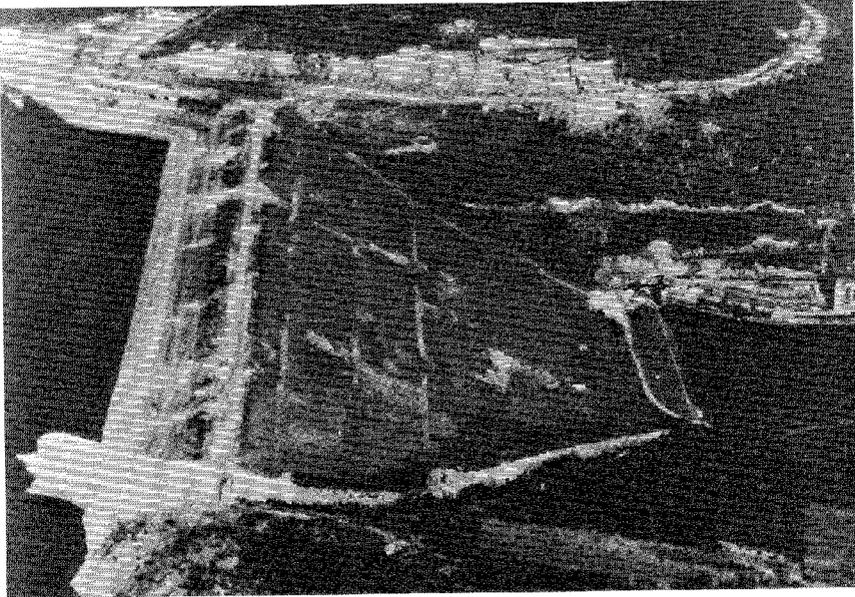


## II. OPERATION GRENADE, THE ROER RIVER CROSSING

As it had since 28 November 1944, the Ninth Army, on 1 February 1945, stood poised on the banks of the Roer River. Most of the Ninth's divisions had been transferred to the First Army to allow it to counterattack the German offensive effort in the Ardennes.<sup>51</sup> This offensive, along with greater than anticipated resistance by the Germans during the Ninth Army's advance to the Roer, had prevented the assault on the Roer from being a continuation of the army's November offensive. One major obstacle still remained—the Roer River dams. These dams, and in particular the concrete Urft dam near Gemeund and the earthen Schwammenauel dam near Hasenfeld—both in the First Army's area of operations—were of particular concern to planners, for if these dams were destroyed while a friendly force remained on the east bank of the Roer, the resulting floods would wash out any tactical bridges supporting the force, allowing it to be defeated in detail.<sup>52</sup> The Ninth Army engineer estimated that, in the worst case, destruction of the dams would make the Roer impassable in the Ninth Army's zone for in excess of fourteen days.<sup>53</sup> This fact was well known to both the Allies and the Germans, and the Allies had repeatedly attempted either to destroy the dams by bombardment or to capture them intact—all to no avail. Finally, early on 10 February 1945, the First Army captured the dams, only to find that the retreating Germans had destroyed the discharge valves allowing water to flow through the dams uncontrolled.<sup>54</sup> Fortunately for the Ninth Army, Lieutenant General William H. Simpson, Ninth Army commander, had on 9 February postponed the attack scheduled for 0530 on the 10th. Had the attack taken place as scheduled, the assault forces would have been trapped on the far side of the river.<sup>55</sup> The flood caused by the damaged dams resulted in the river rising an average of 5 feet and increasing in width, depending on the terrain, to between 400 and 1,200 yards. The river's velocity increased to an average speed of ten and a half feet per second—all of which made rafting operations virtually impossible.<sup>56</sup> The resultant delay, while disappointing, allowed the army staff to refine their plans and to increase their stockpiles of supplies and ammunition.

On 1 February 1945, the medical situation in the Ninth Army was well in hand. Because of a disagreement over a hospital location the previous December, the Ninth Army Surgeon, Colonel



The Schwammenauel dam on the Roer River posed a threat to U.S. troops and the tactical bridges they built to ford the river

Shambora, had obtained an agreement from General Simpson that medical units would have priority in choosing their sites whenever army units displaced.<sup>57</sup> Evacuation of casualties was proceeding without problems, and the army and corps surgeons' staffs were busily preparing for the support of the Roer crossing. The Roer River crossing, in addition to being a major problem, had added significance for future operations. The army staff, from General Simpson on down, saw the real obstacle as the Rhine River crossing and the subsequent advance to the Elbe. Because of this, they viewed the Roer crossing and the advance to the Rhine as their last opportunity to streamline their operations plan for the Rhine River crossing—almost as though the Roer River crossing were a giant dress rehearsal.<sup>58</sup>

The 1st Medical Group continued to operate smoothly, as it had for the most part since the unit was committed on 25 November 1944.<sup>59</sup> The group's staff had been working together as a team for over a year and a half, as had most of the enlisted men assigned to the headquarters, and this no doubt contributed to the smoothness with which they operated.

The group's commander, Colonel Lester P. Veigel, was a native of Dickinson, North Dakota, who had joined the Medical

Corps in 1932 after receiving his M.D. from Northwestern University in 1931.<sup>60</sup> His assignments included a two-year tour at Carlisle Barracks, after which he attended the Medical Corps' Officer Basic Course in 1934. Following completion of the course, he spent three years at Fort Snelling, Minnesota, and Fort Meade, South Dakota, before being assigned to the Philippines in 1937. Upon his return to the United States in 1940, he was assigned to Fort Lewis, Washington.<sup>61</sup> On 7 August 1943, he assumed command of the 1st Medical Regiment<sup>62</sup> and remained in command of the group when the regiment was broken up the next month. He was promoted to colonel on 19 January 1945, after the 1st Medical Group arrived in Europe.

The group S1 and S2, Major William A. Kran, was a Regular Army master sergeant who had his reserve commission (awarded in 1931) activated on 4 June 1941. He became adjutant of the 1st Medical Regiment in September 1941 and continued in that capacity with the 1st Medical Group. The S4, Major Reuben B. ("Ben") Golub, was a civilian pharmacist in San Diego when he was commissioned in the Medical Administrative Corps and joined the 1st Medical Regiment in 1941 as regimental supply officer; members of the regiment quickly learned that his ire could quickly be raised by asking him: "Why do pharmacists

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Lt. Gen. William H. Simpson, commander of U.S. Ninth Army

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Courtesy of Harry L. Gans (Col., USA, ret.)

The commander and staff of the 1st Medical Group: left to right, front row—Maj. William A. Kran (S1 and S2), Col. Lester P. Veigel (commander), and Lt. Col. John D. Dupre (XO); second row—Maj. Reuben B. Golub (S4), Maj. Thomas S. Prideaux (S3), and Chaplain Boldt; third row—Capt. Harry L. Gans (asst. S4, detachment commander), Cpt. Robert Montgomery (asst. S3), 1st Lt. Lester L. Soberg (A&R), and Capt. Kenneth M. Manning (asst. S3 orientation)

charge a dollar for a five-cent prescription?” He and Major Kran must certainly have kept the headquarters lively, for

How it all began, nobody knows; but for three years Kran and Golub have maintained their private but goodnatured feud, complete with raillery, shouts, and openhanded fisticuffs. The feud notwithstanding, the two were inseparable; and, as a matter of fact, were styled the “Gold-Leaf Twins” when they received their majorities on the same day.<sup>63</sup>

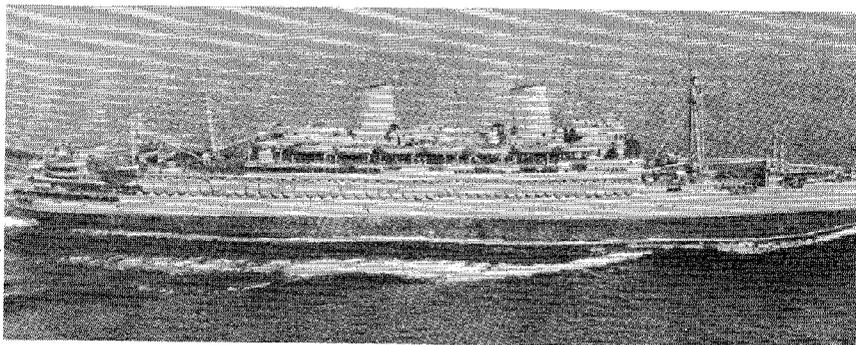
The S3, Major Thomas S. Prideaux, had been a banker in Portland, Oregon, before joining the Army in March 1941. Three months later, he was a sergeant and attending the officer candidate school at Carlisle Barracks. After his commissioning, he was sent to Camp Robinson, Arkansas, as an instructor and joined the group headquarters at the Bend, Oregon, maneuver area on 9 October 1943. He, too, must have helped to keep the headquarters lively, as he was “known as a wit, quick on the ‘retort terrible,’ but withal able to laugh at his own expense when the occasion arises. Although one of his colleagues once said of him ‘Prideaux has no milk of human kindness,’ that isn’t quite true; the milk is only slightly curdled.”<sup>64</sup>

