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## **Armageddon's Lost Lessons: Combined Arms Operations in Allenby's Palestine Campaign**

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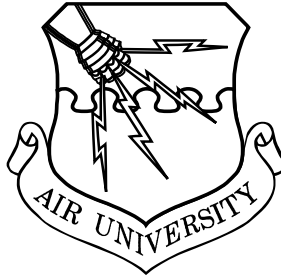
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**Armageddon's Lost Lessons**  
**Combined Arms Operations in**  
**Allenby's Palestine Campaign**

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## **Foreword**

It is my great pleasure to present another of the *Wright Flyer Papers* series. In this series, Air Command and Staff College (ACSC) recognizes and publishes our best student research projects from the prior academic year. The ACSC research program encourages our students to move beyond the school's core curriculum in their own professional development and in "advancing air and space power." The series title reflects our desire to perpetuate the pioneering spirit embodied in earlier generations of Airmen. Projects selected for publication combine solid research, innovative thought, and lucid presentation in exploring war at the operational level. With this broad perspective, the *Wright Flyer Papers* engage an eclectic range of doctrinal, technological, organizational, and operational questions. Some of these studies provide new solutions to familiar problems. Others encourage us to leave the familiar behind in pursuing new possibilities. By making these research studies available in the *Wright Flyer Papers*, ACSC hopes to encourage critical examination of the findings and to stimulate further research in these areas.



RONALD R. LADNIER  
Brigadier General, USAF  
Commandant



## **Acknowledgments**

The origins of this paper lie in my own preparation for attending ACSC. As an Army officer preparing to represent my service at an Air Force school, I wanted to ensure that I had some background in the origins and development of airpower. After reading some short works on the subject, I came upon Robin Higham's *Airpower: A Concise History*. Early in the book, there was a short entry entitled "Airpower in Action: The Ideal." In less than two pages, Higham discussed Gen Edmund H. H. Allenby's Palestine Campaign and how aircraft from the fledgling Royal Air Force (RAF) had been integrated with traditional ground forces to achieve a tremendous victory.

For something so momentous in the evolution of combined arms operations—the "ideal" as Higham noted—I thought a few scant paragraphs on the subject appeared rather incommensurate with its importance. The more I looked into it, I found that relatively few historians had paid much attention to the campaign and even less to airpower's role in it. This paper is an attempt to fill a perceived void in the history of World War I, while also hopefully drawing out lessons that are still applicable for today's military professionals.

As with any historical work, this paper is truly a collaborative effort. First and foremost, I would like to thank Dr. William Dean for his professional guidance, extreme patience, and unyielding ability to focus my research and writing. He is not only a teacher, but also a mentor. I would also like to thank Dr. Kevin Holzimmer, RAF Wing Comdr Stephen Cockram, Dr. Michael Grumelli, and Maj William Pinter for reviewing drafts of the manuscript and providing invaluable advice and assistance. Finally, I would like to thank my wife, Susan, and daughter, Cameron, for cheerfully allowing me to accommodate General Allenby and his Egyptian Expeditionary Force (EEF) in our home for the bulk of our tour at Maxwell.





## **Abstract**

In September 1918, the EEF concluded its campaign in Palestine by routing the Turkish forces at the battle of Megiddo. Under command of British general Allenby, the EEF successfully executed one of the most decisive engagements in any theater of World War I. Aply employing and synchronizing infantry, cavalry, and air forces, Allenby provided future military professionals and historians with a shining illustration of the efficacy of combined arms operations. In terms of surprise, concentration, and operational balance of forces, the culmination of the Palestine campaign was a foreshadowing of the German blitzkrieg used in World War II.

Unfortunately, the true lessons of Allenby's campaign were lost for future generations of military officers. Focusing on the culture and romanticism of the horse cavalry, students of the Palestine battles garnered little instruction on the emerging trends of combined arms operations that integrated air and ground mobility into a decisive operational-level weapon.

This paper analyzes the reasons those in the profession of arms missed the lessons of airpower and its role in combined arms operations. It examines the context of the Middle Eastern theater of World War I, describing how "western front myopia" added to the overshadowing of operations conducted in Palestine. The paper also delves into the role of airpower in the Middle East and how Allenby integrated a relatively new weapon system into his force structure and operational planning and execution. Though largely unexplored by military professionals and historians, Allenby's final campaign in Palestine proved to be a momentous step in the evolution of combined arms operations.



## Armageddon's Lost Lessons

The myth of blitzkrieg that ensconced Hitler's forces in an aura of invulnerability during the opening phases of World War II has equally clouded history's view on the development of combined arms operations. While it appeared that a revolution in warfare was taking place on the European continent in the spring of 1940, a foreshadowing of blitzkrieg had taken place in the deserts of Palestine less than a quarter century before.<sup>1</sup> There, on 19 September 1918, infantry, cavalry, and air forces under command of Gen Edmund H. H. "Bull" Allenby stormed through Turkish defenses at the battle of Megiddo. It was one of the greatest exhibitions of mobility and pursuit in the history of World War I and ultimately led to the surrender of the Ottoman Empire. In an era of costly trench warfare, Megiddo represented near perfection for the British in their use of combined arms operations and, in the process, enthralled both press and public.

For all its impact on popular sentiment at the time—its impact on the overall war effort was debated heatedly among British leadership in 1918—Megiddo appears to be more a foreshadowing of blitzkrieg than an influence on doctrinal development. In *The Roots of Blitzkrieg*, author James Corum gives no indication that the Palestine theater impacted German military reform during the interwar period. The British, for their part, appear to have missed a rare opportunity to learn what Megiddo might hold for the future of warfare. Focusing on the romanticism of the "last cavalry charge" instead of on the efficacy of combined arms operations, conservative military leaders saw the battle only as an illustration of the cavalry's enduring role as the *arme blanche*. Had they looked beyond their traditional mounts, one could argue that military leaders may have been better prepared to confront the Germans in the battles of 1940 to 1942.<sup>2</sup>

If the architects of blitzkrieg garnered few if any lessons from Megiddo, historians of airpower have seemingly made comparable oversights. Lee Kennett's *The First Air War, 1914–1918* contains no analysis of Allenby's use of air assets, while John Morrow allots only one short paragraph to the subject in *The Great War in the Air*. Likewise, air historian

Robin Higham goes only as far to say that Allenby's campaign "was for its day as perfect an example of the proper application of airpower as the German blitzkriegs in 1940 or the Israeli campaign of 1967."<sup>3</sup> But unexamined battles provide few lessons, and thus, pose interesting questions concerning how military leaders and historians choose to learn from the past.

This paper argues that the 1940 German attack in France, while extraordinary, was not the first successful application of air-ground coordination in a blitzkrieg style of war. By examining the role of airpower in the context of World War I and then using the culmination of the Palestine campaign as a case study for analysis, one can discern the enduring yet lost lessons of airpower and its role in combined arms operations. Though largely unexplored by military professionals and historians, Allenby's final battle at Megiddo proved to be a momentous step in the evolution of combined arms operations.

### **The Great Debate: The Indirect Approach**

At the outbreak of World War I, Egypt abruptly became a strategic concern for the British Empire. Within its territory ran the Suez Canal, "the most direct route between England and her far eastern possessions."<sup>4</sup> It was through this narrow passageway that troops and supplies from India, Australia, and New Zealand were expected to pass, thus sustaining the mounting costs of the Allied war effort in Europe. The Turkish Empire, having entered the war on Germany's side, understood the criticality of this logistical corridor and in February 1915 launched raids against the canal under the nominal command of German colonel Count Kress von Kressenstein. The British defenses held, though logistical constraints and cautious leadership prevented any pursuit into the inhospitable deserts of the Sinai and beyond.<sup>5</sup>

The ill-fated Gallipoli campaign forestalled subsequent Turkish forays against the Suez during 1915, but the British withdrawal from the Dardanelles at the end of the year allowed the Turks to reconcentrate their troops in the Sinai. By the time Gen Sir Archibald Murray took command of

the British forces in Egypt in March 1916, the Turks had already made two unsuccessful raids against the canal. One month later they made another more vigorous attempt at Romani but were convincingly defeated, thanks in part to well-timed aerial reconnaissance by the British. By the close of 1916, Murray had driven the Turks out of the Sinai, forcing them to establish defensive positions in the southern portion of Palestine at Gaza.<sup>6</sup>

With no decision being reached in France and events taking a positive turn in Egypt, members of the British War Council, most notably First Lord of the Admiralty Winston Churchill, began arguing for a more indirect approach to the war effort. Churchill's proposals fell on fertile ears, for Prime Minister David Lloyd George reasoned that if Turkey were pushed out of the war, then Germany and Austria would feel they were "being isolated and would soon be encircled and invaded from the south."<sup>7</sup> This "eastern" approach to the war effort came under sharp criticism, specifically from the chief of the Imperial General Staff (IGS), Field Marshal Sir William R. Robertson. Robertson, a resolute Westerner, argued that any siphoning of forces from France would undermine the Allies' chances for final victory. "The first rule in all wars," he stated, "is to concentrate in the main theatre all forces that can be made available. Any departure from this rule has invariably proved disastrous." The debate would last throughout the war and beyond and ultimately lead to Robertson's resignation as the IGS.<sup>8</sup>

Lloyd George and the Easterners hoped to reach a decision in Egypt with a minimal cost in lives, thus boosting British morale. Fighting in Egypt and Palestine offered opportunities not found on the exhausting western front. Gen Sir John Shea extolled the virtues of the desert, since "the great part of it was that you were in open warfare. It was a war of movement. . . . It was entirely different, and it was a great happiness to fight there compared to the frustration of trench warfare in France."<sup>9</sup> While logistical constraints such as water supplies dominated operational maneuver in Palestine, Turkish defenders ensured there were at least some parallels to the fighting in the West. Around Gaza, the trench system was deadly elaborate and nicknamed "The Labyrinth." The 6,444 Egyptian Expeditionary Force (EEF) casualties

suffered in an attack there during April 1917 attested to the effectiveness of trench warfare, regardless of the theater.<sup>10</sup>

Of course, what most set Palestine apart from the trenches of the western front were the environs. Temperatures frequently topped 100 degrees in the shade, making living conditions for men and horses insufferable. For Airmen, the “intense heat made the air so bumpy” that training exercises were normally suspended after early morning.<sup>11</sup> Yet while the weather restricted pilots in one sense, the terrain offered distinct advantages in another. Whether in the open country of the Sharon Plains or the rugged hills of the Judean Range, horse cavalry could only operate so far in the intense heat and suffocating dust. Flight rendered such limitations immaterial. As Trevor Henshaw stated, “Air reconnaissance was to prove particularly effective in this harsh and terrible environment where conditions made any equivalent scope of reconnoitre on the ground completely impossible.”<sup>12</sup>

