

completed. I kept saying that I didn't want to commit my successor. But they wanted to know when it was going to be ready, and finally I said, "Okay, it will be in 1970." And five years after I retired, it was ready. I'm amazed that it worked. It was a good program. It was a big program. It took a lot of overseeing, however, we didn't have really any organizational troubles during my time. We had outstanding people except for the one thing we are going to talk about here in a few minutes.

I don't know of anything else you want now. I think the space program has been well covered. Doing the job correctly, being responsive, getting construction done on time, having a good organization, I believe are the highlights in the era of Corps support of NASA.

Q: Could we talk about the reorganization of the Army during your term as Chief?

A: When did you say it was proposed?

Q: In 1962. You were Chief at the time, and the Corps did not lose its Chief as others did. I would be interested in your giving some of the background that you recall from this reorganization effort.

A: General Hall was the man we put on that board, wasn't he?ll4

Q: Yes, he was in personnel.

A: So he was in on the whole works. We detailed him to that study board or whatever they want to call it. Yes, I remember. I'll do the best I can.

Q: Well, I'm particularly interested in how much you feel that your own personal response to what was being proposed helped the Corps keep as many of its functions as it did.

A: You're going to make me sound like I'm tooting my own horn if I'm not careful.

Q: Well, I'd say that some others have suggested that your role was crucial. Let's put it this way, you were Chief of Engineers at the time and if your response had been different the Corps could have

lost a lot more than it did. Other services did. And you said earlier that you thought this was one of your outstanding achievements.

A: Yes, I do. Well, as we've said earlier, I wasn't looking for the job of Chief of Engineers. I'd figured I'd come through some pretty tough battles up there in the fifties as deputy chief. I wasn't hunting for an opportunity to go through it any more, and suddenly I'm going to be the Chief of Engineers. It was a great honor and a privilege. One reason this turned out so nicely was that I was told by the vice chief of staff to stay in Quarters One at Fort Belvoir. That was time consuming for me riding back and forth, but the family was very happy with the decision. So I enjoyed it too.

When I came up to the Chief's office, I didn't have too much trouble getting read into things because I hadn't been gone but about eight or nine months. Very shortly thereafter I became involved in the space business and that was an exciting opportunity and took up a lot of time. It was a big feather [in its cap], I thought, for the Corps to be in that business.

Then good old Secretary McNamara reared his ugly head.<sup>115</sup> We kept getting more and more indications of reorganizations and changes and switching missions and things of this kind. I had to work fairly closely with some of his staff on a lot of things. We were in the housing business for the Army. One thing that got me down was when I was sent to meet with a Mr. Yarmolinsky, who had moved into office maybe about two months before.<sup>116</sup> I checked up and found that his principal experience prior to this time had been as the executive of some charitable organization with a staff of about four. And I was there discussing with him how we should organize for the housing program. I'm just trying to remember what happened. He began explaining to me the ways you manage and execute and organize. There were no ifs, ands, or buts; you did it that way or it was no good. And I said, "I think we're supposed to be analyzing this, aren't we?" Well, this was typical, to my way of thinking, of much of the attitude during the McNamara regime. They were the experts on everything. And on many occasions, many

occasions during the rest of that time, I ran into the feeling, the very clear feeling, that many of the McNamara studies were made after the decision had already been reached, and the studies were primarily to prove that the decision had been correct. This applied on many things including the reorganization of the Army.

Now as far as any decisions we got for the Corps, most of them weren't too vital except for the reorganization of the Army. And the reorganization of the Army, as far as I could see, had been an edict from DOD and at the Secretary of the Army level and that of Chief of Staff. They had more or less been pointed in that direction. Now, how enthusiastic they were about being pointed in that direction, I don't know. But I suddenly woke up to the fact that the Army was going to be reorganized and all the technical services were going to be decapitated. They were going to lose their head men. They were going to be treated the same as the artillery and infantry and other combat branches had been treated in recent years. It didn't make too much sense, but there it was. It was going to happen without much question. We had always been able to combat something like this to a degree on the basis of the civil works program, but in the eyes of the people working this thing up, that was just a little problem on the side that shouldn't be a governing factor. We tried our best. We wrote the right things up. We made analyses. I was fortunate in that General Decker was Chief of Staff at that time.<sup>117</sup> He had been chief of staff of the Sixth Army at the time Sam Sturgis was Engineer for the Sixth Army and had learned a lot about the use Engineers can be put to in wartime and the desirability of maintaining the capabilities that we had.

Q: Do you think some had forgotten that by 1962 since it was a time of peace?

A: Oh, yes. Let me put it this way. This same trend happens every time after a war when you reach a point where the commanders and those in fairly high position who have had experience in combat across the board have passed on, retired, and disappeared from the scene. And the young ones coming along are gung ho, but they don't recognize the

requirement for logistics and engineers and the like. It isn't until they get in the middle of a big struggle and need some roads or airfields or river crossing support, when suddenly they begin to see that there is some advantage in having engineers for removal of mines and for ferrying operations and the like. And this was one of the interim periods.

