active. At one time when we were on Bataan he conferred with me and Commander John D. Bulkeley on a proposal to ship the Air Force pilots to China. We had no planes and we thought it would be feasible and desirable to send these pilots by PT boats over to China so they could join our American Air Force over there. But that proposal was squelched. But George and I worked very effectively on Bataan in connection with our joint Air Force situation and also during the early stages down in Australia and New Guinea until he unfortunately was killed in an air accident at Darwin. In fact, the time that he was killed he and I were supposed to go on that same trip together. But things came up and I had postponed it or changed it for a mission that I had to take in New Guinea.

Q: He was a very excellent air officer?

A: Excellent, excellent.

Q: He is one of the air officers about which very little is known. Unfortunately, he doesn't receive the credit he should have.

A: Unfortunately, he didn't have too much time during the war because of his unfortunate earl y death. But I think we would have heard much more of him in the event he had continued to live and operate.

Southwest Pacific Area: Australia and New Guinea

Q: When and how did MacArthur tell you that he was ordered out of the Philippine Islands and that you were going to go with him?

A: I was advised by General Sutherland in one of my frequent trips over to Corregidor. As I say, I was on Bataan all the time. I'd make a trip over to Corregidor at night, check up on the engineer situation over there—utilities and reconstruction of the bombed, damaged utilities, and so on—and also on our small airfield that we had up at Corregidor, engineer problems such as that. It was then that I was told by General Sutherland that I was to accompany the group.

Q: What was your reaction when he told you that?

A: Mixed. We sensed that it was impossible to hold out forever. **We knew** that we were not going to get any major reinforcements. But we thought that this would be an opportunity for General MacArthur and the staff-going down to Australia-whereby we'd have access to planes and forces, and in that way we felt that we had a greater chance of getting reinforcements back into the Philippines, hopefully rescuing our command before the situation was completely lost.

Q: You left Corregidor the night of March 12th in a PT boat headed for Mindanao. Could you recount what your trip was like?

A: There were four boats. Mine was the last. Three of them had taken the personnel from Corregidor and the fourth came over and picked up those of us on Bataan-and there were very few, incidentally. We proceeded through the night, with blackout because the Japanese controlled all the intervening waters. Our boat, which was the last, during the night conked out with motor trouble. We fixed it up. Having lost distance, we restarted with maximum speed. Again, the motors failed, but finally we got them going. Then early the next day, just as dawn was breaking, we were approaching a little spit of land and our commander looked back and through his scope saw this vessel approaching us. He shouted, "A Japanese destroyer is headed down on us. "

He said something to me and General Akin [Brigadier General Spencer B. Akin] -we were the senior officers aboard-like 'Shall we oppose? If so, it may mean the lives of the men and the boat. " Well, we had gotten that far and we said, "We certainly will. " So he got out a knife and personally cut the lashings that held the drums of gasoline on the deck. We needed this extra fuel to get to where we were going. He dumped those overboard; the crew manned our machine guns, got our torpedoes ready to function; and he kept observing with his glasses this approaching boat. Suddenly he said, 'That's not a Japanese destroyer. That's one of our boats. " Well, it happened to be the boat with General MacArthur and his family on it, and we were getting ready to sink them to the bottom of the drink. Well, they continued on up to us, dodging some of the drums of gasoline we had dumped, and came up alongside. We had a little conference.

General MacArthur conferred with me, and he decided that I should move over onto his boat with them and we would then continue to proceed even in daylight as we were then far short of the scheduled rendezvous point. So we decided we had to proceed in daylight in order to get down there. We did. When we arrived there, we found only one of the other two PT boats. It was decided then to leave the PT boat that I had been on to await the arrival of a submarine that was due to come under an option to take MacArthur and his family, not all of us, on the submarine and proceed to Australia.

We had a short conference and urged that he continue by PT boat down to Mindanao, rather than by submarine, which he did. Bulkeley then left our PT boat there with instructions to await the submarine and then to proceed to Cebu. We continued on in our two boats. Unfortunately, the commander of the PT boat, when the submarine arrived, said his boat was disabled, and they jettisoned and sank it. And he and his crew got on the submarine and went back to Australia. Commander Bulkeley, when he later learned of that, was very irate over it.

