7.92×57mm Mauser

7.92×57mm Mauser	
 From left to right 9.3×62 mm, .30-06 Springfield, **7.92×57mm Mauser**, 6.5×55mm and .308 Winchester cartridges	
Type	Rifle
Place of origin	German Empire
Service history	
In service	1905–present
Used by	Germany, United Kingdom, Spain, Czechoslovakia, Poland, China, Dominican Republic, Yugoslavia, Ottoman Empire, Turkey, Iran, Egypt, and many other countries
Wars	World War I, World War II and others
Production history	
Designer	German Rifle Testing Commission
Designed	1903/1905
Variants	8×57mm IRS (rimmed)
Specifications	
Parent case	M/88
Case type	Rimless, bottleneck
Bullet diameter	8.08 mm / .318 (I and IR) and 8.20 / .323" (IS and IRS)
Neck diameter	9.08 mm (0.357 in)
Shoulder diameter	10.95 mm (0.431 in)
Base diameter	11.94 mm (0.470 in)
Rim diameter	11.95 mm (0.470 in)
Rim thickness	1.30 mm (0.051 in)
Case length	57.00 mm (2.244 in)
Overall length	82.00 mm (3.228 in)
Case capacity	4.09 cm^3 (63.1 gr H_2O)
Rifling twist	240 mm (1 in 9.45 in)
Primer type	Large rifle

Maximum pressure	390 MPa (57,000 psi)		
Ballistic performance			
Bullet weight/type	**Velocity**	**Energy**	
11.7 g (181 gr) RWS DK	820 m/s (2,700 ft/s)	3,934 J (2,902 ft·lbf)	
12.1 g (187 gr) RWS HMK	820 m/s (2,700 ft/s)	4,068 J (3,000 ft·lbf)	
12.7 g (196 gr) RWS TMR	800 m/s (2,600 ft/s)	4,064 J (2,997 ft·lbf)	
12.8 g (198 gr) RWS ID Classic	800 m/s (2,600 ft/s)	4,096 J (3,021 ft·lbf)	
Test barrel length: 600 mm (23.62 in) *Source(s): RWS / RUAG Ammotech* [1]			

The **7.92×57mm Mauser** (designated as the **8mm Mauser** or **8×57mm** by the SAAMI [2] and **8 × 57 IS** by the C.I.P.[3]) is a rimless bottlenecked rifle cartridge. The 7.92×57mm Mauser cartridge was adopted by the German Empire in 1905, and was the German service cartridge in both World Wars. In its day, the 7.92×57mm Mauser cartridge was one of the world's most popular military cartridges. In the 21st century it is still a popular sport and hunting cartridge that is factory produced in Europe and the United States.

Development

1888 pattern M/88 (left) alongside the 1905 pattern 7.92×57mm Mauser *S Patrone*.

The parent cartridge on which the 7.92×57mm Mauser was based was adopted by Germany in 1888 as the ***Patrone 88*** (cartridge 88) or **M/88** (along with the Gewehr 1888 service rifle. The M/88 cartridge was loaded with a relatively heavy 14.6 grams (225 gr) round-nosed ball cartridge with a diameter of 8.08 mm (0.318 in) and was designed by the German *Gewehr-Prüfungskommission* (G.P.K.) (Rifle Testing Commission).[4]

German government driven efforts to improve the performance of the military M/88 ammunition and the service arms in which the M/88 was used resulted in the design by the *Gewehr-Prüfungskommission* and adaptation in 1905 of the dimensionally redesigned 7.92×57mm Mauser chambering. Besides the chambering, the bore (designated as "S-bore") was also dimensionally redesigned. The 1905 pattern 7.92×57mm Mauser *S Patrone* (S ball cartridge) was loaded with a lighter 9.9 grams (153 gr), pointed *Spitzgeschoß* (spitzer bullet) of 8.2 mm (0.323 in) diameter and more powerful double-base smokeless powder. With the improved ballistic coefficient of the new spitzer bullet, the 1905 pattern cartridge had an improved maximum effective range and a flatter trajectory, and was therefore less critical of range estimation compared to the M/88 cartridge.[5]

The rimless cartridge cases have been used as parent case for several other necked down and necked up cartridges and a rimmed variant.

