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## ILLUSTRATIONS

All the maps, with the exception of maps 11 and 13, are from *American Armies and Battlefields in Europe* (Washington, D.C.: Government Printing Office, 1938), the army's official guide published under the supervision of General Pershing; it was reprinted by the army's Center of Military History in 1995. Several maps contain signs for stops and arrows for routes, referring readers to portions of the guide's text.

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## PREFACE AND ACKNOWLEDGMENTS

As the twenty-first century progresses, the last veterans of World War I are passing from the scene. In 2006, perhaps twenty remained of the nearly 4 million Americans in the army and the half a million in the navy in 1917–1918. Their numbers were considerable until the 1970s and 1980s, but today, these veterans are all centenarians, and in a year or two they will be gone.

World War I has been largely forgotten. People today know little about it; they have no idea what issues caused the European war in 1914 or how it turned into a world war with the United States' entrance in 1917. They have little understanding of the nation's experience in the war, and the individual engagements have entered the dark corridors of history.

In the fashion of present-day historical writing, I suspect I will be criticized for writing about a single battle, even if it was the largest one of the war—the Meuse-Argonne, which lasted for forty-seven days, from September 26 to November 11, 1918. It will seem too small a subject, lacking the expansiveness that historical writing is expected to embody. My fellow historians consider military history old-fashioned. But surely World War I was the root of the horrendous events—in terms of lives lost—of the twentieth century and, by extension, the twenty-first. World War II, the cold war, and terrorism can be traced to the war of 1914–1918, leading to events that in earlier times (notably, the nineteenth century) would have been unimaginable.

In World War I, the appearance of a huge American army in France was decisive, and in that army's history, the most important battle was the Meuse-Argonne. Although that battle was a success, the cost in human casualties was high, which is my reason for writing about it. There were 26,277 men killed and 95,786 wounded, making it the deadliest battle in all of American history. It also was the largest, with 1.2 million men at the front. Still, the battle has received little attention for many years. The only book on the subject, *Our Greatest Battle*, by military historian Frederick Palmer, was published in 1919.<sup>1</sup>

I am greatly indebted to historians of America's participation in World War I. Some years ago, Edward M. Coffman published a remarkably accurate and well-written account of what he described as, in the phrase of

the Wilson era, "the war to end all wars." Donald Smythe's two-volume biography of General John J. Pershing stands as a beacon in the literature of American military history. Similarly valuable are Allen R. Millett's biography of General Robert L. Bullard and Forrest C. Pogue's biography of General George C. Marshall. General James L. Collins Jr. presided over the U.S. Army's Center of Military History for years and edited General Marshall's manuscript on the American Expeditionary Forces. Through books and lectures, Russell F. Weigley almost single-handedly created interest in military history among the officers and men who made it; a whole generation of U.S. Army historians owes a great deal to Weigley. David F. Trask has also contributed significantly to the scholarship, both military and civil, about World War I. In addition, James J. Cooke has written division and topical histories, John S. D. Eisenhower has a notable general account, and Alfred F. Hurley is the biographer of General William Mitchell. And all students who seek to write about the United States in 1917–1918 must thank a new generation of scholars typified by Carol Byerly, Mark E. Grotelueschen, Kenneth E. Hamburger, Jennifer D. Keene, Timothy D. Nenninger, and James W. Rainey.

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My thanks, as always, to Carolyn and Lorin, and now Amanda.

## CHAPTER ONE

# Preparation

Two immense tasks confronted the United States on April 6, 1917, when the nation entered the world war: industrial mobilization and preparation of the army to fight in France. Both ultimately affected the battle of the Meuse-Argonne.

The first, industrial mobilization, was nearly a failure because President Woodrow Wilson simply could not manage it. In the years before 1917, this highly regarded chief executive had displayed a mastery of domestic politics that had brought memorable, progressive legislation, including the Federal Reserve Act (long overdue) and the act creating the Federal Trade Commission. Wilson's presidency was marked by moral leadership of a high order; no tincture of scandal—either personal or political—accompanied it. But for all his admirable qualities, Wilson was not the manager of mobilization that the country needed in 1917–1918. He could not put his mind to the great projects he had begun.

