Britain’s War Machine: Weapons, Resources and Experts in the Second World War

David Edgerton has written what could prove to be one of the most influential books on the history of the Second World War. In a majestic study, Edgerton has successfully shown us that we still have a lot to learn about the conflict. He claims that many of the well-established ideas about Britain’s capability of waging war, and the perceptions we have of those in government during the conflict could now be open to reinterpretation and reassessment. He does this with painstaking accuracy and insightful enquiry, producing a truly gripping study of the conflict, the planning behind the military efforts, and how Britain sought to use the knowledge of the leading experts from all fields to secure victory.

When embarking on this research, Edgerton inevitably took on many challenges. Scholars of this conflict know only too well that the historiography of this period is large, and already contains numerous deeply insightful analyses of the war and its impact on society. Therefore, when Edgerton asks whether another book on this subject is really necessary, one could be forgiven for believing that the academic reasoning for another study of the conflict would be difficult to establish. However, Edgerton has successfully shown that many questions remain unanswered about the Second World War, which suggests that the conflict will remain an area of significant further enquiry for some considerable time. In so doing, he has successfully debunked some of the hitherto well-established assumptions about the war. His main focus is to challenge the previously assumed hostility of the British government towards engaging experts to assist with the prosecution of the war effort, and the supposed technological inferiority of the British Armed Forces when compared with the Germany and America. His powerful presentation of a new and provocative interpretation of the war has also served to highlight the omissions from the historiography. In so doing, Edgerton has also
produced a work that will facilitate further debate on the major events and perceptions of the war.

Britain’s military capabilities during the Second World War have been criticised by many contemporary commentators and historians. However, Edgerton proves that in fact, Britain’s military capability and strength far surpassed any of its allies and enemies. He depicts Britain as a country possessing military strength and mastery in abundance – a supremely confident country which at no point was concerned by the imminent threat of the Germans. This clearly challenges the commonly accepted notion that the German war machine was technically superior to the British. Indeed, Edgerton’s argument points more to the perception that the German failure in the war was largely attributable to their military and tactical incompetence. Moreover, most works have hitherto highlighted the paramount importance of the British Royal Air Force, claiming that it was decisive in the ultimate victory over the Germans. The image of Britain’s organising capability is often juxtaposed with that of the Germans – the British often being portrayed as valiant fighters with inferior technology, with the Germans having greater technological, organisational and military prowess. However, this dominant image has now been effectively and persuasively challenged. Edgerton shows that Britain was a wealthy, confident nation who believed that victory against the Germans was assured. Drawing on contemporary archival material, he shows the confidence of senior politicians and the military from 1939–41. They frequently expressed the belief that victory for Britain would be assured. Central to this argument was Britain’s wealth – a factor that politicians believed would be the key to ensure victory, especially since Britain would have a larger military budget than the Germans with which to fight.

One of the main arguments in this book is the importance of modernisation to the British idea of war. Edgerton successfully portrays Britain as a modern nation, where the ideas and wisdom of scientists are accepted by the government in order to perfect Britain’s war machine. He shows that although there was some scepticism associated with specialised scientific advice for the prosecution of the war effort, Churchill, despite his original hostility to scientists, wanted those with the best expertise to assist with all aspects of British military planning and design. This is a clear response to those in the historiography who have claimed that Britain was experiencing a period of decline in terms of technological innovation. Moreover, Edgerton shows that Britain was in fact an influential country in terms of innovation – an image that has hitherto been overshadowed by the portrayal of Germany as the country of precision engineering, which has often been cited as the major threat to Britain.