Now Decker, going back through his service with Sturgis, had a lot of respect for the Corps. He had told me with obvious pleasure that he was pleased to see me become Chief of Engineers. I don't know how much he had to do with accomplishing it, but he was Chief of Staff when I made it. And I had worked with him while I was deputy chief. In fact, he intervened in the tail end of that Air Force fight just at the right time. He supported us and more or less helped us stand down LeMay and a few other people. I said I didn't know the turning point, but General Decker's support was really the culminating action that started the conflict downhill instead of pushing up all of the time.

So now I went to see him about the reorganization and talked with him. Basically, I got the feeling that he didn't necessarily like the concept, but it was something that had to be analyzed, and they hadn't made up their minds yet--don't give up the ship. But it was pretty obvious to me that this reorganization and elimination of branch chiefs was the coming trend. And a lot of people in the Army were pleased to see it happening without any question because, basically, in my opinion, the infantry, armor, and artillery crowds had felt like they had lost their father and mother. Why shouldn't the ordnance, Engineers, quartermaster, and all the rest of them do it too? So many people in the Army were pleased with the coming change.

I'm an old-fashioned fogey and don't believe infantry, armor, and artillery should have lost their chiefs either. I believe it was desirable to have some senior attention focused on the development of the careers of the people in each of these branches. I think we lost something when we took that capability away because now you just have in essence a few motivated lower ranking people

sitting at the personnel desks for three years, and then the next men come. There isn't any continuity that I can see. particularly for the combat branches, and the same thing must be true now for the quartermaster and signal [corps] and everything because the personnel business is run by short-term assignment. Except that the Chief of Engineers can still talk and suggest and at least be looking.

Q: Didn't the combat branches lose the personnel function before 1962?

A: Yes, that's right.

Q: Then your philosophy was that it was an accomplished fact. Just because others had lost personnel didn't mean the Corps should.

A: And we had the problem of the Corps of Engineers, it wasn't a problem, it was a pleasant situation, of having the civil works program. We had to retain some degree of existence in order to continue to do that. Even between wars the Army wasn't necessarily too excited about supporting the Corps of Engineers. They thought that in many instances we had a boondoggle. But when you got to the people who had seen the Corps in action in major wars, you got pretty good support because our point was made that this civil works program gave US an opportunity to develop talents and experience and skills of the personnel that in turn paid off in the war to the military. And there's no doubt about it, it did happen. Your Wheelers and your Clays and your Clarkes and all those people. Now Clarke didn't have any real connection with civil works except he was in the system. He may not realize it, but being in the system he was benefiting to an extent. But you had an awful lot of people who did well and showed up well and got an opportunity to do big things that they couldn't possibly have done if you had nothing but some sidewalks and some tennis courts that you get funded normally in a troop construction situation.

In every war and between the wars, you have a drop in this Army support and as again I say when the shooting starts and somebody wants a man to go out there and remove the mines or put a bridge across or blow an obstacle, suddenly it begins to come

back the other way. George Decker was completely supportive of us to the extent I think he could get away with, that's probably what it amounted to. However, I'm not too sure he was still there at the time the final blows came. I think he'd retired and "Buz" Wheeler had moved in as Chief of Staff.118 And he was a much more theoretical gent than George Decker. But anyhow we went back over there time and again, and we had opportunities to present our views to this committee and so on, and it was clear that their minds were made up. I didn't know quite what we should do. I knew one thing, I knew we better do all we could to maintain contact with the Army. So I told my top people that. "Look," I said, "anytime we get any kind of a question or inquiry from the Army, let's give it the real go when we respond. I'm going to go to every meeting that I'm invited to. I'm not going to have an excuse that I had to be on the Hill working on the civil works program. I'm going to be available, and if I'm not in town I want my deputy to be there no matter what. Whether it's a little insignificant thing or a major thing, let's show them that we are part of it." We got a few chances to soften the words a little bit in some of the findings, not enough to really make much difference, but I really think what happened to save us was to a large extent our capabilities.

One capability you wouldn't necessarily think about. About this time while this is all flowing along in that direction, there are efforts made to get all the tech services to join hands and go to the Hill and all this kind of business. I just said, "No, the Corps of Engineers is going to take what the Army decides. We're not going to go around behind their backs to try and solve it. We're sorry if it's hurting some of the other tech services, but we're going to play the game by the Army's rules." About this time things began to hotten up out in Vietnam, and there were requirements for better intelligence and better analysis. I don't remember how we first got in it, but at one of the regular meetings of the Chief of Staff the point was made that we needed to have a quick study made of this and where can we get it done promptly.

