

Analyzing World War 1 & World War 2's Impact on the United Kingdom's Population, GDP, and Military Budget

Ursula Stauder

This analysis explores the impacts of World War 1 (WW1) and World War 2 (WW2) on the United Kingdom's population, GDP, and military budget. The data's date range is between 1900 and 2011.

The data used in this analysis comes from DASA (Defence Analytical Services and Advice) and publicspending.co.uk and was discovered via TheGuardian.com.

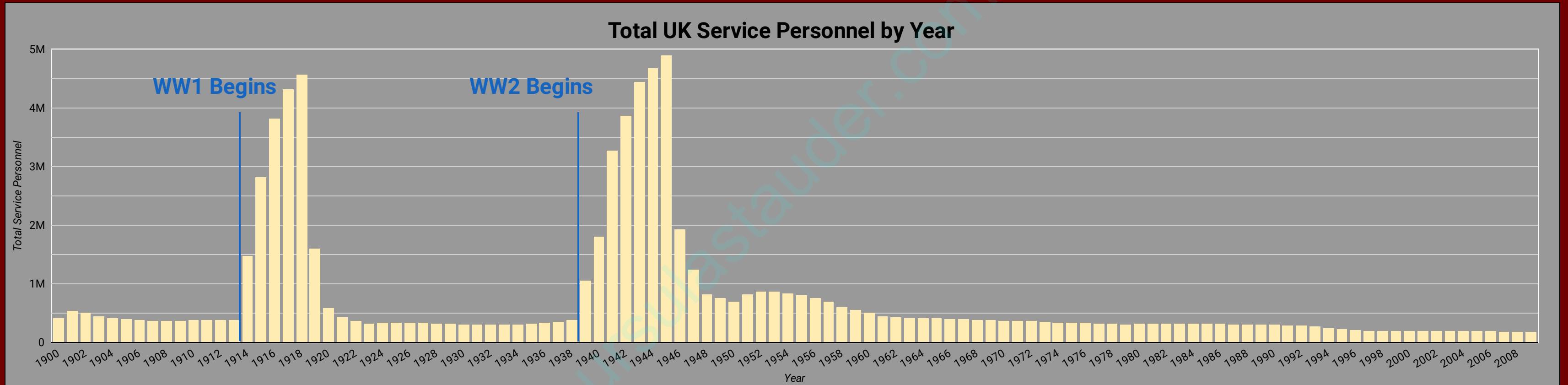
Population > How did the number of Service Personnel change?

WW1 Avg Yearly Service Personnel

3,411,060

WW2 Avg Yearly Service Personnel

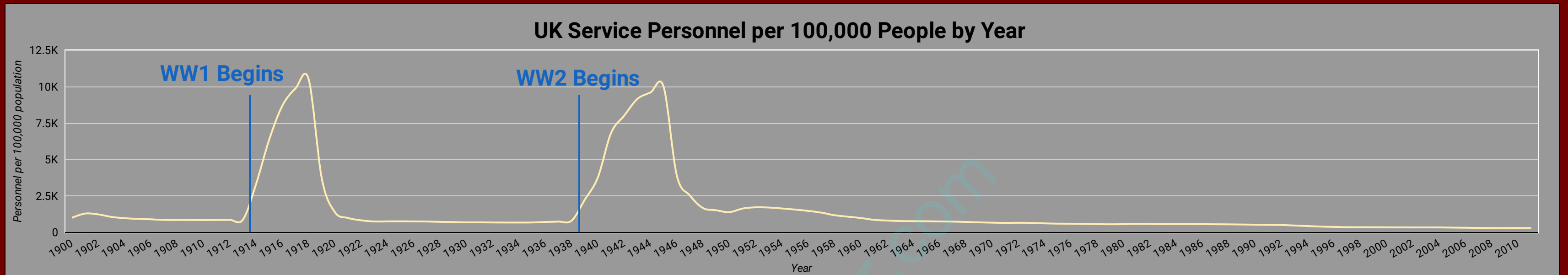
3,442,564



In the UK, the total number of *Service Personnel*, Naval Services (Royal Navy and Royal Marines), Army, and RAF (Royal Air Force), grew substantially during WW1 (1914-1918) and WW2 (1939-1945), and has not seen those high numbers since then.

When comparing the average yearly Service Personnel numbers between WW1 and WW2, both wars total approximately the same during the years the war was happening, both totaling around 3.4M service personnel during each year of the war.

Population > What proportion of the population served?

