Chapter XVII

A Return to Normalcy: From the World War to the Depression, 1919–1929

Introduction

The armistice and eventual return of the American Expeditionary Force's (AEF's) dental personnel to the United States after the war marked the conclusion of an innovative effort to provide adequate dental and oral care to a massive force overseas. The growth and maturity of the Army's dental services during the war set a firm foundation for postwar organization and planning. At the same time, a cadre of war-proven Dental Corps officers with unrivaled personal experiences in command, administration, and combat were on hand to provide leadership and carry out the plans. The respect and acceptance that the front line dental officers had won from their medical colleagues, line commanders, and fellow soldiers was perhaps just as important for the future of the postwar Dental Corps. By fighting the enemy rather than each other (as they so often had since 1901), the officers of the Medical and Dental Corps of the AEF had built a highly efficient and effective system of care for sick and wounded American soldiers. A major question now was whether this spirit could be maintained as the nation tried to return to normalcy in the wake of the World War.

Colonel Logan's Farewell Letter

Upon leaving active duty on February 12, 1919, Colonel William HG Logan, chief of the dental section in the surgeon general's office, sent a 4-page letter to all members of the Dental Corps in which he summarized the wartime achievements and looked forward to the future. After dealing with the ongoing issues of personnel in the downsizing Army, he highlighted the adjutant general's action of September 30, 1918, "which established the precedent for the assignment of two Dental officers per thousand." A critical issue for the Dental Corps, though, was whether this ratio would be retained in the rapidly emerging peacetime Army.[1] Logan wrote:

> Of this I can say that it is my opinion the Powers that Be in the Surgeon General's Office, the Chief of Staff and the War Department have reached the conclusion and concur in the desire of the Dental Profession and Dental Corps that an assignment of two Dental Officers per thousand shall be allowed hereafter in any Army that represents the United States of America. . . . Newton D. Baker, Secretary of War, and General March, Chief of Staff, appeared before the Military Committee of Congress, and

> approved a Bill for the reorganization of the Army, which included the quota of two per thousand of Dental Officers.[1]

Logan believed that the problems both he and Robert Oliver had with the wartime tables of organization had at last been solved. "A Table of Organization has in substance and detail been approved," he wrote, "specifying the number of Dental Officers with their grades, to be assigned at all stations."[1]

While claiming no credit for this major change from the prewar era, Logan said that Dental Corps officers "shall, at all times, in the future, be on duty in the surgeon general's office, looking after the interests of their Corps under the direction of the Surgeon General, and all this will come without a request of any member of the Dental Corps or from any member of the profession at large." Lieutenant Colonel Frank LK Laflamme (1877–1966) would temporarily take over Logan's duties, but Logan believed that a senior Dental Corps colonel would soon be placed in charge.[1] He urged the Dental Corps to have patience, writing:

> As to which one will probably be assigned, I am without an opinion, but for whoever is called upon to assume responsibilities for the Dental Corps, I ask for them your hearty cooperation and take the liberty of suggesting to all members of the Dental Corps that they do not make unusual personal requests for special detail, but shall be charitable in your conclusions before reaching the decision that important policies are not being carried forward as rapidly as would seem should be consummated by those stationed at some distances from Washington.[1]

Unlike the prewar days, Logan reassured the members of the Dental Corps that the surgeon general "fully approves the establishment of a Dental Officers' Training School in connection with the Army Medical School at Washington, D.C., in close proximity with the Walter Reed General Hospital, and in my opinion, the General Staff also concurs."[1] Logan continued, writing:

> The general plans for the building are completed, the subjects to be taught selected, the number of hours to be devoted to each, number of students to receive training in each course designated, and the rank for the seventeen teachers needed for instructive purposes approved; the building to be 50 x 150; the number of professors and assistant professors seventeen Dental Officers to be detailed for each course of instruction about ninety; duration of the course four and a half months, two courses per year; one hundred and eighty to two hundred receiving instruction annually gives a total in attendance in five years of one thousand Dental Officers, or the quota allowed for an Army of five hundred thousand.[1]

Logan had clearly learned the war's lessons about how to turn a large influx of untrained civilians into Army Dental Corps officers ready for military duties. Moreover, he understood that skills once acquired had to be regularly honed, so all Dental Corps officers were now required to attend a 2-month military training course at Camp Greenleaf, Fort Oglethorpe, Georgia (site of the largest wartime medical officers' training camp), every 5 years. Those who had not yet completed the post-graduate professional training at the new dental school would then proceed to Washington to do so.[1]

During the war the Army's existing policy on dental treatment, which provided only emergency care, had undergone a complete reversal, now allowing for full care. Logan believed that "approval has been secured from those in authority in the surgeon general's office for a change, in the immediate future, to have full Dentistry performed in the Army."[1] The consequence, he said, was quite significant: "At every Fort or Post that can properly be designated as a permanent station hereafter will be found equipment that will compare favorably with that of civilian Dentists."[1]

Logan was optimistic about these positive developments, writing:

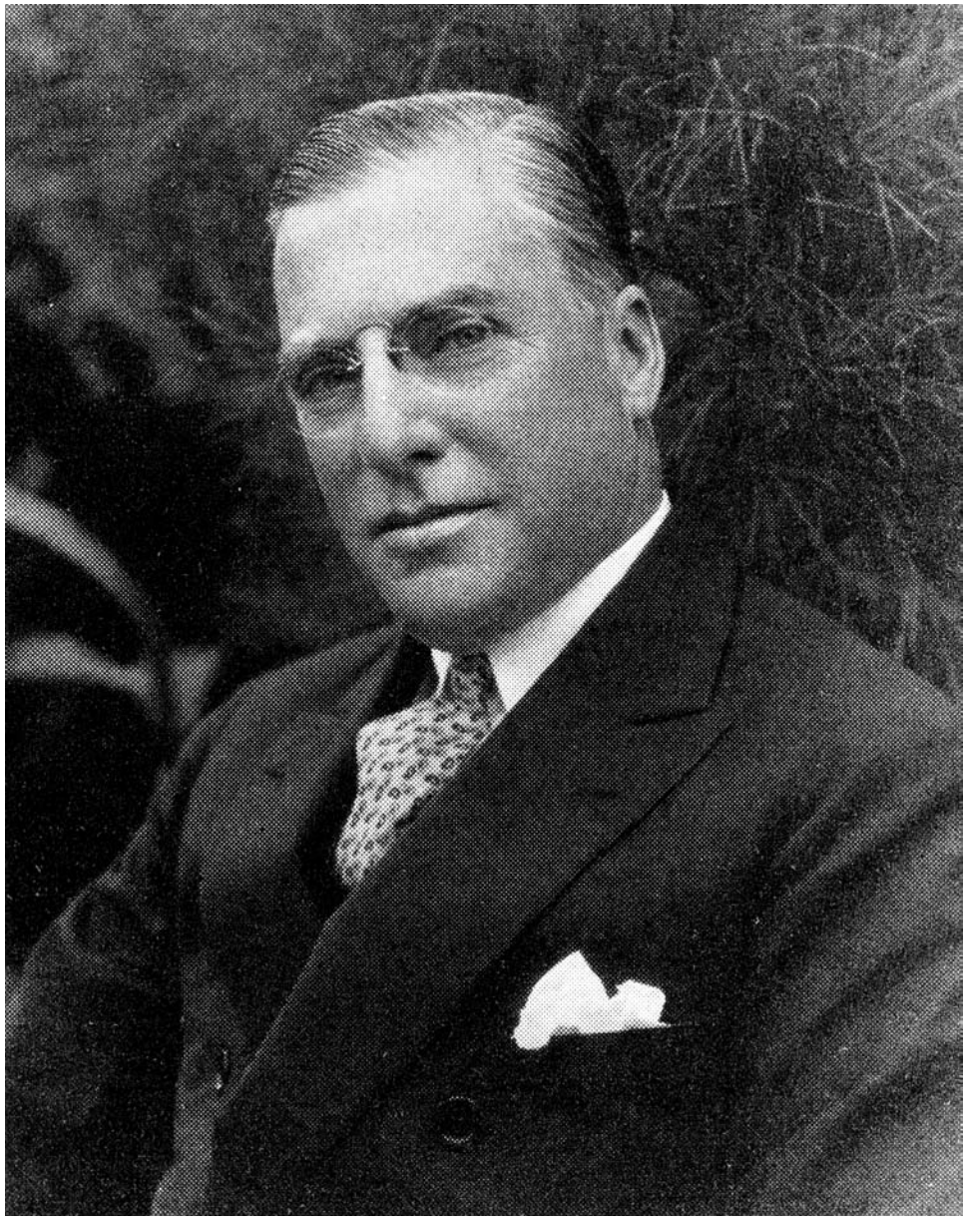
> I believe the most ambitious hopes for the future welfare of the Dental Corps will be realized inside of a year or eighteen months, at the most, for in that time, I have faith that the quota of two per thousand will be authorized by War Department approval, without any further request by members of the Dental Corps; that a post-graduate school of instruction will be established where all members of the Dental Corps will receive instruction once every five years for the duration of their service, that full Dentistry will be authorized in the Army; that complete Dental equipment will be found at all permanent stations.[1]

He concluded by providing three suggestions that he urged members of the Dental Corps to accept:

> First: That discord should not be allowed to develop among the members of the Dental Corps in regard to important questions of policy;
>
> Second: That political activities for Legislation shall not be permitted; and
>
> Finally: The Senior Dental Officers should not endeavor to confine themselves to executive duties unless the detail fully warrants such restriction.[1]

In the April 1919 issue of the *Journal of the Association of Military Dental Surgeons of the United States*, the journal's editor, William C Fisher (1876–1932), commented on Logan's letter. Fisher, a prominent New York City dentist, had been a contract dental surgeon from 1901 to 1904, and a lieutenant colonel in the Dental Officers' Reserve Corps (DORC) during World War I (he was promoted to colonel in the 1920s). He fully endorsed Logan's views on the tables of organization for the Dental Corps, the need for a permanent presence in the surgeon general's office, and the establishment a new training school for dental officers in Washington linked to the Army Medical School. Fisher noted that "when that is an accomplished fact it will indeed be a huge stride in advance, not only for the Dental Corps but for the dental profession at large." He also fully supported Logan on the importance of postgraduate professional education.[2]

However, Fisher doubted that a ratio of two dentists per thousand troops would be approved without political pressure because the congress that had accepted General March's recommendations was now gone and the legislation would have to be resubmitted. Fisher was an able administrator and believed that Logan should have brought some senior dental officers into his office in Washington in 1917 and 1918 to build an efficient organization that could replace him when



Doctor William C Fisher, editor of the Journal of the Association of Military Dental Surgeons of the United States.
Photograph: Courtesy of the National Library of Medicine.

he returned to his civilian pursuits. "But he did not," Fisher lamented, "and it now falls to those officers to take up the work where he has laid it down without the experience that they might have gained under his administration."[2(p80)]

As to Logan's concluding three points, Fisher added an extended comment:

> In commending these three suggestions there can be no difference of opinion regarding the first; regarding the second, as to what is meant by "political activities for legislation shall not be permitted," we are unable at this time to fully conceive. If Colonel Logan means petty political activities, we certainly are in accord with him, but if he means that the Corps should not at any time interest itself in legislation improving their Corps, thus improving the dental service in the Army, then we take issue with him. For without certain dignified political activities the Corps naturally will suffer. There is an old saying that no one will look out for you as well as you will look out for yourself, which we think applies to organizations as well as to individuals. We trust that we will not be misunderstood, and in order that we are not misunderstood we will again state that petty political activities regarding personal advancement or preference should not be tolerated. . . . As to his final suggestion regarding senior dental officers, we believe that there is sufficient administrative work in the Dental Corps, especially in the next few years, to keep every colonel and lieutenant colonel, and many of the majors, busy in that particular activity.[2(pp79–80)]

The Dental Corps' Initial Adjustments to Peace

After the armistice, the Dental Corps in Europe and the United States began adjusting to the realities of peace and the requirements of a postwar Army. Temporary officers of the DORC, then on active duty, requested their releases from service, were discharged as "rapidly as the interest of the service would permit," or could apply for any vacancies in the Regular Army if they were under the age of 32. The number of reserve dentists on active duty was slashed from 4,391 in November 1918 to 2,001 on July 1, 1919. As personnel returned from France, divisions demobilized and the camps and cantonments were closed, and another 1,824 reserve officers were released from July through October. On November 1, 1919, only 176 remained on active duty. By June 30, 1920, only 126 DORC members were still on active duty, which meant that the remaining Regular Army dentists had to shoulder most of the burden of dental care. Pending the new National Defense Act, the authorizations of the Regular Army Dental Corps dropped from 218 on July 1, 1919, to 196 on June 30, 1920. At the same time, however, "the demands for dental service in general hospitals . . . required the assignment of officers in addition to the authorized quota." As a result, during 1919 and 1920, the Dental Corps was stretched to its very limits, with 60 dental officers in Germany (18), Poland (1), Panama (3), Hawaii (8), China (1), Alaska (temporary duty), the Philippines (19), Puerto Rico (2), and Siberia (8), and 256 serving in the United States. In addition, 16 other dental officers were assigned to duty with the Army Transport Service to provide professional services on the Atlantic transports returning the overseas troops and the hospitalized.[3,4]

Army Reorganization and Reality

As Logan's letter was reaching the members of the Dental Corps early in 1919, the American forces occupying their section of Germany were organizing for their stay, which would last nearly 4 more years. At this time, the War Department was already focused on demobilization and the structure of the postwar force. True to the American military tradition of hasty demobilization after wars, the War Department had already discharged over 2,000,000 soldiers by September 1919, when the last combat unit, the 1st Division, returned from France.[5] Simultaneously, the War Department began to grapple with issues of reorganization, modernization, and mobilization that would continue to be studied, debated, and remain largely unresolved for the next 20 years. The wartime changes to the National Defense Act of 1916 had been temporary, and the extent of American involvement overseas made it apparent that permanent changes were in order so that the nation would be better prepared for future conflicts than it had been in 1917. General Peyton March, the chief of staff, favored a 500,000-person force backed by a large reserve based on peacetime conscription. The political feasibility of such a large peacetime Army was another question entirely.[6]

Congress did not treat March's plan favorably. Even while it debated the size of the future force, Congress continued to reduce the active force. What finally emerged from Congress was the National Defense Act of 1920 (Public Law 66-242, June 4, 1920); the first comprehensive plan for the nation's defense ever drawn up and written into law. The first clause of the act said "that the Army of the United States shall consist of the Regular Army, the National Guard while in the service of the United States, and the organized Reserves, including the Officers' Reserve Corps and the Enlisted Reserve Corps." The small peacetime Regular Army was not to exceed an enlisted strength of 280,000 and would provide the nucleus of a larger force to be mobilized from the National Guard (limited to 435,000 strength), the Organized Reserve Corps, and conscription to build to an initial echelon of 2,375,000 soldiers in six field armies. Under this act the Dental Corps was authorized a strength of 298 officers, 102 more than currently held Regular Army commissions. More fully developed mobilization plans in 1921 required a total force of 6,558,000 within 19 months. In peacetime the Regular Army would staff a large number of divisions, corps, and field units at minimal strengths, to be filled during mobilization. Federal control over the National Guard increased in light of its role as the primary reserve for the active force. A civilian military training corps program, similar to the pre-World War I "Plattsburg Camps," was launched to sustain public participation and interest in Army affairs while providing wholesome summer training activities for young men of military age. Also authorized was an expanded Reserve Officers' Training Corps (ROTC) for university students that was to provide a main personnel source for the officers of the Organized Reserve Corps (ORC) and included medical, dental, and veterinary units.[6–12]

The act also replaced the former military departments and divided the country into nine geographic corps areas for administration, training, and reserve component affairs. In 1921 each corps area theoretically held one regular, two guard, and three ORC divisions, for a total of 54 divisions—nine regular, 18 guard, and

27 ORC divisions—and that same year 10 cavalry divisions were added, four in the National Guard and six in the ORC. All of these divisions, as well as the Army, corps, and line of communications (also called communications zone) command echelons and the nondivisional medical units had extensive requirements for Reserve Dental Corps officers.[7–9, 11–13]

The Army's new, expanded involvement with the reserve components required a large Regular Army overhead. Doing so within the limits of shrinking budgets under the parsimonious administrations of President Warren G Harding (1865–1923; president March 1921–August 1923) and his successor, Calvin Coolidge (1872–1933; president August 1923–March 1929), and growing public indifference proved impossible. Congressional budget-cutting intervention only aggravated an already serious problem. The Army Appropriations Act of June 30, 1921 (for fiscal year 1922) cut the Army from 280,000 to 150,000, and reduced the authorized strength of the Dental Corps to 180 officers. Even though General John J Pershing, the new chief of staff as of July 1921, opposed these reductions, the next Army Appropriations Act of June 30, 1922 (for fiscal year 1923) cut even farther into the Regular Army, reducing it to 137,000—125,000 enlisted and 12,000 officers—with an authorized Dental Corps of 158 officers as of January 1, 1923. However, the large mobilization force remained with its equally large requirements for National Guard and ORC personnel and had even grown under plans for a 6,558,000-person force. The 1922 reduction required dropping or forcibly retiring more than 1,000 officers and demoting another 800 who wished to remain on active duty. The shattering effects led Congress to make some minor upward strength adjustments in January 1923, but the damage had been done. Army strength was reduced more over the following years, reaching its low point of 133,949 in 1927, including 12,076 officers and 119,929 enlisted soldiers, and remained relatively constant until the end of the decade when it reached slightly more than 138,000. The reduction in Army strength and the radical modification of many of the programs envisioned in the 1920 National Defense Act strongly affected the Regular and Reserve Dental Corps, whose sizes continued to be based primarily on the old ratio of one dentist per thousand total Army strength.[6,7,9,14]

Thus, within several years of Logan's February 1919 predictions, many of the major gains he had envisioned seemed to have been lost in Congress's radical reductions. The long-sought ratio of two dentists per thousand soldiers was not approved and the official ratio returned to the ratio in effect since 1901. Two years later, the large 500,000-person Army that Logan predicted disappeared, slipping first to 280,000, then to 150,000, and finally 137,000. None of this boded well for the Dental Corps' postwar development and severely tested the Corps' leadership.