Military use

Due to the cartridge's high performance and versatility it was adopted by the armed forces of various governments, including Spain, Poland, Czechoslovakia, Iran, Israel, Turkey, China, Egypt, former German African colonies, and the early Bundeswehr of West Germany.

During World War II it was one of the few cartridges used by both the Axis and Allied powers, a distinction it shared with the 9×19mm Parabellum pistol round. Apart from being the standard rifle cartridge of the German and Polish armed forces, it was also used by the armed forces of Great Britain in the Besa machine gun, which was mounted in some of their tanks and other armoured vehicles. Later, when Egypt decided to manufacture the Hakim rifle, a licensed copy of the Swedish Ag m/42, they redesigned the breech to accept the Mauser cartridge rather than use the original Ag m/42 cartridge. Its military use continues today (2012) in the former Yugoslavia in the Zastava M76 sniper rifle and the license-built copy of the MG 42, the M53 *Šarac* machine gun.[6]

Rifles formerly manufactured for the Wehrmacht and captured by the Allies were acquired by Israel and in 1948 played a critical role in the Israeli War for Independence. Israel, at the time, did not have a domestic arms industry and could not manufacture its own battle rifles, but it could produce replacement parts and refurbish existing weapons. Israel only used its Mauser rifles in their original configuration for a short period, however. When NATO countries created a standard rifle cartridge, the 7.62x51mm NATO, Israel replaced all of the 7.92×57mm Mauser barrels on its Mauser rifles with barrels chambered for the new cartridge.

Civil use

7.92×57mm Mauser (above) and the rimmed 8×57mm IRS cartridges loaded with Brenneke TIG hunting bullets

The 7.92×57mm Mauser is a common chambering offering in rifles marketed for European sportsmen, alongside broadly similar cartridges such as the 5.6×57mm, 6.5×55mm, 6.5×57mm, and the 6.5×68mm and 8×68mm S magnum hunting cartridges. Major European manufacturers like Zastava Arms, Blaser, Česká Zbrojovka firearms, Heym, Mauser Jagdwaffen GmbH and Steyr Mannlicher produce factory new 7.92×57mm Mauser hunting rifles and European ammunition manufacturers like Blaser, RUAG Ammotec/RWS, Prvi Partizan, Sako and Sellier & Bellot produce factory new ammunition.[4] In 2004 Remington Arms offered a limited-edition Model 700 Classic bolt action hunting rifle chambered for the 7.92×57mm Mauser .[7] The 7.92×57mm Mauser cartridge's performance is comparable to the American .30-06 Springfield cartridge and makes it suited and in Germany allowed for the hunting all large European game such as deer, chamois, mouflon, wild Boar and bears.

However, the 7.92×57mm Mauser cannot be used in countries which ban civil use of former or current military rifle cartridges, like France.

The rimmed variant of the 7.92×57mm Mauser, the **8×57mm IRS**, was developed later for break-barrel rifles and combination guns.[8] The 8×57mm IRS is commercially offered as a chambering option in European break-action rifles.[1][8]

Cartridge naming

The naming of this cartridge is cultural and epoch dependent and hence not uniform around the world.

The 7.92×57mm Mauser cartridge is also known by the following designations:

- 7.9, 7.9mm[9]
- 7.9 Mauser, 7.9mm Mauser
- 7.92, 7.92mm
- 7.92 Mauser, 7.92mm Mauser
- Cartridge SA, 7.92
- 7.92×57, 7.92×57mm
- 7.92×57 Mauser, 7.92×57mm Mauser
- 8mm Mauser
- 8×57, 8×57mm
- 8×57 Mauser, 8×57mm Mauser
- 8 × 57 IS, 8 × 57 JS

This list is not conclusive and other nomenclature or designation variations might be encountered.