Wilson was a man of peace to the core of his being. After his election in 1912, he wrote to a friend that it would be an irony of fate if he ended up leading the nation into war. After a German submarine sank the liner *Lusitania* in May 1915, Wilson made a speech in Philadelphia in which he said there was such a thing as a man being too proud to fight—after the deaths of 1,198 men, women, and children, including 128 Americans. Former president Theodore Roosevelt, Wilson's opponent in 1912, said publicly that if he had been president the ship never would have been

sunk; he told military writer Frederick Palmer that he would have sent Germany an ultimatum and seized any German ships in American harbors. To explain his lack of action, Wilson told Palmer that people east of the Alleghenies would have supported war after the *Lusitania*, but those west of the Alleghenies would not have.<sup>1</sup> About the same time, he stated that war would not accomplish anything permanent. In the autumn of 1915 the president read in the *Baltimore Sun* that a group of army officers at the War College in Washington were planning for war, and he instructed the acting secretary of war, Henry S. Breckinridge, to find out whether this were true and, if so, to order all the officers out of the city. Wilson never ventured far from his antiwar position. He was never at ease as a war leader, regardless of what he said out of expediency. When he went to the peace conference in Europe, his generals and European leaders implored him to tour the battlefields, but he put it off for as long as he could and then devoted only a few days to the distasteful task. He did not find time to visit the Meuse-Argonne.

Another quality that accompanied the president's views on war was his tendency to resort to oratory rather than action at a time when the ends were less important than the means. The president believed that words were vital; in the beginning was the word. This principle had taken him far in politics. Oratory had come in with Daniel Webster, Henry Clay, and John C. Calhoun and did not go out until after the world war and the introduction of amplification (loudspeakers), radio, and eventually television. Wilson's leading biographer and the editor of sixty-nine volumes of his papers wrote that oratory was the president's principal attribute as a public figure.<sup>2</sup> Wilson believed that he could resolve problems by taking his listeners to the high places from which they could see the valleys and villages below.

Given the nation's need to mobilize industry to produce ships and weapons to allow the army to get to France and fight on the western front, there was no time to waste in turning industry to this purpose. But despite the president's announcement of this need, he did little or nothing to achieve it. He did not sense that leading such a great enterprise would require him to get into the details of the work; he had to know what was going on, and he needed to confer with experts and appoint them to supervise war production.

Warning signs were visible not long after the declaration of war, but the president paid little attention, with the inevitable result. The first fail-

ure appeared in shipbuilding.<sup>3</sup> The situation had been addressed the year before the war when, to oppose Roosevelt's urging of mobilization, the president had sponsored a program known as preparedness, one aspect of which was to increase the merchant marine. Wilson appointed a shipping board that was coheaded by the builder of the Panama Canal, Major General George W. Goethals. The general was a talented administrator, but he butted heads with his civil counterpart, William G. Denman, and little happened until the president dismissed them both and appointed two civilians. The more dominant was Charles M. Schwab, the head of Bethlehem Steel and a former assistant to Andrew Carnegie. Schwab followed the same course that Goethals might have taken, had he possessed support. But during this administrative confusion, precious time was lost in what proved to be a complicated effort.

The shipbuilding program was given the highest priority, for in 1917 there were hardly enough ships to carry more than a fraction of a large army to Europe. The total transatlantic tonnage was only 1 million, the same as in 1810. For a short time in the first part of the nineteenth century, tonnage had gone up, but by 1860 American ships carried only 65 percent of American commerce. During the Civil War, as a result of Confederate raiders such as the *Alabama*, tonnage fell to a quarter of the overseas trade, and in subsequent years it fell to less than 10 percent. With the invention of iron and then steel ships, the United States lost its advantage in the construction of wooden ships because of Europe's cheaper metals and much cheaper wages (European ships cost 25 to 50 percent less than American). Then in February 1917 came the crisis: the German government engaged in unrestricted submarine warfare to prevent all commerce with the British Isles, which meant the sinking of all ships approaching British ports. In that month, submarines sank 536,000 tons of Allied shipping, followed by 603,000 tons in March and nearly 1 million in April. As the rate of sinkings to launchings approached two to one, if not three to one, among shipyards all over the world, the supply of shipping decreased dramatically.

After April 1917 the capacity of American shipyards increased sixfold under the government program; 1,284 ways were in operation, double the number in the rest of the world. The shipbuilding workforce rose from 45,000 to 380,000. The largest yard was at Hog Island, a muddy acreage near Philadelphia, where pile drivers produced what amounted to a shipbuilding city. It was larger than the seven largest shipyards in

England. Hog Island turned into an enormous enterprise, assigned the task of producing, launching, and finishing two hundred ships. It had a projected production of fifty ships on the ways, with room for fifty at the piers. Each ship required 250,000 parts, and Hog Island had 250,000 piles of parts brought in by fifty miles of rail sidings. Cranes lifted the parts into hulls, and workers used the team method, moving from way to way. One did ribs, another bulkheads, and another decks, turning out 4,600-ton cargo carriers and 5,000-ton combination cargo and troop carriers. The speed of the cargo vessels was eleven to twelve knots; combination ships could travel fifteen to sixteen knots.

