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2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068

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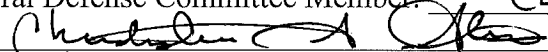
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Constraints to British Military Innovation During The Interwar Period

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AUTHOR: MAJOR PETER E. ANKNEY

AY 2018-19

Mentor and Oral Defense Committee Member: CHRISTOPHER S. STONE PH.D.
Approved: 
Date: 4/10/19

Oral Defense Committee Member: STEPHEN A. KELLEY, CDR, USN
Approved: 
Date: 4/10/19

Executive Summary

Title: Constraints to British Military Innovation During The Interwar Period

Author: Major Peter E. Ankney

Thesis: The British political environment, constrained by a series of social, economic, and foreign policy conditions impeded military modernization and innovation during the interwar period. This dissipation of British innovative potential following World War I is better understood within the context of these constraints, as well as their undermining effects on each of the services' capacity to operationalize key concepts that nearly led to military disaster in 1940.

Discussion: Great Britain emerged from World War I with one of the most modern militaries in terms of technological, organizational, and doctrinal innovation. During the Battle of Cambrai and Le Hamel, British Imperial forces were one of the first to synchronize infantry attacks with supporting arms (tanks, air, aerial resupply, indirect fire, etc.) in ways that changed the character of war. Great Britain's innovative potential was not just consigned to its ground forces; by 1918, its navy possessed twelve aircraft carriers (at a time when no other country had a single one) and was the first in the world to possess its own independent air force. Unfortunately, their military advantages had all but dissipated away only twenty years later in 1940 when Great Britain found itself completely unprepared for another World War, which nearly culminated in its military defeat during the Battle of Britain in 1940. Though much has been devoted to the study of military innovation during the interwar period, this report seeks a deeper understanding of the political, economic, and social obstacles that impeded British military innovation and their impacts to service modernization efforts. From the costs of World War I to its waning great power status, the political mosaic in interwar Great Britain created an environment that even the most effective organizational culture, doctrine, and professional military education would have been difficult to overcome. Additionally, this report will demonstrate that Great Britain's grand strategy throughout the interwar period was not based on political ineptness or naiveté, but logical given its economic, social, and foreign policy constraints whose unforeseen second and third-order effects proved deleterious to military modernization and innovation.

Conclusion: The scale of technological change throughout the interwar period was profound and the subsequent military revolution that marked the conduct of World War II could not have come at a worse time for Great Britain. Its multilateral—and at times unilateral—pursuit of peace that underpinned its strategic approach was a logical result of the economic, social, and political factors during this period. Unfortunately, the unintentional impact of British grand strategy had deleterious effects to its military innovation and modernization efforts.

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Preface

Much criticism has been levied on the British military during the interwar period; specifically, its inability to sufficiently modernize and innovate. This twenty-year span between the two world wars is often characterized as a series of unfortunate events precipitated by service parochialism, inter-service rivalry, and organizational rigidity that culminated in the collapse of France, a near catastrophic military defeat of Great Britain, and a surprise attack on the United States that crippled its Pacific Fleet. On the surface, the answer to “how?” and “why?” may seem obvious, especially with ubiquitous historical material that dissects the various Allied military institutions and find flaws in organizational culture, professional military education, and doctrine that nearly led to an upset of the world order that existed prior to 1940.

This critical analysis offers great insight on institutional preconditions that facilitate military innovation, but provides little into a deeper understanding of “how” and “why.” In most nations, especially democracies, military institutions do not prepare for future conflict in a vacuum, and represent but one instrument of national power that exists within a greater political mosaic. This report presents a critical analysis on the aforementioned narrative, arguing mainly, that service parochialism, institutional rigidity, and inter-service rivalry only scratch at the surface of greater obstacles to British military innovation.

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Much of military preparation depends upon an organization's ability to learn from its past; adapt to existing and "proximate" realities, and leverage emergent technologies and processes that can take on an evolutionary or even revolutionary character.¹ A litany of literature has been devoted to the topic of innovation and its institutional preconditions, which includes fostering a military culture that stresses professional military education, adaptability, and flexible doctrine. Although vital in any innovative effort, there exists a foundational factor that must be present in order to allow the aforementioned elements to produce a desired outcome. The assertion that "broad innovations either undertaken or neglected by military institutions often depend on the political guidance and strategic framework within which those institutions operate" aptly characterizes the greatest obstacle to British military innovation and modernization during the interwar period.² While several critics characterize the failures of British military innovation as self-induced are fair and insightful, their analysis understates the impact of the political environment that such innovation and modernization was expected to occur.³ Additionally, such criticism fails to account for a military culture and doctrine that led to a highly flexible, lethal, and modern force at the conclusion of World War I, which leads one to question: how did a country that emerged from World War I with so much innovative potential (first with the tank, first with the aircraft carrier, first with an independent air force) find its technological advances mostly dissipated by 1939?

The British political environment was constrained by a series of social, economic, and foreign policy conditions that impeded its military modernization and innovation during the interwar period. As evinced by the aforementioned enumerated supports, the dissipation of British innovative potential following World War I is better understood within the context of these constraints, as well as their undermining effects on each of the services' capacity to

operationalize key concepts that nearly led to military disaster in 1940. This paper will examine the domestic, economic and foreign policy drivers that shaped British strategy and describes its unintentional impact to military innovation. Only by gaining perspective through the domestic, economic, and international challenges of the time can one piece together the political rationale for a strategic framework that unintentionally impeded British military innovation and modernization.

As Great Britain and its Allies emerged victorious at the conclusion of World War I in 1918, the collision of industrialization and mass mobilization over the period of four years had set the conditions for innovation that in hindsight were revolutionary in character. The introduction of the tank as well as other emergent technologies and processes created an environment rife with innovative prospect. However, similar to its democratic allies, Great Britain's emergence from the Great War saw a country that was indebted, exhausted, and traumatized. Sold as the war to end all wars, World War I represented to many an aberration that political leaders and society actively sought never to repeat. Although the importance of grand strategy and its subsequent impacts on innovation produces nothing profound, it does raise questions as to expectation management on the many criticisms levied on the British military during the interwar period.