While he left the United States a captain, Prideaux arrived in Europe a major, for on 6 October 1944, while on board the *Mount Vernon*, an impromptu ceremony was held for him:

A transportation officer came to the Prideaux-Manning stateroom late this evening asking for Captain Prideaux. He brought with him the news, considered urgent enough to wake the sleeping captain, that he was now Major with date of rank of 28 Sept 1944. The message had been relayed by Lt Col Veigel through the Transportation Corps channels. The promotion caught Major Prideaux without the necessary gold leaves to indicate the new rank so another bit of promotion persuaded two majors in an adjacent stateroom to part with the necessary number for one set.<sup>65</sup>

The group executive officer, Lieutenant Colonel John D. Dupre, a reserve Medical Corps officer, was a latecomer to the headquarters. He had replaced the previous executive officer, Lieutenant Colonel Benjamin K. Woro, when the latter was reassigned as commander of the 187th Medical Battalion (then the separate medical battalion for XVIII Airborne Corps) on 7 January 1945. Prior to assuming his duties as group executive

Courtesy of the U.S. Naval Institute



The *Mount Vernon*, the 1st Medical Group’s ship on its voyage to France

officer, Lieutenant Colonel Dupre had served as medical inspector of the 84th Infantry Division from 24 September 1942 to 20 July 1943 and as division surgeon of that organization from 21 July 1943 to 13 December 1944.<sup>66</sup>

The staff had made some changes in the internal organization of the headquarters from that authorized in their table of organization and equipment. The table called for one officer to serve as both S1 and S4 and a second to serve as S2 and liaison officer. In field exercises shortly after the 1943 reorganization, the staff found that the work loads of the S1 and S4 resulted in the swamping of that officer, while the S2 duties kept his associate only lightly employed. Accordingly, Colonel Veigel directed that the S1 and S2 duties be combined and the S4 would deal strictly with logistics.<sup>67</sup> January had been a relatively slow month for the 1st Medical Group, with only 1,835 patients transported between facilities,<sup>68</sup> as compared to the 3,948 patients transported during the month of December<sup>69</sup> and the 1,598 patients transported during the 5 days in which the group was operational in November.<sup>70</sup> This gave the staff ample time to plan adequately for the crossings of the Roer and Rhine Rivers.

The organization of the 1st Medical Group on 1 February 1945 was the smallest since it had been committed, as several of its companies had been transferred to other armies to support the Ardennes counteroffensive and had not yet been replaced for the support of the Roer River crossing. The 183d Medical Battalion was composed of the 442d Medical Collecting Company, the 472d Motor Ambulance Company, and the 626th Medical Clearing Company. The group's other medical battalion, the 430th, was composed of the 462d Medical Collecting Company and the 488th Motor Ambulance Company (see figure 1).<sup>71</sup>

The 1st Medical Group headquarters was located in the Sisters of St. Joseph Sanitorium in Heerlen, Holland, where it had moved on 12 December 1944 from Valkenburg, Holland, "in order to be better situated, tactically."<sup>72</sup> Living conditions were pleasant. In the words of one unknown member of the headquarters:

Living conditions were far better than could be expected. We lived in one wing of a sanitorium operated by Catholic Sisters. The men were very satisfied with their quarters and all available means of entertainment were utilized. Radio in sleeping quarters; radio in offices; the Detachment held a dance and party on every second Friday in each month and each party raised morale higher and higher. The men enjoyed these parties as means of relaxation [sic] and

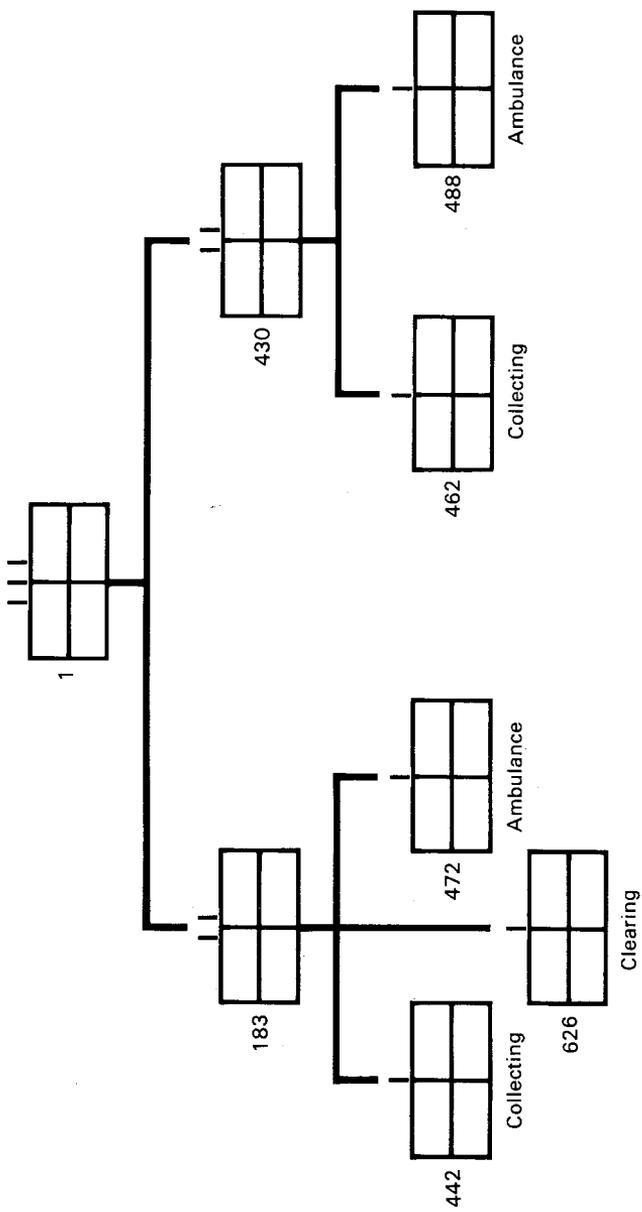


Figure 1. Task organization, 1st Medical Group, 1 February 1945

some of the fellows became well acquainted with some of the local girls of HEERLEN. They visited Dutch homes and gradually learned the customs, and even some, the language of Holland.<sup>73</sup>

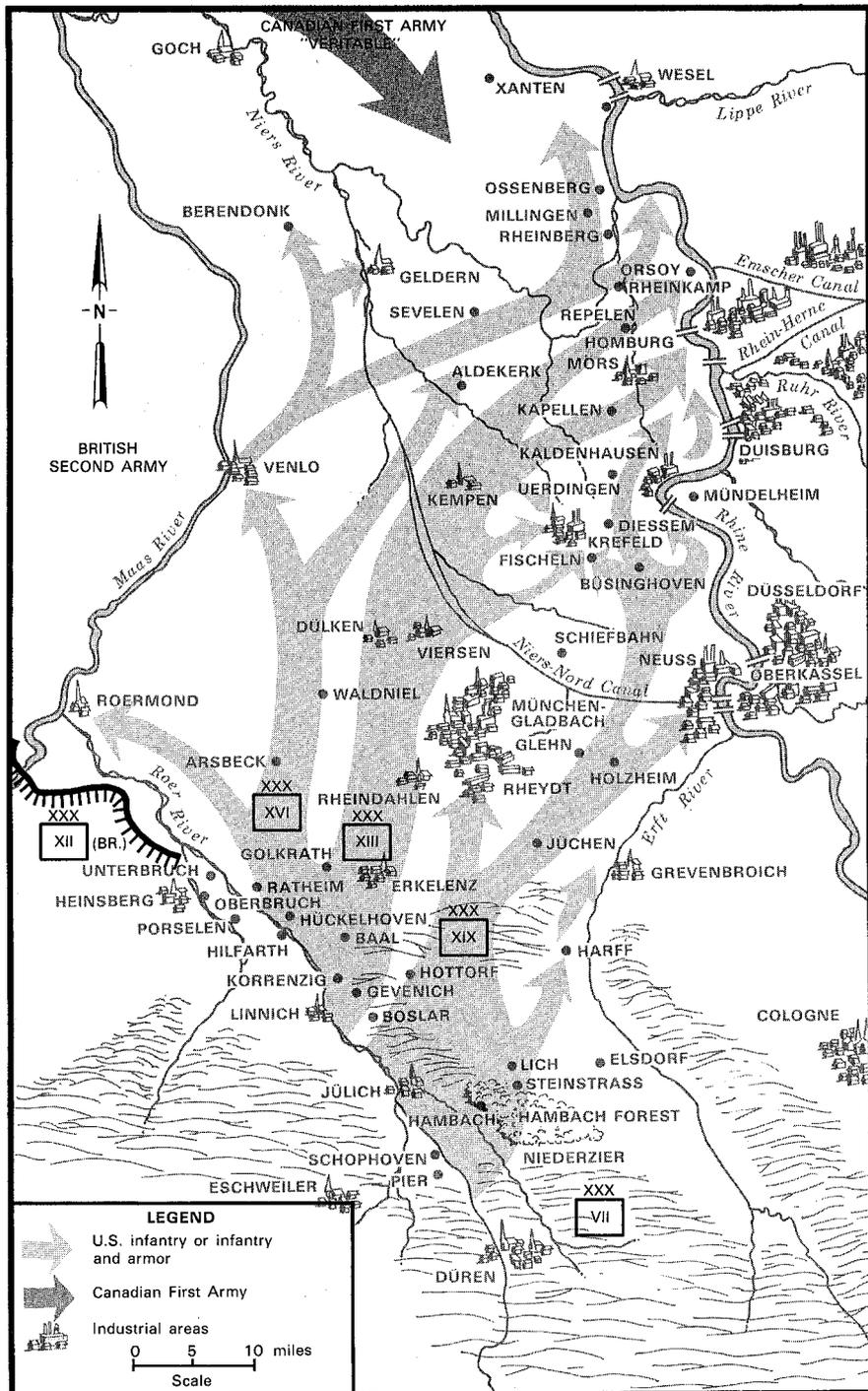
The sisters and the sanitorium also provided laundry service to the members of the headquarters,<sup>74</sup> as well as straw mattresses for the men<sup>75</sup> and—perhaps most important of all to the headquarters—access to indoor plumbing for the first time since the group's arrival in France.<sup>76</sup> The code name Cozy assigned to the 1st Medical Group by the Ninth Army appeared to be quite appropriate. All was not always pleasant, however, as on several occasions, the town of Heerlen came under bombing attack by the Luftwaffe.<sup>77</sup> In fact, "1945 started off with a bang, punctuated precisely at the stroke of midnight by the Luftwaffe bombing of the CP [command post] town of HEERLEN, HOLLAND."<sup>78</sup>