The 7.92 naming convention is often used by English speaking sources for the military issued 7.92×57mm Mauser and 7.92×33mm Kurz cartridges. Remarkably, both the 7.92 and 7,9 used in these and alike designations do not exactly comply to the actual C.I.P. or SAAMI cartridge, chamber and bore dimensions. All other non-military issued rimless and rimmed rifle cartridges originating from Germany having approximately 8 mm bullet diameter are connected to 8 mm namings.[3]

The widespread use in German military Gewehr 98 and Karabiner 98k service rifles designed and manufactured by Mauser caused the "Mauser" tag, though the Mauser company had nothing to do with the development of this cartridge.[10]

The letter "J" often mentioned by English speaking sources is actually an "I" for *Infanterie* (German for "infantry"). A stamped "I" at the cartridge bottom in writing styles used in the past in Germany could be easily mistaken for a "J". Even in the 21st century the "I" is often substituted by a "J" in English speaking communities and German ammunition manufacturers often write "JS" instead of "IS" to avoid confusing customers. The letter "S" stands for *Spitzgeschoß* ("pointed bullet"), and the English designation "spitzer" for that style of bullet is derived from this German term.

Current European civil C.I.P. designation

The mainly European arms standards body *Commission Internationale Permanente pour l'Epreuve des Armes à Feu Portatives* (Permanent International Commission for portable firearms testing) (C.I.P.)—an organisation for standards in ammunition for civilian use—currently (2012) designates the 7.92×57mm Mauser as the **8 × 57 IS**. This designation has the power of law for civil use in C.I.P. member states like the United Kingdom.[3]

German made unprimed cases with their packaging box displaying the C.I.P. 8 × 57 IS cartridge designation.

*Warning: the **8 × 57 IS** and **8 × 57 I** (other non-military issued rifle cartridge developed by civilians after the 8 × 57 IS) are not the same cartridge and are not interchangeable. To avoid catastrophic firearm failures that could endanger users or bystanders, it is important to distinguish clearly between these two differing chamberings and bullet diameters, and only fire them in appropriately chambered/barrelled rifles.*

Current U.S. civil SAAMI designations

The United States standardizing body for sporting cartridges Sporting Arms and Ammunition Manufacturers' Institute (SAAMI) currently (2012) designates the 7.92×57mm Mauser cartridge as the **8mm Mauser**, also known as **8×57mm**.[2]

Since the SAAMI has no authority to issue nomenclature rulings, the nomenclature used for this cartridge can vary in the United States.

German stripper clip with five 7.92×57mm IS cartridges for the Gewehr 98 and Karabiner 98k German rifles.

Historic military designations

The German military used 7,9mm as designation or omitted any diameter reference and only printed the exact type of loading on ammunition boxes during World War II.

In Sweden the cartridge was designated "8mm patron m/39"[11]

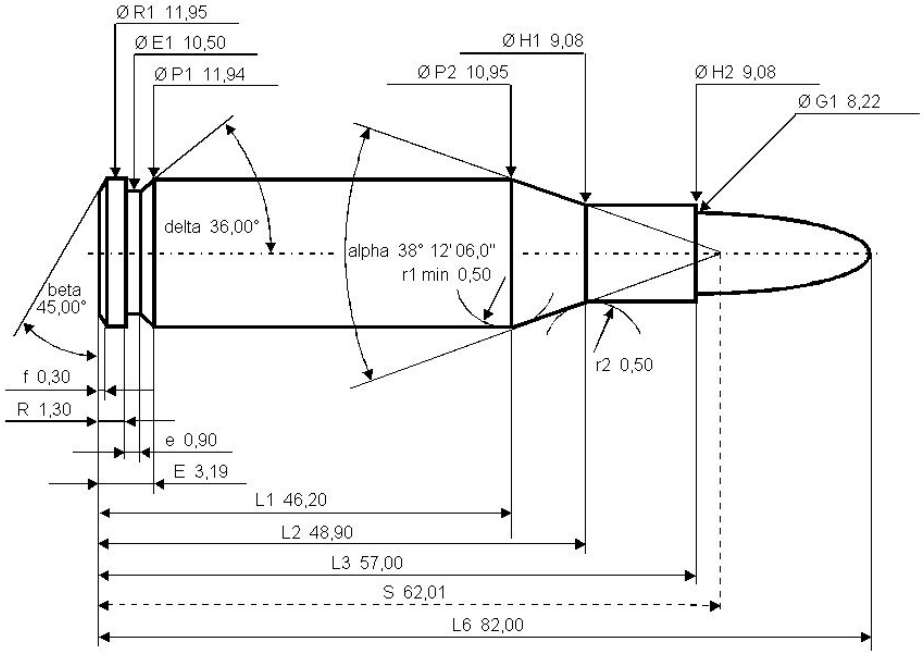
The Polish military used 7,9mm or 7,92mm designations.[*citation needed*]

