0.18 kg	4-round box: 0.29 kg	8-round box: 0.51 kg
12-round box: 0.72 kg	16-round box: 0.94 kg		

.460 A-Square Short

Notes: This is another of the cartridges that Colonel Arthur Alphin developed after his run-in with a Cape Buffalo in Africa. This round is based on the .460 Weatherby case, with a slight neck. The cartridge is the same length as the .458 Winchester Magnum, but has better ballistics and power. Bullets are heavy and round-nosed, but achieve terrific velocities. However, recoil can be brutal.
Nominal Size: 11.6x64mm
Actual Size: 11.63x63.5mm
Case Type: Necked
Weight: 8.44 kg per box of 100; Price: $676 per box
Magazines:

Per round: 0.068 kg			

.460 Steyr

Notes: The .460 Steyr is essentially a .50 Browning Machinegun round, shortened and necked down to .460 (11.63mm) from the original .50 BMG (12.96mm). It was designed by Horst Grillmayer and Guido Wasser of Steyr for their new version of the Steyr .50 HS long-range sniper rifle. The .460 Steyr is actually a .458 diameter round, to circumvent those jurisdictions that do not allow "military rounds" for civilian use. The combination of a case not much shorter than a .50 BMG case along with a smaller bullet, along with almost the same amount of propellent, lends itself to accuracy, range, damaging potential, and body armor (and light armored vehicle) penetration. This is coupled with the fact that a standard military .460 Steyr round is steel-cored or tungsten cored. (These, of course, are off-limits to civilians, so ball rounds are also made.) The .460 round does, in fact, leave the barrel at a much higher velocity than the .50 BMG, sometimes as high as 916 meters per second, and remains supersonic out beyond 1000 meters. Most shooters can, with practice, fire groups at 200 meters that are 16mm or less. Though smaller than the .50 BMG, the .460 Steyr round is still a massive 600 grains. The .460 Steyr is a proprietary round manufactured only by Steyr; however, if you have a bullet mold or bullets (which would have to be custom-made for a civilian), the round may be handloaded using a .50 BMG case. Currently, the only rifle that fires the .460 Steyr round is the Steyr HS-50M1, though an experimental version of the Steyr IWS-2000 has been tested chambered for the .460 Steyr round.
Other Names: .460 HSR, .460 HWG, .460-50 Browning, 11.65x90.5, 11.6x90mm, ECRA-ECDV 12 090 BGC 030, 11.6x90mm Grillmayer
Nominal Size: 11.65x90.5mm
Actual Size: 11.63x90.5mm
Case Type: Straight
Weight: 19.22 kg per box of 100; Price: $481 per box
Magazines:

Per round: 0.097 kg	5-round box: 1 kg		

.460 Weatherby Magnum

Notes: This round was designed in 1958 to be the most powerful commercial rifle cartridge. It was made by necking up the .378 Weatherby case to accept a larger bullet. It was, until the commercial availability of .50-caliber-class rounds, the most powerful one you could find on a regular basis, though limited production rounds that are more powerful have been available for some time.

Nominal Size: 11.6x74mm
Actual Size: 11.62x73.91mm
Case Type: Necked
Weight: 9.8 kg per box of 100; Price $784 per box

Magazines:

Per round: 0.078 kg			

.470 Capstick

Notes: This round was designed by COL Arthur B Alphin for Peter Capstick, a noted big-game hunter of the time. The .470 Capstick round is nearly identical in dimensions to the .475 Ackley Magnum, and differs primarily in its use of a 500-grain bullet instead of the .475 Ackley's 600-grain bullet. There are also minor dimensional differences. The lighter bullet was used because it produced a flatter trajectory then the .475 Ackley's 600-grain bullet, while producing almost the same muzzle velocity and hitting power. The .470 Capstick definitely produces more shock and a larger temporary wound cavity than many .458 rounds. The .470 Capstick has seen a sort of renaissance of late, with sever prominent rifle and ammunition manufacturers producing for the round.

Other Names: .470 Alphin
Nominal Size: 11.94x75mm
Actual Size: 11.62x73.91mm
Case Type: Necked
Weight: 6.27 kg per box of 100; Price: $251 per box

Magazines

Per round: 0.063 kg	4-round double box: 0.8 kg		

.470 Nitro Express

Notes: This round, first introduced in 1907, is one of the most long-lived of the Nitro Express cartridges. Rifles chambered for this round are not as heavy and do not have as heavy recoil as the heavier Nitro Express cartridges, yet still pack a pretty good wallop. Virtually all rifles chambered for this are double rifles, and are generally pretty expensive. The bullets are very heavy (500-600 grains), and though blunt-nosed, have excellent penetration, and they can bring down virtually any sort of game in the world, as well as penetrate light armored vehicles and bring down the occasional helicopter.

Other Names: .470 NE
Nominal Size: 12x83mm
Actual Size: 12.07x82.55mm
Case Type: Necked
Weight: 11.84 kg per box of 100; Price: $948 per box

Magazines:

Per round: 0.095 kg			

.475 A&M Magnum

Notes: This massive round was developed in 1958 by the Atkinson and Marquart Rifle Company. It is a .378 Weatherby Magnum case necked up to .475 caliber. It is a very powerful round, but not widely known; only a few custom rifles and even fewer commercial rifles have been chambered for .475 A&M Magnum. It is basically overpowered for North American game, and almost overpowered for all but the largest African animals. Recoil is brutal; Frank Barnes, a noted ammunition expert and author of *Cartridges of the World,* compares firing a magazine of .475 A&M ammunition to "going a couple of rounds with the world's heavyweight boxing champ."

Nominal Size: 12x74mm
Actual Size: 12.07x73.66mm
Case Type: Necked
Weight: 10.54 kg per box of 100; Price: $844 per box

Magazines:

Per round: 0.084 kg			

.475 Tremor

Notes: The .475 Tremor was designed by Tromix in 2001 as a minor chambering for its Jackhammer assault rifle and the uppers chambered for it. It was yet another attempt to better rounds like the .50 Beowulf and .458 SOCOM; this it did in range, but produced about the same damaging potential and somewhat less penetration. The parent cartridge is the .480 Ruger, drawn out to produce a case and round length that will fit into a modified AR-15 magazine. Bullet weights range from 325-500 grains, but muzzle velocity is only middlin, but faster than the .50 Beowulf or .458 SOCOM, with a flatter trajectory.

Though the .475 Tremor Jackhammer was quite popular for a short while, interest eventually waned and Tromix pulled the chambering from the market. I haven't found any reference to the .475 Tremor round later than 2003.