To substantiate many of the bold claims made in this work, Edgerton has carried out a comprehensive social, political, economic and military analysis of the Second World War. He has linked Britain’s military success to its economic prowess, proving that Britain’s smaller population placed it, in real terms, as a significantly stronger economy than Germany. Although Germany possessed a strong industrial base, it could not afford the same level of economic well-being for its people as Britain, whose population was half that of its wartime enemy. This, coupled with an insatiable self-confidence helped Britain to believe that victory was assured. With Britain producing more aircraft than Germany in 1940, and possessing a belief in the superiority of British science and technology, Edgerton claims that the British Empire was the most modern in the world. This is an interesting view, especially since many works have hitherto argued that Britain was in fact the opposite, and have even suggested that the decline of the British Empire began in the post-First World War period, and moreover that Britain was not well-placed to fight another global conflict. Indeed, one well-established argument in the historiography, especially in works criticising Chamberlain’s policy of appeasement, is that this policy’s major advantage was to delay the war for one year – an important move, since Britain was not ready for another global conflict. However, Edgerton’s re-examination of the issue, and his adept use of primary sources has demonstrated that this could now be open to reassessment. Indeed, at the end of chapter two, Edgerton claims that Churchill’s prophecy that Britain was not prepared for war was incorrect. He shows that Britain was rearming on an unprecedented scale after 1935, and that it was also the largest exporter of arms in the world. This suggests that Britain, contrary to the well-established wisdom, was prepared for war and had greater military might than has previously been credited.

Chapter three deeply explores the idea that the Second World War was a technological war in which machines were the key to ultimate victory. The essential contribution of British engineers to develop sufficiently advanced technology to compete with the growing threat of the Germans is explored in detail.
Quoting evidence from the wartime journal, *The Engineer*, Edgerton substantiates his argument of the centrality of engineers to the war effort by showing that the Second World War was an ‘engineers war against a machine’ (p. 59). Challenging the conventional wisdom that Churchill was anti-technology and opposed to experts, Edgerton emphasises the point that one of his first moves when he became Prime Minister was to create the Ministry of Aircraft Production under Lord Beaverbrook to facilitate the additional production of aircraft for the war effort. Here, considerable money and resources would be dedicated to ensure that aircraft could be developed rapidly to compete with German bombers, although as Edgerton later argues, the success and importance of the bomber, and the wisdom that the bomber ‘will always get through’ has been overstated by historians.

Exploring the issue of aircraft production in more detail, Edgerton shows that the desire of the British government to improve the quality of its defences rested on the assumption that increased expenditure would improve the quality of services provided to the government. However, he proves that this was a misconception, and indeed much of the military spending in 1940–1 was wasted, since what was produced was of poor quality, and in practice, the ability of the pre-arranged defences to fulfil their obligations was a failure. Citing the blitz as an example, Edgerton suggests that despite the extensive planning and money spent on air defences, the policy was an overall failure, especially since so many lives were lost, so many British cities were destroyed, and over 30 per cent of London was flattened in the bombings.

This work contributes to the arguments previously articulated by historians that the war brought Britain and the USA closer together. In exploring the influence of the USA on the war effort after the attack on Pearl Harbour, Edgerton states that it was only after the attack, and the desire of the Americans to join the war effort to assist the Allies that the USA became the strongest military country in the world. However, Edgerton claims that it was British money, through its growing trade relationship with the USA that helped to make the latter the ‘arsenal of democracy’ (p. 79). It was then that the USA became more important as a supplier of weapons, and through collaborative projects with Britain, it sought to develop ships to take the war effort to the seas. However, this was a big challenge, especially in view of the excellent U-Boats in the German Army that proved so strong and so successful. Nevertheless, Edgerton highlights the dangers of assuming that the relationship between the USA and Britain was harmonious when discussing wartime strategies. Challenging previous arguments about harmonious Anglo-American relations in wartime, Edgerton points to significant tension between Britain and the USA in terms of sharing sensitive information about bomb development. Before 1943, Britain had the largest atomic bomb project, but after this date the USA took over as the largest producer of bombs. Consequently, tensions developed over the sharing of information pertaining to bomb development. While this was never enough to break the Anglo-American ties, it certainly contributed to tensions between Britain and the USA at a time when cooperation in the prosecution of the war effort was essential.