Context to the British Strategy during the Interwar Period

Similar to its Western allies, the political and social atmosphere in Great Britain following World War I made support for military investment untenable. For many military leaders, it was unthinkable that Great Britain would find itself fighting another massive continental war, with some officers regarding "the whole Western Front experience as an aberration of dubious relevance to the Army's present and future tasks."⁴ Additionally, it was not an unrealistic

assumption that only lasting peace could replace more than four years of near-apocalyptic conflict. Given that London's Allies and adversaries had suffered even worse from the war, it was not unreasonable that it assumed that the major continental powers would prioritize the maintenance of peace. This mirror imaging combined with the collective trauma that took root among British society ferried in new domestic, economic, and foreign policy objectives.

Domestically, the collective shock that permeated the British people created a pacifistic and anti-military sentiment that spread across the country as people took stock from the previous four years of conflict. Internationalist and liberal philosophy espoused by President Woodrow Wilson was institutionalized in the League of Nations and found in Great Britain a sympathetic audience. Furthermore, the fabric of the British government was irrevocably changing; by the mid 1920s, London was witnessing "the real end of a long era in which Great Britain's policies were decided by a select group of aristocrats...and the real beginning of the period when the attitude of the majority of the population in regard to improved social services was to be the most influential factor of all in success or failure of governments."⁵ Given this reality, British politicians either represented the views of public opinion or forced to reconcile their policies if they wanted to survive the electoral process.⁶ For instance, from 1914-1921, trade-union membership within Great Britain doubled and by 1924, the Tories lost their majority in parliament and the first Labour Government was established.⁷ Though the party's limelight was short-lived, the message was clear and the political establishment was forced to reconcile and coexist with the social and liberal parties that challenged the status quo. A British politician in 1920 need only look at the failed monarchies in Germany and Russia to better understand that the social structure had irrevocably changed.

Great Britain was also adjusting to emerging economic realities. Not only was its treasury empty after four years of conflict, it no longer remained the economic powerhouse of the world. The country suffered severe consequences to its economy, as well as to its great power status, as a result of World War I. With a national debt hovering in the proximity of £7.4 billion (nearly 40% of the government's budget serviced the National Debt through much of the 1920s) and its merchant marine drastically reduced due to combat losses and prioritization of warship construction, the British Government faced an economic maelstrom.⁸ British exports also declined as a consequence to this reduction in merchant shipping as well as prioritization of its industrialized capacity to support the war effort. "Though its [Britain] industrial predominance had long since gone, it is here that the financial supremacy slipped away," to other international markets, such as the United States, decreasing the value of pound in favor of the dollar.⁹ Shortly after the war, the United States soon replaced Great Britain as the largest creditor nation in yet another sign of decline in the country's great-power status. Largely due to its financial resiliency, however, all-out economic collapse was averted until the worldwide economic crisis of 1929. Similar to the affects of the Great Depression in the United States, Great Britain was faced with a severe economic disruption that manifested itself in massive inflation, unprecedented levels of export decline, and a trade deficit reaching £103 million in 1931.¹⁰ By 1932, the British Treasury Office rightly declared, "today's financial and economic risks are the most serious and urgent that the country has to face."¹¹

This crisis was compounded in light of British imperial policy, and the number of territories and countries that were under its direct and indirect control. In the aftermath of war, the empire would find itself in control and politically responsible for more of the map than it had ever had in its history.¹² Through treaties and the allocation of mandates, World War I had added significant

territory and dominions to the British Empire. From large areas of Africa and the Middle East, to the expansion of its island dominions in the Pacific, the British Empire had reached its zenith. Ironically, this enormous territorial expansion did not correspond with increase in economic and political power; in fact, 1919, as noted above, also marked the decline of British industrial and financial supremacy.¹³ Furthermore, given the aforementioned state of domestic and economic affairs following the war, the territory gained by the British prior to and as a result of the war had begun to represent a vulnerability to the once dominant empire. The rise of Nationalist mass movements in North Africa and the Middle East left many British people and government officials contemplating whether the country could (or should) meet its imperial responsibilities. Eminent British historian Brain Bond reinforces this stark reality check stating,

[T]he extension of the Empire as a consequence of the First World War weakened the sense of a moral bias for imperial rule on two counts. On one hand it was increasingly asked whether Britain had the moral right to remain in India, Egypt and the mandated territories in the face of growing nationalist opposition unless she could genuinely confer greater benefits on the peoples than would accrue from self-government. On the other hand, where British commercial and strategic issues were really at stake, it seemed that the British financial and military weakness would make continued direct rule difficult if not impossible.¹⁴

Given the collective psychological impact of sustaining more than 2.4 million casualties,¹⁵ there existed no appetite for another continental war and that given the maintenance challenge of Great Britain's international responsibilities, military efforts would be prioritized to support a strategy that sustained and managed the weakening empire.

British Interwar Grand Strategy –International Cooperation & Security (1919 - 1933)

Unsurprisingly, these economic and political constraints bred a fiscally conservative grand strategy that sought to avoid conflict. The horrifying costs of war weighed heavily on

British consciousness that drove a political strategy that averted economic collapse, as well as a moral obligation to establish policy of “settling international (or, for that matter, domestic quarrels) by admitting and satisfying the grievances through rational negotiations and compromise, thereby avoiding the resort to an armed conflict which would be expensive, bloody and possibly very dangerous.”¹⁶ In other words, peace was the political pre-requisite of critical importance to the national interest that was to be negotiated at almost any cost to mitigate its domestic, economic, and imperial defense challenges. Furthermore, politically and militarily, the British Government was in no position to adopt aggressive, hardline policies that would lead to crisis on multiple fronts. Further exacerbating this issue was the complete breakdown of relationships with their Allied partners following the United States failure in ratifying the Treaty of Versailles. With France facing comparatively worse domestic and economic constraints, uncertainty in Russia, and the United States increasingly becoming more isolationist, Great Britain possessed very few great power allies that would serve as reliable partners in war.¹⁷ Given these realities, Great Britain took on a more passive, conciliatory strategic framework that allowed it to keep what it had gained and live in peace.¹⁸

It is hard for one to argue that the plans and policies adopted by Great Britain throughout this period did not support its overall strategy. Given the political realities at the time, an obvious victim became the military services, albeit the Royal Air Force (RAF) fared better than their sister services. Military manpower, armament and expenditure at the conclusion of World War I were seen as low hanging fruit and drastic cuts were made not only to placate constituencies that were becoming increasingly sensitive to excessive military expenditures, but also to abate a looming economic crisis. As depicted in Table 1, budget cuts across the services throughout this period were swift and severe:¹⁹

Budget Expenditure (in pounds)	Royal Air Force	Royal Navy	British Army
1919	57 million	188 million	520 million
1920	24 million	112 million	217 million
1922	9 million	56 million	45 million
1930	18 million	52 million	40 million
1932	17 million	50 million	36 million

Table 1

In addition to general disarmament, several changes with regard to policy and established treaties further exacerbated obstacles to post war military innovation: the Ten Year Rule, Washington Treaties, and the Locarno Treaty. Adopted in 1919, the Ten Year Rule required the military services to submit expenditures under the assumption that it would not fight a war with a great power during the next ten years. Instituted by the Treasury Office, this policy-confined defense spending estimates under an assumption that hardly facilitated an environment of innovation and only led to further defense expenditure cuts. Although abandoned in 1932, restraints to military armament and long-term investment would remain and tighten once the effects of the Great Depression led Great Britain into financial crisis in 1931.

