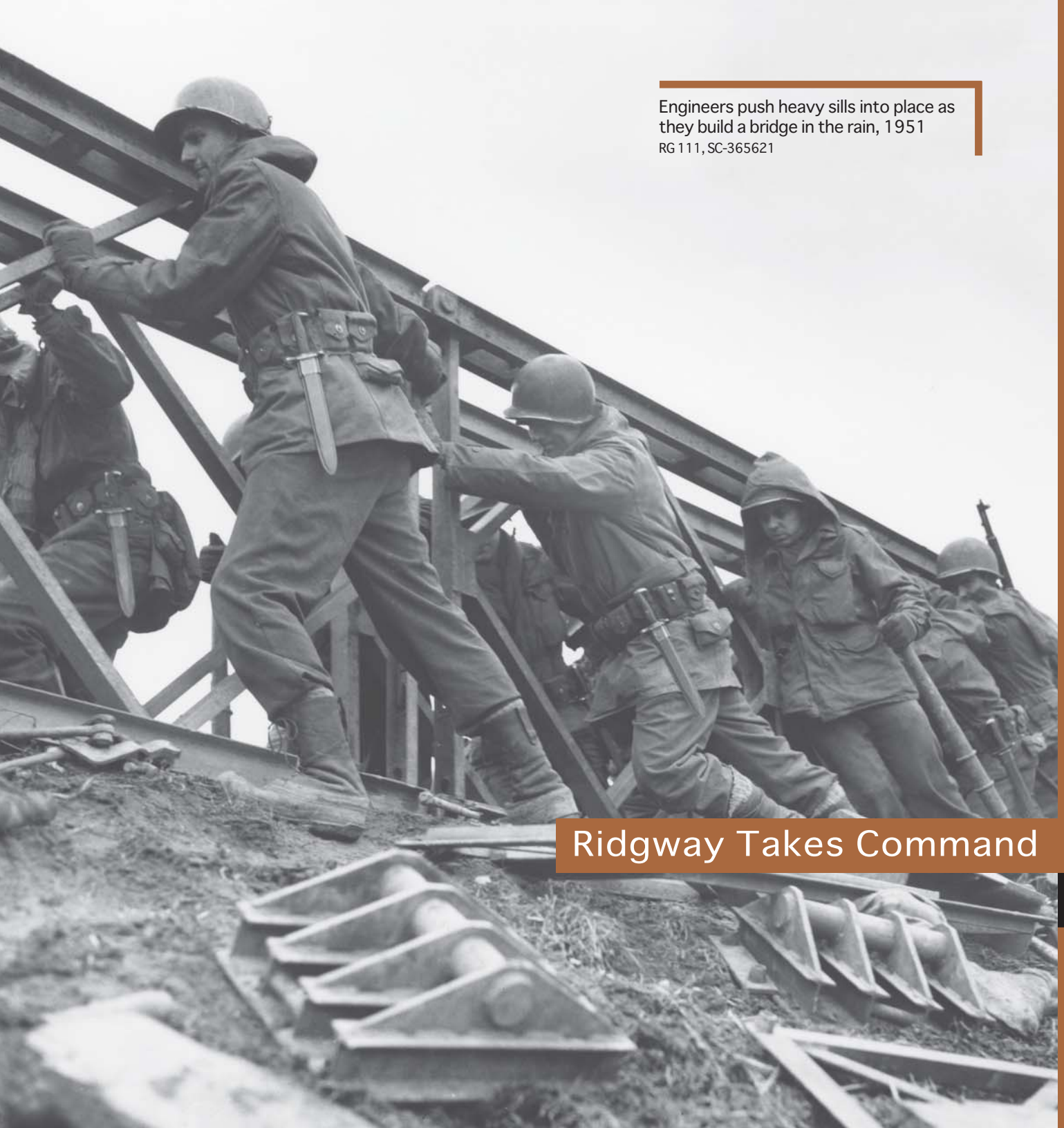
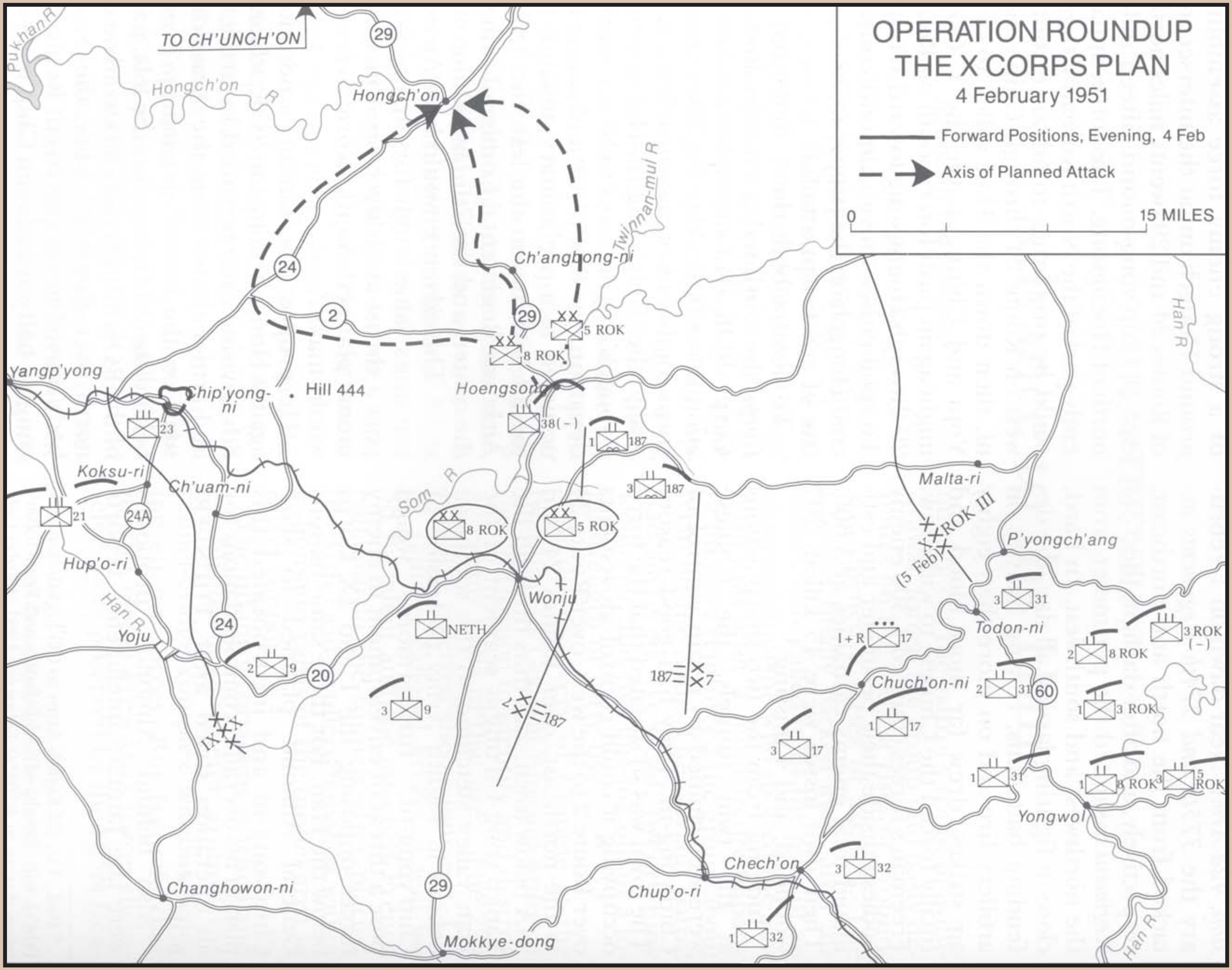


Engineers push heavy sills into place as they build a bridge in the rain, 1951
RG 111, SC-365621

Chapter 5

Ridgway Takes Command

January–July 1951


OPERATION ROUNDUP
THE X CORPS PLAN
4 February 1951
Forward Positions, Evening, 4 Feb
Axis of Planned Attack
0
15 MILES
TO CH'UNCH'ON
Hongch'on
Ch'angbong-ni
Yangp'yong
Chip'yong-ni
Hill 444
Hoengsong
Koksu-ri
Ch'uam-ni
Hup'o-ri
Yoju
Wonju
Malta-ri
P'yongch'ang
Todon-ni
Chuch'on-ni
Yongwol
Chech'on
Chup'o-ri
Changhowon-ni
Mokkye-dong
ROK III
(5 Feb)
IX
8 ROK
5 ROK
NETH
187
Pukhan R
Hongch'on R
Twinnan-mul R
Som R
Han R

Chapter 5

Introduction

Shortly after the Chinese attacked the UN forces and began pushing south, the Eighth Army commander, Lt. Gen. Walton H. Walker, died when his jeep collided with an ROK Army truck. Immediately after the accident, Lt. Gen. Matthew B. Ridgway, on the Department of the Army's staff as deputy chief of staff for operations and administration, assumed command of the Eighth Army.

When he arrived, Ridgway found that American soldiers' morale was poor. He determined his first action would be to stop the Chinese attack, falling back where necessary, then execute a series of attacks to push the line back to the vicinity of the 38th Parallel. Before he began his offensive he assigned X Corps to the Eighth Army. For the first time since the corps landed at Inch'on, the Eighth Army commander controlled all UN ground troops in Korea. This force numbered about 365,000 men.

Gen. Ridgway established a defense line along the 38th Parallel. On New Year's Eve the Chinese attacked along the entire front with four field armies. Ridgway ordered UN forces to pull back to the south bank of the frozen Han River. As the Chinese pressed the attack, Ridgway continued his withdrawal to keep his units intact and to achieve "maximum punishment, maximum delay."

The Chinese suffered heavy casualties. On 20 January, Ridgway decided to exploit the situation with brief but violent counteractions. He followed these on 25 January with a still larger operation, *Operation Thunderbolt,* a reconnaissance in force of one U.S. division and one ROK regiment from each corps. UN forces advanced cautiously against light opposition. By 30 January 1951 resistance stiffened and the enemy began counterattacks. The Chinese resisted the UN drive vigorously until 9 February, and then abruptly they gave way. The Eighth Army took Kimpo airfield, near Seoul, without opposition.

Meanwhile, Ridgway planned another attack called *Operation Roundup* that began on 5 February. The Chinese responded by attacking in strength against the South Koreans on the night of 11-12 February. On 13 February, the Chinese drove against the left hinge of X Corps at Chip'yong-ni. For three days the Americans defended the road junction at Chip'yong-ni against assaults, but by 19 February the initiative passed back into UN hands.

On 21 February, Ridgway established a general

Because of the massive size of the attacking force, General MacArthur decided to transfer X Corps to South Korea. Here, the corps would establish a defensive line just south of the 38th Parallel to reinforce the Eighth Army against the expected Chinese winter offensive.

advance called *Operation Killer,* undertaken by both the U.S. IX and X Corps. Unusually warm and wet weather throughout much of the operation turned the American offensive into a plodding affair and permitted many of the Chinese to escape northward. *Operation Killer*'s physical objectives were attained with little more than a delaying action on the part of the enemy, but the broader objective of destroying a large enemy force eluded the Americans. The entire Eighth Army front stabilized by 1 March.

The UN forces continued the offensive north with *Operation Ripper,* 6-31 March. By the time *Operation Ripper* concluded at the end of the month, Ridgway's forces had fought their way back to the 38th Parallel. On 5 April, Ridgway followed *Ripper* with *Operation Rugged*, a general advance toward a new 115-mile objective line along a commanding ground north of the 38th Parallel. From there, UN forces would press the attack still further.

Meanwhile, several major changes in command took place. A new IX Corps commander, Maj. Gen. William M. Hoge, had arrived on 5 March. On 11 April, Gen. Matthew B. Ridgway replaced General Douglas MacArthur, who had been relieved by President Truman for insubordination, and Lt. Gen. James A. Van Fleet, commanding the Second Army, took over Eighth Army.

By the end of April, enemy activity increased and UN forces prepared for the expected enemy spring offensive. The attack came on 22 April, but by 20 May, UN troops had stopped the Chinese drive. Gen. Van Fleet began a new offensive on 18 May and the enemy pulled back. By mid-June, the Eighth Army had largely attained its objectives of *Operation Pile Driver*, while at the UN a different type of offensive began. Voices in many circles began defining a UN "victory" as a return to the status quo ante bellum, with Korea once again divided by the 38th Parallel.

When Ridgway took command of Eighth Army, one of his first actions was to take Brig. Gen. Garrison Davidson out of the 24th Infantry Division and place him in charge of building another defensive line around Pusan. This time, Davidson had more time to do the work and could plan the line as he wished. Once that line was started he was asked to build a defensive line north of Seoul in the I Corps area. When he finished that assignment he became the acting commander of KMAG until rotation out six weeks later.

During the offensive north with the 7th Infantry Division, Lt. Maurice D. Roush, 13th ECB, spent much of his time building bridges. He describes dealing with the Chinese spring offensive in 1951.

Capt. Charles T. Williams, 8224th ECG, lists the units in his group and points out that most of the problems in returning north were water related—bridging and flooding. Supplies were needed for the front line and constant maintenance was required to keep the roads

from washing out. There was some enemy infiltration resulting in a few casualties and some men were lost clearing minefields.

Maj. Harold R. Parfitt, 2d ECG, notes that the group moved back toward Seoul again, repairing the rail line one more time. It also built three bridges over the Han.

Lt. Col. Evan S. Pickett's 73d ECB moved to Pusan in December 1950 and started north again, widening the narrow Korean roads, making bypasses and, in general, keeping the roads open.

Col. Paschal N. Strong was the Eighth Army Engineer during the first year of the Korean War. His major engineering concern was in bridging rivers and keeping the bridges in during flooding.

Col. Emerson C. Itschner, I Corps Engineer, describes a joint bridge-building operation with the Chinese at Panmunjom.

Maj. Lawrence B. Farnum describes 2d ECB activity after Maj. Leavey came in and took over the battalion. Leavey volunteered the battalion to do engineer work while building up to strength. They built bridges, repaired roads, and cleared minefields. In one instance, a Korean woman was killed in a minefield. Farnum rescued the woman's baby by going into the minefield and bringing the woman's body out along with the baby.

First Lt. George Stukhart describes arriving in Korea with the 93d Engineer Battalion. He tells about building an airfield complex and repairing buildings just north of Pusan. He then moved to the 2d ECB, where one of his big problems involved finding and disarming mines.

Capt. Walter S. Medding describes the 14th ECB's bridge-building activities in the spring and summer of 1951, which were extensive. He notes that the battalion also was involved in road maintenance and mine clearing.

Lt. Col. Harry D. Hoskins, Jr., describes his time in Korea as Supply and Maintenance Officer, Base Section, Eighth Army, December 1950-August 1951, and the various problems he experienced, such as a lack of inventory of equipment and the resulting non-responsiveness of the supply system to using units. He also gives us a remarkable picture of the "black market" system as it existed in Base Section, Korea.

First Lt. James L. Trayers describes his assignment to Company B, 8th Engineers, and his responsibilities in that unit. He describes building a sand bag bridge, making concertinas, and clearing minefields. He also talks about his regimental commander, Col. Dan Gilmer, USMA 1932, who he describes as a real go-getter. Trayers left the unit for the engineer school just before the unit left Korea for Honshu, Japan.

Brigadier General Davidson details his second opportunity to build a defensive line around Pusan, contrasting it with his first proposed line. He also comments on the North Koreans' skill at camouflaging their foxholes.

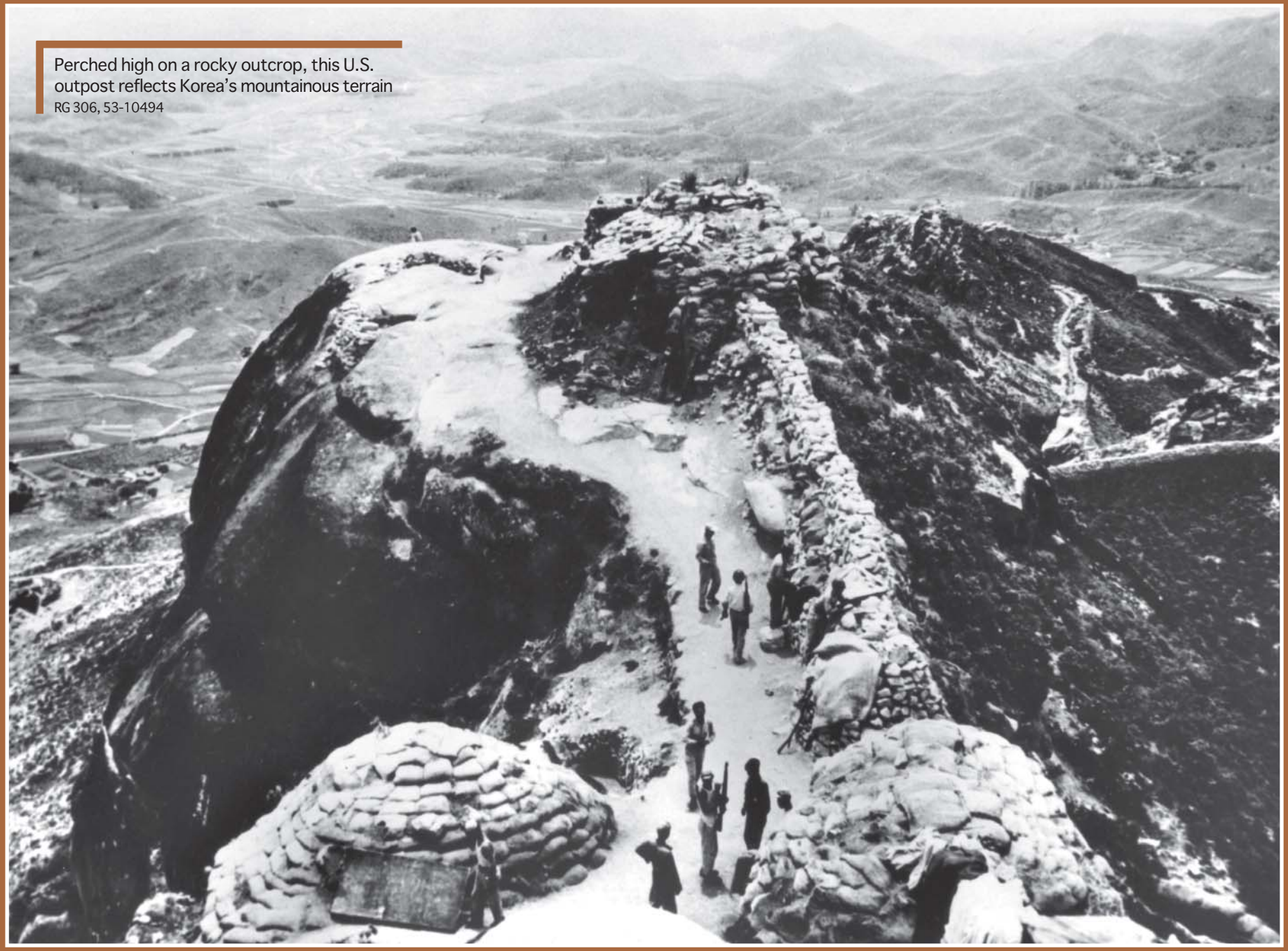
Lt. Gen., soon-to-be General, Matthew B. Ridgway had taken over command from Lt. Gen. Walton H. Walker. It looked like there might be an evacuation from Korea so Gen. Ridgway took me out of the 24th Division in January 1951 and sent me south to build, again, a defensive line around Pusan. But this time the decision of the location site was up to me. I went back pretty much to the line I had originally recommended. It was a shorter line, about 50 miles long, and I went to work on the defensive line there. This time I got some support. I had Korean troop units to work with plus some Americans and American supervisors. I had combat-experienced officers to command sectors. I divided the whole thing into sectors and turned a sector over to each American officer who supervised the construction in that area. The Koreans were damn good at their field fortifications once we taught them. That line was a good line. When the evacuation didn't develop they had me go ahead and finish it anyway, or at least carry it through to its first phase. As the line finally evolved, it would have taken something to puncture it.