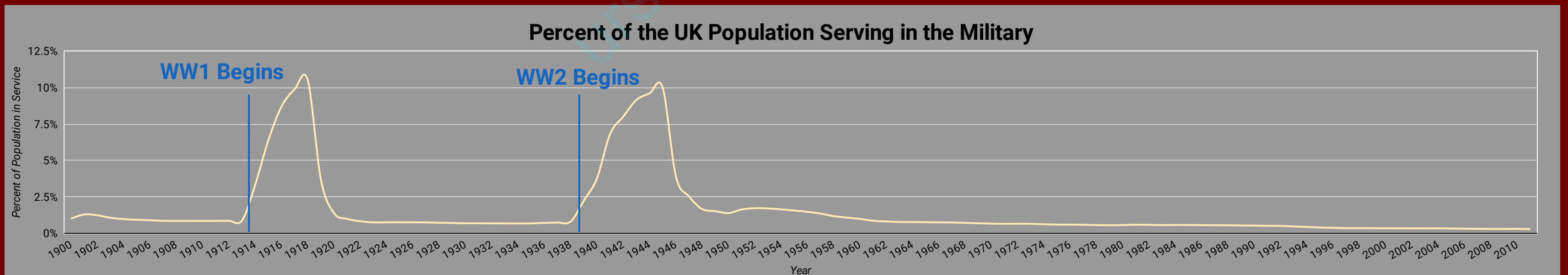


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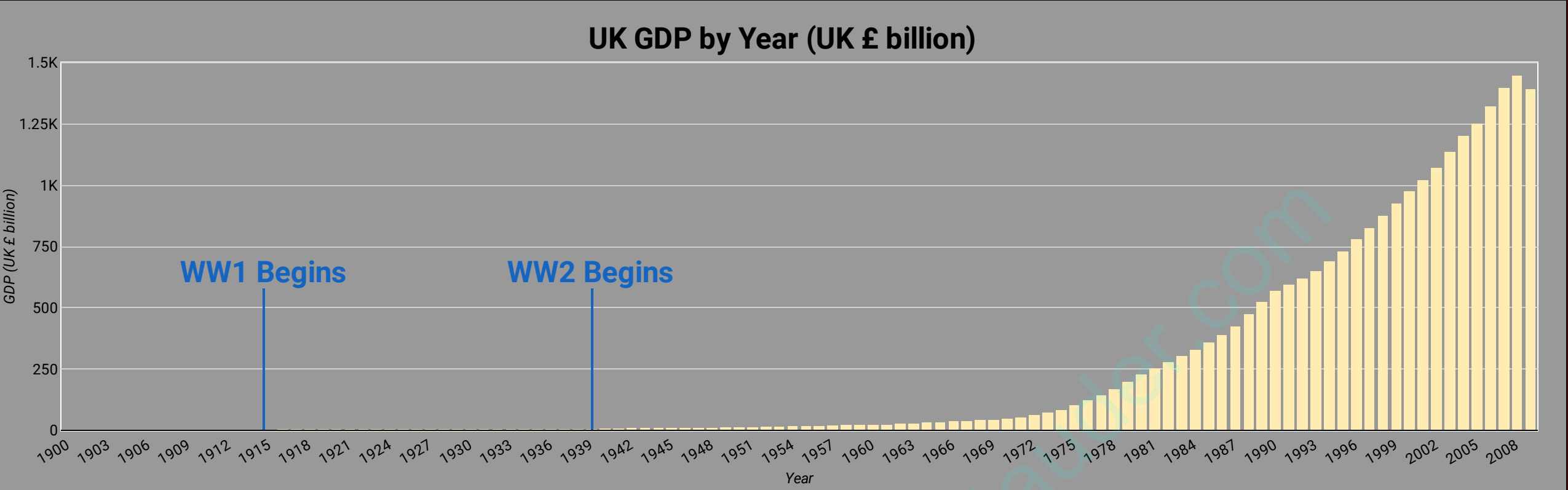
During WW1 in the UK, in 1918, there were over 10k Service Personnel for every 100k people. WW2 in 1945 also showed the same ratio of 10k Service Personnel for every 100k people.