However unprecedented the Washington Treaties of 1921-22 were in eliminating a naval arms race among the world's largest naval powers, it virtually signaled an end to Great Britain's status as the unrivaled sea power for the first time since the reign of Charles the II.²⁰ Politically, the realization of eventual naval parity with the United States made sense since Great Britain lacked domestic support for either further defense spending to support a naval arms race. Though the treaty impacted capital shipbuilding (i.e., battleships) and overall tonnage, it mitigated a costly naval arms race with the United States that made the treaty not just palpable, but silently welcomed by many in the British Government. This treaty had deleterious effects on subsequent innovation efforts. By guaranteeing at least naval parity with the United States, it

enabled the Treasury Office the justification to enact naval expenditure cuts without ceding British naval primacy outright. Additionally, based on the restrictions of tonnage, subsequent naval competition would shift to smaller vessels, which the British found to be more economically feasible and appropriate to imperial defense.²¹ The RN's cruiser class ship received the most investment since this presented the most economic (~6000 tons) and capable vessel for imperial defense in the naval inventory.²² Since the British already possessed a sizeable aircraft carrier fleet, its questionable role in imperial defense and cost burden ensured subsequent modernization and innovation efforts were economically untenable.

If the Ten Year Rule and the Washington Treaties represented milestones towards lasting peace via international security cooperation, then the Locarno Treaty (1925) was undoubtedly the political apogee that signaled Great Britain's collective pacifism and disarmament policy goals. Signed in 1925, the Locarno Treaty concluded with Germany formally accepting its Western borders that were enacted by the Treaty of Versailles. Additionally, as a means to enforce and sustain peace, the Rhineland was demilitarized with signatories Germany, France and Belgium agreeing not to attack one another while Great Britain and Italy served as arbiters. Further providing sustenance and the potential for a longstanding peace on the continent was Germany's willingness to accept arbitration with Belgium and France, which resulted in Berlin's signing of arbitration conventions with these two countries as well as with Czechoslovakia and Poland. A remarkable achievement towards a collective peace agreement, the treaty would also promote further expectations of peace by Great Britain's political leadership that it was none too hesitant to accept. The treaty served to hamstring military innovation on two fronts. First, not only did the treaty reinforce Great Britain's grand strategy up to that time, it wholly justified it and its continued practice. The 'Spirit of Locarno' would serve as the rallying cry for collective

security arrangements that informed and shaped future policy decisions regarding continental peace and further disarmament. Second, the treaty brought a sense of security to British policymakers that was not altogether illogical, which enabled them to successfully argue for the economization of defense measures on the continent in lieu of more pressing imperial defense concerns across its territories and dominions. In addition to vindicating further defense expenditure cuts, the prioritization of military innovation became increasingly less pressing since much of the military commitments across its vast empire could be met with aged and obsolete military tactics and technologies. This would have a profound impact to subsequent British innovation and rearmament by 1936 when future conflict on the continent seemed more and more likely. Furthermore, it was peace that these treaties and policies represented, which later served to fuel a more conciliatory foreign policy approach with other nations.²³

With a waning industrial base and facing severe economic issues, Great Britain represented a great power in decline that was forced to reconcile its vast territorial obligations in a resource-constrained environment. Combined with the collective consensus to avoid conflict following World War I, the domestic, economic, and international realities precipitated Great Britain's grand strategy made political sense. Within this context it is difficult to fault Great Britain's policy decisions but there remained a big problem: the lack of consensus among the politicians and military leaders as to a current and emergent threat framework. However moral and politically feasible the strategy was, the lack of a coherent understanding of the threat environment, or net assessment, made it difficult to streamline and prioritize military resources and requirements, which severely hamstrung innovation efforts. In many cases, this oversight aggravated the relationships among the services, each pursuing their own agendas and in competition with one another for limited resources. As a result, service parochialism and inter-

service rivalries were rampant that impeded sustainable and harmonized innovation efforts. It was in this political environment that each service was left to prepare for an uncertain but tenuous future where innovation was compartmentalized, disparate, and lacking any universal accord regarding current and potential adversaries.

Impacts to British Military Innovation (1919 – 1932)

Despite these obstacles, the British Army surprisingly innovated quite well during the interwar period. Their introduction of the tank and its subsequent employment to break German lines at the conclusion of World War I was a harbinger of armored exploitation warfare that was successfully employed by Germany in 1939. Initially energized by outspoken practitioners such as J.F.C. Fuller, Liddell Hart, and George Lindsay, the advantages and need of a mechanized force capable of high tempo and armored maneuver had been conceptualized.²⁴ Considered by some before its time, the British Army conducted exercises employing tank and motorized forces during its training seasons as early as 1926. Although these maneuvers demonstrate key issues with the mechanized force, the exercises emphasized armor's utility and superiority in many aspects over post war conventional forces. With the introduction of the radio in 1931 and experimentation of deep penetration raids using mechanized and motorized forces, the potential for armored warfare was clear. Although the exercises were limited in design and not necessarily deemed a success among British observers, the Germans found they served as an epiphany whose innovative potential could be the salvation to trench warfare gridlock.²⁵ It is here that early British armored warfare advances were soon the victim of the prevailing political and economic climate that lacked any appetite for further investment. Unfortunately, British advances in armored warfare were soon eclipsed by a German military organization more willing to operationalize the offensive benefits of armored warfare, providing an early asymmetric edge

that Great Britain (as in many other areas of innovation) would spend the majority of World War II to offset.