The line we built around Pusan was a good one…well camouflaged. There's a real art to field fortifications.… It's not just a matter of throwing a few logs or things together. The definitive location is extremely important.

Several things were interesting in connection with the construction process. When those Koreans had been instructed and organized they became masters at making field fortifications. I laid out the trace of the line, which was about 50 miles long, and then we sent the units out to start. I started personally to go over the whole line from the right flank or the center. I went onto the ground to see how the individual fortifications were laid out and reviewed the whole thing physically.

I ran into some funny situations. One was where a Korean outfit had been given a sector to defend on a hill. We instructed them about fields of fire and made sure they had ample field supply. They took everything off the hill. You'd go over on the other side, look back up there, and see the front line was right on the edge of the trees. It was a terrible job. We had to correct that by a little selective land clearing.

We'd go along, and I'd approve the location, say, of a machine gun emplacement. I had to do this in great detail myself until I trained the people. Then my subordinates did it. They located the individual emplacements and it had to be done in a hurry. They'd go and say, "Now, you put a machine gun emplacement right here," you see. We'd have them draw the design for the emplacement and showed them how to build it. We'd mark all the mortar emplacements; put stakes in the ground tied with little red pieces of cloth so they would be readily visible to the troops when they came to do the



Perched high on a rocky outcrop, this U.S. outpost reflects Korea's mountainous terrain
RG 306, 53-10494

construction work. As soon as our people left those spots at night the Koreans would come out and steal those little wooden stakes. That was money in the bank for them even though the stakes were small. They didn't see that much wood for their fires. It would take them hours up in the woods to get that much wood to burn. We had trouble with that.

I discovered that in the ridgelines, where we had to build emplacements, we forgot to tell the Koreans what that stake represented, whether it was a middle or the forward corner or the back corner, or what. The officers I had helped me locate each one, and the governing factor was the field of fire. They had intended the stake to be the forward location stake of the emplacement. Some of the men expected the stake to be the center of the emplacement. When the Koreans came along they built the emplacement so that the stake was the aiming stake for the emplacement—maybe moved it back three to five feet. When you went down in that thing and put the machine gun in, because of the terrain there was about a 10-foot field of fire. We had to make that clear. They got very, very accomplished at it. They could make those emplacements so you were very close to them yet not be able to see them.

The line that we finally built around Pusan was a good one. It was well camouflaged. There's a real art to field fortifications. It's not just a matter of throwing a few logs or things together. The definitive location is extremely important. As I said, moving the emplacement four or five feet forward or backwards changed the whole field of fire. In the case of the mortars that didn't mean so much but it was very important with machine guns. You just can't do it haphazardly; you have to be certain of what you're doing.

In Korea, I was at an area where there'd just been a fight a few hours before. I was standing within a few feet of a North Korean foxhole and didn't see it. They were circular, like a manhole in the street, and they'd weave these mats and just put them in. The holes were built so they could fire from them when they stood up. They could squat in them, use this mat made from the grass around them, and pull it over them like a manhole cover. Unless you looked sharply you couldn't detect them. I don't think we gave enough attention to that.

During that time the Chinese were attacking and Maj. Gen. Frank W. Milburn had I Corps north of Seoul. His CP was in Uijongbu. He asked for me to be sent up there to supervise the construction of a defensive line north of Seoul. He anticipated that they were going to be driven back and he wanted to find a line north of Seoul to stand on. I left my line around Pusan and went to Uijongbu. I laid out that line for the I Corps. I went to Gen. Milburn after I'd laid it out and said, "Now, you can work from now to eternity on a defensive line. You always keep improving it. It's an endless proposition. I've laid out this line with its construction,

General Douglas MacArthur and President Harry Truman meet for the first time at Wake Island, 15 October 1950
RG 111, SC-34915-S

carried out in at least three phases. Nothing was picked out of the air but I made a rough estimate." I said, "Now, this is the date the first phase will be completed. We hope to complete the first phase by this date. And then we'll go to the second date." Just by happenstance and coincidence the date I picked for the completion of the first phase was the night the Chinese attacked, and they stopped them there. I pointed out that the first phase was the minimum we needed to stop the earliest attack.

When my job with the defensive line was finished, I went to Lt. Gen. James A. Van Fleet, Eighth Army commander, and asked him what the prospects were

for my next assignment, because I couldn't get back to the 24th Division—they already had an assistant division commander. He said there were no prospects for anything that I was interested in so I just let nature take its course and they sent me home.

Working with the Korean Military Advisory Group (KMAG)

For about a month or so, until I got my orders, I was acting commander of a KMAG. Frank Farrell, who had headed that program, had done a superb job from the start. He was really bushed when they sent him home. I was appointed acting commander. I remember Lev Allen was insistent that they put the word "acting" in front of it because he said, "I don't want to have you assigned as commander of KMAG. The records would show that you were appointed commander and then relieved in about five or six weeks. It would look bad on your record," he said. "We'll make that clearly 'acting' so there will be no connotation of that." I was in that capacity for a time and I had an office in Taegu right next to Chung Il-Kwon, who was the senior military man on the Korean side. He later became the chairman of their joint chiefs of staff and served as president of the country for a while.

The principle duty of the acting chief of the KMAG was to supervise the training of the Koreans. The Koreans were responsible for the actual training. By the time I left in 1951 the Koreans were doing nicely.

The Change of Command

General Douglas MacArthur's removal in April 1951 came out of the blue. When I was working on the defensive line I had gone down to headquarters in Pusan in a jeep. The driver tuned the radio into the station that broadcasted the news periodically and I heard about it on the street in Pusan. It was a complete surprise.

The immediate result of Ridgway's assumption of command was the feeling of a tighter rein. It was a more positive direction. Gen. Walker operated without all the intelligence information he should have had. I don't think he was as intimately informed as he should have been, through no fault of his own. I don't think he had the information, the overall picture, and the resources that were available to Ridgway. I thought Ridgway was able to take a more positive hold on the reins because he had more information about the overall strength, capacity, and availability of Army resources.

Soldiers of the 2d Engineer Battalion disarm a mine, January 1951
RG 111, SC-362313

Lieutenant Roush recalls going north with the 7th Infantry Division and encountering the Chinese spring offensive, 1951. After advancing 20 miles, the Chinese outran their supply lines and their troops began "surrendering in droves."

From Pusan, we made our way north to around Chechon on an unheated train in the dead of winter. We then prepared a company encampment and started licking our wounds, trying to rebuild our company and get back into fighting shape. That was how we got through the Christmas holidays. In the beginning of the next year, in January-February, the whole [7th] division started back up north, fighting as we went. That was a very critical time for the engineers.

The roads were okay; because they were frozen they were solid. Getting across the streams, though, was really tough. We did a lot of bridge building and spent a lot of time in icy water. It gave me a great appreciation for the American soldier. He sure put up with a lot.

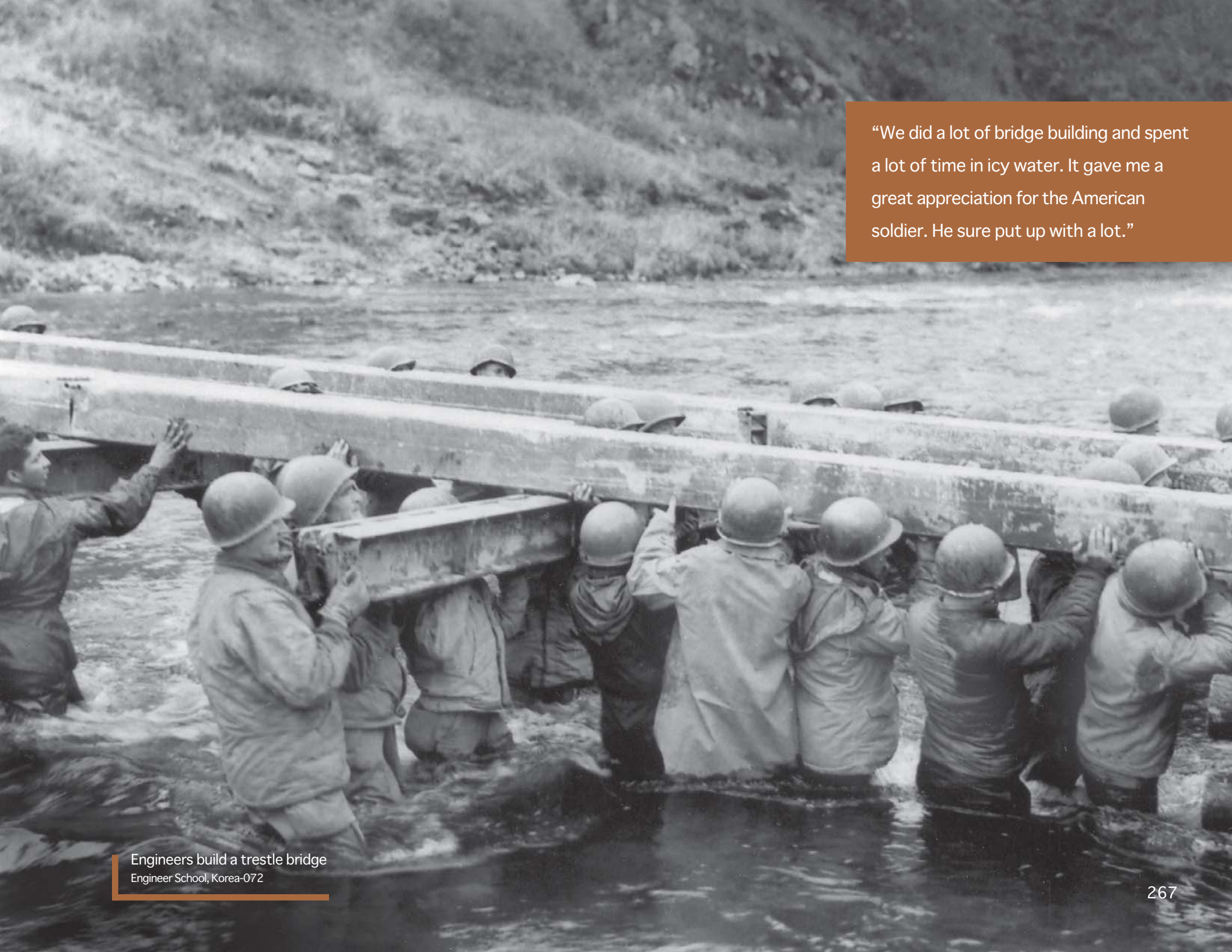
Finally the spring came and all hell broke loose. The Chinese hit us with their spring offensive and we rolled back about 20 miles and then stopped. They had outrun their supply lines. It became a turkey shoot. Literally, when it was over, I am convinced there was nothing between us and the Yalu. Apparently the Chinese reached a breaking point and there were no North Korean soldiers to speak of.

Finally spring came and all hell broke loose. The Chinese hit us with their spring offensive…we rolled back about 20 miles… then stopped. They had outrun their supply lines. It became a turkey shoot.

The Chinese began surrendering in droves. I've never seen anything like it. At one point, I would take a bulldozer on a lowboy along with a tank column and go out as much as 15 miles in front of our lines. We took the bulldozer so we could fill in holes that might have been blown in the road. I was in front of our lines three or four miles in the evening with a bulldozer. Nobody was there but us, a squad of engineers, and we were not troubled. There just wasn't any resistance in front of us.

I recall quite clearly the day that we were stopped. I was with Col. William J. McCaffrey [USMA 1939], who commanded the 31st Infantry, and he had two battalions advancing up two sides of the valley—one on each mountain on either side. He was called by the division commander on his radio and told to stop his people. He refused and said, "I'll stop if you come here and tell me to." Maj. Gen. Claude B. Ferenbaugh [USMA 1919] arrived in a chopper about 30 minutes later and said, "Stop." Col. McCaffrey, however, had lost radio contact so the general went after one battalion and I went after the other and we stopped them.

That time President Harry Truman stopped us. Once again, we entered into a confusing period of operations. The Chinese had time to rebuild their forces. Then things just simmered along from that point forward and it was the winding down of the war.



"We did a lot of bridge building and spent a lot of time in icy water. It gave me a great appreciation for the American soldier. He sure put up with a lot."

Engineers build a trestle bridge
Engineer School, Korea-072

"Our major problems were that we were dealing with a very underdeveloped country with a very restrictive road net, and yet we were a mechanized army with mechanized supply levels required in the forward areas." Captain Williams describes his duties as a road reconnaissance officer.

A reconnaissance officer is somebody who goes out and looks to see what the existing conditions are. We began to try to get the roads ready for the monsoon season. Korea has quite a monsoon season. The winters tend to be very dry, and one can pretty much ford everything except the major rivers like the Han and Imjin. But, starting around the third week in June, for about the next six or seven weeks, there are often torrential rains, and even relatively dry stream crossings suddenly might contain 8 or 10 feet of very turbulent water.

The original roads, primarily built by the Japanese occupiers after they took over Korea in 1910, had concrete reinforced bridges, usually with about 20- or 25-foot spans, single or multiple spans as needed by the site. Many of these bridges had been blown out of existence. We were replacing a number of them, some with Bailey bridges, some with timber bridges—trying to get ready for what we knew was coming up in the spring summer rains. The main problems were water related.

My organization was far enough behind the lines that we did not get either artillery fire or much in the way of sniping—just a very few incidents with infiltrators. We suffered practically no casualties. We lost a few while clearing minefields when we advanced and took over ground. The enemy or our own forces had mined and not recorded the locations properly.

…there are often torrential rains, and even relatively dry stream crossings suddenly might contain 8 or 10 feet of very turbulent water.

Our major problems were that we were dealing with a very underdeveloped country with a very restrictive road net, and yet we were a mechanized army with mechanized supply levels required in the forward areas. It was pretty much straightforward pioneer-type work.

I was promoted to captain, which was another reason for my going up on the group staff. There were four American engineer battalions and a number of separate companies, such as a light equipment company [630th Engineer Light Equipment Company], a ponton bridge company [58th Engineer Treadway Bridge Company], a fixed bridge company, and an engineer dump truck company. We also had two or three ROK Army engineer combat battalions assigned to us. We had large numbers of Korean Service Corps (KSC), which at that time were basically used to "chogey" (i.e., carry on one's back) the A-frames with ammunition and those supplies up the hills. A number of those smaller units were organized into KSC regiments, which might be 2 or 3,000 strong. They were assigned to us to provide our hand labor. They were fed from U.S. supplies, provided with hand tools from our depots, and their work assignments were coordinated by the 8224th.

Men of the 185th Combat Battalion stand watch over a bridge damaged by floodwaters on the Soyang River, May 1951 RG 111, SC-369385

The depth of American involvement with that kind of a system in a work force of 12,000 did not go very far down. One of the problems that it made for the engineer battalions back home, wherein our people returned, was that American soldiers in Korea didn't do as much in the way of physical work, except of course skilled work by mechanics. American soldiers hardly had to pick up a shovel; there were always plenty of Koreans around. When they got back to units in the States, where the full squad was American, shovels still had to be picked up and used, but in their minds they had graduated to a step above this.

The Korean War was the only war in which I actually saw service in the theater of operations. My life was not in danger 99 percent of the time; therefore, I think it was not too dissimilar to serving in peacetime engineer troop units, under virtually continuous maneuver conditions.

Major Harold R. Parfitt 2d Engineer Construction Group

Major Parfitt recalls repairing roads, railroads, and bridges.

The 2d Group came back through Seoul about mid-December. We kept on moving south as the front line came back. Our area of responsibility kept moving toward Taegu. Our mission was heavily oriented to improving the crossings for the retrograde movement, and then preparing them for demolition so that follow-on troops could blow them up if they found it necessary. We did this up until late January 1951 during which time I was assigned as the S-3 of the 84th ECB.

When the line held and a counter offensive was initiated, I was back with the 2d ECG headquarters. We began moving back up the corridor we had been on, enroute to Seoul, checking and repairing roads and railroads that had been damaged. Along the way the 62d was diverted out onto a spur line from Chochiwon toward Chongju. The 2d Engineers together with the 82d arrived in the Seoul area about 7 March 1951.

The mission given to the group was related to three crossings over the Han. One was the low-level shoofly bridge, and we were to prepare plans for repair of two high-level bridges. We were getting closer to the rainy season but there still was a feeling we could repair the shoofly quickly and get an effective use of it—maybe a month or two before the rains got us.

Although crossing plans were quickly prepared, Army headquarters made a decision to assign someone else to do the construction of the high-level bridges. Nevertheless, the group was to continue work on the shoofly across the Han.