Edgerton’s main focus in this work is the willingness and readiness of the British government to accept the influence of science and technology in its military planning. He shows that the process by which the role of experts was accepted and encouraged was largely an evolutionary one, characterised by reluctance but motivated by necessity, especially in view of humiliating defeats for the British army in the early stages of the war. Churchill, as the chief architect for the war, needed to take full responsibility for the humiliating defeats that befell the army at the start of the war, and was advised, in view of these defeats, to contemplate the inclusion of experts in British wartime planning. Edgerton shows that whilst Churchill’s hostility to this at the beginning was clear, his respect for these experts, especially when Britain was making clear gains as a result of their advice, made the inclusion of these experts in the prosecution of the war effort a necessity. Churchill was keen to avoid the massive casualties of the First World War, and was now slowly beginning to realise the benefits of using science and technology, and was persuaded by colleagues that this could help to avert the massive bloodshed and deaths caused by the previous conflict. Nevertheless, whilst technology was accepted as a necessity to help Britain in the war effort, this does not mean that all ideas were accepted wholeheartedly by all sections of the government. Edgerton cites some examples of bizarre ideas suggested to protect government officials, such as the flying armoured car designed for Leo Amery. The contempt shown by the Ministry of Supply for this idea, and many other ideas that did not reach the development
phase shows that while the necessity to include experts in science and technology was accepted by the
government, the willingness to develop their ideas depended on cooperation from several government
sections that was far from assured.

Inevitably, bringing together several experts to assist with the war would create tensions within the
government. This work clearly highlights the divergent opinions within the wartime coalition vis-à-vis the
development of technology and the use of experts. Moreover, Edgerton shows that the experts themselves
failed to agree on several key issues, which merely delayed the decision-making process and increased
tensions between the government and the experts. Additionally, this work sheds new light on the relationship
between several key players in the coalition, and why the nature of British politics changed. For example,
the relationship between Churchill and Aneurin Bevan worsened, with Bevan claiming that the wrong
weapons were being made, and frequently criticising Churchill’s leadership (p. 127). Furthermore, Edgerton
claims that the majority of the opposition to Churchill’s ideas and decisions came from people who had a
technical or scientific background. The publication of the journal *Endeavour* gave a voice to scientists that
they previously did not have, and put their ideas into the public domain. The importance of scientists to
winning the war was very clear at this stage, and explains why Churchill worked to ensure that they would
remain as key advisors to the government on wartime issues.

This book provides a useful compliment to the social history analyses that have already been published on
the period, and provides further insights into the social conditions facing Britain during this time. For
example, it expands on earlier research conducted on wartime rationing to show that although food in Britain
was rationed, it was in fact in plentiful supply. Whilst luxury items may have been more difficult to find,
there was always sufficient bulk foods such as bread, potatoes and vegetables to make sure that the people
did not go hungry. This therefore challenges the image of privation previously presented in the
historiography. Edgerton shows that Britain did discriminate in favour of the armed service and industrial
workers in terms of food supply, but this only accounted for 20 per cent of the population, and despite this
there was still enough food supply for the remainder. This was coupled with the growth in dairy farming,
and also the desire of the government to encourage individuals to open their own allotments and grow their
own vegetables. As a result of German attacks against ships bringing foods to Britain, food imports of
necessity fell, but home production increased, typified by the ‘dig for victory’ campaign.

Edgerton highlights the importance of women to the war effort, showing that a vast number of women were
involved at this time with the development of technology. There were indeed more women employed in this
area than men. This builds on earlier work by Penny Summerfield showing the growing importance of
women in the Second World War.(1) Edgerton’s findings are contextualised within the wider study of
military planning. Large factories for building aeroplanes were established across the country, and they were
staffed by women. Furthermore, the increased role of women workers is highlighted by the Ministry of
Information who, in its short movies, show women working in the factories. This was an essential
propaganda tool, and further demonstrates the vital position of women workers in the war effort.

The advantages of this book are too numerous to mention, and I believe that it will become the required
reading for all students wishing to study the Second World War, and the strategies behind the conflict from a
British perspective. Edgerton engages with some incredibly complex themes, and makes them very easy to
understand by writing about them in an accessible way. The book’s appeal will extend beyond an academic
audience and it should become very popular with general readers. The findings break new theoretical
ground, and effectively demonstrate the significance of the conflict, providing a clear argument and
reasoning to show how Britain prepared, fought and won the war. As a scholar of the Second World War, I
only regret that this work had not been published when I was conducting my PhD research, since it would
have been immensely helpful. Nevertheless, this is a book that many will be able to benefit from in the
future. It is thoroughly engaging and enjoyable to read, one that the author should be immensely proud of.

**Notes**
The author gratefully acknowledges the enthusiasm of the reviewer but does not wish to comment further.

Other reviews:
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Taipei Times
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