Nominal Size: 12x45mm
Actual Size: 12.07x44.7mm
Case Type: Necked
Weight: 5.11 kg per box of 100; Price: $204 per box

Magazines:

Per round: 0.051 kg	7-round box: 0.65 kg	10-round box: 0.89 kg	15-round box: 1.28 kg

.495 A-Square

Notes: This is another one of Col. Arthur Alphin's cartridges designed after his run-in with a Cape Buffalo. The original .495 A-Square cartridges were based on necked-up .460 Weatherby Magnum cases, but they are now commercially loaded by A-Square. The bullet is quite heavy at 600 grains, but velocity is only average, and recoil is relatively low. The heavy bullet, however, make for a hard-hitting round.

Nominal Size: 13x71mm
Actual Size: 12.95x71.12mm

Case Type: Straight
Weight: 93.63 kg per case of 1000; Price: $1500 per case
Magazines:

Per round: 0.075 kg			

.499 Leitner-Wise

Notes: The .499 Leitner-Wise round was originally designed at the behest of the US Coast Guard for use by their MSST and HITRON teams. The round was meant to do things like shoot out engines and put holes in speedboats, under the waterline. To accomplish this, the Coast Guard needed a round that had high penetration, high velocity both in the air and retaining its velocity through a couple of feet of water, and with smaller recoil and in a lighter rifle than the Barrett rifles used by the US military at the time. At the same time, USAF Security Police were looking for a car and truck-stopping round, similar in concept to the .50 Beowulf, but with longer range and better ballistics, as well as better armor-piercing qualities than the .50 Beowulf. They also wanted in a package similar to the M16A1s they were already using (though they switched to M16A2s during the Iraq War).

The .499 Leitner-Wise round's parent case is the .50 Action Express round, drawn out a bit and having gone through a redesign process. The bullet is likewise lengthened. The .499 Leitner-Wise round comes in three flavors: a standard ball round for use against personnel, a low-penetration round for use in CQB, and a high-penetration round for use against cars, trucks and boats, and if necessary, shoot through walls and even concrete. New magazines were also designed based on existing M16A2-compatible off-the-shelf products.

The .499 Leitner-Wise, however, had a lot of problems, though many gun experts say they were not insurmountable problems, with a little extra testing and a few fixes. Cases sometimes blew out inside the chamber; on a few occasions, this damaged the LW-15 rifle firing it, though most of the time the rifle remained undamaged and the blown round could be easily ejected and a new round fed. Feeding and extraction were not a problem with the new round and rifle, nor was performance. The Coast Guard used the round and the LW-15 rifle; though they got good results, they considered the blown case problem potentially dangerous to the user. (The Air Force never had any injuries from a blown case, but considered the blown case problem potentially dangerous to the user if a round does not fire in a tight situation.) Both the Coast Guard and the Air Force in the end considered the round unreliable and after a lengthy evaluation period, decided to reject the LW-15 and its ammunition, going with more traditional and proven designs. The round is now considered obsolete, and .499 Leitner-Wise ammunition has not been produced for about five years; however, the rifles and uppers are still available on the market, and the ammunition can still be found fairly easily since the rifle did not sell well on the open market. Leitner-Wise was the only producer of the ammunition. The rifle and uppers themselves were shelved until 1998, when Leitner-Wise decided to offer them on the open market along with the ammunition, and produced several lots of ammunition and more rifles and uppers, hoping for civilian sales.

Other Names: .499 LW, .499, Mini-50
Nominal Size: 12.5x42mm
Actual Size:12.67x44mm
Case Type: Straight
Weight: 44.4 kg per box of 100; Price: $178 per box
Magazines:

Per round: 0.044 kg	10-round box: 0.77 kg	12-round box: 0.91 kg	60-round drum: 4.17 kg

.500 A-Square

Notes: This round was actually Col. Alphin's first design in 1974, using the modified .460 Weatherby Magnum case. The .500 A-Square is the backbone of the A-Square cartridge line and the reason for forming the company. The recoil can be quite stiff, but stopping power is incredible.

Nominal Size: 13x74mm
Actual Size: 12.95x73.66mm
Case Type: Necked
Weight: 121.25 kg per case of 1000; Price: $4850 per case
Magazines:

Per round: 0.097 kg			

.500 AHR

Notes: The .500 AHR is based on the .500 Jeffrey round, lengthened and rebated. Though it throws a smaller bullet, it does so at a higher velocity, producing tremendous power. It is more than the equal of African game and tough North American game, and easily surpasses the .500 Jeffery in power and range. AHR makes small lots, and handloaders make a decent amount for private use.

Other Names: .500 AHR Magnum, .500 American Hunting Rifles (rare)
Nominal Size: 13x73mm
Actual Size: 12.88x73.36mm
Case Type: Necked
Weight: 12 kg per box of 100; Price: $480 per box
Magazines:

Per round: 0.096 kg			

.500 Auto Max

Notes: Big Horn Armory is known for its lever-action and single-shot rifles, firing heavy-caliber rounds. However, they got a lot of comments from shooters that these rifles are just not fun to shoot – too much recoil. Big Horn was also planning to make a semiautomatic rifle based on the AR-10 platform, and while they wanted it to fire a cartridge with power, they didn't want the rifle to be unmanageable. Therefore, they decided to use the .500 Smith & Wesson Magnum round as a based, but extended a few millimeters, along it to be modified into a rimless round better suited for a semiautomatic rifle. So far, Big Horn Armory has used the .500 Auto Max only in its AR500 rifle, which is based on the AR-10, and it is not known at this time (Oct 2021) if they intend any other applications for the round. In the AR500, recoil is mild, damage is good, and penetration excellent. Currently, 500 Auto Max is available only through Big Horn Armory, though they do source the rounds from a number of small ammunition manufacturers.

Other Names: .500AR
Nominal Size: 12.7x42mm
Actual Size: 12.7x44mm
Case Type: Straight
Weight: 1.61 kg per box of 100; Price: $12 per box

Per round: 0.06 kg	5-round box: 0.54 kg	9-round box: 0.88 kg	

.500 Jeffery

Notes: The .500 Jeffery began as a proprietary cartridge by Schuler in Germany for certain custom-made bolt-action rifles. Jeffery later adapted the round to work in his Mauser-based heavy-caliber rifles. The rim is in fact rebated to fit the Mauser bolt face. Ballistics and power are similar to the .505 Gibbs, though the case is shorter; the .500 Jeffrey is loaded to a higher power and pressure. The round was designed specifically for bolt-action rifles, to give a hunter the same power as the rounds found in heavy-caliber express rifles. Though recoil is high, the .500 Jeffery is capable of downing virtually any sort of African game, though it is considered overpowered for North or South American game. A-Square still makes .500 Jeffery ammunition in small lots.

Other Names: .500 Schuler
Nominal Size: 12.7x70mm
Actual Size: 12.95x69.85mm
Case Type: Necked
Weight: 9.2 kg per box of 100; Price: $295 per box

Magazines:

Per round: 0.07 kg			

.500 Nitro Express

Notes: This cordite-propellant round was derived from the earlier blackpowder .500 Nitro-for-Black round. It was introduced in the 1890s, and generally uses a huge 570-grain soft-point or solid bullet. It is a very powerful round designed for large African game, and is generally enough to kill almost any sort of animal with one shot. It is still in use by some big-game hunters, and A-Square still makes the round.