The Turkish force that the Allied Airmen pursued was an army of contrasts. In defense the Turks had proven their mettle early, as any veteran of Gallipoli would attest. Murray was no less impressed with their offensive suitability. In a cable to the CIGS, he noted: “My cavalry are hardly faster in the desert than the Turkish infantry, who are fine active men in good condition.”<sup>13</sup> But while the individual soldier had his merits, he was continually plagued by supply and transport shortages, thus threatening theaterwide mobility. Though possessing a great number of machine guns—the great equalizer in World War I—the Turks relied almost solely on the Germans for technical services and air support. Logistical shortcomings would increasingly have a detrimental impact on the Turkish soldier, affecting health, morale, and more importantly, combat efficiency on the front lines.<sup>14</sup>

Integration with German leadership proved to be as troublesome as logistical support. Von Kressenstein, who led Turkish raids against the Suez Canal in early 1915, took over the entire Sinai sector soon afterwards and twice beat back Murray’s attempts at capturing Gaza. But the British seizure of Baghdad impelled the creation of an army group intent on its recapture. Code-named *Yilderim*, meaning lightning, the army group consisted of the Turkish Sixth

and Seventh Armies and the German Asia Corps. Redirected to counter another British assault into Palestine in September 1917, *Yilderim* was now commanded by the former chief of the German general staff Erich von Falkenhayn. Emphasizing mobility and a flexible defense, Falkenhayn was succeeded in March by Gen Liman von Sanders, commander of the Turkish Fifth Army and defender of Gallipoli. Believing that “the average Turkish soldier was unable to cope with mobile warfare,” Sanders instead emphasized a more static defense.<sup>15</sup> These persistent changes in leadership and tactical emphasis did little to alleviate tensions between Turkish and German officers who were already suspect of one another’s intentions and abilities.<sup>16</sup>

For Sir Archibald Murray, mistrust within the enemy command structure had little impact on the supply preparations that were consuming his efforts. By the end of 1916, the EEF had laid over 300 miles of water piping and railway and had constructed over 200 miles of metalled road.<sup>17</sup> With a logistical footprint secure on the southern frontiers of Palestine, Murray attempted to dislodge the Turks from their defensive works in and around Gaza (see map 1, appendix A). The ensuing attack on 26 March 1917 was a disaster, resulting in little more than the 4,000 casualties suffered by British forces. Lack of water for the cavalry, poor intelligence and staff work, and even the fog of war were blamed for the reverse. Murray unfortunately exaggerated Turkish losses—which were nearly half of the EEF’s—while understating his own misfortunes, and London quickly sent word to push north towards Jerusalem.<sup>18</sup>

Less than one month later, though using gas shells and a detachment of tanks, the British were repulsed yet again. The outcome was no more successful than the first attempt at Gaza and resulted in even heavier casualties. Despite what Kressenstein later noted as “weakness and exhaustion of the defending troops and the shortage of munitions and supplies,” British troops could not break through the trenches.<sup>19</sup> Lloyd George was infuriated and blamed the failure on “flabbiness and lack of nerve” in the EEF command structure. While leadership certainly played a critical factor in the two Gaza reverses, others saw a more tangible explanation for the lack of success. According to historian H. A. Jones, “The margin between victory and

failure in the battle was extremely narrow, and had the British had local air superiority, victory could perhaps have been assured."<sup>20</sup> Murray's successor would consequently ensure that no such mistakes were made again.

### **The War in the Air**

If Archibald Murray did not fully comprehend the potential of airpower, he was certainly not alone. British military theorist Sir B. H. Liddell Hart asserted, "Military appreciation of air values was a slow growth," as evidenced by French general Ferdinand Foch's comment when viewing the *Circuit de l'Est*. "That is good sport, but for the Army the aeroplane is worthless."<sup>21</sup> Initially interested in flight for its observation and reconnaissance capabilities, military leaders began to realize that superiority in the air was of increasing importance. By May 1917, Field Marshal Henri Philippe Petain informed the French Minister of War: "Aviation has assumed a capital importance; it has become one of the indispensable factors of success. . . . It is necessary to be master of the air."<sup>22</sup>

With no substantial precedents to guide them, World War I leaders in all theaters found the process of achieving mastery of the air somewhat daunting. True, aerial bombing had been experimented with in Libya during the 1911–1912 Italo-Turkish War, but such engagements were far from standardized. Even through the first years of the Great War, "air fighting was a thoroughly individualistic affair."<sup>23</sup> Pilot training focused on the basics, and unseasoned aviators often taxed their abilities just to keep their planes in the air. As individual skills evolved, so did the integration of aircraft into army training exercises. During the 1912 British war games, future Royal Flying Corps (RFC) commander Air Chief Marshal Hugh M. Trenchard, acting as an aerial observer for one of the opposing forces, was able to redirect a wrongly dispatched cavalry force. With new orders, the cavalry under the command of General Allenby changed direction, and Trenchard's unit won the war game.<sup>24</sup> The battlefield was gradually becoming three-dimensional.

Improvements in technology were among the most consequential reasons why airpower was impacting events on



the ground. In 1914, planes could rarely achieve speeds of 90 miles per hour, while mechanical reliability was shaky at best. The British Vickers fighter seldom topped 70 miles per hour and, as one observer laconically noted, "its engine was prone to discard parts of its mechanism in midair."<sup>25</sup> Despite these problems, aircraft production continued at an earnest pace, and pilots increasingly found themselves seated in more capable planes. Thus, with quantity and quality expanding at tremendous rates, Airmen became better suited to support ground forces. The problem, as with ground-to-ground coordination, was developing an effective communications framework.<sup>26</sup>

As artillery began to dominate the battlefield in World War I, officers found that aircraft could provide much more assistance for the infantrymen than simple reconnaissance. Aerial intelligence quickly developed into artillery spotting, and though initial communication techniques were rudimentary (such as dropping messages to the supported artillery battery), air-ground coordination became continually more refined. By 1917 the RFC had 31 wireless stations working in tandem with artillery units in Palestine. Integration was no less synchronized in the West, where aerial photography became the fundamental means of mapping out the tangled web of trenches along the front lines.<sup>27</sup>

With progress being made in speed, maneuverability, and firepower, the buildup of air forces in the Middle East grew at an amazing rate. In July 1916, when the RFC Middle East Brigade was formed, Murray had only three line squadrons of substandard B.E.2c aircraft. Despite their inferiority to the German Fokker Eidekkers, British pilots still found that their impact on ground troops could be substantial. An RFC policy paper written in 1916 strikingly noted that the "appearance of hostile aircraft over the front affected morale 'all out of proportion to the damage' which the aircraft can inflict."<sup>28</sup> By 1918 the brigade had grown in both quantity and quality. Seven squadrons and one balloon company could now be brought to bear, including 37 R.E.8 and 21 S.E.5a aircraft, 18 Bristol Fighters, and one Handley Page bomber.<sup>29</sup>

With new capabilities, the British approach to air combat operations was in marked contrast to the Germans'. As

a whole, the men of the Royal Flying Corps focused their efforts on taking the fight to the enemy. Col Arthur E. Borton, commander of the RFC's Palestine Brigade, illustrated such offensive spirit in a letter home during Allenby's Megiddo campaign: "Pilots who were in roving commissions to attack anything on the ground which formed a target were coming in and hurriedly filling up their machines and going off again in fear they might miss something."<sup>30</sup> Across the lines, the defensive-minded Germans aimed at preventing Allied aircraft from entering their airspace and attacking friendly ground troops or gaining valuable intelligence. As with ground operations, technology was having a pronounced impact on the prosecution of the war in the air. Tactical principles, seemingly validated by recent battlefield experiences, were being negated by rapid technological advances in the instruments of war.<sup>31</sup>

The operational implications of this growth were felt especially in the Middle Eastern theater. Combatant commanders there found that air superiority largely depended upon the quality of the aircraft and, until the summer of 1917, the German focus on technical superiority rather than on quantity paid large dividends. As David L. Bullock relates, "the Germans allotted a few of their best machines to each theater in the belief that these would be able to make a disproportionately beneficial impact."<sup>32</sup> The single-seater Fokker and two-seater Aviatik wreaked havoc on the slower, less maneuverable B.E.2c and often made British observation flights both dangerous and highly ineffective. Colonel Borton lamented in 1915, "Our daily reconnaissance is a positive torture."<sup>33</sup>

What most hurt the British by not achieving command of the air in the Middle East was the role that aircraft were having in the desert environment. Pilots were tasked with both tactical and strategic reconnaissance sorties, all the while cooperating with supported artillery units and photographing enemy positions along the front lines. Aerial operations were taking on critical roles once performed solely by mounted cavalry units. As the Turks became adept at camouflaging their entrenchments to confront this new threat, the machines of the German *Flieger Abteilung* (flying units) continued to hamper British efforts in gaining critical operational information. In May 1917, Murray requested

additional aircraft from the War Office to supplement his efforts and, coupled with Allenby's subsequent insistence on achieving air superiority, one month later the RFC finally received aircraft able to compete with the Germans across the operational spectrum.<sup>34</sup>

June 1917 proved to be a pivotal month for the Royal and Australian Flying Corps in Palestine. With the arrival of the Vickers Bullet, Bristol monoplane fighters, and the single-seater S.E.5 aircraft, the EEF had the technological superiority needed to achieve theaterwide air superiority. With fighters able to reach speeds of over 100 miles per hour and climb faster than any German aircraft, the British quickly set out on offensive missions aimed at regaining command of the air. Though limited in numbers, the new fighters and scouts "spread a feeling of exhilaration, not only among the squadrons, but also in the army."<sup>35</sup> By September 1917 the RFC was well on its way to recovering air dominance, which it would subsequently retain until the end of the Palestine campaign.

### **The "Bull" Breaks Loose**

Sir Archibald Murray was not able to benefit from the EEF's repossession of air superiority. His failure at Second Gaza left officials in London no choice but to replace him with a commander who could achieve much-needed results in an otherwise gloomy war effort. Prime Minister David Lloyd George initially offered command to Gen Jan Smuts, but the South African declined in the belief that he would not receive support from the War Office (and the CIGS in particular) for a "sideshow" effort. Upon Robertson's recommendation, command fell to General Allenby, who was then directing the Third Army in France. Allenby's initial reaction was one of "dismay," but as biographer Archibald Wavell contends, "If the prime minister wanted a man to put fresh movement into a stagnant campaign there could be no better choice than Allenby."<sup>36</sup> In the months to come, the execution of the Palestine campaign would validate Lloyd George's selection of Allenby and provide history with a shining example of the power of combined arms operations at the operational level of war.