Dental Corps Leadership in the 1920s

As Logan had noted in his farewell letter, the assignment of a senior Dental Corps officer who would be both chief of the dental section at the surgeon general's office and de facto chief of the Dental Corps became permanent after the war. Lieutenant Colonel Laflamme temporarily held that position and fought the needed battles for the Dental Corps until Colonel Robert T Oliver returned from

France. In August 1919 Laflamme moved to the US Military Academy, where he remained until October 1925.[4,15]

Two of the most significant changes for the Dental Corps occurred in September and November 1919. On September 18 Colonel Robert T Oliver, the ranking colonel in the corps, assumed the duties as chief of the dental section in the personnel branch of the surgeon general's office. In view of the changed postwar responsibilities and Oliver's long relationship with Major General Ireland, the surgeon general, on November 24 the dental division replaced the dental section. The new dental division was "raised to the dignity" of a separate organization within the surgeon general's office, reporting directly to Ireland and responsible for "all professional and administrative matters pertaining to the Dental Corps." Throughout the 1920s the dental division held overall responsibility for the direction of the Army's entire dental service but remained small, with only the chief and an assistant, usually a captain, authorized and assigned.[4,16–19]

Oliver and Ireland, who had served together in France and earlier, had already established a close working relationship and shared a clear understanding of the importance of modern dentistry to health and readiness in the Army. This benefited the Dental Corps throughout Oliver's time as chief and for the duration of Ireland's tenure until his retirement in May 1931. Their friendly relationship was never more clearly seen than in Ireland's whole-hearted participation in the annual meetings of the National Dental Association (NDA) and Association of Military Dental Surgeons of the United States in Milwaukee, Wisconsin, in August 1921. At this time Oliver was president of the Association of Military Dental Surgeons as well as vice president of the NDA. At Oliver's invitation, Ireland came to address both associations on the status of the Dental Corps and dentistry in the Army, something that no previous surgeon general had ever done. In introducing Ireland to the military dentists, Oliver remarked: "I have always said with a spirit of pride and affection that the gentleman who is here with us today, although he belongs to a different corps and a different profession, is perhaps the greatest champion of modern dentistry in the United States outside of our profession." Ireland opened his address simply and directly: "The interest I have in dentistry, and the interest I may have had as to the place for dentistry in the Army is very materially due to Colonel Oliver. You all know that."[20–22]

During his nearly 5 years as chief and with Ireland's support, Oliver made many contributions to the development of the postwar Dental Corps that were perhaps even more significant in the history of Army dentistry than those he made in France. Drawing heavily on his experience in the AEF, he fully integrated Dental Corps officers for the first time into the field training and professional education programs of the Army and the Medical Department. He pursued Logan's idea of an Army dental school that provided postgraduate education and research appointments for officers and complete technical training for enlisted dental technicians. Civilian postgraduate education opportunities for Dental Corps officers were also introduced during his tenure. Oliver oversaw the addition of authorized requirements for dental officers and technicians to the official Army and Medical Department tables of organization and pushed the development and acquisition of new field dental equipment. Important new Army regulations governing the

Major General Merritte W Ireland in 1919.
Photograph: Courtesy of the National Library of Medicine.

Dental Corps and dental care in the Army were written during his tour and published after his reassignment. While doing all of this, Oliver also fought to maintain a functional Army dental service in the face of heavy reductions in authorized personnel and stringent limitations on funding during the early 1920s.

On July 1, 1924, Oliver completed his tour as chief of the dental division and chief of the Dental Corps. He moved to New York City for duty at the Second Corps Area Laboratory and served as technical advisor at the New York General Intermediate Depot. In 1926 he was transferred to Philadelphia, Pennsylvania, to act as the new assistant professor of military science and tactics at the University of Pennsylvania's School of Dentistry and was in charge of one of the Army's largest dental ROTC units. While there, Oliver served as president of the American Dental Association in 1930–1931. He remained in Philadelphia until his retirement in January 1932 and died on July 11, 1937, after a long illness. During World War II, Oliver General Hospital in Augusta, Georgia, was named in his honor. Since its dedication on November 4, 1969, the Oliver Dental Clinic at Fort Jackson, South Carolina, has perpetuated his memory and many achievements in the Dental Corps and Medical Department.[17,22–24]

With Oliver's reassignment, Lieutenant Colonel Rex H Rhoades assumed the duties as chief of the dental division and the Dental Corps. Like Oliver, Rhoades brought experience in Army dentistry to the office as it struggled to maintain a quality dental service with limited personnel and resources. After being hired as a contract dental surgeon in November 1902, Rhoades had served at numerous posts in the United States and the Philippines before becoming one of the original commissioned officers of the Dental Corps on April 28, 1911. During World War I, he saw service with the 2nd Division as division dental surgeon in France from November 1917 to March 1918, and then became the supervising dental surgeon for the advance section of the services of supply from March to August 1918, and the chief dental surgeon for the First US Army from August 1918 to January 1919. For his wartime service, Rhoades received a wound chevron (Purple Heart Medal after February 22, 1932) and battle clasps for the defensive operations and the Saint Mihiel and Meuse-Argonne offensives of 1918. From 1921 to June 1924, he was assistant surgeon and chief dental surgeon at the Sixth Corps Area headquarters at Fort Sheridan, Illinois, and professor of military science and tactics for the dental ROTC unit at Northwestern University's School of Dentistry in Chicago. Upon Rhoades's departure for Washington, Lieutenant Colonel Robert H Mills, himself a future Dental Corps chief (1942–1946), assumed this post.[25–28]

Rhoades served until June 15, 1928, when Colonel Julien R Bernheim, another of the early contract dental surgeons and original member of the Dental Corps, succeeded him. Rhoades was transferred to the US Military Academy at West Point, New York, where he was the senior dental surgeon until 1932, when he was recalled to serve a second term as chief beginning exactly 4 years after he left, June 15, 1932. Rhoades was the only Dental Corps chief ever to serve two tours. He retired in September 1934 and died on September 11, 1959, at Walter Reed Army Hospital. On June 25, 1964, the new dental clinic at Fort Sam Houston, Texas, was named in his honor.[26,27]

Like Robert Oliver and Rex Rhoades, Colonel Julien R Bernheim had extensive

Colonel Robert T Oliver, president of the American Dental Association 1930–1931.
Photograph: Courtesy of the American Dental Association.

Colonel Rex H Rhoades upon retirement in July 1935.
Photograph: Courtesy of National Archives and Records Administration. US Army photo P-2445.

experience in the Medical Department dating back to his time as a contract dental surgeon (in April 1902 he was hired to replace the recently deceased Charles Petre). His foreign service included two tours in the Philippines (1902–1905 and 1908–1911) and numerous stateside assignments. Unlike Oliver and Rhoades, Bernheim never served in France or overseas during World War I. Rather he headed the dental service at the attending surgeon's office in Washington, DC, before serving in the finance and supply division in the surgeon general's office, and then in the purchase, storage, and traffic division of the War Department General Staff, until he was transferred to Letterman General Hospital to serve as the chief of the dental service in February 1919. From July 1923 through May 1928, he was the chief of the dental service at the station hospital at Fort Sam Houston, Texas, and dental advisor to Eighth Corps Area headquarters. While on this duty, he was promoted to Colonel on April 9, 1928. He served as chief from June 15, 1928, until June 15, 1932, after which he remained on duty in the Dental Corps. He served as chief of the dental service at Tripler General Hospital, Honolulu, Hawaii (August 1932–October 1934), then at the Presidio of San Francisco and Ninth Corps Area headquarters (October 1934–August 1936), before once again holding the post as chief of the dental service at Letterman until July 1940. He returned to Hawaii for another tour as chief of Tripler's dental service, and was at that post when the Japanese attacked Pearl Harbor on December 7, 1941. Returning to the United States in September 1942, Bernheim was assigned to the San Francisco Port of Embarkation, a post he held until he died at Letterman General Hospital on March 16, 1943, just prior to his scheduled retirement on March 31. The Bernheim Dental Clinic at Fort Benning, Georgia, was named for him.[29,30]

The Dental Corps, Dental Practice, and the Impact of the 1922 Army Reductions

The National Defense Act of June 4, 1920, gave the Dental Corps "all the rights, privileges, credits of service for promotion, increased service pay, and retirement heretofore authorized in part by the acts of March 3, 1911, June 3, 1916, comptroller's decision of July 22, 1916, and the act of October 6, 1917." In part trumping the general staff's plans of August 1919 to roll back the act of October 6, 1917, Congress placed the Dental Corps on "equal status as one of the integral corps of the Medical Department of the Army" but repealed the part of the 1917 law that gave Dental Corps officers "the same grades proportionally distributed among such grades as are now, or may be hereafter, provided by law for the Medical Corps." The number of dental officers authorized for the 280,000-soldier Army under the new law was 298.[4,10,31] Congress had returned to the original proportion of one dentist per thousand troops despite new commitments, the changed character of reconstructive dental operations, and the increased demands for "higher professional attention along lines of preventive dentistry and in consultation with medical officers in locating obscure pathological conditions as possible etiologic factors to systemic disease."[4]

Army policies on dental care had changed considerably during the war. With the return of peace and into 1920, the Medical Department was able to maintain a high level of dental care, partly because it retained a sufficient number of reservists

on active duty to care for the large number of patients still in the general hospitals and partly due to the increased authorizations arising from the new National Defense Act.[4,32] According to the surgeon general's annual report in 1920:

> Dental activities for the year have been eminently satisfactory and the number and character of constructive operations resulting have been very gratifying. It is both pleasing and noteworthy to record the great increase in number of cases where dental officers through clinic findings and skillful radiography, have rendered able assistance to medical officers in the diagnosis and treatment of obscure lesions of dental origin—contributing factors to undermined health and efficiency.[4(p304)]

The quality of dental service at the general hospitals had reached the highest levels ever, with adequate numbers of dental officers under the direction of "experienced senior officers of recognized ability." Emergency dental cases were still the predominant type of work performed in these hospitals, but oral prophylaxis was increasingly popular with the enlisted soldiers.[4]

The most serious of the remaining dental patients were the maxillofacial cases, 694 of which had been transferred from France during 1918 and 1919. By June 1919, 320 maxillofacial patients had been discharged and the remaining 374 were concentrated at four centers in the United States—Walter Reed General Hospital in Washington, DC; General Hospital No. 2 at Fort McHenry, Baltimore, Maryland; Columbus Barracks, Ohio; and the station hospital at Jefferson Barracks, Saint Louis, Missouri. At each of these hospitals an experienced chief headed a special maxillofacial service that consisted of ward surgeons, surgical assistants, dental surgeons, and prosthetists. According to the surgeon general's 1919 annual report, "The successful treatment of these cases does not depend upon one man alone, but close cooperation and teamwork between the surgical and dental departments is absolutely essential."[3] These cases challenged the best of the Dental Corps' oral surgeons, but were also important sources for learning how to treat such injuries. For example, the surgeon general's 1920 report says:

> This has required officers of marked professional ability in the construction of splints and special appliances used in the reconstructive treatment of mutilated bones of the face and jaw and in the restoration of masticatory apparatus lost through gunshot wounds or injuries. The large amount of clinical material thus available has been taken advantage of by all dental officers on duty at these stations and careful understudy made of the surgical and dental procedures followed by these specialists. It is to be regretted that more dental officers could not have been given opportunity to obtain practical knowledge of the modern treatment of those interesting and important war injuries.[4(pp302–303)]

By 1921 the maxillofacial cases under care had dropped substantially, and the services at General Hospital No. 2 and Columbus Barracks were closed. The few remaining cases that required additional reconstructive treatment and those requiring routine replacement of prosthetic devices were cared for at Walter Reed and Jefferson Barracks.[21,32] In fiscal year 1923 the maxillofacial service at Jefferson Barracks was ended and everything was then handled at Walter Reed. Virtually all of the reconstruction treatment was completed, and only the more routine

replacement of special prosthetic appliances remained the major responsibility.[33]

In the immediate postwar years, an old, prewar problem reemerged—the issue of "others entitled to treatment" under prevailing Army regulations, mainly dependents of officers and enlisted soldiers and retirees. At many locations, the numbers of such patients were large, and the 1920 surgeon general's report addressed the problem as follows:

> While this class of service is authorized "when practicable," it has become an established custom to grant to families of officers and enlisted men the same character of service usually accorded respectively to them. Thus, the dental officer spends approximately the same amount of time and effort to the case with these patients as with officers and men and the sum of the activities should justly be recorded and credited.[4(p305)]

Another matter that had been a problem since 1901 was apparently resolved when the Army changed its policy on the use of precious metals in 1920. That October the surgeon general's office issued Circular Letter No. 129, which finally added gold to the dental supplies "furnished free by the Government" for use in restorative dentistry for military personnel. Designated "special materials," precious metals were to be stocked at all stations where laboratory equipment was installed. Use was limited to trauma injuries incurred in the line of duty and special cases described in the circular, but was allowed for both officers and enlisted soldiers. Dependents were charged a fixed rate per grain, payable to the Medical Department. Surgeon General's Office Circular No. 149 of December 23, 1920, provided all the necessary accounting and expenditure controls for use of the special materials.[4] The new rules were explained as follows:

> The operation of this policy relieves the dental officer of the necessity of making a charge to brother officers or their families for special materials required in modern practice, and thus terminates an objectionable custom that has existed in the Dental Corps for the past 20 years. . . . While the system governing the expenditure and accounting for these materials is necessarily strict, it nevertheless provides means through which full modern dental service may be rendered in legitimate and meritorious cases. It is meeting with hearty approval throughout the Army.[10(p123)]

The Army Appropriations Act of June 30, 1921, allowed postwar fiscal realities to intrude adversely into the Medical Department and Dental Corps. The act cut the Army's authorized strength to 150,000 soldiers and 13,000 officers. It also reduced the Dental Corps' authorization from 298 officers to 193 on July 1, 1921, and then to 180 August 10, 1921. Despite these cutbacks, the Dental Corps section of the 1922 *Annual Report of the Surgeon General* began with this assessment: "During the past year, the Dental Corps has functioned more smoothly and efficiently than during any previous year of its existence." This result was actually attributed to an increased number of dental officers "accruing under the terms of the reorganization act, June 4, 1920, which permitted a general expansion of the dental service to meet all station requirements and a development of professional activities at general hospitals and other important clinics."[32] The annual report read:

> When the Army was reduced to 150,000, the Dental Corps was found with a surplus of approximately 60 officers over and above the authorized quota of one dental officer for each thousand officers and enlisted men of the Army. This excess number being more nearly that of the ideal number required—namely, two dental officers to one thousand total strength of the Army—permitted a full and more complete development of the dental service in conjunction with the medical and surgical service at general hospitals and in several of the more important large clinics throughout the country.[32(p130)]

Although the authorized strength of the Dental Corps had dropped to 193 in July of 1921, its in-service strength was up to 250 on July 1, 1921, due to 54 surplus officers and four retirees on active duty with dental ROTC units. The in-service strength was 239 on March 31, 1922, due to 56 surplus officers and three retirees. However, the act of June 30, 1922, required a general reduction in the Army, which cut the overall strength to 125,000 men and 12,000 officers. When the Army lost approximately 1,000 of its 13,000 officers (about 8%), the Dental Corps' share was 75 of 233 officers (about 32%). In the first authorized departure from the one-dentist-per-thousand-troops ratio, the Dental Corps' strength was fixed at 158 dental officers as of January 1, 1923, allowing approximately 20 dental officers in excess of the proportion of one per thousand Army total strength.[10,32,33] The 1923 *Annual Report of the Surgeon General* commented that the Dental Corps "functioned under two widely divergent policies" during the year:

> During the first six months [July–December 1922] the broad policies of the previous year remained in force. Based upon favorable conditions incident to an adequate number of dental officers and a generous appropriation, these policies had featured a general expansion of service to include the highest type of professional achievement for the military clientele at all Army stations and that important development of professional activities at general hospitals, known as group treatment, where the medical, surgical, and special services blend in harmonious cooperation in treating the sick. During the succeeding six months [January–June 1923] it became necessary to abandon almost wholly the general features of the above-cited policies and even to modify that pertaining to general hospitals on account of the crippling reduction in commissioned personnel and the great restriction in appropriations required by the provisions of the act of June 30, 1922.[33(p124)]

On February 15, 1923, the surgeon general's office sent a draft of its proposed Circular Letter No. 6 (Dental No. 1) to the Army's adjutant general for review. The letter, titled "Reorganization of the Dental Service," would establish the new policies governing the reduced dental practice in the Medical Department. It noted:

> While the attached circular letter which the Surgeon General proposes to send to all Medical Department units and to each dental officer of the Army is largely technical in character it embodies certain restrictions as to treatment, especially with reference to the families of officers and men and to retired personnel, that must now be enforced because of the existing shortage of dental officers and to which exception may be taken by some of the prospective patients concerned.[34]

Two days later, the adjutant general replied that such sweeping changes were of interest to all Army officers and enlisted soldiers and requested "such instruc-

tions as are of general interest to the service be prepared and submitted to this office for necessary action." The surgeon general complied and on February 26 returned the requested information as a draft circular titled "Policies Governing Dental Attendance." On March 1 the proposed Army-wide circular was forwarded to General Pershing, chief of staff, for his approval. Both Pershing and the secretary of war approved, and on March 12, 1923, the War Department published Circular No. 20. The circular's third section, "Policies governing dental attendance," as originally proposed by the surgeon general, established the new policies that governed dental practice in the Army and limited the scope of dental treatment.[35–38]

On March 14, 1923, the surgeon general's office issued Circular Letter No. 6 (Dental No. 1), "Reorganization of the Dental Service," which outlined the professional and technical procedures for implementing the new policies in War Department Circular No. 20. Basically, the peacetime Army was interested in preventing lost duty time because of "dental diseases or deficiencies." The Corps' secondary duty was to "relieve suffering among and promote the dental comfort of all authorized garrison personnel." The new policy limited dependent care to emergency only, and restricted the use of gold to officer personnel only.[39–41]

The cuts and the new policies necessitated by them were crippling to the Army dental service—the number of dental officers available was so greatly slashed that heavy reductions were soon made in those assigned to hospitals, dispensaries, and corps areas. Circular No. 20 confirmed that it was impossible to continue the previous level of dental service for Army personnel. Among the expedients introduced was placing dentists at posts where the largest numbers of personnel were stationed in each corps area. Part-time dental service was inaugurated at those stations where dental officers had been regularly assigned in the past. The 1923 annual report labeled the reintroduction of itinerant dental service as "wholly unsatisfactory . . . an unsound, ineffectual, and unprofitable attempt to administer piecemeal profession service."[33] At a few of the smaller stations, dental service was completely abandoned. The use of civilian dental hygienists to augment the dental officers was attempted in 1924, but a lack of funding meant they could only be hired at five stations.[42] Civilian dentists were employed for emergency treatment and reimbursed by the Medical Department under the provisions of Army Regulations paragraph 1476 ½ .[39,43] Many beneficiaries did not take the cutbacks in family and retiree care very favorably, and Army dentists often suffered the consequences. The 1923 surgeon general's report read:

> From a professional standpoint it was found necessary to prescribe certain types of dental treatment that reasonably could be followed in meting out the modicum of service yet available. This required radical departure from the class of dental practice heretofore afforded the Army and caused the deprivation of dental service for wives and families and for retired officers, except emergency treatment for the relief of pain and the simple constructive procedures of first aid. . . . The imposed radical departure from the full and beneficial character of service heretofore freely afforded officers and enlisted men and that extended to the wives and families of officers and enlisted men in garrisons has caused great dissatisfaction and considerable well-warranted protest.[33(p125)]

William H Hoblitzell, a former Dental Corps captain, later observed that these changes substantially reduced job satisfaction, "the daily routine became somewhat tiresome and the incentive to accomplish things began to jade." He left the service for private practice in Cincinnati.[44]

The personnel and budget reductions forced Oliver and the Dental Corps to balance many factors of Army dental practice to meet the demands of its various missions. One of the wider impacts of these reductions and the ensuing policy changes was found in the Army's dispensaries and general and station hospitals, where the largest amount of dental work was done. Never losing sight of his primary mission to care for soldiers, Oliver kept as many dentists at their chairs as he could while limiting those in administrative, training, and educational assignments. Rhoades and Bernheim both followed Oliver's policy in this regard. Oliver also tried to maintain the practice of physicians and dentists working together to study and treat patients; a method that he and Ireland had increasingly come to support as "an established axiom."[20,33,42] This was not always easy.