The prospect was exhilarating. At Hog Island, a ship could be built in eighty-seven days, requiring thirty-five more to finish. At this single yard, with all the ways working, a ship could be launched every other day. The national shipbuilding project was getting into high gear by early summer 1918, and on a single day, July 4, yards across the country launched 300,000 tons of ships.

But the program got started too late, and few yards launched ships in time to assist the war effort. Hog Island launched its first, the *Quist-conck* (Indian for "Hog Island"), on August 5, 1918, and delivered it on December 3. The program faltered, and tonnage went up only because of the commandeering of German ships that had taken refuge in American harbors at the outset of the war, as well as those of neutrals that had stayed in port because of the threat from submarines. A few ships came from the Great Lakes, bisected and taken through the Welland Canal. An attempt to build composite ships, with steel frames and wooden plates, failed because of the ships' structural weakness. They proved suitable only for coastal runs, where they freed a few ships capable of transatlantic passage. The total new tonnage was 664,000 in 1917 and 1.3 million in 1918—a miserable performance. The entire shipbuilding program produced only 107 steel, 67 wooden, and 4 composite ships.

The lack of ships in 1917–1918 adversely affected the American contribution to the war, and when the Allies realized this (belatedly), they did something about it. Early in 1918, fearful of a great German offensive, the British government removed ships from Mediterranean runs and other employment and sent them to the United States to bring over American divisions. Half of all troops in the American Expeditionary Forces (AEF) were brought over by the U.S. Navy; the rest were transported by Allied

ships. For the navy, this meant packing the men into holds and assigning bunks on twelve-hour shifts—doubling the capacity of transports.

Getting the men to France was just part of the problem. Creating an infrastructure to receive them proved daunting. Ports in France were insufficient and needed to be enlarged and new ones constructed, if possible. The rail network from the ports up to the Lorraine sector, where the Americans were supposed to deploy, was as primitive as the port structure. French resources were few; the years of war had starved industry of steel and other necessities. The Americans lacked the ships to bring over the necessary materials, and the problem continued until the end of the war.

The effects of the shipping crisis were felt in all directions. The AEF needed trucks—or if not trucks, then horses and mules—to carry the men and their baggage. American industry could have turned out trucks in huge quantities, but there was no space aboard ships to carry them. Thus, truck transport ceased in January 1918. Animals could not be sent from the United States because of the same space problems, and animal transport likewise ceased the same month. Army procurement officers sought to purchase horses and mules in Europe, but they were in short supply and expensive, costing up to \$400. The animals that were available were often of poor quality, having been rejected by the French army. Few American divisions were able to obtain enough animals to fill their tables of organization. Moreover, caring for the animals they did have was time-consuming. They had to be fed, meaning that oats and forage had to be found in large quantities. They also had to be carried. And when they went to the front, their high silhouettes made them vulnerable to artillery and machine gun fire, and those that were killed had to be buried. Owing to this lack of trucks and animals, many divisions went to the front with insufficient transport, and many men, mostly infantrymen, had to walk the fifty miles (eighty kilometers) between St. Mihiel and the Meuse-Argonne carrying eighty-pound packs, leaving them in less than optimal physical condition when they entered battle.

Like the shipbuilding program, airplane production was also ineffective.<sup>4</sup> Failure occurred in the details. Secretary of War Newton D. Baker was the initial enthusiast for a production program, and he let it be known that \$600 million would allow the building of the greatest air fleet ever devised. The president's adviser, Colonel Edward M. House, told the

nation's chief executive that all he had to do was give the word. Wilson gave the word, Congress appropriated \$640 million, and the details intervened. One problem was acquiring the lumber to build frames—five thousand feet were needed to get five hundred feet without a cross or spiral grain. Flax from Ireland to cover the frames was unavailable, and cotton needed different dopes that were hard to come by. Motors were also a problem, and only after many changes did the government decide on the excellent twelve-cylinder Liberty motor, resulting in the production of 13,547 engines, of which 4,435 went overseas. Few planes ever went overseas. Baker originally promised twenty thousand, but the figure decreased to seventeen thousand, fifteen thousand, two thousand, and finally, thirty-seven. On February 21, 1918, the War Department announced that the first American-built planes were en route to the front; in reality, a plane had gone from the factory to an aviation field (in America) for a radiator test. The commander of the AEF, General John J. Pershing, received 1,213 American-made British DeHavilland 4s, known as flying coffins because the fuel tanks exploded on landing. Most AEF planes were foreign built. Of the 6,364 used by the army in France, evenly divided between service and training types, 4,874 were French, 258 British, and 19 Italian.

