

# Chapter XII

## PREPARING THE DENTAL CORPS FOR FRANCE, 1917–1918

### *Introduction*

Relations with Germany deteriorated rapidly in early 1917. The United States declared war on April 6, joining Great Britain and the British Empire, France, Italy, and Russia in the war against Germany, Austria-Hungary, and the Ottoman Empire. Although the Army had learned some valuable lessons during the Punitive Expedition, the country and its army had a long way to go before they could make a meaningful contribution to the war effort. It became apparent very quickly that a large army would have to be raised and deployed to Europe if the United States was to play a significant role in the war. The War Department had envisioned a gradually expanding defensive force in its 1916 plans, but little thought had been given to dealing with the magnitude of demands that prevailed in 1917. The country now embarked on a mad scramble to raise and equip the massive force suddenly required.<sup>1,2</sup>

### *Organizing the Dental Corps for the War in Europe*

Despite its experience on the Mexican Border, the US Army Dental Corps was no exception to the general unpreparedness of the Army and the United States. In April 1917, 86 officers composed the entire Regular Army Dental Corps. While a number of the Regular Army and National Guard dentists were fresh from field experience along the border, they had little formal military instruction and training. Prior to the war, the Dental Corps offered no military, technical, or professional training either upon entering the service or later, unlike the Medical Corps, which provided extensive military and professional training for officers in the Regular Army, Medical Reserve Corps, and National Guard. Aside from the National Guard units with assigned dental surgeons, unit training for dentists was nonexistent because there were no Army dental units and dental surgeons were not assigned to any units in the Regular Army at that time.<sup>3-5</sup>

The Army's basic directives on doctrine and organization for combat operations in a theater of war after mobilization were laid down in its 1914 *Field Service Regulations and Tables of Organization*.<sup>5</sup> These documents, and other applicable doctrine, formed the basis for the *Manual for the Medical Department, United States Army, 1916*,<sup>6</sup> which detailed the medical doctrine, organization, functions, policies, procedures, reports, and medical and dental equipment and supply tables.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

This manual provided a carefully honed doctrine for the employment of the Medical Department's tactical elements with the field armies and divisions in times of peace and war. It paid special attention to the responsibilities of its hospitals on the supporting lines of communication and the zone of the interior. The manual called for only one Dental Corps officer and an enlisted assistant for each base hospital, just as the 1914 *Tables of Organization* had. However, it also listed one Dental Corps officer and enlisted assistant for the dental service in the four existing Army general hospitals, which were not covered in the tables. The only officially authorized position for Dental Corps officers within the field structure of the Army was in the base hospital. This deficiency and the failure to correct it during the war eventually had serious and lasting consequences. Even if there had been a structure to fill, though, the War Department was still working out how those interested could apply for commissions in the Dental Reserve Corps (DRC; later renamed the Dental Officers Reserve Corps [DORC] as part of the Officers Reserve Corps established by legislation in June 1917, but still commonly referred to as the DRC throughout the war years) that the National Defense Act authorized June 1916. Consequently, as of June 30, 1917, 88 dentists had accepted DRC commissions but only 20 were on active duty, all of them assigned to mobilized Red Cross Army base hospitals, 6 of which were already in England or France.<sup>3,5,7-14</sup>

With the Dental Corps largely missing from the Army's doctrinal and organization documents and the *Manual of the Medical Department*, Army dentists looked to French and British wartime experience to shape much of their organization, supply, and clinical procedures. The military structure that the War Department built to raise, train, deploy, support, and lead the US Army into combat against the Germans in France and Belgium determined the requirements for dental surgeons and assistants in mobilization and training camps, on the lines of communication, and in the combat divisions. Although the Army had experimented with infantry and cavalry divisions and brigades since 1911, and despite the fact that the National Defense Act of June 1916 had made them permanent organizations for operations, the Army of 1917 was still largely organized in small units scattered at posts around the country and overseas. The Army had prepared and published tables of organization and doctrine in 1914 in Field Service Regulations for Regular Army and National Guard divisions and a field army, but no permanent divisions had been organized when the United States declared war. To fight the war in Europe, the entire US Army had to be reorganized.<sup>1,5,9</sup>

While the Army's tables of organization laid out the Medical Department's overall allocations, grades, and positions for officers and enlisted soldiers in the field army, divisions, and lines of communication, they specifically identified only one Dental Corps first lieutenant in the base hospital on the lines of communication. In the absence of any official dental organization for the division, Captain Robert Oliver, the senior Dental Corps officer in the Army and then on duty along the Mexican Border, proposed one in an article in the April 1917 issue of the *Bulletin of the Association of Military Dental Surgeons of the United States*. Dropping the standard ratio from one to a thousand enlisted troops to one to fifteen hundred, he outlined a structure of 15 operating dental surgeons and one executive to administer the divisional dental service. The dentists would be distributed throughout the division to provide the full range of dental care in camp, but on campaign they

## PREPARING THE DENTAL CORPS FOR FRANCE

would move from the tactical units to the division's headquarters, field hospitals, field ambulance companies, and a dental laboratory, where they could provide better support. A new, well-equipped field dental outfit, with all essential instruments for handling emergency treatment and gunshot wounds of the jaw, was needed to replace the existing portable outfit, which was too heavy for use with the division in the field. Oliver wrote:

Thus equipped the dental surgeon, may if necessary, accompany his command anywhere the smallest unit of mobile sanitary material can go; as the entire outfit can be packed for transportation on any vehicle of the Sanitary or Combat train or carried by pack mule similar to the Regimental Aid Station. . . . making each division independent and competent to take care of itself from a dental and oral surgical standpoint, and able to conserve its effective strength by retaining services of men otherwise lost through being sent back for prosthetic treatment the length of the line of communications (to the base) occupying transportation that could oftentimes be more profitably utilized.<sup>15(p4)</sup>

In his introduction to Oliver's proposals, John Millikin, the editor of the *Bulletin*, lamented that "many of this nature have heretofore come from the Dental Corps of the Army only to be 'pigeon holed' by the Medical Department. We trust ere long to have an Army Dental Surgeon in the Surgeon General's office to make proper use of these valuable suggestions." The fate of Oliver's proposed divisional dental organization is not known, but his ideas surely accompanied him when he arrived in France in August 1917.

On May 3, 1917, within a month of American entry into the World War, the War Department published new tables of organization for the division. Because of sustained operations and the projected heavy casualties of trench warfare, this division was very large, including 28,256 officers and enlisted soldiers. It contained two brigades of two infantry regiments each, three artillery regiments, an engineer regiment, and supporting ammunition, supply, and sanitary trains. On May 24, 1917, the War College Division planners revised this to an expeditionary division of 18,919, but the final decisions on the size and structure of the American force that would serve in Europe came from Pershing and his staff at General Headquarters (GHQ), AEF, after they reached France in June 1917. On July 11, 1917, Pershing submitted his General Organization Project, which called for a 30-division force (1,372,399 soldiers), formed into five corps of six divisions (four combat, one training, and one replacement), to be trained and shipped to France in 1917 and 1918 to take the pressure off of the British and French combat forces.<sup>1,9,10,16-19</sup>

Pershing's GHQ also prepared all tables of organization for units destined for France because he and his staff had a more intimate understanding of the force and organizational requirements for ground combat and wanted the divisions tailored to their specifications. On August 8, 1917, the general staff issued a new division table of organization of 27,123 soldiers based on Pershing's input. With only minor adjustments, this became the basic division that saw action in World War I. Like preceding and succeeding tables, this August 8 version authorized a Medical Department component but did not specifically refer to or authorize the number of Dental Corps personnel or their placement within the division. As soon as tables of organization were issued for units destined for France, GHQ AEF specifically

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

prohibited any changes without its approval.<sup>1,9,16,20-22</sup>

Based on the statutory ratio of one to a thousand troops, 27 Dental Corps officers and their enlisted assistants should have been allocated to these new divisions, but at first apparently only 20 of each were. This allocation may have resulted from the War College Division's expeditionary division of May 24, or because the AEF allocated 20 of the first dental officers to arrive in France to the First Division, which disembarked and assembled during the summer of 1917. When the AEF submitted its "Services of the Rear" plan to the War Department in Washington on September 18, 1917, it stated that the dental service would be on the line of communications and that the number of dentists and dental assistants would be one each per 1,000 soldiers. Having only arrived in Paris on August 22, Oliver's plans for the dental service were then still in gestation, but it was already clear to him that 20 dental officers were insufficient for a division of 28,000 soldiers. On November 14, 1917, the AEF mandated in its modification of Item M-415, Schedule of Priority of Shipments, that 25 dentists and 25 assistants would "accompany," not be assigned, to divisions going to France, in addition to the line of communication allocation. By specifying that dental personnel were attached or would accompany an organization and were not assigned to it, the War Department gave Pershing and GHQ AEF the maximum flexibility in using the service troops where they considered the need was greatest rather than tying them down in any fixed organizational structure once they reached France. Such a policy placed a heavy burden on Oliver and his small staff to allocate dental personnel among the competing requirements as they arrived in France.<sup>10,11, 17,18, 23-26</sup>

In the absence of documentary evidence, it remains unclear exactly how dental personnel were allocated to the division and used within its authorized medical structure. With no formal guidance on where the dentists were to be placed within the division either in the United States or France, they were apparently allocated to the larger infantry, artillery, and engineer regiments and the divisional trains at the statutory ratio and distributed in the same manner as the assigned Medical Corps officers. For the initial force of 30 divisions, this meant 25 dental surgeons and 25 dental assistants per division, or a total of 750 dental surgeons and 750 assistants, who had to be trained, equipped, and shipped with these combat divisions. Considering that the Regular Army Dental Corps of April 6, 1917, consisted of 86 dental surgeons, none above the rank of captain and no reservists, and lacked central leadership presence at the Office of The Surgeon General until August 1917, recruiting and training this dental force for France was an enormous challenge.

A major shift from the Dental Corps' previously authorized operating and treatment procedures took place as dental care was incorporated within the new divisions in the United States and largely replaced the former itinerancy practice. In accordance with prewar tables and doctrine, the division's major combat elements, the infantry, artillery, and engineer regiments, received an organic medical section staffed with Medical Corps officers and enlisted Medical Department personnel who handled sick call and routine health care when in camp, and care and evacuation of the wounded and sick on the battlefield. Twenty-five dental officers and their assistants were added to those numbers. Each infantry regiment eventually had a regimental dental surgeon who directed a regimental dental infirmary

## PREPARING THE DENTAL CORPS FOR FRANCE

under supervision of the regimental surgeon. By 1918 a dental surgeon and assistant were assigned to each of the three battalions of the regiment, with the dental surgeon often acting as the assistant battalion surgeon and normally stationed at the battalion aid station when in combat. For the smaller divisional units without their own dentists, a few of the excess dental officers not allocated to the larger units provided care in the field on itinerant rounds while dental infirmaries and base dental units provided care in established mobilization camps and training areas. A divisional sanitary train of four field hospitals and four ambulance companies, one for each infantry regiment, was responsible for care and evacuation of sick and casualties. A dentist and assistant were added to each of the field hospitals, which had no authorization for dental personnel in the 1914 tables of organization or the 1916 *Manual of the Medical Department*.<sup>5,8,10,11,16,17,27</sup>

As a result of the Act of October 6, 1917, which created parity between the Medical and Dental Corps (see below, "Amending the Act of June 3, 1916—S 1786 and HR 4897"), significant changes took place in the ranks of Dental Corps officers, the dental command structure (especially in the AEF), and in the allocation of dental officers and assistants to the divisions. Effective October 6, Robert Oliver, then a captain and the AEF's senior dental surgeon, was promoted to colonel of the Dental Corps and became the chief dental surgeon. On October 12, upon receiving notification of the act, Oliver immediately directed an increase to 31 dental officers, including a division dental surgeon, per division in France from available and arriving assets. Many divisions never reached these allocation levels during the war. Oliver later said "though the organization which the Dental Corps finally developed was begun early in the history of the American Expeditionary Forces, its completion in a satisfactory manner was not practicable until after this bill reorganizing the corps became a law on October 6, 1917."

Discounting the division dental surgeon, this translated into a ratio of approximately one dental surgeon per 904 enlisted personnel for the divisions about to embark for France, and provided dental coverage for all of the division's numerous and often widely scattered subordinate units.<sup>10,11,17,18,20,18,29</sup> A single division now had as many dental surgeons as had been authorized to care for the entire US Army from 1901 to 1911.<sup>21,24</sup>

The AEF policy of attaching rather than assigning Dental Corps officers and assistants to the divisions determined War Department policies and left many organizational problems to be resolved for the remainder of the war. In December 1917 the division surgeon of the 78th Division recommended a new dental company composed of a chief dental surgeon and three units each of 10 dentists, 18 enlisted soldiers, and one 2-ton truck as part of the sanitary train. On February 7, 1918, the surgeon general proposed a change in the infantry division table of organization to provide 31 dental surgeons (one to be the division dental surgeon) and 32 assistants, as Oliver had authorized to be done in France. The War Plans Division reviewed both proposals and rejected them. The 78th Division proposal was counter to Pershing's policy of not adding small units to divisions and existing organizations. The surgeon general's recommendation was turned down because it was "in conflict with the general principles of organization enunciated by General Pershing," and insisted "that the proper place for the dental service is in the line

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

of communications." Colonel William Logan, chief of the dental division of the surgeon general's office, informed the War plans division that "... he would have no serious objection to this disposition of dental personnel provided arrangements are made so as that when a division is ordered overseas there shall be attached thereto 31 dental surgeons and 32 enlisted assistants." The war planners agreed, pending Pershing's approval, which was soon received. On March 26, 1918, Brigadier General William Graves, assistant to the chief of staff, cancelled the November 1917 priority shipment schedule of 25 dentists and 25 dental assistants per division and authorized an increased allowance to 31 dental officers, one of whom served as the division dental surgeon, and 32 enlisted dental assistants.<sup>21,24,25</sup>

In April 1918 the War Plans Division rejected a proposal to add dental surgeons to numerous corps and Army troops then headed for France using the same reasoning it had used in February. Again, Colonel Logan stated that dental personnel were now shipped to France attached to each division and "as specifically requested from time to time by General Pershing." The war planners concluded:

it appears that General Pershing has a constant flow of dental personnel to France and a positive means of getting more as needed to carry out his project of September 18, 1917 [Services of the Rear plan]. In view of these facts the war plans division is of the opinion that no dental personnel should be attached or assigned to corps or army troops, and that none should be ordered to accompany any of them when designated for overseas service.<sup>30</sup>

In an April 20, 1918, memo to Adjutant General Colonel DW Ketcham, the acting director of the War Plans Division, made it very clear that the AEF's previous plans and directives controlled these issues:

The approved A.E.F. organization project places the dental service in the line of communications and the program for the shipment of personnel therefore does not contemplate any of it accompanying organizations of corps or army troops designated for overseas service. In conformity with this policy, no dental personnel will accompany organizations of the above troops when ordered abroad.<sup>31</sup>

Confusion about the status of the dental surgeons and assistants pervaded the Army. On April 16, 1918, Major (later Major General and Chief of the Dental Corps, 1954–1956) Oscar Snyder (1895–1983), then the dental surgeon of the 28th Division, wrote to the War Department asking about the status of the dentists and their assistants and how they would travel to France with their equipment if they were not on the division's tables of organization. In the clearest explanation yet prepared, Brigadier General Lytle Brown, director, War Plans Division, told the chief of staff:

Dental surgeons and assistants are not part of the division and their omission from Tables of Organization is in accordance with the general principles of organization indicated by General Pershing. . . . The dental personnel indicated should accompany the division when it sails for overseas service and their status until arrival in France will be that of attached only. After arrival they should receive definite orders as to their future movements, it being the policy to use them at base hospitals on the line

## PREPARING THE DENTAL CORPS FOR FRANCE



*Major Oscar P Snyder, division dental surgeon, while stationed at Camp Hancock, Georgia, with the 28th Division before it sailed for France in May 1918.  
Photograph: Courtesy of Major General Oscar P Snyder.*

A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

of communication. . . . Until arrival in France they are administratively controlled by the division surgeon, through the division dental surgeon. As to whether they will remain attached to organizations enroute or go as a unit, should depend upon the division surgeon who will take into consideration the necessity for emergency dental service enroute. . . . The professional equipment should accompany them and be so stowed as to facilitate its separation from the division property proper, upon arrival. Their personal equipment should go with them in the same manner and should be that of any other unassigned noncombatant officer ordered for overseas service.<sup>32,33</sup>

Enlisted dental assistants were to be attached to the division in addition to the enlisted medical personnel provided by its tables of organization.<sup>32,33</sup>

It was not until June 19, 1918, when GHQ AEF issued General Order No. 99, that Dental Corps personnel and equipment within the division received formal structure and authorization (Table 12-1).<sup>32,33</sup> After the division dental surgeons reported having problems transporting their equipment, Oliver finally intervened and straightened out some of the confusion (see Chapter 13). The division now had 31 dental surgeons and 32 assistants, one of whom was assistant to the divi-

TABLE 12-1  
AMERICAN EXPEDITIONARY FORCES ALLOCATION OF DENTAL  
PERSONNEL AND EQUIPMENT WITHIN THE DIVISION, 1918

Organization	No. of Units	Dental Officers	Enlisted Personnel	Portable Outfit (Complete)	Portable Outfit (Modified)
Headquarters	1	1	1	0	0
Infantry regiments (3 battalions)	4	12	12	4	8
Artillery regiments (3 battalions)	2	2	2	0	2
Artillery regiment (6 battalions)	1	2	2	1	1
Engineer regiment	1	2	2	1	1
Machine gun battalions	3	3	3	0	3
Field signal battalion	1	1	1	0	1
Train headquarters & military police	1	1	1	0	1
Ammunition train	2	2	2	0	2
Supply train	1	1	0	0	1
Sanitary train (field hospitals)	1	4	5	4	0
Total	25	31	32	10	20

Data source: General Orders No. 99, General Headquarters, AEF, 19 June 1918. In: *General Orders, GHQ, AEF, in United States Army in the World War 1917–1919*. Vol 16. Washington, DC: US Army Center of Military History; 1992: 351.