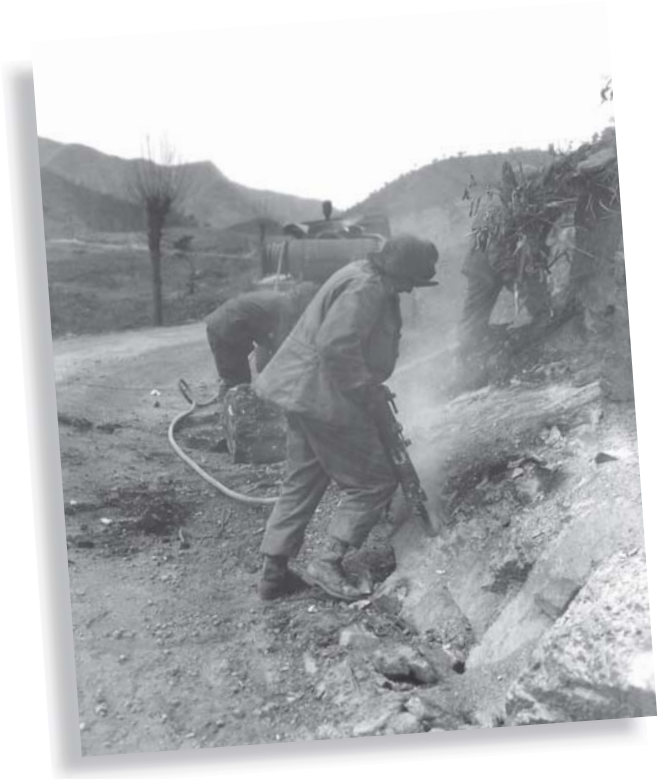
About this time a rotation policy was initiated and units began to lose experienced officers and men. Coincidently, I was seeking to get assigned to an engineer battalion in a combat division to fill out my career experience. I had never been with a division although I had considerable combat service in World War II. Fortunately an opening developed in the 8th Engineers, 1st Cavalry Division, and I was sent up for an interview with the commanding general to see if I would be acceptable. Happily, Maj. Gen. Charles Palmer, commander of the 1st Cavalry Division, interviewed me and approved my assignment as Assistant Division Engineer. I reported for duty on 2 April 1951.

Soldiers of the 55th Engineer Treadway Bridge Company begin construction of a floating bridge at the Han River Engineer School, 42-5-84

Lieutenant Colonel Evan S. Pickett 73d Engineer Combat Battalion

Colonel Pickett describes his battalion's constant battle with Korea's roads—sanding, clearing snow, and widening. He also shares his impressions of General Matthew Ridgway, and of the Korean Augmentation to the U.S. Army (KATUSA) Program.

Our outfit left Hungnam on 18 December 1950 and went to Pusan. I'd lost a lot of my heavy equipment from different sorts of operations. We had five different kinds of cranes and dozers. Getting spare parts was difficult so we had a lot of deadlined equipment.



Soldiers of the 13th Engineer Combat Battalion work to widen a road
RG 111, SC-359630

When we got back to Pusan we were there just a short time. We were told to get rations and ammunition and go north up the MSR until we got to the front. The Chinese by that time were coming south and we were going north. I think the front was near Andong in the Ch'ongju area. That's above Taejon. It was the middle of the winter so we did snow clearance and sanded icy roads. Mostly we spent our time widening, graveling, and making bypasses on the very narrow Korean roads in this mountainous area. There were very few mines or booby traps in our work areas. It was primarily road and bridgework.

At one time X Corps was setting up a defensive line. We had some of our troops helping to construct barbed wire entanglements. They called it the *KANSAS LINE*, and these double and triple barbed wire fences with gun emplacements ran from the Sea of Japan to the Yellow Sea, clear across Korea, about 60 to 100 miles.

Another big job was the Chech'on Railroad Station. We were going to put a big quartermaster and ordnance ammunition dump and supply point there. One of the railcars that was full of ammunition blew up. We had one sergeant seriously injured and several others injured. The explosion had scattered ammunition all over the railroad yard. We spent quite a lot of time cleaning that up and then getting gravel in, hard surfacing the area where they could stack

boxes of supplies and 55-gallon oil barrels for their POL dump.

We built our L-5 or L-19 strip next to headquarters and corps asked that we find a suitable place for the corps' airstrip. We put it alongside of our own airstrip and built it so corps could have their airplanes there. We had used some pierced-steel planking but we didn't use any there. You use it when the ground is really soft and you've got bigger planes. The ground at that time was frozen solid and all we did was lightly gravel it. We once used pierced-steel plank at Kimpo Airfield and interlocked it. Then we pinned it to the ground and it worked pretty well.

We set up our headquarters down there and began working on the roads in the area. During the spring, we started to work on the roads that had frost heaves. As soon as it started to thaw these roads just turned into a sea of mud. As the vehicles went over them the top would break and mud would ooze up through them. We opened up several gravel quarries and got crushers going. We crushed rock, hauled it night and day on these roads, and put on a heavy coat. With a grader and a dozer we'd level it out. Then we'd run back and forth on it with one of these D-7 Caterpillar tractors. That would push the rock back into the mud until it would just stop going down, and it stabilized.

We started moving north in May. We had slowly come up from Andong, Yongju, Chech'on, to Wonju, up to Hoengsong. We were building the big Hoensong River bridge in May, the first part of the month.

Impressions of General Ridgway

Lt. Gen. Matthew Ridgway was a soldier's soldier. He always wore a pair of suspenders like a backpack and he had two grenades tied on it. He was always at the front. The troops were pulling back in a lot of areas. When Ridgway came in a lot of people called him "Wrongway Ridgway" because he turned everybody around and said, "We're going to take this ground and we're going to hold it."

Some people thought things were kind of hopeless but Ridgway was right. He got some good morale going with the troops and started setting up some defensive lines instead of pulling back every time you got hit. I think he did an outstanding job.

He was right up there at the infantry regimental CPs all of the time with the troops. He would go right among the troops. Gen. Walker spent most of his time in the rear areas. He wasn't as aggressive as Ridgway. Ridgway talked to the soldiers, mingled with the infantry commanders, and saw that they got the right amount of support. He did an excellent job.

The last big North Korean and Chinese offensive was in June. X Corps got 10 two and one-half-ton trucks from every unit to haul artillery ammunition. Maj. Gen. Edward M. Almond said, "We're going to haul all of this artillery ammunition. We're going to put it in dumps.

When Ridgway came in a lot of people called him "Wrongway Ridgway" because he turned everybody around and said, "We're going to take this ground and we're going to hold it."

Gen. Almond said, "When they hit us hard we're going to trade a little ground but we're going to saturate them with artillery. Rather than lose these guns we'll burn the damn barrels out."

When they hit us hard we're going to trade a little ground but we're going to saturate them with artillery. Rather than lose these guns we'll burn the damn barrels out."

We hauled artillery ammunition and placed it in these delaying positions where the corps artillery officer told us to put it. We stacked hundreds and hundreds of tons of ammunition. When the Chinese hit, the infantry didn't run. They kept a line and the artillery just kept saturating the area. Maybe we fell back 20 miles, but the Chinese absolutely ran out of steam. There was practically nothing left of them.

Then the infantry turned around and with the tanks went back north. When we went back up there that whole area for miles was littered with dead Chinese, and dead horses that they used to transport a lot of their equipment. This was May and it was getting hot and most of these dead soldiers were still in the padded uniforms from winter.

Along in May and June the front had stabilized and Ridgway stopped the people from retreating. We had put in this defensive line. The Chinese's back had pretty well been broken. Although one thing had given us a bunch of trouble—Koreans were free to move everywhere. You didn't know who were enemy and who weren't. Ridgway moved every Korean out of the front line area. We put them about 10 miles back and wouldn't let a one be up there unless in uniform. This way nobody was passing information to the enemy. Nobody was sabotaging. Every Korean you saw who wasn't in uniform was suspect. The line was stabilized and I think at that time people really started thinking that they had the thing won.

Lt. Gen. William Hoge, commander, IX Corps, congratulates the 62d Engineer Construction Battalion upon the completion of the Forney Bridge, August 1951 Engineer School, 210-13-9

Lt. Gen. Ridgway left and Lt. Gen. James A. Van Fleet came in. Corps was put under Eighth Army, and the 8224th ECG was attached to X Corps. Van Fleet was very similar to Ridgway; he was a good commander. Things had stabilized by then.

In that period the Chinese figured that they couldn't run us

off the end of the peninsula. That was when they started rumors that they wanted to have peace talks, stabilize the line, and all of this kind of bologna. A big part of stabilizing the front and coming out as well as we did was Gen. Ridgway's command and leadership. Up until that time, every time we got a lot of pressure, people were pulling back and a lot of the commanders were saying things like, "You know, we shouldn't even be here."

The Bridge at Hoensong

We built a bridge at Hoensong, across the Hoensong River. The Twinnan River Bridge at Hoensong was 600-700 feet long, a concrete and steel reinforced bridge with about 10 bents under it. Several spans of it had been blown. Those spans that we could jack up and crib under, put new bents under, repair and use, we did. We put in 24-inch I-beams so that the bridge would carry 50-ton capacity traffic. My Company C, under Capt. Snyder—who was a really good engineer—built the bridge.

After it was completed Gen. Almond, the X Corps commander, and Col. Leigh Fairbanks, X Corps engineer, came for a ribbon-cutting ceremony. Col. Walsh, the 8224d commander was there. We called that the Frank H. Forney Bridge. Col. Forney, the previous commander, had been killed in an ambush in North Korea. After Gen. Almond cut the ribbon and made his speech he got in his jeep. He told me to get in the jeep with him and we drove across the bridge. I thought highly of that general, both in Italy and then in Korea.

Building the bridge was a big project taking about a month and a half. It required welding of those steel I-beams, doing a lot of cribbing with railroad ties, concrete work, and crane work, to lift the steel I-beam spans up. That was the biggest job we had.

Capt. Snyder in Company C invented a 55-gallon dump bucket that you could pick up with a crane. We would put it under the cement mixers on the ground and then the crane would lift these 55 gallons of concrete. It would weigh about a ton. We would pour it into these forms that we had for concrete bents. We'd put bolts in the concrete and let the concrete cure for about 21 days so it wouldn't start cracking.

New Uses for Artillery Powder Bags

I've always liked demolitions and powder and dynamite. Every time the artillery fired they usually had four powder bags. Depending on the range they'd throw away two or three of these powder bags. They were not salvageable. They'd throw them in a pile and after the fire mission was over they would burn them. I'd seen this time and time again.

We were doing a lot of quarry work so I took my S-3 and went down to one of these artillery outfits. I said, "I want to experiment with this powder. Can I have some of these powder bags?" He said, "Hell, we'll

We stacked hundreds of tons of ammunition....the artillery just kept saturating the area. Maybe we fell back 20 miles, but the Chinese absolutely ran out of steam. There was practically nothing left of them.

give you a ton of it." It was smokeless powder. The pieces were about the size of your little finger, about an inch long, and had holes in them. I took a lot of that powder. At that time we were drilling into solid rock with our wagon drills, maybe 18 feet for some of our powder holes. I got some of my demolition people and said, "I want you to fill these holes full of this smokeless powder up to about a foot from the top. It just burns unless you compress it." I said, "What we want to do is take either TNT, dynamite, or composition C, and fill in the last foot on top of that powder. Then put your primer in it."

We tried it. When we detonated it this terrific explosion on top compressed it, setting it afire at the same time. That worked perfectly for blasting quarry work. It didn't cost the government five cents, except for the primer and the TNT on top of it, because we were using artillery powder that they would have thrown away. I wrote the thing up and sent it to the Chief of Engineers' office. I don't think anybody else had ever done that. We must have used hundreds of pounds of that powder in our rock quarry work.

Ditches, Culverts, and Bridges

We were primarily working on the MSR by widening, graveling, and doing lots of drainage work on the roads. We'd go to the local police and they would round up civilian men for us. We'd put them in tents and feed them and use them as laborers. But, because of the food it was difficult to keep them. Very often during the night a hundred would run off. Sometimes I'd have 500 one day, and 1,000 the next, and then only 800. Along toward the end, when we got better housing and better food for them, the retention rate improved. We had hundreds of civilians out on the road primarily doing drainage work because, starting in June, and going through August and September, you'd get the monsoon rains. In those periods, within a week, sometimes, we got 15 inches of rain.

U.S. and Korean engineers construct a timber culvert during the construction of a new road, October 1951
Engineer School, Korea-081

Starting in June, and going through August and September, you'd get the monsoon rains. In those periods, within a week, sometimes, we got 15 inches of rain.

First, you built the road and crowned it so the water would run off of the sides. From the center of the road to the edge of the road, on a two-way road, you would get from a three- to four-inch difference in elevation, so the water would run laterally off of the road. Then these people in the ditches along the road with picks and shovels would make a trapezoidal ditch. We made a template that was just a trapezoid. The man in charge would go along and tell them, "You've got to dig it like this." We dug those drainage ditches along the side, and then we were sure to get the water to an area where it would run away from the road. If the water had to cross the road we would put culverts in.

The engineer manual at the time called for the trapezoidal ditch as the best type of drainage. It worked well because we had all of this hand labor to dress it that way. If you were making a drainage ditch with a grader, the grader operator went along with his blade and bladed it out. Or the dozer pushed aside the earth. But we had thousands of hours of hand labor. When the monsoon started I gave orders to patrol the roads constantly. Where we'd made cuts on side hills there would be slides, which filled up your drainage. The water would rush across and cut your roads. Night and day we had people patrolling the roads, keeping debris from clogging the culverts and keeping any slides from blocking the drainage. We weren't interrupted by washouts because our patrols spent 24-hours-a-day on patrol.

Culverts had to be widened. The engineer dump had a good stock of corrugated iron culvert. When they didn't have one big enough we used timber. What we would do is make a box culvert out of timber, maybe five feet square, reinforce it really well, and bury it. So, if we didn't have a big enough culvert quite often we constructed it.

The Hoensong River was like some of those rivers in Africa. It was a half-mile wide and six inches deep. The Marine engineer combat battalion had gone in there with this bridge and constructed culverts in the river. They used many hundreds of 55-gallon oil drums. They put a piece of primer cord on the top and the bottom of each drum and set it off. The primer cord blew the tops and bottoms out. They took all of these and laid them end-to-end to make culverts. They had 48 individual culverts to take water on the south side of this bridge that we rebuilt. During the winter these improvised culverts made out of 55-gallon drums, and covered with dirt, took the traffic. That was an MSR. The monsoons weren't there yet so it was adequate at the time. When we completed the bridge the first part of June the monsoons hit. The monsoons washed out all of those culverts.

In one of the railroad yards we found some great big steam boilers, about half-inch thick steel, that looked like they'd been used for high-pressure gas or something. We cut the ends out of those and used them for culverts.

They were about 40 feet long. We used everything we could find, and most items worked really well. We needed anything to keep the road open. The roads, especially in the mountains, were terrible.

Before the war somebody from the government would tell the Korean civilians, "Well, now, you live in this town, and you take care of the road halfway to the town on this side and halfway to the next town on the other." A few times a year they'd get a lot of hand labor out there and they would chop at the road and fill the ruts. Very few vehicles used them. If anybody wanted to go anywhere they rode the train. The local traffic was primarily horse or ox carts. The roads and the bridges, whatever bridges they had, were very inadequate for military traffic.

If we needed to put in bridges in a hurry we used Bailey bridges. When things quieted down we replaced them with wooden bridges. We were getting timber in from the Philippines. The engineer dump had 12-by-12 teak and mahogany beams, if you can believe that. That kind of timber today would cost $1,000 apiece. Some of these were 20- to 40-feet long. The most gorgeous timber you ever saw. That was what we were using to build bridges.

We would make our bents and our stringers out of those 12-by-12 timbers. We would take two-by-sixes and two-by-eights, stand them on end with a two-inch spacer between, and use them for a deck. They would drain really well. On top of that we would nail the two-by-eights flat for treads the width of a tank tread, about three feet wide on one side and three feet wide on the other side, on top of those two-by-eights standing on end. That made a real good bridge decking. It would hold 60-ton loads. We made a good bridge. I would imagine some of those things could still be standing.

Using KATUSA Troops for Engineer Work

Two companies of KATUSAs were attached to us. Ultimately, we had 1,600 KATUSAs working for us. I assigned a lieutenant and an interpreter to each company. I was assigned two Korean first lieutenants who stayed at my headquarters. On a daily basis they went down with those troops and our S-3 would tell them what was required of them. They would be the liaison back and forth. They spoke good English and they had uniforms. They were first lieutenants, Korean Army. If you wanted to send some information to the people running the civilians they helped all the way around; they did a good job.

When we first received them, the KATUSA troops were untrained and inadequate for engineer work. I put that in my reports. They had no coordination for running bulldozers and graders or running our hydraulic equipment. They were good at hand labor but they were very poor with mechanical equipment. But, as time went on, we found that they learned to

operate the mechanical equipment fairly quickly. The first things they learned to use quite well were all of the air tools on the compressors. You had air circular saws, air chain saws, jackhammers for drilling holes, and air hammers for pounding spikes. They caught on to that really quickly.

They were slower yet with the running of dozers and graders, but they finally learned to do that. Within a month or so they seemed to be able to learn the other mechanical equipment. From their background and upbringing, I suppose, they were unfamiliar with mechanical equipment, but they caught on to it pretty quickly and did some good projects. They were doing what we were doing. In the end they were well qualified and seemed to contribute a lot to our mission, which at that time was primarily road drainage, culvert construction, road widening, some blasting, rock quarry work, and graveling.

Roadwork Equipment

We didn't have any trouble finding rock over there. We had lots of rock. There were hills and rockslides all over the place. If the rocks weren't larger than two inches in diameter we would put a shovel in the pit and start loading the dump trucks. If the rocks were larger than that, we would put them in a crusher, start crushing, and dump the gravel in the trucks. Then we'd haul it onto the roads and spread it out. We would walk it in with the bulldozer so it would push on down in the dirt and give us a good hard base surface.

Korean workers repair a section of a washed-out road
Engineer School, 93-63-1

We had a great deal of trouble with our trucks. We were forever breaking springs on our two and one-half-ton dump trucks, travelling fully loaded over those terrible roads. We couldn't get replacements. At any one time we'd have 10 to 15 trucks out of operation because it was very difficult getting spare parts.