The British military used Besa machine gun chambered for the 7.92×57mm Mauser in armoured vehicles during World War II and the British referred to this ammunition as Cartridge SA, 7.92.[]

United States intelligence documents from World War II refer to the cartridge as 7.92 or 7.92 mm or 7.92-mm.[12][13]

Cartridge drawings and dimensions

The 7.92×57mm Mauser cartridge has a cartridge case capacity of 4.09 ml (63 grains) H_2O. The exterior shape of the case was designed to promote reliable case feeding and extraction in bolt action rifles and machine guns alike, under extreme conditions.



7.92×57mm Mauser maximum C.I.P. cartridge dimensions. All sizes in millimeters.

Americans would define the shoulder angle at alpha/2 ≈ 19.1 degrees. The common rifling twist rate for this cartridge is 240 mm (1 in 9.45 in), 4 grooves, Ø of the lands = 7.89 mm, Ø grooves = 8.20 mm, land width = 4.40 mm and the primer type is large rifle.

According to the official C.I.P. guidelines the 7.92×57mm Mauser case can handle up to 390 MPa (56,564 psi) piezo pressure. In C.I.P. regulated countries every rifle cartridge combination has to be proofed at 125% of this maximum C.I.P. pressure to certify for sale to consumers.[3]

The SAAMI (voluntary) pressure limit for the 7.92×57mm Mauser cartridge is 241.317 MPa (35,000 psi) piezo pressure or 37,500 CUP.[14] This is considerably lower than the C.I.P. pressure limit and is done for liability reasons, in case a 7.92×57mm Mauser cartridge is fired in an "I-bore" rifle that has a narrower throat and barrel diameter. Most European ammunition manufacturers generally only load to a lower pressure limit for I-bore cartridges; and the US based manufacturer Hornady followed their lead in their (now discontinued) EuroSpec brand 8×57 JS load.

German military ammunition

"There were many German military versions of the cartridge, and Germany never stopped its development of different variations until the end" of World War II. "The bullet lengths varied a great deal through the different types, but all were loaded to an overall length" of 80.5 mm (3.17 in). The Germans had started using steel cases in World War I, "and by the end of 1943, most German ammunition had that type of case."[] The weights and case capacities of the World War II military cartridge cases varied somewhat. The German military ammunition manufacturer Polte produced brass cartridge cases weighing 10.32 g (159 gr) with 4.03 ml (62 gr) H_2O case capacity and steel cartridge cases weighing 10.90 g (168 gr) with 3.95 ml (61 gr) H_2O case capacity.[15]

German military standard ball evolution

Name	Year	Caliber	Bullet weight	Length	Rim	Base	Shoulder	Neck	OAL	Muzzle velocity	Muzzle energy
M/88	1888	8.07 mm (0.318 in)	14.6 g (225.3 gr)	57 mm (2.2 in)	11.95 mm (0.470 in)	11.94 mm (0.470 in)	10.95 mm (0.431 in)	8.99 mm (0.354 in)	80.5 mm (3.17 in)	639 m/s (2,100 ft/s)	2,983 joules (2,200 ft·lbf)
7.92×57mm Mauser S Patrone	1905	8.2 mm (0.32 in)	9.9 g (152.8 gr)	57 mm (2.2 in)	11.95 mm (0.470 in)	11.94 mm (0.470 in)	10.95 mm (0.431 in)	9.08 mm (0.357 in)	80.5 mm (3.17 in)	878 m/s (2,880 ft/s)	3,857 joules (2,845 ft·lbf)
7.92×57mm Mauser s.S. Patrone	1934	8.2 mm (0.32 in)	12.8 g (197.5 gr)	57 mm (2.2 in)	11.95 mm (0.470 in)	11.94 mm (0.470 in)	10.95 mm (0.431 in)	9.08 mm (0.357 in)	80.5 mm (3.17 in)	760 m/s (2,500 ft/s)	3,697 joules (2,727 ft·lbf)
The data for the M/88 and the 7.92×57mm Mauser S Patrone of 1905 is for Gewehr 98 rifles with 740 mm (29 in) barrel length. The data for the 7.92×57mm Mauser s.S. Patrone of 1934 is for Karabiner 98k rifles with 600 mm (24 in) barrel length.											