I think I spoke up and said, "I can get it done for you in our Strategic Studies Group." They said, "What are they?\*" I started explaining. They asked, "You have one of those?" I said, "Yes, we have one of those." They wanted to know where we had it, and I told them it was out at the Map Service. "Why do you have it," they asked. I said, "We have it for the Chief of Engineers to have the capability to make recommendations to the Chief of Staff and [to] support the military plans of the Army if the opportunity offers." So they said, "Get us one." We had a recommendation and backup in about three days, and it hit just right. About that time the Chief of Staff said, in essence, "I want Wilson at all our staff meetings considering Vietnam [that] we are now conducting because he's got this tool we can use and we need him." So I suddenly began getting invited to the senior staff meetings of one kind and another which we hadn't been doing for a long time.

We kept using the Strategic Studies Group as a key to unlocking some of these things. And they did a beautiful job. There was no 'place in the whole Army, intelligence and all, that had the balanced, cohesive group pulled together with a capability like we had. And suddenly I had the opportunity in the staff meetings to speak up and make recommendations. I kept recommending that we promptly send some means over to Vietnam to improve ports and prepare for receipt and storage of supplies and equipment, so that if the decision was reached to go we'd have something to land on and a place to put our supplies. I'll put it to you this way, within the next three to six months, we had rejoined the Army on a pretty high level.

Whether the Chief of Staff made .the change or what, I don't know. But suddenly when the reorganization plan came out, we retained a presence. It was a pretty well-chewed--down presence. We lost most of our troop operations staffing, we lost direct control of personnel, but instead we had to operate through a branch of the Army's personnel organization that stayed with us in our building, and we had direct access to them. Basically, it enabled us to give to the Army the kind of support that was necessary in getting ready for Vietnam.

In our own office, I made a decision [that] we were going to comply with their directives, but we were still going to retain some kind of a unit that could monitor troop "ops" for the Chief of Engineers, nothing like we had had before. We weren't going to fight the problem, we were just going to have this unit and keep some airfield capability. One particularly qualified man was being tempted to go down to Vicksburg lab and leave the Chief's office. He'd served in OCE a long time and had been an outstanding representative of OCE on various troop planning groups. He knew his way around airfield construction and things like this. I talked to him and said, "Look, I can't tell you not to take that job. I will tell you that I am going to do my best to continue to hold a presence in your field if you can stay with us. It's my feeling that in a matter of a year or two you will find that you are far more influential than you are today or were yesterday." He gambled on me and stayed.

That's the way we tried to keep our hand in under the reorganization. We got way down in size, but we still kept that Strategic Studies Group out at the Map Service, and we used them frequently. We still kept just a little bit of capability to go speak on the tactical side to the Army. Within another six or eight months that was becoming more important. And the first thing you know, we began to rebuild a stronger capability. We rebuilt an intelligence capability as Vietnam requirements came along.

Q: What more can you say about the Vietnam involvement while you were still Chief?

A: Well, I can only say that it was developing and as it got more important, there was a lot more time devoted to it. We were rebuilding this capability. I was going to every staff meeting I was invited to, or my deputy was going. We got much more involved. I made a couple of trips to Vietnam. I had my deputy make a couple of trips. In other words, we were trying to be ready to help if there was something they wanted. I think it paid off. I think that's what did it. I don't know. What did Bill Hall think?

Q: Well, I think he felt some of the other tech services lost more because their attitude was different. Of course, maybe they didn't have as much to offer.

A: Well, they probably didn't, that's it.

Q: And maybe they didn't present what they had to offer as effectively as the Corps did.

A: That could be. We got another break I think before the end of my tour. Earle Wheeler, as I say, was more of a theoretical man and he moved up the ladder to joint chiefs, if I remember rightly, and Harold K. Johnson moved in.<sup>119</sup> Now Harold K. Johnson I'd never known. He'd been a prisoner in World War II, but he was a pretty solid citizen, levelheaded. I found with a little educational effort on my part I got him around to thinking in terms of what the Corps could do for the Army and the benefits we got from doing the civil works program, the NASA program, and having these outside jobs that didn't cost the Army anything but a few spaces. Didn't cost them any money, and it gave our people a tremendous free education without the Army putting the money up. I think that after he took office, at least for the next year-and-a-half before I retired, we had it back on track. Now, it was not the same situation it had been before, but it was not too different.

Q: And a lot better than it might have been..

A: A lot better. During this same era we had one exciting period when Kennedy got shot. I was living down at Belvoir. It was on a weekend when everything broke, and they decided suddenly--I guess it was probably Friday or Saturday--they decided they were going to bury him in Arlington. That really put us in the middle of things. We had to get over there and locate the grave, work with the cemetery staff, survey the plot, and recommend its location. I assigned Major General Jackson Graham as our personal representative on the group that was getting everything coordinated under McNamara's direction.<sup>120</sup> Shortly, I asked him to give me a report. And he said, "You know they're talking about putting this grave right in front of the Lee house." I said, "Oh, brother. Your mission is to try and get it down over the military crest?"