General Allenby was 56 years old when he took command of the EEF in June 1917. He had served in the Inniskilling Dragoons as a young officer and deployed to South Africa during the Boer War, gaining valuable experiences that would serve him well in the years to come. He learned the importance of using cavalry forces to block the withdrawal of enemy forces and the value of a hard-pressed pursuit. Allenby also realized that proper utilization of resources in meeting well-defined objectives was imperative in cavalry operations. It was a lesson few British generals fully appreciated against the elusive Boers in the veldt of South Africa.<sup>37</sup>

In 1910 Allenby was appointed inspector-general of cavalry after successful command of the 5th Lancers, and while he “supported the introduction of machine guns and stressed the value of firepower,” he also professed that “intervention by mounted action and the sword would still occur on the modern battlefield.”<sup>38</sup> Service in France would show that Allenby’s predictions were forward thinking but not flawless. And, like all commanders dealing with the frustrations of trench warfare, he was criticized by some officers as being unimaginative and ignorant of tactical realities. Gen Sir Hubert Gough, commander of the British Fifth Army, described Allenby as “mentally somewhat lazy” and a leader “who never suggested anything.”<sup>39</sup> Commander-in-chief Field Marshal Sir Douglas Haig equally believed that Allenby “was lacking in aptitude for high command.”<sup>40</sup> Within days of arriving in Palestine, the new commander of the EEF would dispel any misgivings regarding his capacity for independent command.

As Australian Sir Henry George Chauvel, commander of the Desert Mounted Corps (DMC), described the EEF’s change in command climate: “Allenby went through the hot, dusty camps of his army like a strong, fresh, reviving wind.”<sup>41</sup> He immediately moved the general headquarters from Cairo to the field, thus sending a strong message to frontline troops. Allenby kept up a vigorous pace his first few weeks in theater, visiting units, making corrections, and developing a general framework for his first campaign. Almost immediately, he sought the advice of his senior subordinates. As commander of the 4th Cavalry Division Maj Gen George Barrow related, “Allenby was always glad

to listen to other opinions and advice, provided this was backed by knowledge and common sense. What angered him was stupidity, negligence, and, most of all, disregard of orders."<sup>42</sup>

Such anger quickly became legendary throughout the Egyptian Expeditionary Force. Allenby's personal focus on discipline was at the heart of his leadership philosophy. As an example, members of the Australian Light Horse divisions were prone to wearing shorts while riding in the hot climate—an obvious uniform violation and health hazard, as bare legs rubbing against horses' flanks caused harmful sores. Allenby's fury upon catching such malefactors was brutal and unrestrained. Soon troops were sending out coded messages warning units of the commander's impending arrival. Using a nickname that Allenby had picked up earlier in his career, the transmission simply warned: "Bull broken loose."<sup>43</sup>

If Allenby's tactics in reorganizing his command were harsh, the strategic situation allowed little margin for failure. On the western front, the summer of 1917 saw the French army dissolve in mutiny following Nivelle's disastrous offensive. Leaders in Great Britain looked to the East for some semblance of accomplishment.<sup>44</sup> With Murray already having laid the groundwork in terms of supplies and security, focus in the EEF shifted from logistical arrangements to regaining the operational initiative. Allenby knew that the cavalry, employed in conjunction with the combined arms of infantry and artillery, could achieve decisive results in a theater, thus allowing for tactical mobility. The key was to integrate the mounted arm into a larger organizational framework. To accomplish this task, the "Bull" turned to his aerial assets.

One of Allenby's first priorities upon taking command of the EEF was to fortify his anemic air arm. Asking Robertson and the War Office for additional squadrons, balloon detachments, and wireless units, Allenby began setting into place a force that could execute the mobile campaign plan that he was now contemplating. He rapidly institutionalized cooperative training between air and cavalry units, focusing on obtaining and processing reliable intelligence concerning Turkish dispositions.<sup>45</sup> With arrival of new aircraft in June, the RFC finally obtained the means to meet such goals.

Concurrent with changes in training was a restructuring of the entire command. The army was configured into three corps with a supporting aviation brigade. Commanding the DMC of two cavalry divisions and one Australian mounted division was Sir Chauvel, a light horse battalion commander in South Africa and a veteran of the first two battles at Gaza. Leading XX Corps was Lt Gen Sir Philip W. Chetwode, who had commanded a cavalry brigade in France and whose advice and experience were invaluable to Allenby in the coming months. Lt Gen Edward S. Bulfin commanded XXI Corps, having already served as a division commander with the new EEF chief in France. Finally, Maj Gen William Salmond was in charge of the RFC's Middle East Brigade. Salmond, "one of the first army officers to have appreciated the future of aviation," served in the Boer War and in the Boxer Rebellion in China.<sup>46</sup> It was a command team of inestimable experience, skill, and knowledge. And, as Allenby established himself in command, he was to rely on their expertise to formulate and execute the campaign plan that ultimately would drive the Turks from Palestine.

The first step in clearing Palestine was dislodging the Ottoman forces from their Gaza defenses. The stronghold had thus far proved impregnable to British assault and had cost Murray his job. Allenby's plan called for an infantry demonstration in front of Gaza, to include heavy artillery bombardments and naval gun support (see map 2, appendix A). Meanwhile, elements from the DMC and XX Corps would secretly concentrate opposite the Turkish left at Beersheba, assault into the garrison, and capture the water supplies. Once complete, the striking force of some 40,000 troops would roll up the Turkish left flank and intercept any retreating forces from Gaza. Allenby's command and control (C<sup>2</sup>) functions would be considerably stretched during the battle, for Gaza and Beersheba were separated by over 20 miles. Commanders turned to the air to fill in the gaps. Relying on aerial photographs, Chauvel already was gaining valuable information on his attack route, discovering "that the trenches east of Beersheba lacked both barbed wire and *gardes de loup*—pits dug as a trap for cavalry."<sup>47</sup>

On the night of 30–31 October, the DMC and XX Corps maneuvered to the east, while seaplanes spotted for the

Royal artillery and naval guns that were hammering away at Gaza. Late on the afternoon of 31 October, a brigade of the Australian Light Horse—swords drawn—charged into the defenses at Beersheba and secured the town. After a massive artillery barrage had occurred, Bulfin's infantry corps assaulted into Gaza the following day. With Turkish commanders still uncertain if British forces would land from the sea, Ottoman defenses—pressured from two sides—quickly began to crumble. One of Allenby's staff officers noted the effectiveness of British artillery, commenting that three Turkish counterattacks "were blown to pieces by our artillery fire before they could develop."<sup>48</sup> By 5 November, the evacuation of Gaza began in earnest.

The Third Battle of Gaza exhibited Allenby's talent for orchestrating a combined arms operation while concurrently managing the problems of transport, supply, and deception. The battle had not been without lessons. Chauvel's DMC suffered a number of casualties from German aircraft, revealing the vulnerability of exposed troops in a desert environment. The rough terrain east of Gaza proved difficult for both the mounted units and their supporting logistical assets. Allenby gave little pause and pursued the Turks northward as they retreated towards Junction Station. Commanding the skies and bombing and strafing retreating columns almost at will, aircraft from the RFC made the pursuit a harrowing experience for the enemy. By 14 November, Allenby occupied Junction Station and effectively split the Turkish forces in half.<sup>49</sup>

With the Turkish Seventh and Eighth Armies isolated from one another, Allenby next set his sights on Jerusalem, which Lloyd George had ordered taken by Christmas. Moving as rapidly as supply lines would allow, the EEF made good progress against a stiffening Turkish defense. Counterattacks increased in number and intensity. As one commentator noted, "The Turkish troops fought with a remarkable gallantry and succeeded at some points in gaining a footing in the outer line of the British defenses."<sup>50</sup> By 8 December the Ottoman lines began to crack and, on the next day, they withdrew northwards. On 11 December 1917 Allenby made his formal entry into the city—the first Christian leader to do so since 1187. Kressenstein later wrote: "From a purely military point of view, the loss of Jerusalem

was of no importance, but the moral effect of its capture, after having been in Turkish hands for 700 years . . . was a severe blow to the prestige of the Caliphate and of Turkey.”<sup>51</sup>

Allenby's 1917 campaign had achieved significant operational and strategic objectives. He had broken through the Gaza defenses and into the southern frontiers of Palestine, giving little respite to the retreating and shaken Turks. His capture of Jerusalem gave the Allies a much-needed morale boost in an otherwise sagging war effort. Operationally, he began to see the rewards of effective coordination between air and ground units and how strategic and tactical reconnaissance from above was vital to maintaining mobility below. The destructive power of aircraft was all too evident in the pursuit from Gaza to Junction Station, and if Allenby did not fully appreciate that technical quality of the machines mattered more than quantity, he understood that airpower was becoming a decisive element of combined arms operations. This was a significant comprehension, as Lee Kennett noted, “The new arm was so different and its capacities and limitations so difficult for outsiders to grasp, that friction was inevitable.”<sup>52</sup> With 1917 coming to a close, Allenby would continue to focus on the complete annihilation of the Turkish forces in Palestine, while his air assets would prove yet again to be a critical aspect of achieving such an objective.

## **Armageddon**

Events on the western front would critically impact the organizational structure of the Egyptian Expeditionary Force in the early months of 1918. Russia's collapse in late 1917 had allowed the German High Command to shift its focus back towards the West and achieve numerical superiority against Allied forces in France. Hoping to break the deadlock of the trenches before American manpower would again shift the balance of power in favor of the Allies, Gen Eric von Ludendorff launched Operation Michael on 21 March. A massive drive of over 60 divisions, Michael made initial progress but was held up at Arras, thanks to a determined British defense. Tactically, Ludendorff had achieved



brilliant success as the Germans advanced over 40 miles in eight days and inflicted over 300,000 casualties on the British army alone. But strategically, Operation Michael had come up short. The Germans had suffered an equal number of losses, the British army had not been destroyed or separated from the French, and American troops were on the horizon.<sup>53</sup>

As Ludendorff continued to follow up his initial drive, the British War Office hurriedly pulled divisions from other theaters to fill losses in France. Allenby was forced to send the bulk of his soldiers to the western front, retaining only one British division. In all he would dispatch “two infantry divisions, . . . nine yeomanry regiments, five and a half siege batteries, twenty-three infantry battalions, five machine gun companies: upwards of 60,000 officers and men.”<sup>54</sup> Partially trained Indian regiments constituted the majority of the EEF’s replacements and, while the cavalry arm was no worse for the wear, the infantry and specialty troops were seriously weakened. Signalmen, normally requiring two years of training, were forced to become proficient in just two months.<sup>55</sup>

While reorganization and training rose to the forefront of Allenby’s concerns, he nonetheless kept pressure on the Turks. Before losing his veteran troops, the EEF commander ordered an expedition across the Jordan River towards Amman in March. Hoping to combine efforts with the Arabs and capture important Turkish garrisons in the Es Salt region, Allenby believed the raid would demonstrate Ottoman vulnerabilities in the East. Tactically, he was mistaken; poor weather grounded aircraft, Arab cooperation never materialized, and the Turks intrepidly fought off the attack. Undeterred, Allenby tried again in April after the reorganization. The results were no different as the EEF suffered its first setbacks in nearly a year. Chetwode later wrote, “These two expeditions of Allenby’s across the Jordan were the stupidest things he ever did, I always thought, and very risky.”<sup>56</sup> While tactically a reverse, Allenby had accomplished one key operational objective. The Trans-Jordan raids had raised doubt in the enemy camp as to where the next major blow would fall—either east of the Jordan River or west, on the coastal flank. Because of the operations in

March and April, Liman von Sanders, now in command of the Turko-German forces in Palestine, could not be certain.