## PREPARING THE DENTAL CORPS FOR FRANCE

sion dental surgeon and was authorized 30 dental outfits and one dental laboratory in one of the field hospitals of the sanitary train. However, the GHQ AEF's policy on changes in tables of organization and unit organization, which allowed maximum flexibility of service forces, prevented any formal changes in tables of organization that would have codified this allocation guidance, so the basic structural problem remained unaltered. Based on the AEF's existing guidance, on July 26, 1918, the War Department general staff decreed that "there is no Table of Organization covering the organization of the Dental Corps, and it is not contemplated that one will be issued."<sup>34</sup>

By July 1918 the projected demands of the fighting in France forced Pershing to scrap his 30-division program for a plan of 80 divisions and 3,360,000 officers and enlisted in Europe by June 30, 1919. As estimates of the war's duration and intensity were revised, Pershing submitted a new plan for 100 divisions and 5,500,000 soldiers in Europe by June 30, 1920. In August War Department plans called for a total of 5,974 dental officers on active duty. Each of these programs carried new, larger requirements for dental officers and assistants and equipment not only for the combat divisions but also for the mobilization and training base in the United States and the line of communications in Europe. It was only the armistice of November 11, 1918, and Allied occupation of Germany that finally terminated planning for these enormous programs. Until that time, the efforts of the Army's Dental Corps in the United States during 1917 and 1918 were completely dedicated to selecting, training, and equipping dental surgeons and enlisted assistants to provide dental care for the force for the duration of its training in the United States and during combat operations in France.<sup>1,9,20,35</sup>

### *The Committee on Dentistry of the Council of National Defense in 1917*

As part of the growing preparedness movement, Congress authorized the cabinet-level Council of National Defense in 1916. Aimed primarily at coordinating United States industrial production and personnel, the council spawned a large number of subordinate boards and committees, each focusing on a particular specialty. The general medical board dealt with military and civilian medicine, and under it fell the Committee on Dentistry, which was to mobilize all of the nation's dental forces for the war.<sup>36</sup>

With his committee at work since 1916, Dr Edward Kirk of Philadelphia, editor of *Dental Cosmos* and chairman of the Committee on Dentistry, issued the committee's first report on April 8, 1917. While it was too early to set any specific numbers, the committee recommended that enough dentists be appointed to fill the quotas for dental officers provided by law for the Army (one dentist per thousand enlisted) and Navy and for the DRC. The aid of the National Dental Association, state and local dental societies, the senior dental students, and the Preparedness League of American Dentists would greatly accelerate this process. The report urged establishing special courses of instruction in military dental surgery for prospective dental surgeons and placing dental school faculties and facilities at the disposal of the government for that purpose. The committee further suggested

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

that all military hospitals be equipped with the necessary dental laboratory equipment to make prostheses for war injuries. It also wanted a survey of the dental instrument and supply industry to assure the flow of essential materials for both the government and civilian needs.<sup>36</sup>

A week later, the committee issued the findings of its subcommittees.<sup>36</sup> Their consensus was that dental faculty members should be deferred from the draft, as should dental students until they graduated. They further urged the War Department to provide instructors to the dental schools to cover military topics and to establish schools for newly appointed dental surgeons when they entered service. The committees suggested changes in Dental Corps application forms to improve standards for acceptance. They noted the need to revise the dental supply table and agreed with the need to coordinate with the dental manufacturing and supply industry. Finally, they emphasized that dental personnel levels should be premised on assuring that all members of the expanded force receive adequate dental care.<sup>36</sup>

At Dr Kirk's recommendation, a meeting was convened in Washington, DC, on May 12, 1917, of the deans of the dental colleges, the secretaries of the state boards of dental examiners, and the directors of dental infirmaries. At the meeting, which was held at the headquarters of the Council of National Defense, Kirk explained that the government needed trained specialists in all the various professions and wanted to avoid the mistakes that England, France, and other countries made when they placed their trained professionals "in the ranks," losing their special skills to service requiring less education and training, or worse, losing them altogether when they became casualties in the fighting. Estimating the number of annual hours available for a dental operator and the number of hours required to properly care for soldiers' dental needs, Kirk and the committee recommended an increase in the personnel in the Dental Corps to provide more efficient service. Rather than the present one per thousand troops, Kirk recommended one dentist for every 500 members of the line, which turned out to be an accurate prediction of the changes made in September 1918. After a discussion of all the existing wartime conditions affecting the dental profession and the military's needs, the group agreed to support the Committee on Dentistry and the general medical board. One of the key participants in this gathering was William HG Logan of Chicago (MD and DDS), the president-elect of the National Dental Association (NDA) for 1917–1918, a member of the Committee on Dentistry, and chairman of its committee on legislation and enrollment that was responsible for "devising ways and means for securing prompt enrollment of candidates in the Army and Navy Dental Corps." Logan returned to Washington in late May 1917 for the June 2 meeting of the general medical board and Council of National Defense, and in late June succeeded Dr Kirk as chairman of the Committee on Dentistry.<sup>37–42</sup>

### *Dr William HG Logan and Building the Wartime Dental Corps*

In May 1917 the surgeon general announced that the examinations to fill 14 current vacancies in the Regular Army Dental Corps would be held on July 2, 1917, at Fort Slocum, New York; Columbus Barracks, Ohio; Jefferson Barracks, Missouri;

## PREPARING THE DENTAL CORPS FOR FRANCE

Fort Logan, Colorado; and Fort McDowell, California. He also said that on July 1, there would be 22 additional vacancies.<sup>43</sup> On June 12, 1917, Captain Robert T Oliver, the senior Dental Corps officer on active duty and stationed at Base Hospital No. 1, Fort Sam Houston, Texas, who had been on the Mexican border for the past year, reported that he had been very busy during the previous month conducting examinations for the Regular Army Dental Corps and the DRC. On average, he held two examination classes each week and predicted at least 50 successful candidates for the month, including six oral surgeons.<sup>44</sup> While Oliver's work was replicated by other Dental Corps officers throughout the Army, their efforts did not solve the real problem then facing the Army, the Medical Department, and the Dental Corps. Editorials in dental publications like *Dental Summary* revealed the true dimensions of the dilemma when it called for "ethical practitioners" to answer the government's request for one to two thousand dentists to apply for the DRC.<sup>45</sup>

The problem facing the Dental Corps and Medical Department was not how to fill positions in the Regular Army one or two at a time, but how to screen and select the thousands of trained dentists now so urgently required in the DRC to staff a rapidly expanding Army. Initially, the surgeon general's office employed an application and examination system not unlike its peacetime approach since 1901, which required a formal written application, a board examination, and a final decision. Often taking weeks to complete, this cumbersome system did not fill the pressing demands of the Dental Corps for trained dentists. When William HG Logan appeared in Washington in late May on Committee on Dentistry business, things immediately began to change. Logan was an 1896 graduate (DDS) of the Chicago College of Dental Surgery and a 1905 graduate (MD) of the Chicago College of Medicine and Surgery (in 1917 it became part of Loyola University's School of Medicine). Since 1902 Logan, a long-time acquaintance of John Marshall, had been a professor of oral pathology at the Chicago College of Dental Surgery. By the time of the war, he was one of the country's most distinguished oral and plastic surgeons and had a wide range of contacts within the American medical and dental communities, the administration, and Congress from his long career, role in the National Dental Association, and now membership on the general medical board.<sup>42,46,47</sup>

From his work on the Committee on Dentistry, Logan understood the problems of the current system of recruiting dental officers and knew it would never work. After looking at the existing procedures being used for commissioning, his committee realized it had to mobilize the American dental profession and had developed an organization and plans for recruiting dental surgeons for the Army and Navy. On June 1, 1917, Logan recommended to the surgeon general that well-qualified, experienced men of the dental profession throughout the country be designated to give "professional examinations to applicants desiring to be commissioned in the DRC." He later noted that "this request, although without precedent and most unusual, was granted the following day by Surgeon General Gorgas."<sup>8,48-51</sup> Logan went on:

In the twenty-four hours that intervened between the presentation and the acceptance by Surgeon General Gorgas of the plan whereby preliminary dental examiners were to be officially appointed by the War Department, appropriate examiners were selected for each state so that no delay would be occasioned if final acceptance were

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II



*Major (later Colonel) William HG Logan, Medical Officers' Reserve Corps, became the first chief of the Dental Section, Personnel Division, Office of The Surgeon General, and thus the first de facto chief of the US Army Dental Corps, when he was appointed on August 9, 1917. He is pictured here as the incoming president of the National Dental Association.*

*Reproduced from: Journal of the National Dental Association. 1917;4(Dec):1280.*

## PREPARING THE DENTAL CORPS FOR FRANCE

secured. The men so selected and approved by the Surgeon General as preliminary dental examiners were the deans of well-recognized dental institutions throughout the United States, the secretary of each state dental examining board, and such additional dentists as the service demanded in certain localities.<sup>48(p1952)</sup>

All examinations completed by the preliminary dental examiners were forwarded to the surgeon general's office, where a Regular Army Dental Corps officer had the final approval authority.<sup>48</sup>

Logan's success developing the commissioning program for DRC officers during the summer clearly indicated the importance of having a strong, central direction of Dental Corps affairs within the surgeon general's office, as John Marshall had pointed out many years earlier. The surgeon general now made two critical decisions. On August 8, 1917, William HG Logan was commissioned a major in the Medical Reserve Corps, and the next day the surgeon general established a dental section within his Personnel Division, which had administered Dental Corps affairs prior to the war, and assigned Logan to head it. These actions made Logan the de facto head of the Dental Corps in the surgeon general's office (where no such representation had existed since dentists joined the Army in February 1901) and the first chief of the US Army Dental Corps. To enhance his influence and contacts with the American dental community in the new post, Logan wisely retained his positions as president-elect of the NDA and chairman of the Committee on Dentistry.<sup>52</sup>

Logan's system worked smoothly and efficiently. Only five DRC officers were commissioned during the first 2 months of the war. By June 30, 1917, only 20 were commissioned and on active duty, but by July 31, that number had quickly climbed to 598. On September 8, 1917, a little more than 3 months after Logan's recommendation was approved, the adjutant general discontinued all examinations for dental general practitioners as of September 18 at the surgeon general's request. On that date, the Regular Army Dental Corps numbered 178—19 captains and 159 first lieutenants—and the National Guard Dental Corps had 297 first lieutenants (not all on active duty). A sufficient number of commissioned officers were now in the DRC and enough completed applications were on hand to provide dental officers to care for an army of 5,000,000 troops "under the quota then authorized by law."<sup>41,48,53,54</sup> Logan concluded:

It is of interest to record that the dental service of the United States Army was the only arm in the military organization that was built up through the aid of preliminary examiners, who gave liberally and gratuitously of their time to assist dentists desiring to enter military service. . . . The records show that through the hearty cooperation of the civilian members of the dental profession and the patriotic response of those desiring to enter military service, when war was declared there were eighty-six officers in the Regular Army, five had been commissioned in the Reserve Corps in the first two months of the war, and in the following three and one-half months the number had passed beyond 5,000. . . . These officers were secured without the holding of a single public meeting, without the presentation of a personal appeal by letter or by voice of any one in this nation, and, in this accomplishment, the dental profession established a record of which it may be justifiably proud.<sup>48(pp1952-1953)</sup>

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

Largely through Logan's recruiting innovations, by September 8, 1917, the Army had already procured enough dental officers for its immediate and future needs. Now, as a result of the Act of October 6, 1917, the DRC was also allowed the same grades and percentages within the grades as the law permitted for the Medical Reserve Corps. By the time that Logan spoke at the 21st Annual Meeting of the NDA in late October, he could report that the Army had received a total 6,251 applications for appointment in the DRC, had rejected 1,445 as unfit for physical or professional reasons, and had commissioned 4,695 new DRC first lieutenants. On November 18 Logan reported to the general medical board that 4,874 dental officers were now commissioned and subject to call up, more than enough for an army of 4,874,000 troops at the statutory ratio of one dentist per thousand soldiers. The DRC largely staffed Army dentistry during the war and provided dentists for the myriad new Army hospitals and the national Army divisions that were being organized and trained.<sup>41, 55-58</sup>

Meanwhile, those holding commissions but not yet called to active duty as dental officers were subject to being drafted by their local boards. If drafted, the dentist had to serve as a private until his orders for active duty as a dental officer were received. The drafted dentist who had not made application before September 18 likely lost any chance of securing a commission as a dental officer. However, on October 2, 1917, the law was changed to allow unassigned DRC officers to be deferred until called to duty as commissioned officers. The only recourse for those already in camps was to apply for a transfer to the Medical Department with duty as dental assistants until their active duty orders came in.<sup>41</sup>

When Dr Logan initially accepted his commission in the Medical Reserve Corps, some dentists accused him of "deserting dentistry" and severely criticized him. As it turned out, he had positioned himself where he could do dentistry the most good and then worked to achieve recognition for it on the same level as the medical profession. Dr CN Johnson, editor of *Dental Review*, quoted someone familiar with Logan and his work as saying "no dentist in the history of the profession has done more for dentistry than has Dr. W.H.G. Logan in 1917."<sup>59,60</sup>

These accolades did not spare Logan from criticism by some of his dental colleagues during and after the war, although little criticism ever appeared in the dental press. Some critics believed that using dental school deans and faculty to examine their own graduates for commissions placed them in a compromised position. In addition, older and more experienced dentists were needed throughout the Dental Corps for consultation and administrative positions. Unlike the Medical Officers Reserve Corps, which had ranks up to and including brigadier general to attract the most prominent civilian physicians and surgeons, the DRC was never able to obtain sufficiently high ranks for such eminent candidates and suffered from the fact that "older men of reputation, experience and patriotism were excluded from entrance, because sufficient rank was not offered to them and they were financially and professionally prevented from entering the service." Blame for much of this shortcoming was later placed on Logan, although even his critics admitted that "he had the contact with the Dental Profession, and with tact and energy he worked for success."<sup>61</sup>

Despite the criticisms, it was largely through Logan's efforts that the Dental

## PREPARING THE DENTAL CORPS FOR FRANCE

Corps expanded at the pace it did and the issues of supply, training, and personnel inequities were usually resolved in favor of the dentists. The bulk of the profession, in and out of uniform, came to appreciate his accomplishments on their behalf long before the war ended. Logan was promoted to lieutenant colonel on February 28, 1918, and to colonel on May 3, 1918. He was awarded the Distinguished Service Medal for his wartime efforts and was discharged from the Army on February 12, 1919. After the war, Logan returned to the Chicago College of Dental Surgery as professor of oral and plastic surgery and dean, affiliated it with Loyola University in 1923, and made it into a leading institution in maxillofacial surgery and dental research. He was a colonel in the Medical Officers' Reserve Corps from 1923 to 1933 and remained active in Dental Corps issues. He died on April 6, 1943. On October 16, 1970, the Logan Army Dental Clinic at Fort Belvoir, Virginia, was dedicated in Colonel William HG Logan's honor.<sup>42,46,47,62</sup>

### *Amending the Act of June 3, 1916: S 1786 and HR 4897*

The swift slide toward war compelled Congress to modify the National Defense Act of 1916. In February 1917, even before war was declared, *Dental Summary* called for higher rank for dental officers, pointing out that the public throughout the United States would "accept and recognize" whatever Congress set as the "standard" for Dental Corps officers.<sup>63</sup> A proposed new law (S 1786) went to the War Department for comment on April 3, 1917. The section pertaining to the Dental Corps recommended the same rank structure as the Medical Corps with its size still based on one dentist for every thousand soldiers. As soon as the law was approved, the necessary promotions would occur on the basis of seniority in the present Dental Corps. The surgeon general also suggested adding to the bill a clause that restructured the Dental Corps and made Medical and Dental corps entry-level commissions as first lieutenant provisional for 2 years before becoming permanent. On June 1, the general staff recommended against the bill. It did not agree that Dental Corps grades should be distributed in the same ratio as those in the Medical Corps, did not envision the Dental Corps having any need for senior administrators, and wanted the 1916 structure to have more time to prove itself. Accordingly, on June 2, Major General Tasker H Bliss, acting chief of staff, informed the adjutant general that the secretary of war agreed with the general staff's position and requested that the bill be returned to Congress for further consideration.<sup>64,65</sup>

While this was going on, members of the dental profession and press offered various ideas for improving the Dental Corps. Dr Emmett J Craig, one of the original contract dental surgeons in 1901, recommended that the United States adopt the Canadian system, whereby the Dental Corps was awarded the same recognition as the Medical Corps and did not have to depend on the Medical Corps to select its members and supplies or to administer its affairs.<sup>66</sup>

In June 1917 Dr Rodrigues Ottolengui of *Dental Items of Interest* editorialized that a Dental Corps under a Medical Department head would have lower morale and efficiency than it would have under a dental head. Like Dr Craig, Ottolengui used the experience of the Canadian Dental Corps as support for his argument. He

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

recommended that the NDA poll its members to see what the dental profession thought on the subject. Dr Homer C Brown, the chairman of the NDA's legislative committee, stressed the need for a chief of the Dental Corps, preferably with the rank of colonel. In *Dental Cosmos*, Kirk called the current war emergency a "golden opportunity" to demonstrate that dentistry was "a specialized department of the healing art, and not a sublimated form of artizanship [sic]." <sup>67-69</sup>

However, the general staff's June 2 action on S 1786 had not killed the initiative. On June 7, 1917, Representative Murray Hulbert of New York introduced a bill (HR 4897) in the House to amend the medical section of the National Defense Act of June 3, 1916. The bill provided "that during the existing emergency lieutenants in the Medical Corps of the regular Army and of the National Guard shall be eligible to promotion as captain upon such examination as may be prescribed by the Secretary of War." The purpose of the bill was to correct the inequity whereby initial appointments in the Medical Reserve Corps could be made as captain or major without any previous service, whereas, in the Medical Corps of the Regular Army and the National Guard, 5 years of previous service was required before promotion. The bill was referred to the Committee on Military Affairs, which recommended approval on June 21. The Senate began its work on the bill on June 26. <sup>70,71</sup>

On September 20, 1917, the committee reported back the Senate version of the bill (S Rept 131) with some substantial amendments. Finally, on October 5, the bill was introduced for consideration by the Senate. Senator Pomerene recommended the addition of an amendment affecting the Dental Corps, the former S 1786, which Senator Lodge of Massachusetts had previously suggested. The amendment read:

*Provided*, that hereafter the Dental Corps of the Army shall consist of commissioned officers of the same grades and proportionally distributed among such grades as are now or may be hereafter provided by law for the Medical Corps, who shall have the rank, pay, promotion, and allowances of officers of corresponding grades in the Medical Corps, including the right to retirement as in the case of other officers, and there shall be one dental officer for every thousand of the total strength of the Regular Army authorized from time to time by law. *Provided further*, that dental examining and review boards shall consist of one officer of the Medical Corps and two officers of the Dental Corps. *And provided further*, That immediately following the approval of this act all dental surgeons then in active service shall be recommissioned in the Dental Corps in the grades herein authorized in the order of their seniority and without loss of pay or allowances or of relative rank in the Army. <sup>70,72</sup>

Pomerene said that in his view, the dental profession had been discriminated against in the Army. The types of injuries being reported from France highlighted the importance of the need for dental skills, which indicated to him that dentistry as a medical art was equal to any other and should be treated as such. <sup>70</sup>

Senator Francis E Warren of Wyoming, the father of Pershing's late wife, objected to the dental amendment, expressing the fear that the medical amendment for Medical Corps captains would fail to pass if the dental clause (Lodge amendment) was added to the bill. He felt that the medical clause was for "one distinct item," while the purpose of the dental clause was "to reorganize and change the whole dental service." Pomerene reminded his fellow congressmen that in the past, bills had come through for the "relief" of the medical profession with no "relief" for the



## PREPARING THE DENTAL CORPS FOR FRANCE

Dental Corps. Senator Overman of North Carolina recommended that the bill allow dental students to enlist in the Medical Department's Enlisted Reserve Corps, just as medical students could, and that it provide for Senate confirmation of the commission derived from the bill. The same day, October 5, all the amendments were agreed to and the bill was read three times and passed with the following title: "An Act to Provide for the Promotion of First Lieutenants in the Regular Army and National Guard to the Grade of Captain, and respecting the Dental Corps of the Army and Medical and Dental Students and for Other Purposes."<sup>70</sup>

The next day, October 6, the bill was sent to the House. Representative Stanley H Dent, Jr, of Alabama recommended that the House concur in the Senate amendments and pass the bill (HR 4897). The bill was vigorously debated, Congressman Dent defending it. Representative William H Stafford of Wisconsin raised the chief objections, protesting the speed of the process and questioning the appropriateness of a major restructuring evolving from amendments to what originally had been a simple bill to promote Medical Corps lieutenants to captains. He objected to giving dentists the same rank as medical officers because their responsibilities were less significant than those of their medical counterparts and because sufficient numbers of dentists were available without any promises of higher pay and rank.<sup>70</sup> Representative Horace M Towner of Iowa countered Stafford's comments by pointing out that Congress was not operating in normal times and that the changes had War Department approval. He believed that a widely organized "dental department" needed to be formed under the surgeon general.<sup>70</sup>

Indeed, the amendments did have War Department approval. Major William Logan, now head of the Dental Section, was deeply and personally involved as this dental legislation moved ahead. He recounted the story some years later:

About 9 o'clock on the morning of Oct. 6, 1917, two representatives of the Senate and one of the House appeared at my desk in the Surgeon General's Office to ascertain whether it was my opinion that any ill effects would accrue to the Army or to the public needs if legislation were not provided whereby the dental students would be granted the same privilege of continuing in their studies as had been accorded to medical students. Otherwise, they would be called on to proceed to the camps when their numbers were reached by the various conscription boards, in quite the same manner as students in law, theology, engineering and the arts and sciences were conscripted. My reply was that, in my opinion, we could only safely consider the dental needs for an army of not less than 10,000,000 men in the ultimate, and furthermore, if the dental requirements of such an army were to be properly met, all important reparative work should be accomplished during the few months that the conscripted men were in training in our camps in the United States. For this purpose, we would need the assignment of two or three officers per thousand, and not to exceed one per thousand for the men in the field in France. To state this concisely, these representatives were informed that the best interests of the Army would be ultimately served if there was a minimum of two dental officers per thousand for the probable maximum strength of the Army. However, our department was of the opinion that not more than one officer per thousand could be assigned for a number of months to come, even though regulation authorizing two were granted, for the very practical reason that dental equipment was not available and it could not be made so for another six months.<sup>48</sup>

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

After their discussion with Logan, the congressional delegation decided to proceed with attaching the Senate amendment to the bill, even though it was the closing day of that session of Congress. They then completed their rounds of the War Department with visits to Surgeon General Gorgas, the secretary of war, and the judge advocate general. Logan was soon summoned:

In a few minutes, I was called into conference by General Gorgas, in the presence of the committee, with regard to certain details of the question under discussion, at the end of which General Gorgas gave the full approval to the effort toward the passage of the dental bill and the attachment thereto of the amendment providing that dental students be treated with a consideration similar to that which had already been extended to medical students.<sup>48(p1953)</sup>

The delegation returned to Capitol Hill and that day, October 6, Congress voted on the measure. The amended HR 4897 passed the House and the president signed the act into law (Public No. 86).<sup>48</sup>