This was not necessarily too easy. Secretary McNamara was Jacqueline Kennedy's personal representative at the site. But, actually, we succeeded. We got the grave down. It is a very lovely spot, just about where the military crest is, but the crest of the hill itself with the Lee mansion is far enough away that it can be looked at as separate. I credit Jack Graham with having accomplished this action, which I think was a service to all citizens of the U.S.

Now 'about that same time it developed they wanted an eternal flame, and guess to whom they turned to get the eternal flame? They decided on Sunday they wanted the eternal flame. The funeral was on Monday. So, suddenly, again a mission arrived to the Chief of Engineers, this time to produce an eternal flame by the time of the burial in the morning. We immediately assigned the mission to General Cassidy, who had been my deputy and had replaced me at Fort Belvoir as commanding general. So he called on his specialist training people to come up with something. We all got together on the floor of an Engineer School building with a concrete floor, where we laid out different things that might work and tried to figure out what we could do. We figured we couldn't possibly get in a permanent gas line that soon. We'd have to go to butane gas. We'd have to get several bottles of butane gas and put them in a bunch of shrubs there and run a tube underground over to the grave site. And where could we get the thing that would produce the flame? Well, we started hunting and we found people who knew where such things could be. And we started people clear up in Maryland going to pick up some of these things and some butane gas tanks. We designed right on the floor there the concept of what would be the eternal flame. The school troops began fabricating it.

The next morning early I went up to Arlington to see how we were doing, and there they had it. It was all ready to go. As a matter of fact I tested it by lighting it because I didn't want it to blow up or cough or something on Mrs. Kennedy. So I was given the privilege of lighting the first test run. And it worked. I looked where the grave had been dug. It was a very nice location. I was very proud of the fact we had gotten Jack Graham, who

was capable of getting it there. I looked over and the grave was oriented on one angle, and Memorial Bridge, which was supposed to be what it was aimed along, was on a different angle. I went running to find the cemetery manager, who said, "It's all right. When we put the equipment over there that lets the coffin down, we'll line it up right." The hole was bigger than the coffin, so that was no problem.

I ended up doing provost marshal's duty out there, too, because just as I was standing up there looking and deciding to go home, here came busloads of people. And they started tramping all over the grass and running up to look at the grave. I started running out and waving them aside and hollering at them to get off and go around, come around the road, stay on the roads. Pretty soon an MP showed up, a major I guess he was, and he said, "Thank you, sir. You have it started, now I'll take over." And he took over and organized it from then on. It was a remarkable achievement to get all that done and it showed up pretty well. That didn't hurt us with McNamara, I'm sure.

Oh, incidentally, the edict that came to me, presumably from McNamara, transmitting Jacqueline Kennedy's request, was that this eternal flame would have colors shifting all the time. I just told the emissary that came to see me, "That's fine. I accept the fact that you told me. But I'm going to tell you now, we're going to have a one-colored flame. We're not going to make a Coney Island out of this thing." And so, right or wrong, we got a one-color flame, and she was very happy with it. I feel that she didn't know that somebody had made that suggestion. I didn't go looking for somebody to cancel it. I just said, "I'll produce a flame and you'll like it." That didn't hurt us at the Defense level.

We also got involved then in hiring the artist that was to design the tomb and in supervising the construction. And this was all worked pretty closely with McNamara's office. He was involved because he was a Kennedy friend and he was Secretary of Defense. But again, little things like that helped ease the pain. And about that time the Chief of Staff was Harold Johnson, and I

think he saw the point and supported our views pretty generally. So the slide terminated at a point leaving us hanging a little bit over the precipice but not all the way. And to the best of my knowledge, while I was there we rebuilt our position pretty strongly and I think that same thing applies for some years after that.

Q: How was the Corps' relationship with Congress during this time?

A: It was pretty good. I'll tell you, with the effort I was making towards being in the military picture, I carefully allowed and encouraged the director of civil works to have most of the contact up on the Hill. So I didn't spend a whole lot of time there.

Q: Who was director of civil works at the time?

A: Jackson Graham was director of civil works and a good one. So rather than me running up there and responding quickly, I figured it would be better for the director of civil works to do it. It worked very well as far as I'm concerned. I saw lots of them at parties and occasions. If there was some reason to go, I didn't hesitate to go.

Q: Did Congress get involved in the reorganization?

A: Yes, to some extent. But I don't know how thoroughly they supported us. We were just a little bitty cog in this whole thing. They had a veto power. They had given authority for the reorganization. I'm not too sure how effective they would have been, although I'm sure some of them would have spoken up and tried to protect us, particularly in regard to the civil works program. But again, I tried to avoid stirring them up.

Q: How did you get along with Presidents Kennedy and Johnson?