We had four or five Quickway cranes and each of them had a different kind of motor. One set of spare parts wouldn't fit all, and we were always trying to get spare parts. In my reports that went to Washington, I said many times they should mount those darn cranes on regular truck chassis rather than Quickway chassis with some bogus type of motor that you couldn't get spare parts for. We needed to have a truck chassis with a

crane on it where the motor in the crane was the same as the motor in the truck so we could get spare parts for both. But we'd have five cranes, and they'd have different kinds of motors in the cranes, and different kinds in the trucks, and we could never get spare parts.

The 512th Engineer Dump Truck Company was camped near us. I was able to go through group headquarters to get a platoon of their trucks so that really helped. It was a black outfit, like mine was. They got along well. A very competent black first lieutenant commanded it. They gave us a great deal of support on trucking. We needed their support because 80 or 90 percent of our effort was hauling stuff to keep those roads in operation for the corps.

Better Food: Better Morale

The front line stabilized and we were able to improve our living conditions. When you were settled down and the weather wasn't so blasted cold your cooks could do a better job.

About that time one thing General Ridgway did was to improve our food. He put the heat on the Eighth Army, and the Department of the Army, and we started getting fresh rations.

Our food improved 100 percent. Instead of having Spam and powdered eggs, we started getting some fresh beef and very often some fresh pork and turkey—things we'd never seen in Korea before. Along with that you got improvement in morale. Ridgway said, "Unless you're in the front line as an infantryman, in a hole, and they can't get some hot food to you, you can't eat C-rations."

Even some of the infantry regimental headquarters, and some of those who were back behind where they were out of fire, set up kitchens with hot food. They had these big insulated containers that they'd take up to the front and give the men hot food if they weren't under intense fire. Those people were eating some fresh rations for a change, which really helped. General Ridgway should receive all of the credit for it. We never had fresh rations before then—he really did the job.

On 18 August I left. Three or four trucks were with me. It had been raining like the dickens. About 20 miles south of the CP a big landslide blocked the road to the replacement depot. I was riding in the lead truck. I dismounted everybody in Class A uniforms. We started picking up rocks and rolling big boulders off of the road by hand so we could get through. We cleaned a path through this rockslide and got to the replacement depot.

I went from Pusan to Sasebo, Japan, to the replacement depot there. It was a rotation center, the 29th Replacement Depot. We were there for a short period of time until they put us on a boat and we came back to Camp Stoneman, California. From Stoneman everybody got on a different train to go in a different direction. After a short vacation I moved my wife and child to my next assignment at Fort Leonard Wood, Missouri.

Men of the 13th Combat Engineer Battalion repair a road damaged by retreating North Korean forces RG 111, SC-361232

Colonel Paschal N. Strong, Jr. Eighth Army Engineer

Colonel Strong recalls there were some 25,000 engineers in Korea, and shares his motto—"Any engineer can build a bridge if he has all the stuff he needs. It takes a REAL engineer to build one when he doesn't have it." He describes the need for high-level bridges to avoid Korea's floods, and, as Eighth Army Engineer, he characterizes his dealings with Lieutenant General Van Fleet and General Ridgway.

Lt. Gen. James A. Van Fleet was the Eighth Army commander in the spring of 1951 when I used quite a few of my engineer troops to build high-level bridges over the main streams. Up to that time we had low-level bridges over the main streams. Van Fleet said to me one day, "Strong, why are you spending so much of your time and effort on these high-level bridges when you don't need them?" I said, "General, I had a study made of the floods in this country." I requested a flood expert through Washington. One came and made a study. I wasn't talking through my hat.

Maj. Gen. Lee Chong Chan, ROK Army, presents a commendation to Col. Paschal Strong
RG 111, SC-382855

I said, "When the floods come all those low-level bridges are going to be out. If you don't have a few of these high-level bridges, one at least behind each corps, the troops are going to be isolated." Well," he said, "I'm not worried about the floods." I said to him, "Well, general, that's not your job. That's *my* job to worry about the floods." He laughed and said, "Okay, go ahead."

I was very lucky in having three Army commanders who accepted my judgment and didn't try to make me do things that were absolutely impossible.

Shortly before Lt. Gen. Walton H. Walker was killed we were way up in North Korea, not too far from the Yalu River. Then the Chinese struck. The Korean divisions gave way and we had to fall back to prevent the Chinese from flanking us. Walker had a conference with his staff and I was present. He said he had not been able to receive any orders or directives from MacArthur's headquarters. He had to make up his mind what his main objective was. He decided that it

Yoju Bridge, August 1951
Engineer School, 41-1-129

was to maintain the physical integrity of Eighth Army, being the only military command we had in the Far East.

He said, "I am prepared to give up any real estate in Korea I have to, to make sure that Eighth Army is not destroyed." I will never forget when he said that. He was a very able commander. He had to decide whether he would risk Eighth Army by letting all the Chinese come in behind him and cut off our routes to Pusan. That is why he planned to withdraw whenever necessary.

General Matthew B. Ridgway came in after Lt. Gen. Walker was killed in a jeep accident. Walker had planned to evacuate Seoul. I knew that Ridgway would want to defend it. As soon as Walker was killed, and I heard that Ridgway was coming, I immediately took steps to get barbed wire and all defense material—picks and whatnot, and Korean labor—to work on my best concept of a defense line.

When Ridgway came our main headquarters was 60 miles from the front. I was up at Seoul. I was the only section commander who was up there with those advance troops. Ridgway came up to the advance headquarters and found my staff and me working there. He was at West Point, a tactical officer, when I was a cadet. He said, "Strong, I am going to defend Seoul as long as I can. Meet me at 0800 and we will make a

Shortly before Lt. Gen. Walton H. Walker was killed, he said, "I am prepared to give up any real estate in Korea I have to, to make sure that Eighth Army is not destroyed."

reconnaissance of the area and pick out the parts we want to defend."

I met him at 0800 and we went over the ground. Fortunately, the terrain was such that it was pretty obvious where the defense lines would be. The ones he selected I had pretty well already selected. The next morning I got a call from him to go out again to look things over. Many places we went he found engineer troops coming up with wire and labor. He wanted to know how I could get them up so quickly. I couldn't tell him that this mission had been planned a week ahead of time and that we were just coming up now after a week's delay. From that time on Ridgway trusted my judgment all the way through. Van Fleet did too.

I was very fortunate to have had Army commanders who if I said a thing could not be done, accepted it. Sometimes it was pretty "iffy" if it could be done or not. We were only half a jump ahead of the sheriff, but we did stay that half-jump ahead.

I knew Ridgway would defend Seoul because of his record in Europe as commander of the XVIII Airborne Corps. Because the Korean division broke on our flanks and endangered the railroad behind us, eventually we had to evacuate Seoul. In the spring we started back again and recaptured it.

I knew that Ridgway would try to hold it and he did. We held it through New Year's Day. The river froze and our bridges froze in the river. We had a hell of a time maintaining them against the floating ice, or when the tides came in, but we did. We completed the evacuation leaving our bridges behind us. When we returned in the spring we found the Chinese had neatly stacked them up on the banks.

The floods came. There was always a conflict between an engineer of a unit and the commander of a unit when a flood was imminent. The engineer wants to get the floating bridges up before the flood's high water hits, whereas the tactical man will want to keep them in place as long as possible for tactical reasons. He has the say-so. Just as we expected the commanders kept the floating bridges in too long. Soon all of our floating bridges were careening down in the flood out to sea. That was where the high-level bridges came into play.

I am a great admirer of General Douglas MacArthur. I know something about him. When I was a cadet, he was superintendent. I think he would have been a complete failure working with the British and the Allies in Europe, and General Dwight D. Eisenhower would have been a complete failure in the Far East. Eisenhower was a great conciliator—maybe that's not quite the word but—he knew how to work with other people. MacArthur could only work with and by himself. In Japan, MacArthur was just the man to take charge of Japan because the Japanese expected a god. They expected an emperor to take command, and he was an emperor figure. MacArthur would never have gotten along with

I can't emphasize too much the importance of indoctrinating your engineer unit commanders with one reality—the necessity for using native methods with native labor and native material, in the absence of the materials they are supposed to have....

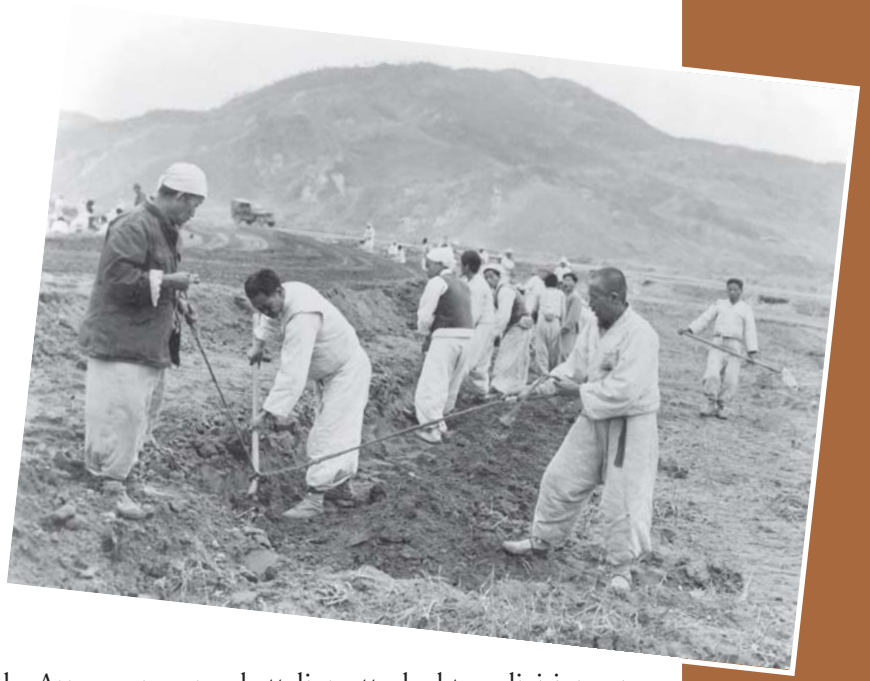
Field Marshal Bernard L. Montgomery, and Eisenhower would not have presented the god-like figure to the Japanese that MacArthur did.

From my experience, the best regimental commanders for heavy construction work were contractors who had been doing that work and who were commissioned in the reserves. I found them better for that purpose than the West Point graduates because the West Point graduates hadn't had the practical experience in heavy construction that the contractors had. West Pointers also were a bit too worried about the spit-and-polish, sometimes at the expense of their construction activities.

I can't emphasize too much the importance of indoctrinating your engineer unit commanders with one reality—the necessity for using native methods with native labor and native material, in the absence of the materials they are supposed to have according to the book. When every new engineer unit came through Korea, I sent the commanding officer and some of his staff on an inspection trip to see how the Koreans handled concrete structures without concrete machinery and how they built pilings without pile drivers. That gave them an appreciation of what they could do with Korean labor.

My motto was that any engineer can build a bridge if he has all the stuff he needs. It takes a *real* engineer to build one when he doesn't have it. We had 25,000 engineers of all sorts in Korea. Engineer units are attached to the Army; some are a battalion attached to a division, or a regiment or group attached to the corps. Then there are heavy construction groups attached to the Army. Well, I requested and received permission to have all the ones attached to the Army placed under my direct command. I could always exercise the authority of the commanding general. I found it better when they knew that I was their commander when writing their efficiency reports.

Generally a staff officer doesn't exercise command, but I found that in Europe and in Korea it worked out much better for the units attached to a high command to be under the command of the engineer. Other people might disagree with me. That's my theory and it worked out very well. I didn't have to issue orders through the commanding general, which meant through his chief of staff. I could issue orders directly to the Army engineer units.



Korean workers repair an airfield to enable it to handle heavy transport aircraft
Engineer School, 13-14-6

Colonel Emerson C. Itschner — Engineering with the Chinese at Kaesong

Colonel Itschner describes a meeting between Chinese and American forces on building a bridge at the site of the Peace Talks.

I had an opportunity to cooperate with a Chinese engineer unit while rebuilding a bridge. The peace talks were at Kaesong and this bridge was very close to Panmunjom. The river was on the route between our line at the Imjin River and Kaesong. We were given orders to go up there without arms and build this bridge so our delegates could get to the peace talks.

I didn't think much about it at the time. We had become pretty hardened and kept in close touch with the fighting. I wasn't apprehensive at all. I hoped the orders were right—that they had gotten it all cleared. I went along in my jeep ahead of this unit and got to the bridge. Nobody was there.

This bridge had a gap of maybe 60 feet, with a demolished pier in between. Soon our treadway bridge company came up, looked over the situation, and immediately started to unload the treads. We could put three treads together and get a jeep across a 30-foot gap without any support in between, but with a 60-foot gap they had to build a trestle. About the time we were just starting to assemble our bridge sections we could see a column coming down the road on foot. They were Chinese. Each pair of men was carrying a small log, or they had axes and saws, and they also had shovels. That was their bridge equipment. They came on the other side of the river and we were on ours. We put out a little boat.

One of our soldiers had a Polaroid camera, which at the time was brand new. He wanted to take pictures of the Chinese but they wouldn't let him.

One of our soldiers had a Polaroid camera, which at the time was brand new. He wanted to take pictures of the Chinese but they wouldn't let him. The Chinese appeared to be surprised and concerned. He took pictures of our own people and held them up. They were amazed to see those pictures taken and developed instantly. The first thing you know they were all lining up wanting their pictures taken—to send to mama back in Canton or wherever their home was. He did take a number and passed them around until he ran out of film. They were pleased to get them; that helped ease the tensions.

It had been a tense situation until that time. They had axes and we didn't have any arms. They outnumbered us as they always did. That photo session relieved the situation and we all worked together very well. They provided a lot of the labor on that trestle. They got their axes out and they worked on that. They had rough timbers and some of them were used to cover large holes in the deck on their side. We built the bridge without incident and it was useful for the peace talks.

While building a bridge, men of the 8th Engineer Battalion lower a culvert into place RG 111, SC-368678

Following the November 1950 Chinese assault across the Ch'ongh'on River, the 2d Engineer Combat Battalion (ECB) was heavily engaged. The battalion suffered 561 battle casualties and lost almost all of its equipment during 2d Infantry Division's retreat. The 2d ECB's condition in December was truly bleak. Major Farnum describes efforts to reconstitute it as an effective force.

The Chinese continued to the south and we continued to fall back. Prior to Majors Edmond Leavey and Clare Farley reporting in, I'd moved the elements of the battalion back to Yongdungp'o. We were back there by 5 December. At that time we had just a few vehicles and we were using our Brockway trucks to move our people around. Still, we felt we had to keep the bridge close enough to them, and, if called upon to provide it, we would be able to do so. At one time for the entire battalion we had one jeep and a few trucks. We didn't have lots of time to get re-equipped and get ready.

We were busy from the word go. We took whatever assets we had and tried to get one company fully equipped….

Col. Paschal Strong, Eighth Army Engineer, contacted me and told me when Majors Leavey and Farley would be arriving. Maj. Leavey, the ranking officer, came in on 10 December 1950 and took over as the battalion commander the following day. Maj. Farley became the executive officer.

The first officers that we received as fillers were virtually all recallees from the inactive [standby] reserve. They had not been active in a reserve unit. They might carry an MOS (military occupational specialty) that had no bearing on any background or interest that they might have. Some were excellent; some were worthless.

Generally speaking, the officers who came from Japan were a much better qualified and motivated group. But the resources in Japan were being stressed to provide fillers. You got whomever was sent. You interviewed them and you tried to figure out where you could use them best, based upon their background and maybe their interests.

Maj. Leavey chose to run the battalion from the division CP in his role as the division engineer. That was contrary to how we had operated and to what I thought would be the normal operation. We were not that far from the division CP. By staying at division, he ran the battalion with the view that I, as his S-3, would be in charge of all operations.

I appreciated Maj. Leavey's trust. The situation was a little difficult in that Leavey would not trust Maj. Farley, the XO, to make a decision in his absence if it pertained to any operational matter. They were both West Pointers; Leavey was Class of '42, and Farley was Class of '43. Those were short classes so there probably was little difference in their rank.

Ed Leavey looked to Farley to run the administrative matters of the battalion—the S-4, kitchens, and battalion rear. I felt it must have been rather hard on Farley

not to be involved in our day-to-day road work and bridge building, which are the heart and blood of an engineer battalion's job.

When Maj. Leavey arrived, the 2d Infantry Division was still classified as combat noneffective. We had a large training mission to accomplish, getting people in, integrating them into the outfit, and preparing them so they knew what they were doing on roadwork, bridge building, or other engineer tasks.

While we were re-equipping and getting in our personnel, Leavey volunteered his battalion to do a lot of engineering tasks for the corp. In the first days I resented this, feeling that our personnel had gone through quite a bit and were still limping around on frostbitten feet. Much later on I realized his approach was the best that it possibly could have been.

We were busy from the word go. We took whatever assets we had and tried to get one company fully equipped, and then one platoon out of each of the other companies to where we could have motor transport to get them out to the roads to do the work.

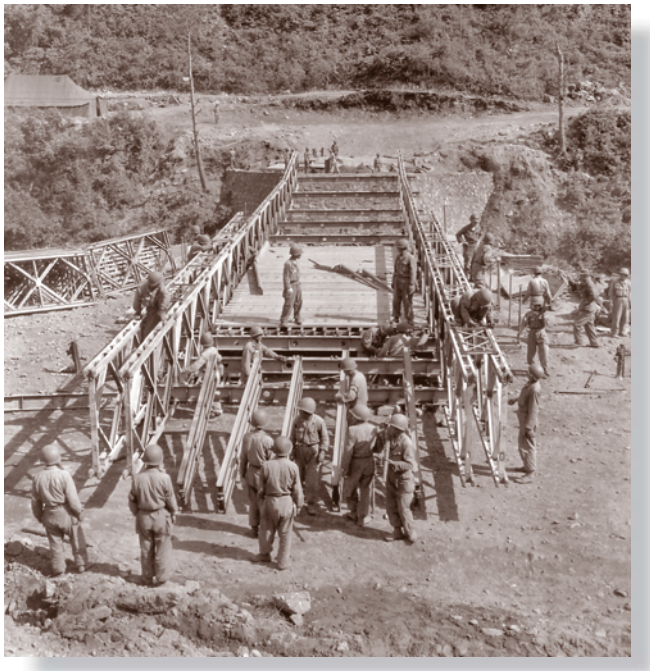
Although our division was in reserve, we took on the responsibility of the MSR work, which normally would have been a corps, or Army, function, and maintained all the roads that were in our division sector where we were in reserve. We even built a couple of bridges for Army in that period.