The Royal Navy (RN) emerged from World War I as the most technologically advanced and experienced navy on earth, being the first nation to introduce an aircraft carrier (HMS *Argus*) capable of launching and landing aircraft. Astonishingly, when no other country had a single aircraft carrier, HMS *Argus* represented the most advanced carrier of twelve in the British fleet.²⁶ However, by the commencement of World War II, Great Britain possessed seven carriers, only four of which were first-line. Geopolitically, Great Britain's great power status was due to its primacy in the maritime domain so it was not surprising that the RN faced much fewer obstacles to innovation than the British Army; however, much like the tank, improvements and innovation to existing technology barely materialized beyond concept. In the face of a political climate of conservative fiscal policy that also had to balance vast imperial obligations, the RN fell victim to the economic and foreign policy constraints that stymied bold innovation. First, in addition to the armament expectations of the Washington Treaty, carriers represented very costly investments. Not only did shortfalls exist with the World War I era carriers that required further research and development, but also the cost to source its associated aviation proved politically injudicious for the Admiralty to argue. The "[Washington] treaty did create expectations about further naval arms control which made it inexpedient for the Admiralty to ask for more carriers or aircraft at a time when politicians were enthusiastically thinking about major reductions."²⁷ As for the carriers themselves, most modernization obstacles were primarily technological, such as catapults, arrestor wires, and deck-parks. Unfortunately, the cost associated with these modernizations was overshadowed due to the cost burden of the aviation, which was seen as redundant and antitheses to armament critics. As a result the RN was forced to build up its fleet

with ships more relevant to imperial defense such as the cruiser, which were also more cost effective. Further intensifying the argument against the Admiralty was that Great Britain already possessed more aircraft carriers than any of its allies or potential competitors. Second, the lack of a strategic framework that outlined potential adversaries invariably created an atmosphere of disparate and compartmentalized innovation pursuits creating contentiousness among the services that impaired cooperation. This would have a profound impact on the Admiralty's procurement of the required carrier aviation where a unified maritime strategy could have better prioritize resources between the Royal Air Force (RAF) and RN. Though not exhaustive, these factors were vital in the RN eventually being eclipsed in its initial carrier advancement advantage, quantitatively and qualitatively, by the United States in 1926 and by Japan in 1933.²⁸ In many ways, carrier warfare represented a lost opportunity very similar to that of armored warfare.

No other instrument of warfare represented more of a revolutionary change to modern war as airpower did, introducing an entirely new domain to the character of war. As the world's first independent air force, the RAF emerged from World War I facing the least amount of outrage by the public and politicians, but its nonetheless perceived and real utility to the battlefield had manifested with limitless potential for defense of the empire.²⁹ The RAF's successful role in the suppression of revolts in India and Iraq not only demonstrated its usefulness in imperial defense but its successes during early colonial conflicts all but assured its independence as separate branch of the British military. RAF Commander Air Marshall Hugh Trenchard adroitly argued that airpower enabled His Majesty's forces to bypass obstacles and strike targets at a fraction of the cost of a land force during punitive expeditions—similar to the same argument the RAF would make concerning strategic bombing as inter-service competition

for resources became more fierce in the subsequent decade. Throughout much of the interwar period, the RAF proved an economically feasible means to policing the empire, one or two reconnaissance planes providing the coverage of an entire cavalry battalion.³⁰ Many imperial defense missions were capably executed with aged, cost effective World War I aircraft; for example, the Wapiti biplane was still in use at the onset of World War II.³¹ Naturally, the RAF's early effectiveness in imperial policing and fiscal fastidiousness furthered a case for their criticality in defense of the homeland.³²

Combined with its early success and cost effectiveness, the RAF found willing allies within the normally parsimonious Treasury Office ably articulating that the future of air power would negate the requirement for a large continental army. Its effectiveness in this argument is evinced in Table 1, which indicates the RAF being the only military branch that enjoyed consistent budget increases from 1922-1933. Also, with its imperial role rather cost effective (i.e., Wapiti biplane employment), it had more flexibility to invest in home defense and European operations. This would prove crucial to subsequent innovation.

For all the advantages that airpower espoused, it also represented an emergent threat: "...the advent of air power had changed Britain's' strategic situation: for the first time since Napoleon, the British Isles were vulnerable to a direct attack by an enemy."³³ However conducive the environment that existed in the conceptual development of strategic bombing, the reality of RAF innovation that was required to operationalize it proved far from impressive.³⁴ Similar to the RN, the RAF's issues were primarily technological; specifically, in innovation that improved bombing accuracy and navigation. Though it is arguable that chronic underfunding was the main obstacle, the British Government failed to invest and exploit relationships with civilian air transport companies. Where the United States and Germany heavily invested and

subsidized civilian companies, British reluctance to follow suit represents a missed opportunity, especially with the Empire's unique geopolitical considerations. These subsidies enabled American and German innovation efforts, specifically long-distance and night-flying technology. These "were the capabilities that translated directly into military capabilities. By the late 1930s, the German and American air forces had adapted the civil aviation navigation technology for military use, and [their] bombers were able to fly fairly effectively over long distances, in bad weather or at night. In contrast, the RAF Bomber Command remained mostly a daytime and fair weather force."³⁵ Undeniably, similar to the RN and British Army, chronic underfunding and a nation galvanized for disarmament posed as challenging obstacles that were difficult to overcome; however, as American and German efforts demonstrate, technological advancement in a resource constrained environment was achievable. The British Government's failure to seek out and invest in commercial avenues demonstrated strategic shortsightedness with implications that would not manifest until the late 1930s.

British Interwar Grand Strategy – Limited Liability (1933 – 1939)

If one could justify Great Britain's grand strategy based on its domestic and economic realities, as well as its undertakings towards peace within the international community that manifested with the Washington and Locarno Treaties, it becomes more difficult to do so after 1933. With the collapse of the Locarno Treaty in 1931 due to the economic crisis, the Geneva Disarmament Conference in 1932 exposed dark tidings to the future of international cooperation and security.³⁶ With Germany increasingly adopting policies to placate the left and right wing constituencies that were willing to accept violence at home and abroad, and a Japan's increasing insistence that it be viewed as a naval equal, Great Britain remained in no position to enforce the policies outlined in the treaties.³⁷ At the Chiefs of Staff and Treasury Office's insistence, the Ten

Year Rule was abandoned but rigid defense expenditures remained. 1932 “set a pattern which was to change little over the next six years. Financial stringency forced a Treasury...to impose on the Services such [defense spending] restrictions...”³⁸ much to the acrimony of British military leadership. Partly due to the decrepit state of the economy and partly to public opinion, whose views had changed little with regard to another European war, this breakdown in collective cooperation did little to change British grand strategy. Additionally, the Locarno breakdown was partly due to the lack of commitment that it required of Great Britain and its allies. Historians have levied much criticism on Prime Minister Chamberlain’s naiveté during his tenure, but it must be remembered that most of the political establishment supported such views. For most of the 1930s, the Liberal and Labour parties continued to hope that collective security might make armament unnecessary, while the usual defense-minded Conservative party supported an armament policy that excluded any continental commitment—the very commitment that Locarno required to ensure compliance.³⁹ Combined with the economic crisis of 1929, the Locarno Era had all but ended by 1932.