Every effort was put forth to retain the facilities for group treatment in the larger hospitals, for it had been shown conclusively that the dental factor in the study of systemic disease had proven of very great value and importance in both diagnosis and treatment. Even in the face of adversity, the important primary function of the dental service prescribed in times of peace—namely, to assist in conserving the physical efficiency of military personnel and to prevent the loss of duty time through dental diseases or deficiencies—was not overlooked, nor was the duty to relieve human suffering forgotten.[33(p125)]

In a theme that was repeated for some years to come, the Dental Corps report for 1923, probably written by Oliver, pulled no punches in describing the underlying cause of the problem, the consequences of the inadequate manning, and the need for remedial action by the War Department:

> The present urgent requirement of the Army Dental Corps is an increase in personnel. It is obvious that a satisfactory type of dental treatment can not be made available to the personnel of the Army with the present quota of officers based upon an apportionment of 1 to 1,000 total strength of the Army, arbitrarily determined upon 23 years ago when the Dental Corps was first established. At that time the importance of dentistry in relation to general health was not yet understood, and modern professional procedures during the last few years and the real value of dentistry in the Military Establishment, conclusively proven during the late war, has served to demonstrate the inconsistency of attempting adequate dental service with insufficient personnel to warrant such undertaking. The only remedy is legislation. It is recommended, therefore, that request be made to the War Department for such legislation as will provide a quota of dental officers in the United States Army apportioned at the rate of not less than 2 dental officers per thousand strength of the Army. It is believed that the General Staff and The Adjutant General, as well as a majority of individuals in the Military Establishment, will heartily endorse such recommendation. Having enjoyed an excellent dental service during the past several years, and then been deprived of it during the last few months, has brought the Army personnel to a realization of the importance of military dentistry as an adjunct of the Medical Department in the conservation of health and physical efficiency and a necessary service for the relief of suffering and the preservation of human comfort among all members of the military service dependent upon the resources of a military station.[33,42,45–48]

Further complicating Oliver's already delicate juggling act were mandatory requirements that Dental Corps officers serve as instructors in various training courses, including the following: the Dental ROTC academic courses and annual summer camps; various National Guard and ORC summer camps; the citizens' military training camps (CMTCs); and the Army Dental and Medical Field Service Schools (where dental officers also had to attend mandatory training as students). Oliver also recognized the need to provide postgraduate, specialized professional training at civilian institutions for at least some selected dental officers.

The Dental Reserve Officers' Training Corps

The National Defense Act of 1920 authorized the establishment of ROTC units at medical, dental, and veterinary medicine schools as part of the overall ORC. In September 1920 the adjutant general authorized the surgeon general to organize the Medical Department's ROTC units. Oliver immediately notified the corps areas' dental surgeons about the new dental ROTC program and encouraged their involvement. At the same time, Surgeon General Ireland wrote to the deans of 10 selected Class A dental schools—those rated most highly according to the Dental Educational Council of America's standards for admission, administration, and curriculum—about establishing dental ROTC units.[32,49–52] A strong supporter of the Medical Department ROTC program, Ireland explained why ROTC was so critical at the NDA's annual meeting in Milwaukee in August 1921:

> These R.O.T.C. units will eventually constitute our principal replacement agency in keeping the reserve roster at a satisfactory level. Each graduate of the advanced military course will be given a commission in the reserve corps. If the majority of them join the reserve, it is estimated that they will provide an annual increment of sufficient size to take care of the normal replacements for both the regular and reserve corps and will more than offset our prospective losses.[53(p936)]

Most of the dental schools initially contacted were connected with universities that already had ROTC units established on campus; some even had affiliated reserve hospital units. Instruction was to commence on October 1, 1920. However, half of the 10 schools selected were unable to participate because of the late start. Therefore, the basic course was only inaugurated at Saint Louis University, Saint Louis, Missouri; North Pacific Dental College, Portland, Oregon; University of Pennsylvania, Philadelphia; University of Minnesota, Minneapolis; and Northwestern University, Chicago, Illinois (the other five schools selected were University of California, College of Dentistry, San Francisco; Harvard University Dental School, Boston; University of Michigan, College of Dentistry, Ann Arbor; University of Pittsburgh, College of Dentistry, Pittsburgh; and Vanderbilt University, School of Dentistry, Nashville, Tennessee). Because of the shortage of dental officers, medical officers were selected as professors of military science and tactics at these colleges and 468 dental students were enrolled. In 1921–1922, dental programs at three more schools were added: Ohio State University, Columbus; Creighton University, Omaha, Nebraska; and State University of Iowa, Iowa City. Five dental officers, including three already retired, attended a special basic field

training and then the normal course of instruction at the Medical Field Service School in 1921 before assuming their assignments as instructors to replace the medical officers at these institutions for the fall semester. Among the new ROTC instructors were four of the original contract dental surgeons—Captain Clarence Lauderdale at Saint Louis University and Colonel Frank Wolven at University of Pennsylvania, both now retired, and Lieutenant Colonels John McAlister at Creighton University and Rex Rhoades at Northwestern University (Rhoades also acted as Sixth Corps Area dental surgeon). The instructors' experiences reflected the importance that the Medical Department and Dental Corps attached to the ROTC program.[10,32,54,55]

The ROTC cadets were to receive 90 hours of instruction per year for 4 collegiate years, divided into a basic course (first 2 years) and an advanced course (last 2 years). The Dental Corps and surgeon general believed that it was impractical for the students to wear uniforms or to engage in drills because of their busy academic schedule, so this training was deferred to the ROTC summer camp of instruction. After completing the basic course, each student was to attend a 6-week summer camp for practical training in drill and the field duties of all Medical Department officers. The dental officers assigned as professors of military science and tactics were provided with all the textbooks and War Department documents necessary to prepare the course. The courses covered subjects such as hygiene and first aid, customs of the service, field equipment, articles of war and Army Regulations, medico-military history, discipline, food preparation in the field, splinting, gas protection, and litter transportation of wounded.[54,56,57]

The course of instruction at the summer camps was similar to that given to reserve medical officers and began at 7:00AM with 2 hours of calisthenics and squad and company drills. The later periods were used for practical exercises, demonstrations, and lectures on topics like personal hygiene, water purification, first aid, field sanitation, care of the sick and wounded in the field, and handling Army equipment. In the June 1923 camp at Carlisle Barracks, the four student companies were organized into the four components of a medical regiment: regimental detachment, collecting company, ambulance company, and hospital company. They rotated at the end of each week so every student saw service in each of the different units prior to leaving the camp. The students were quartered in tents and used field equipment and mess kits. They served kitchen police in rotation. The post gymnasium, three tennis courts, two baseball diamonds, volleyball equipment, track facilities, band concerts, and trips to the Gettysburg battlefield provided recreation. That year similar but smaller medical ROTC camps were held at Fort Snelling, Minnesota; Camp Lewis, Washington; and Fort Sam Houston, Texas.[58]

Just as Ireland had predicted in 1921, the dental ROTC units were steady producers of militarily-trained dental officers for the DORC and for the Regular Army throughout the 1920s. Enrollment increased from 468 in the program's first year, 1920–1921, to a decade high of 1,365 in 1925 before falling off to 995 in 1929 as the American economy boomed and the prospects of civilian practice without military obligations lured aspiring dentists. While the exact number of graduate dentists who were commissioned through the program each year from 1921 to 1925 is not known, the cumulative total through and including 1925 was 350. In the years

TABLE 17-1

DENTAL RESERVE OFFICERS' TRAINING CORPS ENROLLMENT AND COMMISSIONED GRADUATES, 1925–1929

	1925	1926	1927	1928	1929
Basic first year	NR	518	290	337	290
Basic second year	NR	423	516	252	307
Advanced first year	NR	189	280	240	159
Advanced second year	NR	208	212	236	239
Total enrollment	1,365	1,338	1,298	1,065	995
Graduated & commissioned in DORC	160	217	182	213	203
Cumulative graduates commissioned since 1921	350	567	749	962	1,165

NR: not reported
Data Sources: (1) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1925–1929.

from 1926 through 1929, 815 new dental officers were commissioned in the DORC, making a cumulative total of 1,165, or 25% of the 1929 strength of 4,664 officers (Table 17-1).[10,45–48,59]

Citizens' Military Training Camps

Another strain on the Dental Corps' limited personnel resources throughout the decade was the CMTC, a training program for potential officers and enlisted personnel that was introduced in the National Defense Act of 1920. Unlike the campus-based ROTC program, the CMTC was based around summer training camps. In the summer of 1923 Army dental officers assisted Medical Corps surgeons in completing physical surveys of each CMTC trainee and also provided all the necessary professional services. The next summer, dental examinations were also required during physicals. This meant a complete survey of the teeth and mouth, with "detailed notations" on patients' dental and oral conditions. Some 30,000 trainees were examined during the camps, and all of them were informed of their "dental and oral defects, received such emergency treatment as was required, and were advised to seek immediate correction on their return home, [and] had explained to them the importance of proper care of the teeth as a prophylactic measure."[42] The dental work at the CMTCs benefited both the dental officers and especially the trainees, who were sent home with instructions on how to care for their dental and oral health:

> It is believed the general information pertaining to the maintenance of sound teeth and oral health thus diffused throughout each group of young men of military age

> from practically every State in the Union will have beneficent effect in establishing a wholesome desire on their part in securing and maintaining dental fitness as an adjunct to physical efficiency for military service.

The CMTCs continued throughout the 1920s under the jurisdiction of the nine corps areas.[42(p183)]

The Dental Service in the Reorganized Army

The corps areas occupied critical positions and had very significant responsibilities within the Army's new institutional command structure after 1920. Oliver saw this change as an opportunity to decentralize supervision of dental work. During the war, senior dental officers were assigned to the territorial departments, where they acted as assistants to the department surgeons and played a large role in the overall improvement and standardization of the dental service. According to Oliver's instructions of September 8, 1920, the new corps area dental surgeon, who was the assistant to the surgeon, had advisory, administrative, and supervisory responsibilities for the dental activities within each region and was also in charge of the headquarters dental clinic. This plan, however, did not find favor with some of the corps area commanders, who, when later required to reduce their headquarters, saw a supervising dental surgeon "as a surplus officer." The Medical Department reassigned each of these surplus officers to be in charge of a local clinic or even a dental ROTC unit, and was able to "retain him on duty within reach of the Surgeon for such service as may be required in consultation, supervision, or special administration." By the end of the decade, these more senior dental officers in the corps areas had become advisors to the surgeons on dental matters but still retained their other assignments. As such, they contributed to the increased efficiency of the dental service, despite the uncertainty of their positions and relationships to the corps area surgeons and their staffs.[4,10,32,48,60]

When the War Department set about rebuilding the peacetime field army, it began with a new divisional structure based on the lessons of the war. The new tables of organization of October 7, 1920, for the Army infantry division yielded 19,385 officers and enlisted soldiers. Unlike its wartime ancestors, this division fully incorporated dental surgeons and technicians within its tables of organization, thus eliminating one of the Dental Corps' struggles from the war years. Robert Oliver's involvement in this reshaping is unclear, but his experiences in France most likely made him a prominent actor.[12]

The new square infantry division of 1920, with two infantry brigades of two regiments each, looked much the same as its predecessors. However, the units were significantly smaller (3,755 in the 1917 infantry regiment versus 3,041 in 1920) except for the regimental medical detachment, which now numbered 11 officers and 84 enlisted soldiers as opposed to the former 4 officers and 33 enlisted soldiers. A medical regiment of 904 officers and enlisted soldiers (later increased to 962, including those attached to the division surgeon's office) replaced the former sanitary train, but was roughly the same size as its predecessor. The medical regiment had three ambulance and three hospital companies rather than four, and added three sanitary or collecting companies of litter-bearers to help the regimental medical

detachments evacuate the sick and wounded.[12,61–63] The division dental organization in Table of Organization 90W (October 28, 1925) for the infantry division's medical service authorized 22 dental officers (Table 17-2**)**.[61,63]

The restructuring that took place throughout the 1920s was mostly an academic exercise because Congress routinely provided only about half of what the War Department asked for in its yearly budgets. The June 30, 1922 act reduced infantry divisions, which had already been cut down as part of the overall mobilization planning with a peacetime strength of 10,910 soldiers, to 9,200 people. By the mid 1920s, much of the Regular Army ceased to exist as a functional military organization capable of any sustained combat operations, and the National Guard and ORC divisions were no better off. In July 1926, Brigadier General (later Lieutenant General) Hugh A Drum (1879–1951), then commander of the 1st Division, wrote to the commander of the Second Corps Area that "it is not an exaggeration to say that the division as a unit exists only on paper."[12]

During the early 1920s, the surgeon general's office developed tables of organization for all Army medical units that the War Department General Staff then reviewed and approved. The tables for some of the tactical medical units, for instance, the medical regiment and Army-level units, included organizational equipment, such as trucks, ambulances, and mule-drawn wagons. The shifting strength of the Army from 500,000 down to 137,000, and the requirement for peacetime and wartime tables for some units meant that tables of organization were often revised. For many of the units that existed just during wartime, only wartime tables were

TABLE 17-2

DIVISION DENTAL ORGANIZATION IN TABLE OF ORGANIZATION 90W (OCTOBER 28, 1925) FOR THE INFANTRY DIVISION'S MEDICAL SERVICE

Group	Number of Units	Major (Assistant to Commander, Division Surgeon)	Captains or Lieutenants per Unit in Hospital Companies	Total Number of Officers
Medical regiment	1	1	6	7
Infantry regiment	4	0	2	8
Artillery regiments	2	0	2	4
Engineer regiment	1	0	1	1
Division train	1	0	1	1
Quartermaster Corps special troops	1	0	1	1

Data sources: (1) Table 90 W—infantry regiment, division, 25 October 1925, and table 81 W—medical regiment, 28 October 1925. In: Medical Field Service School. 1928: tables of organization medical department. *The Army Medical Bulletin*. Carlisle Barracks, Pa: Medical Field Service School;1928(no. 22). (2) Stone FP. Duties of a dental officer and his relation to medical officers. *Milit Dent J*. 1922;5:147–151.

prepared. Other units, such as the medical regiment, had both peacetime and wartime tables. By 1924 tables of organization for 29 types of army, corps, and communications zone (line of communications or services of supply) field and hospital medical units were completed.

During 1926 the ongoing changes in Army strength and plans required that all pre-1925 tables based on a 280,000 troop force had to be revised. By 1928 official peacetime and wartime tables for all medical units were published following War Department approval. Not all medical units required dentists in their tables of organization. However, for those that did, the work of the 1920s established the official organization and authorization for officers and dental technicians and also created tables of basic allowances and equipment that underpinned doctrine as well as mobilization and war planning (Table 17-3).[4,32,42,45–47,59,64]

Dental Officers in the Organized Reserves

While the Regular Army Dental Corps strained to meet its postwar obligations, the DORC retained much of its wartime strength because 2,255 DORC officers leaving active duty from January through June 1919 opted for inactive reserve status. The DORC actually increased slightly from 3,665 in June 1919 to 3,699 in June 1920, including 59 African American dental surgeons.[3,4]

With the National Defense Act of 1920, the DORC became part of the new ORC, although the term "Dental Reserve Corps" was commonly used well into the 1930s. The new mobilization planning requirements placed an enormous burden on the Regular Army to organize and support the reserve components within each corps area and on the ORC to staff these units. Although the numbers constantly changed with the changing mobilization plans, the ORC dental commitment for full mobilization normally ran between 5,000 and 6,500 officers. The Dental Corps struggled to recruit sufficient personnel to maintain those numbers during the 1920s, but it never succeeded, despite repeated efforts to entice wartime reservists back to the colors (Table 17-4). In 1922 the requirement for dental officers in the ORC was 7,825, but only 3,710 were available. Four years later, in August 1926, Rhoades noted that 4,454 of 5,188 dental officers called for in War Department plans were then in the DORC. Actually, a reduction in the number of medical units in the ORC had resulted in a lower requirement and thus this more favorable situation. A small number of African American dental surgeons remained in the ORC to support African American units that would be mobilized.[4,10,32,33,42,45–48,59,65–69]

Dental officers in the ORC were assigned to authorized organizations of the mobilization Army of the United States during peacetime, such as medical regiments, surgical, evacuation, and general hospitals (formerly designated base hospitals), and medical detachments of infantry regiments. They were placed in three different assignment groups—general, branch, or territorial—of which the latter two were most important. The surgeon general selected the personnel in the branch assignment group and assigned them to special duties within the Medical Department. The territorial assignment group was the largest and included all DORC personnel not assigned to the other two groups. Officers assigned to troop duty, usually those in the junior grades, were in this group and came under the

TABLE 17-3

DENTAL SERVICE STRENGTH IN SELECTED UNIT TABLES OF ORGANIZATION

Table of Organization Number	Date	Type of Unit (size)	Dental Corps Officers	Dental Technicians
81W	October 28, 1925	Medical regiment, division	1 major (division dental surgeon) 3 captains 3 first lieutenants	6
81P	April 10, 1925	Medical regiment, division	1 major/captain 1 captain 1 first lieutenant	1
90W	October 25, 1925	Medical service, infantry division	1 major 10 captains 11 first lieutenants	22
90P	June 15, 1928	Medical service, infantry division	1 major/captain 8 lieutenants	9
190W	October 14, 1926	Army Corps troops	1 lieutenant colonel 13 captains 11 first lieutenants	14
281 W	August 16, 1927	Army medical service	1 colonel 2 majors 27 captain 24 first lieutenants	54
283W	June 15, 1928	Evacuation hospital (750 beds)	1 captain 1 first lieutenant	2
284W	February 23, 1927	Surgical hospital (250 beds)	1 first lieutenant	1
285W	February 27, 1927	Convalescent hospital (3,000 patients)	1 majors 2 captains 2 first lieutenants	5
290W	August 16, 1927	Army troops	1 colonel 2 majors 42 captains 52 first lieutenants	97
689W	April 2, 1926	Auxiliary surgical group—maxillofacial surgical units	25 majors (oral surgeons)	25

W: indicates wartime
P: indicates peacetime
Data Source: Medical Field Service School. 1928: tables of organization Medical Department. *The Army Medical Bulletin*. Carlisle Barracks, Pa: Medical Field Service School;1928 (no. 22).