The mission assigned to the 1st Medical Group by Colonel Shambora was fairly straightforward. It was to

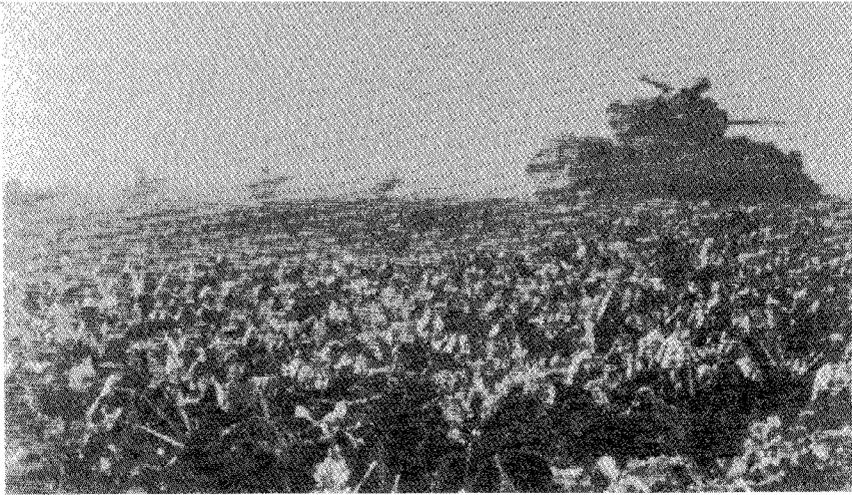
- a. Provide medical service for army units or separate task forces.
- b. Provide Third Echelon Evacuation for all units and Fourth Echelon Evacuation for Field Hospital Units.
- c. Maintain courier service between Army Surgeon's Office and Division, Corps, and Army Medical Installations.
- d. Reinforce Evacuation Hospitals with medical personnel.<sup>79</sup>

While the 1st Medical Group provided these services in the XIII Corps zone, similar services were provided by the 31st Medical Group in the zone of the XIX Corps and by the 30th Medical Group in the army rear.<sup>80</sup> When the XVI Corps became operational, the 30th Medical Group also assumed responsibility for its support.<sup>81</sup> While the 1st Medical Group's mission statement was not overly detailed, it fit with Colonel Shambora's belief that his subordinate commanders should be given broad guidance and then left to develop their own plans; to use a modern term, he provided "mission-type orders."<sup>82</sup> The group performed its missions, while its staff, the staffs of the Ninth Army, and the XIII Corps completed their plans for the crossing of the Roer River.

The plan, as finally envisioned, called for a night attack simultaneously by two of the Ninth Army's three corps and one of the First Army's corps—following a massive 45-minute artillery barrage (see map 1). By attacking before the river had completely returned to normal, General Simpson expected—and achieved—a degree of tactical surprise. After crossing the river, the XIII and XIX Corps would wheel to the north and attack along a corridor between the city of München-Gladbach and the Erft River, allow-



Map 1. Operation Grenade, 23 February—11 March 1945



U.S. troops approaching German positions along the Roer plain

ing the army to outflank the enemy, move swiftly into his rear areas, and pursue him to the Rhine—hopefully capturing one or more bridges across the river intact. After the initial assaults by the XIII and XIX Corps, the XVI Corps would make an unopposed river crossing and serve as the pursuit force. Although enemy resistance was expected to be light to moderate, a contingency plan was developed to provide for unexpectedly heavy resistance. The VII Corps, First Army, would attack simultaneously with the Ninth Army to secure the army's southern flank.<sup>83</sup>

During the war, neither the Ninth Army Surgeon nor the 1st Medical Group's commander issued many formal written orders. While this may seem unusual, it was considered quite appropriate behavior at the time. The 5 March 1941 edition of FM 8-55, *Reference Data*, for example, stated:

Orders frequently are issued in fragmentary form as the situation develops and supplemental decisions are made. Such fragmentary orders may be extracts from a complete order, or they may cover various phases of an operation successively. A medical battalion or regiment rarely will be able to issue a complete formal order prior to initiating operations. A series of fragmentary orders will be the rule.<sup>84</sup>

Instead, each medical group in the army and each battalion within the 1st Medical Group was given a mission statement and a zone of operations. As supported units entered or left the zone, the proper headquarters was so informed by a fragmentary

order. This allowed the units involved to react quickly to rapidly changing situations with a minimum of turbulence. The group also attempted to reduce turbulence by moving its headquarters in echelons. Before closing at one location, the group would become operational via a forward echelon at its new location before informing supported and subordinate units of the move. With the exception of one or two instances when phone service at the new location was inadvertently delayed, the system seemed to work well.<sup>85</sup>

Hospitalization was more complex. Since Colonel Shambora did not like the 750-bed evacuation hospital due to its lack of mobility, the types of hospitals in the Ninth Army zone were limited to field hospitals and 400-bed evacuation hospitals (semi-mobile). The Army Ground Forces Surgeon, Colonel Shambora, once wrote an associate:

Relative to Evacuation Hospitals, we have but two more 750-bed Evacuation Hospitals left and have not recommended that any more be authorized on the troop basis. I have always visualized them as being too large and cumbersome to be of the greatest value. I am enclosing a T/O [table of organization] and T/E [table of equipment; in World War II they were published as two separate documents] for the 400-bed Evacuation Hospital which you can look over. There is only sufficient transportation allotted to carry organic loads. The unit should be moved by shuttle, part equipment and part personnel, depending upon the situation.<sup>86</sup>

Colonel Shambora often went to great lengths to avoid having 750-bed evacuation hospitals assigned to the Ninth Army. On one of the few occasions when he could not avoid having one attached from the European Theater Services of Supply, he managed to delay the attachment until just before he knew the army would be displacing its rear area forward. Then, as the army displaced, he called the surgeon of the Services of Supply and had the attachment canceled, as the hospital was now in the Services of Supply's support area, not his, and he had no way to move the facility forward to support the army.<sup>87</sup>

The 95th Medical Gas Treatment Battalion, lacking a mission unless the Germans used chemical agents, had its companies employed to provide a combat exhaustion center and a VD treatment center for the army. Combat exhaustion casualties averaged 10 percent of the admissions to division clearing stations, and before the use of the 95th as a combat exhaustion center, 60 percent of them were being evacuated from the army area. Use of the battalion as an exhaustion center and more careful screening in the division area reduced the number of such casu-

alties to 30 percent, or 3 percent of the total admissions to the division clearing stations. In the rapid advances from the Roer to the Rhine, returns to duty within the division of sufferers from combat exhaustion decreased because the clearing stations were displacing so frequently that they were unable to hold patients until they could be returned to duty. However, as those patients who would have been returned to duty within the division were evacuated to the 95th Medical Gas Treatment Battalion, the battalion showed a proportionate increase in the return to duty rates of its patients, causing the total number of combat exhaustion cases being evacuated from the army to remain the same during the Roer and Rhine River crossings.<sup>88</sup> The 8th Convalescent Center completed the hospitalization assets available in the Ninth Army.

