

many divisions had that opportunity, I simply don't know, but ours did. I think it paid dividends because the unit was a cohesive unit when it moved to England and when it went onto the continent. Certainly my feeling was that the engineer battalion was ready. During maneuvers in Tennessee, we had had the individual line companies of the divisional battalion work and train with the appropriate infantry regiments in the basic combat team component. The regimental commander knew the company commander of the engineer battalion, and he thought of him as one of his own. Even though we went through this exercise, companies were not attached; they were in support and remained under my command. But there wasn't any real problem; any of the regimental commanders would have fought just as hard for the engineer company as they would for one of their infantry companies. They were a part of a team, and that worked well as we went on into France. For the most part, each line company supported the same regiment backed up by the battalion headquarters and the headquarters and service company for support as needed.

**Q:** I wondered if you had any observations or impressions of England during the period that you were there prior to landing in France-of the people and the British military,

**A:** I had relatively little direct contact with the British military. We were located in a one-battalion cantonment that had been provided by the British. Primarily, we continued our own training of both individuals and small units. We also continued with the planning involving the 30th Infantry Division as a part of the invasion into France.

As to contact with the English people, there was some. The impressions that I have are of a friendly people who were appreciative of both the reason why we were in England and the planning for the invasion. They seemed to go out of their way to make us welcome. To be specific, and purely as an example, I remember a couple who lived near our camp. He was a retired barrister, very badly crippled by arthritis. They had a small country place nearby. They made it a



*Lt. Col. Carroll Dunn in Dropmore, England, just before D-Day, 10 May 1944.*

point to become acquainted. Personally, I had several contacts with them. They invited my adjutant and me to **play** bridge on several occasions when we had a chance to be away, and I believe I had **Sunday** dinner with them at least once.

There were: other activities, more general in nature, to welcome the men of the battalion. Nearby, the Astor estate, Cliveden, sponsored some activities to which battalion personnel were invited. The small communities nearby would often invite a small group for some social function.

One thing I noticed was that the English were quite restricted in the availability of many items of food. The only **fresh** vegetables I remember were Brussels sprouts. I got very tired of **Brussels** sprouts. Cakes were usually made from a very strong wheat flour and with very little sugar available. Nevertheless, they shared what they had.

Moving ahead a little bit, but to give you some idea of the English food: I remember very vividly that about four weeks **after** we landed in France our rations included the first American white flour that had been issued. At the same time, some toilet paper from the United States was issued. I really had a hard time deciding which was most **appreciated**—bread made from American white flour or toilet paper that didn't have the wooden splinters that the British brown paper had! All this is to say that the British shared what they had. They accepted the overloading of the island with troops and equipment. It was very crowded, yet the relationships were good.

Q: One of **the** main things your battalion was engaged in while training in England was mine clearing. Earlier you talked of your insistence on using live mines as part of that training. After your unit got to France, landed in Normandy, how much use were you able to make of that training? How heavily mined was the area? Did you feel that the training turned out to be adequate?

A: The area into which we went, behind Omaha Beach, was very heavily mined. And the mine problem was really our major problem for the first several weeks—together with the problems of trying to move through the very heavy hedgerows of the Normandy countryside.

There's no question in my mind but that the training in England, which accustomed the troops to **dealing** with live mines, psychologically prepared them when they actually got in combat, I have no way of proving this other than the fact that the men readily accepted the assignments given, and we had relatively few casualties from mines that could be blamed on mishandling. There were mine casualties. I was one of them, actually, but this had nothing to do with attempting to remove mines. That mission was handled very, very well.

This success continued throughout the war in France. When we moved into Germany in the **fall** of 1944, we became involved in the defenses in and around the Siegfried Line near the border of Germany. Mines, both antipersonnel and antivehicular, again became a major problem.

Q: Another activity that the unit would have been frequently engaged in was bridging. There was some training in this, too, in England, isn't that correct?

A: Yes, although our unit, as a part of an infantry division, did not have the same degree of either training or capability as existed in, say, an armored division. We did train with bridge units. We did considerable training with relatively short sections of **treadway** bridge for hasty bridge **impalcement**. This paid off in the early days in Normandy in allowing our vehicles and troops to cross some of the canals and relatively narrow watercourses that we found.

We also trained with foot bridges and other types of expedient bridging, which were the primary things that we would be called on to use. Any major bridging requirement meant that we were **reinforced** by corps engineer units. They provided the bridging for any major water crossing, the first of which was the Vire River.

Q: Was it Bailey bridging?

A: Not so much Bailey, although in a few cases we used them. More often than not, treadway-type vehicular bridges were the best solution.

### **Omaha Beach to Saint Lo, France, June 1944**

Q: How much did you know about the enemy that you were meeting before you landed in France; about the kinds of weapons they used, etcetera?

A: The general **information**, I think, was fairly good. We had good intelligence on German units. However, we found after we got to France that many of the units were made up of older people and, in some cases, very young people. In many cases, there were what I would call impressed people **from** other nations who were added to the German units.

The 30th Infantry Division, of which we were a part, actually came in as a part of the elements arriving on **D+6** on Omaha Beach. Our first major mission was to clean out a section of the **front**, along the Vire River, starting about six to eight miles inland from the beach **and** continuing to the area of Saint Lo. We were engaged from the time of the landing (about **13** June) until late July.

Q: From the landing to Saint Lo?

A: Yes.

Q: So, you do feel, then, that your intelligence was generally good?

A: I think it was good. We also had some very good geological and geographical intelligence that was very useful for determining characteristics of the terrain, location of bridges, and locations of streams and their characteristics. This was very useful in preplanning; and, for the most part, I found it to be fairly accurate and indicative of the general situation.

The information we had in the early days of the invasion was very good. As the movement speeded up **after** the breakthrough, we tended to outrun the available intelligence, and mapping information was more of a problem. But, at the same time, the need was not as great because the movement was much faster.

Q: The journal **for** the 105th Engineer Combat Battalion makes frequent reference to how the 105th was involved in instructing the infantry in such things as use of flame throwers. I was wondering if you could comment on the role of the engineers as instructors to the infantry.

A: The method of engineer operation, for the most part, after the first week to ten days following the invasion, was with each one of the three line companies directly supporting one of the infantry regiments of the division. For that reason, the engineer battalion really operated quite dispersed-A Company with the 117th Infantry, B Company with the 119th Infantry, and C Company with the 120th Infantry. They maintained that relationship throughout the campaign.

That meant that the company commander was almost a part of the regimental staff. The regimental commanders became very well acquainted with the company commanders and **often** called on them, not only for assistance in doing the engineer work, but also for help in training their pioneer platoons and other units, when occasion allowed, in those activities that were essentially of an engineering type.

This meant that the engineering capability of the unit could be extended by this training. The regimental commanders thought very highly of their engineer units and became very possessive of them. Actually, I had no real problem on that score, and I welcomed the close association. They were not officially attached to the regiments, but the regiments looked on them as a part of their operational team.

That left the battalion headquarters and the headquarters company as the general support for all of the line companies. That also meant that since the line companies were dispersed, working with individual regiments, I spent a major portion of my time actually operating as the division engineer at division headquarters. I anticipated what would be the requirements for engineers, and also took part in the planning associated with G-3, primarily, but also G-2 and G-4.

Actually, this planning started with the initial movement into France. I was one of eight people who made up the advance detachment of the division going into France under the command of the division artillery commander, who was a brigadier general.

Q: At Saint Lo, you were injured, which required that you be sent back to England. You mentioned that your injury was related to a mine explosion.

A: Yes, but first some background. In the breakout at Saint Lo, which really was the breakout from the hedgerow country of Normandy, an attempt was made to assist the breakout by a massive air bombardment. This bombardment was scheduled and partially took place. Then, for reasons that I'm not sure of at this point, it was called off and rescheduled for late July.

When the attack was launched, our plan as one of the principal divisions to make the breakout, had advance infantry units supported by armor and engineers near the front lines. We tried quickly to break through the German lines closely following the heavy aerial bombardment. There were difficulties with the bombardment, resulting in a number of friendly casualties. As the bombardment took place, the smoke, dust, and debris in some cases obscured the terrain features that the Air Force was using for bomb release. It was at this time that General [Leslie] McNair, who was visiting the front, was killed in the 30th Infantry Division sector by our own air bombardment.

Because of the criticality of the operation, I had a platoon with each of the two battalions from different infantry regiments scheduled to make the initial breakthrough. Being concerned about the success of this, I personally went forward and was with one of the platoons as the last of the bombardment took place. We had actually started moving forward. As the last group of planes came over, they dropped their bombs short, straddling the road on which we were located.

Fortunately, it was a depressed road in that area and the detonations took place on each side of the road without any serious casualties to the group with which I was moving. I had had several trucks hit earlier in the bombardment and there was some disorganization. There were casualties among the infantry units, including, as I remember, at least one of the infantry company commanders with the forward element.

At any rate, because of the static nature of the engagement before the bombardment, we felt strongly that mine removal would be a principal activity, and the engineers were moving toward the **front** of the column. As they started forward, they became engaged by sniper fire. A little later we found a dug-in German tank that had not been hit by the bombardment. It had the road under observation and direct fire.