TABLE 17-4

DENTAL OFFICERS IN THE ORGANIZED RESERVES, 1920–1929 (AS OF JUNE 30)

Year	Total Strength	White	African American	Gross Gain/Loss	Promotions
1920	3,699	3,640	59	713/76	0
1921	3,761	NR	NR	129/67	0
1922	3,760	3,697	63	70/71	0
1923	3,241	3,194	47	326/845	35
1924	3,055	3,006	49	645/831	198
1925	3,666	3,618	48	760/149	411
1926	4,133	4,082	51	540/73	41
1927	4,464	4,407	57	427/96	27
1928	4,647	NR	NR	471/288	9
1929	4,664	NR	NR	484/467	57

NR: not reported
Data sources: (1) Vail WD. The Dental Reserve Corps. *Dent Bull*. 1936;7:21. (2) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1920–1929.

command of the corps area to which the units belonged. To maintain their skills, annual individual and unit training was required, including 14-day summer training camps, which included CMTC, ROTC, or unit camps. From 1926 through 1929, an average of 404 reserve dental officers completed 14-day training camps each year.[45–48,70–72]

During the 1920s the number of nondivisional medical units in the ORC varied from a high of 1,077 in 1923 to 753 in 1927. All of these medical units in 1927 required 16,753 Medical Department officers, but only 7,100 were then assigned in the territorial assignment group. Staffing these ORC medical units remained a high priority, but not one that could necessarily be achieved.[33,42,45,46,59]

Dental Equipment and Supplies

When the war ended, the Medical Department was left with an enormous amount of modern medical and dental equipment and supplies, vastly in excess of any possible peacetime requirements. The wartime experience, especially in France, had indicated very serious problems with the portable dental outfit that had forced Oliver to develop emergency dental kits for the dentists with the front-line troops. One clear lesson from the war was that the field dental equipment was badly in need of an extensive overhaul. On the other hand, the permanent equipment in the stateside dental clinics was relatively new, generally in good condition, and far superior to anything the prewar dental officers ever had.

The first problem the Medical Department faced was what to do with the now-surplus, permanent dental equipment located in dental clinics and the supplies on posts and in warehouses all over the United States and in France. At least

part of the answer was simple—the closure of many of the temporary camps and cantonments freed this modern equipment for transfer to and use on the Army's permanent posts, while the rest was sold as surplus. In regard to the situation, the 1920 *Annual Report of the Surgeon General* read, "for the first time in the corps' history, the installation of complete operating equipment and laboratory with modern electrical appliances have [*sic*] been made in each of the dental offices at the permanent posts of the Army."[4(p304)] The equipment procured to provide complete dental service for the soldiers of the wartime Army was of a much higher quality than ever before permitted and allowed Army dentists to provide "a higher class and greater number of operations." An added advantage of this change for the Army's dental officers was that the fully equipped post dental clinics ended the former bothersome, time-consuming practice of shipping their "bulky equipment by express from station to station" while on itinerary service.[4(p304)]

In October 1919 the War Department appointed a board of dental officers to revise the dental supply tables and to standardize the portable dental equipment, which had come under heavy criticism from the field and combat unit dentists as "too heavy and bulky to be readily transportable." The board carefully examined the requirements for equipment that could be used in both peace and war, experimented to reduce the "weight and bulk of all field equipment," and pushed for "the adoption of new types that will meet the requirements of war-service conditions."[4(p303)] Reviewing the wartime experience with the different sets of dental equipment and supplies, the board outlined the basic new tables of dental equipment:

> Base equipment for general hospitals, large infirmaries, and clinics; portable equipment for station hospitals, evacuation hospitals, and stations in the zone of communications; field equipment for use with organizations of an army in the field—army troops, corps troops, and sanitary trains; division equipment for use in combat divisions and emergency kits, being the personal equipment required for each dental officer on duty with combat organizations.[4(p303)]

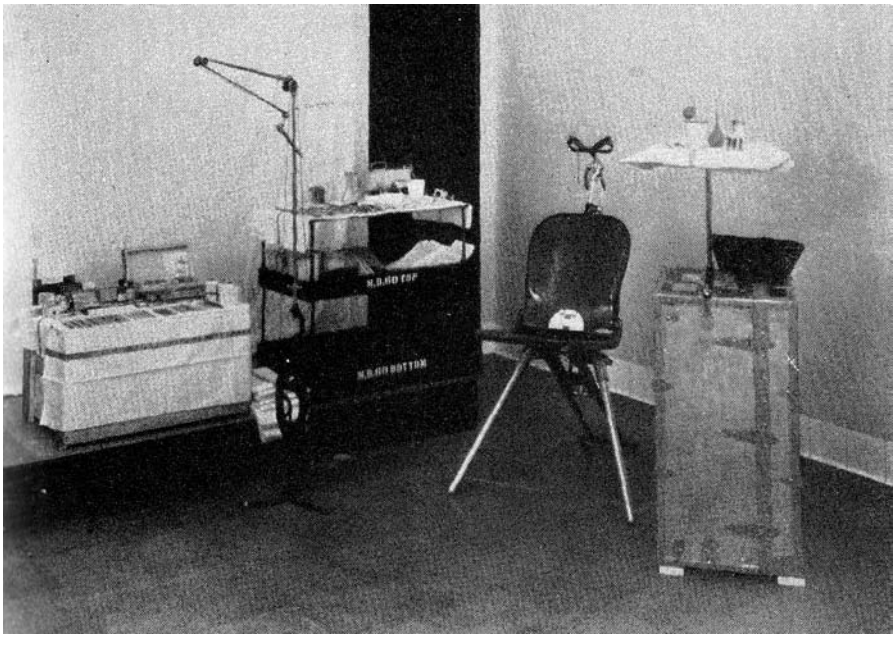
As for the portable dental outfit for field use, the board reduced the wartime collection of six chests weighing 475 pounds and occupying 27 cubic feet to three chests weighing 209 pounds and occupying 8.7 cubic feet. They were designated Dental Chests A (dental engine), B (portable chair), and C (instruments and supplies), and were a marked improvement over the wartime outfits.[73,74]

By 1921 sufficient progress had been made in the study and development of new equipment and supplies to permit the authorization of new dental equipment for the individual dental officer, the dispensary, and the hospital company of the medical regiment. The individual equipment consisted of two aluminum cases, A and B, carried on the belt and by shoulder strap, respectively, at all times. All dental officers below the grade of lieutenant colonel were to carry Case A (later renamed the Dental Officer's Case), and all enlisted dental technicians below the grade of technical sergeant carried Case B (later renamed the Dental Technician's Case). Based on the extemporized wartime rolls in the AEF's emergency dental kits, the cases' contents would enable dentists to render emergency first aid and dental relief anywhere on the battlefield. For the dispensary and hospital company

equipment, the old portable dental outfit was slimmed down to be more easily transportable but still adequate enough to meet "the demands for simple operations of reparative dentistry" for the former and "for the construction of maxillary splints" for the latter.[10(p122)]

During 1922 the process for the development of medical and dental equipment and supplies changed significantly with the establishment of the coordination, organization, and equipment division in the surgeon general's office and with the opening of the Medical Field Service School and the Medical Department Equipment Laboratory at Carlisle Barracks under Major John P Fletcher, MC. The development of dental equipment now fell within the context of research and development that was coordinated from the surgeon general's office and closely linked to the ongoing development of tables of organization, equipment, and supply. Among its many other projects, the equipment lab turned to the development of various new field dental kits.[32,45,74,75]

After some study during the mid 1920s, the dental division determined the equipment, instruments, and supplies that were required for a new field dental operating outfit, the dental officer's and dental private's kits, a field dental laboratory, and a maxillofacial set for extended field operations. With the dental division's lists in hand, the equipment laboratory designed a light field operating set in which all of the required items neatly fit into a single, easily transportable

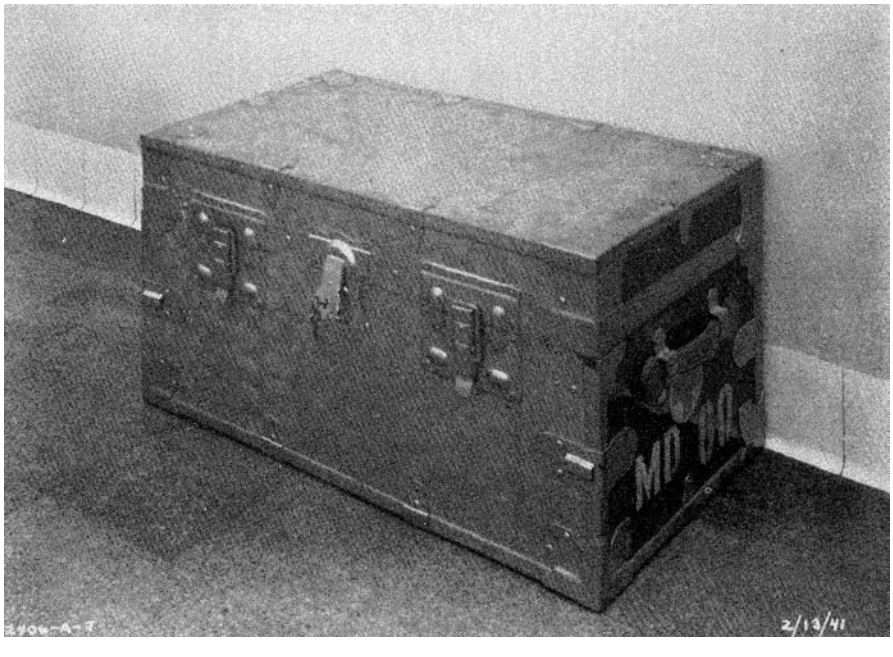


Portable dental outfit developed at the Medical Field Service School and used in the 1930s and World War II.
Photograph: Courtesy of the Medical Field Service School, Carlisle Barracks, Pennsylvania.

Medical Department chest. In 1926 the lab announced the successful development of the new field dental operating set, Medical Department Chest Number 60. Along with test copies of the officer's and private's kits that the laboratory fit into newly designed canvas pouches, trial versions of Chest Number 60 were sent to the 2nd Division at Fort Sam Houston, where they were successfully tested during the Eighth Corps Area's 1927 summer maneuvers. The field dental laboratory set (Medical Department Chests numbers 61 and 62) and a special maxillofacial set (Medical Department Chest number 63) were finished and tested shortly thereafter, but in time were included, along with the three other sets, in the Medical Department's new medical supply table (AR 40-1710) published on April 23, 1928.[45–47, 73,75]

In an article titled "Research-Development of Medical Field Equipment" that appeared in the December 1929 issue of *Military Surgeon*, John Fletcher provided a fuller description of the field dental operating set:

> As the laboratory's activities have not been confined to the division area, neither have they been confined to equipment for the medical service alone. A field dental set has been produced which packs in one standard container. This is known as MD 60. Packed within the container are a table board, two trays with spacer brackets, and a folding dental chair. The old portable dental chair weighed approximately 100



Medical Department Chest No. 60, which contains the portable dental outfit for battalion or regimental dispensary. Developed at the Medical Field Service School, Carlisle Barracks, Pennsylvania. Photograph: Courtesy of the Medical Field Service School.

> pounds and occupied three cubic feet of space, many of its parts were cast iron, it was easily broken and difficult to erect. The portable chair in this new set occupies just one cubic foot of space, weighs twenty-two and one-half pounds and there are no loose pieces. It can be set up ready for use in one minute. A portable dental engine of the foot-type is carried in one of the trays, the other of which carries instruments and supplies. The container when empty is stood on end and to it is attached an instrument bracket shelf so that from this one container weighing 160 pounds, can be erected a dental chair, a dental engine, an instrument table, and an instrument stand.[76(pp839–840)]

In addition to their personal dental cases, each dental officer and technician in a tactical unit also had a recently approved dental officer's kit and dental private's (later enlisted man's) kit. These kits, carried in large canvas pouches over the shoulder, were updated and remodeled versions of the emergency kits carried on the western front in 1918. The kits complemented each other and held the basic instruments, medicines, and supplies that the dental officer and dental technician would need to treat emergency cases in combat when the field dental operating outfit was not available.[74,75] With only small modifications, all of the field dental kits developed and tested at the Medical Department equipment laboratory in the 1920s saw extensive and successful worldwide service during World War II.[74]

While the development of new field dental equipment progressed, the dental division also had to deal with the stocks of dental supplies already on hand. The Army decided to use what was needed now rather than procure new supplies, store in medical depots around the country what was usable in the future, and dispose of the dated, poorer quality, and excess that was beyond reasonable future requirements. The cuts of the early 1920s only aggravated the policy of using war surplus supplies until they were largely exhausted in 1925.[10,32,42]

Supply requirements for various mobilization scenarios were studied at the surgeon general's office and Medical Field Service School as new tables of equipment, allowance, supply were prepared to support the reorganized Army of the 1920s. Once approved by the War Department, these items were procured as funds allowed. This meant large quantities of modern dental equipment and supplies had to be procured and stored in depots to meet normal requirements and to be available as war reserve stocks for possible mobilization. Unlike much of the previous wartime procurement, the supply and dental Divisions drew up much tighter technical specifications with the Bureau of Standards beginning in 1924 and worked for standardization of equipment and supplies to assure that any items procured consistently met Dental Corps and Medical Department quality standards. By 1927 tables of equipment for many of the principal tactical and communications zone medical units, which included their dental equipment and supplies, were completed and had received the War Department's approval for procurement.[33,42,45–47,59,73]

New Standard Classification of Dental Cases

Army dentistry was increasingly focused on prevention in the early 1920s. A key to success on this front and for the "health conservation" that the surgeon general encouraged was to have a better understanding of the dental and oral conditions of the Army's officers and soldiers and an accepted system for classifying their dental and oral health. On January 7, 1921, the surgeon general issued

Circular Letter No. 1, titled "Standard Classification of Dental Cases," which superseded all existing classification systems. Circular No. 1 established a "standardized classification of dental cases and a uniform method of procedure in the treatment of routine cases." Dental cases in the Army were now classified into four groups based on their need for treatment—all cases requiring treatment were in Classes I–III, which also set the order of priority of treatment, and cases requiring no treatment were in Class IV. The circular outlined a sequence of treatment, with all emergency cases to be treated first (Class I), then "all cases favorable for preventive dentistry" (Class II), and finally those needing "prolonged treatment and constructive dentistry" (Class III) (Table 17-5).[10,77]

The classification scheme was based on the "theory of furnishing the greatest amount of service to the largest clientele." As the 1921 annual report explained:

TABLE 17-5

CONDITIONS INCLUDED IN ARMY DENTAL CLASSES

Class I: Cases requiring immediate attention (emergency cases)	**Class II:** Cases requiring early attention (favorable cases for preventive dentistry)	**Class III:** Cases requiring extended attention (constructive dentistry)	**Class IV:** Cases not requiring attention
• Traumatic injuries • Acute infections • Extractions • Salivary calculus (extensive) • Cavities with extensive decay approaching the pulp, cavities involving the pulp • Defects not listed above, but of a nature requiring emergency treatment	• Minor filling operations • Defective fillings (except root canal fillings) • Inflammatory conditions of the soft tissues • Extractions (deferred) • Prophylactic treatments • Defects not listed above, but cases favorable for preventive dentistry, including orthodontia	• Routine filling operations and restorations • Artificial restorations required as a result of traumatic injury • Periapical infections, commonly classed as focal infections • Defective root canal fillings and tooth restorations • Extractions (resultant) • crowns, bridges, and dentures • Defects not listed above but requiring extensive treatment	N/A

Data source: Darnall CR. Office of the Surgeon General, circular letter no. 1, "Standard classification of dental cases," 7 January 1921. *Milit Dent J*. 1922;5:104–105.

> The methods and procedure outlined were the result of careful study, in which the service recommended was in direct harmony and consonance with modern methods of dental practice in civil life. The instructions issued are comprehensive and definite and provide for sufficient latitude to accommodate individual initiative in the professional treatment of cases of varying symptoms, sequelae, etc.[10]

The new classification standards were part of a larger system of examination and treatment that was designed to inspect and classify every officer and soldier in each command and record the information on Form 79, "Register of Dental Patient." Initially, the dental officer was required to complete a dental survey or inspection of his command and classify all cases according to the standards. After that, a plan of treatment could be initiated that provided the priority for treatment, beginning with patients in classes I and II.[77]

The exact origins of this new standard classification system are not clear. Various systems of classifying and reporting on dental patients had been used since 1901. During the war, each recruit passing through the recruit depot was surveyed and classified "to insure the greatest number of recruits possible being placed in a dentally fit condition prior to their assignment to organizations. This is done primarily to improve the general health of the recruit, and secondary, to lessen the duties imposed upon dental surgeons at posts or stations throughout the country."[4(p306)]

Before the recruits left the depot, they were given as much dental work as possible. The dental surgeon filled out a form detailing the administered treatment and what remained to be done, then the form was sent to the dental surgeon at the next duty station. Similar surveys were conducted on each patient that was admitted to a general hospital, either at the dental clinic or bedside, "with a view of primarily eliminating all oral or dental conditions that may have bearing upon the general pathology of the case." This process enhanced the professional cooperation of medical and dental officers and the overall care of the patients.[4(pp305–306)]

Annual Dental Surveys of Officer and Enlisted Personnel as a Preventive Dentistry Effort

The 1920s saw the implementation of more detailed annual dental examinations, the use of the standard classification system for dental cases, the collection and recording of dental and oral conditions found, and an analysis of this data as part of a preventive medicine and dentistry program. The data collection began with Army commissioned and warrant officers in 1924. That year, the data revealed "a very unfavorable condition among the officer personnel." Dental officers were "directed to make further efforts toward a better dental condition among our more permanent military personnel." In 1925 the data collected indicated improved dental conditions among officers. However, the officers represented only a small part of the total Army, so plans were developed to extend the annual examinations and data collection to enlisted personnel. The tables of organization reasoned "in this way the dental condition of military personnel will more accurately be determined and dental attendance can be directed with more beneficial results."[42,59]

The soldiers' health and readiness remained the primary concern.