A: Fine with both. Jack Kennedy was personable and pleasant to be around. Outside of one or two phone calls, one of which I have already mentioned, my main contacts were on trips to dam breakings or dedications or a visit to a major civil works project, such as a visit to Oake Dam, where he, Secretary of the Army [Cyrus R.] Vance, and

Secretary of the Interior [Stewart L.] Udall stopped for an inspection and briefing. And there were limited social contacts.

President Lyndon Johnson I had known as a senator, and I had met him occasionally as vice president. He knew his way around the White House and he knew our strengths and our problems. When his staff asked questions or for any assistance, we responded promptly with what we could do. When they wanted something that we didn't think we should do, we politely suggested that this was not for us. Again, I had fairly frequent contact on groundbreaking and dedications, and less social contact. But as far as business, I didn't get called to the White House by either President very frequently.

Q: Did you still have the phone link with the White House?

A: I don't remember but two or three calls, mostly in the Kennedy regime. I presume it must have still been there with Johnson, but I don't remember. I know that I stood at attention promptly whenever that phone rang.

Q: What were the most important civil works projects when you were Chief? I know that you stressed the importance of comprehensive river basin work, planning, and that you created a deputy director in civil works for comprehensive river basin planning.

A: Well, we got started on the Cross-Florida Barge Canal. We did get more into the comprehensive basin planning and, as you say, we did some reorganization in civil works to give added strength to that. I think it was necessary and useful. We had a lot of major basin problems that had to be worked on and solved. We had a lot of major projects that were coming up for authorization. I would say we had about a balanced civil works load as compared with prior years and subsequent years. Of course, we had the usual floods and flood fights.

Q: Do you have any recollection of the controversy surrounding the Kinzua Dam project?

A: That was a troublesome project, the Allegheny or Kinzua Dam on the Allegheny River in Pennsylvania. It was authorized and funded by the Congress but since it involved relocation of some Indian towns and cemeteries, the Indians, the Quakers, and the Today Show, then featuring Hugh Downs, took up the cudgels. Many federal agencies, including the Corps of Engineers, did their best to overcome objections of the Indians and several modifications in the project were approved in the hope of so doing. But apparently nothing would satisfy the Indians but to stop work and leave them alone. Old treaties by the fledgling U.S. and the Indians figured in the arguments. And as long as the Indians weren't satisfied, the Quakers weren't satisfied, and as long as the Quakers weren't satisfied, Hugh Downs would continue to feature the project on TV.

We tried to interest Hugh Downs in visiting OCE to let us show him any documents, or calculations, or plans that he wanted to check on. But he refused and insisted that I come and discuss the problems on Today with him as the moderator. Jackson Graham, director of civil works, finally went, and as we had expected, got far less than a fair shake from the moderator, who clearly favored the Indians and the Quakers.

But about a year later, Hugh Downs consented to spend a day in OCE. We opened up our files, answered questions, and convinced him. Before he left he told civil works that he had been misinformed and was sorry he had presented an incorrect picture of the Corps position.

Later that week he spent a few minutes on the Today Show repeating his statement, but it attracted little attention. However, the opposition gradually died out, and the project is complete and in operation.

Q: What about disasters during your term, like the Alaska earthquake, for example?