Other Names: .500 Nitro Express 3”
Nominal Size: 13x76mm
Actual Size: 12.95x76.2mm
Case Type: Straight
Weight: 8.83 kg per box of 100; Price: $322 per box

Magazines:

Per round: 0.08 kg			

.500/416 Nitro Express

Unlike the other Nitro Express rounds, the .500/416 was only recently developed (in the early 1990s). It was designed from the outset as a magnum round, and is a .500 Nitro Express necked down to accept a .416 bullet. The .500/.416 was developed by Krieghoff to equal, if not exceed, the performance of the .416 Rigby, and chamber in rifles that will accept a .500 Nitro Express round. It pushes a huge round, soft-nosed 450-grain bullet; despite this, penetration is good and damaging potential is equal to African game and will make a mess out of a human. The .500/.416 has become popular in Europe for use in single-barreled and express rifles, and case lots are made by WR Ammunition Company.

Other Names: .500/.416 Nitro Express 3 1/4”
Nominal Size: 10.6x76mm
Actual Size: 10.57x76.2mm
Case Type: Necked
Weight: 83.63 per case of 1000; Price: $3350 per case

Magazines:

Per round: 0.067 kg			

.502 Thunder Sabre

Notes: The .502 Thunder Sabre round was designed specifically for the Thunder Sabre upper for the AR-10/15, and is essentially a short-action magnum round, with a rebated rim to allow its use with an AR 7.62mm/.308 bolt face. The design purpose was as a rifle for military and police SWAT units, as it’s power allows it to easily shoot through even most concrete and brick walls. It appears to be another round to fall into the same market as the .50 Beowulf, and it of similar format and looks. It, like the .50 Beowulf, is essentially an overgrown pistol round, though due the high charge of propellant it would probably not be pleasant to fire in a revolver. The ballistics out to 200 meters are similar to a hotloaded .45-70, though performance falls off after that.

Reportedly, US Special Operations troops tested the Thunder Sabre carbine; it is not known if they ever combat-tested it or whether they still use it. Several US police departments are also known to have tested it. Most, however, went to civilians, who used it as a sort of “gee-whiz” carbine, with perhaps some ancillary hunting use. In addition to the Thunder Sabre rifle, Robyn Church at the Cloud Mountain Armory made a few examples of a Universal M1 Carbine in .502 Thunder Sabre, something that most shooters think is an insane combination.

There never was a lot of .502 Thunder Sabre ammunition produced, as the rifle itself is rather rare. However, every so often, a small lot of .502 Thunder Sabre ammunition will come up on auction or otherwise be found for sale online or in trade magazines. Reloading brass, primers, bullets and reloading dies also periodically come up for sale. Most ammunition for the few Thunder Sabre rifles that exist is, however, handloaded. The parent round seems to be .50 Action Express (though this is disputed, as it takes a lot of drawing out to produce a .502 Thunder Sabre round from .50 Action Express brass). .50 Beowulf brass is also useable. RL cost of the rifle and ammunition is quite expensive. If you own a Thunder Sabre carbine, you have a carbine chambered for an obsolete cartridge.

Nominal Size: 12.75x45mm
Actual Size: 12.96x44.7mm
Case Type: Straight
Weight: 4.72 kg per box of 100; Price: $189 per box

Magazines:

Per round: 0.047 kg	4-round box: 0.39 kg	9-round box: 0.75 kg	

.505 Gibbs

Notes: The .505 Gibbs was introduced in 1911 for the company’s line of Mauser-type bolt-action rifles. The round has always been rare, as imports of the rifles firing it were never high, and most were custom-built. Bullets and cases for the .505 Gibbs round are still readily available, but only A-Square actually manufactures the complete rounds, and only in small quantities. Like most of these cartridges, the .505 Gibbs was designed specifically for hunting African large game, but is also a more-than adequate manstopper. Original bullets come in regular ball, armor-piercing, and hollowpoint.

Other Names: .505 Rimless
Nominal Size: 12.8x80mm
Actual Size: 12.83x80.01mm
Case Type: Necked

Weight: 11.37 kg per box of 100; Price: $1034 per box

Magazines:

Per round: 0.103 kg			

.510 Phalanx

Notes: This round was the original chambering for the Tromix Sledgehammer rifles (though it was later chambered for more, and more common rounds). The .510 Phalanx was designed to beat the .458 SOCOM in all aspects, and is essentially a monster-sized pistol round in format. It is a big round, capable of tearing large holes in flesh and even in concrete and bricks, and even penetrating light steel. Though Tromix made and sold some complete Sledgehammer rifles in .510 Phalanx, the Sledgehammer was more often bought as an upper to mate with an AR-10 lower. The round is rebated to fit a 7.62mm/.308 bolt face, so the AR-10's bolt can be used. In the end, however, the .510 fell victim to market saturation and many shooters' reluctance to buy a rifle in a new, rare chambering (compared to other rifles) whose cartridge could be discontinued and become obsolete and hard to get. Feed is from modified AR-10 magazines.

Nominal Size: 12.95x51mm

Actual Size: 12.95x51.05mm

Case Type: Straight

Weight: 5.38 kg per box of 100; Price: $215 per box

Magazines:

Per round: 0.054 kg	6-round box: 0.61 kg	12-round box: 1.1 kg	18-round box: 1.59 kg

.577 Nitro Express

Notes: This is basically the earlier blackpowder version of the .577 Nitro Express loaded with Cordite instead of blackpowder. They come in shorter and longer-case versions, but these were eventually dropped in favor of the 3-inch case version, which is the round referred to here. Many say it is superior to the .600 Nitro Express due to somewhat greater penetration (which unfortunately cannot be simulated in game terms). The rifles firing them are also lighter than the corresponding .600-firing weapons. A-Square and Barnes still make bullets for this caliber, and A-Square also makes complete factory loads.

Other Names: .577 Nitro Express 3"

Nominal Size: 14.8x76mm

Actual Size: 14.83x76.2mm

Case Type: Straight

Weight: 11.58 kg per box of 100; Price: $422 per box

Magazines:

Per round: 0.105 kg			

.577 Tyrannosaur

Notes: This large and powerful cartridge was designed by A-Square in 1993 at the request of professional guides in Zimbabwe who escort clients hunting dangerous game. (Note that the clients may not be armed with as powerful of weapons.) The specific designer is the famous ammunition designed COL Arthur Alphin. The round is designed for use in "stopping rifles," as a last-ditch round for stopping dangerous game. The .577 Tyrannosaur rounds are about the size of a short cigar.