Airplanes in quantity were unavailable from the Allies until the summer of 1918 (shortly before the Meuse-Argonne), and never in sufficient numbers. Air service pilots had only a short period of instruction before having to oppose the skilled German pilots. There was also little time for training with the divisions in artillery spotting, which is so essential to the forward movement of troops.

Production of artillery was another mobilization failure.<sup>5</sup> Army officers urged the production of a three-inch gun known as the French 75, wrongly believing that this fine artillery piece was superior to the army's similar gun, the Model 1902. Mass production of the 75 proved impossible. The gun had been made by artisans and demanded rigid tolerances. Too late, officers went back to the Model 1902, but Pershing had to use 1,828 French 75s. Similarly, no American-made six-inch (155-mm) howitzers or guns (a howitzer has a lower muzzle velocity than a gun and delivers curved fire) reached France before the armistice.<sup>6</sup> The War Department obtained plans for 155-mm howitzers from Schneider in France, and by October 1917 it had changed the specifications from metric measurements to the American system. It awarded separate contracts for tubes,

carriages, and recoil mechanisms. The American Brake Shoe and Foundry Company of Pennsylvania received a contract for three thousand tubes, and seven months later, twelve a day were coming down the line. Maxwell Motor Company and Ford Motor Company both produced carriages, Ford turning out 4,373. The difficulty was the recoil mechanism, or recuperator, which needed forgings weighing 3,875 pounds. Companies shied away from the task. A contract eventually went to Dodge Brothers, and at the time of the armistice, Dodge was turning out sixteen a day. In contrast, for 155-mm guns, the Midvale Steel Company was already making tubes and carriages for the British army, and all the War Department had to do was place an order. The department bought French blueprints for the recuperators, and they proved to be more difficult to manufacture than the mechanisms for howitzers; Dodge Brothers had made only one by the time the war ended.

It is impossible to know what the failure to produce three-inch guns and especially 155-mm howitzers and guns meant for the Meuse-Argonne. Nevertheless, it seems certain that if American-made artillery had been available, the army would have used all of it, which would have drastically reduced casualties. In the summer of 1917 the War Department sent a mission under Colonel Chauncey Baker to consult with AEF officers and establish tables of organization for the divisions' supporting units. A member of the Baker board was Colonel Charles P. Summerall, an artillerist, who became a corps commander in the Meuse-Argonne. He argued vociferously and undiplomatically for more artillery but was voted down. The board and the AEF officers allotted each division one artillery brigade, no more.

In the Meuse-Argonne, Summerall's position proved correct. If more 75s and 155s had been available, the AEF's attacks might have gone very differently. In the first weeks of battle, the divisions needed more artillery. The 75s provided barrage fire ahead of advancing troops, and those walls of fire saved lives. But the 75s were short-range guns, and it was difficult to get them forward. They could not get up the poor roads, and taking them through open terrain was awkward; even though the 75 was nominally a light gun, it weighed four tons with its carriage and required six horses. The army could have used many more 155-mm howitzers and guns with their longer ranges. When Summerall's two divisions became the point units in the attack of November 1, 1918, the First Army was under a new and imaginative artillery commander, and with the corps

commander's delighted assent, he gave the 2nd Division three artillery brigades and the 89th two. The guns took out everything in front of them, and the infantry lines swept forward without opposition.<sup>7</sup>

The country's production of tanks was as inconsequential as its production of ships, planes, and artillery, although for a different reason. There was not so much a failure in production as a lack of direction from either the army's leaders in Washington or the commander of the AEF, Pershing, about what should be done. Employment of tanks in dramatic if not always effective numbers had come late in the war. The British used them at Cambrai in November 1917 with devastating effect; they did not anticipate their success, and there were no follow-up troops. In just a few days a German counterattack took back the territory that had been gained. On August 8, 1918, the British tank force struck again at Amiens, this time with the infantry following up.

At the outset of U.S. entry into the war, the War Department considered the production of tanks, and the AEF organized a provisional tank brigade. The problem with tanks, however, was that they were not battle-worthy; the attrition rate was 25 percent daily. Their speed was so slow (five miles an hour) and their armor so thin that any artillery piece could hole them. The Germans brought up long-barreled rifles (with three times the bore of regular rifles) mounted on tripods, and these primitive antitank guns were effective. Tanks also broke down from mechanical failure, motor malfunctions, and loss of treads. For such reasons, the 6.5-ton Renault tanks used by the Americans—360 at St. Mihiel on September 12–16, 1918, and 140 in the Meuse-Argonne—proved ineffective. The heavy French St. Chaumont Schneider tanks were mechanically impossible, and the Americans did not receive enough thirty-ton British tanks to become competent in their use.

