

Forts

By [Miguel A. Lopez](#)

Summary

European militaries considered fortifications before the First World War as vital to their strategic planning. Advancements in weapons technology after the mid-19th century caused engineers to upgrade their forts or face obsolescence. Although fortresses had an uneven record of success during the war, some European military leaders continued to value them.

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Introduction

The French built some of the best fortresses in Europe in the 17th century and set the standard on fortifications not only for [France](#), but for the rest of Europe. French engineers in the 19th century still looked to the famous 17th century French engineer [Sébastien Le Prestre de Vauban \(1633-1707\)](#) for their designs, although fortifications also went through various upgrades because of advances in [weapons technology](#). This changed how engineers designed, built, and incorporated fortifications into a nation's strategic [planning](#). Fortifications during World War I did not lose their importance, nor did European militaries view them as irrelevant.

Strategic Considerations

European nations, to varying degrees, relied on fortifications to “protect ... lines of communications and prevent bridgeheads” and secure their borders.¹ [Belgium](#) built its fortifications around Namur and Liège to protect its frontier so the army could position itself

in the center of the country and delay any invaders. France's defense, focused on an attack from the new German state, depended on 166 fortifications built between Verdun and Toul. By 1900, [Italy](#) viewed France as its most probable opponent and concentrated its fortifications against that country, leaving bare its border with [Austria-Hungary](#) for much of the prewar period, only beginning to modernize fortresses there in 1904. Austria-Hungary was strengthening its fortresses just as Italy began to drift from the Triple Alliance. After beating France in the Franco-Prussian War (1870-1871), [Germany](#) began building the fortifications around Metz to secure its newly won western territories.

Central European nations did not ignore Eastern Europe. Germany, Austria-Hungary, and [Russia](#) all studied ways to improve their strategic positions. Russia learned from its defeat in the [Russo-Japanese War](#) (1904-1905) that "tactical offensive[s]" during engagements led to victory and thus questioned the use of fortifications.² In preparation for a conflict with Germany, Russia upgraded its field army, while also adding improvements to some of its Polish fortifications. The outcome was the worst possible: Weak offense and weak defense. Germany focused its upgrades on the Alsace-Lorraine region until 1912, when the general staff realized it could no longer ignore Russia. Germany therefore allocated more than 210 million marks to upgrade fortifications on its eastern borders, such as in Graudenz and Posen. Renovations began in 1913, but had not been completed by the time the war broke out.

Austria-Hungary, pre-occupied with Italy, paid little attention to the Balkans until 1904. Along the Austria-Russian border, the fortress city at Przemyśl was updated late in the 19th century, but by 1914, half of its fortifications were outdated. After "Austria-Hungary risked war against Serbia, Montenegro and Russia" during the First Balkan War (1912-1913), it subsequently spent 55 million crowns on fortifications in the Balkans and Galicia.³ With the exception of its Italian border, Austria's fortifications were generally outdated. Each nation, therefore, looked toward its fortresses according to perceived threats.

Technological Advancements

Technological advances in arms and construction techniques in the mid-to-late-19th century and up through World War I forced engineers to change their designs if the forts were to remain useful. Rifled [artillery](#) and high-explosive shells required engineers to consider "much deeper 'defence in depth.'"⁴ Artillery could quickly incapacitate fortresses built with traditional masonry materials; French engineers, for example, having begun construction on the fortifications using masonry techniques, ultimately switched to reinforced concrete and steel. Fortresses entered a form of arms race with artillery and siege mortars. At first, field and permanent fortifications complimented each other. Field fortifications, however, would

later surpass permanent fortifications in importance.

The Western Front

World War I started on the [Western Front](#) when Germany implemented its adapted version of the Schlieffen Plan. Named after its chief architect, Chief of the German General Staff [Alfred von Schlieffen \(1833-1913\)](#), the plan sought to overcome Germany's strategic dilemma of a two-front war by first quickly defeating France, then moving to concentrate on Russia. Schlieffen, worried that Germany could not rapidly break through France's strong fortifications along the German border, planned to flank French fortifications by invading Belgium to the north and then swinging south into France. When the war began, the plan at first appeared to work. Germany quickly destroyed the Belgian forts around Namur and Liège, along with many modern French fortresses, prompting the French to take heavy [guns](#) from its remaining forts to augment the field armies' insufficient guns. This reaction would have consequences for the French during the [Battle of Verdun](#) in 1916.