Large-scale operations able to follow up excursions across the Jordan were precluded by reorganization efforts. Throughout the spring and summer of 1918, Allenby took advantage of this operational pause to bring his new troops up to training standards. One soldier in the Egyptian Camel Transport Corps described Allenby's guidelines: "The principle adopted in the infantry was to brigade one British battalion to every three Indian battalions right through the divisions; and this acted very well indeed, for the White troops provided just that leaven of steadiness lacking in the young Indians."<sup>57</sup> During the same time, supply matters were tended to as the EEF's broad-gauge railway was extended to the front lines.

The most dramatic improvement during the summer of 1918 occurred above the lines as the Palestine Brigade shifted from achieving air superiority to air supremacy. The Germans were no match for the new Bristol fighters and S.E.5a aircraft, and the effect on the armies was tangible. William Massey, official news correspondent traveling with the EEF, noted that the "Turk[s] had lost all faith in German aviators, and even the German infantry came to despise them." Sanders even received requests from subordinates to stop German air reconnaissance, "as the sight of the now invariably luckless air fighting was calculated to further reduce the low morale of [the] troops."<sup>58</sup> Concurrent with aerial combat, Royal Air Force (RAF) pilots—the RAF being officially formed on 1 April 1918—continued their photography missions while also dropping propaganda leaflets among the already demoralized Turkish troops. As desertion rates swelled among the ranks, Mustafa Kemal, commander of the Seventh Army, lamented that British aircraft were "dropping more leaflets than bombs."<sup>59</sup>

By autumn of 1918 Allenby decided that the time was ripe to capitalize on the deterioration of the enemy army. His plan, code-named Armageddon, aimed at the complete destruction of the *Yilderim* Army Group by exploiting Turkish preconceptions created in part by the Trans-Jordan raids. The Amman expeditions, coupled with the assault at Beer-sheba a year earlier, had shown the vulnerability of the eastern flank. Using an elaborate deception plan that reinforced

Turkish predilections, Allenby decided to reverse the formula used at the Third Battle of Gaza by placing the weight of his effort on the coastal flank (see map 3, appendix A).<sup>60</sup>

Bulfin's XXI Corps would be the initial assault force breaking through the enemy's defenses along the coast and then wheeling east towards Jenin, thereby driving the Turks into awaiting cavalry at El Affule. The DMC would be positioned immediately behind XXI Corps, exploiting the breakthrough and passing into the Plain of Esdraelon. Chauvel's troopers would seize El Affule to block the enemy's withdrawal while simultaneously sending a detachment northward towards Nazareth and the *Yilderim* headquarters. Chetwode's XX Corps was tasked with conducting a diversionary attack to the east of XXI Corps the night before the main assault. The corps would then swing to its right and position itself to block exits at the lower Jordan River valley. Finally, an Australian and New Zealand Army Corps (ANZAC) force under Maj Gen Edward Chaytor would carry out demonstrations in the Jordan valley to conceal the redeployment of two cavalry divisions to the east and deceive the Turks that another attack on Amman was imminent.<sup>61</sup>

The keys to success were speed, mass, and surprise. The DMC was placed right behind XXI Corps, thanks in large part from lessons learned on the western front. As Chauvel's biographer noted, "Operations in France had shown how important it was to position cavalry well forward to move through a gap as soon as it was cleared."<sup>62</sup> Insistent on speed and mobility, Allenby directed that the cavalry not get bogged down in local actions but instead stay massed for a decisive blow against the enemy's main body. Paralyzing the Turkish forces would assist the DMC in achieving its objectives. The EEF's deception plan was consequently an elaborate design, including dummy horses and empty tents lining the Jordan valley. On the eve of battle—set to launch on 19 September—Allenby was confident that he had confounded von Sanders. "That the enemy expected an offensive on my part about this date is probable. That he remained in ignorance of my intention to attack in the coastal [plain] with overwhelming numbers is certain."<sup>63</sup>

Integral to the entire campaign plan would be the RAF's accomplishments. With one squadron attached to each

corps, Allenby depended on the Palestine Brigade to accomplish a number of diverse missions—strategic and tactical reconnaissance, artillery cooperation, protection from hostile aircraft, and aerial bombing. Prior to D-day, 400 square miles of country were photographed and mapped, while fighters ran security missions to allow for the secret concentration of forces building up on the coastal plains.<sup>64</sup> Thus, not only had Allenby planned for an operation in depth, he had also fully integrated the air piece to ensure the battle was truly three-dimensional. Correctly assessing that the Turkish centers of gravity lay in their rail transport and C<sup>2</sup> sites, the EEF commander was about to exploit the full spectrum of combat multipliers against a demoralized enemy. As Archibald Wavell contended, the battle had “been practically won before a shot was fired.”<sup>65</sup>

The first shots of the Megiddo battle would not be fired by Allenby's ground forces but instead by the Arab Northern Army operating on the eastern flank. Armed with a flight of British airplanes and an armored car battery, the Arabs attacked railway lines and station buildings at Dera beginning on 16 September. RAF bombing runs affected Turkish morale as much as railway traffic, while Arab raids, led by the energetic Col T. E. Lawrence, created havoc along enemy communication lines. Lawrence would later note that the “Turks’ hopeless lack of initiative made their army a ‘directed’ one, so that by destroying the telegraphs we went far towards turning them into a leaderless mob.” Sanders reacted as expected, sending reinforcements from the coastal city of Haifa east towards Dera.<sup>66</sup> Thus, with the enemy command center distracted and soon to be completely cut off from the front lines, Allenby unleashed his modern-day version of Armageddon.

At 4:30 A.M. on 19 September, 435 artillery guns and trench mortars—approximately one gun every 50 yards—opened up a 15-minute bombardment on Turkish positions along the coastal flank. Along this critical 15-mile sector, the EEF had massed 35,000 infantry and 9,000 cavalry troops against 8,000 *Yildirim* infantrymen. The night before, XX Corps launched its diversionary attack towards the Jordan River valley, while just after midnight a Handley-Page bomber dropped 1,200 pounds of bombs on the El Afule aerodome, railway station, and telephone exchange.<sup>67</sup>

Sanders later noted that all “telephonic and telegraphic communication between the Army Group and the armies was completely broken from the beginning of the attack.”<sup>68</sup> As Bulfin’s infantry swept forward 15 minutes after the start of the artillery barrage, the Turkish command was unaware of the main attack’s weight and scope (see map 4, appendix A).

With the main line quickly broken by the combined shock of artillery and machine gun fire, the Desert Mounted Corps rushed through the breach. One squadron commander from the 19th Lancers described the elation at the cavalry’s exploitation. “As we cleared the Turkish trenches and rode unopposed through the debris of defeat, we all felt that the ‘G’ in ‘GAP’ for which we had waited patiently [in France] for years had at last been reached.”<sup>69</sup> By mid-day the Turkish Eighth Army was in shambles, and Chauvel’s DMC had captured Tul Karm. All this was unknown to Sanders, for the RAF had paralyzed Turkish nerve centers through a well-executed bombing plan. By 20 September cavalry forces supported by armored cars had cleared Megiddo as XX and XXI Corps kept constant pressure on the retreating Turkish armies. By nightfall on the 20th, the escape routes at El Affule, Beisan, and Dera were shut down by Allenby’s ground forces and the Arab Northern Army.<sup>70</sup>

On the morning of the third day, an Australian Bristol found the Turkish Seventh Army attempting to retreat northward through the Wadi Fara near Nablus. A steep gorge, the wadi formed a natural canal in which thousands of infantry, cavalry, and transport troops became trapped. Knocking out front and rear vehicles and thus sealing the gorge, Bristols and D.H.9 and S.E.5a aircraft began strafing and bombing runs that lasted throughout the day. The account of one Australian squadron described the scene of destruction. “The long, winding, hopeless column of traffic was so broken and wrecked, so utterly unable to escape from the barriers of hill and precipice, that the bombing machines gave up all attempt to estimate the losses under the attack and were sickened at the slaughter.”<sup>71</sup> By the end of 21 September, the Turkish Seventh Army ceased to exist as a capable fighting force.

Despite the utter devastation created by his air and ground forces, Allenby continued to press. Chauvel for-

warded orders to the 5th Cavalry Division to seize Haifa, which it did on 23 September after heavy fighting in rough terrain. Two days later Chaytor's force fought its way into Amman, while elements of the 4th Australian Light Horse Brigade (of Beersheba fame) occupied Samakh, the last Turkish stronghold west of the Jordan River. The remaining Turks were now in headlong retreat, and Chauvel's telegraphic orders on 26 September disclosed that Allenby had revised his battle plans beyond the enemy's annihilation. "Seventh and Eighth Turkish Armies have been destroyed. Fourth Army is retreating on Damascus via Dera. Desert Mounted Corps will move on Damascus."<sup>72</sup>

The pursuit northwards was aided by Lawrence and the Arabs who, after capturing Dera, cut the lines of retreat of the Turkish Fourth Army. Cavalry divisions from the DMC were thus able to sustain the chase while the Arabs secured the flanks. Air-ground cooperation continued during the 100-mile pursuit to Damascus, with RAF motorcars accompanying lead units of the DMC. Lorries carrying fuel and stores followed closely behind, allowing air assets to keep pace with the fast-moving cavalry. By 1 October, Damascus was occupied in force, and Allenby yet again set his sights northwards—this time to Aleppo, 200 miles north of Damascus. As an illustration of the depth of the EEF's striking power, the 5th Cavalry Division had marched approximately 550 miles in just under 40 days.<sup>73</sup> Though the final pursuit depleted the strength of the cavalry's men and horses, by the end of October the final shots of the war in the Middle East were fired at Haritan, just outside the limits of Aleppo.

On 31 October 1918, the Ottoman Empire signed an armistice with the Allies, effectively ending the Palestine campaign. From the opening of the Megiddo battle to the armistice, the EEF captured 75,000 prisoners, 360 artillery pieces, and 800 machine guns. For its efforts, the EEF suffered 5,666 casualties, though of those only 853 were killed in action. As Matthew Hughes contended, the "completeness of the victory at the battle of Megiddo surprised [even] Allenby. In a letter to his wife, Allenby wrote that he was 'almost aghast at the extent of the victory.'"<sup>74</sup> Indeed, it had been one of the most decisive battles fought in World War

I, causing the ruination of three Turkish armies and the capitulation of an empire.