The two types of hospitals used in the Ninth Army were employed in vastly different ways. First, the field hospitals, which were being used to provide close support for the divisions (as discussed earlier), were usually placed under the operational control of the medical group in whose operational area they were employed. This was a deviation from doctrine, which saw the medical groups providing the functions originally planned for the medical regiment—collection, clearance, and evacuation—but the system worked well, nonetheless. Coordination with the army surgeon was required to ensure that additional hospital units were available to leapfrog over one another as the supported divisions advanced. One problem encountered with the field hospitals during the rapid advances from the Roer to the Rhine was that not all the hospitalization units of the field hospital could be moved simultaneously on organic transportation assets, so vehicles had to be provided by other medical units to assist their moves.<sup>89</sup>

Coordination with the evacuation hospitals was more complex, since they were not under the control of the groups that evacuated patients to them. Patient flow into the hospitals was controlled by placing a hospital in support of (but not under the control of) one of the groups. In the event that a hospital could not be placed in support of only one group, bed credits were issued to each supported group. A bed credit was a bed in a hospital dedicated to the support of one unit. As patients filled beds, the beds available to the group decreased, and increased again as patients were discharged, died, or transferred to another facility. In theory, when all the beds in a hospital dedicated to support a group were filled, a group sent its patients to another

hospital. In units subordinate to the 1st Medical Group, evacuation was controlled using evacuation ratios; units would send patients to one facility in direct proportion to the number sent to another facility—the proportion (or ratio) being specified by the group headquarters. The ratio appears to have been selected based on the tactical situation and the beds available in supporting hospitals and was changed as frequently as the situation dictated to avoid overtaxing the supporting medical facilities. While the unit journals of the 1st Medical Group and its subordinate units show how the system was used within the group, it is not known if this system was in use throughout the Ninth Army or if it was unique to the 1st Medical Group.<sup>90</sup>

As might be expected, this system worked well when patient admission rates were low, but it had to be monitored very carefully as patient admission rates increased. During periods of heavy combat, the system tended to break down almost completely, as the surgical backlog became the dominant factor over beds available in deciding which facilities could accept patients.<sup>91</sup> Surgical backlog is defined as the period, generally measured in hours, between the time a patient is delivered to a facility and the time that patient enters an operating room. Obviously, with a fixed number of operating tables in a hospital, if patients arrive at a facility faster than surgery can be completed, the surgical backlog will increase. The situation, in fact, prompted the author of the group's after-action report for February 1945 (written shortly after the Roer River crossing) to comment:

In present and previous operations, bed status of Evac Hospitals never approached capacity; but surgical backlog required constant checking by Group that patients might be dispatched to the quickest available surgery. For this reason, Group CP's should be as far forward as wire communications with Evacuation Hospitals will permit; because adjustment of flow must be made at the source (Division Clearing Elements) by personal contact. Furthermore, constant personal contact should be maintained with Div Ctr Elms to anticipate and regulate casualty flow during periods of great activity.<sup>92</sup>

The 1st Medical Group also found that the hospitals supporting them (again, not under Colonel Veigel's command or control) often used different methods of computing surgical backlog—an administrative matter which may have affected patient care. As the group noted after the Roer River crossing:

If one hospital includes shock treatment and x-ray in its backlog, it may claim a greater backlog than another hospital which does not include these factors but which actually has more surgery to perform. This situation makes a difference to the wounded man; because Group

sends him where lowest backlog is claimed; and, in the case cited, he may have to wait longer for treatment than if bothe [sic] hospitals used identical systems of computation.

Take, for example, a recent situation: A hospital called Group and announced a twenty-four hour backlog. Group immediately shifted evacuation to hospitals having about twelve hours. An officer was sent to investigate, however; and in forty-five minutes he discovered that the hospital in question actually had reduced its surgery to eight hours—a reduction of sixteen hours in forty-five minutes! Meanwhile the wounded had been routed to hospitals having twelve hours and had lost four hours prior to time of surgical treatment.<sup>93</sup>

While it is impossible to attribute deaths in hospitals directly to surgical backlog, it should be intuitively obvious that a delay in sending a wounded soldier into surgery would increase patient morbidity and mortality. The problem in the 1st Medical Group appeared to have been caused by how the hospital staffs computed surgical backlog, which, as can be seen by this example, can have a significant impact on how long a patient waits before entering surgery. After the Roer crossing, the group recommended that “surgical backlog should be expressed in terms of total patient operating hours divided by the number of operating tables in use.”<sup>94</sup>

By the morning of 23 February, the day the attack was scheduled to start, the 1st Medical Group was still composed of two medical battalions, the 183d and 430th. A third, the 188th Medical Battalion, joined the group on the 24th, the day following the start of the attack (see figure 2).<sup>95</sup> At 0245 on 23 February, the fires of over 1,000 pieces of artillery announced to the Germans that the long-awaited assault was about to begin.<sup>96</sup> Despite the anticipated problems encountered in getting assault bridges across the turbulent river and in moving follow-up forces while under enemy fire, the initial assaults went well, and by the end of the first day, all four of the assaulting divisions had advanced several miles inland. While strong defensive positions had been prepared by the Germans, many of the German troops who were to man them had been diverted to defend against the Canadian First Army, which had launched an offensive of its own on 8 February 1945.<sup>97</sup> By 25 February, the U.S Ninth Army had consolidated the divisional bridgeheads and had made contact with the VII Corps to the south.<sup>98</sup> General Simpson ordered a breakthrough attempt, and enemy defenses continued to crumble. The XIII Corps bypassed München-Gladbach and by 3 March had reached Krefeld and the banks of the Rhine.<sup>99</sup>

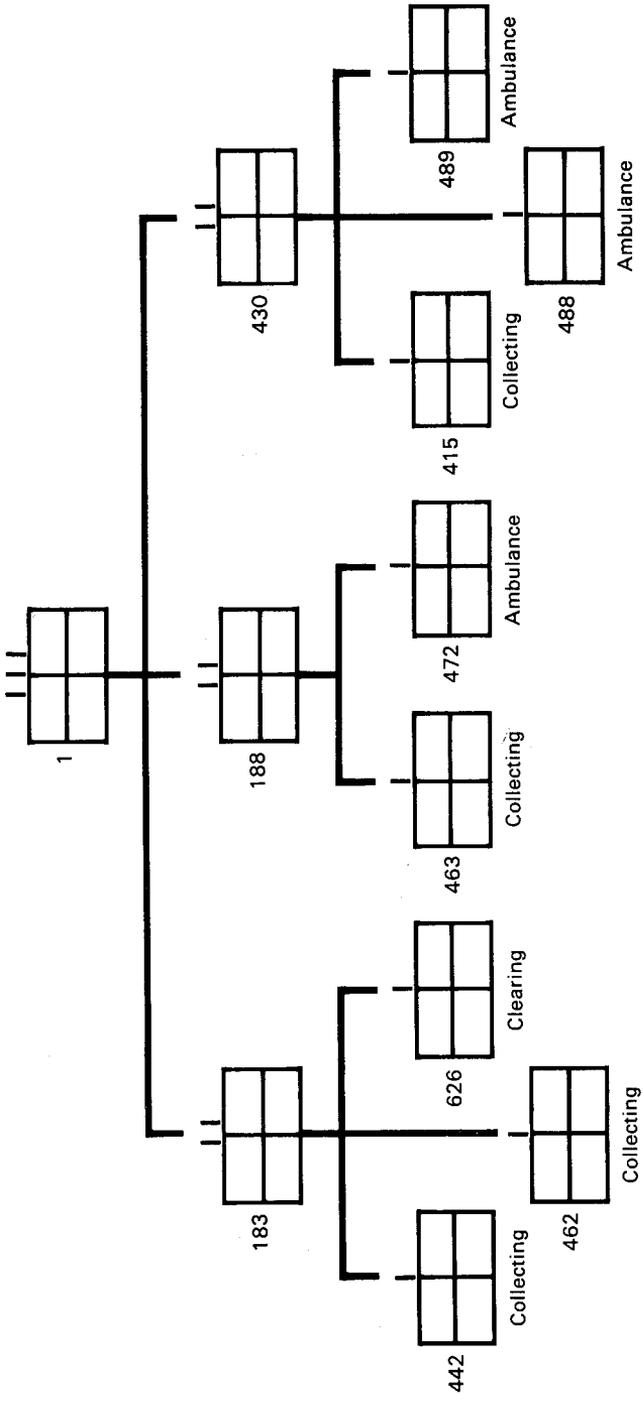


Figure 2. Task organization, 1st Medical Group, 1 March 1945

München-Gladbach, which it was feared would be fiercely defended by the enemy, was captured by a single regiment on 1 March, the largest German metropolitan area to be captured in the west to that point in the war.<sup>100</sup> The enemy attempted an orderly withdrawal across bridges at Wesel and Rheinberg. By 11 March, all enemy resistance west of the Rhine in the Ninth Army zone had been eliminated, but despite several attempts to seize intact bridges across the Rhine River, all had been destroyed by the advancing Germans—one while Ninth Army forces were attempting to cross it.<sup>101</sup>

By rapidly maneuvering against enemy weaknesses and exploiting successes, the Ninth Army now stood on the banks of the Rhine, historically the last defense of Germany from enemies in the west. Plans progressed rapidly to effect a crossing and the capture of the Ruhr industrial region beyond.