Tank production in the United States was too little too late. The Ford Motor Company was slated to produce fifteen thousand three-ton light tanks, but by the end of the war it had produced only fifteen. By autumn 1918 American production of Renault tanks started to move, the first coming off the line in October and two arriving in France on November 20. An Anglo-American project for fifteen hundred thirty-ton tanks got under way, with the Americans providing Liberty engines and the rest of the driving mechanism and the British providing the armor plates; these tanks were scheduled to become available in 1919.

It is intriguing to consider what might have happened if the Wilson administration had gone to the automotive industry and asked for a tank design that combined speed and armor. The industry was highly developed, the best in the world, and such a request would not have been beyond its capability. When the AEF organized its tank brigade, there was enough experience even in that small unit to make excellent technical suggestions to the manufacturer of the French light tank.<sup>8</sup> After a tour of the plant, the Americans recommended a self-starter; a double-cased, felt-lined fuel tank to prevent leaking if hit by enemy fire; a mount for either a machine gun or a 37-mm gun; and a bulkhead to protect the crew from engine fire. Detroit engineers could have outdone Renault in terms of speed and armor, but instead, the industry (with the exception of Ford's three-ton experiment) accepted European tank designs and lacked sufficient encouragement to produce them.

American industry also failed to provide the AEF with munitions: powder, shells, and cartridges. It was unable to produce anything beyond the quantities it had supplied to the Allies in the period of neutrality, 1914–1917. Upon entry into the war, the army's procurement officers were uncertain how many divisions would go to France, so they placed no extra orders with the powder industry.<sup>9</sup> When it became likely that a huge army would be sent, they contracted with the nation's principal powder maker, E. I. Du Pont de Nemours. It was the largest government contract in American history: \$90 million for the construction of new plants, and \$155 million for orders. Six days later Secretary Baker refused the contract, calling it excessive; Du Pont had asked for an additional 15 percent commission on the plants' construction, believing them to be useless in peacetime. Baker told Pierre S. Du Pont that President Wilson had decided to construct government plants and win the war without Du Pont. It was at this time that General Pershing cabled the War Department about his need for ammunition, which the French had promised but failed to deliver. The department could do nothing and cabled in reply that "the French Government must furnish it, for there is no other way of getting it. At the present time there is not in this country any actual output of ammunition of the types mentioned. None has been expected."<sup>10</sup> Confusion reigned for four months until the secretary realized that contractors for government plants would have to consult Du Pont, because that company was the only American firm with the

know-how to produce smokeless powder, TNT, and picric acid. In negotiations, Du Pont proved willing to construct a plant for an acceptable sum: \$1. The arrangement was for two plants—one constructed by Du Pont in Nashville, named Old Hickory, and the other built by the government in Charleston, West Virginia, named Nitro. Du Pont's plant required less money and was already in production when the war ended, although not up to capacity. The government plant went into production on the day of the armistice. Contention over public versus private ownership had delayed the munitions program until it was too late. Meanwhile, British and French production increased sufficiently to supply the AEF, although the troops had some shortages in the Meuse-Argonne caused by a lack of transportation from railheads to the front.

American industry supplied the AEF in only two types of arms—machine guns and rifles. Ever since the Gatling brothers had invented the machine gun in 1861, the War Department had been slow to understand its importance. Seeking to sell it, the brothers had followed the troops of the Union army, using their employees to man the gun and show it off. The army adopted the gun in 1866, but it then shifted its interest to artillery shells that threw shards in all directions, shrapnel that promised to do the work of machine guns. In desperation, another American inventor, Hiram Maxim, sold his gun to the Germans.

In 1912 the War Department's table of organization for infantry regiments allotted four machine guns to a regiment. In the era of neutrality the department's lack of attention continued, and in 1917 its inventory totaled fifteen hundred guns of four types. A machine gun board adopted the heavy Browning machine gun and the Browning automatic rifle; these were first-rate weapons that were easily produced, and they proved so satisfactory over the following years that the army used them again in World War II and the Korean War. Light Brownings began to come off the assembly lines in February 1918 and heavy Brownings in April, enough to make a difference in the last weeks of the war. Until then, the Americans used the heavy British Vickers and French Hotchkiss guns. For automatic rifles they used the French Chauchats, which jammed regularly because of dust or overheating. These guns fired half as many bullets as the excellent British Lewis guns. As for rifles, in 1917 there were the Springfield 1903s, but only 600,000 of them—not enough. The Springfields came from a single government arsenal that managed to turn out 300,000 more by the end of the war. Many AEF divisions used a modified

version of the British Enfield that was heavier than the Springfield and had an inferior sight. Produced in American factories and known as the Lee-Enfield, it took Springfield ammunition.

