

MILESTONES

Origins of the assault rifle

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THE MODERN ASSAULT RIFLE IS UBIQUITOUS, USED BY THE INFANTRY OF NATION STATE MILITARY FORCES, insurgents, militias and often police forces. Indeed, it is claimed that the assault rifle has killed more people since 1945 than any other type of weapon, including strategic bombers and nuclear bombs. Less appreciated is that the assault rifle is a relatively recent development in infantry weapons, one that did not achieve decisive numbers until the Cold War era.

At the beginning of the 20th Century the dominant infantry weapon was the rifle, with a large cartridge, typically long barrel, and intended for use by skilled riflemen to kill opponents at the greatest possible distance. Rate of fire was low, with many types being bolt action and some semi-automatic.

The realities of urban and trench warfare were a shock for military planners of that period. Engagement distances were very much shorter than expected, rate of fire became a major issue, and the skill levels and indeed aptitude of conscripts in marksmanship presented a problem all of its own. In practical terms, infantry rifles proved early in the Great War to be less than optimal for the developing style of infantry combat. The earliest origins of fully automatic infantry firearms fall into the period following 1914.

significant numbers was the Italian Beretta Model 1918, which employed a rifle style stock, blowback mechanism, a 12 inch barrel, a 25 round curved magazine top mounted, with empty 9 mm casings ejected from below. Within weeks it was followed into service by the German 9 mm Bergmann Waffenfabrik MP18 (Maschinenpistole 18) with an 8 inch barrel, 32 round snail magazine, blowback mechanism, and using Parabellum 9 mm ammunition. There are claims the Bergmann was trialled in combat during 1916, but most sources credit the Italians with first operational deployment.

Great War. It played a major role in World War II and the Korean War. The difficulty soon observed with the automatic rifle concept was the weight of the weapon, and the recoil in automatic mode due to the full sized cartridge.

The first weapon to meet the basic definition of an assault rifle, in using a cartridge size intermediate between a pistol and rifle and gas operated mechanism, was the Italian Cei-Rigotti designed in 1890 and redesigned in 1900. The weapon fired a 6.5 mm round from a 25 round magazine.



The Fedorov Avtomat is generally accepted to be the first production assault rifle. Few were built and unlike modern assault rifles it is not gas operated.



Bergmann's MP18 was one of the first mass production submachine guns, firing 9 mm pistol rounds. A key contributor in the design was Hugo Schmeisser who later designed the MP43.

A modern definition of an assault rifle is that of a weapon with a fully automatic, often burst automatic and semi-automatic firing modes, uses a cartridge size and propellant load intermediate between rifles and pistols, a large magazine containing multiple rounds, a barrel length under 0.5 metres, and a gas operated firing mechanism. The pressures of combat during this period saw two classes of automatic infantry weapon emerge, these being submachine guns and assault rifles.

The submachine gun employs pistol ammunition and is a close quarters weapon, built for urban and trench warfare, where rate of fire is the imperative over accuracy and bullet velocity. Usually a blowback mechanism was used.

The first submachine gun to be deployed in

The well known US .45 Cal Thompson or 'Tommy Gun' was developed during that period, but did not play a role in the conflict.

In parallel with the emergence of submachines, fully automatic rifles appeared. Designed for use by squads, this class of magazine-fed weapon is today mostly called a 'light machine gun', as compared to belt-fed machine guns. The first mass production weapon in this class, with around a quarter of a million built, was the French Fusil-Mitrailleur Mle 1915 CSRG or Chauchat. It used a rifle style stock and barrel, a pistol grip, and fired 30-06 rifle ammunition from a 20 round magazine. The US .30 cal M1918 Browning Automatic Rifle or BAR was strongly influenced by the Chauchat but was not deployed in significant numbers during the

The first production assault rifle class weapon was the Russian Fedorov Avtomat, a recoil operated weapon of 6.5 mm calibre. The designer, Captain V. Fedorov, started the design in 1906 and after repeated changes the weapon entered production 1915 to equip Russian army units. The weapon used the Japanese 6.5x50SR Arisaka round, which was cheaply available, carried in a 25 round magazine, and used a 52 cm barrel. The Russian Army had ambitious plans for the Fedorov Avtomat, intending in 1916 to manufacture 25,000 units. The Bolshevik revolution and ensuing Civil war restricted total production to 3200 units by 1924. The weapon was used during the civil war and there are claims it was later used during the invasion of Finland in 1939.