Brass is available from A-Square and bullets from A-Square, Barnes, and Cutting Edge. Complete rounds are not available at present, leaving manufacture of the .577 Tyrannosaur to handloaders. Sometimes those handloaders will make small lots for sale (mostly not more than a small box) at a RL price of $50-125 per round.

Note that recoil from this round, like all such heavy-caliber rounds, is practically shoulder-shredding. The Range365.com website says (tongue in cheek) that even an actual T-Rex would hesitate before firing a rifle chambered for this round. The heavy weight of rifles chambered for the .577 Tyrannosaur helps mitigate the recoil in most cases.

Other Names: .577 T-Rex, .577 Alphin

Nominal Size: 14.9x76mm

Actual Size: 14.86x75.95mm

Case Type: Necked

Weight: 13.17 kg per box of 100; Price: $659 per box

Magazine

Per round: 0.132 kg			

.585 AHR

Notes: The .585 AHR appears to be an independent development in large-caliber rifle rounds, and it is certainly a powerhouse. It is more than capable of taking down even elephants, and can penetrate light armor or helicopters. An antipersonnel hit from this round would almost certainly result in death or loss of limb. Like AHR's other rounds, only small lots are manufactured, and considerable handloading activity is present.

Other Names: .585 AHR Magnum, ,585 American Hunting Rifles (Rare)

Nominal Size: 15x73mm

Actual Size: 14,86x73,36mm

Case Type: Necked

Weight: 15.8 kg per box of 100; Price $639 per box

Magazines:

Per round: 0.128 kg			

.600 Nitro Express

Notes: This round was the largest and most powerful of the English "elephant gun" cartridges until 1988. Despite its power, only a very small number of rifles have been chambered for this huge cartridge, which is the size of a small cigar. The .600 Nitro Express was designed specifically for hunting elephants, but is quite adequate for other game – humans, light armor, helicopters, etc.

Nominal Size: 15.24x76mm

Actual Size: 15.75x76.2mm

Case Type: Straight

Weight: 14.85 kg per box of 100; Price: $476 per box

Magazines:

Per round: 0.119 kg			

.600 Overkill

Notes: With a name that is perhaps tongue-in-cheek, the .600 Overkill is a huge magnum round designed specifically to be the largest round that could be fired from the CZ-550 hunting rifle platform. It is based on the .600 Nitro Express case, with a belt added for headspacing and a rebated rim. The .600 Overkill was also designed specifically for elephant hunting, a thought that gives me dismay. The CZ-550 chambered for .600 Overkill is a bit of a handful, with strong kick and a tendency to turn out of the shooters hands due to the twist of the bullet down the barrel. Needless to say, lots of this ammunition produced are small, and many are made by handloading.

Nominal Size: 16x76mm
Actual Size: 15.75x76.2mm
Case Type: Straight
Weight: 14.85 kg per box of 100; Price: $475 per box

Magazines:

Per round: 0.119 kg			

The magazines presented here are based on *light alloy* magazines. For steel magazines, increase weight by 2%; for plastic or synthetic magazines; decrease weight by 8 percent.

For the most part, the shells here have buckshot with 00 shot (the shot causing less damage on the shotgun tables) or 0 shot (the shot causing more damage on the shotgun tables). Some have stats for 000 shot. If, on the shotgun tables, only one type of damage rate is listed, it will be based on 00 shot or possibly even lesser in size. The Buckshot for these tables is based on lead shot. Slugs are simple rifled lead projectiles, essentially large bullets fired through non-rifled bores with rifling grooves in the projectiles themselves. Cases will be "Shotgun" as per *Fire, Fusion and Steel.* The standard case is plastic; for brass cases, increase weight by 0.1% (unless the specific cartridge is listed as being a brass case). For paper/cardboard cases, reduce weight by 0.1%.

Most shotgun shells have a more-or-less standard length. For purposes of these pages:
2-Inch: 50.8mm Long
2.5-Inch: 63.5mm Long
2.75-Inch: 69.85mm Long
3-Inch Magnum: 76.2mm Long
3.5-Inch Magnum: 88.9mm Long

.410-Gauge

Notes: The .410-Gauge shell is designed primarily for small bird hunting, though with slugs it is also a good small game round, and many argue that it is also an ideal home-defense round, as it limits damage to the house and the recoil is manageable for even small women, young teenagers, and even older children. The .410-Gauge round, due to its small caliber, is not limited merely to shotguns; it is often chambered in revolvers, particularly those which are also chambered for .45 Long Colt ammunition. .410-Gauge is about the smallest-caliber round except for a few obsolete shotgun rounds and some special-application handgun-type loadings, and for many shooters that started shooting in their childhood, their first firearm was chambered for .410-Gauge. Many adults also like the .410-Gauge, as shotguns chambered for it are generally light in weight and short in length, easily carried all day. Some competitive shooters also use the .410-Gauge for clay pigeon shooting; the lesser amount of shot thrown by the round makes clay pigeon shooting more challenging. 2.5-inch shells are primarily used in revolvers and used in relatively few shotguns; 2-inch shells are very rare and used only in a very few firearms.

Other Names: .410-Bore, 68-Gauge
Actual Size: 10.41mm
Weight: (2" Shells) 16.25 kg per case of 1000; Price: $130 per case
(2.5" Shells) 20.25 kg per case of 1000; Price: $160 per case
(2.75" Shells) 22.25 kg per case of 1000; Price: $180 per case
(3" Shells) 24.38 kg per case of 1000; Price: $200 per case

Magazines:

Per round (2" Shell): 0.013 kg (2.5" Shell): 0.016 kg (2.75" Shell): 0.018 kg (3" Shell): 0.02 kg	2-round box (2.75" Shells): 0.09 kg (3" Shells): 0.1 kg	5-round box (2.75" Shells): 0.17 kg (3" Shells): 0.19 kg	8-round box (2.75" Shells): 0.26 kg (3" Shells): 0.28 kg
10-round box (2.75" Shells): 0.31 kg (3" Shells): 0.34 kg			

32-Gauge

Notes: The 32-Gauge shotgun shell was designed by American manufacturers originally in the late 1870s; until well into the 1930s, it was still a common shotgun round, but it fell out of favor after that, and today, it is a rather rare chambering. The 32-Gauge round hangs on only because of this small but dedicated following, and because of certain Russian and European manufacturers who use the 32-Gauge shell as a base or manufacture shotguns in this gauge. Because of this, there are also plastic-cased and brass-cased 32-Gauge shells, though historically most 32-Gauge shells have been cardboard-cased. Most 32-Gauge shells have been 2.5-inch shells, though some firearms, especially today, are designed for 2.75-Inch and/or 3-inch shells. 32-Gauge shells are primarily produced in Europe these days, but not in large numbers; Fiocchi in the US also produces small numbers of 32-Gauge 2.5" shells.