Below:

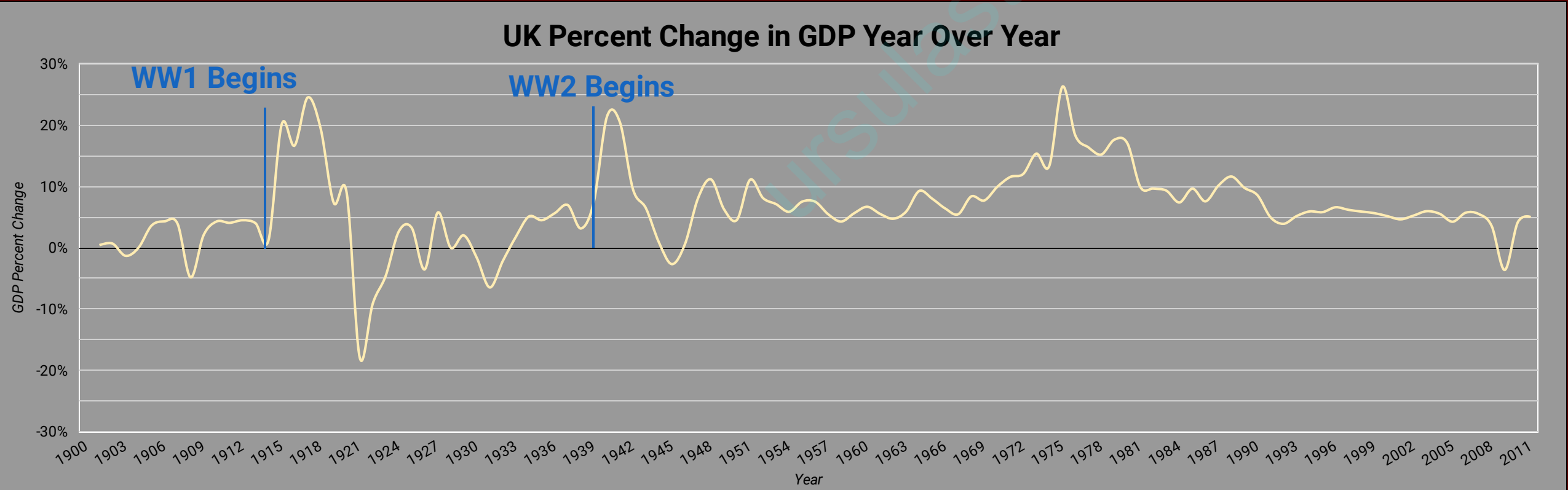
Another way to look at the scale at which an average person in the UK was affected by WW1 & WW2 is to look at the percentage of the population that's serving. When looking at this percentage over the two World Wars, we can see that both WW1 and WW2 had over 10% of the population serving at the peaks -- that's 1 in 10 people!



GDP > How did GDP change during WW1 & WW2?

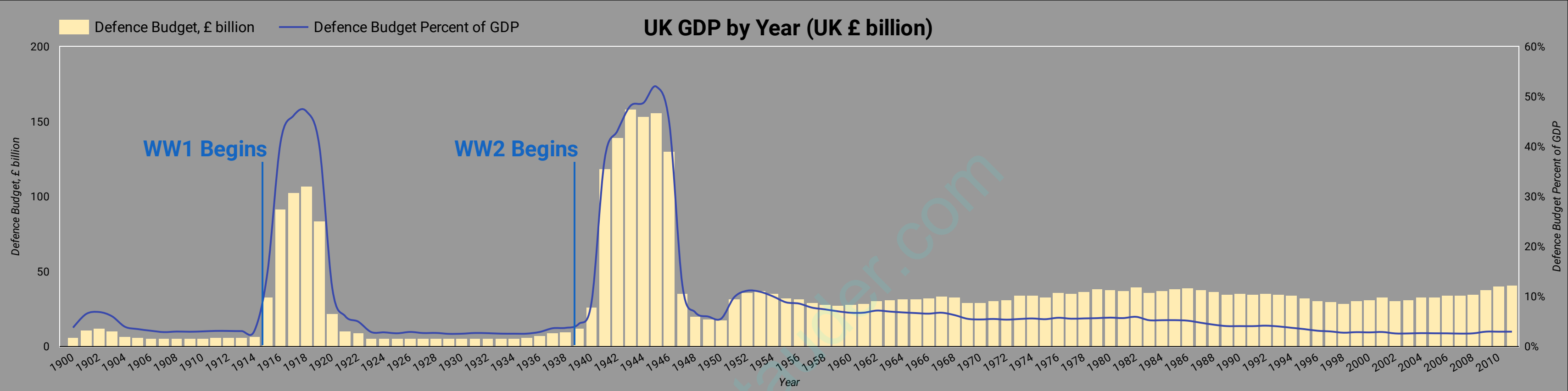


Top:
While GDP has steadily increased for the UK since 1900, it's difficult to see the way that WW1 and WW2 affected the economy.



Bottom:
Instead, when looking at percent change year over year (how much the new year changes in comparison to the previous year), it is clear that GDP spiked during WW1 and WW2, and also spiked in 1974.

GDP & Budget > What did the military budget look like during WW1 & WW2?