> As in the past, the aim of the Dental Corps continues to be preventive dentistry and dental officers have been encouraged to teach and practice prevention at every opportunity. The cooperation of medical and dental officers in the removal of all foci of infection suspected of adversely affecting the health of the patient, continues to be routine in Army hospitals. This team work in group practice of medicine constitutes no small part towards maintaining the non-effective rate at a minimum.[59]

The first dental survey examined 82,751 Army enlisted soldiers and lasted from January through June 1926. These surveys were much more cursory than the annual officer examinations and probably undercounted those in need of dental care. Unlike officer personnel who continued to show improving dental conditions after the first dental examinations in 1924, improvements among the enlisted personnel over the following years were more difficult to track because those soldiers were less permanent in the Army. The 1929 survey indicated that 45,733 enlisted soldiers (42.55%) fell into classes I and II, requiring immediate or early treatment, and showed little or no improvement over 1926 (42%), 1927 (40%), and 1928 (42.04%). Based on data collected, the 1926 annual report concluded that about 50% of Army personnel were "continually in need of dental service" and this held true for remaining years of the decade.[45,46,48]

These annual examinations and surveys were carried out throughout the remainder of the 1920s and showed steadily improved conditions for officers, with Class IV cases increasing from 42% in 1924 to 72.68% in 1929, and Class I dropping from 12% in 1924 to 3.21% in 1929. Enlisted personnel showed only slight improvements in classes I, III, and IV, but a small decline in Class II from 1926 through 1929. This data provided a clear indication of where preventive dentistry and education efforts had to be focused (Table 17-6, Table 17-7).

Army Regulations—a New Approach

After the war, the War Department changed its entire approach to Army Regulations (AR), which governed the Army's every activity. Since the 19th century, the regulations were published as individual paragraphs in general orders or changes to existing paragraphs and in an overall annual compendium of all regulations and called "Regulations for the Army of the United States" (or simply, "Army Regulations"). During World War I ARs became a tangle of frequent revisions and changes. In June 1919 the Army embarked on a new system of easily compiled and revisable loose leaf pamphlets, with different departments and subjects each receiving a specific AR number within the system. All Medical Department regulations were to be published in the AR 40 series that replaced all Medical Department paragraphs in former ARs. The new regulations were to include "all regulations, orders, circulars, etc., which are of permanent application and which relate primarily to administration of the Medical Department." They were written and coordinated during the early 1920s and began appearing in the middle of the decade.[10,33,45,59,78,79]

The new format of the ARs was part of a much larger process that also included

TABLE 17-6

DENTAL CLASSIFICATION OF ARMY PERSONNEL BASED ON ANNUAL PHYSICAL EXAMINATIONS OF OFFICER PERSONNEL (OFFICERS AND WARRANT OFFICERS), 1924–1929 (AS PERCENTAGE OF THOSE EXAMINED)

	1924	1925	1926	1927	1928	1929
Class I	12	8	7	5	4.4	3.21
Class II	30	24	22	20	20.02	16.14
Class III	14	10	8	7	5.99	7.97
Class IV	42	58	63	68	69.59	72.68

Data sources: (1) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1925. (2) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1929.

replacing and rescinding the *Manual of the Medical Department*, which provided everything from medical doctrine to tables of supply. Much of this revision was done at the recently opened Medical Field Service School under the direction of the surgeon general's office, often with dental officers specially assigned. With the publication of AR 40-1710, "Medical Department Supply Table and Price List, Medical Supplies," on April 23, 1928, completely new and updated lists replaced the old and often outdated medical, dental, and veterinary tables of supply and equipment in the *Manual of the Medical Department*.[59,75]

Two of the three most important dental regulations appeared on October 10, 1925, when AR 40-15, "Medical Department. Dental Corps—General Provisions," and AR 40-510, "Medical Department, Dental Attendance" were published. The third appeared on October 20 when AR 40-1010, "Medical Department. Dental Reports, Returns, and Records," was published.[80–82] The January 1922 regulation revisions pertaining to commissioning and promotion in the Dental Corps were published in the series on personnel as AR 605-15, "Commissioned Officers. Appointment in the Dental Corps, Regular Army" on November 20, 1925, and in AR 605-60, "Commissioned Officers. Subjects of Professional Examination for Promotion in the Dental Corps, Regular Army" on August 16, 1926. AR 40-15 detailed the functions and structure of the dental service, the duties of dental officers and enlisted technicians, and the responsibilities of dental clinics.[45,80–84] Under AR 40-510, dental attendance was clearly defined:

> The term "dental attendance" as used in these regulations embraces the medical, surgical, and mechanical treatment of oral diseases, injuries, and deficiencies that come with the field of dental and oral surgery as commonly practiced by the dental profession, the advice relating thereto and the oral examinations connected therewith given to persons by a dental officer or a civilian dentist. It is that phase of medical attendance which, on account of its technical nature, requires the services of a dentist.[81]

TABLE 17-7

DENTAL CLASSIFICATION OF ARMY PERSONNEL BASED ON ANNUAL DENTAL SURVEYS OF ENLISTED PERSONNEL, 1926*–1929 (AS PERCENTAGE OF THOSE EXAMINED)

	1926	1927	1928	1929
Class I	17	16	16.27	13.83
Class II	25	24	25.77	28.72
Class III	9	8	7.54	6.22
Class IV	49	52	50.42	51.23

* Data collection began in January–June 1926 and continued each January–June thereafter.
Data sources: (1) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1925. (2) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1929.

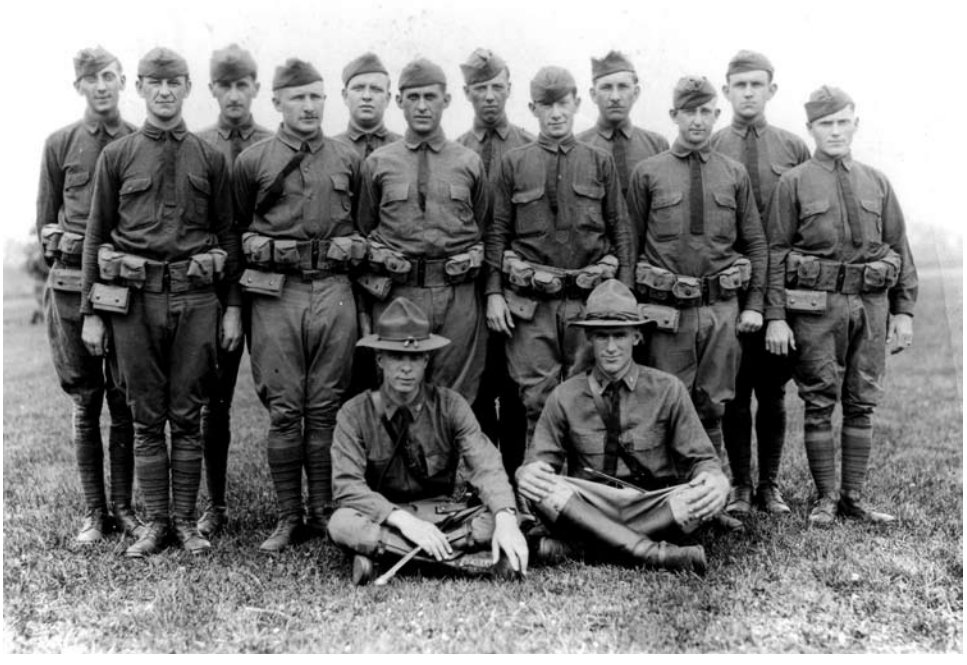
This regulation included the provisions of Circular No. 1 of January 7, 1921, on dental classification as well as the fee schedule for all procedures performed by civilian dentists within the United States.[81] AR 40-1010, "Medical Department. Dental Reports, Returns, and Records," specified all of the requirements for monthly dental reports (Form 57 MD), the maintenance of the register of dental patients (Form 79 MD), and the expenditure of special materials (Form 18b MD) as well as the standard terms and authorized abbreviations for diagnosis and treatment that would be used on Form 79.[82]

Medical Field Service School

Surgeon General Merritte W Ireland believed recent wartime experience clearly demonstrated that realistic field training was essential for all Medical Department officers—including dentists and veterinarians. With that in mind, on April 28, 1920, Ireland requested that the adjutant general turn over the US military reservation at Carlisle Barracks, Pennsylvania, to be "permanently assigned to the Medical Department for use as a field school." Carlisle Barracks, which was on the site of the former Carlisle Indian School, then housed General Hospital No. 31, established in the fall of 1918 as one of the first rehabilitation hospitals to care for the sick and wounded returning from France. The hospital had reached its peak of activity in 1919 and the number of patients steadily declined thereafter. Once General Hospital No. 31 closed, Ireland's survey indicated that it would be an excellent site for the school. Many of the existing facilities from the Indian school and the general hospital were already suitable for use or could be easily converted, and Carlisle's location was convenient for field training in the nearby mountains and at Gettysburg.[85–88]

The War Department concurred and on June 30, 1920, the Army turned Carlisle Barracks over to Surgeon General Ireland to establish a school of instruction in the medical field service. On December 23, 1920, War Department Circular No. 419 officially designated the new school as the "Medical Field Service School," an Army special service school. Within the Medical Department in the years before World War II, however, it was more often called the West Point of the Medical Department. Courses stressing military responsibility and field duties were to be conducted for both officers and enlisted soldiers. The officers' courses were for Medical Department officers of the Regular Army, ORC, and National Guard. Three courses were planned: the basic course for newly commissioned officers of the Regular Army; the advanced course for the higher grade regular officers; and the field officers' course for the National Guard and ORC. Newly commissioned Dental Corps first lieutenants were to be placed on active duty status in the ORC. They were then ordered to the Medical Field Service School at Carlisle Barracks, where they received 4 months of intensive training in "field service activities of the Medical Department," with "special emphasis" on field dental service. A noncommissioned officers' course for selected enlisted soldiers of all three components was also established. During the summers from mid June through July, the faculty and staff, in coordination with the 1st Medical Regiment (also stationed at Carlisle Barracks), was fully engaged in training regimental medical detachments, sanitation units, medical regiments of the ORC, and students in medical, dental, and veterinary units of the ROTC. In addition, officers and noncommissioned officers of the National Guard and reserve and hospital units of the ORC were to come to Carlisle Barracks for their annual instruction and training. The new Medical Field Service School was given the responsibility of providing comprehensive, career-oriented military training never before entrusted to any single entity within the Medical Department in peacetime.[70,86,87,89]

Although competing for the limited faculty, facilities, equipment, space, and time at Carlisle Barracks, these training programs were part of a carefully thought-out concept for the military and professional training, education, and development of the officers of the Army Medical Department from the time of their initial entry into service. The Medical Field Service School's basic course for all incoming officers was originally intended to be the first link in a career-long chain, and it was supposed to be completed before any other schooling. The Army Medical School had been preparing Medical Corps officers for military medicine since 1893. The surgeon general now planned to add to it new Army Dental and Veterinary Schools, the Army School of Nursing (established in 1918), and Walter Reed General Hospital, all located at the Walter Reed complex in Washington, to form the Army Medical Center. When the center opened in August 1923, it was the heart of the Army Medical Department's Professional Educational System (later redesignated the medical department schools). Medical, dental, and veterinary graduates of the Medical Field Service School's basic course were to move on to these professional technical and clinical schools. Thus, within a year, the new officers completed the sequence of the basic officer's course, including field training, and their basic professional course, and were ready for their first assignments in the Army Medical Department.[20,32,33,90]



Reserve Officer Training Corps Summer Camp 1922. Saint Louis University Dental ROTC at Medical Field Service School, Carlisle Barracks, Pennsylvania. Photograph: Courtesy of the National Library of Medicine.

The first class of student officers, which consisted of 50 medical and 20 dental officers, reported for duty on May 27, 1921, and classes began on June 1, 1921.[89] The commandant, Colonel Percy M Ashburn, MC, greeted the first class with these remarks: "Bear in mind that this is a new school, that it has not yet had the shaking down which comes from practice and experience, that our schedules are yet untried and subject to revision, that with your class the course must be shortened and condensed, that the equipment is not complete, and that we are not yet what we hope to become."[91,92]

Although not obvious at first, one of the most critical positions for the Dental Corps was that of the senior dental representative assigned to the new Medical Field Service School. The first Dental Corps officer to hold this post from 1921 to 1925 was Lieutenant Colonel Frank P Stone, DC, one of the original contract dental surgeons who had extensive field and staff supervisory experience in the AEF during the war and would later serve as chief of the Dental Corps from 1934 to 1938. To better understand the training, Stone completed the special field training and basic course at the Medical Field Service School in the summer of 1921, along with the new Dental ROTC professors of military science and tactics. As the Dental Corps' mentor and advisor for all active, reserve, and National Guard dental officers who passed through the school, Stone and his successors gained

a unique knowledge of the Corps' personnel and had a crucial role in shaping their careers. With his years of experience dating back to the trails of Mindanao with Jack Pershing, Stone brought a very realistic perspective to his new duties—to prepare all dental officers for possible combat in close cooperation with other members of the Medical Department, especially the medical officers. Stone was responsible for all the dental instruction at the school and in the numerous other courses offered there, including the Medical Department short basic course for reserve and National Guard officers.[10,32,92–95] In an article in the June 1923 issue of *Military Dental Journal*, Stone wrote that this course was absolutely essential to prepare reserve and National Guard dental officers for combat operations:

> My personal experience in the Army in the last 22 years convinces me that dental officers can not function to any great extent in a strictly professional capacity in an active campaign with troops, and particularly during combat. Their services are valuable when these troops are resting or are awaiting combat. They must be with the troops, so they should know how to function when the troops go into battle. Many surgeons deserve credit for using their dental personnel properly in combat during the late war, and many dental officers deserve credit for using their own initiative in helping out in an emergency, but there were many also who were censured, ridiculed, relieved from duty, and one case reported court-martialed for failure to function properly during combat. This should not happen again, and their training here at the Medical Field Service School is the remedy. Dental officers should know what to do and medical officers should know what to expect of their dental officers during active warfare, and neither should be left to their own initiative to act at so critical a time. . . . It is, therefore, the duty of dental officers who wish to serve their country in war to know something about their duties and to receive instruction to fit them for their best service.[96(p76)]

Among his many duties, Stone also set up and administered voluntary correspondence courses for all dental officers in the National Guard and ORC, which were part of the larger program of Army correspondence courses that began in 1923–1924. These courses covered military dentistry as well as a wide range of other military subjects, such as Army organization, administration, and tactics, and were designed specifically "to provide the citizen soldier with an opportunity for systematic and practical training and instruction which will fit him to perform the active duties of his branch pertaining to his present rank, and which will also prepare him for promotion to the higher grades." Major Frederick R Wunderlich, completed the basic course in 1921 prior to his Dental ROTC assignment at the University of Minnesota and later replaced Stone from 1925 to 1929. In 1927 he wrote of the importance of the National Guard and ROTC training, including the correspondence courses,[32,42,97–99] drawing a rare but crucial distinction between the dental officer and the dental surgeon:

> There is, in the final analysis, but one objective in all military training. The attainment of the efficiency standard or competency of the individual to fill the position which he holds or for which he is being trained is the end sought. . . . The maintenance of professional ideals fostered by contact with professional societies and the daily practice of his profession will assure the Army of well-qualified dental surgeons. This professional

> skill, supplemented by the indicated training of a military nature, constitutes the requirements of a dental officer as distinguished from a dental surgeon. The ability of the individual dental surgeon to make available his full potential value, both professional and military, is the end sought in training and the attainment of this end marks the competent dental officer.[99(p9)]

On July 7, 1923, the Medical Field Service School began a 15-day training course for 56 reserve officers, 9 of whom were dental. The program was similar to ROTC, except the students were housed in barracks rather than tents. The group of 56 was split into four sections to simulate a regimental medical detachment, an ambulance company, a sanitary company and battalion, and a hospital company. Lectures were followed by practical demonstrations, during which students carried out the work required of these units during actual combat. During the practical exercises, the simulated wounded were brought to the battalion aid station by the litter-bearer squads of the regimental medical detachment. They were treated at the station, having splints adjusted and bandages placed, and hemorrhage and shock were put under control. Next, the patients were evacuated to the collecting station operated by the sanitary company and battalion toward the rear, transported by either the ambulances of the ambulance company or sent back as walking cases to the hospital (operated by the hospital company). From the hospital company the wounded were sent to the evacuation hospital even further removed from the front lines.[100]

In addition to this general training, the dental officers were given instruction in the organization and administration of the Dental Corps, dental field administration, and "methods employed in treating and evacuating jaw casualties." Casualty management was covered and reinforced through conferences, exercises, demonstrations, examinations, and critiques by faculty dental officers.[89,101]

It was not until the mid-1920s that the various training programs at the Medical Field Service School were brought into line with War Department guidance for Army service schools on the scheduling of the officer basic (January 2–June 30) and advanced (September 15–December 15) courses, the professional courses at the Army Medical Center's schools were coordinated with those at the Medical Field Service School, and everything was then specified in published Army Regulations. The "shaking down" that Percy Ashburn had mentioned in 1921 consumed a good deal of time and attention during the first several years. Some of the shortcomings in the instructional courses and of the instructors themselves were identified and soon corrected. Others, such as the weather in the area of Carlisle Barracks that hampered field training during the winter months, could only be remedied through major scheduling changes. Accordingly, the Medical Department requested and received the War Department's approval in May 1924 to switch the Medical Field Service School basic course to the months of February through May, aligning the training with existing ARs and allowing field training in the more favorable spring weather. This change made it necessary to realign the basic professional courses at the Army medical, dental, and veterinary schools at the Army Medical Center from January through June to September through December. As a result, in 1924 the professional basic courses were offered from September 2, 1924, to February 10, 1925, after which the graduates were ordered to

the Medical Field Service School basic course beginning February 11.[88, 102–107] Thus, the original officer training sequence of 1921 was reversed, with the field training following the professional training.