The emergence of a modern mass production gas operated assault rifle did not occur until the middle

of World War II. The German Wehrmacht and Waffen SS units learned very quickly that urban combat and infantry assaults on defended positions were not the forte of conventional infantry rifles.

By the early 1940s, German weapons manufacturers were actively competing to provide an assault rifle class weapon for Wehrmacht and Waffen SS use. The Maschinenkarabiner 1942 program saw prototypes submitted for testing by Walther and Haenel, labelled respectively the MKb 42(W) and MKb 42(H). Both were built to use the 7.92 x 33 mm Kurzpatrone or 'short round'. The Haenel design was superior to the Walther, and introduced into low rate production. Its author, the talented Hugo Schmeisser, had previously distinguished himself by playing a leading role in the development of the Bergmann MP18.

The incessant political bickering in the upper echelons of the Nazi leadership saw Hitler suspend all new rifle projects in late 1942. The MKb 42(H) entered low rate production under the label 'Maschinenpistole 43' (MP43), an attempt to conceal the nature of the innovative weapon by listing it as a submachine gun. When Hitler learned of this he suspended production but relented in early 1943 to permit combat trials to be performed. In April 1944, Hitler decided that the MP43 should be labelled the MP44 instead.

The naming game continued. The new weapon impressed Military staff, and it performed well on the Eastern Front – an environment where urban combat was commonplace and where the Soviets frequently employed human wave attacks. The Fuhrer, consummate dilettante micromanager that he was, test fired the weapon in July 1944, and suitably impressed with the MP44 decided to rename it yet again, this time as the SturmGewehr (Storm or Assault Weapon) or StG.44. As a result, different production blocks of the same weapon are known as MP43, MP44 and StG44. Full rate production was authorised and by the end of the conflict nearly half a million of these weapons were built. Manufacturers included C.G. Haenel Waffen- und Fahrradfabrik AG, Erfurter Maschinenfabrik, B Geipel GmbH, Mauser-Werke AG and Oberndorf-am-Neckar Waffenfabrik.

At 5.2 kg, the StG44 was heavy by modern assault rifle standards. The 42 cm barrel provided for a full weapon length of 94 cm. It had a muzzle velocity of 685 m/sec, muzzle energy of 1930 Joules, and a fully automatic rate of fire of around 500 rds/sec using a gas-operated mechanism. A 30 round 'banana' magazine was employed. The weapon was built for mass production at low cost using low quality steels, with the body using stamped sheetmetal components. It was issued primarily to elite Wehrmacht and Waffen SS units on the Eastern Front. Users of the StG44 included the 'Leibstandarte' SS-Division, the SS-Panzer-Division 'Das Reich', the 3rd SS-Division 'Totenkopf', the 5th SS-Division 'Wiking', the 12th SS-Division 'Hitler Jugend' and 'Grossdeutschland' SS-Division.

The popularity of the StG44 soon brought a range of accessories, including the Leitz ZG 1229 Vampir, an infrared night vision device coupled with an infrared illuminator lamp. Another accessory was the Krummlauf, or curved barrel attachment with mirror sight for shooting from around corners. The G41 and ZF41 scopes were tested but not introduced as mass production accessories due to the limited accuracy of the weapon.