The second national task—preparing the army to fight in France once war was declared—encountered the same difficulties that dogged industrial mobilization. Again, the trouble was a lack of leadership, this time within the War Department in Washington. If Woodrow Wilson was no war leader, neither was Newton D. Baker. After a year of inaction, General Peyton C. March became chief of staff of the army and brought order out of chaos.

At the outset, Baker seemed to be the individual who could manage the War Department. In 1916 then secretary of war Lindley M. Garrison had proposed a reorganization of the army that included more federal control over the National Guard, an institution of pride within the individual states. President Wilson believed that this was more control than the country would support. Garrison made an issue of his program and resigned. His successor, Baker, had the full support of the president. The two men had met when Wilson was a professor at Princeton and taught courses at nearby Johns Hopkins in Baltimore and Baker was a student in one of Wilson's courses. They even ate at the same boardinghouse. Baker also had administrative experience. He had become a lawyer and assisted Cleveland's reform mayor, Tom Johnson. Baker followed Johnson as mayor and fought for a three-cent ice cream cone, a three-cent streetcar fare, and dance halls where young men and women could meet each other in wholesome surroundings. It was during his administration that Cleveland's city council financed the local symphony orchestra for an annual sum of \$10,000, an unheard of profligacy. Wilson offered him the job of secretary of the interior in 1913, which Baker declined, but he accepted the War Department post three years later.

Upon taking office, Baker made an unfortunate decision that guaranteed his ineffectiveness for the rest of his tenure. He decided that, as a civilian, he would not interfere with military affairs. This was an egregious error; the department needed all the help it could get. Baker's decision not to intervene was based on a confrontation between President Jefferson Davis and General Robert E. Lee during the Civil War. Once, when Davis offered military advice to Lee, the general unbuckled his sword and

offered it to Davis, who in embarrassment declined to accept it. Baker's decision also may have been influenced by his physical stature. He was a small, slight man, not much over five feet tall, and the generals tended to tower over him; when he sat behind his huge desk, he usually kept one leg folded under him, giving the appearance of greater height. He may have been overly impressed by the air of command he encountered in the old State, War, and Navy Building, a great pile of masonry next to the White House that had been built during the era of President Ulysses S. Grant. For whatever reason, historical or otherwise, Baker removed himself from decisions of military importance. During the war he spent most of his time defending the army; the rest of the time he concentrated on the well-being, legally and morally, of the men in the training camps (dealing with harassment by officers such as Major General Leonard Wood, who mistreated conscientious objectors, and the temptations of men serving far away from their families and friends).

Baker tolerated—indeed, admired—three incompetent chiefs of staff until he finally chose a fourth, which may have been his principal achievement as secretary of war. The first three should never have been appointed. Major General Hugh L. Scott was a relic of the Indian wars. He began his service as a replacement for an officer killed with General George A. Custer at Little Big Horn in 1876. Heavily mustached, with a square face and flashing eyes (the air of command), he was slow-witted and out-of-date when it came to military affairs. Upon taking office, Wilson had appointed him brigadier general for personal reasons: the president had known Scott's brother on the Princeton faculty, and they had been on the same side in a controversy over reforms of the social fraternities and control of the graduate school. There was precedent for doing so; in 1906 President Roosevelt had passed over hundreds of ranking officers to appoint Captain Pershing a brigadier general, but Scott was hardly in Pershing's class.

Rank did nothing to improve Scott's abilities, and when he became chief of staff he spent his days writing memoranda in a large hand on small pads of paper. He was largely unaware of events in Europe. He even inquired of an assistant, Colonel Robert E. Lee Michie, "Michie, everybody's talking about the battle of the Marne. What happened at the battle of the Marne anyway?" In the department he apparently spent a good deal of time sleeping. In 1918, after his retirement as chief of staff, Baker and General March visited Scott's command, a training camp, and

were appalled by a forty-five-minute disquisition on the meaning of the feathers in an Indian headdress. March relieved and retired Scott upon his return to Washington.