The dental profession was jubilant over this victory. *Dental Summary* called the act's passage "the greatest recognition the dental profession has ever received" because it gave dental officers the same standing as medical officers in the Army. Dr CN Johnson of *Dental Review* called the legislation a "red letter day for dentistry" and a "recognition to dentistry that it never before enjoyed." He credited Senators Lodge and Pomerene; the legislative committee of the NDA and its chairman, Dr Homer C Brown; the committee of deans of the dental colleges and their chairman, Dr Arthur D Black; and the thousands of dentists, dental students, and their friends who wrote letters to Washington supporting the bill's passage. But most of all, Johnson thought that the principal architect of all these efforts was really Major William HG Logan.<sup>60</sup>

Logan believed the amendment giving dental students the same rights as medical students was the deciding factor in the success of this legislation:

Before dismissing the question of dental legislation of the year 1917, and its varied ramifications, I desire to express the opinion that had it not been for the attachment of the amendment to this bill that specified that "all regulations concerning the enlistment of medical students in the Enlisted Reserve Corps and their continuance on their college courses while subject to call to active service shall apply similarly to dental students," the bill that provided the "hereafter the Dental Corps of the Army shall consist of commissioned officers of the same grades proportionally distributed among such grades as are now, or may be hereafter, provided by law for the Medical Corps" would not have been passed on Oct. 6, 1917, which was the last day of that session of Congress. However, the conclusion should not be drawn that I did not feel that favorable action on this very same bill would probably have been reached in a subsequent Congress, because of the merit and justness of its demands, and the splendid efforts that had been put forth by all concerned to bring about a desirable end.<sup>48(pp1957-1958)</sup>

In a May 1919 speech to the Dental Society of the State of New York in Syracuse, Logan was very explicit about what this meant to the Dental Corps and the dental profession, as a whole:

## PREPARING THE DENTAL CORPS FOR FRANCE

Two important beneficial results followed this enactment. First, the allowing of advanced grades to members of the regular Dental Corps that they might perform their duties in the executive positions in which they were needed to assist as camp and division dental surgeons. The second benefit is found in the fact that many young practitioners of dentistry, who were well qualified, were attracted to the regular Dental Corps, because it assured them the same recognition for similar years of service as had been granted to members of the Medical Corps.<sup>8(pp219–220)</sup>

Speaking in 1921, Colonel Robert T Oliver, then the chief of the Dental Corps, eloquently summarized the importance of the act:

... the Dental Corps of the Army has come into its own, has a voice in its control and has merged into and become a permanent fixture in the military establishment. We pioneers of the corps had strenuous service for a period of seventeen years, until finally upon enactment of a bill, October 6, 1917, the bursting dental chrysalis opened and a beautiful creation appeared to the world, resplendent with the radiance of realized hope and virile with knowledge of its autonomy. Its iridescent hues, however, soon merged into the familiar olive drab service color; and the Dental Corps, then composed of regular, national guard and reserve officers, soon found its equilibrium and began, with renewed energy and a contented heart, the great work that confronted it.<sup>73(p13)</sup>

Oliver's comments aside, the Act of October 6, 1917, was indeed a major milestone for the Dental Corps. Not only did it give the Dental Corps parity with the Medical Corps and professional recognition within the Medical Department, it almost immediately forced major changes in the allocation of dentists to the divisions as well as in the rank—and thus field—command structure for dentists, especially in the AEF. The act provided the crucial justification for increasing the allocation of Dental Corps officers for the divisions to 31. Effective October 6, the Dental Corps had 12 colonels (11 of them were the original contract dental surgeons of 1901 and 1902 and among the initial commissioned officers of 1911), all promoted from captain to colonel virtually overnight, including future Dental Corps chiefs Robert T Oliver (chief 1919–1924) and Julien R Bernheim (chief, 1928–1932). The corps also had 20 lieutenant colonels (including future chiefs Rex H Rhoades [chief 1924–1928, 1932–1934], Frank P Stone [chief 1934–1938], Robert H Mills [chief, 1942–1946], and Frank LK Laflamme [chief, 1919]), and 54 majors (including future chiefs Leigh C Fairbank [chief, 1938–1942], Oscar P Snyder [chief, 1954–1956], and Thomas L Smith [chief, 1946–1950]). This sudden explosion of rank meant that many Dental Corps officers soon occupied positions on Army, corps, and division staffs with sufficient rank and authority to direct and influence dental matters within those organizations. Moreover, these officers gained the command and administrative experience during the war that groomed them for the leadership of the Dental Corps for the next 40 years, through World War II and well into the postwar era.<sup>11,74,75</sup>

Many of the dentists who joined the DRC during the war saw great opportunities and remained in the Regular Army Dental Corps after the conflict to form its future leadership. One such officer was Walter D Love (1892–1991), who reported for duty at Camp Greenleaf, Georgia, in August 1918 and later served as assistant

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

surgeon general (dental) and Dental Corps chief from April 1950 to April 1954.<sup>8,76</sup> Many other dentists returned to their civilian practices after the war but remained active in the Organized Reserves in the 1920s and 1930s and formed the expansion base for the enormous dental mobilization of World War II. Much that John Marshall had fought for had been achieved by his colleague from Chicago, William HG Logan.

### *The Threat of the Dental Student Draft*

In 1917 many members of the dental profession presumed that the government intended to allow dental and medical students to continue in school until graduation. This was supposed to be a lesson learned from the British and French, who had decimated their future medical pool by sending partially trained students to the front as line combat personnel. However, once the draft started, the question of "class exemption" came up and the government announced that there would be no "special" regulations or exemptions except those provided by law. Immediately, the medical profession organized its case for exemption of medical students. Representative Henry Z Osborne of California introduced a bill (HR 5136) to defer medical students, even though an attempt to include an exemption provision for medical students in the National Army Act had previously failed. Finally, on August 29, 1917, Judge Advocate General Brigadier General Enoch H Crowder directed that second-, third-, and fourth-year medical students and hospital interns who were drafted could enlist in the Medical Department's Enlisted Reserve Corps and complete their courses. They were, however, subject to call up. At first it was assumed that dental students would be permitted the same option, but it turned out they were not included and continued to be subject to the draft. Dr Ottolengui, the editor of *Dental Items of Interest*, decried the policy, stating that the government must feel that a dentist was of greater value "with a gun or a spade" in his hands than his instruments.<sup>77-79</sup>

By fall 1917 a total of 1,341 dental students from the classes of 1918 and 1919 had already entered the Army through the first draft or as volunteers. It was estimated that the total loss due to this draft and subsequent second and third calls would be 1,121 students from the class of 1918 and 2,417 from that of 1919. Additionally, with the dental curriculum being lengthened from 3 to 4 years beginning in the fall of 1917, no graduation would take place in 1920. The freshman enrollment for fall 1917 for the class of 1921 was estimated to be only 1,330 students, or roughly one-third of the 4,184 freshmen matriculated in 1916. The class of 1917 had graduated 2,989 dentists. The average annual graduation rate from 1913 to 1917 was 2,497 dentists. The projection for the next 5 years was a total of 5,886 dentists—2,319 in 1918, 1,767 in 1919, practically none in 1920, 1,000 in 1921, and 800 in 1922. Thus, the average graduation would be only 1,177 per year. This total was unacceptable to the dental profession in view of the needs of the Army and the civilian population. Dental educators hoped that the class of 1918 would be allowed to complete its training and that the class of 1919 could be accelerated in order to graduate by January 1, 1919. On September 27, 1917, two letters from dental students requesting clarification of their status were read before the Senate.<sup>70</sup>

## PREPARING THE DENTAL CORPS FOR FRANCE

When HR 4897 finally passed on October 6, 1917, it allowed dental students (second, third, or fourth year only) to enlist in the Medical Department's Enlisted Reserve Corps and continue their college courses, the same as medical students. They were, however, subject to call up to active duty. At the end of each semester, the dean of their school had to submit a report to the surgeon general certifying that they had passed successfully to the next semester. Those who failed were called up to service. Those former students already in the National Army, National Guard, and Regular Army were eligible to be discharged to enlist in the Medical Reserve Corps to continue their studies.<sup>49,59,80</sup> Graduate dentists and physicians who had already been drafted into the Army as enlisted soldiers could apply for commissions in the Dental or Medical Reserve corps, but their applications would be kept on file until openings occurred. However, an important exception was made for those dentists who were "specially well qualified in the management of fractured jaws and oral surgery. . . ." <sup>81(p522)</sup>

In 1917 some civilian dentists applied for commissions in the DRC higher than lieutenant, even the rank of major. The *International Journal of Orthodontia* thought that these individuals made "the dental profession appear ridiculous." The journal pointed out that those who thought they would be performing a large amount of oral surgery were misled and that what the Army needed was the "general dentist" to get the recruits' mouths in proper order. However, the orthodontists would make excellent specialists for reducing and fixing jaw wounds due to their training and experience in applying bands and ligatures.<sup>82,83</sup>

### *War-Related Dental Training on Civilian Campuses*

Soon after the war began, several dental colleges began giving courses in "war dental surgery." The College of Dental Surgery, University of Michigan, for example, gave such a course from May 28 to June 9, 1917. Three lectures were given daily and the afternoons were devoted to clinics and military drill. The course covered subjects such as head and face anatomy, oral sepsis, general and local anesthesia, oral prosthesis, military law and science, gunshot wounds, war dental surgery at the front, dental materials, diseases of Army life, plastic surgery, first aid, bandaging and splinting, tetanus treatment, bone grafting, and an introduction to the Army dental service. All the dental seniors and over 50 dental practitioners took the course.<sup>84</sup>

In September, Dr Herbert L Wheeler called for an increased emphasis on anatomy, histology, physiology, and mechanics of the maxillofacial bones in the dental curriculum and a "closer and more intimate relationship" between dentistry and the various medical specialties. The Army was in urgent need of dentists with a "knowledge of oral surgery and a genius for prosthetic restoration" to work with the surgeons in treating the large number of facial and jaw wounds encountered in trench warfare.<sup>85</sup> In October 1917 the surgeon general announced that he intended to establish a section of head surgery, including a division of plastic and oral surgery, in certain evacuation, base, and general hospitals. The division would treat all injuries and surgical diseases of the mouth and associated parts, including the facial bones and soft tissue, and the neck above the clavicle, except the diseases

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

and injuries that fell under ophthalmology, otolaryngology, neurosurgery, and diseases of the thyroid. Oral surgeons with dual medical and dental degrees were to be placed in charge of these units. Because there would not be enough of these highly trained individuals, the remainder of the units would be under the command of a general surgeon with some experience in plastic and bone surgery and a dental oral surgeon as his associate.<sup>86</sup>

The government then defined the terms *plastic surgeon*, *oral surgeon*, *dental oral surgeon*, and *dentist* as follows: a plastic surgeon had an MD and did plastic work, bone grafting, and maxillofacial injury cases; an oral surgeon had both an MD and a DDS and a license to practice both medicine and dentistry; a dental oral surgeon had a DDS and was skilled in minor oral surgery; and a dentist had a DDS and acted as a dental oral surgical assistant.<sup>41</sup>

Accordingly, on October 15, 1917, facilities were set up for establishing a school for training in oral and plastic surgery with headquarters at the University of Pennsylvania Dental School. Branches were established at the Jefferson Medical College, its hospital, and the Baugh Institute of Anatomy; the Medico-Chirurgical Hospital; Philadelphia General Hospital; and Pennsylvania Hospital. Doctors



University of Pennsylvania School of Dental Medicine.  
Reproduced from: <http://www.nlm.nih.gov/ihm/images/A/26/814.jpg>.  
Courtesy of the National Library of Medicine.

## PREPARING THE DENTAL CORPS FOR FRANCE

Charles R Turner, dean, and Herman Prinz of the Evans Institute of Dental Surgery were placed in charge of organizing a teaching staff. Thirty-two medical and dental officers were detailed to Philadelphia to take the course. The medical officers were given special instruction in plastic surgery, bone transplantation, and blood transfusion. The dental officers received instruction in intraoral splint fixation, head and neck anatomy, and the systemic effects of focal infection. Similar schools were established at the Washington University Dental School in Saint Louis, Missouri; Northwestern University Dental School in Chicago, Illinois; and State University of Iowa, College of Dentistry in Iowa City, Iowa. In March 1918, after sufficient personnel had been trained, the courses were discontinued.<sup>49,86,87</sup>

### *Dr George Crile's Plan for Red Cross Army Base Hospitals*

One of the major factors in the rapid transformation of the United States military medical system from peacetime to wartime was the new concept of the base hospital unit. After returning from a volunteer tour with the Lakeside Hospital/Western Reserve University Medical School of Cleveland, Ohio, at the American Ambulance in Paris (see Chapter 11) in October 1915, Dr George W Crile (1864–1943) conceived the idea and outlined the general scheme of the plan (Exhibit 12-1).<sup>89</sup> The concept was to organize military hospitals from existing civilian hospitals, medical schools, and medical centers, retaining their key personnel. In this manner, the best medical and surgical talent, already acquainted and accustomed to working together in civilian life, could be transported as a unit to the battlefield where they could still function as a unit. The American National Red Cross, through Colonel (later Brigadier General) Jefferson Randolph Kean, Medical Corps (who was then on detached duty to the American National Red Cross Headquarters from the surgeon general's office as director-general of the Department of Military Relief), immediately endorsed the base hospital plan and agreed to cooperate

#### EXHIBIT 12-1

##### DR GEORGE CRILE

Dr George Crile (1864–1943) served as an Army surgeon during the Spanish-American War and was founder of the American College of Surgeons. He was an authority on surgical shock and the means of preventing it through anesthesia and blood transfusions. He served as director of clinical research in the American Expeditionary Forces during World War I and successfully developed blood-banking techniques for military surgery 20 years before the practice became common in the civilian world. He also developed a pressure suit later used by fighter pilots in World War II. He remained a member of the Medical Officers' Reserve Corps and reached the rank of brigadier general.

Data source: Jones ET, ed. *Dictionary of American Biography, Supplement 3, 1941–1945*. New York, NY: Charles Scribner's Sons; 1973: 200–2003.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

closely with the Medical Department on their organization, staffing, and equipping. By May 1916 seven hospitals were enrolled in what became known as the "affiliated medical units" program, and two others were prospects. The personnel were all enrolled in the Medical or Enlisted Medical Reserve Corps, and later in the Army Nurse Corps or DRC when they became functional. The minimum peacetime strength of the base hospital was 196 personnel. By the time the United States entered the war, 33 base hospital units were authorized and a number of them were equipped and trained for active duty with the US Army. An additional 14 were authorized in July 1917, and a total of 50 would eventually be formed during the war, with 49 serving in Great Britain or France. In *Dental Cosmos*, Dr Kirk called for the base hospital units being formed to make provision for competent dental surgeons on their staffs to treat jaw wounds. Because they had been trained and equipped since May 1916, the Red Cross base hospitals were the only Army hospitals ready for shipment to Europe when the Allies requested medical assistance. The first called and shipped to Europe were Base Hospital No. 2, the Presbyterian Hospital, New York; Base Hospital No. 4, the Lakeside Hospital, Cleveland, Ohio; Base Hospital No. 5, the Peter Bent Brigham Hospital, Harvard University; Base Hospital No. 10, the Pennsylvania Hospital, Philadelphia; Base Hospital No. 12, Northwestern University Medical School, Chicago; and Base Hospital No. 21, Washington University Medical School, Saint Louis. By June 1917 four base hospitals were already in England or France, two were en route to England, and four others were about to ship out.<sup>91,92</sup>

The medical staff of each standard, 500-bed base hospital unit consisted of one medical director, two administrative officers, one quartermaster, one adjutant, nine surgeons, seven physicians, two dental surgeons, and 50 nurses. Upon mobilization, the Army augmented the hospitals' regular staff with two Regular Army medical officers one to serve as the commanding officer and the other as the adjutant and 150 enlisted personnel. The total personnel, including nurses and civilian employees of each hospital, varied from 200 to 500 individuals depending upon the number of beds in the hospital.<sup>92-94</sup>

### *Staffing the Army Hospitals with Dentists*

The Red Cross base hospitals were only one part of a complex of fixed and mobile hospitals that served the Army during the war. While Army dentists came to play important roles in most of them, prior to the war dentists were assigned to Army hospitals more by happenstance than by design. While dentists were often assigned to permanent hospitals, such as the General Hospital at the Presidio of San Francisco (renamed Letterman General Hospital in 1911), or the main hospital in Manila, their itinerant schedules took them to posts throughout their assigned areas in the geographic departments or divisions where civilian dentists were not readily available. Because there were so few dental surgeons, Army policy was to assign them to visit only "those stations where the services of a civilian dentist cannot be obtained."<sup>95</sup>

The Medical Department already had an established system of post, camp, and base hospitals in the departments or on the line of communications and in



## PREPARING THE DENTAL CORPS FOR FRANCE

field and evacuation hospitals in the theater's forward zones of advance. The general hospitals in the United States and its territories supported these hospitals and came under the direct control of the surgeon general. The 1914 Army tables of organization and the 1916 *Manual for the Medical Department* allocated one dentist and one assistant to each 500-bed base hospital. In each of the four prewar general hospitals, the manual authorized a dental service of one dentist and one assistant.<sup>5,8</sup>

When the war came, the Medical Department had to staff and train all of these hospital units to support the mobilization and training bases in the United States and the AEF deployed in Europe. Base hospitals became the most important units because they would eventually supply almost all of the permanent hospitalization facilities for the AEF. The base hospital began the war as a 500-bed unit with one dentist (a first lieutenant), but instructions from the AEF soon changed it to a 1,000-bed hospital with a dental service of two Dental Corps captains and their assistants. A total of 165 numbered base hospital units were organized in the United States, of which 121 were eventually shipped with personnel and equipment to France and England (the AEF organized an additional 14 base hospitals from available resources), where they were operational during the war, temporarily supporting the camps at which they were training. In the United States camps and cantonments, the dental services of the 36 permanent camp base hospitals and 38 camp hospitals (virtually the same organizations) that were established to support the various mobilization and training camps provided dental care along with the dental infirmaries.<sup>20,51,96</sup>

Evacuation hospitals, which bridged the gap between base and camp hospitals and the frontline field hospitals, were established on the line of communications to care for the sick and wounded being evacuated to the rear areas. In 1916 no provision was made for dentists in these hospitals. In 1917 though, each evacuation hospital added one Dental Corps officer (a captain or first lieutenant) and an enlisted dental assistant. Like the base hospitals, evacuation hospitals were expanded to 1,000 beds and were then provided a Dental Service of two dentists and two enlisted assistants. Of the 60 evacuation hospitals organized in the United States, only 29 were shipped to France and saw action before the armistice (seven others reached France in November 1918).<sup>8,20,51</sup>

Dental officers experienced various difficulties mobilizing and shipping out. For example, in August 1917, Base Hospital No. 36 from the Detroit College of Medicine and Surgery, one of the Red Cross base hospitals, assembled at the state fair grounds, where the two dental officers, Captains Bion R East and Harry L Hosmer, provided care to unit members; otherwise, most of the group's time was focused on military basics and packing for shipment. When movement orders arrived, the dental officers were charged with supervising the loading and shipping of the hospital equipment and baggage in conjunction with a Regular Army Quartermaster Corps officer newly assigned to the hospital. At the port of Hoboken, New Jersey, in October, they monitored the transfer from railroad boxcars to their ocean transport. En route to England, they conducted daily sick call in the ship's pharmacy and attended various informal classes. East and Hosmer resumed their baggage responsibilities once in Liverpool and arranged for transfer of the goods across England to France and to their ultimate destination, the town of Vittel. The

## A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

hospital's baggage included "complete equipment for two dentists bought in Detroit" and a dental laboratory, all of which arrived safely.<sup>97</sup>

General hospitals had no regularly assigned Dental Corps personnel until 1916. During the war, 34 additional general hospitals were opened around the country, so a total of 42 general hospitals were operational. The dental services handled routine dental examinations and treatment of patients who were in the hospital for medical or surgical care. Dental services were established on the ratio of one dentist to 1,000 beds, so there were several dentists in the larger hospitals. In September 1918, thanks to William HG Logan, the allocation for all hospitals was increased to three dentists per 1000 beds, but the war ended before it was fully implemented. Many of the larger general hospitals, which had a large patient load, also experienced significant expansion in the dental services. For example, Walter Reed General Hospital in Washington, DC, expanded from three to nine dentists during 1918, one of whom was on duty 24 hours a day to provide emergency dental treatment, and even opened a fully equipped dental department in a separate building. In addition, five female dental technicians worked in the hygienic sec-



*Oral surgery prosthetic room, Walter Reed General Hospital. Patients being examined.  
Photograph: Courtesy of the National Museum of Health and Medicine,  
Armed Forces Institute of Pathology. Reeve 34681.*