Actual Size: 13.36mm
Weight: (2.5" Shells) 2.94 kg per box of 100; Price: $27 per box

(2.75” Shells) 3.23 kg per box of 100; Price: $29 per box
(3” Shells) 3.52 kg per box of 100; Price $32 per box

Magazines:

Per round (2.5” Shell): 0.027 kg (2.75” Shell): 0.029 kg (3” Shell): 0.032 kg			

28-Gauge

Notes: The 28-Gauge shell is an old round, originating as a blackpowder round in the 1870s. The 28-Gauge round is today relatively rare, though several shotgun manufacturers do make shotguns in 28-Gauge, and those numbers seem to be growing. 28-Gauge shotguns are quite useful for hunting both small birds and some larger ones, and is used by some competitive shooters for clay pigeon shooting. Though a good amount of 28-Gauge shotguns are made, the 28-Gauge is limited by the fact that magnum shells are not made, and a .410-Gauge 3” magnum round easily duplicates the 28-Gauge 2.75” round in performance. However, there is enough interest in the 28-Gauge round to keep manufacturers making shotguns and shells in that gauge. Most shotguns in this chambering fire 2.75” shells; 2.5” shells are by comparison quite rare. In addition, slug rounds in 28-Gauge are also a bit on the rare side.

Actual Size: 13.97mm

Weight: (2.5” Shells) 36.5 kg per case of 1000; Price: $290 per case
(2.75” Shells) 40.13 kg per case of 1000; Price: 320 per case

Magazines:

Per round (2.5” Shell): 0.029 kg (2.75” Shell): 0.032 kg			

24-Gauge

Notes: This gauge is largely considered obsolete, though there are some shotguns produced by Italian manufacturers FAIR and Fausti that still chamber this obscure gauge, along with small numbers by some other European shotgun manufacturers. As a result, ammunition is still produced in small lots by Beretta, CBC, and Fiocchi, and in even smaller numbers by some other ammunition manufacturers. The 24-Gauge shotgun reached its heyday in the 1930s when several European manufacturers made shotguns in this gauge as well as some being made in the US by Stevens and by Harrington & Richardson, but today the 24-Gauge enjoys only a small following as sort of an intermediate cartridge between .410-Gauge and 20-Gauge. Firearms chambered for 2.5-inch 24-Gauge shells are relatively rare.

Actual Size: 14.73mm

Weight: (2.5” Shells) 3.58 kg per box of 100; Price: $33 per box
(2.75” Shells) 3.93 kg per box of 100; Price: $36 per box
(3” Shells) 4.29 kg per box of 100; Price: $39 per box

Magazines:

Per round (2.5” Shell): 0.033 kg (2.75” Shell): 0.036 kg (3” Shell): 0.039 kg			

20-Gauge

Notes: One of the most popular shotgun rounds out there, the 20-Gauge is not only a main-line hunting cartridge, it is used in many youth shotguns and competition shotguns. It is also a popular choice for home defense shotguns, and has even been considered here and there for police and military shotguns. The 20-Gauge shotgun is useful against most of the fowl that a 12-Gauge shotgun is used against, and allows for a shotgun that is a lighter, easier to tote package that has less recoil than a 12-Gauge shotgun. At first considered an anemic round when first introduced in the 1870s, the 20-Gauge got a significant boost from its conversion to modern propellant, allowing for more power and heavier shot loads to be fired, as well as making 20-Gauge slugs useful. 20-Gauge magnum shells virtually duplicate 16-Gauge 2.75” shells for performance, and the shotguns that fire 20-Gauge shells are far more numerous than those which fire 16-Gauge shells. 2.5-inch shells are relatively scarce.

Just an aside: The 20-Gauge round once indirectly saved the life of a sergeant I had when I was in the Army. His wife was trying to kill him, and was trying to load 20-gauge shells into 12-gauge bird gun…he was able to get out of the house and call the police.

Actual Size: 15.62mm

Weight: (2.5” Shells) 45.63 kg per case of 1000; Price: $370 per case

(2.75” Shells) 50.25 kg per case of 1000; Price: $400 per case
(3” Shells) 54.75 kg per case of 1000; Price: $440 per case

Magazines:

Per round (2.5” Shell): 0.037 kg (2.75” Shell): 0.04 kg (3” Shell): 0.044 kg	2-round box (2.75” Shells): 0.21 kg (3” Shells): 0.23 kg	5-round box (2.75” Shells): 0.39 kg (3” Shells): 0.43 kg	8-round box (2.75” Shells): 0.58 kg (3” Shells): 0.63 kg
10-round box (2.75” Shells): 0.7 kg (3” Shells): 0.76 kg			

16-Gauge

Notes: To many, it is surprising that the 16-Gauge round is still in existence, since the 20-Gauge 3-inch shell can basically do everything a 16-Gauge 2.75” shell can do, and a 12-Gauge 2.75-inch shell can do as much or more than a 16-Gauge 3-inch shell can do. Nonetheless, the 16-Gauge round has a good-sized following, and lots of shotguns are still made in 16-Gauge. The ammunition is still made in good numbers. Even modern loads are made for the 16-Gauge round, such as steel shot and bismuth shot. Like many modern shotgun rounds, the 16-Gauge round began in 1870s as a blackpowder round, and benefitted greatly from smokeless powder loadings. 2.75-inch shells for the 16-Gauge are the most common; 2.5-inch shells are a bit less common, though 3-inch magnum shells are actually gaining in popularity. The 16-Gauge round, despite its seeming obsolescence, will probably be around for a long time to come.

Actual Size: 16.81mm
Weight: (2.5” Shells) 52.88 kg per case of 1000; Price: $420 per case
(2.75” Shells) 58.13 kg per case of 1000: Price: $470 per case
(3” Shells): 63.38 kg per case of 1000; Price: $510 per case

Magazines:

Per round (2.5” Shell): 0.042 kg (2.75” Shell): 0.047 kg (3” Shell): 0.051 kg			

12-Gauge

Notes: The 12-Gauge round is the current king of shotgun rounds; virtually every shotgun produced at present is either chambered for 12-Gauge rounds or has a chambering in 12-Gauge. Round sizes range from short 2.5-inch shells to huge 3.5-inch Magnum (sometimes called Super Magnum) shells, with many specialist shells of odd sizes or unusual (sometimes, very unusual) loadings being made. The 12-Gauge may in fact be the most popular firearms round ever produced, perhaps exceeded only by the .22 Long Rifle round in popularity. 12-Gauge guns have been produced since shortly after cartridge guns were invented, and were some of the first rounds produced using modern propellants. The popularity is because the 12-Gauge round is so popular – it can be loaded with a large amount of birdshot or heavy 000 buckshot, as well as a wide variety of special loads. It can be subloaded for lower recoil and pressure or hotloaded for more power (especially using brass cases). It can be had with virtually any case material – paper, plastic, or brass or steel. Several types of slug rounds are available, making the 12-Gauge round useful as an all-purpose gun to hunters. Even if you take only the biggest three 12-Gauge round manufacturers, you have 435 different shell sizes and loadings to work with. The military has developed several special loadings and (which will be listed further down the page); the HK CAWS program weapon was based on modified 12-Gauge all-brass shells. The 12-Gauge round is literally used in every corner of the world, and handloading a 12-Gauge round is easy. 12-Gauge guns are used by everyone from military entry teams to civilians wanting a home-defense weapon. The 12-Gauge round will not be going away any time soon.