While the 1st Medical Group did not issue extensive written operations plans, it by no means operated in a vacuum. The group commander, Colonel Veigel, and his S3, Major Prideaux, made frequent coordination trips to the Ninth Army Surgeon's office, the XIII Corps Surgeon's office, and the surgeons and medical battalion commanders of the divisions they would be supporting to ensure that all their plans were in agreement and mutually supporting. They also coordinated laterally with the 30th and 31st Medical Groups, which were supporting the other corps of the army. Finally, they met frequently with the commanders and staffs of their subordinate units to ensure that they knew the plans and were carrying them out properly. If they had any control over the matter, they would ensure that there would be few surprises in this operation.<sup>102</sup>

The group had anticipated that there would be heavy casualties in the 102d Infantry Division zone during the initial assault, and their planning for it paid off. During the entire month of February 1945, the group transported 4,951 patients, and of these, 3,296, or 67 percent of the total, were moved between 23 and 28 February. A total of 704 patients were moved the first day of the assault, with 395 of them, or 56 percent of the total, coming from the 102d Infantry Division.<sup>103</sup>

The group's plan for that anticipated problem called for some patients from the 102d Division to be evacuated from the division's collecting companies directly to the evacuation hospitals supporting the group. This was possible for several reasons. First, the evacuation hospitals had been established close to the Roer to reduce evacuation distances during the assault so that patients

only had to be evacuated about fourteen miles from the collecting companies. Second, the roads were in good condition, so patients could be moved quickly to the evacuation hospitals—the average evacuation time being less than thirty minutes from the time a patient left the collecting company until he arrived at an evacuation hospital. Finally, less severely injured patients could be evacuated to the 327th Medical Battalion's clearing station for treatment, and the more severely injured would be stabilized at the clearing station before further movement to the evacuation hospitals. All in all, 120 patients were evacuated directly from the collecting companies, while another 275 were evacuated from the divisional clearing company—most in the first 8 hours of the assault.<sup>104</sup>

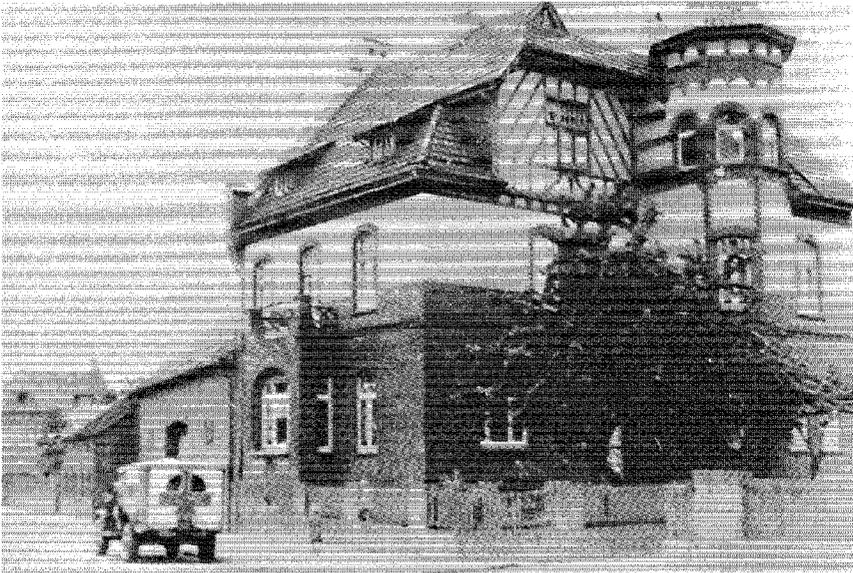
This plan had several immediately apparent advantages. First, it reduced the number of patients passing through the clearing company, preventing degradation of patient care there. Second, since the thirty ambulances of the 498th Motor Ambulance Company were added to those of the division—normally the only assets evacuating the collecting companies—patients were evacuated quickly from the collecting stations, preventing those facilities from becoming overloaded, thus allowing them to provide a higher quality of care. And finally, as already mentioned, this allowed the most seriously injured patients to be seen at an evacuation hospital within thirty minutes after leaving the collecting companies.<sup>105</sup> Similar reasons are given today when discussing the use of air ambulances to move patients directly from the site of injury to the hospital best suited to provide them treatment, thus bypassing facilities in the normal chain of evacuation.

This system would not have worked without proper control of the ambulances providing evacuation. To provide this control, the 430th Medical Battalion established an ambulance regulation point behind the 102d Infantry Division. This control point was in telephonic contact with the group headquarters, which allowed the group to change the evacuation ratios rapidly as bed spaces decreased and surgical backlog increased in the evacuation hospitals supporting the group.<sup>106</sup>

Fortunately, the 1st Medical Group had made plans to control patient flow, for the surgical backlog at the hospitals increased rapidly. By 1100 on the 23d, the 91st Evacuation Hospital was reporting a surgical backlog of six hours, having admitted “approximately 77” patients. By 1300, the 41st Evacuation Hospital was reporting a backlog of eighteen hours.<sup>107</sup> This continued

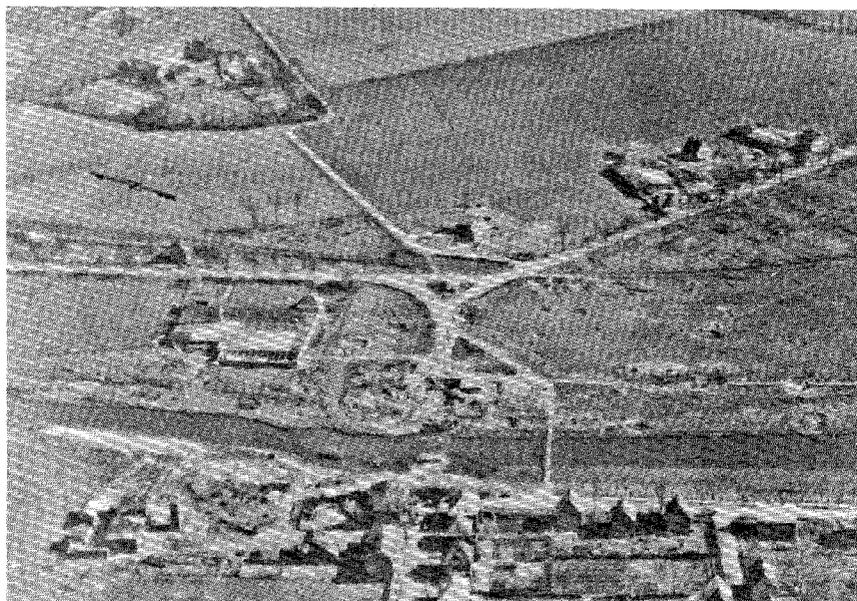
throughout the night, and by 1300 on 24 February, the 100th Evacuation Hospital reported that its surgical backlog had increased from two hours to nine hours in the short period between 1700 and 1800 and by 2015 was reporting a surgical backlog of eighty patients and fifteen hours.<sup>108</sup> This problem with surgical backlog appears to have been much more serious than had been anticipated by the group before the operation, as they commented extensively on it in their monthly after-action report.<sup>109</sup> The medical situation in the 102d Infantry Division improved after the army's engineers installed bridges at Linnich and armored forces could be committed to the bridgehead.<sup>110</sup> The bridges allowed ambulances to proceed across the river to pick up patients, while the commitment of armored forces started a breakout that in turn led to lower casualty rates.