A couple of these were Bailey bridges and some were timber trestles. The best training actually is to build a bridge that was going to be used by the vehicles of Eighth Army. It took a long time for me to appreciate the added tasks when all my friends in the 23d Infantry, and other people we knew within division, were, I suppose, sitting around on their duffs.

The bridges were mostly small. We were replacing small, concrete bridges that we had blown, whether it was coming back the first time, coming back the second time, or whenever. We had destroyed practically everything that had been built along the roads, so it was a question of replacing those with something that was serviceable and wide enough for the military traffic.

Soldiers of the 13th Combat Engineer Battalion repair a bridge destroyed by U.S. air power
RG 111, SC-359632

It was my first experience with Bailey bridges. I'd never had any training in them. The handbook was a marvelous help for any engineer needing to look up the classifications for what you want to span. The directions of what to order and how to put it together were excellent. We were like little boys playing with Tinker Toys.



Soldiers of the ROK 117th Engineer Battalion build a Bailey Bridge RG 111, SC-451511

I don't know that we had any supporting Army-type engineer forces who were sitting on their duffs because we were doing this but it was good training and it kept us all busy. For the first few months we still continued to have our little get-togethers in the middle of the afternoon, to take off our shoes and socks to check everybody, to make sure that nobody was getting gangrene from black toes. As an aside, my middle toes on my right foot still don't have the proper sense or feeling in them. For many years after I returned from Korea I'd all of a sudden be positive that my foot was bleeding and that my toes were down there just soaking in blood. I'd take off my shoes and socks and look and they were perfectly all right. That probably went on for 20 years. When we got back to skiing I'd get that same sensation again in the early ski boots. Now, with the modern equipment, my feet never get cold. They just tingle a little bit. It was a common ailment that virtually all of us, who had been in the north, came back with. For some of us it lingered, in different degrees, throughout life.

Yongdungp'o was a decent area to try to re-equip. Gen. Christiansen, the GHQ Engineer, and Col. Strong, the Eighth Army Engineer, came to call on 14 December. They promised all the help that they could push from their respective headquarters in the way of personnel and equipment. By 20 December we had our line companies sufficiently reestablished, in personnel and equipment, to move out a couple of our companies in support. By Christmastime we had received more than 250 replacements. We were still short on vehicles and engineer-type heavy equipment.

It was my first experience with Bailey bridges.... The directions of what to order and how to put it together were excellent. We were like little boys playing with Tinker Toys.

It was almost like Santa Claus coming—on Christmas Day we received 35 trucks. We received our Christmas mail about the end of December. By that time we had certain reports back on some of our people. More than 200 of them were known to have surrendered in the Kunu-ri area. They were in two groups of about 100 each. Many small groups were spotted from the air surrendering to the Communist forces. Much of my time, after I wrote the operation reports and made the assignments for the next day, I was involved in writing to the wives of the many people we had lost at Kunu-ri.

Early in January 1951, in the area of Yoju, we were back in the engineer business in support of our own units, installing a floating bridge and a ford across the Han River. Division asked me to personally be in charge of the bridge and ford area. I had Company D working on it, with a little help from a couple of the other line companies because we really were only capable of fielding about one platoon out of the company.

On 9-10 January the battalion was located at Ch'ungju. I was the S-3 at that time and we were doing normal engineer work for the division. We installed our floating bridge and a ford across the Han River in our division sector. The latter part of January we moved to Wonju. At that time we had better than 200 miles of road to maintain in our division sector. By early February we had received much of our replacement heavy equipment and we were actually building airstrips in each of our regimental areas. The weather was cold but very clear.

On 7 February a Korean lad who had been working with some of our 2d Engineer Battalion personnel as a "house boy," and who had been taken prisoner along with our people at Kunu-ri, came by our headquarters. He had been released and returned to find us. He reported firsthand to us that no clothing was taken from our POWs, only their weapons, bayonets, and flashlights, and that they were all fed what corn and rice was available. He identified some of our officers and among them was a W.O. Lackner, who had been an assistant S-4. No one had known what had happened to

Maj. Gen. Edward M. Almond made the statement that he didn't have to worry where he assigned the 2d Division because their engineers could 'build a road and maintain it anywhere.'

In the midst of the spring thaw, engineers lay dirt and rocks over a corduroy road to enable supplies to reach the mess hall
Engineer School, 13-14-1

him. He was able to tell us for sure that Lackner was a POW in a group of about 350 U.S. POWs. A relatively smaller number of American soldiers were killed in action at Kunu-ri, compared to the number MIA (missing in action). I used that information to give some solace to the wives in my continued letter writing and asked them to share it amongst themselves.

By mid-February we thought things were going much better again. We were still at Wonju on 11 February but our UN forces were back up in Seoul and our forward forces had moved east. At that time the 2d Division was assigned to X Corps, and X Corps over in the east section faced most of the CCF (Communist Chinese Forces).

The CCF losses were considered to be very high due to our artillery and continued air strikes, or at least we assumed they were very high. I'm not too sure how accurate those evaluations were. I believe that our sweeping artillery fire and associated artillery reports of the Chinese losses were much truer than the estimates of damage and people killed by our heavy Air Force bombardment attacks. Although we knew their losses continued to be high, we also knew that they were still strong in numbers.

On 11 February we moved from Wonju to Hoengsong. Spring was coming and that meant the thawing of the roads. The MSR—which had been quite good—all of a sudden turned to a sea of mud. We had to resort to corduroying the MSR in many places, plus putting on as much gravel as we could possibly obtain.

When Maj. Gen. Edward M. Almond, commander of X Corps, came by we were really fighting a sea of mud to keep the roads open. He made the statement that the 2d Engineers can put their division through anyplace; he didn't have to worry where he assigned the 2d Division because their engineers could 'build a road and maintain it anywhere.' I'm sure he had seen many of our roads going through virgin territory from the air. They probably looked pretty good from there even when they became muddy, but from our viewpoint, on the ground, it was a sea of mud. It was a nice feeling that a corps commander would come by and say that about the engineers in one of his divisions.

We did receive some fine people as replacements. I want to comment on the fellow who became our S-2. His name was Botkin—I don't remember his first name yet we lived in the same tent for some time. In December he reported in and I know that by the spring he had not yet been to bed. He never changed his clothes from when he reported in. He was a fine worker all day long. He sat by the tent stove and tended it all night—not that it needed tending, it was oil or kerosene. As I would waken and look up from my sleeping bag he would say, "They're coming tonight, Larry. They're coming tonight." He was a fine S-2. During the daytime he would go anyplace on reconnaissance with no hesitation.

The mines placed by the enemy along those roads were mostly wooden box mines. The mine detectors did not pick them up. The only way of locating them was by probing with bayonets. It was the old hunt and peck method, by hand.

Although it may sound as if he was afraid, he showed no fear personally.

Most of the battalion was still in the Wonju area on 19 February. There had been a heavy CCF attack in February but the engineers were not committed. Our forces considered the CCF losses to be absolutely staggering. Although our losses had been relatively sizable, our stand in February 1951 by the 23d Infantry at Chip'yong-ni was outstanding. I don't know that we knew exactly where we were by names. We knew what hill we were on, and what hill the CCF and we were fighting for. They were all numbered based on elevations. The papers had to pick up something catchy and so they called it the battle of Chip'yong-ni in which the 23d Infantry made a good showing for themselves and the 2d Division. We supported the action with engineer work tasks and by serving as a reserve force for the 23d Infantry.

On 16 March we were located at Yudong-ni. Someone had received an Associated Press photo of some POWs. It showed a column of people from the 2d Division. In that photo many of us recognized both Zacherle and Fry. If I'm not mistaken, in the particular column as shown in the photo, Zacherle was number eight in the line and Charlie Fry was behind him. About that time I'd had word that Chaplain Wayne Burdue had been killed. When I checked that out with the chaplains in country I found out that the report was due to an error in the chaplains republishing a list of chaplains where

Captains Farnum (left) and Botkin. Botkin was a replacement officer who joined the battalion in December 1950
Farnum Collection

Burdue was shown as KIA when he was actually MIA and in a prison camp up along the Yalu. Chaplain Burdue subsequently did die in prison camp.

In March the division had some action in the Hoensong area. Most of the action pertained to the 38th Infantry and to the artillery supporting them. The weather was beautiful and spring was arriving along with spring flowers. On 20 March the division was moving north on a limited advance. The spring thaws really hit

us and the roads were virtually impassable. The 23d Infantry, in division reserve, was placed under the supervision of the engineer battalion to work on the roads. We also hired Korean laborers; we had better than 500 Korean laborers plus some ROK engineer units working on our roads. We expected another 800 laborers to be delivered to us the following day for roadwork.

This created a rather heavy administrative load on H&S (Health and Services) Company to set up field kitchens and feed more than a thousand Koreans who were working on the roads. The laborers just showed up and we had Korean supervisors who paid them. We gave them a certain amount of food and they seemed much happier eating with our people than cooking their own rice. All of a sudden we had an engineer battalion with a total maximum strength of 900 people supervising an entire infantry regiment, plus 1,500 Korean civilians and some ROK engineer units all working on our division roads. It was an all-out effort to maintain our mobility.

Korean engineers build timber piers for a new bridge, February 1951
RG 111, SC-358000

The road in our particular sector was strictly a dirt road that had insufficient rock base to make it a year-round MSR. Many of our division field artillery units supported us by working on the roads. Some of our artillery units had contests with each other regarding how many yards of roadwork they could do versus the others. There was great competition between our 503d Artillery, which was our division's heavy artillery, and a heavy artillery unit attached from Eighth Army. They were both black units and they did absolutely outstanding jobs in their assigned sectors.

Our mission was to stay with them and check for mines all along the roads to make sure that, because of mines, we didn't lose any of this wonderful support we were getting. Although we used the mine detectors, we didn't have much confidence in them. The mines placed by the enemy along those roads were mostly wooden box mines. The mine detectors did not pick them up. The only way of locating them was by probing with bayonets. It was the old hunt and peck method, by hand, and

I think we were very successful. We found many of them. I don't recall losing any of our vehicles when we were clearing the roads at this time.

The Baby in the Minefield

Anti-personnel mines had been placed by our forces, the North Koreans, and the Chinese. Many of these were in the small Korean villages. These were not really villages but just farmhouses along the roads. As the refugees came back to their villages, and tried to get back in their own homes, sometimes these homes had been booby-trapped. Civilians—the children, or the wives and mothers—were often wounded and maimed, which was very hard to take.

One day we were told at the battalion CP that a Korean mother with a small child on her back was down in the midst of a mine-field. We searched but found no records of a minefield in that area. Our S-2 and S-3 sections made every effort to contact all the other divisional units, and anybody who had passed through, for information on this minefield. It was very hard to amass a reasonable file on what had been put in, by whom, and why.

Lt. James Welcher, my assistant S-3, and I went up to where one of our line companies was holding guard around the minefield where the wounded Korean lady was. Many engineers volunteered to go in and bring her out. One thing you remember about being in the service is that you don't ask or direct somebody to do something you wouldn't do yourself.

An American soldier poses with Korean children in Hungnam
Weygand Collection

Since I was the ranking person there I asked Jim Welcher to back me up and follow me through as closely as he could and still stay a safe distance behind. I entered the minefield and reached the woman but she was dead. The baby was crying. It just seemed to be impossible to get the baby separated from the mother the way she had the baby tied to her clothing. I carefully pulled her back along the route I had come in, then Jim took her legs and we carried them out. I think Korean children are among the most beautiful in the world and this baby was no exception—except it was crying.

One thing you remember about being in the service is that you don't ask or direct somebody to do something you wouldn't do yourself.

We were not too far from a village. Some locals came down and were standing around watching us get the body out of the minefield. One of the Koreans was a doctor who spoke a bit of English and he offered to take the child. That is one of the remembrances of war that stays with you forever. You can forget where you were, what you'd eaten, what you were doing, but these special times stand out, and they're always there.

On 28 March, I was called to division headquarters where they presented me with the Silver Star for attacks through enemy lines during the Kunu-ri period. I'm sure Capt. Jones and others at division staff had some input into it. Although I can't really subscribe to the citation as written, I did thankfully receive it.

My recommendation for promotion to major had been knocking around Eighth Army and various places for months on end. The division commander looked into it and said, "Give me all that paperwork," and he carried it personally to Eighth Army. Ultimately, he was successful. My promotion to major came through with the date of rank 17 April.

On 10 April the 23d Infantry Regiment was on line and we were supporting them with two of our companies, Companies A and B. Maj. Farley, much to his enjoyment, got to go to the 23d to coordinate the engineer support. He was very happy finally to get into some of the operational elements. My assistant, S-3 Jim Welcher, went on R&R to Japan and we started our first rotation of people back to the states. Based upon the point system I was the top eligible captain in the battalion for rotation, but I really had no desire to rotate until all of our original personnel were gone.

On 11 April, the engineer battalion was in the Hongch'on-Ch'unch'on area and we were erecting two Bailey bridges. At this time we received word that General MacArthur had been relieved of command. We all felt that the relief of General MacArthur was quite a blow.

On 13 April, we received our first quota for our battalion to rotate some of our personnel. Our quota was for two officers and 30 enlisted men to be rotated. Since some of our replacement officers that we had received after the Kunu-ri incident had come from Japan, they actually had more time in theater than any of our original group. Our first rotatees, therefore, were replacements that we had received either in December or early in 1951.

We wondered just how the rotation system was really going to work. Most of the replacements we received were either brand-spanking new young second lieutenants, or people recalled from the Inactive Reserve who had not been with a unit since World War II for any training and had no desire to have been recalled for Korea.

I was still writing letters to many of the wives of our missing personnel who had been captured in the Kunu-ri area. I wrote Col. Zacherle up for the Distin-

On their way to a second tour of duty in Korea, soldiers of the 8th Engineer Combat Battalion wait to leave their troop transport RG 111, SC-412166

guished Service Medal for his part in our very successful crossing of the Naktong. It was quite an engineering feat to put in a bridge across a major river with the limited amount of bridging we had. I've never been sure whether Col. Zacherle was recognized with that citation or not.

There were rumors that were supported by some reports from returning POWs that our Maj. Price and W.O. Falls were presumed to be working in a coal mine near Kunu-ri. Maj. Price, as I recall, did have some experience with underground mining prior to his service in the military. I'm not too sure what came of that. Neither of them came back from their POW days.

Soldiers of the 1437th Treadway Bridge Company install a floating bridge
Engineer School, 42-5-118

The communist offensive late in April hadn't hurt the 2d Division. What it did was put us back on Class B-type rations, rather than Class A. We were back to eating canned beef and gravy. At that particular time our H&S mess was very poor and we certainly missed the old company commander, Joe Cox, who had always, even under the most difficult of circumstances, been able to run a mess hall that you were happy to go to.

During this period we were camped on the Naechon. It was a good location and we had a swimming hole. We built a floating bridge on the Soyang River and the bridge was right on the 38th Parallel. On 27 May we had heavy rain and on Memorial Day it rained some two inches. The Soyang River, at the place we had our floating bridge, rose 32 inches in a matter of hours, so it was a real challenge to keep the bridge intact.

We saw our rotation program come to a screeching halt. Certifying that we had qualified replacements was a very difficult thing to do when no one really knew the capabilities of the people who were assigned to us.

By the end of May we were receiving considerable corps engineer support. They were taking over the MSR work to our rear and we were strictly within the division area. The rotation picture once again was very grim.

In mid-June, the 2d Division was in reserve; however, when the division is in reserve, that doesn't mean any rest for the engineers. Edmond Leavey, by this time a lieutenant colonel, volunteered our battalion to corps, saying we could do any tasks they wanted done, so we continued to do engineer work, mainly fixing and widening small bridges, to bring the MSR up to the width that we wanted.

About this time we heard over the radio more than once, Lt. Col. Zacherle reading a letter to his wife, Peg. In his letter he mentioned many of our officers and others who were with him as POWs so that we knew they were alive. At that time we couldn't say they were 'well,' but they were 'alive.'

I'd received a letter from my wife asking about a second lieutenant from the 2d Engineers who someone had met in Tacoma. He had been wounded at the time of Kunu-ri. He had returned to the states and was commissioned. After looking into it I decided that this was Sgt. Joseph Mentkowski, who was the sergeant wounded in the early morning hours of 1 December. We had left him and a tank patrol had picked him up. Our paths never crossed after that. He had been in the hospital in Japan for almost six months from early December until mid-May in 1951.

On 20 July I received my orders and was due to leave on rotation. I expected to be in Japan by the end of July. On 21 July I received the Legion of Merit from GHQ in Japan. It was a big surprise to me, to my battalion commander, and to many in the division. It covered the period I served as the battalion commander, 1-10 December 1950, and was for the resupplying and returning of the battalion to an engineering capability within that short period. Brig. Gen. George C. Stewart, our assistant division commander, presented it. The following day I received the Bronze Star, kind of a formality as you're leaving the division after having done a good job.

On 23 July I headed for division rear, Pusan, Japan, and then home. All of the original crew, save one, had preceded me. The one remaining was Capt. Paul Jones, then serving as the battalion S-3. Col. Leavey was trying to have him promoted to major prior to being rotated. I don't believe it was a successful extension.

First Lieutenant George Stukhart, Jr. 2d Engineer Combat Battalion

A platoon officer with the 2d Engineer Combat Battalion, Lieutenant Stukhart recalls clearing mines, mines, and more mines, often by probing since the SCR-625 mine detector was unreliable for enemy box mines.

When I hit Camp Stoneman, California, the Korean War had broken out. A number of us hoped to go straight on to Korea, but they said, "No, your orders are to the 76th Engineer Battalion, Okinawa." The day we arrived in Okinawa the 76th was leaving. Until October 1950 they had us overseeing construction projects and doing little, minor jobs. Around that time, GHQ in Tokyo decided to take the 93d Engineer Battalion out of Guam, bring it to Okinawa, and staff it with people. We were all assigned to the 93d Engineer Battalion and went on to Korea from there.

We were engaged in building an airfield complex north of Pusan. I had a platoon there and our units were rather scattered around. I ended up supporting the 2d Logistical Command and also doing some jobs around Pusan. Until April or May 1951 we were building, making repairs, and helping to construct the depot outside of Pusan.

Several of us wanted to get in a combat unit. In May 1951 we were still around the Pusan area but I transferred to the 2d Division. I did this by directly dealing with a person in the 2d Division whom I met in Pusan. I got orders to go to the 2d Division when it was in the area near the Punch Bowl, so off I went.