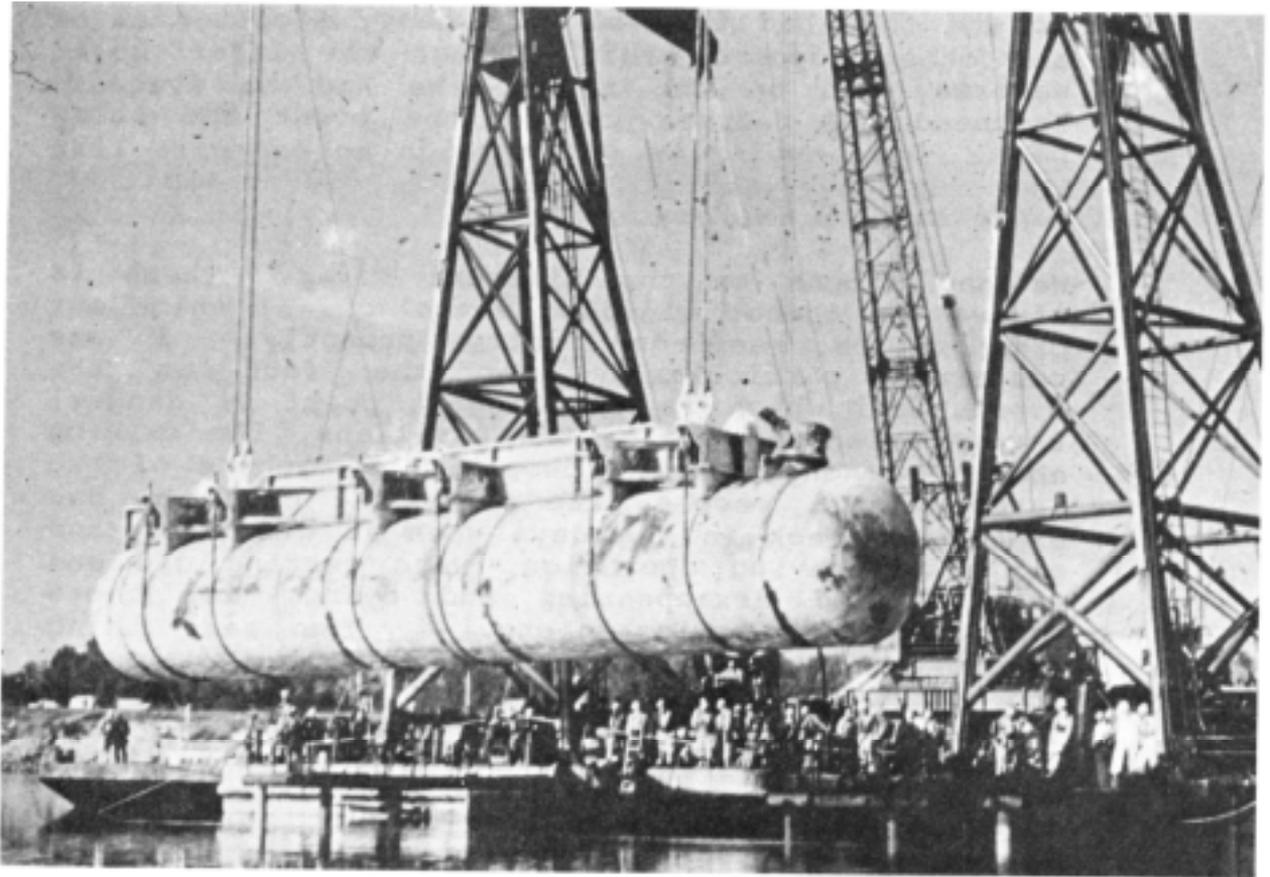
A: Well, the earthquake in Alaska was quite a change from the routine. The normal government agencies that should have handled it were pretty slow getting cranked up. I made a couple of trips. I

went up with the secretaries of HEW and two or three of the agencies on the civil side that could have done the job. When we got through and saw everything and came back, we more or less agreed that the Corps ought to get into it with both feet. So we volunteered and were directed to go ahead and do it. We collared experts of one kind and another and got them up there pretty fast, and we gave additional authorities and monies to the Alaska District. Again, it was a joint federal effort. We weren't running high, wide, and handsome. We had certain basic things to accomplish which I think were pretty darn well done.

That earthquake was really something. The place with the pretty homes near Anchorage was a sad sight. It was amazing. It looked like a loaf of precut bread, and you just took the pressure off one end. Quite a few of the streets and homes had just gone over the brink. There were a lot of engineering decisions that had to be made in Alaska. What was safe to rehabilitate and what wasn't. We participated in that to a large extent. But it was more or less under the same procedures as a standard disaster business where certain other agencies call the shots, and we offer our services. If they take them, we have certain designated authorities and requirements which we can then carry out.

"Operation Chlorine" was a nerve-wracking experience for quite a while.<sup>121</sup> A barge with chlorine in it was in a wreck on the Mississippi River and sank. Everybody was scared to death the chlorine was going to escape and trickle up through the water and spread over the countryside. In the first place, we didn't know where the thing was. The Mississippi River is deep in that area--it was down just below Vicksburg as I remember it. The Mississippi River Commission and the Vicksburg District were involved. I think it was down towards the Natchez area.

We got experts and contractors that could work on it. We had to hire contractors clear over in Texas to come and bring equipment that could pick it up. Everybody was concerned day by day as time went on, and the tank was still under water. We located it fairly promptly and designed a method of picking it



**Operation Chlorine, 1962.** Crane Loading Salvaged Liquid Chlorine Tank Onto a Barge.



**Anchorage, 1964.** Residence Destroyed by Earthquake.

up and then had to send this heavy floating crane and other support craft through the Intercoastal Waterway and up the river. We had to evacuate thousands of people just in the event the thing blew. Once again, we got through an exercise like that with everything working. It didn't hurt our reputation in the region.

We had floods on the Missouri River. There is always the threat of flood someplace. I think our organization responds pretty promptly. I was concerned particularly over the fact on the Mississippi which is the biggest point of danger; the experienced people, the civilians, I'm talking about the nongovernment people, the members of the levee boards, people like this, the ones who had experience back in the days when it was touch and go, a lifesaving operation, were getting old and retiring and disappearing and dying, and there wasn't enough coming along.<sup>122</sup> The same thing was to some extent true with our civilian employees and our military. A flood fight behind a levee is just a different kind of operation. How you ring around a little hole with sandbags to raise the head and keep the hole from expanding. Just lots of things like that.