During the advance from the Roer to the Rhine, the rapidly changing situation, as the troops continually moved forward, required frequent moves on the part of the medical units supporting the maneuver forces, including command and control elements. The 1st Medical Group headquarters moved four times during the advance: on 27 February to Beggendorf, Germany; on 1 March to Rurich, Germany, on the east side of the Roer; on 2 March to Hardt, Germany; and on 4 March to Viersen, Germany.<sup>111</sup> In all cases, the headquarters established itself in



Courtesy of Thomas S. Prideaux

The 1st Medical Group's command post, Hardt, Germany, 2—4 March 1945



The Roer River crossing site at Linnich

fixed facilities, although some were heavily damaged and required some repair before being occupied.<sup>112</sup>

While the group sent out advance parties and then moved its headquarters as a whole, the 430th Medical Battalion took a different approach to the requirement for rapid movement: it split its headquarters into two echelons. The forward section contained the commander, most of the S3 section, and the battalion message center, while the rear echelon was composed of the remainder of the headquarters. The forward section could be ready to displace in a matter of minutes and functioned well as an ambulance regulating point or liaison team, often, in fact, collocating with the clearing company of one of its supported divisions. The rear echelon, on the other hand, could move at a more leisurely pace, allowing it to select better sites for the battalion command post, which the forward echelon would rejoin once a crisis had passed. Like the 1st Medical Group headquarters, the battalion headquarters of the 430th moved four times during the advance from the Roer,<sup>113</sup> while the 188th Medical Battalion headquarters moved five times between 27 February and 10 March 1945.<sup>114</sup> The 183d Medical Battalion, with its mission to provide support to army units in the 1st Medical Group's zone rather than to committed divisions, moved only once, on 10 March 1945.<sup>115</sup>

After the initial crossings on 23 February, activities within the units of the group returned to a normal, if somewhat hectic, pace. The group found that, as the pace of the advance increased due to the crumbling German resistance, the number of casualties requiring evacuation decreased, while the distance each individual casualty had to travel increased. This caused total patient-miles traveled to remain constant. Thus, while individual patients traveled farther—potentially increasing patient morbidity—the smaller number of patients meant that the total number of miles traveled by the ambulances of the group, as a whole, remained about the same. The group also found that the best way to manage hospitalization assets was to try to keep the surgical backlog and the number of beds occupied as constant as possible among the hospitals to which they evacuated. This kept the staff at any one facility from being overloaded (if at all possible). The group found that field hospital units, when employed to support divisions moving on the same axis of advance, were best utilized when centrally located, rather than when placed in direct support of any one division.<sup>116</sup>

One other entry the group made in their after-action report concerned the use of collecting companies. The 1st Medical Group discovered that while clearing companies and ambulance companies were employed in platoons or sections, the collecting com-



Wounded being evacuated in a half-track by medics in Germany (World War II)

pany was often employed in piecemeal fashion. To quote from the group's after-action report:

As part of the army medical service, separate collecting companies are often scattered to the four winds with the litter platoon reinforcing an evacuation hospital, the station platoon running dispensaries or aid stations, and the ambulance platoon committed piecemeal over a wide area. In this connection the following principle should be set down: Collecting companies should be used, where possible, as a single element or in as large an element as possible to ship [toward the front?] [...] [The advantages to this] are immeasurable; greatest advantage should be taken of such tactical situations as river-crossings or attacks of fortified positions to utilize separate collecting companies *as units* in augmenting corps and division medical service.<sup>117</sup>

For example, during the period 9–28 February, the 442d Medical Collecting Company (attached to the 183d Medical Battalion) was employed as follows. First, the company headquarters was established in Valkenburg, Holland. One Medical Corps officer and three enlisted men operated an aid station near the town. The rest of the station platoon, the litter-bearer platoon, and two ambulances from the ambulance platoon supported the 91st Evacuation Hospital; three ambulances supported one of the clearing platoons of the 626th Medical Clearing Company; two ambulances supported the 111th Evacuation Hospital; one ambulance supported an aid station near Heerlen; one ambulance supported an aid station near Valkenburg; and the last ambulance supported an aid station of the 36th Reinforcement Battalion.<sup>118</sup> While the support to the 91st Evacuation Hospital was not defined, it probably meant that the enlisted men of the 442d were used to provide additional staffing on the wards of the hospital.

While the XIII and XVI Corps were advancing to the Rhine, their axes of advance crossed one another. In order to simplify support relationships and to avoid moving many supporting medical units, the Ninth Army Surgeon directed that the medical groups supporting the two corps would exchange missions, so on 9 March 1945, the 1st Medical Group assumed the support of XVI Corps, while the 30th Medical Group, which had been supporting the XVI Corps, assumed the mission of supporting XIII Corps.<sup>119</sup> The transition went smoothly, even to the extent that Colonel Veigel took the commander of the 30th Medical Group to meet the surgeons of the various units the 30th Medical Group would now be supporting.<sup>120</sup>



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Maj. Gen. Alvan C. Gillem, Jr., commander of U.S. XIII Corps

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Maj. Gen. John B. Anderson, commander of U.S. XVI Corps

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This new mission required the 1st Medical Group headquarters, as well as several of its subordinate units, to move again to provide better control over units in its new zone of operations. The group moved to Brockhuysen, Germany, on 9 March. The site it chose, however, was in an area being turned over to the British Second Army, so the 1st Medical Group headquarters moved to Aldenkirk, Germany, the next day (allegedly at the request of Field Marshal Montgomery of the British forces). On the 19th, the headquarters moved again, this time to Lintfort, Germany, "in order to be better situated tactically for the contemplated RHINE RIVER crossing."<sup>121</sup>

While waiting for forces to be assembled for the assault crossing of the Rhine, the 1st Medical Group put its time to good use refining plans and ensuring that the units it now supported, as well as the hospitals supporting the group, understood and would adhere to its plans.<sup>122</sup> Meanwhile, subordinate units refined their supporting plans and ensured that necessary maintenance was performed. They also conducted chemical warfare refresher training—not because they feared that the Germans would use chemicals but because Allied artillery and air attacks might release dangerous industrial chemicals stockpiled in the Ruhr industrial area.<sup>123</sup>

This is the first mention of chemical-defense preparations in the records of the 1st Medical Group since it had departed for France aboard the *Mount Vernon*—and even then the men's primary concern was whether their impermeable uniforms (protected against chemicals) had to be carried in their backpacks, their duffel bags, or their footlockers.<sup>124</sup>

The crossing of the Roer had been the first major operation for the 1st Medical Group, and despite all their years of training in the United States, they were not quite ready for it. It was, in the words of one member of the unit, "sorta 'touch and go' but not as bad as some had it."<sup>125</sup> But the staff learned quickly from their mistakes (most noticeably the problems encountered with surgical backlog) and prepared to ensure that similar problems did not occur during the next river crossing. Soon, the Rhine River would be crossed, and the war in Europe would near its end.

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### III. THE RHINE RIVER CROSSING

Once the Roer River had been crossed, there remained only one real barrier between the Allied armies in the west and the heart of Germany: the Rhine River. For hundreds of years, the Rhine had been recognized by the German people as their final protective barrier against invasion from the west. In the summer of 1944, following the Normandy invasion, the German commanders in the west had repeatedly asked Hitler's permission to withdraw behind the Rhine. This, they felt, was their only hope of stopping the Allied advance. Hitler repeatedly refused, ordering his commanders to contest every inch of ground in front of the Allies. Thus, by the time the Germans abandoned the western bank of the Rhine in March of 1945, the force that might have been able to prevent an Allied crossing of the river had been crippled: mauled on the beaches, decimated in the withdrawal through France, and crushed in the last, desperate battle of the Ardennes. While the forces opposing the U.S. Ninth Army on the Rhine were still formidable, they were not as powerful as they would have been had the Germans withdrawn to the Rhine earlier.<sup>126</sup>

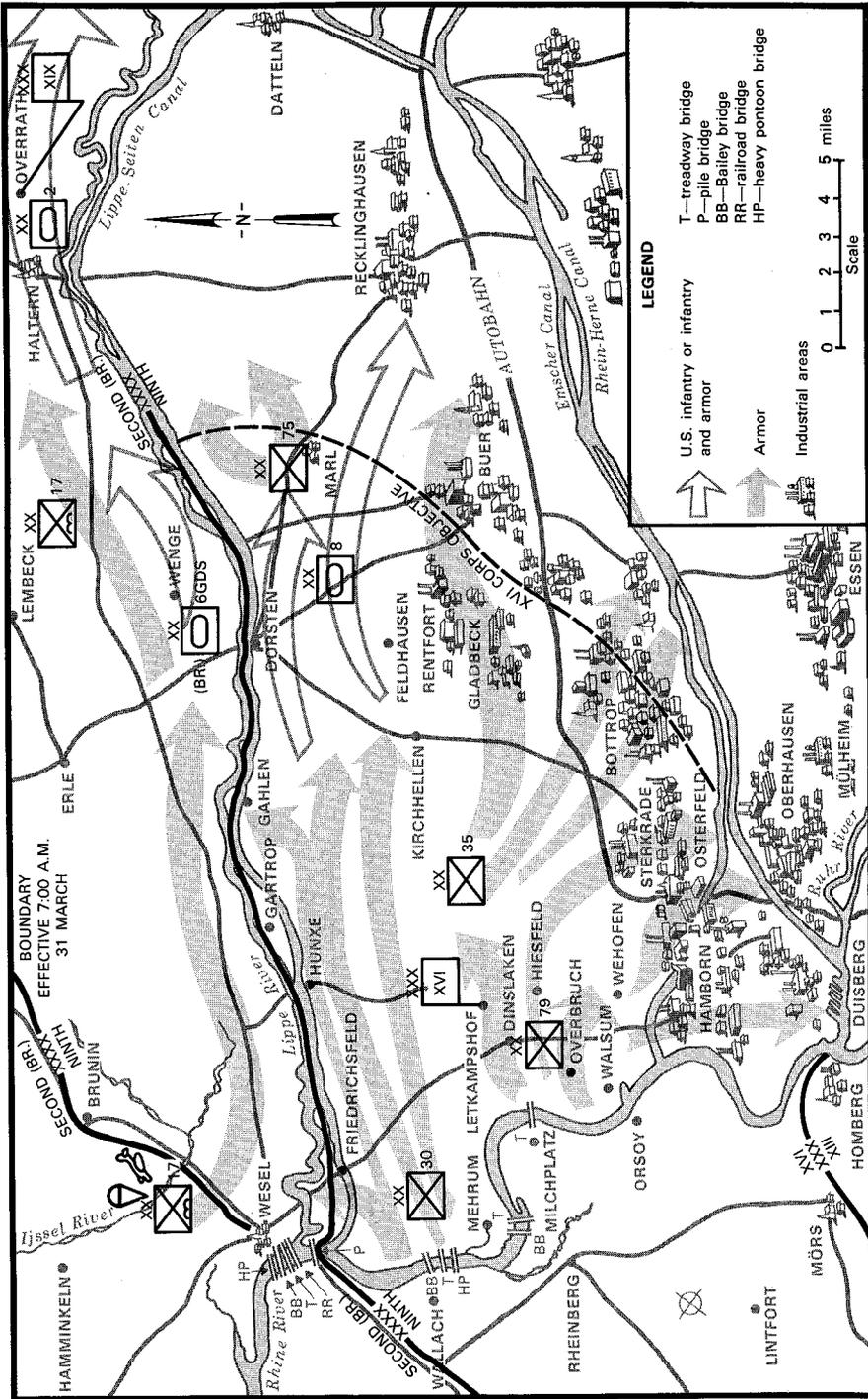
General Eisenhower and his staff had decided early in the planning for the invasion of Europe that the main effort in the Rhine River crossing would be in the north, in the 21st Army Group zone. They had two reasons for doing so. First, although later rendered less significant by the Yalta Conference's agreement on the limits of the Allied advance into Germany, a crossing in the northern sector would leave the Allies in the west much better situated for a final drive to the German capital, Berlin, than would crossings in either the central or southern sectors of the front. Second, and perhaps of greater operational significance, was that a crossing in the north would lead to the capture of the great German industrial region along the Ruhr River. This region, extending for fifty miles along the eastern bank of the Rhine and sixty miles to the east on both sides of the Ruhr, produced 65 percent of the steel and 56 percent of the coal used in Germany before the war. Additionally, with the fall of the Saar industrial region to the Americans farther south and Silesia to the Russians, the Ruhr was the only major source of electrical power for Germany. A crossing of the Rhine in the north, with the subsequent reduction of the Ruhr, would all but ensure a rapid Allied victory.<sup>127</sup>