By the mid-1930s, and in the face of telltale signs of German rearmament, the acceptance of limited liability as a defense policy had severe consequences to military innovation, especially within the British Army. Officially adopted in 1936, but being practiced as early as 1933, the policy of limited liability would remain in effect up until open hostilities on continental Europe erupted. Well-known military theorist Liddell Hart, who at the time worked as a military correspondent for the *Daily Telegraph* (1925-1935) and *The Times* (1935-1939), exploited his influence to advance the concepts of limited liability. Hart argued that the concept of limited liability was nothing more than the “British way of war,” where it could use its navy, air force, and small colonial army on the periphery to influence continental conflicts without the heavy

casualties of a continental commitment.⁴⁰ Owing much to his own experiences from World War I, where he viewed the commitment of a continental army as a mistake, he envisioned a strategic framework that emphasized the superiority of the defense as well as the role of strategic bombing and air defense in lieu of any large-scale commitment of British troops on the continent. Hart would find a sympathetic ear in then Chancellor Neville Chamberlin, whose grand strategy views closely aligned with the influential theorist and writer, subsequently materializing in a relationship as an unofficial advisor to the Secretary of State for War, Leslie Hore-Belisha by 1938. Hart leveraged his influence with many politicians and military leadership to successfully argue that due to recent advancements in technology, mass formations would be more susceptible to air attack and any large continental army committed to the continent would suffer the same results of World War I. Therefore, any collective security obligation should be *limited* to air and naval support.⁴¹ Only in retrospect does it seem rather easy to criticize the validity of this strategy (and many historians have), especially by the late 1930s when the threat of Germany could no longer be ignored, but much of the political leadership that supported a more conciliatory approach remained in power and in the majority so it proved an easy sell. The irony remains that for a man that was as vocal and as influential as Liddell Hart regarding the future of mechanization it would be the modernization of the British Army that would suffer most due to this policy.

By 1936, there was no question as to the threat posed by Germany with its rearmament programs and subsequent occupation of the Rhineland—an undeniable denouncement of the previous international security cooperation arrangements and treaties. At this point, even Great Britain began to acknowledge the emergent German threat to the international order and the deteriorating security situation on the continent. Despite the danger on the continent that an

aggressive Germany posed to home defense, Great Britain remained implacably aligned with its strategy with the caveat through limited liability. Opposed to any recommendations of a large expeditionary or field force in light of the current security situation on the continent, Prime Minister Neville Chamberlin was influential in adopting a defense budget to strengthen RN and RAF programs that improved home and imperial defense programs. He and his political allies' views of any continental commitment was so ensconced it culminated in the New Army Policy in 1938, which forbade the British General Staff from utilizing public funds and resources to invest in army preparations to fight a continental war in Germany. This policy would have severe detrimental effects to British Army modernization and innovation efforts. However clearer the strategic picture became as the 1930s matured, investment into military modernization and innovation was politically slow-rolled and indicative of the prioritization that a limited liability policy espoused, which is evident in the annual budgets of the separate military services:⁴²

Budget Expenditure (in pounds)	Royal Air Force	Royal Navy	British Army
1933	17 million	54 million	38 million
1935	27 million	65 million	45 million
1936	50 million	81 million	55 million
1938	73 million	96 million	86 million
1939	105 million	97 million	88 million

Table 2

Once more and in context, these policies are not altogether unreasonable when the overextension of British military commitments are taken into account, whose leadership concerns are aptly summarized by a Chiefs of Staff Memorandum that was circulated in 1937, “we cannot foresee a time when our defense forces will be strong enough to safeguard our trade, territory, vital

interests against Germany, Italy, and Japan at the same time...[we cannot stress enough] the importance from the point of view of Imperial Defense of any [policy] action which could be taken to reduce our potential enemies and gain the support of potential allies.”⁴¹

Impacts to British Military Innovation (1933-1940)

The service that would suffer the most in such a political climate was the British Army. Even by the late 1930s when the majority of political and military leaders saw Germany as the country’s greatest threat and home defense receiving higher priority, the army was seen as nothing more than a colonial peace force and its sister services received priority for resources.⁴³ As early as 1934, the tank brigade had already existed as a permanent fixture within the British Army organization.⁴⁴ Additionally, with the introduction of the radio in 1931, the British continued their evolutionary experimentation with their armored forces conducting deep penetration raids in the exercises of 1934.⁴⁵ Energized by armored warfare proponents George Lindsay and P. C. S. Hobart, a 1934 exercise consisted of a mobile force composed of Hobart’s tank and Lindsay’s experimental mechanized brigade augmented by additional auxiliary units. Despite time restrictions and limitations imposed by the exercise director, Commanding General of Southern Command, General Sir John T. Burnett-Stuart, the exercise demonstrated the innovative potential of armored warfare but the overall proof of concept was deemed a failure. Originally, Lindsey had developed two plans that were designed to demonstrate armor’s potential for mobility and tempo, but were scrapped in favor of a third plan that fell within the bounds of the exercise’s artificial design. Unfortunately, the third plan did not leave much to the imagination for the opposition force, which basically ensured that Lindsay’s direction of attack was quite predictable. As Liddell Hart recalled later, Lindsey was forced to “make the best of a bad job,” due in large part of exercise restraints.⁴⁶

The consequences of this perceived failure that highlighted the shortcomings (much of it due to the artificial limitations imposed on the exercise force) of the experimental mobile force proved dire. First, military observers and media reporters in attendance drew their own conclusions of the experimental mobile force based on the outcome of the exercise. As Harold R. Winton suggests, “[unable to influence the atmosphere]...Burnett-Stuart was unable to offset the notion that an experimental formation consisting of two of the army’s most modern units had been bested by the conventional infantry division...”⁴⁷ Second, the perceived failure of the mobile force was largely placed on Lindsay’s shoulders and was subsequently posted to India where the British Army would lose an avid and insightful proponent to armored warfare. Hart’s open criticisms of the exercise were seminal in that they were largely responsible in crippling the development of British armored warfare. Though he understood that the exercise design was the largest contributor, his domestic and political audience did not understand this nuance. Unfortunately, the perceived failures of the experimental mobile force could not have come at a worse time for the British Army as the current political climate and increasing support of a limited liability made it even more challenging for the army to argue the merits and relevance of armored warfare.