This stopped the forward movement and, because of the disorganization that had taken place as a result of the bombardment, things were somewhat less than satisfactory. I decided to make a personal reconnaissance to see if there was a quick way around the German tank. I left the road on which we were moving and got maybe 50 feet or so off to the side.

Since I was watching more for snipers than where I was putting my feet, I must have hit a trip wire and exploded a mine. Based on the results, the mine apparently was a homemade affair consisting of a tin can full of rocks with a quarter pound of TNT. It went off about two feet or so from my foot. It sprayed my left **leg** with small metal fragments and rocks. I was told later, when they recovered my boot, which was removed as I was being evacuated, that there were **50-some** holes in it.

The explosion, of course, knocked me down and for a moment I'm sure I lost consciousness. Shortly thereafter I became conscious but was unable to move. My leg had been broken near the ankle. As a result, I was evacuated to a field hospital just to the rear of the division. They operated that night and several days later I was **air-**evacuated back to England.

Q: About when was this?

A: I can find the date, but it was somewhere about the 25th of July.

Q: It was the 25th of July.

A: I got back to the battalion in October.

Q: Or late September, which was indicated in the journal.

A: I can't remember. It was in the late September-early October time frame.

Q: How aware were you of what was going on with your unit while you were in England?

A: I kept track mostly through the *Stars and Stripes* and very limited correspondence. One of the advantages of being a part of a division was that its location was not classified.

Thus, it was much easier to keep track of exactly what the division was doing than if the unit had been part of a smaller organization.

Q: Did you expect to return to command?

A: Theoretically? I was classified as “seriously wounded.” Under normal circumstances I might well not have returned. But there was a request from the division commander to the hospital that I **return** as early as possible. I actually was returned as an exception to theater **policy** based on this personal request of the division commander.

Q: Who was he?

A: Leland S. Hobbs.

Q: Was there a particular reason why he requested you?

A: So far as I know, he and others on the division staff had assumed that I would be coming back upon recovery and release **from** the hospital. For that reason the command of the battalion had passed temporarily to the executive officer [Major **Antonin M. Sterba**], who served as the battalion commander during my absence.

### **Across France, 1944**

Q: At what point did you rejoin the battalion?

A: I rejoined the battalion just after the American forces had captured Aachen and during the action to enlarge the penetration into Germany through the Siegfried Line. The division was then located about 15 miles north of Aachen on the boundary between Germany and Holland.

Q: Earlier, in addition to the mine activity that was an ongoing concern as far as the advance up to this point and beyond, you mentioned bridging and the type of bridging that you used. Were there any problems with bridging during your advance; problems with supplies or problems with the bridges that you were required to construct?

A: **No**, I don't remember any to this point, but we had some interesting bridge problems a little later. During the Battle of the Bulge, we went south to the **Malmedy**, Belgium, area. After that was over, we returned to the original location northeast of Aachen and prepared to cross a small stream called the Roer River as a part of the general attack toward the Rhine. There were some interesting problems here. The Germans had opened the discharge gates **from** an upstream dam, which flooded the Roer in this area.



*Brothers Lt. Col. Carroll Dunn, U.S. Army, and Capt. G. Raymond Dunn, 4th U.S. Cavalry, meet in a bunker near Aachen.*

**Q:** They didn't blow the dam then?

**A:** Actually, we tried earlier to blow it by aircraft bombs but were not successful. To suit their own purposes and time, the Germans opened the gates and flooded the area downstream, very adversely affecting our ability to cross.

As I remember, in late February of 1945 we returned from the Battle of the Bulge to the same area that we had occupied in November and prepared for that attack across the **R**oer. The flooded area not only included the river and its flood plain but large drainage ditches on each side of the river. We also had to make provisions for getting across those ditches.

We did develop some temporary-expedient bridge that was light enough for the troops to carry that provided a foot crossing over these drainage ditches. Then we used the assault boats to get the infantry across the flooded area of the river. This was followed up by floating bridges built by supporting engineer troops so that we could get tanks and vehicles across. The next major use of bridging came in the crossing of the Rhine about a month later and considerably north of this area in the German plain north of Cologne.

Q: In the assault on the Siegfried Line, how effective was the air support that was given?

A: The actual assault took place before I got back to the unit, so I can't specifically comment. I know there was use of close air support through small flights attacking specific bunker areas. One of the things we did, after the capture of Aachen, was to spend some time blowing up the fortifications to prevent their being reused in case there should be a counterattack. In doing so, we experimented by shooting at them with large-caliber weapons to determine exactly what the effects would be. I don't remember any specific details, but I can say that they were extremely difficult to destroy.

Q: Do you recall hearing that there had been a problem with U. S. planes hitting Americans during the air assaults prior to that?

A: In my personal experience, on two occasions that happened. One was in France at Saint Lo, as I previously mentioned. The other was during the Battle of the Bulge when our unit went south to a position on the north flank of the Bulge in the Malmedy area.

We were definitely bombed by our own Air Force at the time we were moving into Malmedy because there were erroneous reports that the Germans had captured Malmedy. Actually, they never reached Malmedy itself but turned south instead. There was a lack of coordination, resulting in some destruction in that area from our own aircraft as our own troops were occupying this village.

Q: How did you find the German fortifications in general along the line when you got there?

A: In the Siegfried Line area, of course, the ground was well organized. The fortifications were well built and extremely strong. The primary weakness inherent in that type of fortification was the restricted visibility. The main means by which they could be attacked was to find the blind approach to reach and blow the door with shaped charges. The doors faced the German lines and were not susceptible to being hit by our artillery. We also used flame throwers and shaped charges in those cases where individual bunkers were occupied during the assault.

Q: There has been some feeling expressed that at that point the Germans were quite vulnerable (in late September-early October 1944) and that the war could have been won earlier, or certainly much more could have been accomplished than was. From your perspective, what would your observations be on that?

A: It's pretty hard to get an overall view from near the front lines even at the division level other than knowledge of what's generally being reported in the intelligence summaries, operational summaries, and in the *Stars and Stripes*. It was very obvious that we had

outrun our supply lines, and we were engaged in reorienting our supplies and developing a supply route from the Dutch ports. There had been the excursion into the Rhine plain in the Netherlands, which had further diverted supplies and efforts, even though not overly successful

My own experience, as I returned from the hospital through the replacement system, had impressed on me the problems in the supply and transportation systems. I went through at least four replacement depots after leaving England, and finally ended in one near Etampes, about 15 miles from Paris. I was delayed there several days by **discussions** of whether I was medically fit to return to duty. I finally was allowed to leave.

My trip to the front was another experience. Thirteen hundred replacements were placed on a train made up of cargo box cars without any provisions for food and water other than cases of cold C-rations placed in each individual car. There were about 40 cars; and, as the train was being loaded, an individual came up to me and asked me to sign a paper. I asked him, "For what?" He said, "You're the train commander and these are the records which require a signature for this replacement group."

He had no roster of men in the group and said we were designated to go to another replacement unit somewhere in Belgium. The "somewhere" was literal. They really didn't know where it was but said we were supposed to be on the train about 24 hours. We actually spent 72 hours before arriving at Huy.

The major problems resulted from the fact that there were no kitchen cars and the train crew was French. There was no real information as to where we were or when we would get to our destination. For instance, we sat in the rail yards, in the outskirts of Paris, **from** about 8:00 at night until about 5:00 the next morning simply waiting for a train crew and a change of locomotives.

By that time, the water that individuals had brought in their canteens was somewhat low. I tried to make provisions for water as we finally began to move north. We came into Compiègne, where I had been promised some water. Sure enough, there were two tank trucks. However, there was no way to fill canteens other than through one oversized hose connection on the back of each tank truck. With some difficulty and considerable delay, we finally got several **lister** bags set up. This gave some opportunity during a relatively short stop to provide water, but it was a very unsatisfactory and **disorganized** performance.

Not long **after** I returned to the division, there was an IG [Inspector General] investigation of the replacement system, and it was changed to provide travel crews and

permanent kitchens and water cars on trains carrying troops. This experience certainly indicated that our advance had somewhat outrun our organized support system.

Q: Did evidence of this crop up again?

A: That is the major instance of which I was personally aware. One earlier time was on Omaha Beach **after** a major storm that occurred about the 16th or 17th of June, which had disrupted supply transfer over the beach. There were times then when things got a little short.

Q: After entering Germany, was there any sabotage of German industry that you recall?

A: I didn't see any signs that I could call sabotage. Actually, the breakthrough, with the bombing and artillery shelling, reduced the border villages to piles of rubble with very little industry actively working. Our division headquarters, for instance, was billeted in a building that had been a glider factory at an earlier date. Those portions that had escaped the bombing were perfectly usable. Utilities were out, both water and electricity, but there was shelter. Several mines in the border area had escaped damage. We found these very useful because the changing facilities at the mines were an opportunity for showers, including hot water, which was a very precious commodity at that time.

Q: Was there much equipment or usable material that was left behind by the Germans?

A: Not at this point because the movement had been too slow. Later, after we crossed the Rhine in early April 1945 and began the rapid advance across Germany, there were occasions when equipment and food were found. I remember, after capturing food storage warehouses, [we found] one had mostly cheese and another frozen strawberries. These obviously didn't last long and wouldn't have lasted long had they not been, shall we say, requisitioned. Spoilage would have occurred, since there was no electricity for refrigeration.