When German Chief of the General Staff, General [Erich von Falkenhayn \(1861-1922\)](#), launched the offensive against Verdun in February 1916, its surrounding fortresses were not fully operational because many of their heavy guns and manpower had been removed. General [Henri-Philippe Pétain \(1856-1951\)](#), commander of the French Second Army south of Verdun and the man responsible for the city's defense, quickly saw that the forts had to be restored to their full status to survive the German offensive. Pétain's actions not only helped enable the French to stave off defeat and beat the Germans at Verdun, but also demonstrated the continued value of fortresses.

The Eastern Front

Because Russia had opted to update its army and fortresses at the same time, neither were fully ready when the war broke out. Russia's failures became evident when it suffered a disastrous defeat at the [Battle of Tannenberg](#). By 1915, Germany had captured all the region's fortresses.

Austria-Hungary's position was precarious at the start of the war. Its efforts into [Serbia](#) were stalled, and its offensive into Galicia was defeated. Despite its offensive failures, the fortress city of Przemyśl held out against the Russian siege for over four months, while none of Austria's other fortresses fell. To the southwest, the mountainous terrain along the Italian-Austrian border limited Italian offensives options to the [Isonzo](#) River Valley, which was relatively free of fortifications. Despite the geographic opportunity for an advance, an inept Italian army, combined with stiff Austrian resistance, caused the Italian-Austria front to remain stagnate for large portions of the war. What the fighting along the Western and

[Eastern Fronts](#) showed that fortifications could be effective if they were modern, fully gunned, and fully manned.

Conclusion

The effects of forts on various First World War campaigns convinced some European nations of their continued value, despite their uneven battlefield record. The Germans' ability to destroy fortifications in Belgium showed forts' weakness against superior firepower. The survival of the French fortress-city of Verdun, however, suggested the potential effectiveness of fortifications when fully operational. Fortress effectiveness on the Eastern Front was also questionable. Various Russian fortresses fell, yet nearly all Austria-Hungary's fortifications resisted capture at the start of the war. Even after the war, the Belgian construction of Eben-Emael, France's Maginot Line, and Germany's "Westwall" show that many Europeans continued to value fortifications despite advancements in weaponry and the forts' "ambiguous" record in the war.⁵

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Notes

1. Stevenson, David: Fortifications and the European Military Balance before 1914, in: The Journal of Strategic Studies 35/6 (2012), p. 831. ↑
2. Joll, James / Martel, Gordon: The Origins of the First World War, Harlow 2007, pp. 304-305. ↑
3. Stevenson, Fortifications 2012, pp. 836-837. ↑
4. Griffith, Paddy: The Vauban Fortifications of France, New York 2006, pp. 56-57. ↑
5. Stevenson, Fortifications 2012, p. 856. ↑

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- [Donnell, Clayton: **The fortifications of Verdun, 1874-1917**, Botley, Oxford, 2010: Osprey Publishing.](#)
- [Herrmann, David G.: **The arming of Europe and the making of the First World War**, Princeton, 1996: Princeton University Press.](#)
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Citation

Miguel A. Lopez: Forts, in: 1914-1918-online. International Encyclopedia of the First World War, ed. by Ute Daniel, Peter Gatrell, Oliver Janz, Heather Jones, Jennifer D. Keene, Alan Kramer, and Bill Nasson, issued by Freie Universität Berlin, Berlin 2017-11-07. DOI: [10.15463/ie1418.11180](https://doi.org/10.15463/ie1418.11180)

External Links

- [Hamelius, Paul: The Siege of Liège. A Personal Narrative, London 1914 \(Royal Library of Belgium\) \(Book\)](#)
- [Vanderstraete, Bertrand: La défense du Nord, couloir d'invasions \(1871- 1940\). Fortifications et plans stratégiques, in: Revue du Nord 70/277, 1988, pp. 377-397 \(Persée\) \(Article\)](#)

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Author Keywords

Fortifications; Liège; Strategic Defense; Verdun; Weapons Technology

GND Subject Headings

[Festung ; Weltkrieg \[1914-1918\]](#)

LC Subject Headings

[World War, 1914-1918 ; Fortification](#)

Rameau Subject Headings

[Guerre mondiale \(1914-1918\) ; Fortifications](#)

Key Person(s)

[Vauban, Sébastien Le Prestre de](#); [Pétain, Philippe](#); [Falkenhayn, Erich von](#); [Schlieffen, Alfred, Graf von](#)

Key Location(s)

[Liège](#); [Metz](#); [Namur](#); [Przemyśl](#); [Toul](#); [Verdun](#)

Title

Forts

Author(s)

[Miguel A. Lopez](#)

Article Type

Encyclopedic Entry

Classification Group

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