Immediate acclamations regarding the Megiddo victory were majestically trumpeted in the press. The *Times* of London proclaimed that a “brilliant cavalry move” had “brought about the complete *debacle* of the Turkish Army in Palestine.”<sup>75</sup> Later historians such as David Bullock noted how the battle created “a positive boost in Allied morale,” even if the overall campaign “had no direct military bearing on the European theatre either in negative expenditure of resources or in outcome.”<sup>76</sup> Contemporary military leaders and historians quickly seized upon what they believed to be the keys of Allenby’s success. Cyril Falls’s *Official History* gave publicity to the “lessons of mobility, surprise, and concentration of strength in front of immediate objectives.”<sup>77</sup> Many conservatives saw the enduring role of cavalry being validated by Megiddo, while critics believed that the Palestine campaign held little value for study since it was conducted against a weak enemy in a “sideshow” theater of the war. Little discussion was given to the effectiveness of air-ground cooperation, and it was here that the Allies—the British in particular—missed a grand opportunity to prepare for the next war.

### **Lost Lessons of Blitzkrieg?**

Most all military leaders and theorists in the years between World Wars I and II were consumed with the idea of restoring mobility to the battlefield in strategic and tactical senses. Overlooking the difficulties experienced in the Trans-Jordan raids and in front of the Gaza defenses, observers of the Palestine campaign too often focused on the potency of the mounted arm above all else. General Barrow, former commander of the 4th Cavalry Division, later wrote how “the *arme blanche* showed that, given the proper conditions, it was still effective as in the days of Joshua.”<sup>78</sup> Wavell’s influential *The Palestine Campaigns*, written in 1928, would continue to reinforce the notion of cavalry-induced mobility. While Wavell discussed the importance of coupling mobility with firepower, as well as the advantages of mechanized forces, he nonetheless retained a partiality for the traditional

mounted arm. In his final chapter on "Lessons of the Campaigns," no discussion at all was given to air-ground coordination, at either the tactical or operational level.<sup>79</sup> The romance of the horse was too strong.

Arguably, it was not the cavalry, but its synchronization with the Royal Air Force that proved to be the decisive factor at Megiddo. It was here that the battle's true lessons were missed. Allenby had tasked the Palestine Brigade with numerous and diverse missions, from close air support for infantry and cavalry troops to interdiction of rail lines and key communication nodes. Operational objectives were also achieved, as air superiority had allowed the masking of Allenby's final troop deployments to the coastal flank. What few commentators noted was that the integrated application of air and ground units had increased the overall effectiveness of the EEF. A US Navy lieutenant, writing in 1927, was exceptional in remarking "instead of the air force replacing cavalry, it in fact had enhanced rather than decreased the value of a highly mobile mounted force."<sup>80</sup> Many interwar officers overlooked the essence of this statement in their analysis of the Megiddo campaign.

The consequences of such ignorance would prove unfortunate for the Allies. French air doctrine stagnated during the 1920s and 1930s, while in Great Britain the RAF became wedded to the Douhetian-like theories of Air Chief Marshal Hugh M. Trenchard. Such was not the case in Germany, where chief of the general staff Hans von Seeckt "insisted that the German army become the most air-minded in the world."<sup>81</sup> Despite the shackling restrictions of the Versailles Treaty, it was in Germany that the lessons of air-ground combined arms operations were best applied during the interwar period. As a British air intelligence officer correctly surmised in mid-May 1940: "It is the cooperation between the dive-bombers and the armoured divisions that is winning the war for Germany."<sup>82</sup>

There are unmistakable aspects of the Megiddo battle that would later form the essence of the May 1940 blitzkrieg. Surprise and concentration at the decisive point of battle were achieved by virtue of a well-executed deception plan. Allenby had integrated ground, air, and even naval fire into a battle plan that combined maximum firepower with deep-reaching mobility. Before the first shots were fired,



the EEF commander's intent was to strike the enemy throughout the operational spectrum. Aircraft and cavalry were synthesized to cause paralysis among the enemy's command and control centers, while at the same time annihilating whole formations of frontline infantry troops. Penetration and exploitation by Allenby's mobile forces, in the air and on the ground, led to a deadly pursuit of the main enemy force while bypassing local pockets of resistance.<sup>83</sup> Though aircraft were bound by technological limitations of the day and capable armor formations were still years in the future, the principles of blitzkrieg at the tactical and operational levels could be found at the Battle of Megiddo.

The problem was that such lessons by and large went unlearned. Certainly, conditions under which the battle was fought were ideal for the EEF. Air supremacy had already been achieved by September 1918, and Turkish anti-aircraft defenses were nonexistent. The Turkish army, a mere shadow of Gallipoli fame, was demoralized and in disarray. But disavowing battlefield lessons because the enemy was not as resolute and accomplished as the German army proved to be an imprudent choice, for Megiddo had all the ingredients of restoring mobility and decisiveness to the battlefield. Largely because the Ottoman army was thought of as impotent and the Middle East theater considered inconsequential, there is little evidence to prove that Megiddo greatly influenced the development of blitzkrieg. At best, it can only be described as a foreshadowing.

But such precursors in war often hold untapped information and insight. The Crimean War revealed the impact of the rifled musket, while the Russo-Japanese conflict did the same for the machine gun. Yet the majority of officers in the American Civil War and in World War I appear to have missed or at least greatly underestimated the tactical implications of these new weapons. Thus, battles such as Megiddo raise the difficult question of what lessons military leaders and historians should derive from past conflicts. How should those in the profession of arms choose to learn judiciously from the past?

The central problem to this question lies in the fact that war is continually in a state of flux. Within this continuum, technological and doctrinal changes ultimately force military

leaders to adapt their methods and thinking to remain successful on the modern battlefield. When officers fail to acclimatize themselves to new situations, they all too often sow seeds for future disaster. Megiddo offered a tremendous opportunity for the British army to adjust its thinking on how battle might be conducted in the next war. Instead, they were blinded by the grandeur of the last cavalry charge. Failing to differentiate between traditional and modern concepts of battlefield mobility, those in the profession of arms missed an occasion to formulate new theories on the effectiveness of combined arms operations. Their studies of Megiddo missed the essence of why the EEF proved so capable in achieving its operational objectives.<sup>84</sup>

Adapting to new technologies and their impact on the battlefield does require some intellectual flexibility, and military officers have traditionally been a conservative lot. But, far-reaching vision is not necessarily required for success in times of change. It is doubtful that Allenby fully grasped the true potential of airpower and its interrelationship with mounted ground forces. Of greater importance, he was willing to be innovative. As Wavell later noted, Allenby "was not afraid to depart from the stereotyped methods of warfare."<sup>85</sup> Arguably, the "Bull" had a transforming experience when he assumed command of the EEF. Divorced from the lack of vision so prevalent on the western front, Allenby was able to step outside the confines of the traditional set-piece battle and develop a concept of operations that exploited and synchronized all of the available elements of combined arms warfare.

It is here then that the true lessons of Megiddo are still applicable today. With war being in a continual state of reformation, those in the profession of arms must attempt to study the past without rigid preconceptions of what war will look like in the future. This is of course a difficult task. While certain principles of war may be time honored, few wars truly repeat themselves in either execution or context. But, threads of continuity do exist, and it is exposing and assessing these themes that are among the greatest challenges to military officers. In 1918 most of the elements of modern blitzkrieg were evident at the Battle of Megiddo. Had the British uncovered these lessons in the

years following World War I, they may well have been better prepared for the battles of 1940.

### Notes

1. Some historians argue that it was the German methods of *operativ* (operationally oriented) warfare that stunned the Allies in the opening rounds of World War II. See, as an example, Martin van Creveld, et. al, *Airpower and Maneuver Warfare* (Maxwell Air Force Base [AFB], Ala.: Air University Press, 1994), 49. Van Creveld notes that the Luftwaffe “sought to bring about the enemy’s destruction by *operativ* warfare in conjunction with, but not in subordination to, the ground forces. . . . The bulk of the Luftwaffe’s effort was devoted to what we today would call behind-the-front interdiction but which, under their terminology, included considerably more than merely attacks on lines of communications” (ibid., 53). For a recent and concise argument on the German blitzkrieg not being an inevitable victory in France, see Robert Doughty, “Almost a Miracle,” in *No End Save Victory: Perspectives on World War II*, ed. Robert Cowley (New York: G.P. Putnam’s Sons, 2001), 22–39.

2. Though Corum makes no mention of the Palestine campaigns in *The Roots of Blitzkrieg*, Allenby biographer Brian Gardner contends that the Germans studied World War I desert battles. “[T]he works of Capt B.H. Liddell Hart, the leading progressive, were influencing all thoughtful commanders, particularly those in Germany, where the lessons of Allenby’s campaigns were being learned better than elsewhere.” Brian Gardner, *Allenby of Arabia: Lawrence’s General* (New York: Coward-McMann, 1965), 266. James S. Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform* (Lawrence, Kans.: University Press of Kansas, 1992). Many military professionals considered Palestine to be a “sideshow” campaign fought against an irresolute enemy. The lessons in Egypt against the Turks, they argued, could never be applicable in the European theater against a continental power.

3. Lee Kennett, *The First Air War, 1914–1918* (New York: The Free Press, 1991); John Morrow, *The Great War in the Air: Military Aviation from 1909 to 1921* (Washington and London: Smithsonian Institution Press, 1993); and Robin Higham, *Airpower: A Concise History* (New York: St. Martin’s Press, 1972), 41.

4. Thomas W. Darrah, “The Palestine Campaign,” *Infantry Journal* 25, no. 6 (December 1924): 649. “In Egypt, flying reconnaissance to guard against a Turkish attack on the Suez Canal began as early as the end of November 1914.” Peter H. Liddle, *The Airman’s War, 1914–1918* (Poole; New York; Sydney: Blanford Press, 1987), 122. Upon Turkey’s entrance into the war, Egypt became a British protectorate.

5. For a concise overview of the pre-Murray stages of the war in Egypt, see Montecue Lowry, “Allenby’s Campaign in Palestine,” *Military Review* 69, no. 6 (June 1989): 68–69.

6. See Raymond Savage, *Allenby of Armageddon: A Record of the Career and Campaigns of Field Marshal Viscount Allenby* (Indianapolis, Ind.: The

Bobbs-Merrill Company, 1926), 188–89; Darrah, “The Palestine Campaign,” 649–50.

7. David Lloyd George, *War Memoirs of David Lloyd George*, vol. 6, 1918 (Boston, Mass.: Little, Brown and Company, 1937), 201.