## PREPARING THE DENTAL CORPS FOR FRANCE

tion of the department, thus freeing the dental officers to devote their full time to operating. A number of embarkation and debarkation hospitals were redesignated as general hospitals after November 1918 and additional general hospitals also opened after the armistice to handle the sick and wounded returning from France. A total of 43 numbered general hospitals and the original four hospitals were in operation at various times from April 1917 to March 1920.<sup>6,8,20,39,40,96</sup>

### *Women's Service*

In 1917 the War Service committee of the Medical Women's National Association organized a group called the American Women's Hospitals, staffed by all-female personnel and officially a part of the Red Cross. This organization established the first American volunteer hospital unit for treating civilian casualties in France and Serbia. In December 1917, after American entry into the war, the Women's Hospital of New York equipped the first unit of female physicians that served as a base hospital at Ordway House, London, and at various places in France. The chairman of its dental service was Dr DeLan Kinney of New York.<sup>98,99</sup>



*Dental motor car with patients, doctors working. Camp Upton, New York, 1918.  
Photograph: Courtesy of the National Museum of Health and Medicine,  
Armed Forces Institute of Pathology. Reeve 17664.*

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

In April 1917 Dr Kinney had first applied to the surgeon general for appointment as a dental surgeon. A native of Nashville, Tennessee, she graduated from the University of Tennessee Dental School (1905) and the New York College of Dental and Oral Surgery (1916). She was an associate of Dr Rodrigues Ottolengui, editor of *Dental Items of Interest*, at the time of her application. In May the surgeon general's office replied that she was ineligible for the Regular Army Dental Corps because of her age (over 27), but could apply for the DRC. Her unusual first name originally hid the fact she was female, but when she reapplied, the surgeon general's office notified her that "women dentists" were not eligible for appointment.<sup>100-106</sup> Major Robert E Noble told her that "regardless of ability and eligibility," the law did not "provide for the commissioning of women, and nothing short of an Act of Congress would admit women," and recommended she join the American Women's Hospital Group.<sup>99,107,108</sup>

### *The Association of Military Dental Surgeons of the United States*

The massive mobilization of American dentistry in support of the war effort and the large number of dentists now in uniform stimulated the growth of the Association of Military Dental Surgeons of the United States. Former Army contract dental surgeons of the initial 1901 group who were now in civilian practice originally established the association in 1913 as the dental equivalent to the Association of Military Surgeons of the United States (AMSUS) that Nicolas Senn had founded in 1891. In early 1915 the association's president was William C Fisher of New York City. John D Millikin of San Francisco was first vice president, William H Ware of San Francisco was second vice president, Charles J Long of Rock Island, Illinois, was secretary, and RW Waddell of New York City was treasurer. In the beginning, it was a rather small organization composed of members of the Regular Army Dental Corps and former contract dental surgeons.<sup>109,110</sup>

The association held its first annual meeting in 1915 in Washington, DC. It elected Dr John D Millikin president, replacing Dr William C Fisher. A former Army contract dental surgeon (1902-1912), Millikin was a vigorous advocate of Army dentistry. (Other officers elected were: Vice President Dr Charles J Long, Rock Island, Illinois; Secretary Dr Samuel W Hussey, Berkeley, California; Treasurer Dr Ralph W Waddell, New York City; and Member of Executive Council Dr Robert P Updyke, Pasadena, California, all of whom had served as original 1901 contract dental surgeons.) The association meeting in Louisville, Kentucky, in July 1916 coincided with that of the NDA.<sup>111</sup> During 1915 and 1916 Fisher and Millikin were both heavily involved in lobbying Congress, the War Department, and Surgeon General Gorgas on Army dental legislation (see Chapter 11). In October 1917 the association's annual meeting in New York City attracted more than 300 members of the armed forces. New officers elected in 1917 were: Captain Edwin P Tignor, president; Captain George Casaday, vice president; Dr Ralph W Waddell, secretary-treasurer; Dr John D Millikin, executive council member and editor of journal; Dr Edward PR Ryan, executive council member; and, Dr William C Fisher, associate journal editor and business manager. Honorary memberships were bestowed upon: Surgeon General Gorgas; Dr Homer C Brown of Ohio; Major William HG Logan of Chicago; Dr Lafayette L Barber of Ohio; Lieutenant Emory

## PREPARING THE DENTAL CORPS FOR FRANCE

Bryant, US Navy, of Washington, DC; and Dr Otto U King of Indiana.<sup>112</sup>

The association grew to include the dental officers of the National Guard, Navy, Public Health Service, and later the Veterans' Bureau, and was active as a lobbying force with the Department of the Navy, War Department, and Congress. In 1917 the association began publishing a journal, the *Bulletin of the Association of Military Dental Surgeons of the United States*, but changed the title the same year to *The Military Dental Journal*. Dr Millikin, who also served with William HG Logan on the Committee on Dentistry of the Council of National Defense's General Medical Board, was the editor of the journal, which carried articles and information specifically for military dentists. The organization, which was at its peak during World War I, had about 5,000 members and held regular annual meetings. The association and its journal were an important voice for Army and later military and government dentistry. After the war, however, membership fell off as the majority of uniformed dentists returned to civilian practice, and the association's influence waned. The journal ceased publication in 1924, following a congressional ruling forbidding Army officers to participate in this type of private professional enterprise. The association's decline continued throughout the 1920s and into the 1930s. With its membership down to 250 in 1938, the association amalgamated with the larger Association of Military Surgeons of the United States (AMSUS). A separate dental section was retained in the senior organization, which had already initiated its own dental section in 1936. Brigadier General Leigh C Fairbank (1889–1966), then the Dental Corps chief (1938–1942), was the driving force behind the merger.<sup>109, 112</sup>

### *Dental Equipment: Shortages, Improvisation, and Innovation*

Because of the acute shortage of dental instruments in 1917, dental surgeons entering the service were asked to bring along certain instruments from their private outfits. The government agreed to purchase "dental outfits" in good condition from those on the short list at fair compensation. The new DRC officers were given instructions for equipping themselves in preparation for active duty.<sup>113</sup> The major reason for the equipment shortage was that the majority of dental instruments, including forceps, were made in Germany, with which the United States was now at war. Already heavily laden with orders from the Allies for the same reason, the American dental supply houses became swamped with large Army procurements and could not keep up with the increased demand. In addition to the portable dental outfits that were first developed in 1901 and had been the mainstay equipment for the prewar Dental Corps, the Army also began requisitioning stationary dental units for the National Army cantonments and National Guard mobilization camps. The medical supply depot in New York gave the contracts to the various dental manufactures, who tried their best to fill the orders. On May 25, 1917, the surgeon general directed the purchase of 500 portable outfits, followed by another order for 400 more on July 2 and a thousand late in August. During the war, the Army Medical Department bought a total of 4,030 portable outfits.<sup>18, 114–117</sup>

Plans called for each dental surgeon in a division to be equipped with a portable dental outfit, an updated version of the outfit originally developed by John

## A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

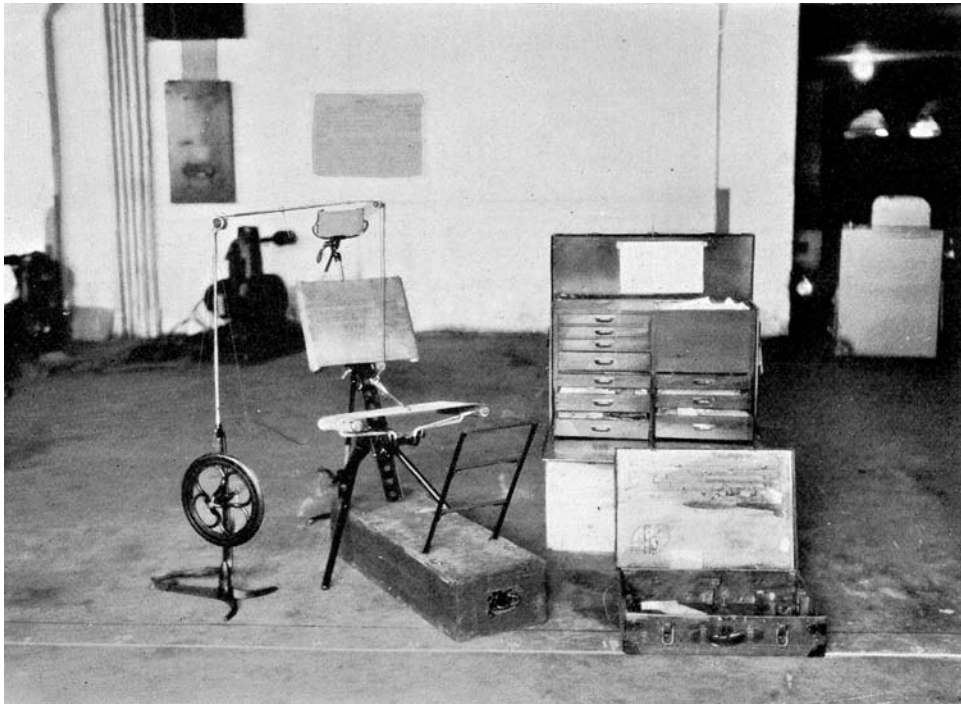


*Leigh C Fairbank, future chief of the Dental Corps.  
Photograph: Courtesy of Maryalice Minor, daughter of Leigh C Fairbank.*

## PREPARING THE DENTAL CORPS FOR FRANCE

Marshall and Robert Oliver in 1901. When complete for overseas service, these portable outfits were not really so portable. Containing everything that the dentist actually required as well as supplies normally drawn from hospital stocks, the original outfit was made up of six packages: a dental engine in a chest, a collapsible dental chair in a chest, a field desk, two instrument chests, and a supply chest. Five additional packages were added for service in France: a portable stand and table, a single-burner coal-oil stove, a box of medicines, a box of miscellaneous supplies, and a box of alcohol. Altogether, the 11 packages occupied 39.3 cubic feet and weighed 775 pounds.<sup>18</sup>

After experiencing many problems with the shipping and frequent non-arrival of the portable outfits in 1917 and 1918, in June 1918 the surgeon general (on the advice of the AEF chief surgeon) directed all dental surgeons shipping out for France to take their outfits with them as personal baggage. This way, the surgeons were ready to work when they reached France and did not have to await his equipment. The ongoing problems with procuring and shipping dental equipment and supplies also left the AEF's medical supply depots without their full stock, often rendering them unable to fill requisitions for missing equipment.<sup>10,18</sup>



*World War I portable dental outfit.*

*Reproduced from: Wolfe EP. Finance and Supply. In: The United States Army Medical Department in the World War. Vol 3. Washington, DC: US Government Printing Office; 1928.*

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

a



b



(a) This portable dental chair was probably used through WWI.  
(b) It breaks down to fit inside the wooden box to be transported.  
Photograph: Courtesy of US Army Medical Department Museum.



## PREPARING THE DENTAL CORPS FOR FRANCE

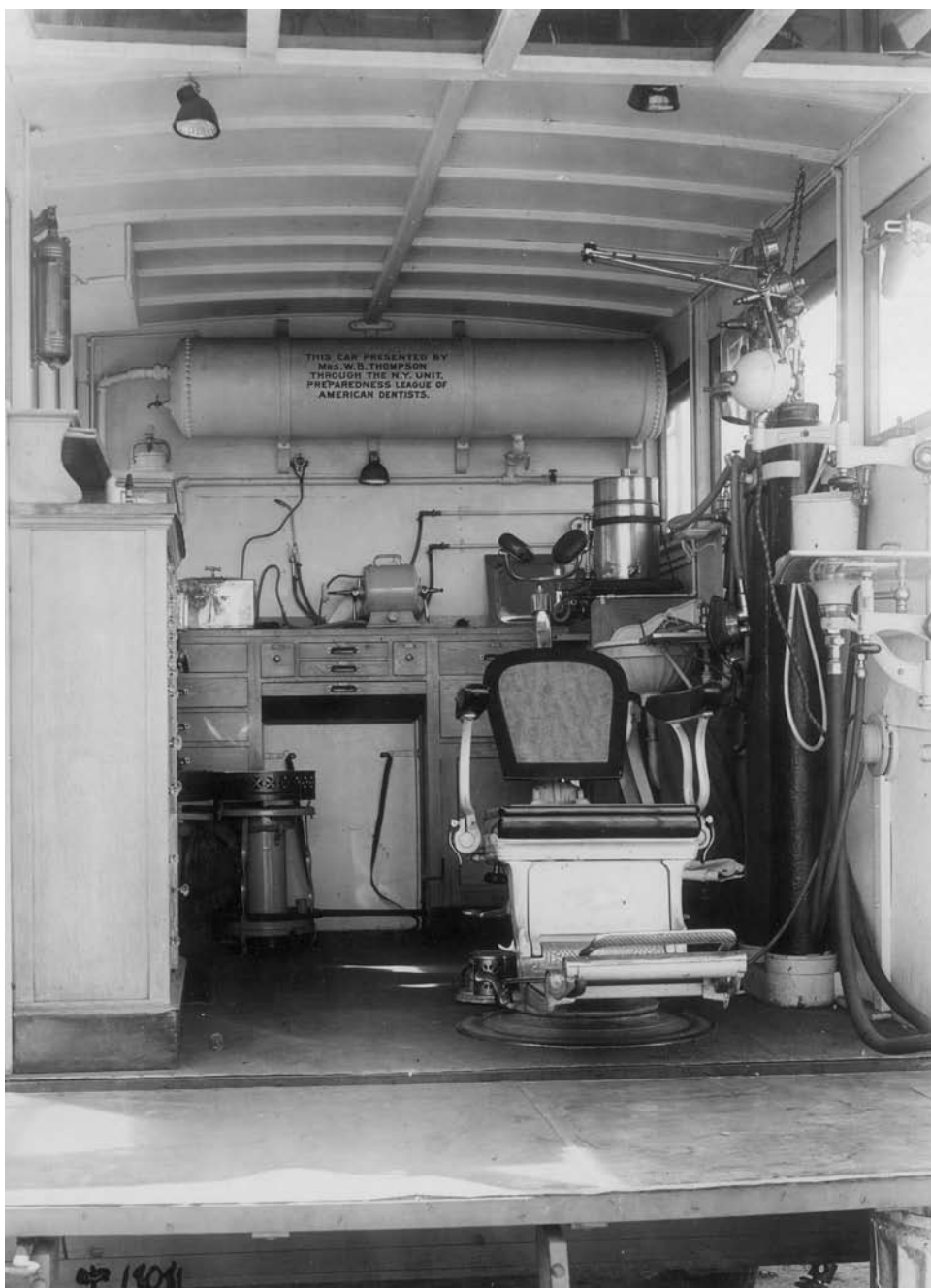
Stationed with the 28th Division at Camp Hancock, Georgia, First Lieutenant C Judson Hollister, Dental Corps, National Guard, who had recently served on the Mexican Border, stated that at the time of his arrival in the camp of almost 30,000 soldiers, there were 33 dental surgeons but only two dental outfits. In September 1917, another dental officer, First Lieutenant Harold Van Blarcom with the 116th Infantry Regiment, 29th Division, stationed at Camp McClellan, Alabama, complained that his unit had about 20 dentists but not one complete dental outfit between them. They spent "several weeks in shacks with nothing to do" but make friends, explore the camp, fill out forms, and try to learn the customs of the service. First Lieutenant HR Ludwig reported a similar situation upon his arrival at Camp Zachary Taylor, Louisville, Kentucky.<sup>118-120</sup> On the other hand, First Lieutenant J Crimen Zeidler, stationed at Camp Nicholls, Louisiana, reported that his dental infirmary had been established within 2 days of his arrival and his dental equipment was in place by the fourth day.<sup>121</sup>

### *Dental Ambulances*

At least one valuable new piece of dental equipment entered the Army inventory during the war but saw little use in France. In 1915 Dr William C Speakman, a Wilmington, Delaware, dentist, performed several months of volunteer service with the American Hospital at Neuilly near Paris, France. In the course of his duties, he saw several British and French dental ambulances, basically van- or truck-mounted mobile dental clinics that had been donated by private groups on duty with tactical units. Impressed by the flexibility and mobility these vehicles provided for dental care at the front, Speakman was inspired to design his own dental ambulance while on the boat trip home. Through advertisements in local newspapers, he raised enough resources to have it fabricated on a Buick chassis and to take it back to France in early 1916. Fully equipped and attached to the American Hospital at Neuilly, Speakman's ambulance was heavily used. French authorities claimed that its services kept "soldiers to the number of a division and a half" at the front. Speakman later entered the DRC and served in France with Mobile Hospital No. 39 (Yale Unit). His ambulance design became the basis for later official action. After the US Army arrived in France, it took over the original ambulance itself as Dental Ambulance No. 1.<sup>122,123</sup>

In October 1917 the War Department adopted a standardized dental ambulance. The Cleveland Dental Motor Car Committee of the Cleveland Unit of the Preparedness League of American Dentists developed the basic design that the Committee on Dentistry of the General Medical Board accepted. The Brown Auto Carriage Company in Cleveland built the first three cars under the direction of Dr S Marshall Weaver, the chairman of the Preparedness League's Ambulance Committee. The chassis was the GMC Model 16, the only chassis used for ambulances overseas. The car was designed to provide for four dentists and a driver. In addition to a fully equipped operating room (chair, engine, bracket table, cuspidor, and the like) inside the truck, the outfit included two portable, waterproof tents, designed to be set up on each side of the chassis. Each tent had a wooden floor. The chair in the outfit was the model 1895 SS White portable dental chair. The vehicle had a 30-gallon water tank, compressed air tank,

## A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II



*Dental motor car, Camp Upton, New York, 1918.  
Photograph: Courtesy of the National Museum of Health and Medicine,  
Armed Forces Institute of Pathology. Reeve 017665.*

## PREPARING THE DENTAL CORPS FOR FRANCE



*Dental motor car, Camp Upton, New York, 1918.  
Photograph: Courtesy of the National Museum of Health and Medicine,  
Armed Forces Institute of Pathology. Reeve 017666.*

alcohol stove, and a sterilizer. The Cleveland unit donated the first car, and Dr Charles F Ash of New York donated the other two.<sup>124</sup>

In his final report, Colonel Robert T Oliver, chief dental surgeon of the AEF, wrote that:

The need for dental ambulances, mobile dental offices, has been manifest throughout the entire dental service of the A.E.F. . . . The use of these dental ambulances with outlying commands or detachments within divisional training areas or in rear of combat sectors would have proven of great value inasmuch as the mobile units could proceed from place to place with little loss of time, either in actual transportation or in the unpacking and repacking of equipment ordinarily required of a dental officer on itinerary service.<sup>10(p409)</sup>

The Preparedness League of American Dentists had 25 completely equipped dental ambulances ready to be presented to the AEF, provided they could be shipped to France. However, neither Oliver nor the AEF chief surgeon's office could obtain the necessary tonnage priority allocation to get the dental ambulances on transports headed their way. Thus, the vehicles sat at ports of embarkation for months until they were finally removed and sent to the Army cantonments in the United States for use.<sup>10,125</sup>

## A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II



*View from distance of dental motor car, door open, tent, chair, spittoon beside. Camp Upton, New York.  
Photograph: Courtesy of the National Museum of Health and Medicine, Armed Forces Institute of Pathology. Reeve 17663.*

Speakman's Dental Ambulance No. 1 operated extensively within the Zone of the Armies, but was one of only two such ambulances to actually serve in the AEF during the war. The American Red Cross donated the second ambulance, which functioned as Dental Ambulance No. 2 in support of aerosquadrons of the aviation service in the Advanced Section. Mobile dental offices were viewed as the "ideal type of dental equipment for Air Squadron Groups."<sup>10(p409)</sup>

### *Dental Standards for Conscripts and Recruits*

In March 1917, with the imminent prospect of mass mobilization for the United States, *Dental Summary* mused about the implications to the dental profession of instructing millions of soldiers in the value of regular dental care. After the war, many believed that these men would continue to seek dental treatment and more dentists would be required to fill the new demand for service. Apparently, the new inductees' attitudes started to change when they arrived at the training depots and received among their equipment a "recruit kit," which included a toothbrush.<sup>126,127</sup>