Q: What kind of general activity was the battalion engaged in after taking over each area?

A: After the initial breakthrough of the Siegfried Line, a major activity, as I have indicated, was destroying the pill boxes so they couldn't be reused. Another activity was enlarging the gaps through the tank traps that made up the line; clearing rubble to open at least a passable road that was later improved and enlarged by the supporting engineer group. We also carried on, where possible, some training with the infantry in preparation for further attacks to the east through areas near the border that had been mined previously. This basically was how we were engaged until the time the Battle of the Bulge started in mid-December.

### The Battle of the Bulge, 1944

Q: Do you have any comment about the support that was given to [Courtney] Hodges' First Army, of which you were a part at this time? Was supporting [Bernard] Montgomery as opposed to supporting [George] Patton farther to the south a wise decision or not?

A: Since I was hospitalized from the time of the breakthrough at Saint Lo until after lines had pretty well been reestablished with the capture of Aachen, I don't have personal knowledge that would indicate one way or the other the actual distribution of supplies. My only knowledge would have come from reading the reports in the *Stars and Stripes* and other papers. By the time I got back to my unit, we were not critically short of fuel and other supplies. Nevertheless, as I've indicated, the supply lines weren't well established and only through such things as the Red Ball Express were we able to maintain the required ammunition and other supplies needed for the continued offensive.

Q: What was the reaction when things began to turn around and the Germans mounted their counteroffensive?

A: Well, the thing that I remember before the Battle of the Bulge was being in a relatively quiet sector making preparations for crossing the Roer River and further attacks to the east. We heard on the radio, both officially and unofficially, that a German counterattack had started in the Ardennes. It was only a few hours afterwards that we got orders to be prepared to turn our sector over to a mechanized cavalry unit, and to proceed south to stabilize the northern flank of German breakthrough. I left immediately to go to V Corps headquarters (to which we were being attached) to get further information and, particularly, a supply of maps for our units and to meet them as they arrived in the new area. So I was thus engaged during the first evening at a time when the movement of our troops came under fairly heavy German air attack. Actually, in my own war experience, it was probably the heaviest air attack that I experienced. It did disrupt, to a fair degree, some of our convoys. In some cases inexperienced drivers simply stopped their trucks and took off. The major problem was getting these people rounded up and keeping the traffic moving. Even with the disruption, we were able to get the maps into the hands of the units as their advance attachments arrived.

Our division moved in three columns into Malmedy and the little villages to the west of Malmedy along the north flank of the German breakthrough. One of the units (the 119th Infantry, to which B Company, 105th Engineers was attached) came head-on into one of the German columns and fought a very decisive battle in the vicinity of Stavelot and Trois Ponts, along the Ambleve River. This stopped the Germans in any

breakthrough to the north. However, they continued on to the west, where they were met by other units, which finally stopped the breakthrough.

This was one of the few times that we blew up bridges as a part of our defensive operation. On several occasions engineer platoon units had the job of blowing up some masonry bridges across that river as a part of their defensive position. We also used the First Army map depot, which was located at Stavelot, as a fortified position. The maps in bulk were a part of the protection as you would use sandbags or other material. Maps are pretty effective in stopping **small-caliber** bullets when they are in heavy packages.

Q: So you made do with what was available. Near the end of December 1944, the 30th Infantry Division became part of the XVIII Airborne Corps. Did this include the engineer battalion with them at that point?

A: Well, we were already in place when the XVIII Corps came in together with the **82d** Airborne Division. We became a part of the corps on the north flank of the Bulge. We then participated as a part of the XVIII Corps in stopping the German penetration in that area and in the counterattack to close the gap. When the gap was reclosed, as I remember it, toward the end of January 1945, the division was transferred back from the XVIII Corps to the XIX Corps, which had been our basic corps unit through most of the war.

Q: What was the reason for that change?

A: The reason was purely the fact that we had been moved out of the sector that we had occupied, which was then the XIX Corps sector, and transferred from XIX Corps to the V Corps and then to XVIII Corps as it was brought in as a part of the reinforcing reaction to the Bulge.

Q: The actual official date for the change back was the 2d of February 1945, at which point the **battalion** journal recorded they felt that was good news because no one wanted to go back to the Siegfried Line assault again.

A: Yes, but remember that this unofficial journal basically was kept by the operations sergeant at battalion headquarters. Many of the comments are as he saw them, which I think is unique and unusual, but they may or may not always describe the official viewpoint.

Q: That's a good point. I was interested in what you thought about this comment. Were there any unique things about this experience that you'd like to comment on-the time when you were out of the XIX Corps sector?

A: The main events were influenced by the German counteroffensive. One thing that stands out was the very heavy use of aircraft on 1 January 1945, when the German air force essentially appeared for the last time. They really massed their aircraft in support of their operation. This resulted in one of the heavier air attacks of the war as far as our unit was concerned. We also were in the path through which the German V-1s or "buzz bombs" flew toward Antwerp. These often had malfunctions, and several fell in our area. The engineers had the problem of making repairs, cleaning up the debris, and protecting some major installations to minimize the possible damage. It was also winter—a very cold and disagreeable winter.

I would say that one of the things I remember is the fact that we really weren't prepared with proper clothing for continued operation in that kind of climate. Later, in Korea particularly, better equipment and clothing for cold-weather operations were available. The cold and its effect on people were primary problems. We did put in a Bailey bridge. One of the few times that the 105th Engineer Battalion itself erected a Bailey bridge was as a part of our counteroffensive in the Battle of the Bulge. We had quite an exposed location and put in the bridge during the night in weather well below freezing with snow on the ground. This was an acid test of the training that our unit had in Bailey bridge erection. Although, as I say, most of this type of bridging was done by supporting corps units.

Finding mines in the frozen ground under the snow was the other big engineer problem. We tried using some of the mine-clearing devices with heavy rollers and flails on tanks as a means of exploding mines that we could not otherwise find. While in defensive positions along the northern flank waiting to begin the counterattack, we also developed a mine strategy for our division. On my recommendation, the division commander, over objections from some of the regimental commanders, decreed that all defensive mines would be emplaced on a temporary basis with no booby traps used. This made it necessary to cover all minefields with small-arms fire but was dictated by the fact that we anticipated going over to the offensive soon.

We recognized ahead of time the problems that would be encountered in our attempts to get through our own minefields and the casualties that would occur as we began the offensive. We felt it was worth giving up a little bit on the defensive in order to be able to move more rapidly forward once we began the counterattack. I believe that this was a wise move, and it did pay dividends when we went on the offensive.

Q: What would account for the problem of not being prepared for the cold?

A: This is purely my opinion, but I think that we really just hadn't developed our cold-weather gear to the point where we were prepared to support major ground units under these conditions. We obviously had wool uniforms, which were the normal wear, but

the field jackets and overcoats that were issued were really not the answer—field jackets were good fighting clothing but didn't provide sufficient warmth, and the overcoats were just too bulky to wear in combat. You need something light and yet with protection against the cold, and with pockets that are reachable when in full gear.

Q: The journal noted the demonstration of a new antitank grenade that the British had developed—the gamman grenade. Do you recall this?

A: I have a vague recollection but remember no details at this time.

Q: I was wondering if it had been used—

A: We (primarily the infantry but in a few cases engineers) did use the bazooka round, which has been developed as an effective antitank weapon.

Q: It had been **developed** during the course of the war?

A: It had been developed before we went into France. We also, for the only time in my memory, during the Battle of the Bulge prepared defensive antitank and antivehicular obstacles by blowing down trees in the forest and by digging some short stretches of antitank ditch. As defensive measures, so far as I can remember, other than mines, none **of these** obstacles were ever really tested by the German attacks since we were on the flanks and the major effort or attack was to the south and to the west. After the first few days, we did not come in contact with major first-line German units.

Q: Was that kind of defensive activity something that the troops would have been trained for?

A: Yes, that had been covered in training, although it hadn't been used in quite sometime. Both the junior officers and the noncommissioned officers had been trained and were able to effectively carry out their assignments.

Q: When you went back into Germany, at the beginning of February, 1945, do you recall the feeling associated with returning to areas where you'd been before and were now taking over again?

A: As I remember it, there was somewhat of a feeling of discomfort at the fact that we were going back to where we had been before. The feeling was that the Germans had learned well what our disposition was and that we might be somewhat more vulnerable now. On the other hand, plans were being made for an attack to the east, including the crossing of the Roer River. As I indicated previously, this was delayed and made much

more **difficult** by the flooding caused by the Germans' release of water from upstream dams.

The plan for our Air Force to blow a major dam had been made with the idea that the water would be gone by the time we got ready to make the attack.

Q: What do you think about that decision?

A: I think the decision was fine. The only problem was they weren't able to accomplish it.

Q: So, you think the water would have been gone-

A: Yes. It took ten days to drain. Actually, the Germans in a way helped because, by their releasing the water, we were able to find a means to deal with it. If we had started to cross and then there had been the sudden release of water, there would have been no way to prevent a cutoff of those units that were already across the stream. This way, we waited until the major flood crest had passed. Then we made the crossing in a receding stream and probably achieved tactical surprise because I think we attacked several days earlier than the Germans believed we would under the circumstances.

Q: There was heavy artillery fire?