Actual Size: 18.52mm
Weight: (2.5” Shells) 64.13 kg per case of 1000; Price: $510 per case
(2.75” Shells) 70.5 kg per case of 1000; Price: $560 per case
(3” Shells) 77 kg per case of 1000; Price: $620 per case
(3.5” Shells) 89.75 kg per case of 1000; Price: $720 per case

Magazines:

Per round (2.5” Shell): 0.051 kg (2.75” Shell): 0.056 kg	3-round box (2.75” Shells): 0.37 kg (3” Shells): 0.41 kg	4-round box: (2.75” Shells): 0.46 kg (3” Shells): 0.51 kg	5-round box (2.75” Shells): 0.55 kg (3” Shells): 0.6 kg

(3” Shell): 0.062 kg (3.5” Shell): 0.072 kg			
6-round box (2.75” Shells): 0.64 kg (3” Shells): 0.7 kg	7-round box (2.75” Shells): 0.72 kg (3” Shells): 0.79 kg	8-round box (2.75” Shells): 0.81 kg (3” Shells): 0.88 kg	10-round box (2.75” Shells): 0.98 kg (3” Shells): 1.07 kg
10-round drum or cassette (2.75” Shells): 1.08 kg (3” Shells): 1.18 kg	12-round box (2.75” Shells): 1.15 kg (3” Shells): 1.26 kg	20-round drum (2.75” Shells): 1.98 kg (3” Shells): 2.22 kg	

12-Gauge Aguila Mini-Shell

Notes: The Aguila Mini-Shell was produced especially for the Centurion Ordnance Poseidon MS (MicroShotgun); the shotgun is primarily sold in the US, though the shotgun itself is produced in Turkey and the ammunition by Aquila in Mexico. Currently, only buckshot is produced by Aquila, though they are examining the possibility of producing slug rounds. The Aquila is a very short (44.45mm length) shell which allows for very high-capacity shotguns in weapons of short length, though of course the range and amount of shot thrown are correspondingly low. The Aquila mini-shell is aimed at for the home-defense market, though military and police concerns have examined shotguns firing this round to limit collateral damage. Currently, only a small handful of shotguns are designed for the Aquila Mini-Shell, though some have developed modifications of standard shotguns for the round, with mixed success.

Actual Size: 18.52mm

Weight: 3.95 per box of 100; Price: $72 per box

Magazines:

Per round: 0.036 kg			

10-Gauge

Notes: 10-Gauge is about the largest shotgun shell that is commonly available, though the round and the shotguns that fire them are relatively quite rare. The introduction of 12-Gauge 3-inch and 3.5” Magnum shells have largely worked against the use of the big 10-Gauge shotguns, particularly the 2.75-inch version of the shell, as they are capable of duplicating the 10-Gauge 2.75-inch shell in most respects in a round which has less kick and is cheaper. Time was, however, when the 10-Gauge was a common shell, before the introduction of 12-Gauge magnum shells in the early 1900s; before that, the 10-Gauge was *the* shotgun to have. Perhaps its most famous user was Doc Holliday, who used one at the famous OK Corral shootout in its blackpowder days. Today, however, the 10-Gauge has only a small, if devoted, following, and the shotguns that fire 10-Gauge are rather rare. Most of these shotguns fire magnum loads, as these produce the only shot patterns and volume that cannot be reproduced by the 12-Gauge. 10-Gauge rounds come in some odd shell lengths, however, that fall in between the standard shotgun shell lengths. Most manufacturers of the 10-Gauge round are located in England and the US these days, and they produce only relatively small lots at any one time. In most jurisdictions in the world, 10-Gauge is the largest bore of shotgun that civilians are allowed to own.

Actual Size: 19.69mm

Weight: (2.5” Shell) 5.86 kg per box of 100; Price: $116 per box
(2.75” Shell) 7.02 kg per box of 100; Price: $128 per box
(3” Shell) 7.66 kg per box of 100; Price: $140 per box
(3.5” Shell) 8.93 per box of 100; Price: $162 per box

Magazines:

Per round (2.5” Shell): 0.058 kg (2.75” Shell): 0.064 kg (3” Shell): 0.07 kg (3.5” Shell): 0.081 kg			

23mm Drozd

Notes: Fired only by the Russian KS-23 Drozd shotgun, it is equivalent roughly to a 4-Gauge shotgun in size and whether is a shotgun round or a grenade is debatable, though the KS-23 is primarily used as a special-purpose shotgun. The standard KS-23 fires from a tubular magazine; the KS-23M uses an underbarrel box magazine, which is itself huge. The 23mm Drozd is itself a rather very weapon, and the rounds also rare. Though the 23mm Drozd is used to throw large amounts of shot, some of specialist rounds are available. The Anti-Vehicular round is a large steel-cored round designed to penetrate light armor or things like engine blocks, and

costs double standard prices. CS rounds are also available, at quadruple normal prices.

Other Names: 4-Gauge (though this is incorrect)

Actual Size: 23x75mm

Weight: 10.29 kg per box of 100; Price: $94 per box

Per round: 0.094 kg	5-round box: 0.91 kg		

Special Rounds

Steel and Bismuth Shot

Notes: Environmentalists have, with some legitimacy, objected to the use of hunters' firing of 12-gauge shot against waterfowl, citing lead contamination of wetlands. Hunters have countered, again with some legitimacy, that the use of a substitute, steel shot, makes the buckshot too light, reduces range, and widens the spread too fast. The steel shot *is* much more biodegradable, though it does still contaminate the environment to some extent. Steel shot also tends to be harder on a barrel, as it is harder than lead shot (though not hard enough to increase penetration in *Twilight 2000 v2.2* terms); some sources say that large amounts of steel shot can reduce barrel lifetime by half. The GM will have to wing it here as far as the increased wear of shotgun barrels firing a lot of steel shot.

A compromise of sorts was reached with the use of shot made of bismuth. The problem with bismuth rounds is that they are more expensive than regular or steel shot, and bismuth is still not natural to the environment, though it does biodegrade faster than lead (though not steel). It does not cause the increased barrel wear as steel shot. A strike against them is that they are still not as heavy and don't have the range of lead shot.

To simulate the use of steel shot in Twilight 2000 v2.2 terms, reduce the damage of shot by two points per die, and reduce range by 15%. As stated above, the GM will have to adjudicate increased barrel wear, though this will only affect the gun only after large amounts of steel shot are fired (say, 10 shots per day for a month).

To simulate the effects of bismuth shot, reduce damage of shot by one point per die, and reduce range by 10%.