The Ninth Army plan called for the XVI Corps to make an assault crossing at Rheinberg. Once this bridgehead was enlarged sufficiently, the XIX Corps would also be committed east of the Rhine. The XIII Corps would continue to secure the west bank of the Rhine. After being relieved of its mission to secure the west bank by the Fifteenth Army, which was acting as an army of occupation behind the Ninth Army, the XIII Corps would join the XVI and XIX Corps west of the Rhine. Once across the river, the army would drive east toward the industrial city of Hamm, and from there to the Elbe River. The XVI Corps, after securing the initial bridgehead, would wheel south to link up with the First Army, encircling the Ruhr industrial region.<sup>128</sup>

The XVI Corps' plan called for two infantry divisions, the 30th and 79th, to cross the river simultaneously at Mehrum and Milchplatz. After the bridgehead was expanded, the 35th and 75th Infantry Divisions would be committed (see map 2). The 8th Armored Division, as the corps reserve, would be held west of the Rhine until the battle for the far shore was developed enough to show where it could be employed best.<sup>129</sup>

In order to achieve tactical surprise, the army implemented a deception plan during the buildup of forces on the west bank of the Rhine. Medical units were not excluded from this plan, and all units were required to remove red crosses from vehicles and equipment. Ambulances moved in ones and twos, by infiltration rather than in convoys and, when not in use, were kept under overhead cover. In order to make the Germans believe that the XVI Corps' main effort would be in the southern portion of the army zone, a medical clearing company was set up across the river from Duisburg and provided with extra tentage. Ambulance traffic was continued to and from the facility to make it appear as though the unit was still engaged in its medical-support mission.<sup>130</sup> On at least one occasion, the 1st Medical Group's S3 flew over the group's area to observe how well camouflage was being maintained and to report to the group's subordinate units on its effectiveness.<sup>131</sup> Of course, once the attack commenced, the requirement for camouflaging medical facilities came to an end.<sup>132</sup>

By 24 March 1945, the day the attack began, the 1st Medical Group was composed of the 20th Field Hospital and two medical battalions, the 188th and 430th. The group's third medical battalion, the 183d, had been removed from the group on 15 March 1945<sup>133</sup> to provide medical support to the XVIII Airborne Corps under the direct control of the Ninth Army Surgeon's office (see figure 3).<sup>134</sup>



Map 2. The expansion beyond the Rhine bridgehead

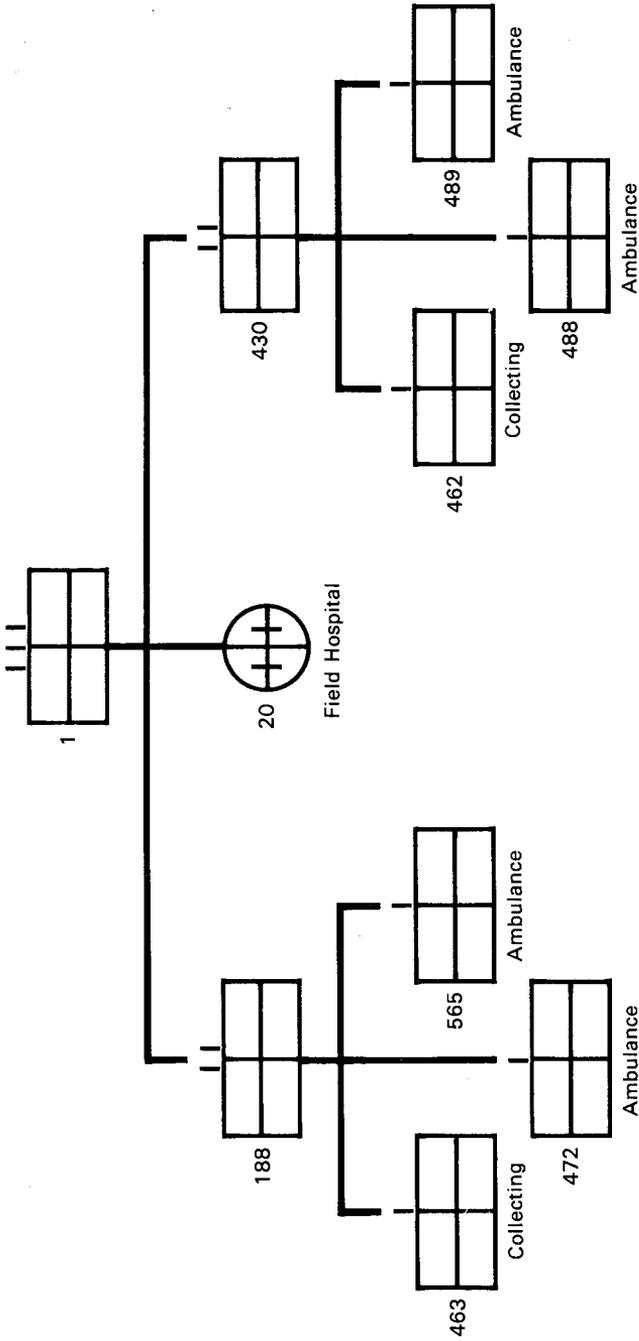


Figure 3. Task organization, 1st Medical Group, 24 March 1945

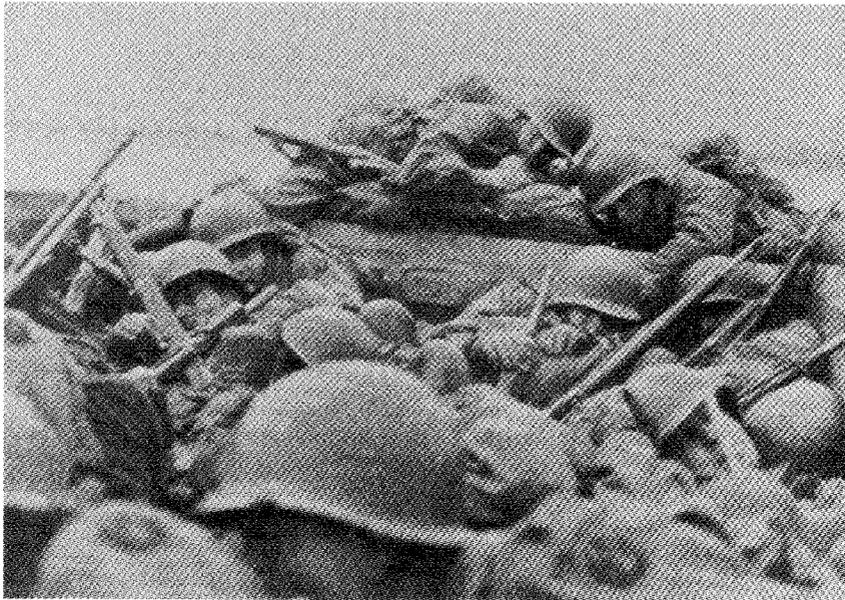
While doctrine called for the supporting medical group to reinforce divisions of the corps while the corps' attached medical battalion provided care for corps troops in the rear area, the XVI Corps Surgeon, Colonel Harold L. Furlong, adopted a different concept for the actual crossing. Under his plan, he suggested

reinforcement of division medical service from corps medical battalion, using special equipment on near and far shore and on the water, with reinforcement of corps medical battalion from Army to insure rapid evacuation of casualties from across the river, and conservation of critical medical supplies and personnel for more advantageous use later.<sup>135</sup>

This plan covered only the initial assault crossings and the establishment of the bridgehead, after which the corps would return to a doctrinal support concept.