A: Quite heavy artillery fire, and some heavy casualties. We made extensive reconnaissances throughout the planning time period, including getting people across to the German side. We had a fairly good idea of the location of obstacles, including the width and depth of the two drainage ditches on each side of the river. We were aware of them from intelligence documents. But, by using reconnaissance patrols, we were able to actually find and measure the location for crossing and then develop a means of crossing on prefabricated walkways. These we made in sections and assembled at the sites to allow the foot troops to move across.

We also strung a cable ahead of time between two large trees over the main section of the river. 'When it came time for the crossing, we were able to use this cable as anchorage for the foot bridge to allow the infantry to cross the main stream. Later, there were fairly heavy casualties at the fixed bridge locations since these were known and the Germans had a chance to register in on them early. These were at breaks in causeways carrying the original roads, and no other places were available that could be used for vehicular crossings. Once bridging started, it was perfectly clear to the Germans where we were working, and we did suffer fairly heavy artillery fire until it could be knocked out by air and by our own artillery.

By the way, I have some very excellent pictures of this Roer River crossing. I actually used this crossing as an example of a tactical river crossing in teaching at the Engineer School back in 1947. Somewhere in the Engineer School is a lesson plan with all of this, including; the pictures. I also have copies of the pictures. This action is pretty well documented.

### **The Rhine Crossing, 1945**

Q: Did **you** have a chance to practice on another river?

A: **Not** here. We did later on the Rhine River in quite great detail.

Q: What was the reason here?

A: In the first place, there wasn't time. In the second place, there really wasn't any way that we could duplicate a small stream in flood.

Q: In the journal, prior to the crossing, you describe this as the most impossible spot in Germany.

A: Probably an overstatement, but certainly it wasn't an easy one. Fortunately, it was so bad that the Germans didn't expect us there and, except for the artillery fire, the resistance was not great once we got across to the other side. Had they been defending it seriously with troops, it would have been an extremely costly operation for us.

Q: But a necessary part.

A: No, it was a tactical surprise, going where they didn't anticipate it

Q: And again you had the time.

A: We had known about this, and we had about ten days after we returned from the Battle of the **Bulge** to finalize our plans. We constantly reconnoitered and kept very close track of the rise and fall of the water so that we were able to predict the water levels, and we had some idea of the current. We made current measurements. During the crossing, we also set up some fairly heavy smoke with smoke generators on the friendly side and smoke shells from 4.2 mortars on the enemy side to block observation of the attack, which was started under cover of darkness.

Q: Were there problems getting the right engineer equipment at this point?

- A: I don't remember any major problems. We got some amphibious vehicles for this crossing that we used to put one of the infantry battalions across in an area where we felt we could not put in a foot bridge. We did practice with these. As I remember, they were fairly effective. No equipment shortage per se stands out in my mind as being a limiting factor.
- Q: Shortly before this time, around the end of January, the journal referred to the companies in the battalion being reorganized according to the book. The organization had become a "mess"—that is the word that was used—because of new replacements and casualties. What comment would you have on this as far as keeping the organization as it was designed to be? Also, what are your comments about the replacement troops that you were getting in the field; the quality of them and this kind of thing.
- A: Again, from the point of view of 35-plus years, nothing now stands out in my mind as being particularly significant or particularly lacking in the quality of the replacements. Having been engaged in fairly heavy combat during the Battle of the Bulge and having been fairly widely dispersed with individual companies working with the infantry regiments, we did need time, not so much to reorganize but to be sure that each unit was filled with replacements; that equipment was replaced—things of this sort. It is vitally important for any organization engaged continually in combat. For instance, we went into Normandy on about the 11th or 12th of June. The first time the battalion was totally out of combat was just prior to the Battle of the Bulge in November 1944—and for only a relatively short time. With the fighting in the Battle of the Bulge there were requirements to replace casualties. As these replacements came along there was a degree of inexperience created simply by the fact that a large number of new people were coming into the units.
- We were able to do fairly well in replacing our noncommissioned officers from within the unit by promoting people who had had combat experience. Therefore, experienced NCOs continued to be available. Replacing younger officers was not as easy to do. A fair number of our noncommissioned officers received battlefield promotions as commissioned officers, thereby giving us some experienced people as platoon leaders.
- Q: Which was surely an important factor.
- A: A unit reflects the quality of the training and the experience of the people, in my opinion, to a higher degree than anything else.
- Q: What about black troops?

- A: We had none in our unit. That was a period of total segregation. There were none in the division. There were black units from time to time (primarily quartermaster or transportation units) that did support the division, but that was our only contact.
- Q: Was your association with the Ninth Army simply because of the area in which you moved?
- A: Simply by the realignment of the Army boundaries the north flank of the U.S. forces became the Ninth Army.
- Q: Now, for the Rhine crossing, which occurred on 24 March 1945—you did have an opportunity for the advance training and practicing of river crossing?
- A: With the Ninth Army directive that we would be pulled out of the line where we were and reassigned to XVI Corps, we did arrange for special training. This was a reflection of my being able as division engineer to work very closely with the division G-3 and the assistant division commander. The units that were to make the assault crossing, together with supporting engineers, went back to the **Maas** River near Maastricht, Holland. There, for several days, we made practice crossings using assault boats and what we call storm boats with faster and heavier motors. We practiced moving up to and crossing the river on a wide front, which was our plan for later crossing of the Rhine.
- Q: Now you related this to your working with the division G-3?
- A: I mean, the fact that the line companies worked almost continuously with the individual regiments gave me more time to be not only the battalion commander but the division staff engineer. In a river crossing, the engineer, the engineer plan, and the engineer troops play a very major part. This close relationship with G-3 meant that when the time was available there was no problem in making the arrangements to carry on a practice operation. After all, the Rhine is a major river.
- Q: That's the point I wanted to **clarify**. Do you remember any unique problems associated with crossing; the Rhine River?
- A: Yes, the first problem was crossing on a fairly wide front in three columns. Also, the river was about 1,500 feet wide and had a fairly fast current. The assault crossing, using power boats, led us to make a very detailed plan.

We were provided heavy engineer support from the corps' engineer units. We planned for the initial waves to go over in storm boats as opposed to assault boats. These were faster and heavier craft propelled by 55 horsepower outboard motors.

I believe we had some 50 of these distributed among the three regiments. We had several problems. One, there was a levee system on that part of the Rhine, which was back from the river a quarter to a half a mile, depending on exact location. Once you crossed that levee, you were in a flood plain, which was open country and subject to visibility from the enemy side.

This led to the decision that the crossing would be at night and would be protected by very heavy artillery fire. It was one of our more detailed planned operations. I remember that over 50 battalions of artillery fired in direct support of the crossing. In order to guide the initial crossing limits, we devised a scheme of setting machine guns on the river bank firing tracers to define the limits of each assault unit sector.

We also used a system of colored lights so that after each boat reached the far shore it could return to its proper area for the next load. Insofar as I know, it's the only time that such a scheme was used. But in those days outboard motors were nowhere near as dependable as they are today.

In order to try to ensure that these motors, which couldn't run for at least two days before their assault use, would start when required, I got from the medical battalion enough chemical heating pads to provide two for each motor. About an hour before time to go, a small amount of water put in the pad initiated the heat source of the pads. By putting the pads on the motor blocks, the blocks were warmed. We did not have a single failure to start at the time we made the initial crossing and didn't lose a single boat in the first wave.

Our major problem on the crossing came considerably later when the support engineer unit, which had done a very good job of ferrying some of the tanks across initially, continued to operate the ferry too long hoping to get one more tank across. The floating bridge was being put in by supporting corps engineer units. Contrary to instructions, the ferry continued to operate. Just about the time the bridge was essentially complete, the motor quit on one of the boats pushing the ferry. The ferry hit the bridge and knocked it out. It took another 12 hours to make repairs and complete the bridge. That was the major adverse event during the crossing. It certainly reinforces the idea that it is very undesirable to operate ferries upstream of a floating bridge. However, the floating bridge was still completed in less than 24 hours after the initial troop crossing.

Q: Even with the accident?

A: Yes. However, it took longer to get the bridge back after the accident than it had taken to put it in. My memory is that it was essentially completed in 8 hours, or a little over, and that it took 12 hours to put it back in after the accident,

Q: And that was just reassembling the same structure?

A: Yes.

Q: How much coordination was there with the other Rhine River crossings at the time?

A: None with **the** other Rhine River crossings other than the fact that our assault followed very shortly after an airborne assault across the river-by a combined U.S.-British airborne group that was just to the north of us.

Q: So, when you were talking about the three units in **column**—

A: I was talking about within the 30th Division. We'd passed through another U.S. division that was holding the river bank in three columns; a battalion at the lead of each of these columns. This made the crossing three battalions abreast; regiments in columns of battalions.

Q: At this point, the enemy's obstacles were not terribly formidable, is that not true, once you broke through?

A: Well, the far river bank was fairly heavily defended at the river's edge. Once we broke through the shell and got ourselves established on the other side, then the problem became similar to that with the move across France, of having supplies keep up with the rapidity with which we could move. This was after we got about 5 miles from the river.

Q: Then after this operation your next major point was what?

A: We moved across the north German plain to Brunswick. There we stopped for a while and negotiated with the Germans concerning a possible surrender of the area. They did not surrender in the final analysis; however, actual resistance was minimal.