12-Gauge Specialist Rounds

Notes: Due to its ubiquity, a large amount of special rounds have been devised for use with 12-Gauge shotguns. These rounds are often for use by military and police concerns only, and have a narrow range of applications.

Baton and Rubber Rounds

Baton and Rubber rounds are designed to be minimally-lethal rounds (they are not entirely nonlethal, though the chances of a lethal injury is substantially reduced. When firing a baton or rubber round, damage is resolved the same as for slug rounds, but only 25% of the damage is "permanent" damage, healed as the standard firearms combat damage. The rest is temporary damage that heals at a rate of 1 point per 10 minutes (it equates to bruising and suchlike). Head wounds heal at a rate of one point per 20 minutes, and half the damage is permanent damage. Baton and Rubber rounds have a penetration of Nil, regardless of range. Baton rounds have their range reduced by 20%; rubber rounds are not so affected.

Beanbag Rounds

Beanbag rounds open up into a small beanbag after traveling at least 10 meters from the muzzle of the shotgun; range is reduced by 30% when firing a beanbag round due to extreme drag. Similar rounds for Twilight 2000 v 2.2 purposes include rubber "cross" rounds, which open up, as the same suggests, into a rubber cross. The beanbag round works as the rubber slug above, except that only 10% is permanent damage (20% for a head hit), and knockdown chances are doubled. Beanbag rounds cost 1.5 times the standard cost for 12-Gauge shotgun rounds.

Bolo

This round consists of two balls joined together by a wire. Only two balls are fired, but the combination does damage like a slug round.

Breaching Rounds

Breaching rounds are very short-ranged rounds designed specifically to blow out hinges or locks of doors. They generally consists of a large charge of metal powder which is propelled by a larger-than-normal propellant charge. Such a round is 80% likely to blow out a hinge or lock per 25mm of thickness of an average wooden door; metal doors are much less likely to be penetrated (10% change). A dense wood door is only 50% likely to have its hinges or lock blown off. Used as an antipersonnel round, resolve the damage as a slug round, but short range is 5 meters. Damage at 5 meters is only 3d6, and at 10 meters only 1d6. Beyond that, the round does no damage. Penetration is not only Nil, but any sort of body armor or thick clothing will mean that the round does no damage.

Double Mule

This shot round has only two large balls, but damage of each ball causes 3d6 damage.

Explosive Rounds

These contain a small explosive charge instead of a standard shotgun load. When personnel are hit by an explosive round, the round causes 1.75 times the damage of a slug round (rounded down); penetration is always 2-2-2. The round has a concussion of 1 and a burst of 1; against vehicles; penetration is -2C. Range is the same as for a shot round. Attempting to load a magazine or tube with multiple Explosive rounds will instantly result in a jam when the weapon is fired, though the first round will feed. Explosive rounds cost 6 times the normal cost of 12-Gauge rounds. A variant of the Explosive shell is the Frag shell; this increases collateral damage to C0 B2, though it decreases penetration vs. vehicles to Nil, and penetration vs. personnel to 3-3-3. Explosive shells cost five times the normal cost.

Flamer Rounds

There are a number of different brands and types of rounds that are collectively called here 12-Gauge Flamer rounds. These rounds produce a gout of flame just beyond the muzzle of the weapon (to protect the barrel). Flamer rounds are available in 2.75-inch and 3-inch shells. The range of these rounds is 5 meters. 2.75-inch rounds produce a gout of flame 0.5 meters wide and a short range of 15 meters; this has the effects of a flamethrower burst within that area of effect. The 3-inch shell has the same effects, but the short range is 20 meters. The flame gout is nearly instantaneous, lighting and burning out in less than one second. The Flamer will not cycle in a semiautomatic shotgun, with the exception of cylinder-fed shotguns like the Protecta. (The Pancor Jackhammer cannot chamber these round, due to the cassette feed and automatic fire mode). Attempting to load a magazine or tube with multiple Flamers in a semiautomatic shotgun will instantly result in a jam when the weapon is fired, though the first round will feed. Flamer rounds cost 10 times the cost listed above for 12-Gauge rounds.

Flares

Shotgun flares function essentially like normal flares (see Signaling Device Rules), but the altitude feature is twice the shot range of the shotgun. Virtually any color is available.

Device	Size	Weight	Burn Time	Burst	Altitude	Price
Shotgun Flare	18.52mm	0.1 kg	2	B1/2K	2xRange	$1

Flechette

This does damage as per standard 2d6-type buckshot, but each flechette has a penetration of 1-Nil (if the table indicates no penetration) or 1-1-Nil (if the penetration indicated on the table is 1-Nil). Cost is three times the standard cost. This round includes such rounds as Atlas Ammo's Shredder.

Irritant Gas Rounds

These shells are filled with irritant gas, usually CS. The amount of gas is small and has one-quarter the size of cloud and length of cloud persistence as a CS grenade. Range is 60% of a shot or slug load. Cost is four times that of a standard round.

Less-Than-Lethal Pellets

This type of load can consist of plastic pellets, rubber pellets, or hollow steel or aluminum balls. They cause the same damage as standard buckshot, but only 25% of the damage is "permanent" damage, healed as the standard firearms combat damage. The rest is temporary damage that heals at a rate of 1 point per 10 minutes (it equates to bruising and suchlike). Head wounds heal at a rate of one point per 20 minutes, and half the damage is permanent damage. Penetration is always Nil. Range is reduced by 20% unless the load is rubber pellets; range of rubber pellets is not affected.

Mark 5 Super Buckshot

This round was developed by Winchester in the 1960s for use in the abortive Liberator four-barreled shotgun. The Super Buckshot round puts nine balls of 0 buckshot in a single shell. The shell casing is that of a 3-inch magnum round, but the propellant charge is reduced to accommodate the large balls in the casing. Therefore, damage is 2D6 with a penetration of 1-Nil, but divide range by 1.44. The round, however, requires a shotgun that can chamber and fire 3-inch magnum rounds.

Pit Bull

The Pit Bull consists of a combination of buckshot and a lead slug. This results in a combination of effects – the buckshot does normal 1d6-type damage, and the slug does the same damage as a lead slug, minus 1d6. Range is -25%.

Shotgun Sabots

Shotgun sabots are slug rounds which use a subcaliber penetrator to increase the effectiveness of slug rounds. The result is a smaller round flying at a higher velocity; they are generally still soft lead rounds, though sometimes with a steel core. Sabot rounds are resolved use the standard slug round as a base, but damage is lowered by one point per die, and penetration is increased by one level (1-Nil becomes 1-1-Nil, 2-3-Nil or 2-4-Nil becomes 1-2-Nil, etc.) Range is increased by 20%, and most sabot rounds use rifling for the round itself to spin the round. Cost is double what is listed above. Note that Sabot rounds can make somewhat effective antivehicle rounds.