8. William Robertson, *Soldiers and Statesmen, 1914–1918*, vol. 2 (New York: Charles Scribner’s Sons, 1926), 179. Many historians would later denounce these “sideshow” as imprudent uses of limited resources. Immediately after the war’s conclusion, Frank H. Simonds criticized, “it is clear that the Allies wasted men and materiel and severely taxed their transport by endeavoring to achieve victory in a minor field.” See Frank H. Simonds, *History of the World War*, vol. 5, *The Victory of Armistice* (Garden City, N.Y.: Doubleday, Page & Company, 1920), 365–66. Earl Wavell, on the other hand, noted: “The Palestine theatre might be wasteful of shipping, but the Western theatre was wasteful in lives” (Earl Wavell, *The Palestine Campaigns*, 3d ed. [London: Constable, 1931], 175).

9. Peter Liddle, John Bourne, and Ian Whitehead, eds. *The Great World War, 1914–1945*, vol. 1, *Lightning Strikes Twice* (London: Harper-Collins, 2000), 129–30. Interestingly, the official record of the EEF has a much different take on the terrain around Jerusalem. “The rugged country in which the majority of the fighting took place not only favoured the defense, but demanded great physical exertion on the part of the attackers.” H. Pirie-Gordon, ed., *A Brief Record of the Advance of the Egyptian Expeditionary Force, June 1917 to October 1918*, 2d ed. (London: H.M. Stationery Office, 1919), 23.

10. David L. Bullock, *Allenby’s War: The Palestine-Arabian Campaigns, 1916–1918* (London; New York; Sydney: Blanford Press, 1988), 47. In what could easily be mistaken for a defensive position on the western front, Bullock describes the “Labyrinth” as such: “Engineers had sited these redoubts for mutually supporting and enfilade fire, and with direct field of fire along any open-slope approach.” On logistical constraints, see R. J. Collins, *Lord Wavell: A Military Biography* (London: Hodder and Stoughton, 1947), 96. Collins notes: “As is so often the case in a Middle East theatre, administrative factors bulked large in the plan if they did not dominate it, one of the chief amongst these being supply of water both for men and horses.”

11. Liddle, *The Airman’s War*, 123; George Macmunn and Cyril B. Falls, *Military Operations, Egypt & Palestine: From the Outbreak of the War with Germany to June 1917* (London: The Imperial War Museum, 1938), 176. Macmunn and Falls noted in their history of the Great War that “once the sun is well up, the desert throws back its heat like metal. Plate-laying on the railway [an important logistical consideration] could not in these conditions be carried out after 10 A.M.” For environmental impacts on the Australian Light Horse units, see A. J. Hill, *Chauvel of the Light Horse: A Biography of General Sir Harry Chauvel, G.C.M.G., K.C.B.* (Melbourne: Melbourne University Press, 1978), 114.

12. Trevor Henshaw, *The Sky their Battlefield: Air Fighting and the Complete List of Allied Air Casualties from Enemy Action in the First War* (London: Grub Street, 1995), 508. For an excellent synopsis regarding the geography of Palestine, see Wavell, *The Palestine Campaigns*, 6–10. Prior to Allenby’s departure for the EEF, “Lloyd George presented him with a

copy of Sir George Adam Smith's *The Historical Geography of the Holy Land*, remarking with a sideswipe at Robertson that it probably contained more of practical use than could be found in the War Office surveys." Lawrence James, *Imperial Warrior: The Life and Times of Field-Marshal Viscount Allenby, 1861–1936* (London: Weidenfeld and Nicolson, 1993), 114.

13. Quoted in David L. Bullock, "Swift as Eagles: The Victory of the Royal Air Force in Palestine, 1916–1918" (PhD diss., Kansas State University, 1995), 170. Wavell, too, notes the character of the Anatolian Turk. "He is a fine soldier of the rough-and-ready type, with extraordinary powers of endurance, great patience under hardships and privations, a certain inherited aptitude for warfare, and stolid courage in battle" (Wavell, *The Palestine Campaigns*, 19). For a concise overview of the Turkish army's organizational structure in Gallipoli, see C. C. R. Murphy, *Soldiers of the Prophet* (London: John Hogg, 1921), 141–42.

14. On machine guns in the Turkish army, see Paul A. Povlock, *Deep Battle in World War One: The British 1918 Offensive in Palestine* (Newport, R.I.: Naval War College, 1997), 12. See also Wavell, *The Palestine Campaigns*, 20.

15. Views regarding German skepticism of the Turks' ability to adapt to a flexible defense from Hughes, JSS, 69. See also H. A. Jones, *The War in the Air: Being the Story of the Part Played in the Great War by the Royal Air Force*, vol. 6 (London: The Imperial War Museum, 1937), 181. For a solid biographical synopsis of Sanders, see Bullock, "Swift as Eagles," 399–400.

16. "Turkish administrative sclerosis exasperated German and Austro-Hungarian officers with higher standards of efficiency and created permanent tension between them and their Turkish counterparts" (James, *Imperial Warrior*, 130). Bullock also notes some interesting problems regarding language and technology. "Few German officers and staff spoke Turkish, and those Turks who spoke German discovered that they could not translate German aeronautical terms into Turkish language because the words themselves did not exist in their language" (Bullock, "Swift as Eagles," 178).

17. F. Maurice, "The Campaigns in Palestine and Egypt, 1914–1918, in Relation to the General Strategy of the War," *The Army Quarterly* 18, no. 1 (April 1929): 17. Allenby was to write in a 1919 dispatch that Murray's "bridging of the desert between Egypt and Palestine laid the foundations for the subsequent advances of the Egyptian Expeditionary Force." Sir Archibald Murray, *Despatches (June 1916–June 1917)* (London; Toronto: J.M. Dent & Sons, 1920), vii. The downside of Murray's focus on supply was felt among the fighting troops, with whom he seemed to have lost touch. Wavell criticizes him as "an administrator rather than the commander of an army in the field" (Wavell, *The Palestine Campaigns*, 59).

18. On reasons for the failure at the First Battle of Gaza, see Savage, *Allenby of Armageddon*, 189; and Hill, *Chauvel of the Light Horse*, 106.

19. Baron Kress von Kressenstein, "The Campaign in Palestine from the Enemy's Side," *The Journal of Royal United Service Institution* 67, no. 467 (August 1922): 507. British casualties for the second Battle of Gaza range from 10,000 in Kressenstein's estimate, to approximately 6,500 in both Wavell's and H. A. Jones's appraisals. Tellingly, the use of tanks at

Gaza proved that the new weapons in and of themselves did not guarantee success in a combined arms approach to battle. Due to the restrictions of the difficult terrain and the unreliability of the machines, tanks did not provide the necessary mobility that the horse cavalry would later furnish at Beersheba and Megiddo. This fact would later enforce the penchant for thinking that it was the cavalry, not the use of combined arms, that led to success in the overall campaign.

20. Lloyd George would later condemn the attacks on Gaza, stating they "had been the most perfect sample exhibited on either side in any theatre during this Great War of that combination of muddleheadedness, misunderstanding, and sheer funk, which converts an assured victory into a humiliating defeat." Lloyd George, *War Memoirs of David Lloyd George*, 201. Air superiority quote from Jones, *War in the Air*, vol. 5, 215. See also Macmunn and Falls, *Military Operations*, 328–29.

21. In Basil H. Liddell Hart, *A History of the World War, 1914–1918* (London: Faber & Faber Limited, 1934), 457. Appreciation for the value of airpower was no more enthusiastic across the Atlantic. "Even the glaring deficiencies shown by the 1st Aero Squadron, which . . . had accompanied Brig Gen John J. Pershing's expeditionary force into Mexico in 1916, failed to rouse either military or industrial leaders to corrective action. Consequently, when the United States finally declared war on Germany in April 1917, it did not have a single combat airplane" (Vincent J. Esposito, ed., *A Concise History of World War I* [Washington; London: Frederick A. Praeger Publishers, 1964], 256).

22. Quoted in Morrow, *Great War in the Air*, 199. Support for airpower was just as earnest in Britain. On 15 September 1917, Field Marshal Douglas Haig wrote to the CIGS: "I am in entire agreement with the view that the full development of all possibilities of aerial attack is of urgent importance" (In Jones, *War in the Air*, appendices, 18).

23. Esposito, *Concise History of World War I*, 257. On aerial bombing in Libya, see Benjamin F. Cooling, ed., *Case Studies in the Development of Close Air Support* (Washington, D.C.: Office of Air Force History, 1990), 14–15. On no precedents for how to realistically use airpower, see Kennett, *First Air War*, 21.

24. Training accidents in the air actually consumed more lives than combat missions. "Unnecessary casualties were caused by the pilots' inability to command and control their aircraft, let alone fire the guns or drop the bombs effectively" in Alan Stephens, ed., *The War in the Air, 1914–1994* (Maxwell AFB, Ala.: Air University Press, 2001), 14. On 1912 British war-games, see Bullock, "Swift as Eagles," 18–19. The losing force commander was Douglas Haig.

25. A. J. Insall, *Observer: Memoirs of the R.F.C., 1915–1918* (London: William Kimber, 1970), 56. Insall's lieutenant colonel had written the War Office in 1914: "A case has recently been brought to my notice where a pilot has had 22 forced landings in 30 flights in a Vickers machine" (*ibid.*). On early speeds and endurance of aircraft, see Arnold Blumberg, "Close Air Support in World War I," *Command* 16 (May–June 1992): 35.

26. One contemporary RFC captain noted: "As the number of available aircraft increased, so did the amount of observation for the guns, until finally the entire front opposite the British was registered for bombardment

and divided into sections covered by specific artillery machines.” Alan Bott, *Cavalry of the Clouds* (Garden City, N.Y.: Doubleday, Page & Company, 1918), 147.

27. On the western front, Paddy Griffith asserts frequent coordination between air and ground units was “all the more essential since the landscape kept being changed and deformed under the batterings of artillery and rain, so that only constantly updated photographs could make sense of it” (Paddy Griffith, *Battle Tactics of the Western Front: The British Army’s Art of Attack, 1916–1918* [New Haven & London: Yale University Press, 1994], 156). On wireless stations in Palestine, see Jones, *War in the Air*, vol. 5, 229. For general discussion on air-ground communications, see Cooling, *Case Studies*, 16. Finally, for aerial photography developments, especially in Palestine, see Yigal Sheffy, *British Military Intelligence in the Palestine Campaign, 1914–1918* (London; Portland, Ore.: Frank Cass, 1990), 188–89.

28. Cooling, *Case Studies*, 20. For a German perspective on how aircraft affected troop morale, see also Richard P. Hallion, *Strike from the Sky: The History of Battlefield Air Attack, 1911–1945* (Washington; London: Smithsonian Institution Press, 1989), 19.

29. For details on the Palestine Brigade’s composition, see Henshaw, *Sky their Battlefield*, 508–11; Jones, *War in the Air*, vol. 5, 187, and vol. 6, 209.

30. Guy Slater, ed., *My Warrior Sons: The Borton Family Diary 1914–1918* (London: Peter Davies, 1973), 197. Casualties were high in such an offensively minded approach to aerial combat. In 1917 the “RFC lost 434 officers in the 50 days from 31 July to 19 September” (Morrow, *Great War in the Air*, 236).