My next impression concerns the **legendary** village of **Hamlin** on the Weser River—the village hall with the stone rat race around it commemorating the emptying of the village by the Pied Piper. Things of that sort stand out, but mostly it was a matter of moving 30 or 40 miles a day, keeping watch for the enemy, outrunning the supplies, and having to be somewhat concerned about protection from the rear—but not a great deal. Hostilities **had** practically ceased except for a few pockets of short-time resistance.

The only time I had any leave during operations in Europe was shortly after the crossing of the Rhine. I went back to England for three days. When I returned to **Muenchen-Gladbach**, where my plane landed, my jeep driver was there to meet me. He

had a map showing where the division was supposed to be headed. The two of us drove over a hundred miles across the north German plain. For more than 50 of those miles we never saw an American vehicle or individual, yet so complete was the disorganization of the Germans that we were never in any way challenged. As we went through small towns, we saw white flags waving out of the windows. Our only real scare came when we started up an incline across a major canal. I got a little concerned because I could see no evidence of a bridge structure above the levees. I told the driver to slow down and stop. When he stopped at the top of the levee, there was no bridge. We had been driving pretty fast, since it was beginning to get dusk, and we'd come a long way without any sign of Americans.

We found an alternative way around the destroyed bridge. We picked up the signs that showed where the 30th Division had been, so we knew we were on the right track. Before dark, we ran into the rear elements of American units and knew we were back near the front lines. I thought it was significant that within a week after we crossed the Rhine, two Americans could drive for over 100 miles without any anti-American expression from the German people we saw.

Q: Do you recall the German slaughter of political war prisoners that occurred at Gardlegen on 14 April?

A: I am aware of a report that people were herded into a barn that was then machine-gunned and set afire.

I also **remember** an occasion when we were moving toward Magdeburg on the Elbe. A small element of the forward section of division headquarters, in trying to gain a little time and catch up with the advance troop elements, decided to take a shortcut. It went through an area the forward elements had bypassed as they turned south. I was the senior officer of the command group. As we started to cut across the triangle, we came into a small village. It was very quiet, and you could feel the tension in the air. We discovered that there were about 100 Allied prisoners of war under control of a relatively few German guards. They were English and Americans, most of whom had been captured in North Africa several years before. With caution and no firing, we released the prisoners. They, of course, were obviously happy to see Americans.

I remember well the filth that they were trying to eat, but yet, in spite of this, how well they had taken care of themselves and the military discipline that existed. The senior Allied officer of the group was a British sergeant major. I admired the spirit, the discipline, and the resolve of those soldiers of both countries.

We observed one man eating the worst gruel I ever saw, and he offered me some. It was almost impossible to look at it, much less eat it. We had with us a few K-rations

and some D-ration chocolate bars that we passed out. We tried not to give them too much for fear it might make them sick. Several walked up and put their hands on my vehicle and said, “Jeep, jeep,” as though it—something they obviously hadn’t seen for several **years**—reflected, in effect, liberation.

We were able to get some civil affairs people in who got them [released prisoners] housed, fed, and started on the process of return to Allied control. The human interest aspect of the total change in their outlook in a period of just a few minutes was something that I have never forgotten. Their condition was almost hopeless as they were just moved around by their German guards so that the Germans could avoid capture. Then, when we appeared, the guards ran away, and these people suddenly were faced with freedom. It was for them, and also for us, quite an emotional experience.

My most pronounced memory of the rapid movement across the north German plain to the vicinity of Magdeburg was the complete collapse of any organized resistance. Other than in a few pockets where there were German headquarters or other means of organized control, we moved unimpeded during April and early May prior to the surrender.

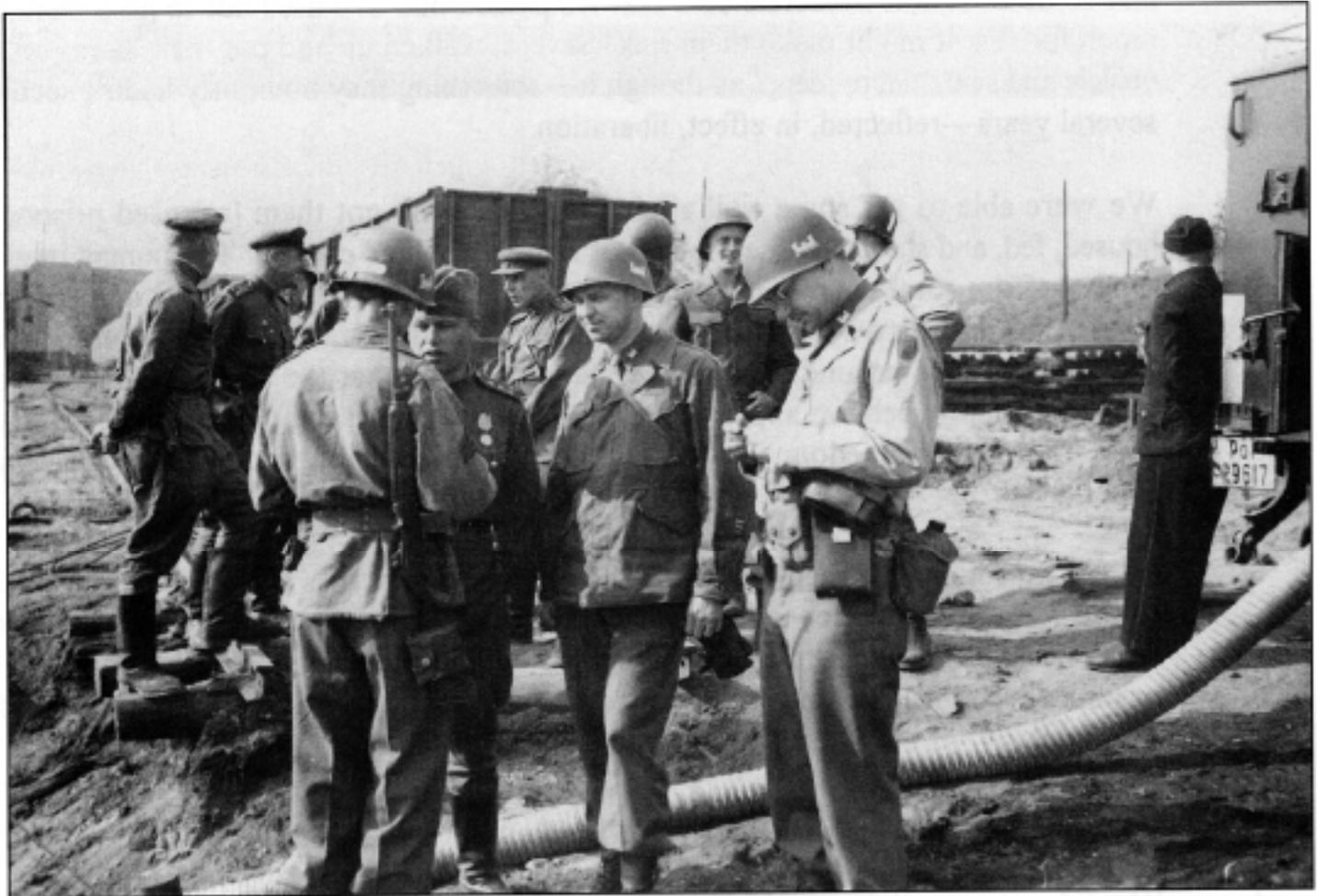
Q: There was another river crossing of the **Elbe**, wasn’t there?

A: We did not actually cross the Elbe. We stopped at the Elbe and met the Russians at Magdeburg, along the river. I remember the complete destruction of all means of crossing the **Elbe**, by either air bombardment or by the Germans themselves.

When the Russians did arrive, I participated in negotiations with them to arrange for us to build a bridge across the Elbe to provide our link for the Allied occupation of Berlin. This negotiating was a very interesting experience. It took the better part of a day. We **were** met at the river and taken to the Russian Army headquarters on the east side of the Elbe. There we had a meal, and we carried on our negotiations through an interpreter. The negotiations were successful; I would rather forget the meal!

We thought we had everything tied down; however, when we sent a survey party across the river to locate the far abutment for the bridge, which was in the vicinity of Magdeburg, the Russians started shooting. This required more talks. The decision was that we would build a fixed bridge near Magdeburg. The Russians would build one where the autobahn crossed the Elbe several miles north of Magdeburg.

I think the Russians considered this location a matter of prestige. The bridge that they built was a very rickety pole structure that would have been hard pressed to carry more than 10 or 15 tons. Nevertheless, they put in the bridge at the highway. Our interest



*Meeting with the Russians in Magdeburg, Germany, near the Elbe River, May 1945.*

was in getting an adequate bridge. We didn't argue too much about exactly where the location would be. The actual structure was built by Army engineers, and not by our own division engineer unit.

**Q:** Do you feel you had enough contact with the Russian engineers to make an assessment of them?

**A:** I had practically none. I'm not even sure that the people we talked to reference the bridges were engineers. The fact is, I suspect that they were not, although one might have been.

**Q:** What about British engineers?

**A:** I had a limited amount of contact primarily in England in liaison and at the time of the crossing of the Rhine, since we were next to the British sector. All in all, not a great deal of contact.