## PREPARING THE DENTAL CORPS FOR FRANCE

**a**

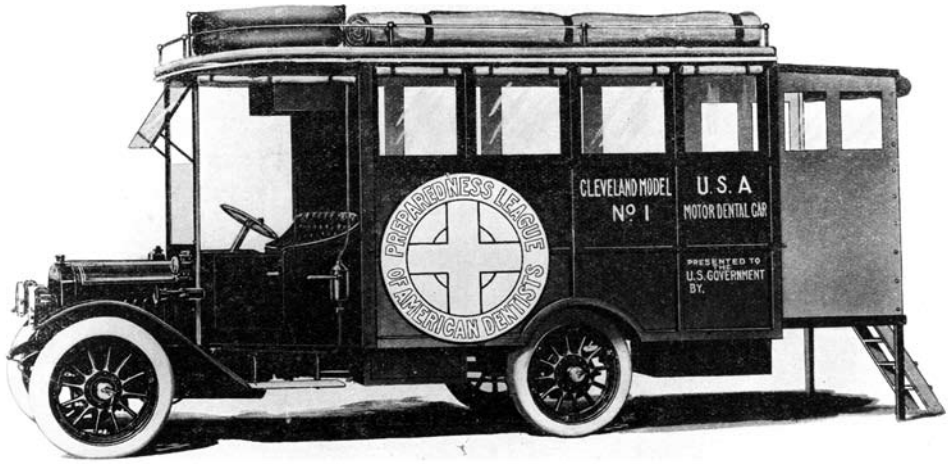


*American ambulance designed for William Speakman. (a) Exterior. (b) Interior.  
Photograph: Courtesy of National Archives and Records Administration.*

**b**



## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II



*Cleveland Dental Ambulance. This design was the standardized War Department dental ambulance originally proposed by the Preparedness League of American Dentists in 1917. The original caption reads: "This is the car that has been designed and standardized by the Ambulance Committee of the Preparedness League of American Dentists, and accepted by the War Department. These cars are under construction and will be tried out in the various cantonments."*

*Reproduced from: Dental Cosmos. 1918;24:10.*

With the introduction of selective service in 1917, some potential draftees opted to have their teeth extracted to avoid conscription, just as during the Civil War. The government deplored such actions and said that it would prosecute dentists who intentionally extracted teeth to disqualify a conscript. However, no reliable method was proposed to judge such actions.<sup>128</sup>

The huge growth of the forces compelled the Army to relax its dental requirements for recruits. The old requirement of four opposing molars was reduced in 1918 to three opposing molar teeth on the same side. Crowns, bridges, and partial dentures were counted as natural teeth, but full dentures were a cause for rejection. Still, about 50% of the rejected recruits were turned down because they did not have the required three molar teeth.<sup>129</sup> In addition to the six opposing molars, inductees had to have six opposing incisors. If any of the natural teeth were carious and could be repaired, they were considered adequate. The recruit could have the work done at home prior to induction or at the cantonment where he was ordered to duty. Even with the requisite teeth, those whose mouths showed conditions such as "deep pyorrhea pockets" or root infection (with or without a draining sinus) were referred to a medical advisory board for a decision. At the conclusion of an article on the subject extracted from the *Journal of the American Medical Association* and reprinted in *Dental Cosmos*, Edward Kirk wrote: "No registrants can be rejected on account of teeth defects."<sup>130</sup>(pp274-275)

These much looser wartime dental standards meant that many recruits who would have been rejected for peacetime service were now admitted. The new



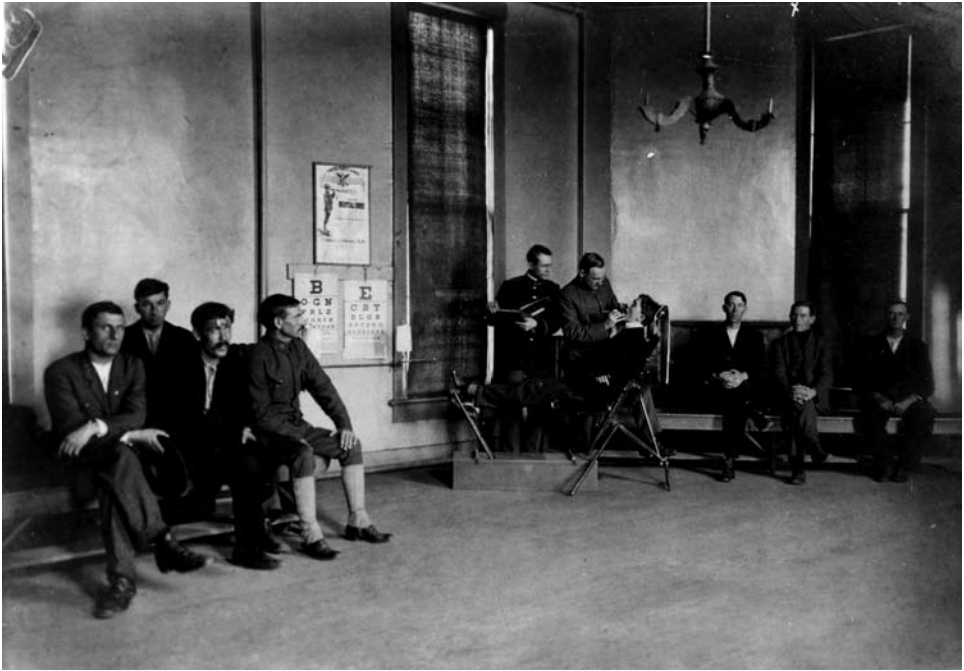
*Portable dental ambulance for American soldiers,  
circa February 1918, at Camp Meade, Maryland.  
Photograph: Courtesy of National Archives and Records Administration.*

troops' dental problems became the Army's dental problems, resulting in significant consequences for existing Army policies that only permitted emergency dental treatment and prohibited more refined dental work and materials. Dentures, bridges, restorations, and other serious dental deficiencies soon presented major problems at the mobilization and training camps and cantonments. In September 1918 Colonel Logan estimated that 90% of those who had entered the service required dental treatment.<sup>18,131</sup>

#### *Establishing Dental Service at the Army's New Camps and Cantonments*

As soon as war was declared, the Quartermaster General's Department embarked on a massive construction program to provide shelter to the millions of conscripts it anticipated being called up for training. Almost concurrently, National Guard units (26th through 42nd divisions) were recalled to federal service. These units were sent to 16 temporary mobilization camps, usually facilities in the south where the presumably milder climate allowed the greater use of tents. As guard units poured into the camps, 16 semipermanent cantonments with newly constructed wooden structures were hastily thrown together at sites throughout

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II



*Dr Seibert D Boak, dental surgeon at Columbus Recruit Depot, Ohio,  
from August 1915 to January 1918, completing a dental examination of a recruit.  
Photograph: Courtesy of the family of Seibert D Boak.*

the north in anticipation of hoards of draftees composing the so-called National Army (76th through 93rd divisions). Newly appointed dental officers were assigned to the cantonments both as part of the camp overhead and as members of tactical units in training. All too often these mobilization and training camps descended into chaos as soldiers, equipment, and supplies rarely arrived as planned or promised.<sup>2,96,132,133</sup> The dental story was certainly no exception to this rule.

The earliest concepts for dental treatment in the camps and cantonments included only emergency work like the kind the dental surgeons had done since 1901. Therefore dental equipment was limited to portable dental outfits for dentists in camp organizations and a base dental outfit for the base hospital, while the dental surgeons of the divisions in training brought their assigned individual portable outfits. By November 1917 it was clear that this approach was not working. The division and base hospital dental surgeons who trained in the camps either took their personal portable and unit dental outfits when they shipped out for France—leaving insufficient equipment for continuing camp requirements and requiring large-scale replacement—or went without their equipment if they left the outfits behind. Because of this totally unanticipated challenge, new dental infirmaries were authorized for each National Army cantonment and National Guard camp.<sup>18,96</sup>

The standard portable dental outfits were only intended for emergency care



## PREPARING THE DENTAL CORPS FOR FRANCE



*Oscar P Snyder (fifth from right) and dental surgeons of  
28th Division at Augusta, Georgia, before shipping out to France, 1918.  
Photograph: Courtesy of Major Oscar P Snyder.*

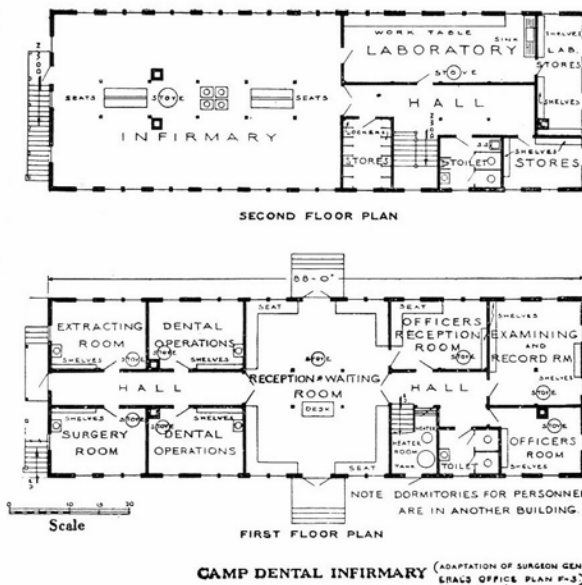


FIG 63.

*Construction drawing of a  
standard camp dental  
infirmary for a National Army  
cantonment of 1917–1918.  
Reproduced from: The  
Medical Department of the  
United States Army in the  
World War. Vol 5.  
Washington, DC: Government  
Printing Office; 1923: 108.*

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

and were ill-suited to treat the more pronounced dental deficiencies that presented themselves. Thus, standard dental chairs, furniture, an electric dental engine (where electrical power was available), an instrument cabinet, a laboratory outfit, and some additional instruments together with the portable dental outfits were used in general hospitals, at larger military posts, and in base hospitals to treat the more complicated dental cases. Originally called the additional dental outfit, this equipment package later became the base dental outfit used throughout the Army. Unlike the portable outfits, heavy standard dental chairs and electric dental engines were readily available from civilian suppliers and the government procured them for the infirmaries' base dental outfits. Each was designed for nine operating dental surgeons and one orthodontist, and three units were sent to each camp and cantonment in November 1917 for the newly authorized dental infirmaries. The first 60 base dental outfits were authorized on August 14, 1917, and 400 chairs and engines were required for all authorized dental infirmaries. From April 1917 to November 1918, the military purchased 1,550 chairs and 1,184 electric dental engines. These acquisitions relieved the tension on the portable dental outfits and the Army standards for dental treatment underwent a radical change.<sup>18</sup>

After the fall of 1917, when the camp's own base hospital included a dental outfit, each training camp and cantonment had three or four dental infirmaries "where the services of the dental surgeon could be fully utilized and practically every kind of dental treatment needed could be furnished." Once these facilities were equipped with the more complete base dental outfits, staffed, and operational, the dental surgeons could turn their portable dental outfits in to the camp medical supply officer for refurbishing. The surgeon general's office then took control of the outfits and could reissue them to deploying dental surgeons, thus relieving the problem of availability of portable dental outfits. However, not all dental infirmaries were operational until the late spring of 1918 and soldiers often experienced inconvenience in obtaining treatment in some of the larger, more dispersed camps.<sup>18</sup>

The experiences of the dentists assigned to Camp Sherman, Chillicothe, Ohio, were typical of the early problems of establishing dental services. Between August 13 and 22, 1917, seven dental reservists arrived at the camp, which was still under construction. They spent a few days in temporary barracks until the post hospital was completed. Three remained at the hospital while the others scattered to units located elsewhere on the post. They all shared the one dental outfit of an Ohio National Guard unit. When First Lieutenant (later Major) Benjamin H Sherrard reported as division dental surgeon on September 14, he sized up the equipment situation and requested shipment of an unused set of field equipment he had left behind at Jefferson Barracks, Missouri. His equipment arrived on September 17 and was set up in the officer's ward of the base hospital where most dental services could be offered. More dentists arrived by the end of September. They were quartered in the hospital until dental field outfits arrived, then joined various organizations around the camp, eventually leaving five dentists to staff the hospital. "Permanent quarters in the head surgery building were occupied on or about October 10, 1917." Field equipment was used briefly, but by November 1, standard permanent equipment and furniture had been installed. There

## PREPARING THE DENTAL CORPS FOR FRANCE

were three operating rooms, a laboratory and an office, allowing full service dental and prosthetic operations. The unit received all oral surgery and prosthetic cases from the cantonment and provided all dental treatment to hospital patients and staff. Cordial mutual support quickly developed between it and the other medical departments.<sup>134</sup>

As the new recruits arrived at camp, the dental officers, who often lacked their equipment and had time on their hands, quickly introduced them to the latest advances in oral hygiene and preventive dentistry. Lieutenant Hollister of the 28th Division described a morning "tooth-brush" drill as "a great sight to see 150 men in line with cup, tooth-brush, and paste or powder in hands 'cleaning up' in a way that had been entirely unknown to most of them a few months ago." He estimated that at least 50% had never previously brushed on a regular basis.<sup>118</sup>

In March 1918 First Lieutenant Alvie R Livermore, a National Army dental surgeon stationed at Camp Zachary Taylor, Louisville, Kentucky, credited Army dentists with saving more teeth than their civilian counterparts because there was less chance for soldiers to have missing teeth replaced with bridges or dentures. Therefore, the forceps was not the "predominating instrument" of the military dentist, as was commonly believed outside the Army. Livermore praised his colleagues' ability to save teeth by restoration with amalgam and their success in treating periodontal conditions. First Lieutenant KF Smith, DRC, agreed, stating that the only difference between military dentistry and civilian dentistry was the type of restorative material available to the military dentist. It could be said that another reason for saving teeth in the Army was to dispel the reputation that came with the rumor, "if you got a toothache in the army, they pulled it out."<sup>135,136</sup> Later, the Camp Zachary Taylor dental clinic placed high in an "efficiency record competitive test" sponsored by the Association of Military Dental Surgeons of the United States in the first 3 months of 1918. Major William Mann, Dental Corps, who had entered the service in 1916, was in charge of the dental clinic. In January 1918 a record 9,554 total operations were performed.<sup>117</sup>

The dentists knew their job was to get their assigned units into the best possible oral health and ready for deployment. Once the soldiers were examined and their records made, the work began in earnest, with the most critical cases treated first. At Camp Dodge, Iowa, the oral problems of the forming 88th Division were identified and the troops ordered to treatment based on the dentist's recommendations, rather than their own or their unit's desires. Those failing to show up for treatment were checked on and disciplined if necessary. The unit dental officers accompanied their medical counterparts on fortnightly visits to the troops to follow up on treatments and to answer any questions their patients might have. Numbers of dentists were occasionally levied for reassignment to deploying units or as individual overseas replacements, and newly called up reservists had to replace them. Considerable turnover occurred between September 1917 and July 1918 when assignments finally stabilized, and, under the leadership of Lieutenant Colonel Frank P Stone, the dentists moved to France with the division.<sup>137</sup>

On July 3, 1917, most of the Pennsylvania National Guard was called into federal service and redesignated the 28th Division. During its training at Camp Hancock, Georgia, from August 1917 to April 1918, the division's medical department

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

consisted of the 103rd Sanitary Train, ambulance companies numbers 109, 110, 111, 112, Headquarters, Field Hospital Section, field hospitals 109, 110, 111, 112, a mobile field laboratory, a veterinarian, Mobile Veterinary Section Number 109, and a medical supply unit.<sup>138</sup>

The 28th Division's medical department had a dental department consisting of 32 dental surgeons and 32 enlisted assistants. The assistants were selected for their adaptability for dental work. Shortly after mobilization, the dental surgeons were organized to work in three dental units, one in each brigade, to care for it and any auxiliary organizations in its locality. Parts of the previously built regimental infirmaries were used to house the dental units, the most central infirmary in each brigade being used, with a Dental Corps captain in charge of each unit. The captain's duties consisted of procuring the necessary supplies and equipment for the other dental surgeons and arranging for a system of appointments so that the dentists did not waste their time. The captain was also responsible for carrying out courses of instruction in subjects of importance to dental officers. Semimonthly inspections were held to evaluate the oral health of the soldiers. Each infirmary submitted a weekly report of the dental work performed to track the number of sittings, fillings, extractions, and the like. The local dental officers also gave talks to the enlisted troops on oral health.<sup>139</sup>

On August 30, 1917, First Lieutenant Oscar P Snyder joined the 28th Division at Camp Hancock as the dental supply officer.<sup>140</sup> On September 25, 1917, he reported to Major William HG Logan that there were only two portable dental outfits available for use in the camp for the 33 (counting himself) dental officers on duty, and only one base dental outfit had been shipped for use in a regimental infirmary.<sup>141</sup>

On October 20, 1917, Snyder reported that he had held triweekly meetings with the dental officers to discuss Army Regulations, Medical Department and courts martial manuals, and military writing and the various military forms to be filled out. In addition, he required each dental surgeon to write a paper on a dental subject to be read and discussed at the meetings. An oral examination of the enlisted soldiers revealed that 75% were in need of some form of dental attention.<sup>142</sup>

On November 24, 1917, Snyder reported that in compliance with the surgeon general's orders, division dental units numbers 1, 2, and 3 had completed organization and were composed of 8, 10, and 11 dental officers, respectively. The ratio of one dental surgeon to each thousand enlisted was as prescribed. In addition, there were two dental officers assigned to the Engineer Regiment, and Lieutenant Hollister with the "privately owned" dental ambulance. Snyder also reported that an additional 22 portable dental outfits had just arrived, therefore every dental surgeon in the division finally had his own equipment.<sup>143</sup> On January 4, 1918, Lieutenant Snyder reported to the division surgeon that there was a problem with the soldiers reporting for dental sick call. It seems they were not reporting early in the morning, but in some cases arrived as late as 8:45 or 9:00 AM. Snyder said the soldiers were "loafing around the place where sick call is being held until the last one when he might have been at the dental office, treated and out to duty by that time." He recommended that the surgeons holding sick call send all dental cases to the dental office before they proceeded with the actual sick call. In this manner the

## PREPARING THE DENTAL CORPS FOR FRANCE

soldiers could be returned to duty quickly instead of wasting time at sick call.<sup>144</sup>

Broken appointments were also a problem for the dental surgeons because the training schedule made no provision to excuse those with dental appointments from drill, marches, kitchen police, or other duties. As a result, dental surgeons' hours were increased in order to do a greater amount of work.<sup>143</sup> In March 1918 sites for two new dental infirmaries for Camp Hancock, each 90-by-30 feet and two stories high, were selected and awaiting approval for construction by the construction quartermaster.<sup>145,146</sup>

In April 1918 the 28th Division's surgeon, Lieutenant Colonel William J Crookston, complained to the commanding general that there was "no such thing as enlisted dental personnel." It seems the dental assistants were working "on detached duty" and were carried by the organization to which they belonged. He felt that they should be permanently assigned to the Medical Department and detailed as dental assistants. By then, Camp Hancock had 28 dental assistants—17 from the line and 11 from the Medical department—and was still short four. Crookston recommended that these soldiers be authorized and recognized as dental assistants, assigned to the Medical Department, and detailed as dental assistants; that way they would accompany the regimental detachment and would be quartered and carried on the rolls of the different sanitary detachments.<sup>147</sup> Furthermore, he recommended that the "question of Dental Assistants be taken up with the Adjutant General, and that a definite decision as to their status be established."<sup>148</sup>

Snyder, by then a major (he was promoted on October 6, 1917), went to France in May 1918 as the division dental surgeon. The division's May 1918 personnel return stated that it deployed with its full quota of medical officers, but only 18 of the authorized 31 dental officers.<sup>149</sup>

One of the last big division cantonments to be completed was Camp Frémont, Palo Alto, California, the training site of the Regular Army's Eighth Division, giving it the advantage of learning from the preceding year's activities around the country. Major Charles M Taylor, Dental Corps, arrived in April 1918 and began organizing dental support for the camp as other dentists trickled in throughout May. Each was assigned to a fully equipped dental infirmary located in the dispensary of each thousand-person unit. A few of the infirmaries were in tents, but most were in buildings. Unit members received complete dental inspections and treatment began based on the degree of urgency. Among the first 14,339 soldiers inspected (about half the division), there were 21,402, carious teeth and 6,053 extractions were necessary. Nearly 4,000 troops had more serious oral problems. Permanent division dental infirmaries were completed in June, allowing full dental service of any complexity, while a laboratory allowed any category of dentures to be produced. The division dentists met twice weekly for classes on military and medical subjects and enjoyed close working relations with their medical colleagues.<sup>150</sup>

In 1918 First Lieutenant EH Scheifer described the dental department at Camp Grant, Illinois, which was located in a two-story building. The second floor had 18 chairs and cabinets, electric engines, sterilizers, atomizers, two air compressors, and a rest area for officers of the day. The first floor consisted of the reception room, extraction rooms, X-ray room, the commanding officer's office, and an examining room. All the dental units were finished in white enamel. In addition,

## A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

there were eight or ten small clinics scattered throughout the camp, each with two or three dental outfits. About 70 dentists and an equal number of assistants were assigned to the camp. The majority of the assistants were dentists who were not commissioned. In October 1918 the clinics' 51 dental officers treated over 7,436 patients, inserted 9,084 permanent fillings, extracted 2,205 teeth, and performed 1,138 prophylaxes. Other work included root canal therapy, temporary fillings, and denture construction.<sup>151</sup>