When finalized, courses at the Medical Field Service School and the Army Medical Center's schools formed an interlocking, functioning system that endured until the eve of World War II. The annual programs coordinated the training, dental, and veterinary divisions at the surgeon general's office, the surgeons of the corps areas, the ORC and National Guard Bureau, the schools of the Army Medical Center, and Walter Reed General Hospital. From approximately September 1 to January 31, the new appointees and "inexperienced junior officers" of the three corps attended the professional basic courses at the Army medical, dental, and veterinary schools in Washington. They then moved to Carlisle Barracks for the Medical Field Service School basic course, which was given from approximately February 1 through May 31, a schedule that allowed realistic field training in the late spring months. Field duties during the summer training cycle of June and July for the National Guard, units of the ORC, CMTC, and ROTC then followed. For more senior officers, the advanced course at the Medical Field Service School was offered from October 15 to December 15, 1926. The advanced courses at the dental and veterinary Schools, when ready and offered, coincided with that of the Army Medical School, which were from February 1 through May 31, because they all shared the limited faculty and facilities of the medical school and Walter Reed General Hospital.[4,10,32,33,42,59,45–48,68,102–105,107]

During the 1920s a total of 84 Dental Corps officers graduated from the Medical Field Service School; 83 completed the basic course, but only one completed the advanced course (Table 17-8). That sole Dental Corps officer was Colonel Rex Rhoades, who attended from the course from October 15 through December 15, 1927.[32,33,42,45–48,59,98(p820),108]

By 1924 Oliver and the Dental Corps were already well pleased with the results of this training and reported:

> The value of this basic instruction to the dental officer can not be overestimated. It affords him a comprehensive knowledge of the Army, the mission of the Medical Department, the integral function of the Dental Corps, and tends to divorce him from the narrow sphere of professional activity to which he is inclined to gravitate in the daily routine of office practice.[42(p184)]

The Army Dental School

A new and critical link in the chain of professional development for dental officers was the more advanced, postgraduate-level Army Dental School located on the grounds of Walter Reed General Hospital in Washington, DC. William HG Logan had strongly advocated such a school in February 1919, and many leading Army dentists had thought about and discussed it since 1901. John Sayre Marshall and Robert Oliver, both dental educators, had originally conceived of an Army dental school during the initial meetings of the dental examining board in February 1901. As Oliver later related, "The primal reason actuating the original thought

TABLE 17-8

DENTAL CORPS GRADUATES OF THE MEDICAL FIELD SERVICE SCHOOL, 1921–1929

	1921–1922	1923	1924	1925	1926	1927	1928	1929	Total per Course
Basic Course	22	13	9	6	8	7	9	9	83
Advanced Course*	N/A	N/A	N/A	N/A	0	1	0	0	1
Total per year	**22**	**13**	**9**	**6**	**8**	**8**	**9**	**9**	**84**

*First offered in 1926.
Data sources: Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1922, 1924–1930.

of these two dental educators was the manifest necessity of preparing and training young dental men, just entering the Corps, to meet the new conditions of life—physical, mental and professional—in which they were suddenly thrust."[90(p59)]

In the years after 1901, dental officers continued to discuss the need for a school as a means for "standardization of methods of conducting military dental practice at home and with troops in the field" as well as for "a standardization in the preparation of reports and returns." Oliver had established the first such school for dental officers at Fort Bliss, Texas, during the Mexican Punitive Expedition in 1916, and created similar dental training schools in the 1st, 2nd, 26th, 32nd, and 42nd Divisions of the AEF until the Army Sanitary School at Langres became operational in December 1917. The establishment of the dental school in connection with the medical officers' training camps at Fort Riley, Kansas, and Camp Greenleaf, Georgia, and the success of their graduates during the war confirmed the wisdom of a school for Dental Corps officers. Upon his return to Washington in September 1919, Oliver became the leading advocate for this new school and guided its creation through the surgeon general's office and general staff in 1920–1921.[90,107]

On January 6, 1922, the secretary of war finally authorized the new Army Dental School as a special service school of the War Department. Its mission was to:

> teach newly appointed dental officers the practical application of approved methods of professional procedure in the military service, to furnish post-graduate courses in advanced military dental surgery to members of the Dental Corps, to provide an organization for the investigation, study and research of dental problems, a source of authoritative information on professional matters, and the training of enlisted personnel to meet the requirements of the dental service.[109(p18)]

Walter Reed General Hospital was selected as the site of the new school because of its large dental clinic, expert faculty, and the advanced bacteriological, pathological, and chemical laboratories of the Army Medical School, which was to be relocated from its current building in Washington to a new building on the hospital's grounds in 1923.[32]

Addressing the school's formal opening on January 9, 1922, Major General Merritte W Ireland, the surgeon general, told the students and faculty of the Army Dental School:

> I trust every officer here appreciates the importance of this hour, when the first session of the Army Dental School is begun. I predict this event is epoch-making in the future of the Dental Corps and that its importance will grow as the years go by. . . . I am sure the course here will be equal to, if not better, than any post-graduate instruction you could receive in any city in the United States. . . . You are starting a Dental Corps School which will enable you to get together every year, a liberal number of your officers will learn to know each other, will establish a community of interest and thereby develop a pride in the service which will be of inestimable value. . . . I urge upon you to make the most of this vast opportunity here for advancement, which will be of the greatest value to you through your service. And do not forget that you are a part of the medical profession. The advances made during the last few years have demonstrated your outstanding value to group practice and we all realize that we are more and more dependent upon each other. I think it most unfortunate that dentistry should have been taught for more than eighty years as a separate profession. The great opportunities for advancement in the means of relieving suffering humanity lie in coordinated activities.[109(pp19–21)]

Ireland's speech strongly endorsed not only the Army Dental School but also the role of the Dental Corps within the Army Medical Department. Speaking at the 1923 graduation, Oliver also stressed the uniqueness and potential contributions of the school:

> The Army Dental School is the first school in the world to teach the new specialty of military dentistry and is the first to incorporate in its curriculum the full courses in the basic sciences of medicine. Its teaching staff is composed equally of selected medical and dental officers of the Army. The benefits derived from the dental school shall not be confined only to the Dental Corps and its clientele in the military service, but promises to extend to the dental profession and, in a larger measure, to our great citizen body.[90(pp64–65)]

While Ireland seemed to share Oliver's opinion of the school, the tougher challenge was converting Ireland's words and Oliver's vision for the Army Dental School into reality. For that, Oliver turned to Colonel Seibert D Boak, DC, the first commandant (later designated director), who was also in charge of the dental clinic at Walter Reed General Hospital, and Colonel Raymond E Ingalls, DC, the assistant to the commandant (later executive officer) and head of the department of prostheses. Boak, one of the original contract dental surgeons of 1901, had gained significant experience in educational work when he successfully directed the dental section of the Army Sanitary School at Langres, France, for its duration from January to December 1918 (for his work, AEF General Headquarters

awarded Boak a Distinguished Service Medal in 1923). The building housing the new school was a Walter Reed hospital ward remodeled to meet the needs of the school, which would be remodeled again later in the decade. It contained lecture halls, a library, a museum, conference rooms, and offices for the commandant and his assistant.[109–112]

According to the *Annual Report of the Surgeon General* for 1922, the opening of the Army Dental School corrected some of "the greatest handicaps in the development of the dental service" and was "one of the most important events in the history of the Dental Corps." Except for a brief period during World War I, the Dental Corps lacked a location and program to train newly commissioned dental officers in "their military duties and the adaptation of professional procedures to an expeditious and satisfactory military dental practice." Without this training, most newly commissioned Dental Corps officers, who had little or no familiarity with the Army, were assigned directly to stations without other Army dentists. These stations had little contact with the civilian dental community that would have permitted the new dental officers to maintain their professional dental skills. In combination with the Medical Field Service School, the new Army Dental School removed these shortcomings in professional development and education and promised "the maintenance of a highly trained commissioned personnel in the Dental Corps of the Army."[32]

The Army Dental School leadership changed three times during the remaining years of the 1920s, but each new commandant brought significant experience that improved both the school and the dental clinic at Walter Reed. In September 1923 Colonel Franklin F Wing, DC, another original contract dental surgeon, became the school's commandant and chief of the Walter Reed Dental Clinic, replacing Seibert Boak, who was reassigned to the Philippines. Lieutenant Colonel Raymond E Ingalls, DC, now reduced in rank due to the officer reductions, remained the executive officer until June 1925.[59,112,113] In the summer of 1926 Major William S Rice, DC, who Oliver dispatched to set up the initial dental school at the 1st Division in September 1917 and who later established the dental section of the Army Sanitary School at Langres in December 1917, assumed the duties as the director. Captain Clyde W Scogin, DC, was the executive officer until February 1928, when Major Oscar P Snyder, a future Dental Corps chief (1954–1956), replaced him.[45] On July 1, 1929, Lieutenant Colonel Frank LK Laflamme, who had briefly held the post of Dental Corps chief in 1919, became the director of the Army Dental School, replacing Rice when he resigned from the Army in November. Laflamme remained in that position until August 4, 1932.[114–116]

Students admitted to the basic course were primarily officers of the Dental Corps. From 1922 to 1924 those who had first satisfactorily completed the Medical Field Service School at Carlisle Barracks usually attended. That prerequisite changed when the Medical Field Service School began to follow completion of the Army Dental School. Qualified National Guard and ORC dental officers were also admitted, as were foreign dental officers by invitation of the chief of staff or under regulations prescribed by the War Department. The surgeon general selected the officers to take the course on the recommendation of the Dental Corps chief. National Guard eligibility was determined by the provisions of section 16 of the Act of January 21, 1903, as amended by the Act of May 27, 1908 (35 Stats, 402).[59,109]

According to the Army Dental School's annual report of 1928, the basic course was designed:

> as an intensive course of special training in the adaptation of professional procedures to the requirements of the military service and to qualify officers of the Dental Corps to take their places with the specialty of dental medicine in the scheme of "group medicine" as practiced in the Army. Notwithstanding the fact that recent graduates who enter the Corps are well grounded in that basic theories and technical procedures of clinical dentistry, it has been found advisable to give them, immediately a broader conception of professional dentistry as a specialty of medicine, and to this end there is included a course in preventive medicine and clinical pathology at the Army Medical School.[117]

On June 22, 1922, at the National Museum Auditorium in Washington, DC, General John J Pershing, the chief of staff, presented the diplomas to the first class of 14 Dental Corps officers who graduated alongside the students from the Army Medical School.[109]

The Army Dental School shared key faculty members with the Army Medical School, also located at Walter Reed after September 1923, which was especially strong in the areas of surgery and preventive medicine. The basic courses of instruction were in clinical dentistry; dental and oral surgical prosthesis; oral surgery and exodontia; preventative dentistry and oral hygiene; bacteriology, pathology and preventive medicine; chemistry; and oral and dental roentgenology.

TABLE 17-9

HOURS OF INSTRUCTION, ARMY DENTAL SCHOOL, BASIC COURSE, 1922–1927

Department	Lectures and Examinations	Laboratory and Clinic	Lectures and Laboratory	Total Hours
Clinical dentistry	17	99		116
Prosthesis	36	174		210
Oral surgery	39	48		87
Preventive medicine and clinical pathology			180	180
Roentgenology	11	15	27	53
Special lectures	8	9		17
Total hours	**111**	**345**	**207**	**663**

Data sources: (1) Basic course, Army Dental School, seventh annual session, September 1, 1928 to January 31, 1928. In: *A History of the Army Dental School, 1927–1928*. Located at: Research Collections, Office of Medical History, OTSG/MEDCOM, Falls Church, Va. (2) Ninth annual basic course for officers, session September 3, 1929 to January 31, 1930. In: *A History of the Army Dental School, 1 July 1929–4 August 1932*. Located at: Research Collections, Office of Medical History, OTSG/MEDCOM, Falls Church, Va.

TABLE 17-10

HOURS OF INSTRUCTION: ARMY DENTAL SCHOOL BASIC COURSE, 1928–1929

Department	Lectures and Examinations	Laboratory and Clinic	Lectures and Laboratory	Total Hours
Clinical dentistry	20	98		118
Prosthesis	36	171		207
Oral surgery	40	57		97
Preventive medicine and clinical pathology			191	191
Roentgenology	8	19	30	57
Special lectures	7	0	8	15
Total hours	**111**	**345**	**229**	**685**

Data sources: (1) Basic course, Army Dental School, seventh annual session, September 1, 1928 to January 31, 1928. In: *A History of the Army Dental School, 1927–1928*. Located at: Research Collections, Office of Medical History, OTSG/MEDCOM, Falls Church, Va. (2) Ninth annual basic course for officers, session September 3, 1929 to January 31, 1930. In: *A History of the Army Dental School, 1 July 1929–4 August 1932*. Located at: Research Collections, Office of Medical History, OTSG/MEDCOM, Falls Church, Va.

The instruction in bacteriology and pathology in the curriculum was much more intense than that required of dentists in civilian education. Until 1928 the basic students took 663 hours of instruction, 207 of those hours together with the medical school classes (Table 17-9, Table 17-10). During the 1927–1928 school year, this combined instruction was temporarily cut to 153 hours, but the following year it was pushed back up to 229 hours.[118,119]

An advanced course was initially planned for September 15 to December 15, 1923, but it was cancelled "owing to the general wide disturbance of morale due to the shortage of personnel as the reduction program for dental officers progressed." The continuing disturbance in the Dental Corps in the ensuing years meant that the inaugural advanced course did not begin until February 1, 1928, when Major Oscar Snyder reported to replace Captain Clyde W Scogin (1890–1938; DDS, Colorado College of Dental Surgery, later University of Denver, 1915), the school's executive officer and an instructor in the department of oral surgery. Scogin had served as a dental surgeon in various units of the 89th Division throughout the war in the United States and France, completed postgraduate instruction in oral surgery at several civilian schools, and had already earned a national reputation in oral surgery for his work on "nutritional support for the maxillofacial patient." Snyder's arrival freed Scogin to take the course in conjunction with the Medical Corps students attending the Army Medical School's advanced course, which ran from February 1 to May 31, 1928. While the students selected for the advanced course were to be chosen from dental officers who showed "special fitness for

particular subject" they wished to pursue, no students had yet been selected nor had any advanced course been run, due to the continuing scarcity of dental officers. Apparently the time was right to establish the precedent for the new course of instruction. Scogin had demonstrated that he was capable of completing a rigorous course of study and could demonstrate the importance of the advanced course for Dental Corps officers. His course of instruction totaled 579 hours (Table 17-11). The surgical service at Walter Reed General Hospital provided 102 of the surgical hours in surgical principles and the practice of oral and maxillofacial surgery.[33,120–122]

Regarding the first advanced course, the Army Dental School's history for 1927–1928 says:

> This year also marked the beginning of the Advanced Course for officers. While only one officer was in attendance the course was very important in establishing a precedent and schedule for this instruction, as well as demonstrating the great benefit to be derived from a more intimate relation in the character of instruction given to the Dental and Medical Officers general practice. This Advance Course was made possible by a special refresher course given at the Army Medical School, which included in its schedule a great deal of material and instruction which is required by Dental Officers who are specializing in Oral Surgery. All of the instruction given by Medical Officers was taken with the Medical Class and our one student not only was able to keep up with the class but we are unofficially informed had a relatively high standing.[123]

After completing the advanced course, Captain Scogin went on to attend the basic course at the Medical Field Service School in 1928–1929. Upon graduation he was the first Dental Corps officer to receive the Skinner Award, which was pre-

TABLE 17-11

CAPTAIN CLYDE W SCOGIN'S COURSE OF INSTRUCTION AT THE ARMY MEDICAL SCHOOL

Course	Number of Hours
Clinical dentistry	56
Oral surgical prosthesis	56
Oral surgery	235.5
Preventive medicine and clinical pathology	153.5
Special roentgenology	60
Special lectures	18
Total	**579**

Data sources: (1) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1923. (2) The Army Dental School. *Milit Dent J*. 1922;5:25–26. (3) First annual advanced course for officers, session February 1, 1928 to May 31, 1928. In: *A History of the Army Dental School, 1927–1928*. Located at: Research Collections, Office of Medical History, OTSG/MEDCOM, Falls Church, Va. (4) Major Clyde W. Scogin (1890–1938). *Dent Bull*. 1938;9:154. (5) Major Clyde W Scogin. In: Biographical Files, Research Collection, Office of Medical History, OTSG/MEDCOM, Falls Church, Va.

sented to the student with the highest standing in each basic course class. Scogin was promoted to major in November 1929 and was assigned dental surgeon for the US Army Forces in China at Tientsin, where he contracted an illness. After his return to the United States in 1932 he was hospitalized at Fitzsimons General Hospital in Denver, Colorado, but never regained his health. Clyde Scogin was retired on September 30, 1933, due to a service connected disability, and he died at Fitzsimons on April 26, 1938.[98(p1050),121,122,124,125]

In addition to recommending officers for courses at the school, the surgeon general also selected enlisted soldiers to attend courses for dental technicians (chair assistants), dental hygienists, dental mechanics, and dental radiographic technicians and to take advantage of the talented instructors and facilities available at Walter Reed.[32] The Dental Corps had realized for many years that adequately trained dental technicians were critical to successful dental and oral care in the Army, and the establishment of the new Army Dental School provided the ideal location for such an enlisted training program:

> A dental officer, assisted by a properly trained and efficient technician, is enabled to increase the quality and quantity of his service. The training of an adequate sized corps of dental technicians, as herein contemplated, is believed to be a sound and economic policy that will greatly improve the professional service of the Dental Corps.[32(p135)]

No enlisted personnel were trained in 1922 because the school's training program was being set up. An extensive training program was developed that began in 1923 and by 1928, it consisted of a 6-month course (usually January through June) with 905 hours of instruction, laboratory, and clinic for technicians in dental mechanics and a 4-month course (usually January through April) of 567 hours for technicians in dental hygiene. The first three enlisted students completed their training in 1923—two dental mechanics and one dental hygienist. They "were assigned to duty in laboratories of dental clinics, where their services were urgently needed" and were soon "valuable adjuncts in the respective dental services." From 1923 through 1929, a total of 43 enlisted soldiers were reported as trained—30 as dental mechanics and 13 as dental hygienists—but the total number was actually higher because the number of enlisted dental technicians trained in 1924 was not reported. In 1927 the opening of the Walter Reed Central Dental Laboratory allowed the dental technicians to receive an entire month of "practical instruction" in the laboratory for the first time, which handled "a greater quantity and variety of practical cases."[33,42,45–48,59,123]

During the 1920s a total of 81 Dental Corps officers completed the Army Dental School—79 in the basic course and two in the advanced course, which began with one student each in the 1928 and 1929 classes (Major John L Schock)(Table 17-12, Table 17-13).[4,10,32,33,42,45–48,59,108]

In his address to the graduates of the second Army Dental School class on June 8, 1923, Colonel Oliver laid out his vision for the school and for Army dentistry within the larger context of the development of medical science:

> Our school, with a broader conception of the profession of dentistry in conjunction with that of its older sister, medicine, appears to be the first beacon light to aid and

TABLE 17-12

OFFICER GRADUATES OF THE ARMY DENTAL SCHOOL, 1922–1929

	1922	1923	1924	1925	1926	1927	1928	1929	Total
Basic course	14	13	11	7	7	9	9	9	79
Advanced course	0	0	0	0	0	0	1	1	2
Total officers	**14**	**13**	**11**	**7**	**7**	**9**	**10**	**10**	**81**

Data sources: (1) Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1922–1930.