Q: What about the Germans? Having marched against them, what would you say about their engineering?

A: I'd say they're quite good. And particularly good at improvising.

Q: At improvising? Could you give me some specifics?

A: Not really; but their ability to make mines, their ability to build obstacles-these certainly were indicative of a fairly well-trained group. I had the impression they could make do with what they had available.

Q: Would you say you learned anything from their approach to things?

A: Well, I think you can learn from any experience. However, I couldn't really point to anything about which I could say, "This I learned."

Q: How often did officials from Washington from the Chief of Engineers' office-appear in the **field**? In the journal of the 105th Engineer Combat Battalion, there was a reference to the deputy chief and the commandant of the Engineer School at Fort Belvoir being at the training exercise in March 1945-the river-crossing exercise. Do you recall that and any other instances?

A: I hadn't recalled it until you mentioned it. I do remember, of course, fairly close contact with Corps and Army engineer officials. The historical section of the European theater was very active in trying to be sure that information was recorded. I'm not sure of this, but I believe there was a Colonel [John H.] Carruth who was engaged in assuring that there was some historical record of engineering activities. I'm sorry to say that I can't remember too many cases of people from Washington visiting. Washington was a long way from me in those days.

### **Commanders**

Q: Maybe you'd like to comment on some of the commanders whom you worked with or knew of-their abilities during the war. How about Courtney Hodges?

A: Well, as a commander of an engineer battalion, I had met General Hodges and General [William] Simpson (the commander of the Ninth Army) as well as a number of the corps commanders who participated in planning, particularly such major operations as the Rhine River crossing. As a division staff officer, my relationships were really not so close or intimate that I feel qualified to make any substantive comments.

Q: OK. Would that hold true of people like [Omar] Bradley and Patton and Montgomery?

A: Well, I don't remember ever having met Patton over there. We were never part of Third Army, and he came after we left England. [Dwight] Eisenhower, Bradley, and Montgomery all visited my battalion while we were in England. I was quite **impressed** with Bradley's apparent knowledge of events important at the battalion level-and of what an engineer battalion was supposed to do.

It **happened** that he and Eisenhower visited my battalion on two successive days. Having the supreme commander and the Army group commander visit was quite an occasion in any case, so I wasn't really looking at subtle differences between them. Of course, it was very clear that they were operating on somewhat different problems. Bradley's discussion, as he addressed the officers of the division, was obviously aimed at the ground war and what he saw as the coming invasion of Europe. It was clear that Eisenhower was looking at the somewhat larger picture-the political and **tri-service** aspects of it. My limited association didn't lead me to any feeling other than that they knew what they were doing. My contact with Montgomery gave me, in that one very brief visit, the impression that he was a very aloof and self-centered individual. This was **reinforced** when we operated briefly under Montgomery in the later stages of the Battle of the Bulge. His headquarters seemed to have a different approach to command compared with others, but again, that's a point of view at a fairly low level.

Q: Would you have specifics on Montgomery?

A: He used a system of personal spies whom he called liaison people. They were deliberately set up to bypass all the intervening chain of command. This hardly seemed to me to be the best way to operate.

Q: And you saw this particularly in the later stages of the Battle of the Bulge?

A: Yes.

Q: You said that Bradley impressed you because he seemed to appreciate the place of the engineers. Was that correct?

A: Yes.

Q: Was this a problem for the other commanders - n o t appreciating the engineers?

A: I won't say it was a problem. It just happened that during this visit he observed us **training**. I believe it was mine training. He seemed to not only know what we were doing, but why, and his reaction impressed me.

Q: How about some of the Army engineers like [William]Carter? Did you have much contact with him?

A: I knew Bill Carter quite well. In the early planning I had considerable contact with him, but during the tactical situation my contacts were more with the corps engineers. "Hub" [Hubert] Miller was the corps engineer of the XIX Corps. I remember him quite well. I found him very fine to work with. I would say, of all the corps engineers, we had closer contact with him than with Carter at First Army headquarters. The name of the Ninth Army engineer escapes me right at this minute, but I also had a number of contacts with him [Brigadier General Richard U. Nicholas].

I think there was, in all cases, a desire to push forward engineer support from the rear. Their recognition of the shortage of engineers in the division seemed to **galong** with my view of what should be done, so I have no adverse comments on the support that we got from the Army and Corps engineer units. I thought it worked very well.

Q: We had an interview with General [Cecil] Moore. Of course, he's speaking from a slightly different perspective, but he felt in almost all cases-in equipment, supplies, and personnel-the engineers were slighted.

A: He would know better about that than I because the division engineer battalion is a relatively **small** unit. We did get replacements. That may well mean we got them because we \*were given priority. I just don't know. But this does not stand out as having been one of my major problems.

Q: From your perspective?

A: Yes, from my point of view.

Q: What major problems do stand out?

A: There was no time to rest or to complete training. Because of continued activity even during periods of relative quiet, there were always roads to clear, rubble to get rid of, or assistance to give to other units of the division.

Q: You mentioned that your leave, your only leave, was three days.

A: Yes.

Q: Can you think of any further general comments you would like to make or areas that we didn't cover as far as your World War II experience is concerned-things that you feel are important to mention?

**A:** No, except to say that experiences in Korea (in which I was not involved other than at general **headquarters** in Japan) or in Vietnam (which I viewed from the major headquarters) indicate that you can't win one war and pattern everything you do on it. The situations are different; the aims are different; unit levels are different. So we can't automatically say that what worked in World War II will work the next time, or that something else will be better.

It's a matter of looking at each individual problem and gaining what we can from experience. The experience is to be used for knowing what to look for and how to make judgments. This is much more important than how something was done. I think that sometimes in our schools and training we may lean too heavily on examples, which may tend to become school solutions. These solutions are not always the best choices under a different set of circumstances. I think we need a great deal of caution and knowledge to keep from getting fixed ideas simply because of our past experience.

**Q:** Would this be true in terms of thinking about a possible ground war in Europe in the future?

**A:** That is hard to answer. I'm talking about any engagement. I really can't think of a ground war in Europe as being anywhere near the same as World War II, even over the same territory. The advent of nuclear weapons and many other new developments preclude this. I can't conceive of a war going on for 11 months, for instance.

One of our big problems was the fact that there was no rotation system. Certainly, I saw it in the engineer battalion, but it was even worse in the infantry units. The million-dollar wound was the thing that kept you in the hospital 60 days or more, and that was the ticket home. Whereas the Air Force had a mission rotation and the Navy also had a rotation system.

There was no rotation system in the ground forces. Consequently, the general feeling was that you were bound to get it if you stayed there long enough. In Vietnam that was taken care of by the one-year rotation policy. While not the best way to fight a war, it provides a very definite improvement in morale.

**Q:** Does that trace back to the World War II experience, do you think?

**A:** I assume that World War II had a lot to do with it, but I don't know that for a fact.

**Q:** What about mobilization?

**A:** I wasn't close enough to that to express an opinion.

Q: Mobilization is another major concern now, and the World War II experience is being looked to.

A: I think there are some parallels, but I think we have lots of things now that weren't problems in those days. We had an ability to shift our economy and move. I question whether we **have** that ability today, or whether we have the means to do it in this open society in **which** we live. In other words, national action depends on a consensus that what's being done is right. As I've observed Korea and Vietnam, in no case did that national will appear.

Q: But it was true in World War II?

A: It was true in World War II.

### **1153d Engineer Combat Group, Le Havre, France, 1945**

Q: After the surrender in May 1945, your assignment was to the 1153d Engineer Combat Group in Le Havre.

A: This was a group that had supported us on several occasions in operations during the Bulge, and it actually was the major engineer support for the Rhine River crossing. Ninth Army made a decision to change group commanders for what they felt were proper reasons, and on about one hour's notice I was assigned and moved from the division to command the group in Germany. Shortly thereafter, the group headquarters without assigned units moved to Le Havre to serve as the processing headquarters for engineer units being rotated out of the European theater, either to the U. S. or direct to the South Pacific for the assault on Japan.

### **2d Infantry Division, 1945-1946**

I actually stayed with the group less than two months, and then was reassigned to the 2d Infantry Division as it came back through Le Havre on its way to the United States in preparation for going to Japan. This was at the request of the division commander, whom I knew quite well. He had been the assistant division commander of the 30th **Infantry** Division through most of its operations. He was looking for a G-4 and asked me if I would take on the job.

Q: Who was the commander?

A: William K. Harrison, Jr. I had no real choice in the first place. In the second place, I knew and admired General Harrison very much, so I assented. After 11 months of combat in the European theater, I got on the boat and came home on verbal orders, a somewhat unique move; but it seemed to work out.

I stayed with the 2d Infantry Division as G-4 through a very trying period, following the Japanese surrender. The division was used as a release unit stationed at Camp Swift, Texas. We were trying to maintain training, yet at the same time we were putting soldiers through by the thousands, simply to process them for discharge. This continued into the spring of 1946, when the division moved to Fort Lewis, Washington.

### **State University of Iowa, 1946-1947**

Shortly after the division's arrival there, I was detached from it and sent to graduate school. This assignment had been deferred six years before when I had orders to go to Cornell for graduate work. Those orders had been canceled with the mobilization of the Army in late 1940. This time I went to the State University of Iowa for a master's degree in civil engineering.