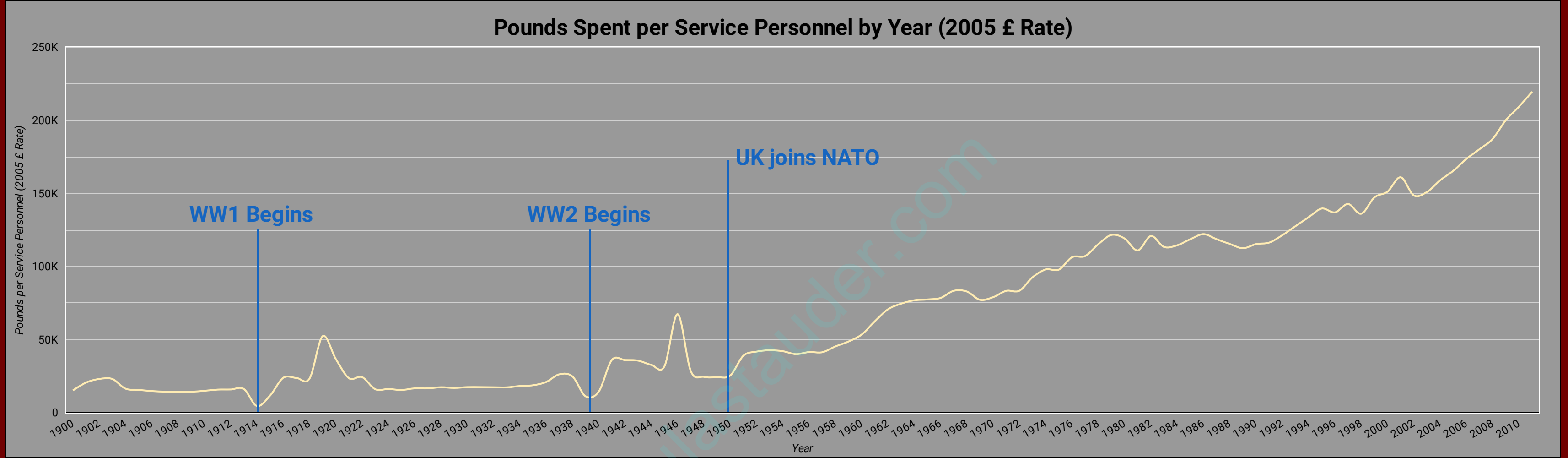


Above:
WW1 and WW2 both saw a tremendous increase in the defence budget during the years the war was going on. As a result, the spending around the war due to increased budgets was at least 50% of the UK's GDP during these two wartime periods.

Right:
When aggregating the defence budgets between 1900 and 2011 and normalizing the pound to the 2005 rate, the 1940s and the 1910s had the largest military budgets, with the 1940s making up 25.8% of the budget during this time window, with the 1910s making up 12.13% – with both decades totaling 37.98% of the military budget over 111 years.

Defence Budget by Decade (UK £ billion)					
1940 : 25.81%		1970 : 9.14%		2000 : 8.99%	
		1950 : 8.28%			
1910 : 12.13%		1980 : 10.15%		1990 : 8.8...	1960 : 8...
				201... 192...	1900 : 2....
					1930 : 1....

Budget > How is the defence budget being spent?



During WW1 and WW2, pounds per Service Personnel appears to follow a similar pattern: a drop in pounds spent per Service Personnel the year the war starts, an increase in spend that levels out up until the last year in the war, and then a large spike for one year during the subsequent year after the war ends.

Interestingly enough, starting in 1950, the average pound spent per Service Personnel started growing year after year, increasing from about £25,000 in 1950 to about £219,000 in 2011 – a 776% increase! This increase is likely due to a variety of reasons including, but not limited to: the UK's commitment to NATO to spend 2% of GDP on defence and investment in new weapons technologies.

Wrap Up

Key takeaways:

- Both WW1 and WW2 had major impacts on the UK through numbers of Service Personnel serving in the wars, GDP, and budget.
- Since the end of WW2, the country has not seen Service Personnel numbers anywhere close to the numbers in WW1 and WW2. It was at such a high scale that, during both world wars, 1 in 10 people were serving.
- Both WW1 and WW2 were major economic stimulators, and both caused the UK's GDP to grow significantly year over year during wartime.
- Moreover, during these wars, defence budgets grew substantially and totaled to be about 50% of GDP during peak wartime.
- The UK has been increasing spend per Service Personnel each year since 1950, potentially due to NATO guidelines, investments in new technology, and more.

Conclusion:

The two World Wars mobilized British society and the economy to an unprecedented degree, with impacts felt across the population, GDP, and budgetary spending. The scale of participation and economic stimulation has not been matched in any subsequent conflicts.