German cartridge variants during World War II

The German standard s.S. (*schweres Spitzgeschoß*—"heavy pointed bullet") ball bullet was 35.3 mm (1.39 in) long, boat-tailed, and very well made.[] It was lead filled, had a gilding-metal-plated jacket, and weighed 12.8 grams (197.53 gr). The s.S. ball boat tail projectile was designed for long range use and offered the best aerodynamic efficiency and external ballistic performance of any standard rifle bullet used during World War II, with a G1 ballistic coefficient between 0.593 and 0.557 (ballistic coefficients are somewhat debatable). When fired at the typical muzzle velocity of 760 m/s (2,493 ft/s) out of a 600 mm (23.6 in) barrel the s.S. bullet retained supersonic velocity up to and past 1,000 m (1,094 yd) (V_{1000} ≈ Mach 1.07) under International Standard Atmosphere conditions at sea level (air density ρ = 1.225 kg/m^3). It had a maximum range of approximately 4,700 m (5,140 yd)[16] Even by contemporary (2012) standards 1000$^+$ m (1,094$^+$ yards) effective supersonic range is quite remarkable for a standard military rifle round. For recognition the circular groove between cap and brass was green, and it had a yellow colored bullet.

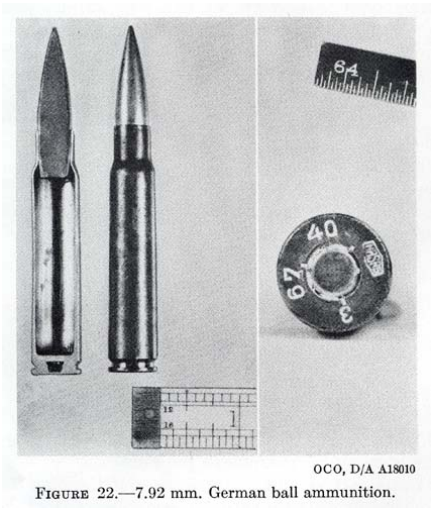


FIGURE 22.—7.92 mm. German ball ammunition.

German 7.92 mm s.S. 12.8 g (198 gr) Full Metal Jacket Boat-Tail round.

During World War II German snipers were issued with purpose manufactured sniping ammunition, known as the 'effect-firing' s.S. round.[17] The 'effect-firing' s.S. round featured an extra carefully measured propellant charge and seated a sS full metal jacketed boat tail projectile of match grade build quality, lacking usual features such as a seating ring or cannelure to further improve the already high G1 ballistic coefficient to approximately 0.595 (G1) or 0.300 (G7).[18] The 'effect-firing' s.S. projectile had a form factor (G7 *i*) of 0.869, which indicates good aerodynamic efficiency and external ballistic performance for the bullet diameter.[19][20]

Steel cased German s.S. ball ammunition produced in 1941.

Special ammunition included:[15][21][22]

- *SmK L'spur - Leuchtspur* (SmK tracer)—red circular groove, black bullet point—German tracer bullets "were the best put out by any country — streamlined and with excellent ballistics".[]
- *SmK-Geschoß - Spitzgeschoß mit Kern* ("Spitzer with Core")—steel cored projectile for use against targets behind thick covers, tanks, or airplanes. Red circular cap groove, yellow bullet. There was also a version *SmK(H)-Geschoß - Spitzgeschoß mit Hartkern* ("Spitzer with Hardcore") which had a tungsten carbide instead of a steel core.