Q: How did it feel to get back home to the United States after a period of 11 months of combat in Europe?

A: Well, terrific, really.

Q: You were married before you went overseas?

A: Yes, married and had two children. My wife didn't even know I was coming home until I called her in the middle of the night after I got to Camp Kilmer, New Jersey, telling her I was back in the States.

Q: Where had she been while you were in Europe?

A: She and the children had been in Illinois at her parents' home. This was from February of 1944 until July of 1945.

Q: Which is a long time.

A: Eighteen months or thereabouts. After a short leave, I moved the family to Texas to join the 2d Infantry Division, which had been assigned to Camp Swift.

Q: You said you were there doing training as well as processing?

A: Our mission was to maintain a trained division as a part of the U. S. forces. At the same time we were receiving men from disbanded units who did not have quite enough points to be released. However, in a few months they would have enough points, and so we were in turmoil trying to train men at the same time we had thousands of people coming through. It became quite a supply problem in terms of keeping track of equipment, uniforms, etcetera.

Then in March of 1946 the unit was reassigned to Fort Lewis, Washington. But we had to stop by San Francisco on the way and parade on Army Day, 6 April 1946. If you try to move a division of 14,000 people by train and put on a parade en route, it raises a few supply problems.

Q: I'll bet.

A: We had a very interesting time.

Q: And then, off to school?

A: **Yes**, three weeks after I got to Fort Lewis, I was ordered away to school.

Q: OK. And you spent a year there. Did your family go with you to Iowa?

A: Yes.

Q: Is there anything about your graduate school experience that you'd like to mention?

A: Well, there were 15 engineer officers doing graduate work. I was the senior member by both length of service and rank.

Q: Had many of them been with you in the European theater?

A: They were from all over. I had not been closely associated with any of them. It was a good group, and we had a **goodyear**—a full 12 months. We started off with a six-week summer schedule, then a four-week session, and the regular session of two semesters to make up the year of graduate work.

Q: Do you recall what your thesis was on?

A: I didn't write a thesis.

Q: You didn't?

- A: I wrote a thesis as an undergraduate, but not as a graduate student. Iowa had an alternative system, particularly if you were taking a master's in a **subject** other than the subject of your bachelor's degree. They did not require a **thesis**, but they required additional course work. As I remember, I took a **total** of 40 hours of course credit rather than taking 36 hours and writing a thesis.
- Q: And you had your bachelor's in mechanical engineering, and your master's in civil engineering'?
- A: Right. Apparently, things went well enough during the year at Iowa that in 1958 (11 years after I graduated), the university asked me to retire from the Army and be the Dean of Engineering at the school, which, **after** some consideration, I decided to decline.
- Q: Was that while you were at the Industrial College of the Armed Forces [ICAF]?
- A: Just before I went. Actually, they had approached me the year before, and I told them that I couldn't afford to leave the Army short of 20 years' service. When they came back the next year, I had to make a decision before I went to ICAF because attendance there would lock me in for four more years of service.
- Q: Was that a hard decision to make?
- A: Well, we thought about it seriously enough that my wife and I made a trip out there and investigated it on the site and talked to the people. I wasn't ready to leave the Army, and there were some other factors.
- Q: At that point you had about 20 years?
- A: I would have had exactly 20 years. But there were other reasons why I thought it was not the right thing to do.
- Q: And you had quite a career ahead of you!
- A: Of course, I didn't know that then.
- Q: No, you didn't.
- A: With **subsequent** events in my opinion, I made the right decision, both from the point of view of the Army and the school.
- Q: Were there any other times in your career when you were tempted to retire?

A: Not too long afterwards, when I came back from work on construction of the Ballistic Missile Early Warning System facility at Thule, Greenland, in July of 1960, a senior official of R.CA offered me a job as their senior representative for a like facility in Alaska. He was responsible for the radar portion of the Ballistic Missile Early Warning System for the Air Force. That wasn't much of a temptation in view of the fact that I had just spent a year in the Arctic, and I wasn't particularly interested in going back.

### **Engineer School, Fort Belvoir, Virginia, 1947-1949**

Q: I'll bet. Right. From Iowa you went to Fort Belvoir?

A: Fort Belvoir, yes, as an instructor in the Engineer School. They wanted someone who had been an infantry division engineer to take over the combat engineering portion of the course, primarily for the officers advanced course, but also for the basic course.

Q: The combat engineering portion you set up? How did you approach it? I mean, what things did you think were important to include? You mentioned earlier that you used the Roer River crossing.

A: Yes. There were a great many prescribed requirements tied into the curriculum. I used examples **from** the war but tried to emphasize the training of officers who would be, or could be, division engineers and engineer battalion commanders. We tried to teach the things that they should be concerned about in their responsibilities both as staff officers and as commanders as related to engineers in combat. That was the principal mission. I was not responsible for civil-type engineering. That was a different department of the school.

Q: Was there any feeling about the emerging cold war at this point, in terms of your position?

A: Not really. It was too early. That came later.

Q: Who was the commandant at Fort Belvoir when you were there?

A: General [William M.]Hoge, followed by General [Douglas L.]Weart.

Q: Were these people ones with whom you had much experience?

A: I had not known them prior to this assignment. I had met General Hoge, but I didn't know him.

Q: How about **while** you were there?

A: Well, I certainly knew them and talked with them on occasion.

Q: Did that begin friendships with, say, **Hoge**, that lasted?

A: No, not really. We weren't that close.

Q: Do you think, in view of what you said earlier, about your World War II experiences and their applicability, that you had that same point of view in 1947?

A: No. We **had** all the answers in 1947.

Q: You had all the answers. So really, later experiences gave you the perspective that you expressed **earlier** in our discussion.

A: Yes. The atomic bomb had been developed, but it was an aerial delivery weapon in those days, so the situation was different. The tendency was to think that the next war was going to be similar, but with the Russians.

Q: Can you mention a few more specific things that you thought were important to stress to the **officers** at Fort Belvoir who would be infantry division engineers in the future, in view of your relatively recent combat experience?

A: I think I emphasized the requirement for the division engineer to be both a staff officer and a commander-how to do both jobs and their importance. There was a lot of discussion about separating the two jobs, and I felt very strongly that they should not be separated. So I emphasized how I felt both jobs could be done adequately by the same individual, and the advantages of a dual assignment rather than two separate assignments.

Q: Can I ask you for some more specifics on how he would do that?

A: I think I'd have difficulty being very specific at this point in time. Each of the students was required to prepare a kind of a term paper. With my encouragement, one of the officers wrote a paper on that subject, based on a survey questionnaire [completed by] a number of people who had served as division engineers. Not too surprisingly, his [conclusions] came out the same way that I'd been thinking.

Q: Does that survive? That paper?

A: I suspect if you look somewhere in the Engineer Library there might be a copy.

Q: It was a thesis?

A: The title was *The Position of the Division Engineer in the Engineer Combat Battalion*. The author was MacLaughlin Hatch. That would have been in 1948, I think.

Q: And that was on the subject of—

A: The dual role for the division engineer.

Q: Now you said that was your experience in World War II. Was it generally true of others?

A: As far as I know, it was fairly common, although not all of them operated exactly the same. Nothing changed as a result of the questionnaire as far as I was concerned. I must admit, however, I don't remember exactly how the vote came out.

Q: Now we move to Tokyo— or can you think of any more that you want to say about Fort Belvoir?

A: No, I don't think so.

### **General Headquarters, Far East Command, 1949-1952**

Q: In Tokyo, where you spent three years from September 1949 to August 1952 with General Headquarters, Far East Command—this was basically involved with Korea, was it not?

A: Yes, during the later years. But I personally was more involved with Japan and Okinawa than with Korea. When I was assigned to Japan, I was supposed to be the engineer for IX Corps, but somewhere along the way, after I had left the States, my assignment was changed to the Far East Command headquarters. Initially, I was in the supply division of the engineer section. I was not particularly happy since I had been looking forward to being the corps engineer, IX Corps. After a short period there, a new development occurred. A decision was made by the Secretary of the Army that the construction to develop a base on Okinawa would be transferred from the Corps of Engineers, Western Pacific Division, to the Far East Command engineer. The effort basically would be oriented toward using Japan for materials and contractors since Okinawa had been a Japanese colony and possibly would be again.

The U.S. was spending a lot of money in support of the Japanese and the Okinawans, and the theory was that we could combine two requirements. Instead of just giving

money or loans, we could put money into the Japanese economy through construction on Okinawa. Government and Relief in Occupied Areas [GARIOA] was the fund appropriation involved.

Major General James G. Christiansen, the Far East Command engineer, decided to establish a liaison office in Tokyo, in his office, to work with the Okinawa Engineer District. I was selected to be in charge of that liaison office. Having arrived in August, I took on this mission sometime in November. A very detailed study had been made by a group from Washington, headed by Brigadier General George Nold, who, at that time, I believe was the Deputy Chief of Engineers or the chief of military construction. They made a lot of recommendations concerning construction requirements on Okinawa **and** how it could be supported from Japan. I worked with this group while they were making the study, and then worked out the implementation of the recommendations. I served as the command representative in budget hearings before the Department of the Army, the Budget Bureau, and committees of Congress. As a result, I made six round trips to Washington in one year. At that time it took 40 hours just to cross the Pacific to San Francisco, so I spent a great deal of time traveling. In addition, I made at least one trip a month to Okinawa. For most of two and a half years of my service in Japan, I was totally tied up in working on Okinawa construction activities.