But we continued on and, due to the fact that we had taken so much more time than scheduled, proceeded that afternoon before dusk instead of waiting for the darkness of night. Shortly before dark we looked ahead and here was a Japanese cruiser, this time a real cruiser, headed east as we were headed south. We swerved over to the west, hoping we would not be recognized; maybe they would figure we were two Philippine fishing boats. In any case, the cruiser proceeded on and its commander missed a wonderful opportunity to capture General MacArthur and his staff.

After that, we proceeded without further incident to Mindanao. Near Del Monte we were met by General Sharp, American commander of Mindanao, and his staff to await planes to proceed from there to Australia to the new command.

Q: What was General MacArthur's attitude during the trip down?

A: I think he was concerned over the safety of his family. Otherwise, I think he was acting normally. I was surprised, though, when I sort of sensed that he was seeking my advice in connection with whether to proceed by submarine or continue further, because he asked questions along that line.

I urged him to continue on. I was sort of surprised at that because he was a man of decision, and he usually didn't ask for suggestions or advice such as that.

Q: Why did you think he should continue on the PT boat?

A: Well, that was our objective, our mission. I thought it was the thing to do. And I felt we could make it successfully.

Q: When you arrived in Mindanao, you were supposed to have been met by B- 17s sent north by Major [later Lieutenant] General George H. Brett, who was commanding general of Army Air Forces in Australia. But you only were met by one usable B-17 at Del Monte. MacArthur apparently got very disturbed at this. What was his reaction to this episode?

A: Well, I guess he was quite disturbed, based on other reports rather than as I noted directly. But anyway, General George and I thought that this was a wonderful opportunity for us to survey the situation there. While the rest of the members of the staff-General MacArthur and the others—stayed there waiting for the replacement planes, we utilized three days in making reconnaissances, seeking out potential airdrome sites. What we hoped to do was to provide facilities for planes and other reinforcements to come to Mindanao en route to the Philippines.

Q: Do you think that Brett's slowness in getting those planes to MacArthur affected their relationship once MacArthur got to Australia?

A: That possibly was a factor. I don't know what the reasons were that Brett had for such a delay. But I know General MacArthur was quite irate and impatient. I think Brett would be the individual target for such feelings.

Q: There are comments that Brett's bad relations with MacArthur were partly caused by that and partly caused by Brett's slowness in coming to see MacArthur once he reached Australia, that he did not come and see him quickly enough.

A: I don't know anything about the latter. I think that MacArthur felt that Brett was operating more on sort of a peacetime administrative basis rather than, say, under the wartime atmosphere that prevailed under combat conditions up in the Philippines. Possibly some of that I think MacArthur resented, and it came out possibly in his feelings toward Brett as an individual.

Q: Brett and MacArthur apparently never got along too well.

A: I don't think they did too well.

Q: What was Brett like?

A: He was a likable person. I didn't personally have too much contact with him. My main relationship was with General [Brigadier General Dwight] Johns, his engineer deputy, because I was concerned primarily with the engineer situation—what we had to do and what we could do.

Q: Did you have any occasion to meet or know Air Force Brigadier General Henry Clagett, who was up at Townsville?

A: Yes, but not too much. He seemed an older officer, less virile and less active, certainly compared to General George. But he gave the impression of being a good, solid type of officer. He was one of the older officers of his rank. I sort of liked him with the few contacts I had. I didn't regard him as somebody that was outstandingly capable, alive, and active and so on, but he seemed to be a good solid type, an old-type commander.

Q: You were mentioning the work of the Australians at Port Moresby when you went up there with Harold George.

A: They were engaged in what I would consider more permanent type of construction rather than the expedited construction to meet the immediate requirements. After all, it was not necessary to make concrete runways and the other refinements that would go with permanent construction. It was a matter of getting a usable runway and taxiways and dispersed hardstands that

would be operable, especially during the dry season that we were then experiencing.