Spitzgeschoß mit Kern, yellow bullet, red circular cap groove

  German *Spitzgeschoss mit Kern* armor-piercing bullets were also very good, being very stable and accurate at long ranges.[] The most common type of armor-piercing round had a hardened-steel core with plated-steel jacket and weighed 11.5 grams (177 gr). Other types appeared which used tungsten carbide and combinations for cores. Sintered iron and mild steel cores also came into use in ball ammunition.

- *PmK-Geschoß* - (*Phosphor mit Stahlkern*) ("phosphorus with steel core") German *Luftwaffe* (Air force) 7.9 mm high velocity machine gun ammunition loaded with the 10.15 grams (156.6 gr) PmK (*Phosphor mit*

Stahlkern—"phosphorus with steel core") ball bullets, featuring a higher muzzle velocity than standard ammunition due to a more powerful smokeless powder charge. These rounds were designated as V-patronen, with 'V' being short for improved (German: *verbessert*). This cartridge can be recognised by the black circular cap groove, yellow bullet.

- *B-Geschoß - (Beobachtung*) ("observation") — The German *Luftwaffe* 10.85 grams (167.4 gr) B (*Beobachtung*—"observation") HE incendiary ball bullets contained phosphorus and "had a pellet in it which exploded on contact with any target, however frail".[] The B ball bullet was like any other high-explosive or incendiary bullet, illegal for anti-personnel use according to the Hague Conventions. It featured a higher muzzle velocity than standard ammunition due to a more powerful smokeless powder charge. These rounds were designated as V-patronen, with 'V' being short for improved (German: *verbessert*). "The Germans maintained that it was used mainly for observation and range-finding, but observers report having seen them in rifle clips and machine gun belts".[] The regular German infantry units were not allowed to use this round; however German snipers sometimes used this high velocity round to gain an extra 100 m (110 yards) effective range and cause horrendous wounds. The standard issue Karabiner 98k rifles handled these higher pressure cartridges without issues.[23] This cartridge can be recognised by the black circular cap groove, yellow bullet.
- *SPr-Geschoß - S-Phosphor* (S incendiary)—black circular groove, clear or black bullet
- *Platzpatrone* (blank cartridge)—two cannelures in the brass, red wood- or cardboard-bullet, cardboard plug (*Fließpappe-Pfropfen*) between bullet and propellant powder. Safe distance given at 25m.
- *Exerzierpatrone* ("drill cartridge")—two variants:
  - *S-Punkt* ("S-dot") with vertical grooves in the brass for aiming exercises.
  - *Werkzeug* ("tool") with the same weight as a sS ball cartridge for examining the functioning of firearms action. A horizontal ring of small holes above the extractor grooves differentiated the *Werkzeug* round from the sS ball cartridge.

British military ammunition

British cartridges included "Ball", "Armour-Piercing", "Tracer", and "Incendiary". Blanks and a Drill round were also available for instruction purposes. The Drill round was an aluminium bullet fixed in a chromium-plated case which had three deep lengthwise recesses painted red to identify it. Ammunition was supplied in belted form with 225 rounds per belt.[]

Designation	Marks	Annulus colour	Notes
Cartridge, SA, Ball, 7.92mm	Mark I.Z, Mark II.Z	Dark purple if present	Mark II.Z bullet has "flatter" nose and longer parallel portion to engage with rifling
Cartridge, SA, Armour-piercing, 7.92mm	Mark I.Z, Mark II.Z	Green	Hard steel core, lead-antimony sleeve, steel envelope
Cartridge, SA, Tracer, 7.92mm	Mark I.Z, Mark II.Z	Red	Red tracer composition in non-streamlined bullet. Effective for 900 yards.
Cartridge, SA, Incendiary, 7.92mm	Mark I	Blue	

The Ball case was filled with a charge of around 45 grains (3 g) of nitro-cellulose.[]

The British cartridge was used in only one weapon—the Besa machine gun. This was a Czech design adopted shortly before the war as a move towards rimless ammunition across the armed service. However the move was disrupted by the lead up to war. The BESA was only fitted to tanks and armoured cars of British design (the original Czech design was also produced for German use following the occupation of Czechoslovakia) and captured German ammunition was used when available.