31. See Bott, *Cavalry of the Clouds*, 156–58. As he noted, “A type of machine is good for a few months of active service, just holds its own for a few more, and then becomes obsolete except as a training bus.” On technology’s impact on German tactical use of fighters, see Norman L. R. Franks, Frank W. Bailey, and Russell Guest, *Above the Lines: The Aces and Fighter Units of the German Air Service, Naval Air Service and Flanders Marine Corps, 1914–1918* (London: Grub Street, 1993), 13.

32. Bullock, “Swift as Eagles,” 139. See also Stephens, *War in the Air*, 9. Henshaw notes, “It was not the policy of the Allies to commit sophisticated machines to these [peripheral] theatres, preferring to concentrate them on the western front” (Henshaw, *Sky their Battlefield*, 509).

33. Slater, *My Warrior Sons*, 25. The lack of an interrupter gear, allowing a machine gun to fire through a plane’s propellers, made the B.E.2c even more vulnerable to its German counterparts (Macmunn and Falls, *Military Operations*, 203). The speed of the German aircraft was also nearly double that of British seaplanes working in conjunction with the EEF (Cecil E. Hughes, *Above and Beyond Palestine: An Account of the Work of the East Indies and Egypt Seaplane Squadron* [London: Ernest Benn Limited, 1930], 215).

34. On British air missions, see Sheffy, *British Military Intelligence*, 279. On Turkish camouflage techniques, see Edward Davis, “The British Cavalry in Palestine and Syria,” *The Cavalry Journal* 32, no. 130 (January 1923): 63. On German air units in Palestine, see Terry C. Treadwell

and Alan C. Wood, *The First Air War: A Pictorial History, 1914–1919* (London; Washington: Brassey's, 1996), 126.

35. Jones, *War in the Air*, vol. 5, 231. Regarding new British aircraft, see Sheffy, *British Military Intelligence*, 279; Cyril B. Falls, *Armageddon: 1918* (Philadelphia; New York: J.B. Lippincott Company, 1964), 62; Savage, *Allenby of Armageddon*, 210–11.

36. Earl Wavell, *Allenby: A Study in Greatness: The Biography of Field-Marshal Viscount Allenby of Megiddo and Felixstone* (New York: Oxford University Press, 1994), 184. Allenby initially thought he was being relegated to a theater of lesser importance.

37. Bullock, *Allenby's War*, 63; Wavell, *Allenby*, 88.

38. Wavell, *Allenby*, 117.

39. Gough quote in Jonathan Newell, "Allenby and the Palestine Campaign," in *The World War I and British Military History*, ed. Brian Bond (Oxford: Clarendon Press, 1991), 204. For other criticisms of Allenby in France, see James, *Imperial Warrior*, 74.

40. Michael Carver, ed., *The War Lords: Military Commanders of the Twentieth Century* (Boston; Toronto: Little, Brown and Company, 1976), 144.

41. In Hill, *Chauvel of the Light Horse*, 117.

42. Quoted in Matthew Hughes, "General Allenby and the Palestine Campaign, 1917–1918," *The Journal of Strategic Studies* 19, no. 4 (December 1996): 63. For a contemporary soldier's view of Allenby, see Vivian Gilbert, *The Romance of the Last Crusade: With Allenby to Jerusalem* (New York; London: D. Appleton and Company, 1923), 195–96.

43. Falls, *Armageddon*, 159–60. On Allenby's temper, see Gardner, *Allenby of Arabia*, 62–63.

44. For a discussion on the interrelationship between the eastern and western theaters in the summer of 1917, see Maurice, "Campaigns in Palestine and Egypt," 19–20. For strategic implications within the eastern theater, see Darrah, "Palestine Campaign," 651.

45. On Allenby's "shopping list" to the CIGS upon taking command, see James, *Imperial Warrior*, 118. On training between air and ground units, see Sheffy, *British Military Intelligence*, 284. Ground commanders were often highly critical of the accuracy of aerial reconnaissance reports. Major General Barrow complained that "some of the aeroplane reports . . . were ludicrously inaccurate."

46. For biographical sketches on Chauvel and Chetwode, see Ian V. Hogg, *Historical Dictionary of World War I* (Lanham, Md.; London: The Scarecrow Press, 1998), 51–52. On Salmond, see Bullock, "Swift as Eagles," 98. On Bulfin, see Wavell, *Allenby*, 154, 220.

47. Hill, *Chauvel of the Light Horse*, 127. Errors in aerial reconnaissance were of course made. "A ridge near Dir Sanid occupied by the Ottomans during their retreat from Gaza in November 1917, which blocked the northern advance of the 52d Infantry Division, turned out to be three times higher than indicated by the map being used." Sheffy, *British Military Intelligence*, 283.

48. Gen Guy Dawnay, quoted in Hughes, "General Allenby and the Palestine Campaign," 71. For an overview of the battle's results, see Wavell, *The Palestine Campaigns*, 124–25. Cyril B. Falls, *Military Opera-*



tions, pt. 1, (London: The Imperial War Museum, 1930), 76–77, includes a quick synopsis from the enemy’s viewpoint. On coordination with seaplanes, see Cecil Hughes, “General Allenby and the Palestine Campaign,” 213.

49. One correspondent noted during the pursuit to Junction Station that you could trace the path by the “stench of unburied and burnt bodies.” In James, *Imperial Warrior*, 136. For a discussion on the splitting of the Turkish Seventh and Eighth Armies, see Falls, *Military Operations*, pt. 1, 139, 184; and Darrah, “Palestine Campaign,” 754.

50. Savage, *Allenby of Armageddon*, 261. See also Lowry, “Allenby’s Campaign in Palestine,” 72.

51. Kressenstein, “Campaign in Palestine,” 512. The last army to conquer Jerusalem was led by Sultan Saladin in October 1187. See John T. Spach, “Allenby and the Last Crusade,” *Military History*, March 1996, 28.

52. Kennett, *First Air War*, 90. See also James, *Imperial Warrior*, 120, regarding Allenby’s limitations in fully appreciating airpower.

53. For an overview of the Michael offensive, see Esposito, *A Concise History of World War I*, 105–15. For its impact on the British army, see Liddell Hart, *A History of the World War*, 476.

54. In Falls, *Military Operations*, pt. 2, 421. Darrah’s numbers are somewhat different, noting that only six Yeomany regiments were transferred; see Darrah, “Palestine Campaign,” 658.

55. Collins, *Lord Wavell*, 94. Falls, *Military Operations*, pt. 2, 420. In all, Allenby absorbed “216 partially-trained Indian infantry companies (54 battalions), as well as 13 Indian cavalry squadrons, so as to bring his force back up to strength.” Hughes, “General Allenby and the Palestine Campaign,” 80.

56. Chetwode quote in Hill, *Chauvel of the Light Horse*, 152. For RFC participation in Trans-Jordan raids, see Henshaw, *Sky their Battlefield*, 520. Thanks to the bad weather, which grounded aircraft, and poor coordination with the Arabs, the Turks were able to reinforce Amman by rail during the March battle. See James, *Imperial Warrior*, 151.

57. Antony Bluett, *With our Army in Palestine* (London: Andrew Melrose, Ltd., 1919), 247–48.

58. William T. Massey, *Allenby’s Final Triumph* (New York: E.P. Dutton and Company, 1920), 139. Liman von Sanders, *Five Years in Turkey* (Annapolis, Md.: The United States Naval Institute, 1927), 272–73. For excerpts from German air force reports on the effectiveness of the Palestine Brigade, see Pirie-Gordon, *Brief Record*, 112.

59. Kemal quote in Sheffy, *British Military Intelligence*, 304. See also R.H. Kiernan, *Wavell* (London: George G. Harrap & Company, 1945), 93. Cyril Falls asserts that in the Turkish army, there “were actually more deserters than men under arms, even though lorries with machine-gun parties patrolled the roads behind the front.” Falls, *Military Operations*, pt. 2, 445. A. J. Hill also notes that Turkish animals “were so undernourished that they could not be relied on to haul . . . guns” (see Hill, *Chauvel of the Light Horse*, 163).

60. Yigal Sheffy argues that the Turkish preconceptions about the eastern flank were so strong they actually rejected any intelligence to the contrary. “Institutionalized Deception and Perception Reinforcement” Allenby’s Campaigns in Palestine, 1917–1918,” in *Intelligence and Military*

*Operations*, ed. Michael I. Handel (London; Portland, Ore.: Frank Cass, 1990), 226–27.

61. For Allenby's details of the campaign plan, see Pirie-Gordon, *Brief Record*, 26–27. For roles on each of the corps's missions, see Wavell, *The Palestine Campaigns*, 198–99.

62. Hill, *Chauvel of the Light Horse*, 163.

63. Allenby in Pirie-Gordon, *Brief Record*, 27. On massing of the cavalry, see Darrah, "Palestine Campaign," 663. The deception piece was an integral part of Allenby's plan. "Every day . . . West Indian battalions, like extras in a film, marched toward the left of the Turkish line, and every night they secretly returned in trucks to their starting points to do it over again the next day" (Spach, "Allenby and the Last Crusade," 32). See also George de S. Barrow, *The Fire of Life* (London; New York; Melbourne: Hutchinson & Co., 1942), 193.

64. For aerial operations orders, see Falls, *Military Operations*, pt. 2, 678–79. On mapping and photography missions, see Forrest Sherman, "Air Operations in Palestine," *United States Naval Institute Proceedings* 53, no. 7 (July 1927): 789. On concealing troop concentrations, see Wavell, *The Palestine Campaigns*, 201.

65. Wavell, *Allenby*, 271. On Turkish centers of gravity as well as the integration of Allenby's forces with the Arabs, see Jim McNulty, *Irregular Warfare in the Conventional Theater: An Operational Perspective* (Fort Leavenworth, Kans.: US Army Command and General Staff College, 1994), 31, 36. On command and control targeting, see Povlock, *Deep Battle*, 17.

66. Thomas E. Lawrence, *Revolt in the Desert* (New York: George H. Doran Company, 1927), 280. See also Jones, *War in the Air*, vol. 6, 213. For full organization of the Arab Northern Army, see Falls, *Military Operations*, pt. 2, 405. On Sanders' reaction to the Dera raids, see Wavell, *The Palestine Campaigns*, 203.

67. The Marquess of Anglesey, *A History of the British Cavalry*, vol. 5, *Egypt, Palestine and Syria, 1914–1919* (London: Leo Cooper, 1994), 260. Two British destroyers, the *Druid* and the *Forester*, also joined in the initial barrage, firing 1,000 rounds per minute into the Turkish lines (Bullock, *Allenby's War*, 131). Firepower from the Palestine Brigade on the first day of the battle was impressive. As an example, the No. 1 Squadron, Australian Flying Corps "dropped during the day 48 112-lb bombs, 264 20-lb bombs, about 30 incendiary bombs and fired 20,000 rounds of ammunition at ground targets." See Mark Lax, ed., *One Airman's War: Aircraft Mechanic Joe Bull's Personal Diaries, 1916–1919* (Maryborough, Australia: Banner Books, 1997), 133. "The RAF also rendered good service by laying smoke screens on two different occasions in front of brigades of the XXI Corps" (Falls, *Armageddon*, 59).