In July 1918 the dental profession began a campaign to provide automobiles for to dental personnel at the various sprawling camps. Donated by private sources, these vehicles were eventually delivered to the dental services at Camps Upton, Greenleaf, Frémont, Sherman, and Merritt and allowed the dental officers to travel quickly to the various clinics on the bases. Previously, some dentists had to walk as far as 6 miles from one infirmary to another. The donations responded to a need first perceived during the Civil War by the Confederate Army, which found it expedient to provide official transportation for its hospital steward dentists to and from their assigned hospitals.<sup>152</sup>



*Interior of the dental building Love Field, Texas 1918.  
Photograph: Courtesy of the National Museum of Health and Medicine,  
Armed Forces Institute of Pathology. NCP 1338.*

## PREPARING THE DENTAL CORPS FOR FRANCE

### *Dental Assistants*

In 1918 the dental infirmary at Camp Sheridan in Montgomery, Alabama, was under the command of First Lieutenant William A Squires. By early 1918 dental facilities throughout the post were complete, and 21 dentists and 26 enlisted dental assistants were hard at work. A March 1918 news item in *American Dentist* described the dental work:

Each dental operator has his own assistant who sterilizes each instrument immediately after use. The position of operator or assistant is no sinecure, as the infirmary handles from 250 to 300 patients daily. The regular schedule is from 7:30 a.m. to 5 p.m., but at all hours of the night men are kept on duty to attend emergency cases. Attendance at clinics and quiz classes, held two nights a week, is compulsory. Work in the dental infirmary is continuous instruction in the theoretical as well as the practical side of dentistry.<sup>153</sup>

The dental assistants at Camp Sheridan clearly played an important role in the installation's dental program, but the source of the dental assistants was as uncertain as it had been since the first contract dental surgeons entered Army service in 1901. At first they were soldiers of the Hospital Corps. After the Medical Department's Enlisted Force replaced the Hospital Corps as a result of the National Defense Act of 1916, the dental assistants had at least some dental training or interest in the field. They were usually accounted for on a separate muster roll along with the itinerant dentist, but they were still Medical Department personnel assigned at the will of the surgeon general's office. Close working relationships often evolved between the dentists and their assistants, and they were frequently reassigned together. However, such assignments were not policy and many dentists had to repeatedly train neophytes as they made their circuits. In 1915, for example, First Lieutenant Seibert D Boak asked that his assistant of 6 years be reassigned with him for the fourth time since 1909 because "I have trained him to my own methods of operating and disposition of instruments, which enables me to handle more patients per day." Major Robert E Noble in the surgeon general's office responded that the surgeon general no longer viewed it as "a good plan to make such transfers . . . for administrative reasons he does not think it desirable to make assignments permanent." The Mexican Border expedition and then the World War caused an unprecedented demand for dental care that gained recognition for skilled dental assistants and acknowledged them as a separate and required enlisted specialty. The National Defense Act of 1916 prompted a need to clarify the pay rates for Medical Department enlisted soldiers. On November 18, 1916, the secretary of war directed that privates first class on duty as dental assistants would be considered the same as surgical assistants for pay purposes. This decision made the duty more attractive and stabilized an enlisted career track.<sup>154,155</sup>

### *African Americans and Fort Des Moines, Iowa*

On August 27, 1917, a special training camp was opened at Fort Des Moines, Iowa, for African American medical and dental officers. Before 1917 African American medical or dental officers did not exist, with the exception of a few isolated

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II



*Interior of the dental building at Love Field, Texas, 1918.  
Photograph: Courtesy of the National Museum of Health and Medicine,  
Armed Forces Institute of Pathology. NCP 1609.*

cases in African American National Guard units. Once African American combat divisions were approved for organization in the National Army, the need for medical and dental personnel became an urgent matter. There were already 1,200 African American enlistees in training at the reserve officers' training camp for service with the infantry. Thirty physicians from among this group were transferred at their request to the newly established medical training camp and commissioned in the medical section of the Officers' Reserve Corps. Soon there were 116 soldiers in training at the camp, including 12 dentists.<sup>156</sup>

Prior to the war, the surgeon general's office had not been receptive to the idea of African American commissioned medical personnel, claiming they could not itinerate in a segregated force and would be "social pariahs" because of their race and officer status.<sup>157</sup> During the war with Spain, Captain William T Jefferson, a black dentist from Chicago, had served as commander of D Company, Eighth Illinois Infantry, a segregated National Guard unit. In his spare time, he provided dental care to his and two other African American guard regiments, likely becoming the first African American to perform dentistry in the US Army.<sup>158-162</sup> He was among many black dentists who applied for an appointment in the new Dental Corps between 1901 and 1917 only to be rejected. Age or physical condition were often given as reasons for these rejections, while some applicants were turned down for lack of competence.<sup>161,163-166</sup> Once war was declared and the need for numbers of African



## PREPARING THE DENTAL CORPS FOR FRANCE

American medical officers could not be ignored, the surgeon general authorized their being commissioned in the inactive reserve to be called up as needed.<sup>167</sup>

It took most of July 1917 to develop a curriculum and prepare facilities before the first class began on August 27. The course lasted about 5 weeks and followed a mix of military and technical subjects. Dental officers took the same program as medical officers except for subjects wholly medical, for which dental topics were substituted. The *Journal of Allied Dental Societies* noted that the opening of the Des Moines camp marked “a new departure” in Army Medical Department policy toward “colored” medical personnel.<sup>156,168–170</sup> By June 1918 there were about 250 black medical and dental officers in the Officers’ Reserve Corps providing care to the roughly 157,000 African American soldiers in the Army and in the 92nd and 93rd Divisions, both of which were then in France.<sup>170,171</sup>

### *Dental Officer Training*

Training for all medical personnel gradually consolidated in the course of the war. By March 1918 there were 5,400 officers and enlisted soldiers, including dental personnel, in military medical training at the medical officers’ training camp at Camp Greenleaf, Fort Oglethorpe, Georgia, and 3,800 at Fort Riley, Kansas. The



*Dentists of the 92nd Division in the field at Millery,  
Meurthe et Moselle, Lorraine, France. November 15, 1918.  
Photograph: Courtesy of US Army Military History Institute. SC 44005.*

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

Fort Riley camp had a capacity for 7,000 and Fort Oglethorpe for 5,500 medical personnel. Oglethorpe eventually grew to the same size as Fort Riley and became the single center for training and Fort Riley was phased out. Between June 1917 and March 1918, a total of about 9,000 officers and 20,000 enlisted soldiers graduated from the medical training camps or were still under instruction. The medical training camps at Fort Benjamin Harrison, Indiana, and at Fort Des Moines, Iowa, for African American soldiers were phased out first.<sup>172</sup>

Additional facilities were added at Camp Greenleaf, under the command of Brigadier General Henry P Birmingham, Medical Corps, National Army, to accommodate a 2-month course for dental personnel; one month was to be devoted to military training and one to professional training. Each class could include up to 165 officers and the same number of enlisted dental assistants, who were frequently selected from drafted dental college students. All recently appointed Regular Dental Corps officers and enough DRC officers to fill the class were ordered to take the course. On March 15, 1918, the first class of dental officers (50 Regular Army and 35 Reserve Corps) began their 2 months of instruction at Fort Oglethorpe. Lieutenant Colonel John H Snapp was the senior dental instructor, assisted by Majors Ben H Sherrard and E Henry Valentine, Dental Corps, and Major John D Eby, DRC. The staff already at the camp conducted the military instruction.<sup>173-175</sup>

During the first month of training, approximately 180 hours were devoted to general military subjects. The second month consisted of only 71 hours of military and 100 hours of dental subjects. The plan was to start a new class of about 85 dental officers each month. In March 1918 there were about 1,500 officers and 9,000 enlisted soldiers in camp from the various branches of the Medical Department: Dental Corps, Medical Corps, Sanitary Corps, and Veterinary Corps.<sup>174</sup>

### *Problems for Enlisted Dentists*

Approximately 800 graduate dentists serving as enlisted soldiers passed through the medical officers' training camp at Camp Greenleaf during the war. The War Department called up more of them than could be accommodated or trained effectively. The enlistees were housed in converted mule stables and subjected to endless drill and fatigue duties as the school struggled to expand to train them properly. Dental Company No. 1, the dentists' training unit, fielded an undefeated football team as one of its few accomplishments. Most of the enlisted dentists were unable to use their skills, except for a fortunate few later selected for assignment as dental assistants in other camps.<sup>173,174,176-178</sup> In September 1918, when two dental officers were authorized per thousand troops, arrangements were made to examine those eligible for commissions in the DRC. But before the examinations could be held, the armistice was signed and the secretary of war ruled the commissions could not be issued. It was a bitter disappointment for the dentists involved who had understood that they would be commissioned even after the armistice was a reality.<sup>179</sup>

One of those victims of this "tragedy of Camp Greenleaf" was Dr Walter Dean Gearen of Racine, Wisconsin. He was a senior dental student at Marquette University who had enlisted in the Army so that he could continue his dental

## PREPARING THE DENTAL CORPS FOR FRANCE

studies without interference from the draft. He graduated in 1918 with a DDS degree, took the Wisconsin dental boards and was licensed, and about 15 days later received his orders for active duty. He was assigned to Dental Company No. 1 at Fort Oglethorpe. In about 5 months, the company strength grew to some 450 enlisted soldiers, dental graduates from all over the country. "All Buck Privates," Gearen wrote, with a "scattering of one or two stripers, men who had some training in the this and that and knew a few of the tricks" of the military. Gearen described the training:

Twice a day, five days a week, it was "fours right, left and Halt!" Saturdays was reserved for reviews . . . and inspections! Sundays was day off unless you had duties. The DDS's cooked, scrubbed, drilled, did guard duty . . . with latrine specialties, chased dogs off the streets, kitchen duties, office duty, shined the major's boots, this being considered a top assignment. If it was done in camp, it was done by dentists. But note that NOTHING was done about the SCHOOL of O[ral] & P[lastic] SURGERY . . . not one DAM thing! But By Gad we had the snappiest group in Parade daily that ever layed the dust of a drill field. FULL company in review daily at 5 PM.<sup>180,181</sup>

Some of the enlisted dentists got to serve as assistants for the commissioned dental officers in the dental clinic, a small "barracks-type building, located on the Dixie Highway, which ran right thru our area." It was equipped with three chairs (of an older make) and had no electricity, only foot engines. However, Gearen was never assigned to the clinic. He said, "I never touched a single dental instrument . . . or a tooth or layed my hands on a patient."<sup>181,182</sup>

In 1918 the Army had enough dentists for the AEF overseas. Therefore, it inducted all the 1918 dental graduates as privates and deferred commissioning them. If the war had continued and more troops were needed overseas, the Army planned to draw from this trained pool. Meanwhile, graduate dentists like Dr Gearen were kept in a holding pattern until the war was over.

Finally, in September 1918, Gearen was invited to take the examination for a commission in the DRC to fill vacancies created by the expansion of the Dental Corps and in military hospitals. He passed the examination and was notified in October 1918 that he would be receiving his commission as a first lieutenant. Yet, he did not get his commission until October 22, 1922. Though disappointed, Gearen went on to serve in World War II, spending over 2 years in New Guinea, and the Korean War, where he remained stateside. He eventually retired as a lieutenant colonel.<sup>17,180</sup>

### *Students' Army Training Corps, 1918*

Congress created the Students' Army Training Corps on August 24, 1918, to provide personnel management and training of deferred students while they remained on campus.<sup>183</sup> In September 1918 all dental schools designated as "well recognized" by the surgeon general were allowed to apply for the establishment of a Students' Army Training Corps unit for their school. Students between 18 and 21 years old were eligible to enroll until the schools' prescribed quota was full. Each school was to be assigned a military director. The students' tuition would be paid

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

by the government and they would be furnished uniforms and quarters as well as paid \$30 a month. They would receive at least 6 hours of military drill a week and would be examined in military and professional subjects every 3 months. Those who failed would be sent to military camps for general duty. While in training, they would be subject to military law and discipline. The Army would furnish cots, blankets, and rifles for the program. The voluntary inductions into the Students' Army Training Corps were expected to start around October 1, and students had to pay their own expenses until then. By July 1, 1919, these students were providing some of the 9,200 dental officers needed for the planned Army of 4,500,000.<sup>184-186</sup>

After the armistice of November 11, 1918, the Students' Army Training Corps was demobilized without warning and began discharging its students the week of December 1, 1918. All discharges were completed by December 21. The abrupt ending to the Students' Army Training Corps program provoked an immediate response from the college administrators. The colleges had made up their 1919 budgets on the basis that the government had promised to pay fair compensation for the additional services they were to provide. Some thought that this reflected "bad faith" on the part of the military and that the colleges should be reimbursed for their efforts on the government's behalf. Others thought the program should be continued as part of universal military training.<sup>187,188</sup>

On December 6, 1918, the surgeon general announced that the dental graduates who were serving in the Army as privates could be commissioned as first lieutenants on the inactive list of the Reserve Corps prior to their discharge, provided their applications were started before November 11, 1918. They would be subject to recall for 5 years.<sup>186,189</sup>

A number of aspiring young dentists who were members of the Students' Army Training Corps eventually became Dental Corps officers after completing their postwar dental school educations. One such officer was James M Epperly (1900-1973), who served in the Students' Army Training Corps as a private from October 1 until the termination of the program on December 16, 1918. After the war, he continued his dental training at Saint Louis University School of Dentistry, joined the Reserve Officers' Training Corps program, and received his DDS. He was commissioned a first lieutenant on June 1, 1923, and entered active duty at Fitzsimons Army Hospital in Aurora, Colorado, on May 8, 1924. Capping his long career in the Dental Corps, Major General Epperly served as the assistant surgeon general (dental) and chief of the Dental Corps from December 1956 until July 1960.<sup>190,191</sup>

### *Dental Support to the Air Service*

New technology generated an unusual departure from the Medical Department's normal policy of centralization. Medical personnel were attached to the aviation section of the Signal Corps because the War Department recognized the necessity of "giving efficient medical service to this rapidly developing new military arm." Aviation schools and installations were exempt from the local department commanders' oversight on the premise that the "administration of the

## PREPARING THE DENTAL CORPS FOR FRANCE

Aviation Section could best be accomplished by [its own] centralized control." The funds appropriated by Congress for the construction of flying schools included provisions for small hospitals of 40 or more beds at each installation. These hospitals were constructed "as part of the Aviation Section program and not as a part of the Medical Department program under the Surgeon General."<sup>192</sup>

Surgeon General William C Gorgas "appreciated that a rapidly developing aviation service could be more efficiently provided with medical service if a special medical service were assigned to this particular duty." Accordingly, he supported the designation of Lieutenant Colonel Theodore C Lyster (1875–1933), Medical Corps, as chief surgeon, aviation section, Signal Corps, US Army.<sup>193</sup> In October 1917 Gorgas further recommended that "in the interest of good administration" all Medical Department matters pertaining to the aviation section should be "under the immediate supervision" of Lyster who, in turn, was under the direct control of the commanding general, Air Division of the Aviation Section, Signal Corps.<sup>192</sup>

On May 20, 1918, President Wilson issued a proclamation establishing the Department of Military Aeronautics. Office Memorandum No. 1, Department of Military Aeronautics, dated May 21, 1918, established a medical division (or section) of the air service to "handle all matters pertaining to the administration of personnel, equipment, supplies, and all other matters affecting the Medical Department, which relate to the development, maintenance, organization, and operation of aeronautical personnel." Paragraph 2 of the memorandum established the medical branch as "a part of the Executive Section of the organization of the Department of Military Aeronautics," which included hospitals, medical research, medical personnel, care of pilots, and reports and returns.<sup>192</sup> Shortly thereafter, on May 27, 1918, dental officers First Lieutenant James F Dean (Mather Field, Sacramento, California); Captain Ralph Burkhart, (Eberts Field, Lonoke, Arkansas); First Lieutenant William Sankey, (Aviation Repair Depot, Dallas, Texas); and Captain George F Brand (Scott Field, Belleville, Illinois) were ordered for temporary duty to the places indicated.<sup>194</sup>

Captain Burkhart was sent to Eberts Field in response to the June 1918 complaints of its commander, Major Patrick Frissell, to the commanding general of the Southeast Department. He had to send his troops to the Base Hospital, Fort Logan H Roots, Arkansas, for dental X-ray work because his post had neither a dentist nor an X-ray machine. He had previously requested a dentist and sent in a requisition for an X-ray for his station without success. Because Fort Roots was about 30 miles away, his ambulance was gone an entire day and he had only two other ambulances, both of which had to remain at the flying field.<sup>195</sup>

When Captain Burkhart reported for duty, the post surgeon requested that everyone in the command go to the dental surgeon's office for "preliminary dental examination," at the rate of 100 patients per day, daily except Sunday, until the oral examinations were completed.<sup>196</sup> Such comprehensive screening showed that the dental situation at some of the aviation fields was so bad it inspired a search in October 1918 to locate any enlisted aviation section members who were graduate dentists and could help with the backlog of work.<sup>197,198</sup>

During crash landings, soldiers' faces were particularly prone to injury because of the flimsy construction of the wooden, fabric-covered aircraft. Because of frequent

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

jaw injuries to flying personnel, it was decided in 1918 that study models be made of pilots' jaws to quickly fabricate intraoral splints in case of jaw fracture. Lieutenant William A Squires (1887–?), Dental Corps, said that eight out of every ten aviators that crashed and were not killed had their maxillae and perhaps their mandible fractured. He recommended taking good impressions and pouring them up in stone or metal with the aviator's name written on them. When the pilot made a change of station, he could take the models with him. Removable prosthetic appliances and fixed bridgework were regarded as "potential hazards" in the mouths of aviators because they could be "broken and/or loosened and forced into the soft tissue of the mouth, pharynx or trachea during rough flying or crash landings." It was recommended that extensive fixed bridgework should not be made for aviators and that removable appliances be "pocketed during flight."<sup>199,200</sup> Even in the 1930s, the Army took a dim view on unilateral partial dentures. Two deaths in the enlisted ranks by swallowing such a device were reported in the dental literature.<sup>201</sup>

From 1917 to February 1919, the medical section of the air service supervised 61 independent stations, with a total strength in 1919 in the United States of 41,000, and 45 hospitals with a bed capacity of 3,670. The air service of the surgeon general's office was discontinued effective March 14, 1919, and its functions, including the supervision of the commissioned and enlisted personnel of the Medical Department on duty with the air service, were transferred to the chief surgeon of the air service.<sup>192</sup>

### *The Dental Corps' Growing Strength*

The Dental Corps expanded enormously during World War I to satisfy the demands of the vastly expanded US Army that grew to nearly 4,200,000 soldiers by November 1918. At first, however, that growth had been sluggish. At the end of July 1917, the Dental Corps numbered 933 dental officers on active duty—86 in the Regular Army, 249 in the National Guard, and 598 first lieutenants of the DRC. By June 30, 1918, the Dental Corps had ballooned to 5,837 officers—212 in the Regular Army, 253 in the National Guard, and 5,372 in the DRC (2,493 on active duty and 2,879 on inactive status), including 36 majors, 244 captains, and 5,092 first lieutenants. On November 30, 1918, the total number of commissioned officers in the Army Dental Corps reached 6,284, of which 4,620 (229 regular Army, 253 National Guard, and 4,138 DRC) officers were on active duty—the greatest number of dental officers actually on active duty at any one time during the wartime period. Of the 4,620 officers, 1,779 of were then in Europe (1,765 in the AEF). According to Oliver, the maximum number of dental officers who served in Europe during the war was 1,873 in November 1918, which included 1,861 Army Dental Corps and 12 US Navy Dental Corps officers assigned to support the US Marine Corps personnel in the Fifth and Sixth Marine Regiments of the Second Division. However, personnel reports from the AEF chief surgeon's office indicate that the highest number of Dental Corps officers in the AEF was 1,819, and that number was reached on January 11, 1919. The three tables below summarize the growth of the Dental Corps in commissioned officers in service by component and by rank as well as the growth of the DRC from April 1917 to November 30, 1918 (Table 12-2, Table 12-3, and Table 12-4).<sup>10,17,35,202–204</sup>

## PREPARING THE DENTAL CORPS FOR FRANCE

**TABLE 12-2**

**COMMISSIONED DENTAL CORPS OFFICERS IN SERVICE BY COMPONENT, APRIL 1917 TO NOVEMBER 1918**

	April 1917	July 1, 1918	November 30, 1918
Regular Army	86	211	229
National Guard	0	253	253
Dental Reserve Corps (DRC)	0	2,493	4,138
Total Temporary (National Guard and DRC)	0	2,746	4,391
<b>Total in Service</b>	<b>86</b>	<b>2,957</b>	<b>4,620</b>

Data sources: (1) Office of the Surgeon General. *Annual Report of the Surgeon General*. Vol. 2. Washington, DC: OTSG; 1919: 1111. (2) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1918: 391.