The magazines presented here are based on *light alloy* magazines. For steel magazines, increase weight by 2%; for plastic or synthetic magazines; decrease weight by 8 percent.

5.66mm MPS Dart

Notes: This is not a rifle cartridge in a conventional sense, but rather a long, dart-like projectile that is designed primarily for underwater use and fired using a modified case based on the 5.45mm Kalashnikov cartridge. The 5.66mm MPS Dart is finless and drag-stabilized underwater; in open air, the dart is highly unstable and has limited range and effectiveness. The firing cartridge itself is about the same size as a rifle cartridge, though the dart is considerably larger than any bullet. The dart is made from a steel alloy designed to be heavier than standard steel. Due to the construction of the 5.66mm MPS Dart, the polymer magazines are strikingly large, including a projecting lower section containing the follower spring.

The 5.4mm MPS Dart is essentially the same as the 5.66mm MPS Dart, but uses a larger propellant charge and a harder grade of steel. Price is twice what is listed below.

Twilight 2000 Notes: The 5.4mm MPS Dart is not available in the Twilight 2000 timeline.

Nominal Size: 5.66x39mm (plus a 120mm dart)

Actual Size: 5.61x39mm (plus a 5.61x120mm dart)

Case Type: Necked

Weight: 3.27 kg per box of 100; Price: $357 per box

Magazines:

Per round: 0.03 kg	26-round box: 1.24 kg		

7.62mm PZAM

Notes: Development of this round goes back to 1965, where it followed on the tail of the prototypical SP-1 cartridge. The jacket is a heavily-modified 7.62mm Nagant cartridge, which has internally been modified to accept a plunger. The plunger is actuated by the propellant charge, which then pushes the bullet itself out of the barrel. The propellant gasses are thus contained almost entirely within the case, and the round is virtually silent except for the click of the plunger extending. The bullet itself is a standard 7.62mm Kalashnikov bullet; this was partially done to confuse the compatriots of victims as to the source of the bullet (as to whether it could be a silenced AK-47 or SKS). The PZAM bullet is used exclusively by the S-4M silent pistol.

Other Names: 7.62mm PZAM Silent, PZAM Silent

Nominal Size: 7.62x63mm

Actual Size: 7.8x63mm

Case Type: Straight

Weight: 1.33 kg per box of 50; $384 per box.

Magazines:

Per round: 0.024 kg	2-round clip: 0.48 kg		

7.62mm SP-3

Notes: Very little about this round is known outside of Russian clandestine services; it may have been in existence as early as the mid-1960s. It was developed for the MSP silenced tip-up pistol, and as such is loaded as a clip of two rounds into the breech of the weapon, after which the weapon is locked shut again. The SP-3 is believed only to have been used operationally in the MSP Groza silenced pistol, the successor to the S-4M. Silenced ammunition might be a better description, as it is the ammunition and not the pistol which is for the most part silent. The SP-3 uses a captive piston system, like the PZAM, where the propellant charge pushes a piston inside the case to propel the bullet. The bang of the propellant gasses are therefore contained almost entirely within the case, and only a very faint sound is heard during firing. There is some controversy as to whether the bullet is a standard 7.62mm Tokarev bullet or not; it is, however, round-nosed. The case origin is also a mystery, and may be custom-designed.

Other Names: SP-3 Silent, 7.62x35mm Russian Silent

Nominal Size: 7.62x35mm

Actual Size: (Estimated) 7.8x35mm

Case Type: Necked

Weight: 0.91 kg per box of 50; Price: $134 per box

Per round: 0.017 kg	2-round clip: 0.34 kg		

7.62mm SP-4

Notes: The SP-4 was developed from the SP-3 and PZAM rounds, as was designed to be used in an autoloading pistol. The principle behind the round is the same, however, is very similar, using a captive plunger system. It is, however, supposedly just a little louder, though this is probably due to reciprocation of the slide rather than the actual noise of the fired round. The ammunition, based on a radically cut-down 7.62mm Kalashnikov round, uses a propellant-actuated plunger inside the case, trapping the sound of the propellant inside the case; in addition, the round itself is subsonic, as the PZAM and SP-3. The SP-4 is also used in the NRS Scouting

Knife/Pistol.

Other Names: SP-4 Silent, 7.62x37mm Russian Silent
Nominal Size: 7.62x37mm
Actual Size: (Estimated) 7.9x37mm
Case Type: Necked
Weight: 1 kg per box of 50; Price: $144 per box

Per round: 0.018 kg	6-round box: 0.2 kg		

Barak-1: Weight 88 kg; Price: 15,700 (R/-)

Blowpipe: Weight: 11 kg; Price: $425 (R/-)

Chaparral: Weight: 91 kg; Price: $15,000 (S/R)

Crotale: Weight: 84 kg; Price: $14,000 (R/-)

FIM-43 Redeye: Weight: 8 kg; Price: $425 (R/-)

FIM-92 Stinger: Weight: 10 kg; Price: $450 (R/-)

FIM-99 Scorpion: Weight: 13 kg; Price: $595 (-/-)

HN-5: Weight: 9 kg; Price: $250 (-/R)

Javelin: Weight: 15 kg; Price: $450 (R/-)

Matra Mistral: Weight: 17 kg; Price: $2500 (R/-)

MBB-7 Venusfliegenfalle: Weight: 11 kg; Price: $595 (-/-)

QW-1: Weight: 11.5 kg; Price: $520 (-/R)

QW-2: Weight: 11.32 kg; Price: $675 (-/-)

Rapier: Weight: 42.6 kg; Price: $12,000 (R/-)

RBS-70: Weight: 15 kg; Price: $2500 (R/-)

Roland: Weight: 80 kg; Price $13,500 (R/-)

SA-4 Ganef: Weight: 2.5 tons; Price: $313,000 (-/R)

SA-6 Gainful: Weight: 599 kg; Price: $75,000 (-/R)

SA-7 Grail: Weight: 9 kg; Price: $250 (-/R)

SA-8 Gecko: Weight: 130 kg; Price: $13,000 (-/R)

SA-9 Gaskin: Weight: 32 kg; Price: $3200 (-/R)

SA-13 Gopher: Weight: 42 kg; Price: $4200 (-/R)

SA-15: Weight: 167 kg; Price: $16,700 (-/R)

SA-16: Weight: 10.5 kg; Price: $450 (-/R)

SA-18: Weight: 10.6 kg; Price: $575 (-/R)

SA-19: Weight: 60 kg; Price: $6000 (-/R)

SA-27 Grappler: Weight: 10.5 kg; Price: $595 (-/-)

SAHV-3: Weight: 120 kg; Price: $17,000 (R/-)

Sakr Eye: Weight: 9.9 kg; Price: $500 (R/-)

Starburst: Weight: 15.2 kg; Price: $550 (R/-)

Starstreak: Weight: 12 kg; Price: $595 (-/-)