I do know that during this period, whenever we had an opportunity to get into a flood fight, we tried our best to bring people from other Districts and Divisions there to work on it and gain experience so that we could reeducate. We went out of our way to take some of the levee board people. Pay their way, take them in an airplane, and take them up and show them. Let them see what was going on at some other site, which I believe will pay off. I think it is something we've got to keep up in the Corps every five or ten years because that expertise dies off.

Q: And that is one of the major strengths, to have that expertise available for emergencies?

A: Yes, that's right. But again you have to look to the levee board, the privately elected or appointed people, because they have lots of the responsibilities. Unless you kind of encourage it and make it possible easily to do this kind of business, they are just not going to think about it.

Q: When you were Chief of Engineers, you stressed that hydroelectric power fit into multipurpose projects and you said that it shouldn't become the stepchild of such projects. Could you comment?

A: Are you talking about whether we should encourage or discourage hydropower in the projects or whether we ought to build projects solely for hydropower, or what?

Q: How do you feel hydropower fits in? Should it receive greater consideration in planning multipurpose projects?

A: Well, I'll put it real simply. Hydropower is a particularly useful kind of power because if you have it and it's stored, your water is available and can be turned on on instant notice. It doesn't take a warmup time or a break-in time or anything like that. So the more times you can have potential power, not that you don't want to use it regularly, but the more times you can have additional potential power sitting there in the form of water in an elevation where it can generate in a hurry, the easier time the network countrywide has of accepting -problems and overcoming them. I personally believe that wherever we can generate hydropower without it costing us too much money, by that I mean where the benefits exceed the cost, I feel that we should try and include it.

Now that runs afoul of some of the environmental things in that when you build a reservoir you drown out a lot of land. But if you are going to have a project anyhow with a reservoir and so on, I'm convinced that if you can add the power to it, it is a desirable thing. I would hope that you would normally sell it through existing systems rather than setting up separate government distribution things. There are both. I'm not going to say you shouldn't let the government have it too, because I think we should. But you should use existing organizations and add potential to those in preference to adding new organizations solely on the basis of the federal hydro.

Q: What do you see in the future?

A: Well, the reason I don't say there is a greater future is that we are running out of economically developable sites to a large extent. As you develop these projects, you are using up one place. What would bother me would be to see you building something in a location which could be hydropower without including it so that you lose that opportunity. It is *never* going to be the major power source in this country. But it is particularly useful when you are trying to run a network like Alabama Power or Southern Power. There is a complete lack of problems in cutting it off or putting it back on. There's no problem, whereas with a steam plant or some other power source, you can have difficulty in an instant shutdown.

Q: We haven't said much about the environmental movement and the increasing demands on the Corps to reflect a greater awareness of environmental concerns.

A: Basically, that has blown up since I retired. Now I did describe what we went through in the St. Paul District, and in all honesty I still maintain that the Corps was one of the first environmentally aware agencies in this country. Like the public parks, the Corps established a lot of those like Yellowstone and others and got them started. I believe that we were already--take the anadromous fish in the Columbia River basin--we are doing a tremendous amount of work to prevent damage to fish life of that area, and we're trying to compensate for the effects of interference with the salmon runs. That's been going on for one devil of a long time.

Now, we were not quite as environmentally aware back in my day as people of today as a result of some recent activities. If you are talking basically of when I was Chief of Engineers, I don't think there is much more to say about it. We had beach erosion thoroughly analyzed but it was a pretty expensive problem to correct. I was president of the Beach Erosion Board as deputy chief.<sup>123</sup> I was [chairman] of the [Board of Engineers for Rivers and Harbors] as the deputy chief also, and this gave me a chance to know what was going on in civil works to a large extent,

because the culmination of their efforts would appear on the desk every so often. We had a lot of environmental happenings or influences in the beach erosion field. We pumped in the beach down here at Biloxi, which was one. But again, we weren't as concerned as we might have been of where we put spoil from dredging,. But as far as the hunters and the fishermen, I'm pretty sure we were thoroughly aware of them and their wants and desires. They didn't have quite as big a clout then as they do now, although they had a pretty good size one. When they wanted to get stirred up on something, you had to listen.

Q: Given sentiment at the time, do you think more was expected of the Corps than should have been? The indication is that you maybe weren't as concerned about some things as you should have been, but --

A. But we were a lot more concerned than most everybody else. That's what I'm saying. What I've seen standing on the sidelines--and I've been involved in it here in the Mobile area since I retired--there was some good that came out of the increased emphasis on environmental protection. However, I'm not sure yet that they have accomplished as much as it cost the country in terms of rules, and changes, and prohibitions against certain things that are going on in the name of the environment. But again, the awareness was a desirable thing. It's true with the Corps as well as with everybody else. I would say that the military in the Corps have accepted the requirement more promptly than some of the oldtime civilians, although by and large the Corps has, in my opinion, responded almost too well. It's now almost impossible to accomplish anything.

Q: Do you mean because of the impact statement requirements?