Q: This seemed to be a major problem with the Australians; that is, that they wanted to build facilities that were of a more permanent nature, looking forward to the postwar period, whereas the Americans wanted to build temporary wartime facilities to serve tactical needs. Did you ever resolve this with the Australians?

A: Gradually. For one thing, we developed standard plans for various types of structures and issued those; they were to conform more to temporary type construction of facilities, seeking to utilize to the minimum materials and manpower and so on and yet meet the need.

Australia estimated there was a strong possibility of a Japanese invasion. They had a coastal railroad that went along the east coast, and just inland they had two other sections of parallel railroad, but with a 300-mile gap between these two. The Australians, figuring that the coastal railroad might be cut, wanted to build a railroad for the 300-mile section or so connecting these two interior routes. Well, I opposed that most strongly and successfully because it would have been a diversion of manpower, materials, and equipment for that. Ultimately, in peacetime it would be very useful.

Another problem I had was that each province had a different gauge for its railroad, which meant, for example, that when you came to the Queensland border, you had to transfer supplies to a train that operated on a different gauge track in the adjacent province. There was a strong movement in Australia at that time, even with the war on, to try to change the gauges to a uniform size throughout Australia. And that would have been a terrific diversion of manpower and materials, and also we successfully opposed that. Also, on the road to Darwin, the railroad went up part way, I think up to Alice Springs, and there was about a 600-mile gap to the next branch. Then you had rail on up to Darwin. So there was strong pressure to build the railroad in that intervening gap. We also successfully opposed that.

But by and large, though we had such differences in their desires to get such useful peacetime projects under way, we were successful in stopping them and keeping the construction program, with its utilization of materials and manpower, primarily limited to the war requirements.

Q: How quickly did you realize that in the Southwest Pacific you were going to have to scratch for every piece of equipment and the materials to do your job?

A: We sensed it right away. For instance, we relied not only on equipment that we requisitioned from the War Department, but we went around and requisitioned and obtained tractors and machine equipment of all different types that were in use in Australia by contractors, by others, and from the different equipment dealers. We made mass requisitions for any type of such construction equipment we could get. That meant we had equipment of different sizes and of different manufacture. We had a terrific spare parts problem trying to maintain these different items of equipment. But the need was so great that we just had to get as much of everything of that nature as we could. Recognizing the limitations on shipping, we requisitioned motors for tractors and assembled them in bulldozers and carryalls from parts made by Australian production.

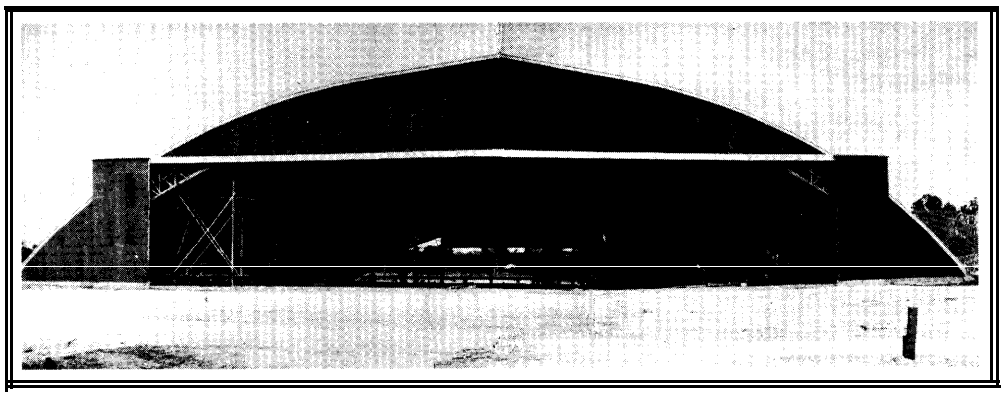
Q: You adopted all kinds of expedients-substitutions, scavenging, improvisation —in an effort to get your work done. Why do you think the War Department or General Reybold's office was not more understanding of your needs and provided greater assistance?