The first assignment I had was to Company A of the 2d Engineers. Company A supported the 9th Infantry. The first assignments were putting in defensive positions. Not long after that we were taken off the line. We went back and moved over to another position. We were in reserve a short time. Then we were put into the line west of our original position and started moving back north. That involved more offensive-type operations—putting in bridges and clearing roads and mines. The one thing I recall the most was clearing mines off roads.

We cleared mines by probing. The SCR-625 didn't work very well. They could pick the nails up in the shoe mines, but most of the mines were made of wood. We used them, but metallic detectors were not very efficient [see "The Portable SCR-625 Mine Detector" in *Builders and Fighters: U.S. Army Engineers in World War II,* Barry Fowle, ed.]. Probing was maybe 80-90 percent efficient—unfortunately not 100 percent. We thought we had cleared a strip of road, or a field, then somebody would lose a leg or a jeep would blow up. It was very disturbing to us when we would declare the road clear and somebody would go up there in a jeep and get blown up. Considerable pressure was on us to get the areas cleared. The enemy was far more efficient in putting those things in than we were in getting them out. You couldn't tell at all where they were. The mines could have been on the

Probing was maybe 80-90 percent efficient—unfortunately not 100 percent. We thought we had cleared a strip of road, or a field, then somebody would lose a leg or a jeep would blow up.

shoulders or in the middle of the road. There was no rhyme or reason to where they were.

We lost a number of our own people through their use of two mines, one on top of another. We cleared one out and then a second one would go off. Or, they would have a second one in a remote location. When you pulled one out, it would set off the other one. They used ingenious schemes like that.

Engineers probe for mines using bayonets Medding Collection

We operated in a series of narrow valleys. The infantry were up on the hill. I recall some of the battles, watching the infantry trying to take those hills. We were down in the valleys trying to clear them out and repair the bridges so that they could get close support. The armor units were normally not able to come to their help until we cleared the area. In the meantime the infantry were in a very exposed position up on a lot of the hills. They had air and artillery support, but there was some very tough fighting up in those mountains.

The roads were pretty narrow so we did some road widening. Except for the armored engineer dozer there wasn't really too much need for engineer equipment. That was fairly effective because it was not affected by most of the smaller mines. It had to be one heck of a large mine to take out that type of vehicle. On several occasions our platoon went out with the armored engineer vehicles and cleared a bypass—off the road down into a streambed, for the armored units to get through.

A lot of our work was done at night because we were under artillery fire most of the time during the day. The enemy could see us from where they were.

The infantry dug in their own positions. We had one major project putting in a road up a very steep hill. We had to do a lot of blasting to get that road through. This was after I'd taken over Company C, which was in support of the 38th Infantry Regiment. The 38th Infantry was in a rather exposed position so we had to put a road in up that mountainside. They actually needed to come back down that road to get out because they had a

The guys in our company loved what they were doing. We could hardly understand the mentality of stateside soldiers or people who complained about being in war. These guys really were enthusiastic about what they were doing.

lot of trucks up in their forward position. We had to help them get out; we had to keep our equipment there.

The commander of the 38th, Col. Ed Rowny, commended us after they got out. He called us up and said he thought it was quite a remarkable thing that we were able to keep that road open. Although it was raining very hard we managed to keep it open.

We had a lot of maintenance problems. Unfortunately we had to cannibalize a lot. Most of our trucks eventually were cannibalized to keep the remaining ones running. Maybe on a fleet of 15 to 20 trucks, a third would be running. You couldn't get the parts support you needed to keep them running so you cannibalized. You had to leave a lot of vehicles inoperable. These were mostly World War II vehicles.

Engineers experiment with a newly received Tournadozer at a facility near Seoul
RG 111, SC-378098

They sent us the Tournadozer, a wheeled dozer with big rubber wheels built by LeTourneau. They sent it over to Korea for us to evaluate. We didn't think very much of it and the Army never adopted it. It was very hard to move around. You couldn't have built that road up the side of the mountain without a D-6 or a D-7. No rubber-tired vehicle would go up that incline. The wheeled dozer might be good for building highways out here in Bryan College Station, Texas, but it wasn't very good for mountains.

Our people were out doing demolitions to clear the roads. That was always a very difficult thing because of the slope of the hillside. We were not skilled enough to be able to tell what would happen when we blasted those slopes. On one or two occasions we had some serious accidents. I don't recall anybody being killed while I was there, but the day after I left we had two guys killed doing demolitions.

The guys in our company loved what they were doing. We could hardly understand the mentality of stateside soldiers or people who complained about being in war. These guys really were enthusiastic about what they were doing. It didn't matter what hour of the night. We never got complaints about getting people up to go out and do a job.

When I joined the battalion it had not been completely reconstituted after coming back down from the Yalu River. A few veterans told stories about how they got out, mostly by foot over the mountains. They told stories of convoys getting blown up. Two lieutenants, one in another company and one in my company, had some very interesting stories to tell about how they escaped by foot. They couldn't get out by vehicle. They had to take off over the mountains, hide during the day, and hoof it at night. There weren't many survivors but I remember these two fellows, Hunter and Crosley, very well. They really told us stories about how the Chinese would come past them but they managed to get away.

We did some bridge building in the 2d Division. We built a couple of Baileys. The first real experience I had under fire was trying to put a Bailey bridge in. As we started this move back north, we put a Bailey bridge in over a creek under constant fire. We'd have to stop and go back and start again. We'd get hit, but we finally got it in.

I remember the rain in Korea. The rains came in late summer and they'd take out a great deal of what you did. We had to replace that Bailey bridge we put in although the second time wasn't as bad as the first.

The winter clothing was not very good but it was getting better when I left. It didn't affect us too much because we normally were in a position where we could stay warm. But the infantry had a tough time. The infantry were very exposed. I remember the winter coming on and how cold it got.

In the midst of a battered Korean village, soldiers of the 25th Infantry division huddle around a small fire
RG 111, SC-368493

By the time I left in January 1952, things had fairly well stabilized. About that time I remember once again going back into reserve and going through training exercises. I left the 2d Division and was assigned to the 11th Airborne Division, the 127th Airborne Engineer Battalion at Fort Campbell, Kentucky.

Captain Medding describes the battalion's extensive bridge-building activities during the spring and summer of 1951.

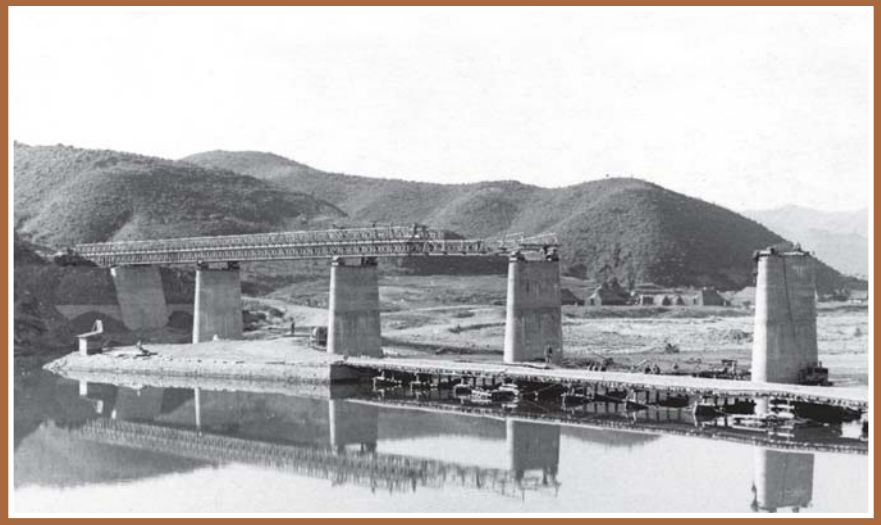
After the withdrawal and turn-around, our major bridge-building efforts really got underway, mainly during the late winter and early spring of 1951. I Corps assigned numbers to all of the bridges. Starting in March, the 14th Engineers, with the 72d Company attached, built 18 semi-permanent bridges, mostly two-lane and multi-span. At one time the battalion had 11 bridges under construction by only nine platoons. For a while we had no equipment for pile driving so that piers and abutments were founded on concrete slab footings. By late spring, pile-driving equipment was available and pile piers were used in most instances. During May the battalion built a 480-foot Bailey bridge with six 80-foot spans.

At one time the battalion had 11 bridges under construction by only nine platoons. For a while we had no equipment for pile driving so that piers and abutments were founded on concrete slab footings.

The materials available for bridge construction consisted of 24-inch I-beams, 42-feet long, 18-inch wide flange (WF) beams, about 20 feet long, eight-by-eight- and six-by-six-inch timber, and two-inch and three-inch lumber for bracing, decking, and abutment walls. In addition, there was miscellaneous lumber for decking, small steel angles, and channels for cross bracing and diaphragms. Portland cement, welding rods, and welding equipment also was available. Most semi-permanent bridges were two-lane, multi-span bridges with 40-foot spans, using six 24-inch I-beams. Intermediate supports usually consisted of two bent piers, using either eight-by-eight-inch timber or piling. Occasionally, we designed laminated decking, using two-by-four- or two-by-six-inch lumber on edge, covered by longitudinal treads of two-by-twelve or three-by-twelve lumber.

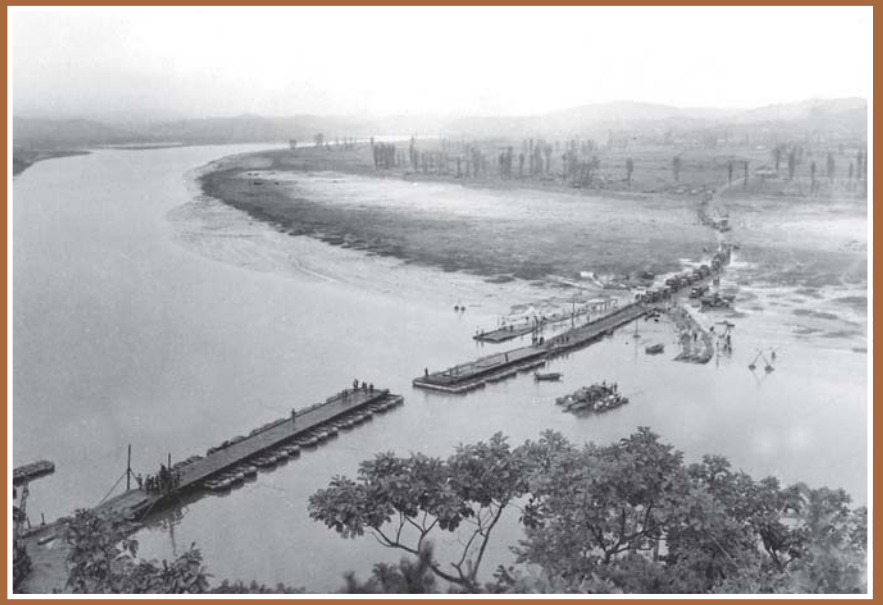
Probably our most unique bridge was the Bayton-Evans Bailey bridge built in June 1951 on the Hantan River north of the 38th Parallel. The site included 1-1/4 existing spans of haunched concrete T-beams and five unfinished spans. The Japanese started but never completed the bridge, except for piers and abutments and the 1-1/4 span. Center-to-center spacing of the piers was approximately 98 feet, and the distance from the deck to the pier tops was about 10 feet. The 1/4 span was a cantilever with a supporting lip for an intermediate simple span. The top of the lip was about 45 inches below deck level. The Chinese or North Koreans had built an existing one-lane bypass bridge at low level over the river.

There was considerable confusion about how to build the high-level bridge. It was believed that the best solution was to use Bailey bridging in some way. The confusion resulted from the fact that the Bailey is built in multiples of 10 feet. A meeting was held at group headquarters to discuss the problem. Although I had designed most of the bridges previously built by the battalion, I remained outside in an adjacent room at the request of Col. Linden.



The Bayton-Evans bridge under construction
Medding Collection

Built by the 14th Engineers, a ponton bridge takes shape while a ferry carries troops and equipment across the river
Medding Collection



Dedication ceremony for the newly completed Bayton-Evans bridge
Medding Collection

During my wait it occurred to me that we could build a 480-foot continuous double-double Bailey with the roadway on the upper story. It could be built and launched from the end opposite the existing span by demolishing the top of the existing far-shore abutment. It would be necessary to build grillages on top of the existing piers with bearings and rocker beams. I interrupted the meeting and explained my solution, which was immediately accepted. That is how the bridge was built. Company B built it in about two weeks. It took five days to jack it down onto its bearings. The bridge was completed on 30 June 1951. When dedicated, an impressive group of people attended. We named the bridge for Capt. Bayton-Evans of the British 55th Royal Engineers, who had been killed in action a short time before, and with whom we had had many close associations.

At about the same time, Company C built a 720-foot two-lane pile-bent bridge further downstream over the Hantan River. The last bridge I built while I was there was an M2 treadway floating bridge, also on the Hantan River. Because of an existing sandbag causeway and angled approach, the bridge was built on a skew with the river. A large number of Chinese box mines in the area required extensive probing clear them. Mine detectors would not pick them up. They were discovered when a jeep hit one, but it only flattened a tire!

For a time the 14th Engineers also had about 150 miles of road maintenance responsibility. During the spring of 1951 we had a reserve ROK division attached to the 14th for road maintenance work for about a month. I visited them every day for two or three hours to check their assigned area.

During the spring of 1951, DA (Department of the Army) announced several promotions. We didn't get any battlefield promotions. In March, Lt. Col. Burcher was promoted to colonel and reassigned to CONUS. Maj. Linden was promoted to lieutenant colonel and reassigned as battalion commander, 14th ECB. Capt. Gass was promoted to major. Lt. Col. Linden temporarily assigned me as the battalion S-3, a position I held for about a month. When Maj. Gass was assigned as S-3, Capt. Kania was reassigned as S-2. Col. Linden departed for CONUS on 21 June, and Maj. Charles E. Wright was assigned as battalion commander.

I left the 14th Engineers on 18 July 1951, exactly one year after arriving. I returned to Tokyo where I served on the post-treaty planning board, and then with the Japan Construction Agency.

Soldiers of the 24th Infantry Division return to their unit after purchasing food in the neighboring village, February 1951 RG 111, SC-357651

Lieutenant Colonel Harry D. Hoskins, Jr. Base Secton, Eighth Army

As Supply and Maintenance Officer, Base Section, Eighth Army, Korea, December 1950-August 1951, Colonel Hoskins describes the frustrations he faced—a thriving black market and a chaotic and unresponsive supply environment that left most engineer equipment inoperable because of a shortage of spare parts.

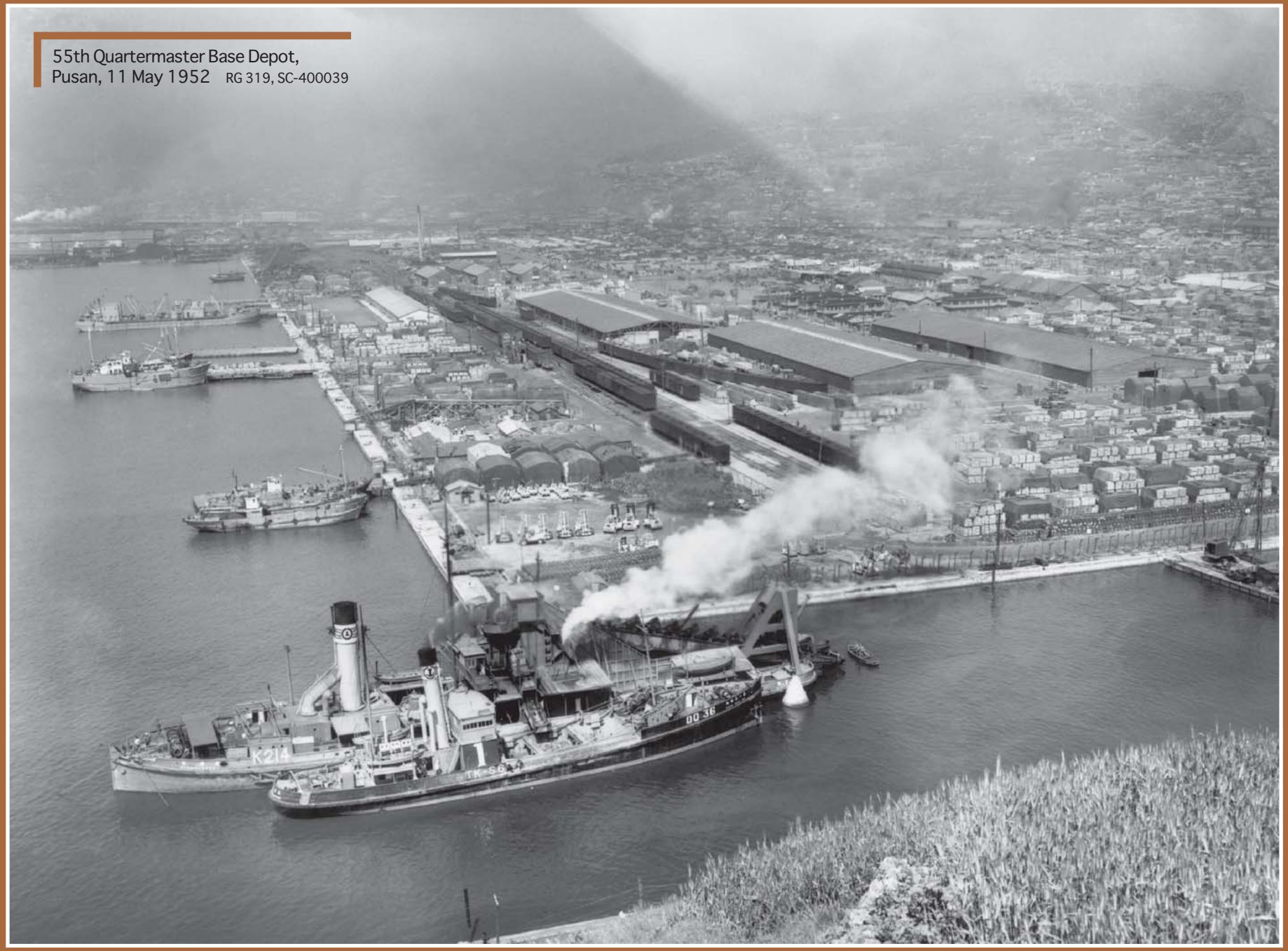
I was sent to Korea around Christmastime 1950. The Corps of Engineers wrote in my orders that I had a Department of the Army-directed 1331 (Combat Engineer MOS) because I wanted to go over and be a division engineer. When I got to the port they decided that I had to be troop commander and take a shipload of troops to the Far East.

