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# Steel Helmet

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**The steel helmet was invented and fielded in response to increased lethality on the battlefield due to advances in artillery and fragmentation. World War I witnessed the first wide-spread use of the steel helmet, which remains a signature piece of equipment in modern warfare.**

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## Introduction

Soldier combat headgear prior to World War I was largely ornamental in nature, serving to identify the wearer's nation, branch of service, rank, or unit. Helmet designs varied widely, ranging from the German *Pickelhaube* (spiked helmet) to the British pith helmet. The *Pickelhaube*, made of boiled (and thus, hardened) leather, like the pith helmet, made of pith fibers or cork, provided very little ballistic protection for the wearer. Even at the onset of World War I, belligerent nations still equipped their soldiers with soft headgear, such as the cloth French *kepi* or the felt American campaign hat.

## Development

## France

The dramatic increase in head wounds due to the proliferation of [artillery](#) and improved shrapnel munitions created a need for better head protection. The French were the first to address this challenge with a small steel cap, the *calotte métallique* (metal cap), worn under the soldiers' cloth *kepi*. By 1915, the French sought a more effective solution to falling shrapnel and fielded the M15 Adrian Helmet, or *casque Adrian*, named after its creator, Intendant General [August-Louis Adrian](#) (1859-1933). This first of the modern steel helmets was constructed of mild steel, 0.7 mm thick, and consisted of a two-piece brim, a crown, and a comb either riveted or welded together. It was lined with a leather-covered metal band which suspended the helmet on the wearer's head. Weighing just under two pounds (0.765 kg), the Adrian helmet was designed to protect against low-velocity falling shrapnel and was generally ineffective against [rifle](#) or [machine gun](#) fire. Over 3 million M15 Adrian helmets were eventually produced and were used by a number of countries including [Russia](#), [Belgium](#), [Romania](#), and the [United States](#). The helmet was modified and upgraded in 1926 and continued to be used through World War II.

## Germany

German troops entered World War I wearing the *Pickelhaube* and they too quickly learned of the need for better ballistic head protection. Individual efforts began in 1915 to field better protective headgear, such as the Gaede helmet issued to Army Group Gaede on the southern flank of [Germany's](#) western front. Constructed of cloth and leather, its brow and mantle were covered with a steel plate providing frontal protection to its wearer. After significant testing, the Imperial German Army fielded the *Stahlhelm*, or steel helmet, at first in limited numbers to [stormtroopers](#) at the [Battle of Verdun](#) in February 1916. It proved successful and was in general issue on the [Western Front](#) by the end of the year and on the [Eastern Front](#) by mid-1917. Constructed of chromium-nickel-steel alloy, the *Stahlhelm* was issued in various sizes and ranged in weight from just under 2.5 pounds to just over 3.5 pounds (.98 kg to 1.4 kg), depending on size. In addition to its distinctive profile, another recognizable feature of the M16 *Stahlhelm* were two lugs on the side of the dome. These projections provided ventilation and also served as attachment points for an additional armor plate or *Stirnpanzer*. Like the French Adrian helmet, the *Stahlhelm* incorporated a suspension system of a metal band covered with leather padding and adjusted to fit with leather or fabric ties. Over 8.5 million M16 *Stahlhelme* were produced during World War I. The helmet was used by other Central Powers nations including [Austria-Hungary](#) and the [Ottoman Empire](#) and was also updated and modified to serve Germany into World War II.

## Great Britain

The British also sought improved headgear in World War I to reduce shrapnel injuries to the head from air burst artillery. The British War Office began studies in the summer of 1915 and quickly adopted a design by John L. Brodie initially constructed of mild steel. This helmet, designated

“Brodie’s Steel Helmet, War Office Pattern” began fielding in October 1915 and gave the name of its inventor to an entire line of stamped steel helmets used by a large number of countries including [Australia](#), [Canada](#), [New Zealand](#), and the United States (which adopted it as the M1917). By 1916, Brodie helmet construction shifted to stronger, non-magnetic manganese steel. Additional improvements to the original Brodie design were approved in April 1916 and led to the fielding of the Mark I steel helmet which began to be issued in September 1916. Unlike the full dome of the Adrian or the *Stahlhelm*, the British designed helmet was shallower and resembled a pie tin. Its adjustable suspension system, or liner, was of conventional design, being made of leather and treated cloth. Over 7.5 million Brodie helmets were produced and continued to serve, with minor modification and improvements, into World War II.

## Conclusion

Helmet finishes and later, [camouflage](#), varied widely between combatants and over time. Early French M15 helmets were painted “horizon blue” or light blue-gray which changed to a matte grey-blue by war’s end and to tan or khaki by World War II. Basic *Stahlhelme* were issued in field grey (*feldgrau*) until a July 1918 general staff order directed camouflage paint schemes be applied in green/brown/black/yellow/rust camouflage patterns. Early British Brodie helmets were considered too light reflective and so, by 1918, were painted in a matte khaki finish and textured with sand or crushed cork. Camouflage was not uncommon.

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