Polish military ammunition

The cartridges manufactured in Poland during the interwar period were mainly copies or modifications of the corresponding original German cartridge designs. The standard rifle cartridge was the S—a copy of the 1905 pattern German *S Patrone* loaded with the 9.9 g (152.8 gr) S bullet. For machine guns a cartridge variant loaded with the heavier 12.8 g (197.5 gr) SC bullet—a copy of the German 1934 pattern s.S. cartridge—was used. The armor-piercing variant loaded with the P bullet was a copy of the German SmK cartridge. The armor-piercing with tracer PS and incendiary Z cartridges were Polish modifications of the original German counterpart designs. The Polish designed a long-range machine gun cartridge loaded with the D bullet, which offered a maximum plunging fire range of 5,200 m (5,687 yd) to 5,500 m (6,015 yd).[24]

Yugoslav military ammunition

After World War II the Socialist Federal Republic of Yugoslavia used the 7.92×57mm Mauser as military service round. The Yugoslav National Army (JNA) designated their 7.92×57mm Mauser ammunition as 7,9 mm. At the end of the 1940s the Yugoslav National Army adopted a 7,9 mm Cartridge, Ball M49 variant, designated as **M49**, as infantry ammunition.[25] As extra accurate ammunition for sniper and designated marksman use the Yugoslav National Army adopted a 7,9 mm Cartridge, Sniper, with Universal ball M75, designated as **M75**.[26] Besides ball ammunition the Yugoslav National Army also adopted a tracer round 7,9 mm Cartridge, Ball with tracer M70, designated as **M70**. The M70 tracer round burns out to 900 m (980 yd).[27] For training and ceremonial use a 7,9 mm Cartridge, Blank was adopted.[28] After the breakup of Yugoslavia this ammunition was extensively used in the 1990s during the Yugoslav wars.

The 7.92×57mm Mauser as parent case

This was the parent case for many other later cartridges, such as:

- 5.6×57mm
- 6×57mm Triebel (wildcat)
- 6.5×57mm
- 9×57mm Mauser
- 9.3×57mm see 9×57mm Mauser article
- 10×57mm
- 10.5×57mm

8×57 IRS and 8×57 IS (a.k.a. 7.92×57mm Mauser) sporting rounds. The rimless cartridge on the right is used in repeating and self-loading rifles, the other is for breech-loading only (and therefore rimmed)