A: Oh, not just the impact statements, the whole thing. We've got some local channels here that have been in the "just before start of construction" era now for *over* 10 or 12 years.

When you're just about ready to go, somebody else raises their head. And it just takes one or two standing on a street corner and hollering and

pretty soon you're stopped. And the Corps has gone through that so much that they tend to stop without waiting for a court to act, which may or may not be a good idea. But that's long after my retirement. I'm on the other side there.

**Q:** And how do you react from that vantage point?

**A:** I think they've gone too far. The pendulum swung, and it's time to swing back a little bit.

One of the interesting projects during my tour that I'd like to mention was the expansion of the military academy. I had some fixed ideas on the subject but that wasn't the main point. The main point was they had to be done. The military academy had a planning board and came up with concepts, and we assigned the mission to the North Atlantic Division and the New York District. To be sure we got off on the right track, I personally went up there several times and met with the planning board and the superintendent. There were **many**, many studies of ways to get traffic around the main parade area, the plain, but the goal really was to pretty near double the size without changing the basic appearance of the military academy. I'm convinced that the results today show that we really succeeded.

We had an architect-engineer: we had the District and the Division: we had the Chief's office: we had the Pentagon, and the board up there, everybody involved. But basically what we did was build additional barracks outside the line of those that were already there, to about the same height the current barracks were, but with lower ceilings so that we got five floors where there had been four. We changed the design. Instead of having a stairwell going all the way up to the fourth floor and serving just four rooms on each floor, as had been traditional forever, instead of vertical living, we went to horizontal living. This saved space, and also with the fifth floor, we actually got in essence twice as many people living with the same per-person criteria that we'd had before without really materially changing it.

Now when they got the barracks finished on the outside of the old quadrangle, then they took down

the ones inside and moved the cadets over. They left one of the old divisions standing there. They came to me to ask if as Chief of Engineers I had any objection to leaving the first division of central barracks. And I said, "Do you happen to know where I lived my four years at the military academy? I lived four years in that first division, so you have a strong supporter in saving the first division." The mess hall was the key to the thing. The way we solved that one was to build a mirror image of the original one, which had been back into the Rocky Hill, a mirror image of it out towards the plain. You look at a picture of it and you won't notice any difference, really, it's right between the two barracks. You've got twice the number of seats, the same poop deck or whatever you want to call it, where the officer in charge and the officer of the guard sit. You could look both ways up there. They did a beautiful job. And by moving the barracks out to meet it, it doesn't look like there has been any real change.

The major problem, that beautiful chapel with a gorgeous organ, couldn't stand explosives too close to it. You couldn't dig the rock out without endangering that. But we ended up with what looks just about the same. Now there were other features, hospitals and things like that, but a lot of effort went into the design, the layout and concept. Several academic buildings were done at this time or later, after I retired. The main living features were what we got going on strong while I was Chief. These other things went along later. There was a new cadet activity building, a new hospital, a new academic building, and a new library. The new library came while I was Chief and nearly caused me a divorce because my wife found out about it and asked how we could tear down the beautiful old one. We've got four times the library in the same square-foot space, and now you go up there and don't think anything about it at all. It's on the same location and utilizes more efficient design and everything. It's a darn good library building.

Incidentally, I was responsible for letting them get their stacks in. We had a problem of money, as usual, but I realized that if they didn't put their stacks in on all the floorspace they were going to

put them in to begin with, that there was going to be a terrific job of moving everything when they added additional stacks. so I found a way of getting a little more money to buy stacks on some of the between-floor floors that they added up there. So they could go ahead and plan to put the volumes in and put them in in the general areas they were going to have them stay right from the beginning. That made the librarian and the superintendent and a lot of people real happy. That was a personal decision on my part which I don't regret. It's a good deal.

It was a very interesting project. It's hard to do it with the cadets there and not interfere with them. But it was expensive; expensive to a large extent because of the location. There had been congressional investigations galore into the subject, and basically it's the labor union principles and agreements and wages and rates, travel time allowed from New York, all based on New York costs transposed up there. This caused a lot of trouble, and it almost killed the project. It got worse after I retired, and Congress questioned the veracity of the reports being given. After I retired I became a member of the consulting board appointed by the superintendent and the Secretary of the Army, really, to look into it and report to the Congress what the costs should be and why it was this way and that everything was being done to hold them down that could be and that we ought to continue to go or not continue to go. I served on that board for close to three years. I made at least nine visits. They canceled the board along about September or October of '73, figuring that the job was done--it had started in September of 1970. It had some high-level architects and engineers and academic types. M.P. O'Brien out at the University of California was a member of the board. General Johnson, the former Chief of Staff of the Army, was a member of the board. It was a pretty well-qualified board, and it was a pleasure to serve on it. I was delighted to see it clear the air, and I think we did some good in reestablishing a little confidence in the estimates. That came after I had retired.

Q: Could you comment on your part in getting the Corps involved in postal construction after you retired as Chief?