Though the failures of the exercises of 1934 proved disastrous to British armored warfare, gradual mechanization continued with mixed results under the Chief of the Imperial General Staff (CIGS), General Archibald Montgomery-Massingberd (Feb 1933-Apr 1936), who was aided by a pro-army Secretary of State for War, Duff Cooper (Nov 1935 – May 1937), with mixed results. Not long after the ascension of Neville Chamberlain to Prime Minister in 1937, which had all but assured a cessation to modernization and innovation efforts of the British Army, Cooper was replaced with Leslie Hore-Belisha. As already noted, Hore-Belisha’s

subsequent relationship with Liddell Hart had profound impacts on the reorganization of the British Army and the role of British armored warfare. This taciturn atmosphere among the political and military leadership would prove the final nail in the coffin to British armored warfare reorganization and innovation efforts. In November 1937, and not borne out of military logic but political compromise, the final composition of the mobile force was announced, which consisted of one tank brigade and two mechanized cavalry brigades with supporting units.⁴⁸ Further adversely affecting the army's ability to advance armored warfare was the British Cabinet's decision to make home air defense priority number one for the British Army, which would be bound in policy as the New Army Policy in 1938. Such policy only provided funds to a potential continental role once home air defense, trade route protection, and imperial defense concerns had been addressed, which severely limited any army expenditure and procurement for the purposes of armored modernization and innovation.⁴⁹

With a proud naval history and its critical role in imperial defense, the RN did not suffer quite as much as the British Army by the limited liability strategy. In a time marked by relative peace and cooperation that Locarno encapsulated, which was further bound by the Washington and London Treaties, the RN entered the early 1930s like as if returning from a "holiday." Additionally, with the emergence and the increasingly strategic importance of airpower, the RN was no longer seen as the lone guarantor in defense of the homeland.⁵⁰ With the commencement of the Japanese conquest of Manchuria in 1931 (and its subsequent renunciation of the London Treaty in 1936), the "spirit of Locarno" had all but ended with the RN in desperate and vitriolic competition with the RAF for limited resources (especially regarding aviation). Furthermore, 1933 would prove a dire year for the RN with the ascension of Hitler and the Japanese overcoming Great Britain in terms of maritime aircraft numerical superiority.⁵¹ Although telltale

signs of German and Japanese armament were evident, the fiscally stringent and anti-defense spending political atmosphere in Great Britain continued to plague progress in a cogent and coherent aircraft carrier program.

First, even in the face of emergent threats on the continent and Far East, political leadership still remained hopeful that peace could be obtained. In retrospect, this seems naively altruistic for a government strategy, but realities of the impacts of the economic crisis in 1929 were still manifest and continued to bind the political agenda regarding imperial defense and expenditure. Therefore, the RN was left to compete with the RAF in a resource-constrained environment, which only increased animosity and disparate innovation programs. Resource “constraints reduced the ability and willingness to test what they did and made it more difficult for the navies to cooperate with the other services.”⁵² Within this caustic and fiscally stringent environment, the RN lacked any appetite for risk and continued to invest in programs that an aging Admiralty was more comfortable with.

Second, obstacles to innovation were exacerbated without a unified strategic framework that defined and prioritized expected and “proximate” threats to Great Britain’s national security, either adversary or competitor. Without specific direction, the RN was unable to define the capabilities it required and prioritize accordingly. This lack of foresight was ominous and the “[political leadership] who made the decision failed to realize the six-year time lag between the initiation of a major change in military policy and its likely industrial and martial fulfillment.”⁵³ Not only did this leave an ambiguous role for carrier aviation that impacted technical innovation, improvements and further innovation efforts on the carriers themselves stagnated. By the time the political and military leadership was able to coherently define the threat with the rising

international tension in 1938, it was far too late for the RN to adapt, and British carrier warfare would never again achieve the apogee it had had throughout the 1920s.

Of all the services, the RAF emerged in the strongest position among the services regarding political and budgetary support (see Table 2) due to several reasons. First, by 1934, the RAF had already demonstrated a keen role in imperial defense and a promising future towards home defense, which the latter was quickly becoming a priority as international events continued to unfold. Second, RAF enthusiasts continued to gain powerful allies in government in their assertions that strategic bombing would make large armies irrelevant, which directly fed the political appetite of limited liability that rejected a continental commitment. And lastly, as it appeared that the Locarno era was breaking down, the Air Ministry's alarmist machinations that Germany's increased rate of production would enable it to inflict a "knock out" blow by 1938 further served the service's agenda.⁵⁴ Whether these arguments proved real or perceived in retrospect, they seemed to have had the affect the RAF desired. Once rearmament became a reality in 1934, the RAF's budget would drastically rise to nearly quadruple amount by 1939 (more than any of the other services). One would think that these would be positive omens for RAF innovation efforts, but in reality, the converse held true.

It was not until 1937 that the RAF began to apply its conceptual plans towards a specific enemy. Though Japan and France had been considered as potential threats, very little strategic framework had been applied to Germany as a potential adversary. The lack of political and military foresight stalled focused innovation efforts and disjointed modernization. Once rearmament began, many of the aircraft that were ordered and put into production in 1934 (a full three years before the RAF began to operationalize its concepts towards Germany) possessed severe shortfalls (i.e., lack of fighters, armaments, etc.) that made most of them irrelevant against

their German counterparts. Furthermore, as the RAF began to operationalize its strategy to meet the German threat, it became shockingly apparent that its current operational capacity was unable to meet strategic requirements. As late as 1938, only 93 fighters were modern (out of an inventory of 666). and out of 29 Fighter Command Squadrons only one was capable of flying above 15,000 feet.⁵⁵ As Robin Higham has observed, “The R.A.F had faced rearmament in 1934 at a time of vast technological changes. It entered the war in a state of strategic flux. Created as an offensive force...it found itself in a dichotomous position in September 1939. The major part of its effort was being devoted to providing the men and machines for defense against a knock-out blow which it had convinced everyone would come at once, while its own deterrent counter-strike [strategic bombing] force had been found to be operationally unusable.”⁵⁶ Thus, with home defense as an unbending strategic defense policy and the lack of any political direction until the late 1930s, British grand strategy served to impede the required innovation to operationalize strategic bombing beyond concept.