This plan, Furlong and his staff believed, offered a number of advantages over the other options that they considered. It made maximum use of divisional and corps medical personnel while ensuring that the medical treatment facilities provided by the corps would allow continuous support by leapfrogging second-echelon facilities past each other as the supported divisions began their advance from the far shore. The one disadvantage they saw in the plan—that corps and army personnel on the near shore would be mixed and that army and corps medical-treatment facilities would both be providing care to corps troops—could “readily be overcome by careful coordination and command and control.”<sup>136</sup>

At 0200 on 24 March 1945, the 30th Infantry Division began its assault across the Rhine following a massive one-hour barrage from the collected artillery of all three corps of the Ninth Army. An hour later, following another hour-long artillery barrage, the 79th Infantry Division began its crossing farther to the south in the corps' sector. The British had also begun their crossings at 0200, and at 1000, the XVIII Corps conducted an airborne assault. Resistance was initially light but increased as the forces of the corps moved inland. Nonetheless, by 25 March, the corps was twenty-four to forty-eight hours ahead of schedule in its advance.<sup>137</sup> While the capture of a partially intact bridge at Remagen in the First Army zone on 7 March meant that the Ninth Army would not be the first American army across the Rhine, General Eisenhower decided to stay with his original plan to place the main effort of the Allies in the 21st Army Group's zone. While the First Army was getting all the publicity in the



U.S. troops crossing the Rhine under fire

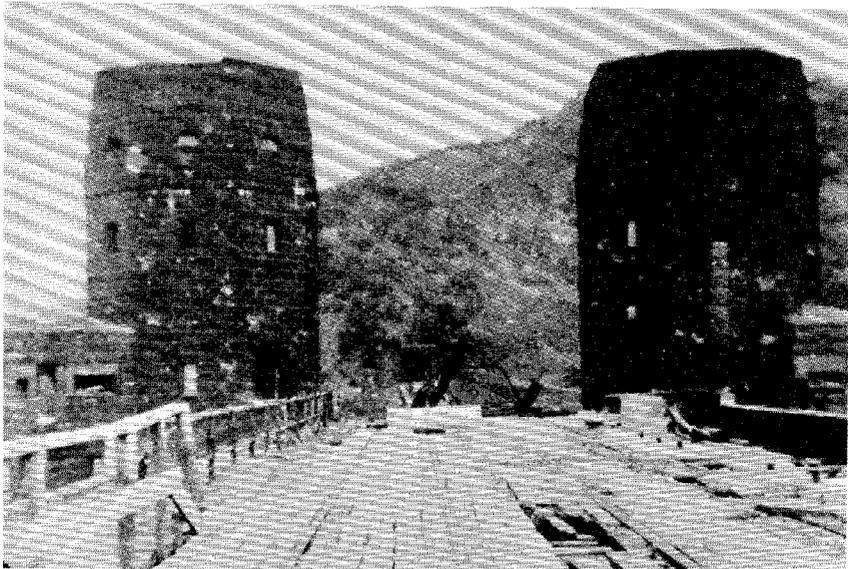
stateside press, the Ninth Army was bringing the war that much closer to its conclusion.<sup>138</sup> By 26 March, the 35th Infantry Division had crossed the Rhine and was assembling on the eastern shore, while the XIII Corps assumed control of the west bank of the river and the XIX Corps prepared to be committed to the east.<sup>139</sup> By the 29th, the 8th Armored Division cleared Dortsten and Feldhausen, while the 35th Infantry Division cleared the city of Gladbach, and the 79th Infantry Division advanced to within a mile of the Rhein-Herne Canal.<sup>140</sup>

On 30 March, the corps continued to advance, clearing the towns of Rurhassel, Polsum, Bottrop, and Buer. The north bank of the Rhein-Herne Canal was reached. Meanwhile, the XIX Corps launched its first attack east of the Rhine. On the 31st, the 2d Armored Division achieved a breakthrough in the XIX Corps' zone and advanced thirty-five miles, while the XVI Corps cleared more of the banks of the Rhein-Herne Canal.<sup>141</sup> The end was now only a matter of time.

Although the 1st Medical Group would have preferred to place its hospital units along a single axis where they could support both divisions, the distance between the two division axes prevented this. Therefore, the 1st placed a hospital unit in support of each division, with a third held in reserve. It did this because

it expected a greater number of casualties than in the Roer crossing and because of the limited objectives of the assault. When the first clearing company from the 30th Medical Battalion established itself on the east bank of the Rhine, the group established a hospital unit of the 48th Field Hospital in support of it, where it received the corps' first nontransportable patients.<sup>142</sup> To assist in the treatment of these patients, two auxiliary surgical teams and two shock teams were attached to the 1st Medical Group from the 5th Auxiliary Surgical Group and were further attached by the group to the field hospitals.<sup>143</sup> As the divisional clearing companies moved forward, the hospital units of the 20th Field Hospital were left in place and were replaced with hospital units of the 48th Field Hospital, while those of the 20th reverted to field army control.<sup>144</sup> The army had placed five evacuation hospitals—the 100th, 105th, 108th, 111th, and 119th—in support of the XVI Corps (and the 1st Medical Group) at the start of the assault, while another evacuation hospital, the 91st, was loaded on its vehicles and prepared to displace forward, which it did on 30 March, establishing itself in the vicinity of Vorde, on the east bank of the Rhine.<sup>145</sup>

In the 430th Medical Battalion, the 488th Motor Ambulance Company provided evacuation for the 79th Infantry Division,



*Courtesy of Thomas S. Pridéaux*

The Ludendorff railroad bridge (called the Remagen bridge) across the Rhine River, a lucky acquisition from the Germans



Courtesy of Harry L. Gans (Col., USA, ret.)

The 1st Medical Group crossing the Rhine River, May 1945

while the 489th Motor Ambulance Company evacuated the 35th Division and various corps units. The 462d Medical Collecting Company was one of the units providing support to corps units and was responsible for providing collecting support to engineer units constructing bridges in the northern portion of the corps' zone. While the litter-bearer platoon provided aidmen at the bridging sites and the collecting station platoon established their collecting stations nearby, the ambulance platoon provided evacuation support to various engineer, artillery, and anti-aircraft artillery units in the area. The 430th Medical Battalion's fourth company, the 415th Medical Collecting Company, was established at Repelen, Germany, to serve as a holding area for casualties should the need arise, while its litter-bearer platoon augmented the 79th Infantry Division during the initial crossing.<sup>146</sup> Units of the 183d Medical Battalion provided similar services to engineer units, probably in the southern portion of the corps' zone.<sup>147</sup>

The assault crossings of the Rhine River went much easier for the 1st Medical Group than did the crossing of the Roer a few weeks earlier. There appear to be several reasons for this. First, the massive preassault artillery barrage, the deception plan, and the rapidly crumbling German defenses all helped to produce fewer casualties than had been anticipated. Moreover, hospitals

were placed closer to the river line, and more important, the group was initially supported by five semimobile evacuation hospitals—with a total of 2,000 beds—rather than the three hospitals and 1,200 beds it had shared with the 30th Medical Group during the Roer crossings. But most important, the group had used the Roer crossings as what physicians call “a good teaching case.” Like all good soldiers, the 1st Medical Group had learned from its mistakes and implemented procedures—most notably a standard method of calculating surgical backlog—in cooperation with its supported and supporting units. With the greater number of hospitals, coupled with standardized procedures, surgical backlog became so minimal as to escape comment in the group’s unit journal—a vastly different situation than that following the Roer crossing.<sup>148</sup>

On 26 March, the 430th Medical Battalion moved to Rheinberg to establish an ambulance control point but found that the need that had required one the previous month did not exist, so it was discontinued. On 29 March, the battalion crossed the Rhine and established its headquarters in Stockum, Germany. The battalion moved again before the end of the month, this time to Dinslakenerbruck to better support the corps’ turn to the south to encircle the Ruhr.<sup>149</sup> On 28 March, the group headquarters crossed the Rhine, setting up in Letkampshof, where it would remain until 6 April 1945.<sup>150</sup>

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