With the collapse of the Third Reich in May 1945,

production of the StG44 ceased. The weapon remained in use for some time in the East German (DDR) NVA (Army) but was later replaced by the Russian AK series. Original World War II MP43s, MP44s and StG44s are now highly prized collectors items, curiously enough reports emerged that Saddam's sons included examples in their extensive collection of guns.

The greater significance of the StG44 is however its pervasive influence on Cold War period infantry weapons. Both the AK-47 family and M-16 family of guns reflect the configuration of the StG44 very closely.

Mikhail Kalashnikov is widely cited to have flatly denied copying the StG44 when he developed the original AK-47, using a 7.62 x 39 mm round. The AK-47 is clearly a unique design, also using some features from the M1 Garand and other period weapons, but it follows the configuration of the StG44, using stamped sheetmetal extensively, and employs a very similar layout. The incrementally improved AKM superseded the original Avtomat Kalashnikova (AK) in production by the mid-1950s. Assault weapons have evolved considerably since the first generation StG44 and second generation AK/AKM. There has been a shift from 7.62 mm

calibre to 5.56 mm calibre, intended to reduce the weight of carried ammunition, and there has been disenchantment with the poor penetrating power of the high velocity 5.56 mm round in subsequent conflicts, especially the Iraq insurgency. Bullpup configuration weapons such as the Steyr AUG used by the Australian Defence Forces have become widely used, competing against the 'conventional' configuration introduced in the StG44 series.

The long-term future of assault rifles is unclear. The AK series for instance remains in production and numerous hand built replicas are manufactured in 'cottage industry' fashion in various parts of the world. Vast inventories of the AK and M-16 family weapons remain in use, and the oft-predicted global shift to Bullpups has not occurred. Controversy continues over the utility of the 5.56 mm round, which has proven less than entirely effective in urban combat due to its inability to penetrate structures. Factors that will influence future choices in assault rifles will include the ability to defeat structures and body armour, increasingly a feature in modern combat.

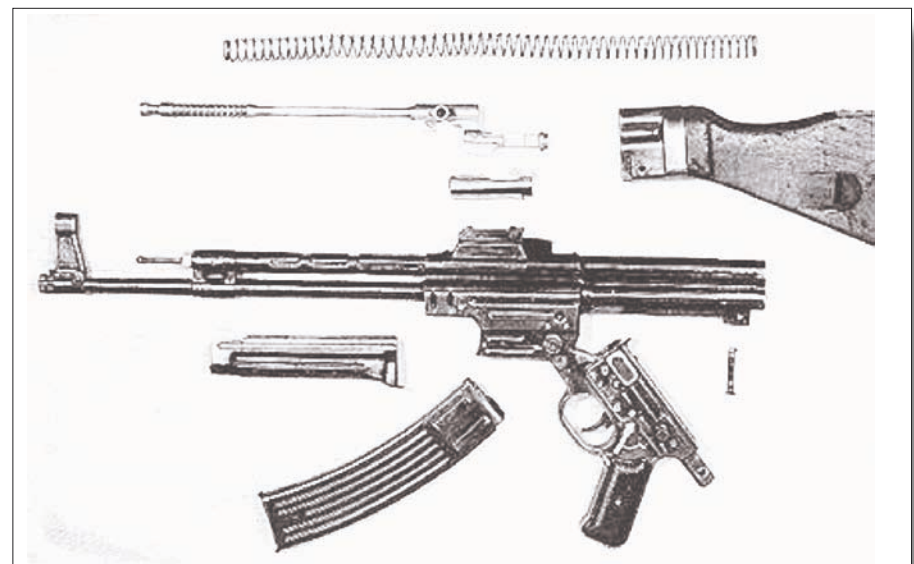
What is clear is that Hugo Schmeisser's work in 1942 produced an impact well beyond his wildest expectations.



SturmGewehr StG44, the first mass production assault rifle. Elite Waffen SS divisions used it extensively on the Eastern Front.



MP43 magazine and 'Kurzpatrone' ammo.



Stripped MP43.