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# The Grim Reaper Becomes Hitler's Buzz Saw

Photo example, Lewis Gun in use, July 1916, Battle of the Somme,

Photo example, MG08 in use.

When one thinks of World War I technologies that made the fields of Europe such a horrific killing ground, there are several that immediately come to mind: artillery, poison gas, the tank, barbed wire, the trench system and the machine gun. Static trench warfare, with men advancing through barbed wire-festooned killing zones, helped make the infantry machine gun responsible for about 20% of all WWI casualties and about 90% of casualties among soldiers attacking out of the trenches. Artillery accounted for more casualties than machine guns, but machine guns helped artillery as well: they provided sitting targets for the big guns. By including their psychological effect, the machine gun truly dominated WWI, especially in 1916 and 1917.

Going back a little in time, to the late 1800s, American Hiram Maxim developed a breakthrough recoil mechanism to improve on manual machine guns like the Gatling gun. The recoil produced by the firing of a bullet pushes the bolt back against a spring, the casing is ejected and a new round is pushed into the breech. The innovation allowed for improved firing rates, range and accuracy. The first extensive use of a Maxim-based machine gun by the German army was the 1901 MG 01 (*Maschinengewher* 01), which saw action around the turn of the century in conflicts like the Boer and Russo-Japanese wars. These weapons had some effectiveness there, but were rather misapplied as cavalry support, rather than support for infantry and in defensive fortifications, which would take advantage of their intrinsic capabilities. The MG01 is classified as a *heavy* machinegun; it's distinguished from light or medium machine guns by lack of portability by one man and the presence of a heavy mount. In 1908, Germany lightened the MG01 and produced a more manageable mount to create the MG 08, based closely on Maxim's gun. Keeping in character as a heavy machine gun, the MG 08 weighs around 126 pounds. The "sled" mount alone weighs in at 77 pounds. The two pieces, mount and gun, could be disassembled and carried by two men, or two men could together carry the folded assembled weapon "stretcher-style." Imagine the difficulty for soldiers transporting the MG08 (by any means) through the muddy fields of the Somme! Although cumbersome, the heavy mount greatly helped with recoil and accuracy.

PMM Collection, MG08.

The water-cooled (by a jacket surrounding the barrel) MG08 was given the nickname "Grim Reaper" by the allies, and has earned another colorful name: "The Devil's Paintbrush." For good reason: not only was the gun accurate, with a range of up to 4,800 yards, it was superior to most of the French weapons; could continuously fire, for hours at a time, at a cyclic rate of 400 to 500 rounds per minute; had a decently high muzzle velocity; and could be equipped with a 2.5 power scope. (The cyclic rate is the maximum mechanical rate of fire, as

opposed to the effective rate, which includes things like aiming, reloading and cooling.) The gun fired 7.92 x 57mm cartridges (ball, armor-piercing or incendiary), and was made by *Deutsche Waffen und Munitionsfabriken* (DWM), *Gewherfabrike Spandau*. Later in the war, from the latter, it was often just called a "Spandau." In practice, gunners were directed by gun commanders, usually non-commissioned officers. The gunners used the elevation wheel and small pulls or taps on the traversing handles to "walk" the gun onto a target, and were trained to understand the spread of impacts and the differently shaped impact zones as the distance to the target is changed. Of course any machine gun is much more effective in enfilade fire (down a long row of targets), but spraying 500 high-velocity rounds per minute had a devastating effect in any case, especially psychologically - men would simply refuse to advance into the torrent of bullets an MG 08 could produce. In 1915, a more portable version of the MG 08 was produced, the "light machine gun" MG 08/15. This weapon was equipped with a tripod mount rather than the heavy sled, and an altered stock and grip. With water cooling, it was still relatively heavy at about 46 pounds. In the last stages of the war, an aircooled version, the MG 08/18, was tested in the field, but overheating was a problem.

Now, all too swiftly, on to World War II.

PMM Collection, past temporary exhibit, MG08 at top, and MG42 at bottom.

There were two WWII infantry machine guns in the lineage of the MG 08 which were notorious for lethality. The MG 34 was formally approved in 1939, just in time for the Blitzkrieg into the Low Countries and France. The air-cooled MG34 was exquisitely engineered but manufactured to high tolerances, so it had limited resistance to battlefield conditions such as sand and mud. It was also expensive to produce, which became increasingly a problem as the German economy began to suffer later in the war. It was the same caliber as the MG 08, but had a higher cyclic rate - 800 to 900 rounds per minute. The successor to the MG 34 was the MG 42, which was cheaper to produce and more rugged than the 34, and was one of the most fearsome weapons of the war. In addition to heavy service in WWII, the model was also the basis for post-war German Army machine guns. More than 400,000 were produced by 1945 in the same caliber as MG08, but the cyclic rate was increased, to as much as 1,200 rounds/minute. Such high rates led to increased dispersion of fire and loss of accuracy due to vibration, but German Army doctrine allowed for those limitations. Another downside was the high rate of consumption of ammo, and the need for good quality cartridges, which were hard to get late in the war. The high fire rate of the MG 42, 20 rounds per second, led to the nickname "Hitler's Buzz Saw"; its rate of fire was so high that it was impossible to distinguish individual shots by ear. The sound has also been likened to

that of ripping cloth - one can only imagine the impact on attacking soldier morale of advancing on an emplacement containing an MG 42.

In addition to an MG 08 and MG 08/15, the WWI collection of the Pennsylvania Military Museum includes a 1915 Colt Vickers; a Browning M1917 A1; a Hotchkiss M1914; and a Lewis 1917. The museum also includes an MG 34 in its collection, as well as an 1885 Maxim.

By visiting the museum one can view the evolution of one of the most famous lineages of any weapon of war, as well as many other fascinating artifacts of the “War to End All Wars.”