When we got to Yokohama and were debarking all of the troops, the aide of Maj. Gen. Walter L. Weible came on board. He told me that Gen. Weible wanted to have my orders changed and that I would go to work for him. I said, "No, I would appreciate it if the general would just leave the orders alone. I wanted to go to Korea and I wanted to be a division engineer." That was the only opportunity I would have, and if I made it through after my tour was up in Korea, I could come back and work for the general if he still wanted me. The aide said, "Okay," he would go and talk to the general. He came back and finally told me, "Yes," the general was not going to interfere with me going to Korea, but that I would never get to be a division engineer. I'd get siphoned off along the way somewhere, and I would contribute more to the war effort working for him than I would over in Korea.

I went over to Korea and up to 7th Infantry Division. After I was there about two hours I had to report back to Eighth Army headquarters to Col. Baker, who was the Eighth Army Engineer, and to Col. Gus Wyrick, the Deputy Army Engineer. Gus Wyrick and I had been at ICAF (Industrial College of the Armed Forces) together. They handed me an IG report that must have been an inch-and-a-half thick. Why somebody wasn't court-martialed as a result of that report I'll never know. Somebody should have been fried as a result of the alleged malfeasance outlined in that IG report. I was assigned as the engineer supply and maintenance officer at the base section to correct the situation.

Shortly after that I went to Pusan and didn't report in for three days. I walked around and observed what was going on. That was the damnedest mess I had ever seen in my whole life. Then I reported in. They accused me of going AWOL, of going to Japan, or someplace, to keep from getting that assignment. But I had a pretty good idea of what was going on by the time I went in and accepted the responsibility for what I was getting into.

They had this automatic supply arrangement. Anybody who had something they didn't want just shipped



55th Quartermaster Base Depot, Pusan, 11 May 1952 RG 319, SC-400039

it to Korea. They had ships in the harbor at Pusan that had been there for five months loaded with engineer supplies. There was no way in God's world they could be unloaded. There was no place to put the stuff. Hell, I didn't know anything about the supply system. I knew how to manufacture equipment, and I knew how to run a plant, but I always had a sergeant or somebody who did all of the supply requisitioning. I'd look around for either a sergeant or somebody to be my S-4.

I looked at what my problems were and what my resources were. After I surveyed my current situation I went up and visited the three corps. That was where the war was being fought. About 80 percent of the engineer equipment was deadlined. Everywhere I went, everybody was mad as hell. They'd heard that I had just arrived. I said, "Look, I came up to find out what the score is. I'm not sitting back there in some plush set-up. I'm trying to find out what my problems are." It worked out. I got the support of a lot of fine people.

Why somebody wasn't court-martialed as a result of that report I'll never know. Somebody should have been fried as a result of the alleged malfeasance outlined in that IG report.

I soon realized all of this so-called automatic supply had to stop. The first thing I did was set up a requirements group. With a requirements group the theater determines what they need. Nothing comes in except what you ask for. You accept a lot of responsibility when you do that. I set up the requirements group, and I knew what the authorizations were for all of the units, those on the authorization tables. Plus, I got a list from the theater G-4 and from the different national services for special authorizations that they had.

I soon found out what I was supposed to support—the established consumption under combat conditions. I ran all of these numbers off. Then I notified Tokyo to stop automatic shipment. I sent a couple of ships back—talk about 'hitting the fan.' The engineers and transportation went to Gen. Weible, and they—the engineers particularly—wanted me fired. They were going to hang me from the nearest yardarm.

Before he would do that, Gen. Weible sent a major over to see me, one he had some confidence in, and said, "Find out what the hell's going on over there. I thought Hoskins was supposed to be in a combat unit." The major came to see me. I went through the numbers with him and told him what was happening. I took him down to the port and to all of the other depot and maintenance locations. They were trying to put everything through Pusan. There was no way you could bring everything through that one port and distribute engineer equipment and supplies by the existing rail system.

I gave him the notes I had on what was happening in the forward areas. I said, "You're practically at a standstill. If there'd be any enemy breakthrough, you couldn't win this war, not with the condition that the equipment is in." He said, "Well, how are you going to solve it?" I told him, "I'm going to set up a requirements division. The next thing I want to do is run this thing like you build automobiles." He said, "How do you build auto-

mobiles?" The key to building automobiles is making requirements that are geared to sales. You set up a movement control, which controls all materials and equipment, and the transportation system as well. I said, "I've got to get a handle on it. I need to make sure that I can get the ships loaded the way I want them, get the rail system so I could control something on it, and get all of the needed trucks, and even handle the air traffic." He said, "My God, how are you going to do that?" I said, "I'll work on it."

I went to the transportation people, who were having all kinds of problems because there was no consistency in their movements. When I told them what I was trying to do they said, "Let's get on board." I sent instructions back to the States, Japan, and even the Philippines, as to how ships would be loaded. When one opened the hatch, stuff that was needed right away would be taken right out and moved forward. Instead of trying to manhandle everything two or three times, I would load it at dockside and send it as far forward as it could be taken. The transportation people were happy because they could plan ahead about how their equipment would be used.

I got the people up forward to receive their supplies for me. Hell, it was in their interest. By going to the railhead or the truck stop and unloading the damn stuff they got their supplies. Pretty soon, I wound up with not just the engineer supply responsibilities, but a lot of the other services' supplies, because I was controlling much of the transportation system.

Rations are unloaded at Pier 3, Pusan habor
RG 111, SC-355011

Black Market Problems

When the theater IG came to see me after I was on the job about a week he stood me at attention and told me about all of the things that he expected me to do. I said, "Well, what happened to all of these officers ahead of me? When are you going to get after them?" He said, "I'm talking to you. I want you to clean it up."

One of the big problems was the pilferage. We're not talking penny ante. One whole train disappeared. That was when it got my attention. I went to the hospital and told the hospital commander that I was looking for six company-grade officers. I wanted men who had been either with the FBI, Food and Drug Administration, or with a special undercover unit that used to exist in New York. I said, "These officers are probably in your hospital because they've been wounded but not wounded badly enough to be shipped back to the states." He said, "We've got a bunch of them around, but I don't know what their backgrounds are. Man, they're a surly bunch. Many of them were wounded in World War II and they're back here in Korea. They are mad as hell at the country and at the service." I said, "You just give me six of them."

When those investigators arrived, let me tell you they were a surly bunch. I told them I was going to take their officer rank off of them and get them lost as enlisted men in the organization. I said, "There have to be Americans involved in such a large-scale pilferage operation, as well as Koreans, and there has to be somebody high up. I don't give a damn who the hell they are. I'm going to get them." This one first lieutenant, a little Italian guy, told me, "Man, I caught the biggest fish in New York State one time and what did they do to me? Instead of giving me a medal they sent me to the garbage dump. I've heard this before." I said, "Okay. If I find out that you haven't carried out what I'm telling you, I am giving each one of you orders in the face of the enemy—I'll throw the book at you." So, they disappeared after we arranged how we'd keep in contact with each other.

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Some guerrilla units in the area occasionally would hit one of the depots. I used that as an excuse to keep one company on alert at all times. They would have to sleep in their full field equipment with their weapons and their hard hats and be prepared to move out on very short notice. One supply point got hit regularly so we sent the different companies out there to get a little experience. They screwed up a bit at first, but after that they did a little better.

One night I was alerted that they had the real kingfish involved in this operation. Did I really mean what I said? I let them know I meant it. You follow through and I'll be here where you can get to me. Around 2200 one of the undercover officers came and said, "We've got him. Break out the company and we will lead them to the area we want surrounded." We got the company out.

It was at night. We were under the cover of darkness. We went in and completely surrounded a particular area of Pusan. Nothing could move in or move out. The company had fixed bayonets. We moved in and surrounded a big shed. I saw for the first time the original chop shop. There was everything in there, not just engineer equipment. They could take a piece of equipment,

The engineer shop supervisor at the Yokohoma Depot inspects a D-7 tractor during overhaul
RG 111, SC-427315

break it down, and disperse components and parts faster through the underground system than we had any idea. There were components of equipment we were short of that had been showing up everywhere on the Korean black market.

We had a top Korean official, an Army full colonel, a couple of other field-grade officers, and other lesser ones, and a few Korean civilians. I put leg irons and handcuffs on all of them. They shouted, screamed, and accused me. The full colonel was going to have me court-martialed and put away for good. So, I said, "Start inventorying all of the evidence now. Get each individual's name, rank, and serial number."

I called the local MP and I told him who and what we had. I wanted them to come in and give us a receipt for the individuals and all of the evidence. He blew up and said he'd have nothing to do with it. He called the area commander and the area commander asked me who the hell was I? I said, "I'm sorry. If you just give me a letter saying that I'm relieved of my specific responsibility to stop pilfering in the depot, I can hand your letter to the IG and they'll take it from here, but I have caught these people red-handed. So I want that signed letter first." Well, he wasn't about to give such a letter.

I wound up going up the chain of command. In fact, a man claiming to be the ambassador in Tokyo called me later that evening and said I was creating an international incident. I told him to call the IG and to send me a letter that I was relieved of the responsibility the IG had given me. Otherwise, these individuals were going to stay where I had them until I got that letter, or somebody gave me a receipt for the evidence and the individuals.

Not long after that the MPs came in. They gave me receipts for all the evidence and the individuals. The Americans were court-martialed and the Koreans had

Not long after that the MPs came in. They gave me receipts for all the evidence and the individuals. The Americans were court-martialed and the Koreans had "fatal accidents." You can break up a black market operation if you catch the "big fish."

"fatal accidents." After that, I never had any trouble with anything that moved, except the penny ante pilferage that was going on all of the time. You can break up a black market operation if you catch the "big fish."

After that I probably came close to being killed by some of those who hadn't been caught and resented what I had done—there were sniper shots. I was unable to travel in the same vehicle at predictable times. I never rode in the sedan I was authorized; I never used it anyway. I rode in trucks, jeeps, half-ton trucks—anything but an ox cart. I don't know if it was by accident or design but the IG inspected my operation and gave me a superior. When I was given the assignment, the Eighth Army Engineer had agreed if I got a superior rating from the IG they would send me back to be a division engineer.

Ellsworth I. Davis, a Corps of Engineers officer, was a very good friend of mine. After I got sent to Pusan and found out what a mess I had there I decided I better find out what the situation was with the rest of the engineering organization in Korea. I went to the different corps areas where most of the work was going on and to the divisions. I soon found out that about 80 percent of the engineer equipment was deadlined and they were just cannibalizing it to try to keep some of the equipment going.

As a colonel of one of the combat groups, Ell Davis supported me. He really got on the rest of the engineers. I told him what I would like to do. I didn't know if I could sell it, but if I could get the right support I'd see what I could do. I wanted to replace all of that equipment, just get it out. Spring was coming and they were going to lose all of the roads. There'd be no supply lines for an awful lot of the army other than rail, which only went up to the corps rear areas. They really had no choice.

I got into a lot of haggling with the people in Japan. They said, "Oh, you'll never get approval." I was sending ships back that I didn't want, loaded with a lot of supplies because we had enough of those supplies in Korea to fight three wars. We didn't need any more, and yet the automatic supply system sent us more.

I knew that if I went up to the G-4 I'd get in an argument, so I went to Gen. Weible. I said, "The situation over here is pretty desperate. If you want, send some people over to Korea. Don't return them on a three-day deal where they could get credit for a month and then go back to Japan. Let them get down in the mud and the cold and find out what the situation is." So he sent a couple of his officers over and Ell Davis was one of those who really helped me.

The agreement was that the operating units would come to Inch'on and accept the equipment. We would transfer the ownership of all of the new equipment, evacuate all of the rest of the deadlined equipment by rail through Pusan, and we would set up repair lines in Ja-

I tried to tell the general, "Look, you're playing with a firebomb. I have to call the chief of staff of the X Corps and tell him what's happened here." He said, "Go ahead." I did. I thought the end of the phone line was going to melt.

pan. The repair lines in Japan had no organization or system because somebody said, "We need a few D-8s, or some graders, or something." No requirements had been laid on it for a time-phased program to start with. This was the fault of the units in Korea. They had never stated their requirements.

Once they approved this exchange program we evacuated all of the junk. We used LSTs to bring the new engineer equipment into Inch'on. I sent a team up there and we transferred the ownership of it on site. They did all of the paperwork right on the beach. The units on their own, with their own capabilities, moved it across Korea to the different locations where they had to have it. We were close to the point of a total breakdown at that point. The mass transfer of equipment came just in time. It took about two months to complete and the spring thaws were about to start. Ell Davis got all his counterparts together and said, "Hey, somebody's trying to help us. Let's get behind him. Get off of the dime yourself and do something."

It could have been a total engineering disaster if we hadn't been able to pull that off. So much inoperable equipment was for all practical purposes just junk. Engineer construction and support capabilities were practically nonexistent—it had gotten to that point.

Salvaged vehicles being returned to the United States
RG 111, SC-399179

Automatic supply from Japan was all right for the first 30 days on a beachhead. After that, somebody ashore, close to the situation, has to assume the responsibility to tell the supply people what they need. I got shiploads of barbed wire. Hell, I needed barbed wire like I needed a hole in the head. One ship had been in the Pusan Harbor for six months loaded with barbed wire. We had enough barbed wire to go back and forth across the Korean peninsula about five or six times.

People in the automatic supply operation sent in material. There was no supply operation *per se* in Korea. The

There was no supply operation per se in Korea. The depots were nothing but bone yards.

depots were nothing but bone yards. The supplies and equipment were shipped in and everybody around Korea came in to get them. If you wanted a bottle of liquor, or something of that sort, you could get it and haul it away. There wasn't any control.

The Corps of Engineers never put a regular officer in the supply system who had any backbone. If you want to get ahead in the Corps, go into civil works. We had a Regular Army full colonel assigned to command the depot and he had absolutely no backbone. The guy spent all of his time with his Korean girlfriend and he just let the depot operate as a bone yard. He was one of those we had to get out of there.

A brigadier general, head of one of the engineering departments in one of the California colleges, was at brigade headquarters. He had a few operating troops, but very few of them. Most of the engineering operations were up north. When I saw that equipment was sitting in mud and that there were no drains or fencing around anything I asked him to give me some help. He told me that was not his job; he had other more important things to do.

I said, "I can't think of anything more important in a logistical area than protecting the logistical system." He said, "Lieutenant colonel, it's not for you to question a brigadier general." I said, "Yes, Sir." Well, I knew I wasn't going to get anything from him. Later, I got a replacement for myself and took command of the depot and maintenance operations.

The next thing I knew the brigadier general was packing up and had 24 hours to clear the area. He and his whole brigade headquarters were returned to the United States and released from military active duty.

I kept trying to tell this brigadier general that all of the equipment belonged to the Eighth Army. We simply could not barter equipment out. Some of my people were bartering out generators and other items of that sort for things that they wanted to make their own lives a little more comfortable. We put an end to that. The general took a bulldozer one day and knocked down all of the fences I had built and took what he wanted.

X Corps chief of staff called me and said they desperately needed a lot of this equipment. They would arrange for a special shipment by train to get up there to the railhead as quickly as possible. I said, "Let me check and make sure I have it all available. I will freeze it in place. I'll call you back and tell you what I can ship and when I can expect the rest of the equipment that I'm short." I checked all of the equipment, gave him the information, and told him the rail car numbers. Damned if this brigadier general didn't come in and take some of that equipment off of the rail cars as they were to be pulled out. It was some of the D-8 angle dozers that were very much needed up forward.

I tried to tell the brigadier general, "Look, you're playing with a firebomb. I have to call the chief of staff of the X Corps and tell him what's happened here." He said, "Go ahead." So I did. I thought the end of the phone line was going to melt.

Two officers—one was the G-4 and one from the Corps Engineers' office—came down by L-19s. We had

built a landing strip that the L-19s could land on near the main depot there in Pusan. Those two planes came barreling in. In the meantime the train had gone. They wanted to know the numbers on the equipment. I gave the information to them and told them what I knew about the equipment. They went over and found the equipment in this brigadier general's motor pool on some project that he decided he wanted to work on. They came back and got on the phone back to the corps headquarters. The next thing I knew the brigadier general was packing up and had 24 hours to clear the area. He and his whole brigade headquarters were returned to the United States and released from military active duty.

The "Papa-san System"

I organized between 5,000-6,000 Koreans. You've got to remember, all males above 15 to 17 years of age wound up in the ROK Army. They sent police sweeps through an area, ROK Army sweeps, and they'd catch anybody they could find and send them to the military. That was how they got their recruits. I was left with the old men, the old women, and small kids to do work. Most Orientals are damned good workers. The Koreans particularly are good in doing stonework, in putting in drainage and hard stands. You could build airfields by this method. You could build roads. You could build all kinds of structures with them, but you must use the Korean culture, which then was the "papa-san system."

Korean workers use hand tools to excavate a storage facility
Engineer School, 11-30-7

I organized what I called the "Sing Song Korean Construction Company." I had mostly young kids and mamma- and papa-sans, but those people from the rice paddies really understood drainage. They knew how to make water flow. They knew how to build stone embankments and retaining walls. In a short time we had good hardstands and good facilities in all the depots. The troops were living in deplorable conditions and we got that quickly straightened out. The morale improved.

The papa-san is the chief honcho in the community, and he's got his sub-papa-sans under him. If you want to get anything done you deal through the papa-san. He's the big man who makes things happen. I rounded up five or six papa-sans in the community where we were and told them I wanted to provide work for them. I had arranged through the civil support area to get food. I could offer them so much food a day for those who worked and did a good job, as well as some pay. I insisted on stopping all of the breaking of boxes and pilferage going on, but I would take the scraps that we had and make bundles of scrap wood. At the end of each week, those who did a good job for the week would get a bundle of firewood. Well, that was extremely appealing to these people.

By using the Koreans, in very short order, I got a hell of a lot of work done. They even did pile driving, by what I called the "Sing Song pile driving" crew. They worked with the local hemp rope and a great big wooden block they had. God, OSHA (Occupational Safety and Health Administration) would have had a heart attack if they had seen the way these people worked. They'd get the piling up, get some guides on it, and with a chant and a daisy chain, they'd pull that driving block up. Then they'd pull it down with a series of chants. It was amazing the amount of pilings that they could drive in a short period of time.