Conclusions:

Though easy in hindsight to criticize British preparations during the interwar period, all Western Allies faced similar experiences. Every great power entered the 1920s having concluded World War I, which had wrought nearly 40 million casualties.⁵⁷ Combined with the economic costs that totaled more than \$200 billion, this inconceivable expense of blood and treasure could only be justified if the end result was a lasting peace.⁵⁸ International cooperation and security was a logical assumption, since for all the destruction that resulted from World War I, Great Britain’s Allies (i.e., France and Russia) and belligerents had suffered a great deal more. In Great Britain’s case, the cost of anything but peace was an exigent threat to its economic, social, and political survival. In a sense, the British strategic framework’s net assessment was

not directed at a specific threat, but of any threat that that challenged hard-won peace following the Armistice. Any threat of future war on the continent would have been seen as a failure to observe the lessons learned from World War I and might call into question its justification of being fought in the first place. Furthermore, the scale of technological change throughout the interwar period was profound and the subsequent military revolution that marked the conduct of World War II could not have come at a worse time for Great Britain. As Machiavelli has observed, “it is worth noting that nothing is harder to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in introduction of new order of things.”⁵⁹ Given this context, Great Britain’s multilateral—and at times unilateral—pursuit of peace that underpinned its strategic approach as a logical result of the economic, social, and political cost burden from World War I. It was more than just idle talk as much of British economic, social, and foreign policies supported such an approach. However, their noteworthy pursuit came with a cost.

British military innovation regarding the aircraft carrier, strategic bombing, and armored warfare were well ahead of their contemporaries and future adversaries through the early and mid interwar period. Although not an illogical approach within context, the British interwar strategy’s impact to military modernization, and hence innovation, was the main obstacle that dissipated much of the innovative potential that existed after World War I. Additionally, even as the strategic picture became clearer and threats became better defined during the limited-liability era, it remains unsurprising that peace continued to be pursued as late as the Munich crisis in 1938. Unfortunately, this disrupted focused innovation efforts across the services where an accepted net assessment may have overcome some budgetary constraints and de-escalated service parochialism.

In many ways, Great Britain's strategic approach made political and economic sense. It had emerged from World War I at the peak of its imperial power with a declining industrial base while the government faced near economic collapse, all the while facing the inevitability of its declining monopoly on economic and military power. Combined with an increasingly powerful domestic voter base still suffering a collective trauma from more than four years of war, the future for any British government official or civilian was uncertain. However, by 1933, telltale signs of the changing international landscape registered little with the many of the strategy's champions. From 1934 onward, the limited liability policy continued to produce a political environment that was not conducive to modernization and innovation. Policies that supported Great Britain's strategic approach, such as the New Army Policy, continued to hamstring military innovation as late as 1938, and the absence of any credible threat assessment until 1939 made innovation efforts disparate among the services.⁶⁰ As in World War I, British would enter World War II unprepared and facing foes that had operationalized many of the offensive benefits of armored (i.e., Germany) and carrier warfare (i.e., Japan). Ironically, if it was not for Britain's late innovation that produced asymmetrical advantages regarding integrated air defense and radar, the Battle of Britain may have proved its "peace at any price" approach as fatal.

Endnotes

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- ¹ Mark M. Lowenthal, *Intelligence: From Secrets to Policy*, 7th ed. (Los Angeles: CQ Press, An Imprint of SAGE Publications, 2017), 8. Also called Net Assessment.
- ² Williamson Murray, "Innovation: Past and Future," In *Military Innovation During the Interwar Period*, eds. Allan R. Millet and Williamson Murray (New York: Cambridge University Press, 1996), 305.
- ³ For criticism on British military innovation during the interwar period, see essays by Brian Bond, Williamson Murray, and J. Paul Harris In *Military Effectiveness: The Interwar Period*, eds. Allan R. Millet and Williamson Murray vol. 2, (New York: Cambridge University Press, 1988); In *Military Innovation During the Interwar Period*, eds. Allan R. Millet and Williamson Murray (New York: Cambridge University Press, 1996); and *In Past as Prologue*, eds. Williamson Murray and Richard Hart Sinnreich (New York: Cambridge University Press, 2006).
- ⁴ J. Paul Harris, "Obstacles to Innovation and Readiness: the British Army's experience 1918-1939," *In Past as Prologue*, eds. Williamson Murray and Richard Hart Sinnreich (New York: Cambridge University Press, 2006), 196.
- ⁵ Paul M. Kennedy, *The Rise and Fall of British Naval Mastery* (London: Ashfield Press, 1986), 271.
- ⁶ Paul M. Kennedy, *Strategy and Diplomacy, 1870-1945* (London: Allend & Unwin in Association with Fontana Paperbacks, 1983), 29.
- ⁷ David Stevenson, *Cataclysm* (New York: Basic Books, 2004), 440.
- ⁸ P. Kennedy, *Strategy and Diplomacy, 1870-1945*, 97.
- ⁹ P. Kennedy, *Strategy and Diplomacy, 1870-1945*, 98.
- ¹⁰ P. Kennedy, *Strategy and Diplomacy, 1870-1945*, 99. Inflation would rise as much as 74% after the economic crisis of 1929.
- ¹¹ Committee on Imperial Defense, Treasury Comments on Chief of Staff Review, March 1932, *Papers 1087-B*, as quoted in Michael Howard, *The Continental Commitment* (London: The Ashfield Press, 1989), 98.
- ¹² Brian Bond, *British Military Policy between the Two World Wars* (Oxford: Clarendon Press, 1980), 10. The British would reach its imperialist high water mark in 1919. By 1929, the British Empire had only decreased in its territories and dominions by a small margin.
- ¹³ P. Kennedy, *Strategy and Diplomacy, 1870-1945*, 99.
- ¹⁴ Bond, *British Military Policy between the Two World Wars*, 11.
- ¹⁵ Forces War Record, "Soldiers Died in the Great War," accessed December 28, 2018, <https://www.forces-war-records.co.uk/soldiers-died-in-the-great-war>. This estimate includes the fatalities and wounded of all British imperial and colonial forces.
- ¹⁶ P. Kennedy, *Strategy and Diplomacy, 1870-1945*, 16.
- ¹⁷ P. Kennedy, *Strategy and Diplomacy, 1870-1945*, 28.
- ¹⁸ W. N. Medlicott, *British Foreign Policy Since Versailles 1919 – 1963* (New York: Methuen, 1968), xvi, as quoted in P. Kennedy, *Strategy and Diplomacy, 1870-1945*, 27.
- ¹⁹ Robin Higham, *Armed Forces in Peacetime: Britain, 1918-1940, a Case Study* (London: G. T. Foulis, 1962), 326-7.
- ²⁰ Michael Howard, *The Continental Commitment* (London: Ashfield Press, 1989), 89.
- ²¹ Robert G. Albion, *Makers of Naval Policy 1798-1947*, ed. Rowena Reed (Annapolis, MD: Naval Institute Press, 1980), 233.
- ²² Greg Kennedy, *Imperial Defence: The Old World Order 1856-1956* (London: Routledge, 2008), 136.
- ²³ Though debated by Historians as to when it was employed, this *conciliatory* approach is referred to as appeasement. At the time appeasement was not viewed by most with derision (which is often the case now) but based on a moral obligation to establish polices that averted another major conflict. In *Strategy and Diplomacy*, Paul Kennedy argues that during the interwar period, Great Britain exercised an appeasement strategy in 1923, making concessions with its dominions to avoid mass uprisings and internecine conflict. In *Roots of Appeasement*, Martin Gilbert argues that the first example of British appeasement with Germany took place during the Treaty of Versailles negotiations.
- ²⁴ Williamson Murray, "Armored Warfare: The British, French and German Experiences," In *Military Innovation During the Interwar Period*, eds. Allan R. Millet and Williamson Murray (New York: Cambridge University Press, 1996), 26.
- ²⁵ J. Paul Harris, "Obstacles to Innovation and Readiness," 199-200.