A: I think they possibly were moderately acquainted with our needs. But they also were acquainted with the needs of the European Theater. The decision had been made that the European Theater was to be given first priority in the allocation of supplies, equipment, troops, personnel, and whatnot. We were sort of on the end of the line, so that we had great difficulty in trying to get the things we needed and particularly as quickly as we needed because the need was so great.

You were speaking of improvisation. At that time the Air Force wanted a camouflage cover or protection in our hardstands for their airplanes because of the air superiority of the Japanese force. So in connection with getting camouflage nets over big planes in the operational areas, it would be a difficult problem as to how to provide them.

We also needed many structures for temporary depots and storage areas. So I came up with the idea, along with two Australian civilians whom I got to

know, and we designed a so-called igloo which was made up of arched frames assembled just by 2x4s, instead of using steel structures and concrete. We were able to make an arch frame made only of small-sized timber. We would make these structures 60, 100 feet or whatever length was necessary and use them as supports for camouflage nets, but more particularly we used them in the depot construction throughout Australia and later on through New Guinea as need developed for structures of that type. In that way we were able to utilize locally available timber and manpower and develop very effective, economically built structures.



Igloo hanger, Archerfield, Queensland, Australia.

Q: You were mentioning your reconnaissance to Port Moresby. Could you describe MacArthur's reaction to your report when you delivered it?

A: Well, he asked me what I thought of the Australian combat troops that were there. I said I thought they were excellent. I reported about the tremendous amount of engineering work that had to be done. We had to increase the port. We wanted to use that as a base.

We needed, I don't remember if it was four or five, airdromes around the Port Moresby area. Shortly after, I made a trip down to the Milne Bay area and met with the Australian combat forces there. They had no airdromes and only limited port facilities and roads. I figured that we had to develop that port as a big base and also construct three airdromes down there. We made a plan for the construction of three new airdromes in that area because

it would be the most vital point for the protection of Port Moresby and all of New Guinea. I decided to rush part of our limited engineer force down there.

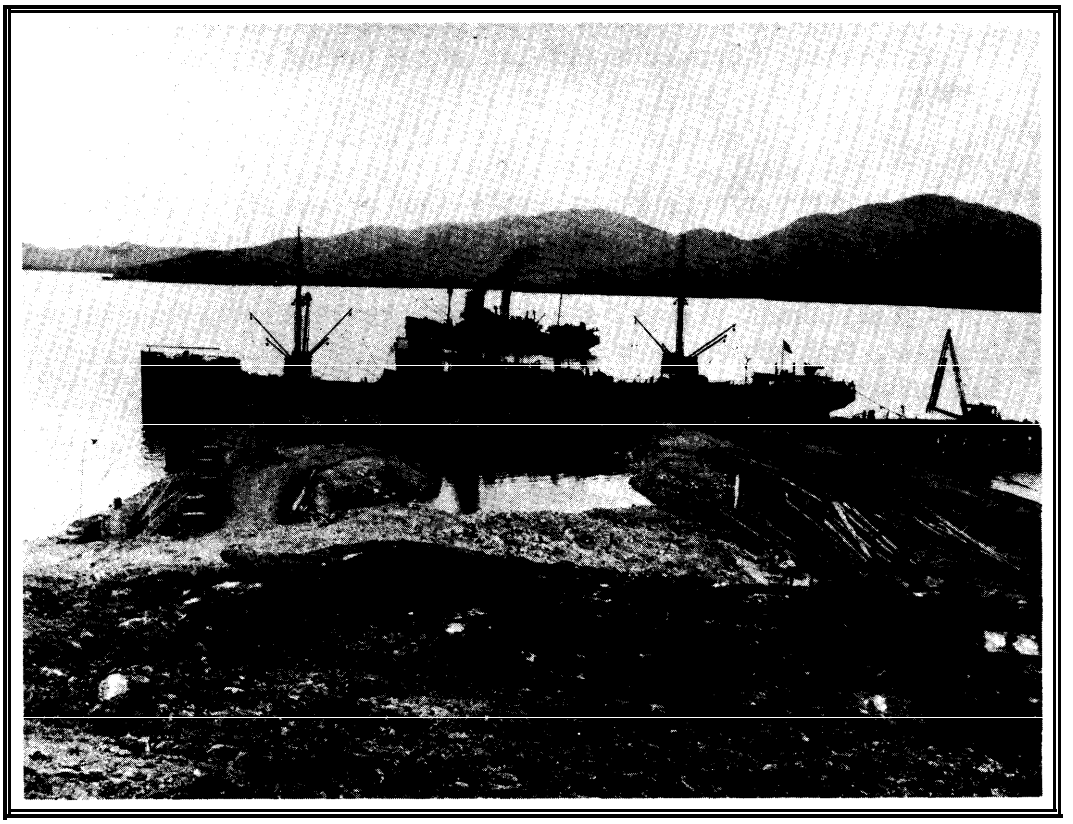
Q: Do you have any information on exactly when or how MacArthur made his decision to hold in New Guinea rather than to fall back into Australia?