One Man's Trash is Another Man's Treasure

I had very little to do with the supply system until Korea. I don't really know if the situation was typical. I knew where depots were, and I'd visited them, but I had never had the responsibility of having to deal with the problems that existed. When you make something run, you get all kinds of problems. Not only do you have your men, you have all of the laborers you need to use. You also have to deal with all of the pilferage and black markets.

I contacted the local police. I told them this was their country and I was trying to stop all of this pilferage. Their troops and ours were suffering because we couldn't get all of the equipment up there due to the black market—would they help me? They said, "Yes," they'd help me. One day I got a call from the local police chief and he said, "We have recovered a bunch of your supplies. I want to see you." I went to his compound where he had all of this material. There were two piles. He says, "One pile's for me and one pile's for you." I said, "I can't go along with that. That's U.S. Government property in that other pile. For me to agree to give it to you I'd just be a part of the black market." He said, "I either get my cut or we don't help you any more. You can take it all now, but we don't help you."

I said, "What do you want that I have some control over that I can give you?" He said, "We would like the garbage from all of your messes from all of the differ-

ent companies you have. There's a big racket going on." I said, "What do you mean big racket?" He said, "Oh, big pay, big pay off." I said, "Okay, the garbage has to be disposed of. I'll make sure that the police can come in and only the police can pick it up." He said, "You tell all mess sergeants and all of the company commanders." I called them all in, told them what was going to happen, and said, "The police chief told me there was a big racket going on with our garbage. My God, if I can pin it down, I'll hang some bodies just like I've hung a few other people around here." Some of them squirmed with that.

I said, "The garbage goes and there hadn't better be any hanky-panky on this damn thing. It's going to go to the police so I get the cooperation of the police in breaking the back of the black market." Then the pilferage was reduced down to the smaller type of stuff, but material still got out.

In these countries, particularly in wartime, any trash, garbage, kindling, or any kind of material, had some kind of value and it meant something to somebody. It was part of their survival. You had to deal with that. A lot of officers would say, "Let the sergeant take care of that." When they see that chance for extra money some people cannot resist the temptation of being paid off. They figured, "This is my chance. I can pick up a bunch of money."

Plenty of it was going on. When I left, I had cleaned out an awful lot of it. I'm not even going to begin to say that I cleaned out all of it because I didn't have responsibility for all of it. What you wind up with in these base sections is a base section commander who was an infantry colonel. Hell, he had as much chance as a snowball in hell of getting command of an infantry regiment, or any kind of an assignment of any significance up in the combat area. He was a cast-off that they had to find an assignment for.

When I would go up to Col. Baker and say, "Look, I need more manpower down there," he'd say, "If I give you any more manpower I cannot control it. I did trans-

Salvaged truck and jeep engines waiting to be shipped from Mason, Korea, to Japan, August 1951
RG 111, SC-379213

fer some engineer troops down there and they made MPs out of them." I had to solve my problems myself. The way I did was to change the approach to the problems. For example, the only way we improved the maintenance situation was through a rebuild program in Japan, and by eliminating many thousands of small parts. I decided we'd go to a major assemblage exchange. In other words, if you had a problem with a fuel pump on a diesel engine, we'd just replace the whole pump instead of trying to repair the damned thing. You had to turn one in to me, which I then sent back to Japan for repair, and we issued a good one.

That reduced the number of parts and made sense too. The working conditions most of the time in the field were pretty brutal. These mechanics were out there trying to repair equipment when it was bitter cold, snowing, windy, or sleeting. Their cold hands were trying to repair components or sub-assemblies. It was no wonder that a lot of the maintenance concepts broke down the way they did. If you gave them a replacement component it was easier to work with.

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We soon found a significant improvement and reduced the deadline rate. We'd say, "You give me an old transmission, I'll give you a new transmission. You give me a gearbox and I'll give you a gearbox. If you've got a problem winch, we'll replace the winch and send it back. Let them repair it where they've got shops inside and warm."

There were mountains of supplies. I've heard about people going through the depots and picking over equipment to try to find what they needed. The divisions had enough priority that if they lost a 'dozer we'd try to find a complete replacement for it. When you got farther back from the frontline, into corps' units, then you ran into other problems.

Generators were our biggest problem, simply because people would not maintain them. Certain pieces of equipment are absolutely essential to military operations and a generator is one of them. You've got to be able to communicate. You must have certain lights and a certain amount of power so you could heat equipment. We would run these generators. A blower is required to start in bitter cold so that you can heat the light aircraft and the helicopters' engines. You've got to have some of this equipment—a blower, a heater—to get those engines started in that cold weather.

We always had trouble with generators simply because all organizations assigned the last GI that came in to take care of the generator. Nobody told him where the dipstick was, or to check the level of the oil, or water, or anything about maintenance. He knew it was going to take diesel or gasoline, depending on the type of engine, to keep it running. When it conked out, he'd say, "The damned thing's no good. Somebody didn't do their job."

The best engineer equipment in the Korean conflict was Caterpillar equipment. One reason is the inter-

changeability of the components on the grader or tractor. Some people liked the bulldozer, but I preferred the angle dozer with a Hyster winch on it because it gave you so much flexibility. You could get it into locations by using a "dead man" to get it up to an elevated area where you could go to work. If you had another one down below you working you could marry up two sections of a road, or three or four sections of a road. If you didn't have the Hyster winch, you didn't have the flexibility or maximum capability you needed. You couldn't angle that blade so that you could shove all of that material off on one side. With the bulldozer, you've got to swing your track to clear the blade. A lot of people don't like the angle dozer because it's got a longer blade. Nothing is perfect. I found the bulldozer's best application was digging sanitary fills.

You never know what you're going into, or what you're going to be called on to do, so I preferred equipment with the winch flexibility and the angle blade. The generators, the road graders, and the D-7 and D-8 angle dozers were really the workhorses. The dump truck and the truck-mounted bucket crane were vital for many different types of projects.

Korea was a bad situation in that you were constantly rotating all of your troops. You'd get men in, and they'd leave about the time you got them trained. We'd have to get it through their thick heads that, by god, they'd better put the outriggers out on that track-mounted crane before they ever started that engine up to move that crane. If they didn't, it was going to turn over. If it didn't kill them, it was going to wreck the crane to where it's no longer operable.

We had any number of individuals who were too lazy—or they thought it was too cold and unpleasant—to put the outriggers out. Those are the booms you've got to put out on each side and you telescope them in when you're going down the road. You don't dare use that crane with the bucket in front of it, even for a lift, if you don't put those outriggers out. That provides the stability to that truck because the truck has a high center of gravity. That was a constant problem.

The constant rotating of individuals caused a lot of the problems. In World War II, a person was in a unit and he stayed with that unit until the war was over, unless he was wounded, or something happened to him. Then somebody immediately behind replaced him, and it was usually some understudy. You had some continuity. The man wasn't always thinking about the day he was going to go home and figuring out how he was going to get out of doing something. That's why I understand in *Operation Desert Storm,* General Schwarzkopf said, "Absolutely no more. You come over here and you're staying here until it's over." I'm sure that the commanding generals who were involved in *Operations Desert Shield/Storm* had been in Vietnam, where commanders had the same rotation policies we dealt with in Korea.

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Lieutenant Trayers recalls the engineering challenges he faced in the spring of 1951 while supporting 1st Cavalry Division operations south of the Hwach'on Reservoir, just above the 38th Parallel. He and his men built sandbag bridges, strung concertina wire, cleared mines, and maintained floating bridges.

One of the missions I had was to build a sandbag bridge. We had no lumber supplies and we didn't have an air compressor for a while. We took the air compressor out to cut down some trees but it was parked on the wrong side of the down-falling trees. A tree fell on the compressor and put it out of commission.

Engineers use a pneumatic chain saw to clear trees from along the MSR
RG 111, SC-383355

Korean sandbags are about three times as large as American sandbags. They are not made of hemp; they're made of rice straw. I had about 50 Koreans who were permanently attached to my platoon to assist in doing manual labor. With the available labor and sandbags I decided to install a sandbag bridge.

As we constructed the sandbag bridge the channel through which the water flowed became narrower. One of the principles of hydrodynamics is that the cross-sectional area of the river multiplied by the velocity of the water gives the quantity of the flowing water. If the area of the flow is decreased, but the quantity of water remains the same, the velocity will increase. The smaller the area the greater the velocity. In our bridge the gap became too small, which caused the water to flow too fast, and it washed the sandbags downstream as quickly as we put them in the bridge. We hoped that when we put in a sandbag bridge it would allow the water to flow gradually over the top of the sandbags. It's almost a hidden bridge because you can't see it. In this case the velocity of this river was such that a sandbag bridge was not appropriate; we had to put some culverts in the middle of the bridge.

I sent a squad out to secure some materials to build culverts to install in the bridge. The squad leader returned

with a truck loaded with railroad ties to build the box culverts. We used a crane to place the culverts into the river and then put sandbags on top of them. Everything was going great. The bridge was holding and the water was flowing through the culverts.

When we were loading up to leave the construction site I saw a train in the distance with someone standing on the cowcatcher with a lantern. He was swinging this lantern back and forth. Suddenly, instead of swinging it side-to-side, he began moving it up and down and the train stopped. Several people exited the train and came up to the front of the engine and looked at the railroad bed. I was not aware of what was going on until the sergeant who had brought the railroad ties came over to me and said, "We'd better get out of here. That's where I got the railroad ties." We got out of there! The mostly sandbag bridge worked. They brought in a railroad repair crew and they replaced the missing ties so everything was fine.

The 120th Combat Battalion experiments with a new method for replacing barbed wire while under fire RG 111, SC-410975

The Concertina Wire Episode

Talking about a lack of supplies, the engineer battalion ran out of concertina wire so we had to make our own. One company in the engineer battalion was given the responsibility of making concertinas. Barbed wire stakes were driven into the ground in a roughly four- or five-foot circular pattern. Then the wire, which on the spools was used for single or double apron fences, was stretched out around the stakes in the ground to make concertina.

The battalion was putting pressure on the company commander, telling him that he wasn't producing concertinas fast enough. He got up in front of the company and said, "We're going to produce more concertinas, so tomorrow, the person who produces the most concertinas is going to get a three-day pass to Seoul along with the jeep." The next day, everybody worked their rear ends off. The one who produced the most concertinas the next day was awarded, publicly, in

Everybody worked their rear ends off. The one who produced the most concertinas the next day was awarded, publicly, a three-day pass to Seoul along with the jeep.

front of the company, a three-day pass to Seoul along with the jeep. Although no one else in the company was able to produce as much concertina as the winning soldier, the exercise increased the company's production of concertina such that it was able to produce enough for the entire division.

The 7th Calvary regimental commander was Dan Gilmer [USMA 1932]. He was a controversial person but a man whom I admired because he was a real go-getter. General Ridgway, who took over after Gen. Walker was killed, made a flyover of the Army front and complimented Gilmer with words to the effect that, "If every unit had as much protection in front of it as does the 7th Cavalry, we wouldn't have to worry."

I do believe that Col. Gilmer used to work 24 hours a day. One time he went out in a jeep and inspected the three battalions—actually four battalions, because a Greek battalion was assigned to the 7th Cavalry Regiment. Col. Gilmer inspected each of the battalions in the morning and gave the battalion commander a list of the deficiencies that were to be corrected, and he told the commander that he'd be back to inspect them later that day.

After he had lunch, Col. Gilmer borrowed a helicopter from the division commander and hooked a loud speaker up to it. He then went over and inspected each of the battalions from the air. In one case, in spite of the fact that he had given instructions that the barbed wire was to be increased in front of that battalion's sector, the men were not working quickly enough. Gilmer flew the helicopter over the battalion CP and talked into the loud speaker. He had a few "words of wisdom" for the battalion commander, from the helicopter, 45 feet above the ground.

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Organizing Engineering Support

When supporting the regimental combat team there's two ways to do it. The engineer company can either be put in direct support of the regiment, or it can be attached to the regiment. Col. Gilmer wanted to have it attached. That meant that the orders he gave were the ones that were followed by the engineer company, rather than having to go through the engineer battalion commander. He also felt that the equipment that was in support of the company was under his control.

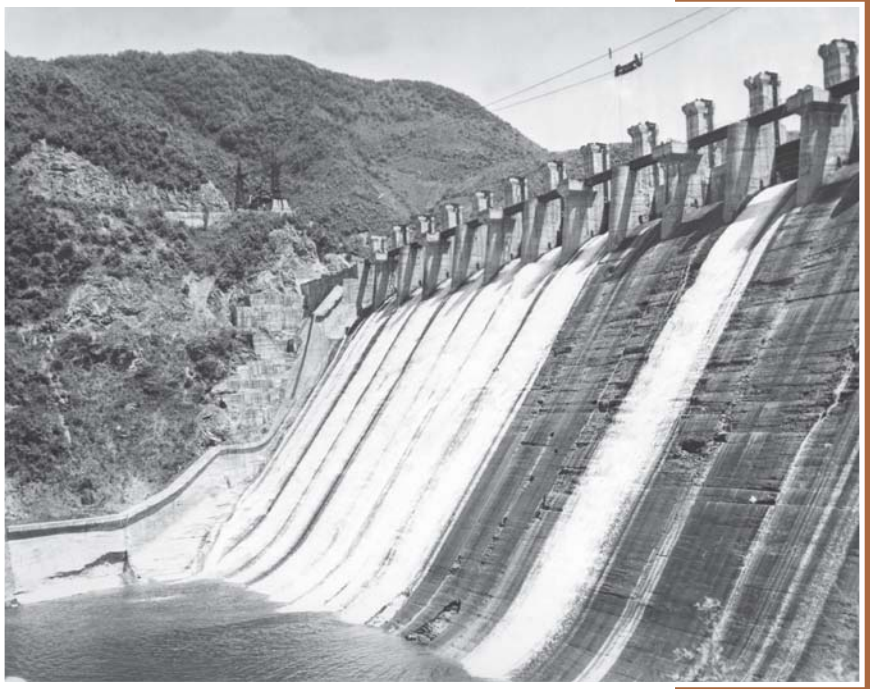
In one instance the graders from battalion were out maintaining the MSRs, contrary to instructions that had been given to the company commander by Col. Gilmer. Gilmer had said that the graders would be used to improve the roads to the medical clearing stations and to the battalion CPs. When he called Capt. Georgeff to task, Georgeff explained that the engineer battalion HQ said that he was to maintain the MSRs. Gilmer then told Georgeff, "Well, ask your battalion commander if he'd like to have evening meal with me tonight and we can talk about this."

The battalion commander came and after a rather hospitable supper was over, Col. Gilmer told him that the equipment attached to or in direct support of the 7th Cavalry was his equipment and he would do with it what he wanted. With that Col. Gilmore told the engineer battalion commander that if he didn't like it they'd both go see the division commander. Well, needless to say, not much equipment was attached to the engineer company after that because the company commander lost control of it to the regimental commander.

Clearing Mines…the Hard Way

My platoon was given the mission of clearing mines from the roadway. As we were driving down the road there was a big sign that read, "Road and shoulders cleared of mines." Going down the roadway were the tire tracks of a two and one-half-ton truck that had previously gone down the road. I was leading my trucks down the road and my jeep driver chose to put the wheels on his side of the jeep in the left-hand truck tire track. That meant the right wheels of the jeep were in between the two tire tracks left by the truck. That didn't make any difference to me because the road sign said, "Cleared of mines."

I was about 30 to 40 yards in front of my first two and one-half-ton truck and I heard this large explosion. I turned around just in time to see Sgt. Janus, the squad leader, being blown out of the truck. The two and one-half-ton truck had run over a mine in the right truck tire track. If my driver had chosen to put the right wheels of the jeep in that track I wouldn't be giving you this interview. Remarkably, Sgt. Janus only suffered two punctured eardrums. Battalion headquarters later changed the signs from "road and shoulders cleared of mines" to "road and shoulders swept for mines," which allowed for the possibility that there still could be mines in the road.



Damaged face of the dam at the Hwach'on Reservoir
Engineer School, 120-15-79

Breaking Bridges to Save Them

The Hwach'on Reservoir was quite a large reservoir with a lot of water in its pool. It had a gate system and the

I turned around just in time to see Sgt. Janus, the squad leader, being blown out of the truck. The two and one-half-ton truck had run over a mine.

Chinese were opening and closing the gates, which raised and lowered the downstream river level. We had a number of floating bridges downstream on the river that passed through the reservoir. The Chinese would open the gates at random, allowing a large wave of water to surge down the river, washing out the floating bridges.

We kept a light aircraft in the air all of the time and when the Chinese opened the gates our airborne observer could see the water moving downstream. He would radio ahead and the engineers would "break" open the bridges. They would take out the middle section connecting pins allowing the bridge to swing open, pushed open by the force of the flowing river. After the wave of water passed through the bridge opening, the engineers would have to reconnect the two sides of the bridge and replace the pins.

Opening and re-connecting the bridges was a difficult, time-consuming process. We wanted to demolish the reservoir gates in either the open or closed position to prevent the enemy from releasing large quantities of water downstream and disrupting our bridges.

The first attempt to destroy the gates was made by the 7th Cavalry. It was unable to seize the gates because of a lack of 105-mm howitzer support. In the second unsuccessful attempt the 4th Ranger Company suffered a significant number of casualties in its amphibious assault on the gates. The field-of-fire for the Chinese machine gunners was the tabletop-like surface of the reservoir. The 7th Cavalry never did take the reservoir. I think the Navy torpedoed the gates [30 Apr-1 May 51, Douglas AD Skyraiders from Air Group 19 knocked out the dam's gates and ended the enemy's tactic of impeding UN forces by selective flooding].

I was promoted to first lieutenant in November. When the battalion commander promoted me I was unshaven because my face was covered with impetigo. I hadn't had a bath in a number of days. I had lice, fleas, and scabies. It was a rather bad situation but he promoted me anyway.

One evening Eddy West and I were sitting watching a movie in the open-air theater when we were directed to report to the S-1. We were told that we were returning to the states the next day. We rotated out of Korea in November and Eddy and I were assigned to Fort Belvoir, Virginia. Eddy went to OCS and I to ERTC.

Cpl. Thomas Younteris (left) and Pfc. Gilbert Garfield, of the Engineer Combat Battalion, sweep the roads for anti-tank mines RG 111, SC-361471