For the last six months, I was in charge of engineering and operations for the entire Far East Command, which then included the Korean War operations as well as other activities. However, my major activity during my three years in Japan really revolved around getting a base built on Okinawa. I think we were fairly successful. Most of the major Japanese contractors you hear of today had been contractors before World War II. After the war they had absolutely nothing. As we started this Okinawa program, they participated and became viable concerns.

Q: That's interesting.

A: It was a unique solution which, as I said, was considered to have been very successful. It was in this assignment that I first knew General [Frederick J.] Clarke. He was then the executive **officer** of the Okinawa Engineer District, and he and I used to shout at each other over radio telephone between Tokyo and Okinawa about once a day for two years-that is, when the phone was working! That began our very close relationship.

Q: Now would you like to say anything specifically about the Korean War aspect of your assignment?

A: No, because it didn't really affect my own assignment. Actually, I did get set up to go to Korea as the engineer representative in establishing a forward general headquarters

in Korea after the **Inchon** landing, pending the link-up between Eighth Army and X Corps as it landed at **Inchon**. However, the link-up took place so fast that no GHQ [general headquarters] element was ever established. As a result, I didn't go to Korea until 1964. Our activity on Okinawa continued during all of the time of the Korean engagement.

Q: Now at this point you had served with the Corps of Engineers for 14 years, and you hadn't had a civil assignment yet?

A: That's right.

Q: What was your feeling about that? Were you getting kind of anxious?

A: Well, I began to wonder because I really had expected such an assignment after graduate work. However, because of the requirement for someone with combat experience in a division engineer battalion at the school, I'd been assigned there. Of course, after Belvoir, I was apparently due for overseas assignment. Then it was time to return to the U.S., and I received orders assigning me to be the executive officer in the Savannah Engineer District. That was on a Friday. When I went to the office the next Monday to pick up my orders and get ready to have my household goods packed, I found that I wasn't going to Savannah. I was being sent to the Waterways Experiment Station at Vicksburg, Mississippi. This was my first hint of any change.

### **Waterways Experiment Station, Vicksburg, Mississippi, 1952–1955**

Q: Do you know what was the cause of the change?

A: No, I really don't. Hydraulics had been one of my specialties at Iowa, and my home had been in Arkansas, very close to the experiment station at Vicksburg. I knew the area. I'd been to the station.

Q: I recall you said that you had been there when you were younger.

A: I don't know what brought it about or whether there was some other factor that I wasn't aware of. But I was delighted.

Q: You were delighted. It was back home.

A: Close to home. I was 100 miles from home and in an area I knew and with a lot of people I knew, including a few who had gone from Arkansas to the station to work.

Q: And it was your first civil assignment?

A: That's right.

Q: There were a lot of changes all at once.

A: And then en route, I was promoted to colonel. In retrospect, this upcoming promotion may well have caused the assignment change.

Q: And when you got to Vicksburg and became the director of the experiment station, what things -were going on? I've looked at the statement that you made as part of the first history of the Waterways Experiment Station.

A: There are several passages in the history that probably quote me. One had to do with the Eisenhower-directed reduction in force shortly after I got there. We had to reduce strength by about 25 percent. This was a traumatic experience because there really wasn't any place else for these people to find work. The government was the biggest employer in Vicksburg. It was drastic, but we did all we could to find places for people. We were fairly successful and survived the experience.

Q: During the next several years was there a reversal? In other words, did you build the strength back up?

A: No. Possibly a little bit but not really very much. Their expansion came after I left.

There were a couple of other things of less significance. We built a new headquarters building. This had been planned and started before I arrived. I would have made some changes, but it was too far along in planning to be feasible.

We established a major capability for doing weapons effects tests. The facility on the Big Black River was to do explosive detonation studies in water. This led to a continuation of work by the hydraulics division on weapons effects. They were still actively involved when I was head of DNA [Defense Nuclear Agency] in the early 1970s. This started while I was there, but it had grown out of the nuclear weapons program of the Manhattan District. WES determined the effects of a detonation in water, how it propagates, and so forth.

Q: And that assignment went to the Waterways Experiment Station basically because—

A: They were experienced in hydraulics and model studies.

Q: I would like to ask you two other questions about the Waterways Experiment Station I'm sure you would anticipate. One is about its transfer in 1949 from the Mississippi River Commission [MRC] to OCE under the Assistant Chief of Civil Works. At the time you were there at the Waterways Experiment Station, there was some pressure to put it back under MRC. And there were two presidents of the commission. Who were they?

A: **Hardin** was one. You said you just interviewed John**Hardin**. He was there most of the time I was there. Peter Feringa was there ahead of **Hardin**.

Q: **Hardin** would have been the major one?

A: He was for it.

Q: He was in favor of regaining control. Before getting into some of the reasons given, do you recall the position of the Chief of Engineers' office?

A: Basically, the Chief of Engineers agreed with having it directly under that office. Their reasoning, I **think**, was pretty much the same as mine. Only a relatively small percentage of the time--maybe 25 percent, but I'm guessing at this figure--was what we were doing directly related to the Mississippi River Commission. I felt that since we were working not only on civil worksactivities-including OCE projects but also those of other divisions and districts, as well as on some military work-it was inappropriate to assign the station to a single subordinate element. This was fine when the station was doing only MRC work, but now they had branched out. Other offices for whom we were doing work would feel much freer about dealing with us than they would if they felt [their jobs] were always going to [receive a lower] priority than something that the MRC wanted to do. I still think it's a very valid argument.

Q: What about **Hardin's** position, do you recall?

A: In my conversations with him it was very clear he would like to have seen the experiment **station** under the division [MRC] It had been that way during a previous assignment that he had held within the division.He was not adamant on the subject, and never did we have any personal animosity over it. There was just a gentlemen's agreement to disagree. At least, that was my position. It would be interesting if he were asked about this.

Q: Yes, he should be asked about it. So you would say that even within MRC, there wasn't that strong an effort to—

A: Well, I don't know how strong the effort was. It was very clear that the MRC staff wanted very much to have WES under their control, and my impression was that Hardin inclined toward that view. I suspect that he had some early conversations with [Emerson] Itschner, who was assistant chief for civil works, and was probably told that it wasn't going to happen. As a result, I don't think he ever put himself out on a limb to get it chopped off. There was a lot of discussion and a lot of talk, but I never felt that a change was ever really imminent.

Q: So it's not a case of anything having occurred since 1949 that raised doubts about the wisdom of the original move?

A: I think the feeling was that MRC was the major headquarters in the area and all the Corps activities in Vicksburg ought to be under one command. The one element that wasn't was the experiment station, because the commission office, the division, and the district were all under the commission. From that point of view, it made sense. But from the point of view of work, no, it didn't make any sense at all

The station was supported by the division in many ways. The Vicksburg District provided real estate support and a number of other services. It was a very close association. But it wasn't necessary for the station to be assigned to the division.

Q: So it's really a question of the prestige of the experiment station and

A: And its relationship with other customers.

Q: I see that point. And this involved such things as attracting employees or getting the better ones?

A: I think that the real thing was to attract the work that we depended upon; having challenging work was what made it attractive in employing people. Other districts and divisions felt much freer in dealing with us directly than if they were required to go through another office essentially parallel to theirs. There was too much opportunity for them to feel that they were getting second-place treatment. Whereas, if they were dealing with an OCE subordinate office, there was no reason to believe that they would get any less priority than anybody else.

The station's prestige was also a factor. But that, in reality, meant that because people weren't required to bring work to us, we had to convince them that we were the best qualified.

Q: How did you go about doing that?

A: Just by doing a good job.

Q: On the ones that you had?

A: Yes. Being responsive.

Q: Another question I have deals with the decision that was made to complete the Mississippi River Basin model, which was roughly 50 percent complete when **you** came. Why was there a question about completing it? Was it a budgetary thing?

A: Well, there were three factors. One was budgetary. Second, was a question of whether the model would ever be needed and would supply the data that it was designed to supply. In other words, could the whole system be put together and would it really be useful in flood times? And third, was there any possibility that computers—that were then coming **along**—might make it obsolete? In effect, that did happen, but it was not a factor at the time. Of course, the model was never completed. More area was added, but it was never really completed.

Q: But at that point, a decision was made.

A: To continue.

Q: There was a flood in 1952 that had some impact on that?

A: Yes, a flood on the Missouri, and the model had been very effective in forecasting gauge heights on the river. This was one of the key elements that really made it logical to continue.

Q: Now you mentioned the computer aspect, but was there a general discussion about the virtues of mechanical models?

A: The virtue was that, once validated, the mechanical model could provide information on any flood. A computer would only work if you could write a mathematical equation to start with. We didn't know enough to write-or felt we didn't know enough to write-the proper equations for various flood plans. Also, the computer capacity that was available then limited the number of variables that you could consider. So the model was really built as a physical integrator instead of an electronic one.

There were two other major activities in that period at WES. One was the silver anniversary of the station. We worked with the city of Vicksburg to take note of the occasion and, I would say, had a verysuccessful celebration. The other event was the