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- ²⁶ Richard R. Muller, "Close Air Support: The German, British, and American Experiences," In *Military Innovation During the Interwar Period*, eds. Allan R. Millet and Williamson Murray (New York: Cambridge University Press, 1996), 184.
- ²⁷ Geoffrey Till, "Adopting the Aircraft Carrier: The British, American and Japanese case studies," In *Military Innovation During the Interwar Period*, eds. Allan R. Millet and Williamson Murray (New York: Cambridge University Press, 1996), 199.
- ²⁸ Till, "Adopting the Aircraft Carrier," 202.
- ²⁹ Williamson Murray, "Strategic Bombing: The British, American, and German experiences," In *Military Innovation During the Interwar Period*, eds. Allan R. Millet and Williamson Murray (New York: Cambridge University Press, 1996), 102. As Murray notes, "the RAF...was the least affected by the postwar anger. At the least, it escaped blame for the Western Front or failure to win another Glorious First June." Within reason, the British public generally accepted military expenditure allotted to the RAF.
- ³⁰ G. Kennedy, *Imperial Defence*, 157.
- ³¹ G. Kennedy, *Imperial Defence*, 157.
- ³² Brian Bond and Williamson Murray, "The British Armed Forces, 1918-39," In *Military Effectiveness: The Interwar Period*, eds. Allan R. Millet and Williamson Murray vol. 2, (New York: Cambridge University Press, 1988), 107.
- ³³ Murray, "Strategic Bombing," 102.
- ³⁴ Murray, "Strategic Bombing," 102.
- ³⁵ G. Kennedy, *Imperial Defence*, 160.
- ³⁶ Howard, *The Continental Commitment*, 96.
- ³⁷ Howard, *The Continental Commitment*, 96.
- ³⁸ Howard, *The Continental Commitment*, 98-99.
- ³⁹ Howard, *The Continental Commitment*, 99.
- ⁴⁰ Williamson Murray, "Armored Warfare," 9.
- ⁴¹ Brian Bond, *Liddell Hart: A Study of His Military Thought* (New Brunswick, NJ: Rutgers University Press, 1977), 93.
- ⁴² Higham, *Armed Forces in Peacetime*, 326-7
- ⁴³ Williamson Murray, "Armored Warfare: The British, French, and German experiences," In *Military Innovation During the Interwar Period*, eds. Allan R. Millet and Williamson Murray (New York: Cambridge University Press, 1996), 10.
- ⁴⁴ Harold R. Winton, *To Change an Army: General Sir John Burnett-Stuart and British Armored Doctrine, 1927-1938* (Lawrence, KS: Kansas University Press, 1988), 174.
- ⁴⁵ Winton, *To Change an Army*, 177.
- ⁴⁶ Sir Henry Basil Liddell Hart, *The Tanks*, Vol. 1 (London: Cassel & Company LTD., 1959), 334.
- ⁴⁷ Winton, *To Change an Army*, 182.
- ⁴⁸ Winton, *To Change an Army*, 195-7.
- ⁴⁹ Winton, *To Change an Army*, 198.
- ⁵⁰ P. Kennedy, *The Rise and Fall of British Naval Mastery*, 281-2.
- ⁵¹ Till, "Adopting the Aircraft Carrier," 202.
- ⁵² Till, "Adopting the Aircraft Carrier," 226.
- ⁵³ Robin Higham, *Armed Forces in Peacetime: Britain, 1918-1940, a Case Study* (London: G. T. Foulis, 1962), 146.
- ⁵⁴ Higham, *Armed Forces in Peacetime*, 175.
- ⁵⁵ Higham, *Armed Forces in Peacetime*, 186.
- ⁵⁶ Higham, *Armed Forces in Peacetime*, 188.
- ⁵⁷ History on the Net, "How Many People Died in World War I: A Look at the Numbers," accessed February 10, 2019, <https://www.historyonthenet.com/how-many-people-died-in-ww1>.
- ⁵⁸ David Stevenson, *Cataclysm: The First World War as Political Tragedy* (New York: Basic Books, 2004), 179.
- ⁵⁹ Niccolo Machiavelli, *The Prince*, (Newburyport: Open Road Media, 2014), 17.
- ⁶⁰ Paul Kennedy, "British "Net Assessment" and the Coming of the Second World War," In *Calculations: Net Assessment and the Coming of World War II*" eds. Williamson Murray and Allan R. Millet (New York: The Free Press, 1992), 40. An updated European Appreciation Memo was published in 1939 following the Munich Crisis.

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