A: I would say almost-I won't say overnight, but practically from the very beginning that was in the back of his mind. I mean, it was probably formulated in the very first contact we had with any of the Australian force leaders.

Q: The order to hold New Guinea was not easy because the immediate operational requirements had to be balanced with long-range plans to develop the theater and the bases necessary to conduct operations against Japan to recover the Philippines. How did you go about trying to balance the operational requirements for engineer construction and forces against this long-range need?

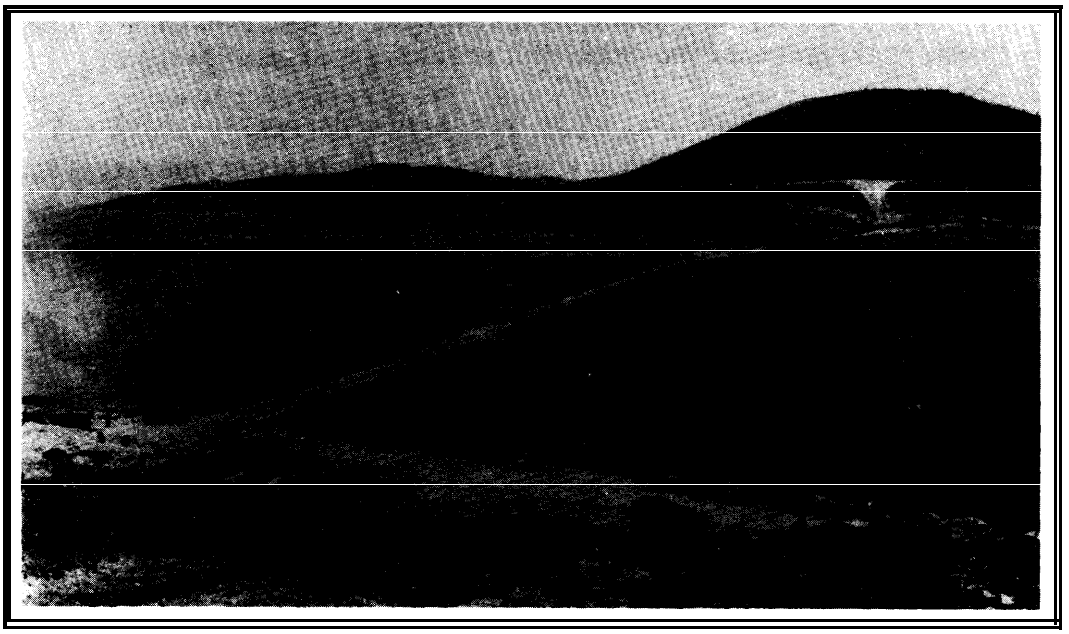
A: The long-range need I think was far away. The immediate need was a matter of highest priority. All we had were two white general service regiments, the 43d and the 46th, and the 808th Engineer Aviation Battalion. We had two colored separate battalions [91st and 96th Engineer battalions] just made up of black labor troops. They had no equipment, very few officers. In order to increase their capacity to perform, I sent a radio [message] to the States for authority to transform them, in name anyway, to general service regiments. That meant we could get more authorized white officers. It meant also we could get more authorized equipment. With that as a base, we had a better chance of getting equipment that we direly needed. We then also assumed a big training job to convert them.