68. Sanders, *Five Years in Turkey*, 284.

69. Quoted in Anglesey, *History of the British Cavalry*, 262. Aircraft were early on working in close coordination with the cavalry. Fighters had effectively shut down the airfield at Jenin until Light Horse troops captured the town on 20 September. See Hill, *Chauvel of the Light Horse*, 167; Richard M.P. Preston, *The Desert Mounted Corps: An Account of the Cavalry Operations in Palestine and Syria, 1917–1918* (Boston: Houghton-Mifflin, 1923), 216.

70. One subaltern with the 18th Lancers noted the swath of destruction created by the far-reaching cavalry and aircraft. "We had covered 80 miles in 34 hours. What a sight the roads were! Abandoned lorries and cars, cut off in their attempt to escape, stood every few yards on the road. . . . El Affule was a shambles. Engines and trains full of army winter clothing and kits stood in the stations, just as they were surprised that morning." J.R.H. Cruikshank, "How Cavalry Exploits a Victory: Being Extracts from a Diary of a Subaltern under Allenby in Palestine," *The Cavalry Journal* 32, no. 131 (April 1923): 166.

71. In Hallion, *Strike from the Sky*, 33. For views from the AFC, see Ian Hodges, "The Massacre at Wadi-Fara: A Machine-Gunner's Paradise," *Wartime* 10 (Autumn 2000). "Some who flew these missions were repelled by what they were doing and got so sick of the awful havoc they had created that they asked to be relieved of the duty." In James, *Imperial Warrior*, 166.

72. In Cyril B. Falls, *The Great War* (New York: G.P. Putnam's Sons, 1959), 401.

73. On air-ground coordination in the pursuit to Damascus, see Preston, *Desert Mounted Corps*, 286. On 5th Cavalry Division's march, see Falls, *The Great War*, 401.

74. Matthew Hughes, *Allenby and British Military Strategy in the Middle East, 1917–1919* (London; Portland, Ore.: Frank Cass, 1999), 97. Casualty figures are taken from Bullock, *Allenby's War*, 147.

75. *Times*, 23 September 1918.

76. Bullock, *Allenby's War*, 151.

77. In Gardner, *Allenby of Arabia*, 266.

78. Barrow, *The Fire of Life*, 201. On overlooking the difficulties in the Amman raids and in the Gaza battles, see Hughes, "General Allenby and the Palestine Campaign," 80.

79. Wavell, *The Palestine Campaigns*, 234–42. Interwar year lessons in the United States were similarly focused, for as "with the British Cavalry, the American Cavalry's hero at this time was Allenby, who had employed large numbers of horsemen in his highly successful campaign against the Turks in Palestine." Quoted in Messenger, 51. Interestingly, for all of Wavell's emphasis on mobility, the British appear to have missed this simple lesson. In North Africa, German field marshal Erwin Rommel would note in 1942 the "virtues and the faults of the British soldier—tremendous courage and tenacity combined with a rigid lack of mobility." B.H. Liddell Hart, ed., *The Rommel Papers* (New York: Harcourt, Brace, 1953; DaCapo Press, n.d.), 222.

80. Sherman, "Air Operations in Palestine," 787. On operational objectives, see Bullock, "Swift as Eagles," 423.

81. James Corum, "Airpower Thought in Continental Europe between the Wars," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell AFB, Ala.: Air University Press, 1997), 171.

82. Quote in J.F.C. Fuller, *The Conduct of War, 1789–1961: A Study of the Impact of the French, Industrial, and Russian Revolution on War and its Conduct* (New Brunswick, N.J.: Rutgers University Press, 1961), 258. Al-stair Horne contends: "If any simple, general explanation is to be found [for the failure in Sudan], it must lie in the dreadful quagmire of liaison

links between the various French ground armies and combat units of the air forces." *To Lose a Battle, France 1940* (Boston; Toronto: Little, Brown and Company, 1969), 288.

83. See Bullock, *Allenby's War*, 148; Fuller, *Conduct of War*, 256–57.

84. Liddell Hart, one of the leading British theorists of the interwar period, "seized upon Megiddo as an example of what he had for so long been asserting—that great battles could be won 'by strategic means, with fighting playing a minor part.'" In Newell, "Allenby and the Palestine Campaign," 196.

85. Wavell, *Allenby*, 180.

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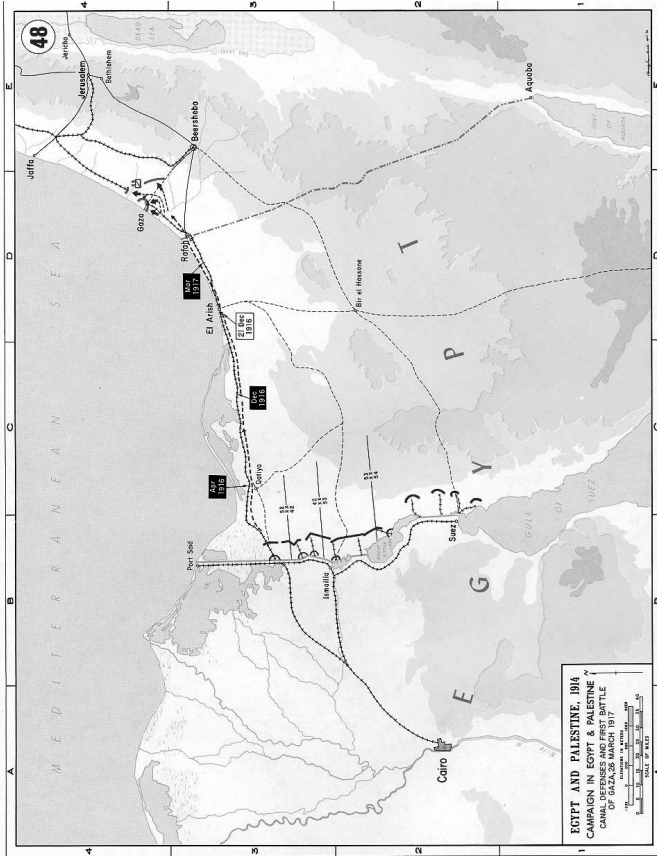
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## **Appendix A**

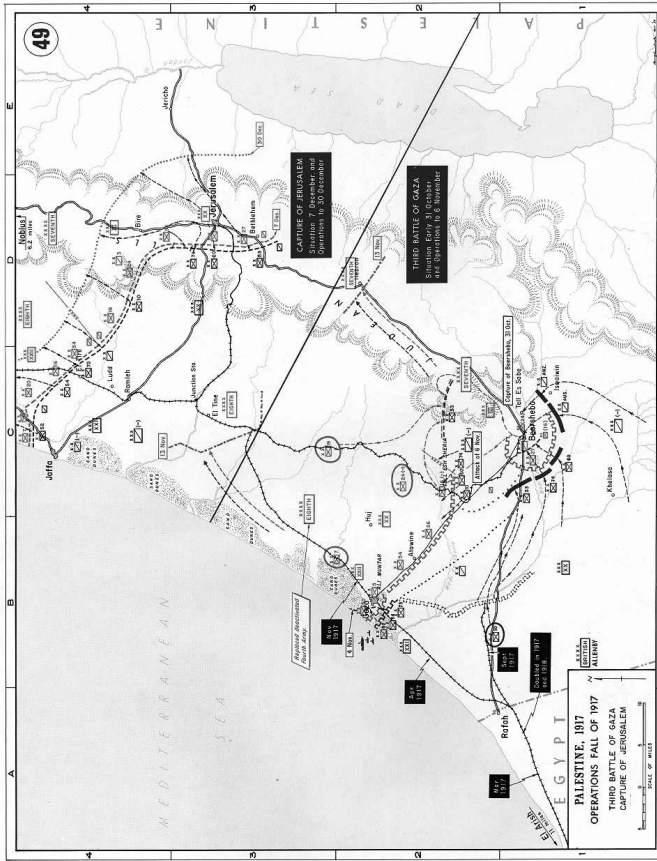
### **Maps**





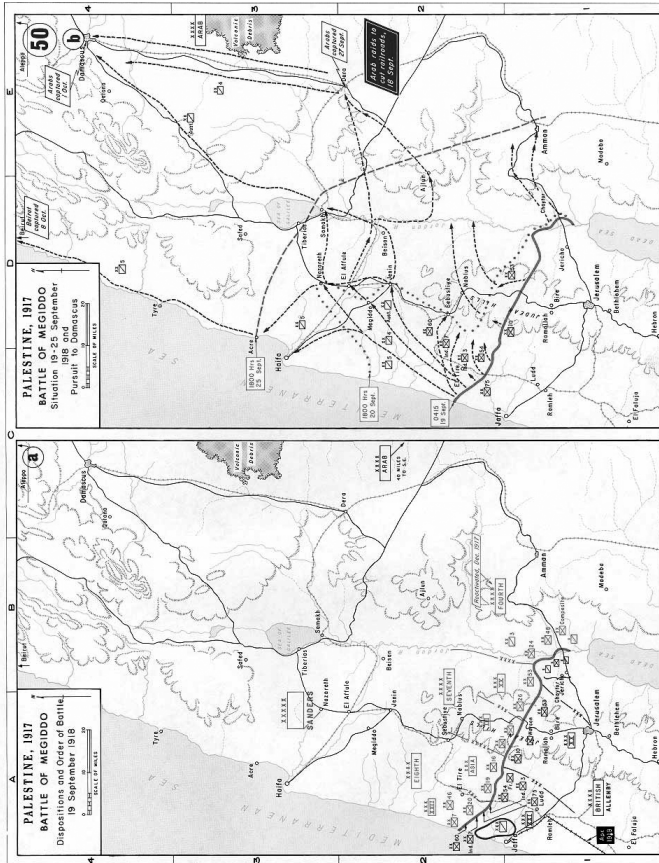
**Map 1. Egypt and Palestine, 1914**

Source: Thomas E. Greiss, ed., *Atlas for the Great War* (Wayne, N.J.: Avery Publishing Group, 1986), 48.



**Map 2. Palestine, 1917**

Source: Thomas E. Greiss, ed., *Atlas for the Great War* (Wayne, N.J.: Avery Publishing Group, 1986), 49.



**Maps 3-4. Palestine, 1917, Battle of Megiddo**

Source: Thomas E. Greiss, ed., *Atlas for the Great War* (Wayne, N.J.: Avery Publishing Group, 1986), 50.