Notes

Footnotes

[1] RWS Rifle Cartridge Brochure showing 8×57mm IR, 8×57mm IS and 8×57mm IRS cartridge offerings at page 9 (http://www.ruag.com/de/Ammotec/Hunting_Sports/RWS/RWS_Rifle_Cartridge_Broschure.pdf)
[2] SAAMI 8mm MAUSER (7.92×57) cartridge and chamber drawings (http://www.saami.org/PubResources/CC_Drawings/Rifle/7.92mm Mauser.pdf)
[3] CIP decisions, texts and tables 2007 CD-ROM
[4] 8×57mm IS cartridge portrait - Totgesagte leben länger, Wild und Hund 11/2006 (http://www.wildundhund.de/r30/vc_content/bilder/firma438/Archiv_2006/052_057_8x57_1106.pdf)
[5] The 8 mm (7,92×57) Mauser Cartridge (http://omegacrossroads.com/GunCabinet/8X57/8mmMauser.htm)
[6] Machine Gun 42 (http://www.tactical-life.com/online/tactical-weapons/machine-gun-42/)
[7] Remington's 8×57 Classic (http://www.rifleshootermag.com/featured_rifles/classic_062804/)
[8] Table II (http://www.intermin.fi/intermin/images.nsf/files/B0E765375DA00143C2256FBE0032DD2A/$file/TABIIcal.pdf) pages 31-32.
[9] German 7,9mm Military Ammunition 1888-1945 by Daniel W. Kent (http://www.cruffler.com/Features/JAN-02/bookreview-January02.html)
[10] (http://omegacrossroads.com/GunCabinet/8X57/8mmMauser.htm)
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[12] Military Intelligence Service, Special Series No. 14, May 25, 1943 (http://www.lonesentry.com/manuals/german-infantry-weapons/rifle-ammunition.html) Section V: AMMUNITION 27. RIFLE AND MACHINE-GUN AMMUNITION (7.92-MM)
[13] Catalog of Enemy Ordnance (http://www.lonesentry.com/ordnance/tag/7-92mm) Originally Published by U.S. Office of Chief of Ordnance, 1945
[14] ANSI/SAAMI Centerfire Rifle | Z.299.4 1992 - Pages 19 and 24 of 240 (http://www.saami.org/specifications_and_information/publications/download/206.pdf)
[15] 7.9mm Mauser Polte factory drawings of various German military cartridge variants, projectiles and cartridge case (http://home.scarlet.be/p.colmant/polte.htm)
[16] The 8mm (7,92X57) Mauser Cartridge, Ballistics of the F.N. Rifle, Cal. 7,9 m/m Streamlined Pointed Bullet with Tapered Base (197.5 gr.) (http://omegacrossroads.com/GunCabinet/8X57/8mmMauser.htm)
[17] Peter R. Senich: German Sniper 1914-45, Page 91
[18] 7.9mm Mauser drawing of s.S. proofing projectile without cannelure (http://home.scarlet.be/p.colmant/polte.htg/p41.jpg)
[19] The Case for a General-Purpose Rifle and Machine Gun Cartridge (GPC) by Anthony G Williams (http://www.quarry.nildram.co.uk/The Next Generation.htm)
[20] Form Factors: A Useful Analysis Tool by Bryan Litz, Chief Ballistician Berger Bullets (http://www.bergerbullets.com/form-factors-a-useful-analysis-tool/)
[21] W.Reibert, *Der Dienst-Unterricht im Heere, Ausgabe für den Schützen der Schützenkompanie*, edition 1940, pp. 169f.
[22] 7.9mm Mauser color codes drawings of various German military cartridge variantse (http://home.scarlet.be/p.colmant/792color.htm)
[24] Dąbrowski, Jarosław. *Amunicja małokalibrowa kampanii wrześniowej* (Small-calibre ammunition of the September campaign) in: "Strzał" 10/2010, pp. 18-24 (in Polish)
[25] 7.9mm Cartridge, Ball M49 (http://www.marstar.ca/html/reflibrary/Yugoammo/79mmballm49.html)
[26] 7.9mm Cartridge, Sniper, with Universal ball M75 (http://www.marstar.ca/html/reflibrary/Yugoammo/79mmsniperm75.html)
[27] 7.9mm Cartridge, Ball with tracer M70 (http://www.marstar.ca/html/reflibrary/Yugoammo/79mmballtracerm70.html)
[28] 7.9mm Cartridge, Blank (http://www.marstar.ca/html/reflibrary/YugoslavAmmo.html)

Citations

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External links

- The german Mauser K98k Info site (http://www.k98k.info/)
- The Mauser Shooting Association (http://www.mausershooters.org/)
- Munition 7,9×57 IS / 7,9×57 (http://www.waffeninfo.net/mun_8x57.php)

- Various images of 7,92×57mm Mauser cartridges (http://www.conjay.com/Ammunition for Armor Testing WW2 7.9mm Mauser.htm)
- Technical drawings of German 8×57 IS bullet types (http://www.k98k.info/index.php?area=1&p=gallery&action=showimages&galid=4)
- 7,92 Mauser WWII (http://www.worldwar.it/sito/munizioni/tedesche/792-x-57-mauser) (Italian)
- 7,92×57 on GunsTribune (http://gunstribune.com/cartridges/792x57)
- RIFLE AND MACHINE-GUN AMMUNITION (7.92mm) US Military Intelligence Service, Special Series No. 14, May 25, 1943 (http://www.lonesentry.com/manuals/german-infantry-weapons/rifle-ammunition.html)
- The 8mm (7,92×57) Mauser Cartridge (http://omegacrossroads.com/GunCabinet/8X57/8mmMauser.htm)
- British produced 7.92mm BESA ammunition (http://www.ammunitionpages.com/download/366/British 7.92mm BESA.pdf)

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