We had only one engineer supply company for the whole theater. We had only one maintenance company, whereas there was a need for many, many more. I put on my emergency requisition list our needs for the troops we needed, but we couldn't get them. In some cases they weren't even available back in the States. They hadn' t provided to organize or train them in the overall mobilization plan. Their objective seemed to be to organize and train combat divisions rather than a balanced force.



General view of the Tatana dock being constructed by the 96th Engineer Regiment, Port Moresby, New Guinea, 27 July 1943.

But we had to use these forces, spread them thin over the work program there in New Guinea, in Port Moresby, Darwin and Queensland, and at Milne Bay. In order to increase the capacity of the port at Port Moresby, we built additional docks. Over the objection of the Air Force, because they thought this was a diversion of construction effort from airdromes, which they considered the only and primary thing, we built a causeway over to Tatana Island and there we developed a number of additional docks, as it was vital to have sufficient port capacity to get the stuff in to build and support these airdromes. That greatly increased the capacity of Port Moresby as a port to receive supplies. At that time the Japanese had great superiority in the air so that any air flights in and out of Moresby had to be made at night and planes would also have to take off at night in order to keep from possible bombardment by the Japanese air forces.



Tatana Island causeway, Port Moresby, New Guinea.

As I indicated, the need was for developing airdromes and developing a base. But after we had built up a small American complement, it was decided to set up a small hospital unit there at Moresby to take care of casualties on the American troop side. We got word they were going to send over a contingent of nurses. Prior to that time all of our troops were operating in the open and the latrine facilities were also all in the open. We decided that with nurses coming we would have to give them a plush-type latrine. So we fixed up a small screened structure with boxed seats and finished it just about the day before the nurses were due to arrive. They came in by plane at night. The next morning they found the need to utilize this new latrine we had furnished. Well, to indicate how the American soldier does not lose his sense of humor even when he's working around the clock, our engineer boys set up a loudspeaker in the trench below the row of seats and they were over in the woods watching. When they thought the place was quite full, over the loudspeaker from below came the message, "Will you please move over? We're working down here. "

Whereupon there was great screaming with the nurses all leaving. The chief nurse later put in a complaint about that, but it indicated how the engineer,

particularly the engineer soldier, the American soldier, even under great stress, working around the clock, still retained his sense of humor.

Q: You emphasized in your article about military engineers at war that it was essential to have a sense of humor in wartime conditions.

A: Yes. I mean, if one is going on under stress and tenseness and can't occasionally see a little bit of humor out of some of the situations that develop, you don't have a measure of relief from all of that tenseness under which you otherwise would be. I listed a flock of characteristics that I thought the military engineer should have. That's one of them.

Q: Do you remember any other little stories like that that come to mind particularly?

A: Not that I can think of right now. Probably you can find some in Sam Sturgis's correspondence between him and me or Sam with others. But we found lots of jokes about certain incidents, little humorous commentaries about people, about events.

Q: Despite the fact that airfield construction was the number one priority both in New Guinea and in northeast Australia, the Allied Works Council was reluctant to send men into those areas to work. You finally had to rely upon the Queensland government to help you with Mareeba and Cooktown Mission airfields.

A: The Allied Works Council was not unwilling, I think. It wasn't a case of their being unwilling to send their personnel to New Guinea, but we just didn't particularly care to have Allied Works Council send their personnel to New Guinea. They were older men, primarily workers and not qualified for combat and so on. I think it would have been difficult for them to operate under the conditions that obtained in New Guinea. What we were concerned with was getting the Allied Works Council to take over the work that was being done by our engineer units on the mainland, including those in the more advanced or exposed areas, such as up in North Queensland and the Darwin area. That was where we had to exercise a little more pressure to get them to take over those projects.

But as I say, in order to do it we used the provincial governments like the Queensland government. We just used every means possible we could to get manpower to do the work that had to be done. We worked with the principal objective of having the Australians take over all the construction work in Australia just as quickly as they could in order to release our troops for more vitally needed work over in New Guinea.