Scott's successor, General Tasker H. Bliss, was no better, but for a different reason. He was alert but was essentially a theorist, with little experience leading troops. In 1912 he had commanded combined maneuvers of the Regular Army and the National Guard in Connecticut, where he had insisted to the umpire, Robert L. Bullard (later a lieutenant general and commander of the Second Army of the AEF), that the troops halt on the rut of one wagon wheel not another, a distance of three and a half feet.<sup>11</sup> After the war Bliss performed diplomatic tasks for the president; he was one of the delegates to the peace conference, where he drew up memoranda.

The third chief of staff was only an acting chief. Major General John Biddle, an engineer, filled in for Scott and Bliss when they were out of the country. He did not consider himself suited for the office of chief of staff, a sure sign of inability. In 1918 Biddle commanded American troops in England, where he received visiting British and American dignitaries.<sup>12</sup>

Last among the chiefs of staff, but far more important than his three predecessors put together, was March. A tall man with a large nose and a wispy goatee, he had an imperious air that was no facade; he was efficient to the point of ruthlessness. He had been Pershing's chief of artillery, and the commander in chief of the AEF had recommended March to Baker, thinking that he could control him (actually, Biddle had been Pershing's first choice). But March put his hand to everything and pushed in the direction of efficiency. Almost overnight he changed the War Department. When he walked into the State, War, and Navy Building on his first evening in Washington, he found only one officer at work and bags of unopened mail stacked outside one of the offices. Furious with this nine-to-five mentality, he let his anger be known, and the next night the offices were bright with lights.

Typical was the way March handled relations with Baker. Although the secretary had chosen not to do much, March ensured that he did less. The two had adjoining offices, and early in March's tenure, Baker used a buzzer to summon March to his office. The buzzer had been there a long time, and Baker had used it with March's predecessors. March came in, the two took care of the business at hand, and the chief of staff left. He summoned an assistant and told him to pull the buzzer's wires out of the

wall. Under March, more tasks went to Goethals, whom he put in charge of all army supply, and what March and Goethals did not do was handled by assistants such as Captain Robert E. Wood (promoted to brigadier general and, after the war, in charge of Sears, Roebuck). March saw to it that draftees—a draft was instituted in May 1917—filled the training camps and sent them to ports of embarkation on the East Coast, where they were packed into ships' holds and headed to France. He provided the divisions that his European opposite, Pershing, needed. Had March not been in charge at the War Department in the spring of 1918, the troops never would have gotten there.<sup>13</sup>

General March failed in only one respect in his work as chief of staff, and that was the matter of training. It was one thing to get the men into camps and then across to France, but quite another to make them proficient in the work of soldiering and prepared for what they would encounter on the western front. The men were trained so quickly, and in many cases wrongly, that no amount of efficiency in Washington and no will to achieve could turn the divisions into effective fighting units. They had to learn by experience, on the front itself, when they came up against the German army's efficiency and paid the price of instruction by the enemy—the heavy casualties in the Meuse-Argonne.<sup>14</sup>

The initial problem in the United States was a delay in the construction of training camps. It was decided to build huge cantonments consisting of tent camps in the South and barracks camps in the North. Construction of the camps took six months, so the cantonments were not ready until September 1917, and construction continued into the winter. This was much too slow, and the War Department should have used its powers of persuasion with local contractors. When March published his memoirs years later, he excoriated his predecessors for their slowness. In fairness, however, upon U.S. entry into the war it was unclear whether Britain and France needed credits and munitions or troops. Not until the end of the year did it become evident that they desired troops. Still, Secretary Baker had announced an emergency program of training camp construction and should have carried it out as such, if only as a precaution against what proved to be a miscalculation in the Allies' requirements.

Once the men arrived at camp, there was a lack of weapons with which to instruct them. They reached the cantonments only to discover that their heavy weapons would be available once they got to France. Artillery brigades could not train without their French guns. A Stokes mor-

tar platoon in the 82nd (the AEF used the British-made Stokes) saw no such weapons until its arrival in France. Machine guns were mostly unavailable. A soldier assigned to the 160th Machine Gun Company of the 90th Division was in training for two months before the division sailed in June 1918, and he did not see a machine gun until a few weeks before going to the front. Even rifles were not always available, and men trained with Krag-Jorgensens left over from the Philippines; the army had 200,000 of them. Stories circulated that men without rifles trained with broomsticks. This was almost true; the 82nd used four-inch boards to cut out approximations of rifles.<sup>15</sup>

Because of equipment shortages, officers assigned the men to tasks that were supposedly related to training, such as physical exercise. Men from cities may have benefited, but farm boys did not need it. Officers resorted to close-order drill, which had little use on a battlefield. In the eighteenth century, when armies came from the dregs of humanity, it held troops together when they marched through forests (red coats also helped), and it looked good to outside observers. Its rudiments could be learned in fifteen minutes, and the men spent hours and hours on it. Harvard professor William L. Langer, a recruit in 1917, complained in a history of his regiment that the men did "squads east and west" long after the experience had the slightest value.<sup>16</sup> Training time was also spent "policing" the grounds outside the tents or barracks. In sandy ground the men raked everything so that the rakes' teeth erased all footprints; the last man finished by trailing a rake behind him.