On August 7, 1918, War Department General Order Number 73 consolidated the Regular Dental Corps, National Army and National Guard Dental Corps, and the DRC into the Dental Corps, US Army. The War Department order stated:

This country has but one army: The United States Army. It includes all the land forces in the service of the United States. Those forces however raised, lose their identity in that of The United States Army. Distinctive appellations, such as the Regular Army, Reserve Corps, National Guard, and national Army, heretofore employed in administration and command, will be discontinued, and the single term, The United States Army, will be exclusively used.<sup>205</sup>

**TABLE 12-3**

**COMMISSIONED DENTAL CORPS OFFICERS IN SERVICE BY RANK, APRIL 1917 TO NOVEMBER 1918**

	April 1917	July 1, 1918	November 30, 1918
Colonel	0	12	9
Lieutenant Colonel	0	19	17
Major	0	80	102
Captain	21	222	368
First Lieutenant	65	2,624	4,124
<b>Total</b>	<b>86</b>	<b>2,957</b>	<b>4,620</b>

Data source: Office of the Surgeon General. *Annual Report of the Surgeon General*. Vol. 2. Washington, DC: OTSG; 1919: 1115.

TABLE 12-4  
GROWTH OF COMMISSIONED OFFICER STRENGTH IN  
THE DENTAL RESERVE CORPS, APRIL 1917 TO JUNE 1918

Date	Commissioned Officers
April 1917	0
July 31, 1917	598
October 31, 1917	3,452
December 31, 1917	4,749
April 30, 1918	5,221
June 30, 1918	5,372

Data source: Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1918: 391.

With the increase in the draft age to 45 in August 1918 (a result of projected personnel requirements for 1919 and 1920), some practicing dentists who had not already secured commissions in the now closed DRC faced the possibility of being drafted into the Army as privates, while many recent graduates held commissions. These dentists had not applied for commissions in the previous years, and now nearly 6,000 others were ahead of them in line. As of September 3, 1918, 5,981 dentists held active and inactive commissions, of which some 3,500 were already on duty, although all dentists serving in the Army were now known as members of the “Dental Corps, US Army” and no longer broken down by Regular Army, DRC, and National Guard. However, if the war continued, by July 1, 1919, the Army would need at least 3,000 more dentists for a total of more than 9,000 dental officers. First call for these openings would be given to the dentists already in the service serving as privates in the various camps and overseas units. After this group, commissions would be granted to civilian candidates successful in passing the examination for appointment as vacancies occurred (according to Army strength). If there was a surplus of dental officers, the enlisted dentists would be assigned as “dental mechanics [technicians]” to the camps and hospitals to help clear up the backlog of partial dentures.<sup>39,140,184,206</sup> Some members of the dental profession thought it was ridiculous to have experienced dentists serving as privates while “inexperienced, newly graduated” dentists were “wearing the officer’s uniform.” Others were of the opinion that the recent graduates could put the “older practitioners to shame” because of their special training in war surgery and fracture work.<sup>207,208</sup>

In his planning for the 80-division Army of 1919 and the 100 divisions of 1920, Colonel Logan developed new requirements for Dental Corps officers and assistants to be filled by July 1, 1919, which the surgeon general recommended to the general staff on August 22, 1918. Logan noted that to date, experience indicated that a minimum of one dental officer was required per 500 draftees in training in the United States because such a short time was available to prepare them for service overseas. The newly increased draft age of 45 would increase the number of



TABLE 12-5

INCREASE IN DENTAL CORPS OFFICER AUTHORIZATIONS FOR THE EXISTING EMERGENCY (SEPTEMBER 28, 1918)

	Current Authorization	Increase	Total
98 divisions	1,395	1,643	3,038
Corps troops, American expeditionary forces	10	246	256
Army troops, American expeditionary forces	75	665	740
Lines of communication, services of supply	410	1,155	1,565
Required in US	1,308	2,299	3,607
Camps & cantonments	789	1,743	2,532
Military hospitals	98	451	549
Others	421	105	526
<b>Total</b>	<b>3,198</b>	<b>6,008</b>	<b>9,206</b>

Data source: National Archives and Records Administration. Decimal File 382, Dental Corps. Record Group 165. Memorandum for the chief of staff, Brigadier General Lytle Brown, director, War Plans Division, 8 September 1918, and memorandum for the adjutant general, General Peyton C March, chief of staff, 28 September 1918. No. 8954-20. Box 48. Entry 8.

those needing dental care, which was now running at 90%. Logan also added dentists and assistants for all Army and corps units, which the war plans division had specifically ruled out in April. The general staff reviewed the request and on September 8, recommended that for the duration of the existing emergency, the Dental Corps should be increased by 6,008 officers and 6,355 enlisted to a total authorized strength of 9,206 officers and 9,648 enlisted on active duty (Table 12-5).<sup>209-211</sup>

Once again, Logan was the catalyst for another vast expansion of the Army Dental Corps, which was achieved on September 28, 1918, when the chief of staff, General Peyton C March, approved the new authorizations. The ratio of one dentist per thousand enlisted strength was changed to one dentist per 500 enlisted soldiers, or two per thousand enlisted soldiers, as Kirk and then Logan had proposed in 1917. Camps and cantonments were increased by 1,743 dental officers from 789 to 2,532 because the majority of the dental work would be completed in their dental infirmaries. Each of 183 military hospitals in the United States was authorized three dental surgeons per thousand patients and increased from 98 to 549. While authorizing the adjutant general to make these changes, March also specifically restated the existing policy that "the recommendation therein is approved except that Dental personnel will not be assigned to any organization, but attached in order to leave the Commanding General, A.E.F. free to use such personnel where he considers for the best interest of the service."<sup>212</sup>

Speaking in Syracuse, New York, in May 1919, Logan explained how this change came about:

## A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

As most of you recall, efforts had been made since dentists sought entrance as officers in the United States Army, to have the quota of two per thousand authorized by law, but without avail, and here we find by authorization of the General Staff the granting of that which we had all sought so long. Why was it possible at that time to secure authorization for assigning two officers per thousand? It was because our civilian dentists banded themselves together to assist in making the selective service man dentally fit through the activity of that splendid patriotic organization the Preparedness League of American Dentists previous to his induction into military service; and because dentistry in posts, training camps and hospitals in this country, the base and evacuating hospitals, field service and far forward in the line had been tried and not found wanting, and the service of the dental officers had been proved worthy of every consideration. Therefore, the request for the authorization for doubling the quota was approved.<sup>8(pp217-218)</sup>

Because the number of commissioned dental officers was insufficient to cover the increased requirements, examinations were reopened on October 3, with the first opportunity for examination going to those graduate dentists already in the Army. The secretary of war stopped this process on November 9, when the impending armistice obviated the requirement for more dental officers. Only 10 new dentists were commissioned and ordered to duty out of the 800 to 900 applicants already acted on by the surgeon general. However, Colonel Logan intervened and convinced the War Department to give the successful applicants an opportunity to accept commissions in the DRC upon their separation from service.<sup>48,182</sup>

### *On To France*

In less than 2 years, from April 6, 1917 to November 11, 1918, the US Army had expanded from a middling-sized total regular force of 133,000 to more than 4,200,000, equipped, trained, and flowing in large numbers (2,000,000) to France to fill the ranks of the American Expeditionary Forces under General John J Pershing. During the same period, the Medical Department expanded the Dental Corps from just 86 Regular Army dentists to a force of 4,620 dental officers on active duty in the United States and Europe and had received War Department approval for a dental corps numbering 9,206 officers and 9,648 enlisted soldiers for the even larger forces planned in 1919 and 1920. Orally and dentally, this Army was the fittest yet fielded by the United States because of the ceaseless efforts of the members of the Dental Corps—Regular Army, DRC, and National Guard. Drawing on French and British experience, oral surgeons had been carefully trained to handle the worst imaginable maxillofacial casualties in evacuation and base hospitals near the front. Dentists were in place and equipped throughout the divisions if not in the official tables of organization, and in their field hospitals and all along the chain of evacuation were ready to care for the American “doughboys” when and where needed. The preparations in the United States had readied the Medical Department and Dental Corps for the struggle to save soldiers’ lives from the frontlines to the hospitals in the rear.

## References

1. Ferrell RH. *Woodrow Wilson and World War I, 1917–1921*. New York, NY: Harper and Row; 1985.
2. Kreidberg MA, Henry MG. *History of Military Mobilization in the United States Army, 1775–1945*. Washington, DC: Department of the Army; 1955.
3. Rhoades RH. The dental service of the Army of the United States. *J Am Dent Assoc*. 1928;15:264.
4. Office of the Surgeon General. *Annual Report of the Surgeon General, 1917*. Washington, DC: Government Printing Office; 1917: 293.
5. War Department. *Tables of Organization (Based on Field Service Regulations, 1914), United States Army, 1914*. Washington, DC: Government Printing Office; 1914.
6. War Department. *Manual for the Medical Department, United States Army, 1916*. Washington, DC: Government Printing Office; 1916.
7. Gillett MC. *The Army Medical Department, 1775–1818*. Vol 3. Washington, DC: Center of Military History, United States Army; 1981: 377–415.
8. Logan WHG. Dental service in the United States Army during the world war. *Dental Cosmos*. 1920;62:216–220.
9. Wilson JB. *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*. Washington, DC: US Army Center of Military History; 1998: 32–34.
10. Oliver RT. History of the dental service, AEF. In: Activities of the chief surgeon's office. In: *Reports of the Commander-in-Chief, Staff Sections and Services, in United States Army in the World War 1917–1919*. Vol 15. Washington, DC: US Army Center of Military History; 1991: 411.
11. Ford JH, ed. The dental section. In: *Administration American Expeditionary Forces, in the Medical Department of the United States Army in the World War*. Vol 2. Washington, DC: Government Printing Office; 1927: 116–117.
12. Brun BL. Oral surgery in the Army. *Dental Cosmos*. 1920;62:640.
13. Persons EE. Field service regulations, United States Army, 1914 and organization tables, United States Army, 1914. *Military Surgeon*. 1914;34:401–410.
14. Miller RB. The new manual for the medical department. *Military Surgeon*. 1916;38:300–319.
15. Oliver RT. Army Dental Corps. *Bulletin of the Association of Military Dental Surgeons of the United States*. 1917;1:3. Reprinted as: The Army Dental Corps of the U.S.A. *Br Dent J*. 1917;38:651–653.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

16. Tables of organization for World War I infantry divisions of 1917–1918, Infantry division (combat). *American Expeditionary Forces: Divisions, in Order of Battle of the United States Land Forces in the World War*. Vol 3. Washington, DC: US Army Center of Military History; 1988: 446–447.
17. Office of the Surgeon General. *Annual Report of the Surgeon General, 1919*. Vol 2. Washington, DC: Government Printing Office; 1919.
18. Wolfe EP. Finance and Supply. In: *The United States Army Medical Department in the World War*. Vol 3. Washington, DC: US Government Printing Office; 1928.
19. Pershing JJ. *My Experiences in the World War*. Vol 1. New York, NY: Frederick A Stokes Company; 1931: 100–102.
20. *Zone of the Interior: Organization and Activities of the War Department, in Order of Battle of the United States Land Force in the World War, Part 1*. Vol 3. Washington, DC: US Army Center of Military History, 1988.
21. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 165. Memorandum for the chief of staff, Colonel DW Ketcham, assistant director, War Plans Division, general staff, 19 February 1918. No. 8954-8. Box 377. Entry 296.
22. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 165. Memorandum for the adjutant general, Brigadier General William S Graves, assistant to the chief of staff, 21 February 1918. No. 8954-8. Box 377. Entry 296.
23. National Archives and Records Administration. Dental Corps (decimal file 382). Record Group 165. Memorandum for the adjutant general, General Peyton C March, chief of staff, 28 September 1918. No. 8954-20. Box 48. Entry 8.
24. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 112. Memorandum for the chief of staff, Colonel D.W. Ketcham, assistant director, War Plans Division, general staff, 22 March 1918. No. 8954-10. Box 377. Entry 296.
25. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 112. Memorandum for the adjutant general, Graves, assistant to the chief of staff, 26 March 1918. Report No. 8954-10. Box 377. Entry 296.
26. National Archives and Records Administration. Record Group 112. Notes: AEF program for Medical Corps. Decimal File 320.2-1 (AEF). Box 5. Entry 31.
27. General Orders No. 99, General Headquarters, AEF, 19 June 1918. In: *General Orders, GHQ, AEF, in United States Army in the World War 1917–1919*. Vol 16. Washington, DC: US Army Center of Military History; 1992: 351.

## PREPARING THE DENTAL CORPS FOR FRANCE

28. Additional Dentists for Divisions. *Army and Navy Register*. Quoted in: *Dental Cosmos*. 1918;60: 460.
29. Biographical File on Colonel Robert T. Oliver. Available at: Research Collections, OTSG/MEDCOM, Falls Church, Virginia.
30. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 112. Memorandum for the chief of staff, Colonel D.W. Ketcham, acting director, War Plans Division, 18 April 1918. No. 8954-13.
31. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 112. Memorandum for the adjutant general, Colonel D.W. Ketcham, acting director, War Plans Division, 20 April 1918. No. 8954-13.
32. National Archives and Records Administration. Dental Corps (decimal file 382). Record Group 165. Memorandum for the chief of staff, Brigadier General Lytle Brown, director, War Plans Division, 10 May 1918. No. 8954-14.
33. National Archives and Records Administration. Dental Corps (decimal file 382). Record Group 165. Memorandum for Adjutant General Brown, 10 May 1918. No. 8954-14.
34. National Archives and Records Administration. Dental Corps (decimal file 382, War Plans Division report no. 8954-18). Record Group 165. Memorandum for the adjutant general, Brigadier General Lytle Brown, director, War Plans Division, 26 July 1918.
35. Clark CC. Great patriotic public sessions are big feature of twenty-second annual convention National Dental Association at Chicago. *American Dentist*. 1918;7:1.
36. [Kirk EC]. Committee on dentistry, general medical board of Council of National Defense. *J Natl Dent Assoc*. 1917;4:640–643.
37. Meeting of dental educators. *J Natl Dent Assoc*. 1917;4:642–656.
38. Allen CC. Meeting of deans and educators. *J Natl Dent Assoc*. 1917;4:657.
39. [Kirk EC]. Expansion of the Army Dental Corps. *Dental Cosmos*. 1918;60:935–936.
40. [King OU?]. Ten thousand dentists to be commissioned and assigned before July 1, 1919. *J Natl Dent Assoc*. 1918;5:1085.
41. Logan WHG. The dental profession's contribution in the present war emergency. *J Natl Dent Assoc*. 1918;5:239.
42. William Hoffman Gardiner Logan 1872–1943. *Dental Bulletin Supplement to the Army Medical Bulletin*. 1943;14:90–91.
43. Examination of dentists for the U.S. Army. *Dental Cosmos*. 1917;59:584.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

44. Oliver RT. Letter from Captain Robert T. Oliver. *J Natl Dent Assoc.* 1917;4:786.
45. The Dental Reserve Corps. *Dental Summary.* 1917;37:385.
46. [Ottolengui R]. The man of the hour. *Dent Items Interest.* 1918;40:307–308.
47. US Army, Dental Activity (DENTAC), Fort Belvoir, Va. Dedication ceremonies Logan Army Dental Clinic to memorialize Col. William H.G. Logan. Fort Belvoir, Va: Dental Activity; 1970.
48. Logan WH. The development of the dental service of the United States Army in this country from April 8, 1917 to Feb. 12, 1919. *J Am Dent Assoc.* 1933;20:1952–1953.
49. Logan WH. Development of the dental service during the present war. *J Natl Dent Assoc.* 1918;5:996–999.
50. Kirk EC. Committee on dentistry, general medical board of the Council of National Defense, report no. 3, 13 May 1917. *J Natl Dent Assoc.* 1917;4:653–655.
51. Lynch C, Weed F, McAfee L. The surgeon general's office. In: *The Medical Department of the United States Army in the World War.* Vol 1. Washington, DC: Government Printing Office; 1923.
52. US War Department. Special orders no. 184, 9 August 1917. In: *Special Orders 1917.* Washington, DC: Adjutant General's Office; 1917: 5.
53. Logan WH. Report of committee on dentistry, general medical board, Council of National Defense, 9 September 1917. *J Natl Dent Assoc.* 1917;4:1135–37.
54. Office of the Surgeon General. *Annual Report of the Surgeon General, 1918.* Washington, DC: Government Printing Office; 1918: 391.
55. Logan WH. Report of committee on dentistry, general medical board, Council of National Defense, 18 November 1917. *J Natl Dent Assoc.* 1918;5:78–79.
56. National Archives and Records Administration. Record Group 165. Major General John Biddle, acting chief of staff, to the adjutant general, 3 November 1917. Report no. 12574. Box 131. Entry 5.
57. National Archives and Records Administration. Record Group 165. Memorandum for the chief of staff, Colonel PD Lochridge, acting chief, War College Division, 27 November 1917. Report no. 12574. Box 131. Entry 5.
58. Martin FH. *The Joy of Living: an Autobiography.* Vol 2. Garden City, NY: Doubleday, Doran & Company, Inc; 1933: 255.
59. [Bethel LP]. Congress gives dentistry the same recognition as medicine. *Dental Summary.* 1917;37:855–856.
60. [Johnson CN]. A red letter day for dentistry. *Dent Rev.* 1917;31:1008–1010.

## PREPARING THE DENTAL CORPS FOR FRANCE

61. Ryan EPR. President's address, Association of Military [dental] Surgeons of the United States. *J Assoc Milit Surg US*. 1919;3:164–165.
62. Biographical file on William HG Logan. Research Collections, OTSG/MEDCOM, Falls Church, Va.
63. [Bethel LP]. Anent Army and Navy dental surgeons. *Dental Summary*. 1917;37:162.
64. National Archives and Records Administration. Record Group 165. Memorandum for the chief of staff, Brigadier General Joseph E Kuhn, general staff, 1 June 1917. Report no. 13349. Box 140. Entry 5.
65. National Archives and Records Administration. Record Group 165. Memorandum for the adjutant general, Major General Tasker H Bliss, acting chief of staff, 2 June 1917. Report no. 13349. Box 140. Entry 5.
66. Craig EJ. The Army and the dentist. *West Dent J*. 1917;31:33.
67. [Ottolengui R]. Legislation in regard to the Army Dental Corps. *Dent Items Interest*. 1917;39:470.
68. Brown HC. New and proposed legislation affecting the Navy and Army Dental Corps. *J Natl Dent Assoc*. 1917;4:386.
69. [Kirk EC]. Our golden opportunity. *Dental Cosmos*. 1917;59:658.
70. *Congressional Record, 65th Cong, 1st Sess*. Vol 55. Washington, DC: Government Printing Office; 1917.
71. US Congress. House. *To Amend Section 10, National Defense Act*. 65th Cong, 1st sess, 1917, H Rept 84.
72. US Congress. Senate. *Promotion of First Lieutenants in the Medical Corps*. 65th Cong, 1st sess, 1917, S Rept 131.
73. Oliver RT. *Transactions of the Dental Society of the State of New York, 53rd Annual Meeting*. 1921:13.
74. Army promotions. *Dent Dig*. 1918;24:165–166.
75. Biographical Files on Oliver, Bernheim, Rhoades, Stone, Laflamme, Mills, Fairbank, Snyder, and Smith. Research Collections, OTSG/MEDCOM, Falls Church, Va.
76. Biographical File on Walter D Love. Research Collections, OTSG/MEDCOM, Falls Church, Va.
77. Black AD, Morgan HW, Friesell HE, Logan WHG, Castro FM. Why drafted dental students should be permitted to finish their courses. *Dental Summary*. 1917;37:773–776.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

78. [Ottolengui R]. Unjust discrimination against dental students by the War Department. *Dent Items Interest*. 1917;39:780.
79. National Archives and Records Administration. Record Group 165. Representative Osborne to Secretary of War Baker, 4 August 1917, endorsement, judge advocate general to chief of staff, 10 August 1917, Secretary of War Baker to Representative Osborne, 14 August 1917. Letters. Report no. 13709. Box 145. Entry 5.
80. National Archives and Records Administration. Record Group 165. Colonel PD Lochridge, general staff, to chief of staff, 14 November 1917. Memo. Report no. 13709. Box 145. Entry 5.
81. Barrett L, comp. Our Army and Navy [Army Dental Corps]. *J Allied Dent Soc*. 1917;12:522.
82. Dentists in the Army. *International Journal of Orthodontia*. Quoted in: *Dent Dig*. 1917;23:609.
83. The value of the orthodontist in military service. *Dent Dig*. 1917;23:506.
84. The profession and war. *Dental Register*. 1917;71: 253–255.
85. Wheeler HL. The relation of the surgeon and the dentist in face and jaw injuries. *Dental Cosmos*. 1918;60:224.
86. [Blair JP]. Oral and dental surgeons for the Army. *Dent Reg*. 1917;71:494.
87. Barrett L, comp. Our Army and Navy [United States Dental School in Philadelphia]. *J Allied Dent Soc*. 1917;12:516.
88. Iowa dentists organize course in war oral surgery. *American Dentist*. 1917;5:12.
89. Jones ET, ed. *Dictionary of American Biography, Supplement 3, 1941–1945*. New York, NY: Charles Scribner's Sons; 1973: 200–2003.
90. The base hospital unit. *JAMA*. Quoted in: *Dent Dig*. 1917;23:534–535.
91. [Kirk EC]. Preparedness—mobilization—efficiency. *Dental Cosmos*. 1917;59:557.
92. Development of Red Cross Medical Department units. In: *The Surgeon General's Office, the Medical Department of the United States Army in the World War*. Vol 1. Washington, DC: Government Printing Office; 1923.
93. Ellis WH. Dental surgery in the Red Cross base hospitals. *Oral Hyg*. 1917;7:755.
94. US War Department. *Regulations Governing the Employment of the American Red Cross in Time of War*. Washington, DC: Government Printing Office; 1917: 7.