> direct the return of dentistry to the fold of medicine, there to travel along the great broad highway intended for the progress of the healing art. Should it be successful in directing the mental trend of the entire profession toward a general convergence of dentistry back to medicine and surgery, from which it so abruptly departed in 1839, and should it be the means of engendering broader views relative to the importance of the specialty of dental surgery in connection with the general application of medical and surgical procedures in the treatment of mankind, it will indeed have rendered signal service to humanity.[90(p65)]

Dental Caries Research: Captain Fernando E Rodriguez

In his June 1923 speech, Oliver stressed the potential benefits of the Army Dental School and even discussed one of the first and most significant of those: the research of Captain Fernando E Rodriguez (1888–1932) on the bacteriology of dental caries. Rodriguez was born on February 24, 1888, in Puerto Rico, and received his dental degree from Georgetown University in 1913. After a short time in private practice in Washington, DC, he entered the United States Indian Medical Service. While serving as a field dentist with the Pima Indians in Arizona, he studied the stained and mottled enamel of his patients' teeth and determined that

TABLE 17-13

ENLISTED GRADUATES OF THE ARMY DENTAL SCHOOL, 1922–1929

	1922	1923	1924	1925	1926	1927	1928	1929	Total
Dental mechanics	0	2	NR	6	5	5	5	7	30
Dental hygienists	0	1	NR	2	4	3	1	2	13
Total enlisted	**0**	**3**	**NR**	**8**	**9**	**8**	**6**	**9**	**43**

Data sources: Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1922–1930.

drinking water had caused the condition. This discovery contributed significantly to the study of mottled enamel. On September 14, 1917, Rodriguez was appointed a first lieutenant in the Dental Reserve Corps at Camp Upton, New York. After completing the medical officer's training camp at Camp Greenleaf, Georgia, he accepted a commission in the Regular Army Dental Corps on February 15, 1918. He served in San Juan, Puerto Rico, from August 1919 until February 1921, when he reported to the Army Medical School in Washington, DC, for "duty as student and investigator of the bacteriological aspect of dental diseases." Shortly after his arrival, Rodriguez's article, titled "Oral Lesions in Tropical Diseases," was published in the March 1921 issue of *Military Dental Journal*.[126–128]

Based on his research at the Army Medical School under the direction of Major Henry J Nichols (1887–1927), MC, assistant director of laboratories, and Major James F Coupal, MC, pathologist at the Army Medical Museum and the Army Dental School, Rodriguez published his first article on the etiology of dental caries, called "Studies in the Specific Bacteriology of Dental Caries." This article appeared in the December 1922 edition of *Military Dental Journal*.[129] From his experiments, he reached the following conclusions:

> 1. A distinctly high-acid producing group of bacteria, morphologically distinguishable into three types, is constantly found in the deep layers of dental decay.
>
> 2. This group may be differentiated, bio-chemically, from the other acid producers of the mouth by a constant optimum H-ion concentration varying from pH 3.9 to pH 2.9.
>
> 3. These organisms, in pure culture, survive and are active in degrees of alkalinity equivalent to normal reactions of the saliva.
>
> 4. When normal previously sterilized teeth are subjected to the direct action of these bacteria, caries-like lesions are produced.
>
> 5. Histological sections of the artificial lesion present the gross clinical characteristics of the natural process and the localization of the experimental organisms in the deep tooth areas.
>
> 6. The group has been tentatively placed under Tribe V, *Lactobacillae*, Classification S.A.B., and will accordingly be designated with the group name Lactobacillus odontolyticus, Types 1, 2 and 3, respectively.[129]

Military Dental Journal wrote that Rodriguez's work was "the most valuable advance made in the etiology of dental caries since Miller's time," referring to Willoughby D Miller, DDS (1853–1907), who published a major study titled "Micro-organisms of the Human Mouth" in 1889. The journal also said that there was an "urgent need in military dentistry for an agent that will arrest or retard the progress of dental caries in recruits and others stationed where dental service is not always available or those going into combat or on field maneuvers."[51,130]

Commenting on Rodriquez's research, Oliver said:

> It is with some degree of pride that we invite attention to the splendid research work recently accomplished by medical and dental officers, working side by side in the laboratories of our schools, in which absolute findings have been made and recorded

> of that particular bacteria which produces dental caries. Groups of this bacteria have been segregated, classified and actually put to work developing dental caries under observation. Accepting this as a literal fact, it is readily conceivable that the next real progressive step in behalf of mankind is to find the natural antidote for that class of bacteria and begin study of ways and means leading to its universal application. This will then prove to be the most important step in the history of preventive dentistry and one of but little less importance in preventive medicine. The development of such an antidote will render salient service to the medical profession in the prevention of disease and in so doing will earn for dentistry far greater appreciation as an important specialty of the healing art.[90(p65)]

In 1923 Rodriguez was honored with an appointment to the Committee of Dental Investigation of the National Research Council, a group established by the president in 1918 to coordinate scientific activity in the country.[131,132] Shortly afterward, Rodriguez became the first US government dental scientist to be elected as a fellow of the American College of Dentists and a member of the International Society for Dental Research. He received a Bachelor of Science degree in 1924 from Georgetown. As he gained national prominence, Rodriguez continued his research on dental caries into the 1930s and published articles in the *Journal of the American Dental Association*.[133,134] Promoted to major in 1929, Rodriguez died unexpectedly at Walter Reed General Hospital on October 21, 1932. He was buried in Arlington Cemetery with full military honors. On August 31, 1944, Rodriguez General Hospital at Fort Brooke in San Juan, Puerto Rico, was dedicated in his honor. The general hospital was closed in February 1949, but the outpatient clinic located at Fort Buchanan was later renamed the Rodriquez Army Health Clinic and it continues to serve the Army today.[135] Rodriguez's pioneering research became the basis for future studies of the bacteriology of dental caries and was a major milestone in the history of dentistry.

The Dental Corps Medal

When the first Army Dental School class graduated in a joint ceremony with their medical school colleagues in June 1922, participants noted that while physicians were the recipients of three achievement medals, the dentists got none. Dental officers in the audience resolved to rectify the situation by raising funds from Corps members to endow a medal for the dental honor graduate. Students at the school successfully persuaded the school commandant to solicit a pro rata assessment of all members of the Dental Corps to raise funds to pay for the design of the medal and endow its future manufacture and award.[136]

In May 1924 a medal design was approved for the Army Dental School to present to the top graduate of each class. It was to be cast by Bailey, Banks & Biddle Company of Philadelphia from a rough freehand drawing made in the dental division at the surgeon general's office. It was described as:

> a 14-carat gold medal, one-eighth of an inch in thickness and one and seven-eights inches in diameter. On the obverse side around the upper segment, appear the words, THE DENTAL CORPS, and around the lower segment, the words, 'United States Army.' In the center appear a sturdy dexter hand grasping a well-defined blazing

> torch of knowledge, while in semi-circle above it there are five stars and to its right the emblem of the Dental Corps of the U.S.A., the caduceus with superimposed letter D. The significance of this design is allegorical and represents the strong right hand of the Dental Corps holding aloft the torch of knowledge, way up in the firmament, thus setting on high the Corps' standard of excellence as a coveted ideal for attainment, one well worthy of consistent effort. The reverse side shows a laurel wreath around the border, tied at the bottom with a bow of ribbon. The upper center contains in large letters the words "The Corps Medal" and in smaller words "awarded to (name) for highest standing Army Dental School, Washington," with blank space below for the date figures.[136(pp103–104)]

The first recipient of the new medal was Captain (later Colonel) Walter D Vail, the honor graduate for the class of 1924. Vail was born in Kansas on July 26, 1886, and graduated from the Saint Louis Dental College in 1912.[136]

Specialized Postgraduate Instruction at Civilian Institutions

The National Defense Act of 1920 authorized postgraduate instruction at civilian institutions for Army dental officers. The following year, Oliver and the surgeon general selected three field grade officers to receive this kind of instruction—Majors Neal A Harper (later Brigadier General), BC Warfield, and Leigh C Fairbank. They were detailed to the Dewey School of Orthodontia (New York University) in New York City for a full postgraduate course from June through September 1921. Upon completion, they were assigned to station and general hospitals or headquarters' clinics at corps areas where they would handle and advise other dental surgeons on orthodontic work, which had long been a major problem in Army dental care. Major Leigh C Fairbank (1889–1966) was later the first dental division chief and Dental Corps chief (March 1938 to March 1942) to hold the rank of brigadier general, and had a distinguished career as an orthodontist both in the Army and in private practice.

The dental division planned to send three or four officers to the course annually until a group of 12 orthodontists were available "for special assignment at important stations having a large child population." In 1922 the Army sent another three dental officers to the special summer course. These officers, like their predecessors, were later able to "supply a deficiency in the treatment of Army children that has long been a crying need." The personnel cuts and budget reductions of 1922–1923, however, ended this important program because neither the officers' time nor the Army's funds could be spared any longer. For the remainder of the decade, only occasional short-term training was possible, often in conjunction with local dental schools or specialty clinics put on by the American Dental Association, formerly the National Dental Association, which had readopted its 19th century name in 1922.[10,32,33,42]

This situation remained little changed through 1929, when the *Annual Report of the Surgeon General* said that once again, the heavy demands in the Army for dental service meant that no officers could be detailed to civilian schools for extended instruction. The consequences of this deficiency were quite significant and portended a long-term problem elevating the quality of specialty practice in the Dental Corps:

Leigh C Fairbank, first Dental Corps chief to hold the rank of brigadier general. Photograph: Courtesy of Leigh C Fairbank's daughter, Maryalice Minor.

> Many of the dental schools are conducting each year excellent postgraduate courses pertaining to the various specialties of dental practice and in order to keep dental officers abreast of the latest thought and developments in dentistry, it is highly desirable that a certain number of them be detailed for study at such institutions as soon as a sufficient number of officers become available to permit such action.[48(p237)]

The benefits to be gained by the individual dentist and the Dental Corps from such instruction were evident from Major Fairbank's experience in the early 1920s. Fairbank had no training in orthodontics, but while serving as a contract dental surgeon at Fort Sam Houston (from 1914 to 1916; before he was commissioned and sent to the Philippines until 1919), his experiences treating jaw fractures led him to correct malocclusions in children. His first formal training in orthodontia was at the Dewey School in 1921. After returning to his assigned post at Fort Leavenworth, Kansas, Fairbank wrote a short piece, titled "Orthodontia in the Military Service," which appeared in the March 1922 issue of *Military Dental Journal*. He noted that orthodontia was a dental specialty that had contributed greatly to the success of maxillofacial work during the recent war. Prior to the war, the Dental Corps had not developed such specialties, but now Fairbank concluded that orthodontia was "recognized as necessary in the progressive development of our Corps."[137,138] He wrote:

> Orthodontia, carefully, earnestly and painstakingly applied, can have a very beneficial influence upon the impression of the worth of the Dental Corps. It presents an opportunity to render a lasting service to the younger members of the military service and the children of officers and enlisted men. There is also a grave and serious obligation with the work in this new field, which is not to be disregarded. A most gratifying service can be rendered, and yet, the prevention of unsightly facial disfigurement, not to mention complete loss of function of some teeth, requires diligent study and painstaking attention to detail.[137(p15)]

With more than one thousand children at the Fort Leavenworth garrison, Fairbank found many types of malocclusion to work on. For many Army parents who could not afford the great expense of taking their children to nearby specialists, the dental clinic provided a very welcome service. This result was exactly what those who had sent Fairbank to the Dewey School had planned. Fairbank found that educating the parents about orthodontic work was often more difficult than dealing with the children. He wrote, "it is a joy to see how systematic some of the little patients are in regard to brushing their teeth. One of the great benefits of orthodontic treatment is that children become systematic in the care and attention they give their teeth, a habit worthy of emulation by all of our patients."[137]

While Fairbank saw the great benefits that his work brought to his patients, he also realized that this work was practice for his potential wartime responsibilities:

> The hope of the dental officers undertaking this work is to bring the advantages of this specialty to a very high state of development within the Corps; to render a lasting and beneficial service, and, when called upon in a national emergency requiring coordination of all our activities in the demands of war, to take our place in the maxillo-facial section and render an acceptable service.[137(p17)]

Central Dental Laboratories

Dental officers in the 1920s had to devote as much of their time as possible to the many patients they had to care for, leaving them little time to work in their laboratories on prosthetic appliances. It was not until fiscal year 1927 that the dental division was able to provide a new service to relieve the dentists and their technicians of this time-consuming aspect of their work. By then, the Army Dental School had produced a sufficient number of well-trained enlisted dental mechanics who could make and also oversee the manufacture of prosthetics in a dental laboratory. In 1926–1927, the dental division opened three new central dental laboratories that provided the same services to Army dentists as commercial laboratories provided to their civilian colleagues. Army dental mechanics at these labs could expertly construct and repair bridges, crowns, dentures, and inlays, which freed the operating dental officers and their technicians to spend many more hours at their chairs. The first laboratory, Walter Reed Central Dental Laboratory, was opened at Walter Reed General Hospital and served all dental officers in the First through Seventh Corps areas. It soon became an important adjunct to the training of officers and enlisted technicians at the Army Dental School. A similar laboratory at Letterman General Hospital supported the Ninth Corps Area, and another at the station hospital at Fort Sam Houston supported the Eighth Corps Area.[46]

The central dental labs quickly contributed to the increased efficiency of the dental service and took some of the load off dental officers and technicians throughout the Army. All dental officers in the continental United States could utilize the skilled dental mechanics to produce needed appliances. The labs handled 644 cases in fiscal year 1928 and 1,076 the following year as the labs ironed out their procedures and increased their capacity. Denture output increased from 149 to 269 and partial dentures from 345 to 559, and the labs became a critical component in the Army's dental service.[47,48]

The Need for Professional Information: Military Dental Journal and Dental Bulletin

Military Dental Journal, the quarterly publication of the Association of Military Dental Surgeons of the United States from 1917 through 1924 (not published in 1920), was the unofficial gazette for the dental officers of the Army, Navy, public health service, and any dentist interested in military dentistry. Each issue carried articles and items of professional and personal interest for officers of the Regular Army, Dental Officers' Reserve Corps, and National Guard, as well as the US Navy and public health service. As such, it was an important voice for the military dental community and the community's only real channel of information. At the end of 1924 the association terminated publication of the journal "for at least a year" due to insufficient membership, and it never reappeared.[139,140]

The variety of information previously provided in *Military Dental Journal* was apparently sorely missed within the Dental Corps. On January 1, 1929, the Army Dental School published the first mimeographed issue of what was supposed to be a new monthly, *Dental Bulletin*. This new, much-needed professional bulletin was sent to each dental officer in the Army as well as to corps area and department headquarters. According to the 1929 *Annual Report of the Surgeon General*,

> Each issue contains professional articles prepared by officers of the Dental Corps and others, instructions and comments prepared by the dental division of this office concerning the conduct of dental service and a section devoted to news and events of interest to the personnel of the dental service. The publication of this bulletin has satisfied a definite need of the dental service and has elicited much favorable comment from various sources.[48]

"A Perfect System": The Pressures of Too Much Work, Not Enough Dental Officers, and Decaying Morale during the 1920s

While serving as Dental Corps chief, Colonels Oliver, Rhoades, and Bernheim each faced very serious problems providing professional dental services to the widely scattered Army. After the Dental Corps' strength was fixed at 158 officers on January 1, 1923, they constantly juggled their limited resources to provide administrative control at the surgeon general's office and in the corps areas where the chief dental surgeon had to double in another post, advanced military training, and postgraduate instruction opportunities. In addition, numerous posts had to be filled in the United States, Hawaii, the Panama Canal Department and Zone, Puerto Rico, the Philippines, and even in China. For many years, an Army dental officer served with the 2nd and 3rd Battalions, 15th Infantry, in Tientsin, China, when the China garrison was a part of the Philippine Department and dental surgeons were assigned from there. A dental officer was usually assigned to 1 year of China service. However, in April 1923, the China Expedition became a separate command (the US Army Forces in China) and assignments were made from the United States rather than the Philippines. The tour of duty was also increased to 3 years, placing a new dental officer in China every third year.[141]

Elsewhere in the 1920s, dental officers were still itinerants traveling the Alaskan circuit. Captain Joseph L Boyd told of his 4 months of temporary duty in Alaska in 1923, saying that he used the "engine room of the boat as an operating room, a pickle keg for a chair and the river for a cuspidor" on the boat trip to Fort Gibbon. Where there were only a few patients at remote camps, he removed only the foot engine from the truck, left the instrument case in the rear of the truck at working height, and used a common chair with a board covered with a pillow for a headrest. This field setup was quickly assembled and taken down, much easier than setting up the M 1895 SS White issue chair.[142]

In 1924 Colonel John DL Hartman told the chief signal officer the problem he was having getting dental treatment for his troops stationed in Seattle, Washington, who worked the Washington-Alaska Military Cable and Telegraph System. It seemed that the nearest Army dentist was at Fort Worden, which was inconvenient for his troops to get to. They had orders to have their dental work completed before going to Alaska, but in some cases had to pay a civilian dentist to do the work, which they could ill afford. Hartman wanted to know if they could have their work done at the Veterans' Bureau in Seattle.[143] Instead, on August 14, 1924, the surgeon general authorized Hartman to employ a civilian dentist to treat his soldiers during the fiscal year 1925. However, no bridges or crowns were authorized at public expense.[144]