Actual training time was devoted to learning trench warfare, the kind of war that had prevailed on the western front since the first weeks of 1914. The Allies and the War Department believed that what had gone on in northern France for three years would continue. The Allies sent instructors to the camps to help train the Americans in digging and sand-bagging trenches, including secondary and tertiary trenches, with dug-outs to protect troops under fire. Recruits also practiced the use of the bayonet, the supposed weapon of choice of a soldier emerging from a trench. As members of the AEF learned, however, bayonet practice was a waste of time. Bayonets were the most overrated weapons of the war, and AEF surgeons saw almost no bayonet wounds because attacking troops could not get close enough to the enemy to use them, especially if the defenders possessed machine guns. Bayonets had only two uses: to hang gear on and to dig foxholes when shovels were not available.

Departing divisions had to be brought up to strength, and the War Department had no replacement depots, so it took men from divisions in training. Cantonment commanders thus found their training schedules in turmoil. Over a period of months the 80th Division was affected by the transfer of 87,000 men, three times its strength. In November 1917 the 78th's training started, and January levies reduced it by two-thirds; in April it was half strength. In June it sailed, filled with recruits. General Pershing was always critical of the War Department, in particular its fracturing of training schedules, and in this case he had a point. "Although the War Department eventually established a replacement system, as urgently recommended by me, it was done too late to be of material benefit even to the last divisions that came over in the fall of 1918."<sup>17</sup>

Just as the training of individuals was often inefficient, so was unit training in companies, battalions, regiments, brigades, and divisions. This led to a huge problem in the Meuse-Argonne, where units had to stay together despite rugged terrain and German fire. Units were large: companies consisted of 250 men, battalions 1,000, regiments 4,000, brigades 8,000, and divisions 28,000. Size made control difficult. Training schedules did not call for much unit training, and division maneuvers were rare. In the 35th Division, which went to pieces after four days in the Meuse-Argonne, the only such training took place just before the division sailed. Carrying packs—which would not have been the case at the front, where packs were left behind—the men marched down a road for eight miles. They refused to take the experience seriously, laughing, joking, and straggling, with troops on the flanks loping along.<sup>18</sup> Even though the cantonments stretched for miles, providing plenty of room to train units, War Department inspectors did not stress such training, and once the divisions got to France, it became impossible. The men were immediately on the move from the ports to the interior; upon their arrival in Lorraine, they were billeted in villages, farmhouses, and barns. In Alsace, while training in the mountainous Vosges, the 35th was strung out for twenty-five miles.

Disgusted by the War Department's handling of training, Pershing decided, with his usual steely resolution, to add three months to the department's training. That is, he would add three months if time permitted, which it often did not, because he had to put divisions into the line. For the AEF program, Pershing elaborated his own personal theories of tactics, but they were no more realistic, in terms of what was going on in

the front line, than the training in the cantonments. He stressed above all else the importance of the rifle, the weapon he had known in the Regular Army in the West among the Indians, during the Spanish-American War, afterward in the Philippines, and in the expeditionary force against Pancho Villa in Mexico. He considered the rifle all-important, and officers from the training section of general headquarters (G-5) so informed their divisions. "In spite of the addition of numerous ancillary weapons to infantry units, the rifle is by far the most formidable weapon of the infantry soldier. . . . Effective rifle fire is essential to victory and is the element which most frequently determines the issue of the battle."<sup>19</sup> The AEF's commander in chief did not have much to say about the worst tactical problem in the Meuse-Argonne—enfilading artillery fire from heights in the Argonne or east of the Meuse, or fire from frontal batteries. As for machine guns, he advised his commanders to attend to them, even if the guns fired too rapidly to permit frontal attacks, their positions were too difficult to identify except at night, and the gunners were often in cement pillboxes impervious to rifle fire. Nor did he understand the importance of gas, which rifle fire could not eliminate because the canisters were too far above the line or contained in shells. As the organizer of the AEF, which was eventually a force of 2 million men, Pershing deserved praise; no one could have done better or even as well. As a guide to training, however, he was no better than the War Department.