## PREPARING THE DENTAL CORPS FOR FRANCE

95. National Archives and Records Administration. Record Group 112. Colonel John L Phillips, commanding officer, Walter Reed General Hospital, to surgeon general, 13 July 1914, and first endorsement, Colonel Charles M Gandy, surgeon general's office, to commanding officer, Walter Reed General Hospital, 31 July 1914. Letter. No. 149731. Box 1070. Entry 26.
96. Weed FW. Military hospitals in the United States. In: *The Medical Department of the United States Army in the World War*. Vol 5. Washington, DC: Government Printing Office; 1923: 118–126.
97. *A History of the United States Army Base Hospital No. 36 (Detroit College of Medicine and Surgery Unit)*. NP; 1919 : 68–70.
98. Kinney D. American women's hospitals organized by war service committee of the Medical Women's National Association. *J Natl Dent Assoc*. Quoted in: *Pacific Dental Gazette*. 1917;25:774.
99. Barrett L, comp. Our Army and Navy [Unit of Women for France]. *J Allied Dent Soc*. 1917;12:516.
100. National Archives and Records Administration. Record Group 112. Kinney to surgeon general, 26 April 1917. Letter. No. 172478, Box 1223, Entry 26.
101. National Archives and Records Administration. Record Group 112. Ottolengui to surgeon general, 28 April 1917. Letter. No. 172478. Box 1223. Entry 26.
102. National Archives and Records Administration. Record Group 112. Kinney to Major General J Franklin Bell, 2 May 1917. Letter. No. 172478. Box 1223. Entry 26.
103. National Archives and Records Administration. Record Group 112. Surgeon general's office to Kinney, 4 May 1917. Letter. No. 172478. Box 1223. Entry 26.
104. National Archives and Records Administration. Record Group 112. Kinney to surgeon general, 28 May 1917. Letter. No. 172478. Box 1223. Entry 26.
105. National Archives and Records Administration. Record Group 112. Surgeon general's office to Kinney, 11 July 1917. Letter. No. 172478. Box 1223. Entry 26.
106. Dow TD, Jones M, comp. *History of the Tennessee State Dental Association*. Nashville, Tenn: Tennessee Dental Association; 1958.
107. Kinney D. What women dentists are doing in the present crisis. *J Natl Dent Assoc*. 1918;5:1048–1049.
108. National Archives and Records Administration. Record Group 112. Kean to surgeon general, 11 June 1917. Memo. No. 192485. Box 1357. Entry 26.
109. Hume EE. *The Golden Jubilee of the Association of Military Surgeons of the United States: a History of its First Half-Century, 1891–1941*. Washington, DC: The Association of Military Surgeons; 1941.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

110. National Archives and Records Administration. Record Group 112. Fisher to Gorgas. Letter. No. 106047. Box 712. Entry 26.
111. Military officers elect officers. *American Dentist*. 1915;1:6.
112. Association of Military Dental Surgeons of the United States. *J Natl Dent Assoc*. 1918;5:64–66.
113. Necessary field equipment for Dental Reserve Corps Officers. *Dental Cosmos*. 1917;59:1067–1068.
114. [US War Department]. Memorandum regarding dental apparatus and supplies. *J Natl Dent Assoc*. 1917;4:812.
115. National Archives and Records Administration. Record Group 165. Purchase of dental outfits, 25 April 1917. Report no. 13278. Box 139. Entry 5.
116. Ryan EPR. The Dental Corps: Our responsibility. *J Natl Dent Assoc*. 1918;5:759.
117. Bayley MW. The dental clinic in the national Army cantonment. *Dental Cosmos*. 1918;60:705.
118. Hollister CJ. Dental service at Camp Hancock: headquarters twenty-eighth division. *Dent Dig*. 1917;23:770.
119. Van Blarcom H. Experiences in camp life. *NJ Dent J*. 1917;6:365–366.
120. Ludwig HR. With the Army. *Oral Hyg*. 1918;8:145.
121. Zeidler JC. Giving them the up and down. *Oral Hyg*. 1918;8:711.
122. Speakman [W]C. War dentistry. *Oral Hyg*. Quoted in: *Dent Rec*. 1918;37:140-43.
123. Speakman MAV. *Memories*. Wilmington, Del: Greenwood Bookshop; 1937.
124. [Weaver SM, Henahan JP]. The Cleveland Motor Dental Car for Army Use. *Amer Dent*. 1918;6:6–7.
125. National Archives and Records Administration. Record Group 120. Endorsement, Colonel Walter D McCaw, Medical Corps, chief surgeon's office, American Expeditionary Forces Headquarters, to Fourth Section, general staff, General Headquarters, AEF, 31 October 1918. No. 703. Folder 18. Box 5149. Entry 2065.
126. [Bethel LP]. Universal military training and its bearing on dental conditions of our young men. *Dental Summary*. 1917;37:236.
127. Bernheim JR. Oral hygiene in the Army. *J Natl Dent Assoc*. 1917;4:501.
128. Extraction of teeth to avoid military service. *Dominion Dental Journal*. 1917;29:293.

## PREPARING THE DENTAL CORPS FOR FRANCE

129. Healy TF. Examining the drafted men. *Amer Dent*. 1918;6:9.
130. Physical examination of registrants in the Army. *JAMA*. Quoted in: *Dental Cosmos*. 1918;60:274–275.
131. National Archives and Records Administration. Dental Corps (decimal file 382, War Plans Division report no. 8954-20). Record Group 165. Logan, cited in memorandum for the chief of staff, Brigadier General Lytle Brown, director, War Plans Division, 8 September 1918.
132. Ayres LP. *The War with Germany: a Statistical Summary*. Washington, DC: Government Printing Office; 1919: 26–28.
133. Coffman EM. *The War to End All Wars: the American Military Experience in World War I*. New York, NY: Oxford University Press; 1968: 54–85.
134. Wood CA. A history of the base hospital, Camp Sherman, Chillicothe, Ohio. *Mil Surg*. 1918;43:457–458.
135. Livermore AR. Army dentistry. *Oral Hyg*. 1918;8:267–268.
136. Smith KF. The practice of dentistry in the Army and in civil life (a comparison). *J Natl Dent Assoc*. 1918;5:408.
137. Huber CF. Letter with enclosure, dental history of the 88th division. Washington, DC: US Army Center of Military History.
138. National Archives and Records Administration. Record Group 120. Schedule 1165, 28th Division. Box 3626. Entry 2144.
139. National Archives and Records Administration. Record Group 120. Headquarters, Twenty-Eighth Division, Camp Hancock, Augusta, Ga. No. 703. Box 3630. Entry 2144.
140. National Archives and Records Administration. Record Group 120. Return of medical officers, etc., serving in the 28th Division, Camp Hancock, Augusta, Ga, during the month of August 1917. Box 3627. Entry 2144.
141. National Archives and Records Administration. Record Group 120. First Lieutenant Oscar P Snyder, Dental Corps, dental surgeon, Camp Hancock, Ga, to Major William HG Logan, surgeon general's office, Washington, DC, 25 September 1917. Report. No. 703. Box 3630. Entry 2144.
142. National Archives and Records Administration. Record Group 120. First Lieutenant Oscar P Snyder, dental surgeon, Camp Hancock, Augusta, Ga, to Major William HG Logan, surgeon general's office, Washington, DC, 20 October 1917. Report. No. 703. Box 3630. Entry 2144.
143. National Archives and Records Administration. Record Group 120. First Lieutenant Oscar P Snyder, dental surgeon, Camp Hancock, Augusta, Ga, to surgeon general, Washington, DC, 24 November 1917. Report. No. 703. Box 3630. Entry 2144.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

144. National Archives and Records Administration. Record Group 120. First Lieutenant Oscar P Snyder, division dental surgeon, 28th Division, to division surgeon, Camp Hancock, Ga, 4 January 1918. Report. No. 703. Box 3630. Entry 2144.
145. National Archives and Records Administration. Record Group 120. Major Oscar P Snyder, division dental surgeon, 28th Division, to division surgeon, 18 March 1918. Memo. No. 703. Box 3630. Entry 2144.
146. US War Department. *Official Army Register 1918*. Washington, DC: Government Printing Office; 1918: 111.
147. National Archives and Records Administration. Record Group 120. Lieutenant Colonel William J Crookston, Medical Corps, division surgeon, 28th Division, Camp Hancock, Ga, to commanding general, 28th Division, 4 April 1918. Memo. No. 703. Entry 2144.
148. National Archives and Records Administration. Record Group 120. Lieutenant Colonel William J Crookston, Medical Corps, division surgeon, 28th Division, Camp Hancock, Ga, 8 April 1918. Memo. No. 703. Entry 2144.
149. National Archives and Records Division. Record Group 120. Return of medical officers, etc, serving in 28th Division on the last day of May 1918. Box 3627. Entry 2144.
150. Blanquie RH. Camp fremont Dental Corps notes. *Dental Cosmos*. 1918;60:1166–1167.
151. Scheifer EH. Life in the Dental Department at Camp Grant, Illinois. *Amer Dent*. 1919;8:7.
152. Ottolengui R. Report of Committee on Motor Cars for the Dental Service at Military Camps. *Dent Items Interest*. 1918;40:1002–1006.
153. Efficient dental work at Camp Sheridan, Montgomery, Alabama. *Amer Dent*. 1918;6:11.
154. National Archives and Records Administration. Record Group 112. First Lieutenant Seibert D Boak to Major Robert E Noble, 18 August 1915, and reply 20 August 1915. Letters. No. 138037. Box 975. Entry 26.
155. National Archives and Records Administration. Record Group 112. William M Criukshank, adjutant general, to commanding general, eastern department, 18 November 1916. Letter. No. 157271. Box 1131. Entry 26.
156. Barrett L, comp. Our Army and Navy (colored medical officers' training camp at Fort Des Moines). *J Allied Dent Soc*. 1917;12:515–516.
157. National Archives and Records Administration. Record Group 112. Surgeon general to president, 24 December 1904, profiles of 1898 black contract surgeons. Memo. No. 5. Box 468. Entry 242.
158. National Archives and Records Administration. Record Group 112. Jefferson to surgeon general, 24 February 1901. Application. No. 78832. Box 519. Entry 26.

## PREPARING THE DENTAL CORPS FOR FRANCE

159. National Archives and Records Administration. Record Group 112. Jefferson to surgeon general, 8 February 1901. Letter. No. 78832. Box 519. Entry 26.
160. National Archives and Records Administration. Record Group 112. Jefferson to Charles G Dawes, 1 March 1901. Letter. No. 78832. Box 519. Entry 26.
161. National Archives and Records Administration. Record Group 15. Pension record, William T Jefferson, declaration for pension, 4 January 1924, 31 October 1925. Cert. no. 969282.
162. McCard HS, Turnley H. *History of the Eighth Illinois United States Volunteers*. Chicago, Ill: E.F. Hartman; 1889: 45.
163. National Archives and Records Administration. Case files of persons examined for appointment as dental surgeons, 1900-17. Record Group 112. Charles C Fry. Box 344. Entry 101.
164. National Archives and Records Administration. Case files of persons examined for appointment as dental surgeons, 1900-17. Record Group 112. Andrew L Jackson. Box 348. Entry 101.
165. National Archives and Records Administration. Case files of persons examined for appointment as dental surgeons, 1900-17. Record Group 112. Robert G Johnson. Box 348. Entry 101.
166. National Archives and Records Administration. Case files of persons examined for appointment as dental surgeons, 1900-17. Record Group 112. Rufus P Beshears. Box 338. Entry 101.
167. National Archives and Records Administration. Record Group 112. Record card, Oliver to surgeon general, 20 June 1917, endorsement, surgeon general to department surgeon, southern department, Fort Sam Houston, 4 July 1917. No. 188808. Box 283. Entry 25.
168. National Archives and Records Administration. Record Group 112. Surgeon general to commandant, Medical Officers' Training Camp, Fort Des Moines, Iowa, 30 July 1917. Course of progressive instruction medical officers' training camp, Fort Des Moines. Telegram. No. 187170. Box 1322. Entry 26.
169. National Archives and Records Administration. Record Group 120. Surgeon general to department surgeon 14 May 1917. Memo. No. 320.2. Box 7. Entry 1241.
170. Hyson JM. *African-American Dental Surgeons and the U.S. Army Dental Corps: A Struggle for Acceptance, 1901-1919*. Located at: Research Collections, Office of Medical History, Washington, DC, or <http://history.amedd.army.mil/ameddcorp/African-AmericanDentalSurgeons/frameindex.html>. Chapter 4.
171. Barrett L, comp. Our Army and Navy (157,000 negroes in Army). *J Allied Dent Soc*. 1918;13:288.

## A HISTORY OF DENISTRY IN THE US ARMY TO WORLD WAR II

172. Medical Corps instruction extended. *JAMA*. Quoted in: *Dental Cosmos*. 1918;60:275.
173. Training medical personnel. *Army and Navy Register*. Quoted in: *J Natl Dent Assoc*. 1918;5:326.
174. Medical Department training: dental officers. *Army and Navy Register*. Quoted in: *Dental Cosmos*. 1918;60:367.
175. Barrett L, comp. Our Army and Navy (enough Army dentists). *Army and Navy Register*. Quoted in: *J Allied Dent Soc*. 1918;13:292.
176. Medical department training. *Army and Navy Register*. Quoted in: *J Natl Dent Assoc*. 1918;5:415.
177. Waite SC. Dental Company No. 1. In: *Dental Alumni News, University of Buffalo (Winter 1988)*. Buffalo, New York: University of Buffalo; 1988 : 1-2.
178. Letter, Sheridan C Waite to Dr John M. Hyson, Jr, 27 January 1989.
179. Green JC. Dental Company No. 1. *Mil Dent J*. 1922;5:103.
180. Gearen WD. World War I Research Project: Army Service Experiences Questionnaire. Available at: Department of the Army, US Army Military History Research Collection, Carlisle Barracks, Pennsylvania.
181. Letter. Walter D Gearen to Dr John M. Hyson, Jr, 17 September 1979.
182. Letter. Walter D Gearen to Dr John M. Hyson, Jr, 30 January 1980.
183. US War Department. General orders no. 79, par. 2, 24 August 1918. In: *General Orders and Bulletins*. Washington, DC: Government Printing Office; 1919: 1.
184. [Ottolengui R]. The present status of dental service in the United States Army, and the effect of war conditions upon dental education. *Dent Items Interest*. 1918;40:825–826.
185. US Army, General Staff, Committee on Education and Special Training. Students' Army Training Corps. *J Natl Dent Assoc*. 1918;5:1093.
186. King OU. Dental Reserve Corps commissions to be granted enlisted dentists. *Tex Dent J*. 1919;37:3–6.
187. [King OU?]. Demobilization of the Student Army Training Corps between December 1 and 21, 1918. *J Natl Dent Assoc*. 1918;5:1288.
188. The S.A.T.C. and the Army Authorities. *Army and Navy Register*. Quoted in: *Dental Cosmos*. 1919;61: 93.
189. Enlisted dentists will get commissions. *Evening Mail*. Quoted in: *J Allied Dent Soc*. 1918: 523.

## PREPARING THE DENTAL CORPS FOR FRANCE

190. Biographical file on Major General James M Epperly. Available at: Research Collections, OTSG/MEDCOM, Falls Church, Va.
191. US War Department, Adjutant General's Office. *Official Army Register, January 1, 1938*. Washington, DC: Government Printing Office; 1938: 225.
192. National Archives and Records Administration. Record Group 341. Review of the development and the organization of the medical service of the Army Air Forces, 26 August 1944. Box 356. Entry 48.
193. US War Department. Special Orders No. 207, September 6, 1917.
194. National Archives and Records Administration. Office of the Director of Air Service. Record Group 18. Personnel orders no. 68, 28 May 1919. No. 703. Box 1237. Entry 166.
195. National Archives and Records Administration. Record Group 18. Major Patrick Frisell, commanding officer, Signal Corps Aviation School, Eberts Field, Lonoke, AK, to commanding general, southeast department, Charleston, SC, 27 June 1918. Letter. No. 703. Box 1360. Entry 393.
196. National Archives and Records Administration. Record Group 18. Samuel M Strong, Medical Reserve Corps, post surgeon, Eberts Field, to commanding officer, Eberts Field, Lonoke, Arkansas, 10 July 1918. Memo. No. 703. Box 1360. Entry 393.
197. National Archives and Records Administration. Record Group 18. Major Albert L Sneed, Signal Corps, to commanding general, southern department, Fort Sam Houston, Texas, 18 October 1918. Letter. No. 211.19. Box 1888. Entry 465.
198. National Archives and Records Administration. Record Group 18. Second Lieutenant Virgil C Thomas, adjutant, Squadron "C," to commanding officer, Love Field, Dallas, Texas, 14 October 1918. Letter. No. 211.19. Box 1888. Entry 465.
199. Squires WA. The advisability of recording the models of the jaws of aviators. *J AS-MUS*. 1918;2:169–170.
200. Mitchell DF. A history of aviation dentistry: with emphasis on development in the AAF during World War II. *Ann Dent*. 1946:1–2.
201. [Dental Subdivision, Office of the Surgeon General]. Dangers from the use of removable unilateral prosthetic dental appliances. *Dental Bulletin Supplement to the Army Medical Bulletin*. 1933;4:173–175.
202. V[ail] WD. The Dental Reserve Corps. *Dental Bulletin Supplement to the Army Medical Bulletin*. 1936;7: 19–20.
203. National Archives and Records Administration. American Expeditionary Forces Weekly Reports (decimal file 200). Record Group 120. Personnel, medical department, 30 November 1918. Boxes 4908, 4909. Entry 2065.

## A HISTORY OF DENTISTRY IN THE US ARMY TO WORLD WAR II

204. National Archives and Records Administration. Personnel, medical department (decimal file 320.2-1). American Expeditionary Forces. Record Group 112. Medical department personnel on duty in AEF, May 1919. Box 5. Entry 31.
205. US War Department. General orders no. 73, par. 1, 7 August 1918. In: *General Orders 1918*. Washington, DC: Government Printing Office; 1919.
206. [King OU?]. Sources of new dental officers. *Dental Cosmos*. 1918;60:1168.
207. Clark RA. Professional capability and dental commissions. *Dental Cosmos*. 1918;60:918.
208. Daniels B. Professional capability and dental commissions. *Dental Cosmos*. 1918;60:1129.
209. National Archives and Records Administration. Decimal file 382, Dental Corps. Record Group 165. Memorandum for the chief of staff, Brigadier General Lytle Brown, director, War Plans Division, 8 September 1918, and memorandum for the adjutant general, General Peyton C March, chief of staff, 28 September 1918. No. 8954-20. Box 48. Entry 8.
210. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 165. Memorandum for the chief of staff, Ketcham, acting director, War Plans Division, 18 April 1918. No. 8954-13.
211. National Archives and Records Administration. Dental Corps, US Army (War Plans Division report no. 8954). Record Group 165. Memorandum for the adjutant general, Ketcham, acting director, War Plans Division, 20 April 1918. No. 8954-13.
212. National Archives and Records Administration. Decimal file 382, Dental Corps. Record Group 165. Memorandum for the adjutant general, March, 28 September 1918. No. 8954-20.