To offset some of the pressure on the Dental Corps, in 1924 the surgeon general

obtained the War Department's approval to call up five reserve dental officers for active duty at Army hospitals. The hospitals to which they were assigned were ones that treated beneficiaries of the US Veterans' Bureau, which accounted for 28.9% of all their patients. The bureau provided funds to cover pay and allowances for the five reservists, who were carefully selected from among those living closest to the hospitals. Walter Reed General Hospital, Washington, DC, gained one lieutenant; Fitzsimons General Hospital, Denver, Colorado, got one captain and one lieutenant (First Lieutenant James M Epperly, later chief of the Dental Corps); Letterman General Hospital, San Francisco, got one captain; and Fort Sam Houston Station Hospital, Texas, gained one lieutenant. As a result, the dental treatment available to the veterans was significantly enhanced and one of the Dental Corps' burdens was slightly reduced. In 1925 the number of DORC officers serving Veterans' Bureau beneficiaries grew to nine and remained at that strength for the remainder of the 1920s.[42,45–48,145]

The "objectionable itinerary service" reinstituted in 1923 as a result of the reductions was continued in 1924 to ensure that the smaller stations received "some sort of dental service." Many dental officers were now serving two to four stations with periodic visits, and more than 30% of the dental officers within the territorial limits of the United States served itinerantly duty during the year. The net result of this service was not only a diminished dental service across the board but also a significant decay in the morale of the dentists who were pulling this duty.[42] The 1924 *Annual Report of the Surgeon General* captured this problem in the following passage:

> Such temporary service at best is but a makeshift, unsatisfactory to local personnel and to the dental officers concerned. A limited time in which to attend the multitude of cases usually found at each station results in the accomplishment of little more than relief measures or emergency treatment for strictly military personnel. This unwholesome type of service in peace times has been conducive to lowering the morale of dental officers who become discontented and discouraged by the long absences from home and family.[42(p182)]

As the surgeon general had anticipated early in 1923, the policies restricting dental service were not well received throughout the Army. By late that year, numerous personal and official complaints had been received that the discontinuation of dental services for the families of officers and enlisted soldiers had reduced the soldiers' pay and allowances. From late 1923 into early 1924, these complaints sparked an exchange among the War Department General Staff, the adjutant general, and the surgeon general about the limited dental service, Circular No. 20, and why the Dental Corps could not provide required services like the Medical Corps did. Colonel TQ Donaldson, acting assistant chief of staff, G-1, went so far as to conclude that: "It seems suitable that the same spirit of service should govern the Dental Corps and that its officers should not be restrained by any prohibition against rendering full service within the limits of their capabilities." Similar comments and comparisons to the Medical Corps from the adjutant general caused Surgeon General Ireland to respond:

> The disabilities in the dental service for the Army at present are fundamental. They are not the fault of the Medical Department nor of the Dental Corps nor of the War Department, but are believed to be the result of lack of liberality in the personnel authorized by legislation. Under the present law 158 dental officers are allowed. That is not sufficient to render dental service to the United States Army, and there is no argument or no action that will make this number sufficient to give satisfactory service to the Army at its present strength and distribution. These are facts that we must accept.[146]

Ireland stood by the restrictions in Circular No. 20 as "fundamentally correct and that its provisions should be continued in effect." He noted that the War Department had reviewed and approved these policies before they were put into effect.[146] As to comparisons between the Medical Corps and Dental Corps and contentions that dental officers could do more, Ireland drew the line:

> I appreciate very thoroughly the compliment that is paid the officers of the Medical Corps . . . I trust, however, that the reputation the Medical Corps has acquired by a century of devotion to duty will not in any way be used to the detriment of the Dental Corps, which is an entirely new organization. The members of the Dental Corps were not commissioned until 1911, and in reality had no professional supervision by this office until after the World War. The dental officer therefore has not acquired the traditions from a long history of service and accomplishment that the medical officer has acquired. I have, however, been very intimately associated with the work of the dental officers since their first recognition by legislation in 1901. I believe their devotion to duty from the beginning has been most commendable and everything that could be expected, and in my opinion the officers of this Corps have acquitted themselves under the trying circumstances of their service in a most commendable way. I know from my personal contact that they appreciate thoroughly the rapid manner in which they have been accepted by the military hierarchy and recognized by legislation; also the way in which the Medical Corps has accepted them one hundred percent into its traditions and into its organization. There is no disposition on the part of the Dental Corps or the Medical Department to limit their service in so far as their numbers will permit. On the other hand every effort is being made to give the maximum amount of service that can be given with the facilities allowed by legislation. This policy is going to be continued to the fullest extent so far as this office is concerned. My own opinion is that the present number of dental surgeons is not sufficient to render efficient service to the Army, and I trust that in time, and when considered opportune, this fact will be recognized by the War Department in an appropriate recommendation for an increase in the Corps.[146]

This exchange highlighted the growing problems that the War Department had with the more restrictive provisions of Circular No. 20. Subsequent discussions resulted in the eventual rescission of that circular's third section, with the publication of War Department Circular No. 6 on February 4, 1925 (pending the completion and issue of new Army regulations covering dental care).[147] By rescinding section III and providing dental care for officers and enlisted soldiers ordered to foreign or detached service, Circular No. 6 made two simple statements:

> . . . 4. Members of the Dental Corps will serve free of charge all those entitled to free medical treatment by medical officers.

> 5. Members of the Dental Corps will operate upon those entitled to their services. Materials issued by the Government will be expended only in operations upon those entitled to free services. Emergency work for officers and enlisted men will have precedence at all times over other work.[147]

Within 2 days of the appearance of Circular No. 6, Rhoades sent a letter to "all dental officers" to discuss the changes. He wrote:

> It is expected by The Surgeon General that each dental officer will assume in the proper spirit the additional responsibility which has been placed upon you of formulating your own policy governing dental attendance under present regulations and after the rescinding of Section III, Circular 20, W.D., 1923.[148]

Rhoades supported the regulation in Circular No. 6 "to attend first the dental requirements of strictly military personnel." Then he said, if time permitted, military dentists were "permitted and expected to attend certain others. For these certain others you are authorized to use any materials supplied." The "certain others" were the families of military personnel and retirees who had received very limited dental care since early 1923.[148]

In his letter, Rhoades strongly advised all Army dentists to increase the efficiency of both their office management and their assistants. He recommended scheduling schemes that permitted swiftly filling cancelled or missed appointments with family members requiring treatment, and urged dentists to use Saturday mornings to manage their patient loads. Rhoades cautioned each dentist to "guard very carefully your professional reputation," writing:

> Every operation should be the best of which you are capable. To complete more operations at the expense of finished operations will be directly disastrous to your professional reputation and indirectly disastrous to the professional reputation of our Corps. Simply because you are called upon to render much more dental service than is possible, you should never state that treatment is not necessary, unless that is the case.[148]

Rhoades concluded his letter with an appeal to the professionalism of the Army's dentists that was clearly intended to lift their morale and address their apparent anxieties about renewing treatment of families and retirees:

> If the best results to the Army and to our Corps are to be obtained, each of us must develop in our heart the true professional spirit. When a patient presents, our first impulse should be "What can I do to be of most help to this patient?" We must feel towards patients exactly as the good dentist in civil life feels towards his family practice. All their requirements should be our concern. When we develop that same professional feeling towards the Army which the good dentist in civil life does towards his family practice, we will really possess that true professional spirit, and ways will be found whereby much dental attendance will become available to the others in the Army who are of so much concern to the military personnel. This will develop, and it is most desirable that there be developed in return, a real sympathetic friendship for the Dental Corps. . . . Our Corps is a selected Corps of dentists. All are capable of doing good work. With this and with each of us a professional man a heart, our Corps will have attained 100% in professional efficiency, and apprehension regarding the results to follow extending dental service to families, will soon vanish.[148]

The changes of early 1925 seemed to bring a general improvement. The 1925 *Annual Report of the Surgeon General* noted the positive results of Circular No. 6, commenting:

> During the past year more liberty of action has been granted to and responsibility placed upon dental officers in conducting the dental service. The same persons are now entitled to dental attendance under the same conditions and precedence for treatment as are entitled to medical attendance. Certain restrictions on the use of special dental materials have been removed and dental officers are authorized to use economically any materials supplied to the Army in rendering dental service to those entitled thereto. They are, however, directed to utilize the less expensive materials when good dentistry can be accomplished with such materials.[59(p234)]

Despite this slight improvement, the overall situation of the Medical Department and Army dentistry had not greatly improved due to the continuing lack of Dental Corps personnel. Accordingly, in 1926 the surgeon general attempted to resolve problems caused by the personnel shortage with a proposed amendment of section 10 of the National Defense Act based on the requirements for a 280,000-person Army. Among other things, the amendment would have increased Dental Corps personnel to 560 officers and added a brigadier general as its chief, similar to the approved wartime staffing of the dental division in the surgeon general's office. The surgeon general's concept was to replace the existing percentage basis for personnel allocation with "proposed actual numerical requirements" similar to the Army's other branches. Over the following 3 years, no legislative relief was enacted.[45–48,64,149]

The laments of 1924 were repeated in the 1928 *Annual Report of the Surgeon General*. The report added a brief but vivid glimpse of exactly what the deficiencies meant to the quality of dental care in the Army and what work was like for the average Army dentist in such "a perfect system":

> Dental attendance is of such a nature that little can be delegated to any but graduates in dentistry, which requires that it be rendered almost entirely by dental officers. The service confines one almost entirely to operating, which is most tedious. An average of six hours each day devoted to professional service is as much as can be expected if the health of the dental officer is to be maintained. . . . When days which officers do not devote to professional service are deducted, such as holidays, leaves of absence, travel time in change of station, other duties, sickness, etc., there remains but about 225 days per year devoted to operating at the dental chair. With 135 officers operating at the dental chair for 6 hours per day for 225 days per year, there is available to 135,000 military personnel an average of little more than one hour per year for each person for dental treatment. That is presuming there are no broken appointments, but continuous operating on all days—a perfect system.[47(p246)]

The severe limitations on resources compelled the Army to streamline a variety of activities. The Army made determined efforts during the 1920s to learn from the management techniques then developing in civilian society. In one form or another, the business culture and collateral economic issues influenced Dental Corps activities as well. Dental officers throughout the Army had collected statistics

and data on their work since 1901, but during the 1920s the process was refined with new reporting requirements that emphasized preventive dentistry and trends in operations, the classification system, and prevalence of dental and oral diseases in accordance with new ARs. On April 12, 1928, 2 months before he was reassigned, Rex Rhoades, outgoing chief of the Dental Division and Dental Corps, consolidated the information collected over the years 1925–1927, analyzed the trends, and distributed his conclusions to all Dental Corps officers (Table 17-14).[150] Rhoades discussed what the data indicated about the nature of the Army's dental service:

> A study of the above tabulation presents most gratifying results. It indicates the trend in professional procedure in the dental service during the last three calendar years. This trend has been decidedly towards lines of prevention of chronic dental infections. The tabulation also indicates that where chronic infections have developed more extractions have been the rule and in many cases extracted teeth replaced by bridges and artificial dentures. The reduction in root canal fillings and artificial crowns indicates the extent to which the time element devoted to root canal therapy has been reduced. The decrease in temporary fillings and the increase in permanent fillings show that dental officers are now using more extensively the permanent filling materials.[150]

Rhoades identified a trend toward greater preventive dentistry and a decline in operations involving chronic problems. The lower number of root canals indicated to him "that fewer areas of infection have been sealed in vital tissue beyond root apices by root canal fillings" and that "less time has been devoted to root canal therapy and the increase of 19,583 permanent fillings in 1927 over that of 1925 indi-

TABLE 17-14

DENTAL SERVICE IN THE US ARMY, SELECTED OPERATIONS, 1925–1927

Operation	Totals			Average per Dental Officer			Increase / Decrease per Dental Officer
	1925	1926	1927	1925	1926	1927	
Prophylaxis	27.123	31,408	33,423	195	226	240	+45
Permanent fillings	97,717	102,200	117,300	703	735	844	+141
Teeth extracted	50,335	54,313	61,636	362	390	443	+81
Bridges	725	948	1,038	5	7	7	+2
Artificial dentures	2,552	3,051	3,496	18	22	25	+7
Temporary fillings	15,746	9,548	6,771	113	68	48	-65
Root canal fillings	4,794	3,728	3,087	34	27	22	-12
Artificial crowns	1,153	1,183	1,048	8	8	7	-1

Data source: National Archives and Records Administration. Record Group 112. Lieutenant Colonel Rex Rhoades, DC, to Dental Surgeons; Efficiency in the dental service, April 12, 1928. Letter. File no. 703.1. Box 105. Entry 29.

cates that much of this time has been devoted to the insertion of permanent fillings before the dental pulp has become infected from approaching caries." Periodontal problems seemed to be as great a cause of tooth loss as caries, and he urged more attention be paid to gum diseases. The record indicated that greater use could be made of the new central dental laboratories, further freeing dentists for their primary mission. Rhoades also concluded that productivity would be enhanced with better appointment and office task scheduling, as he had first urged back in February 1925, and he observed that improving the efficiency of administrative duties would also enhance the quality of work being done.[150] In his summary, Rhoades wrote that there was still much room for improvement:

> The Surgeon General is pleased with the yearly increase in efficiency which is taking place in the dental service. After reviewing the compiled individual accomplishment of each officer for the past three calendar years we know there is yet much room for improvement since some are still below the average accomplishment for all dental officers in 1925. If these officers would so arrange and manage their offices as to eliminate lost motion, if they would arrange to send for members of families who have applied for treatment when appointments are broken and military personnel cannot be obtained as patients, if they would standardize professional procedure, and if they would reduce palliative treatment to a minimum, efficiency in the dental service throughout the Army would be still further improved. . . . Under the direction of the Surgeon General we individually and collectively should continue to make the dental service a little more efficient each year to the end that it may become one of the outstanding specialties in health promotion of the general medical service of the Army.[150]

In October 1928 the short supply of dentists prompted Captain Robert C Craven, DC, to suggest that one of the dental officers on duty at the Medical Field Service School at Carlisle Barracks give a "simple lecture on the extraction of teeth" to the Medical Corps students. He had lectured on the subject to the physicians of his hospital with much interest. Craven thought such instruction might prove useful to any physicians who would be stationed at a post without a dentist and have to extract a tooth. Colonel Bernheim, the new Dental Corps chief as of June 15, 1928, passed the recommendation along to the plans and training division.[151,152]

Unlike the Dental Corps' officers, the enlisted soldiers who worked in the dental service rarely saw themselves in the spotlight. In fact, their numbers are even difficult to track down, and their achievements were little noted. In 1927 152 enlisted soldiers served in various dental positions within the Army's dental service, but many more served in the tactical units. By 1929 that number had increased to 198, including 5 staff sergeants, 14 sergeants, 2 corporals, 90 privates first class, and 87 privates. Most of the enlisted personnel were chair assistants (one for each dentist) or dental mechanics in the various dental laboratories, and their training at the Army Dental School was by this time thorough and professional. A noncommissioned officer was assigned to the larger clinics, which often employed three or more enlisted soldiers.[46,48,68]

By 1929 the gloomy picture of "a perfect system" for dental officers remained unchanged because the Army had stabilized and the number of Dental Corps officers remained fixed at 158. More than 80% of the authorized Dental Corps officers were assigned to treating patients, but that number was insufficient to prevent dental

disease from getting "entirely out of control, many cases passing into chronic stages before treatment can be initiated." Their continued itinerant practice was marked by repeated temporary duty trips to posts without dental officers. With approximately 135,000 soldiers in the Army and "thousands of dependents and others entitled to treatment," the 1929 annual report concluded that "it is apparent that adequate dental attendance can not be provided with the present authorized number of dental officers."[47,48] As the soldiers' dental and oral health deteriorated, morale sank throughout the Army's frustrated dental service, which knew what had to be done to correct the situation but lacked the resources to do it. Perhaps intended to attract congressional attention and corrective action, the report noted:

> Military personnel are given a dental examination at least once each year and every effort is made by dental officers to practice prevention of chronic dental conditions, but it is utterly impossible to attain this most desirable objective without an adequate increase in the Dental Corps. The hopelessness of providing proper dental service under present conditions is demoralizing to the morale of dental officers throughout the Army, inviting as it does frequent undeserved criticism of the service.[48(p247)]

There were few signs that this situation would change for the better any time soon.

The decade after 1921 was bleak for the Dental Corps in terms of new officer personnel (Table 17-15). The capping of its authorized strength at 158 on January 1, 1923, and subsequent dismissal or retirement of 75 officers by June 30, 1923, led to a period of stagnation. No new officers were appointed between 1922 and 1926, even when vacancies existed in 1924 and 1925. From 1924—1929 15 losses occurred, but only 12 new appointments were made, and those came during 1926—1928.[4,32,33,42,46,48,59]

TABLE 17-15

REGULAR ARMY DENTAL CORPS: STRENGTH, LOSSES, APPOINTMENTS, AND VACANCIES, FISCAL YEARS 1920–1929*

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Authorized strength	196†	193††	158	158	158	158	158	158	158	158
Actual strength	196	250§	236¥	159¶	156¶	154¶	154	158	158	155
Losses	34	25	13	75	3	2	3	2	2	3
Appointments	14	75	0	0	0	0	4	6	2	0
Vacancies	102	0	0	0	3	5	4	0	0	3

*As of June 30 of each fiscal year.
†National Defense Act of 1920 increased authorizations to 298, effective July 1, 1920.
††Authorizations reduced to 193, effective February 7, 1921.
§Includes 4 retired officers on active duty in Dental ROTC.
¥Includes 3 retired officers on active duty in Dental ROTC.
¶Includes 1 retired officer on active duty in Dental ROTC.
Data source: Office of the Surgeon General. *Annual Report of the Surgeon General*. Washington, DC: OTSG; 1920–1925, 1927, 1929.

Depression and a New Decade

The 1920s was a period of often harsh readjustment to the realities of peace for the Army and the Medical Department. The Dental Corps suffered its share of the travail, but its leadership constantly struggled to maintain a reasonable level of dental service for the officers, soldiers, and military families it cared for. While not exactly the rosy future that William HG Logan had so optimistically predicted in February 1919, the 1920s actually turned out to be a period of some significant growth for the Dental Corps. Important foundations were laid in professional education and development, authorization for dental personnel in tables of organization, research, dental supplies, and equipment development and fielding. The Medical Field Service and Army Dental Schools produced important advances, such as the integrated field training of dental officers, the development of the field dental operating sets and kits, the basic and advanced dental officers' courses, and the work of Captain Fernando Rodriguez on dental caries. Despite a decade of congressional neglect and public indifference, a great deal was achieved. However, it was far from the anticipated "return to normalcy" for the Dental Corps and dentistry in the US Army. The stock market crash in October 1929 and the government's desperate efforts to economize portended even more stringent times in the coming decade.

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