Q: Besides their lack of equipment and their lack of training, what else stands out about the 91st and 96th Engineer battalions?

A: Well, first of all, they had been recruited, trained, organized merely, you might say, as supplemental labor. They were given no special engineer training. They had no special engineer construction equipment. They had relatively few officers compared to the large sizes of their companies, so that their management and their control were difficult problems.

As I say, our need for equipment and a basis for getting equipment were such that I felt if we transformed them to general service regiments by name—now that didn't make them individual y qualified-it did give us more officer personnel and it did give us a basis for getting equipment, whether they were going to use it or somebody else was going to use it. Ultimately, we got to where we were training them and they worked generally as an effective unit—not nearly as much so as the basic general service regiments or the aviation engineer battalions and other trained engineer units.

Q: Although your engineers worked hard on the airfields, you couldn't satisfy the Air Force commanders. Why didn't they understand the problems facing you in building serviceable airfields in the conditions of weather, terrain, lack of equipment, and lack of trained personnel that you then had?

A: Well, because the Air Force—at least the leaders then—felt that in their minds the operation of the Air Force was the most important factor in the conduct of the war, certainly as of that time. They kept pressing, pressing, pressing for these airdrome facilities. They wanted extra taxiways. They wanted dispersed hardstands. They wanted camouflage cover for these. They wanted large mounds around each as further protection from air raids. They wanted these big revetments, for example, around each one of the dispersed hardstands. Well, that meant a great big mound of earth all

around. These, of course, called for a tremendous amount of extra construction.

In order to service those airdromes you had to have roads to them. You had to have ports to bring supplies and equipment in. You had to have other facilities, like water supplies, certain types of utilities, pipelines and oil tanks to get the fuel in in the quantity which they would require. But somehow or other, they couldn't sense that those other things were as important as work on their own individual airdromes.

One particular problem we had in the early part was they wondered why we didn't go in for, you might say, permanent construction so that these airdromes could withstand heavy traffic during the coming rainy season. At that time it was the dry season. I felt that the need was more vital to get two or three operating airdromes then than one, you might say, all-weather airdrome.

I had to fight General Whitehead [Major General Ennis C. Whitehead, Commander, Forward Echelon, Fifth Air Force] in particular on that. And I said, "If, as, and when we're here during the rainy season, we'll have these strips, certain strips, prepared adequately to operate under such conditions. But as of now, our main need is to get the maximum amount of operable airdromes, possibly under reduced standards. "

One thing that was important, and I had to personally impress it on all of our engineer officers, was drainage. Somehow or other, in working they'd build an airdrome or whatnot but not give sufficient attention to drainage. I had to point out that if you can lower the water table by a foot, it's much easier to do that than to put in, for instance, an additional foot of field cover which in turn would subside. I just tried to point out the very simple doctrine that water flows downhill and can be released by drainage. I prepared personally a short technical memorandum. I issued it to all of our commands, and I directed that it be read to every officer and every NCO and every engineer as a measure of stressing the importance of certain fundamentals such as drainage, which is an important factor in the construction of airdromes as well as roads and other features.

Q: The Battle of the Coral Sea in early May 1942 must have caused some anxious moments for MacArthur as well as yourself?

Muddy and rough roads made transportation difficult. Saidor, New Guinea, 18 January 1944.

A: Well, we felt a little confident about that. I don't know that we were too perturbed about it. I mean, it wasn't like Pearl Harbor where they popped in and unseen and unnoticed effected great destruction. We went out prepared for what was expected. That was primarily coming from the Central Pacific area, not ours.

Q: Once the Japanese were beaten back at the Battle of the Coral Sea, MacArthur ordered Leverett Yoder to Abau and Milne Bay in May of 1942 to survey for possible airfields so that they could establish a presence in northeast New Guinea and Papua. What were your actions in helping get the plans approved for the move to Milne Bay?

A: I don't know about General MacArthur ordering Yoder to go down there. I mean, after all, Yoder was under my command. I think I'd have issued

such orders to him. I think he was sent down to Milne Bay. Abau came at a time just after the Japanese had made a landing in New Guinea and after General MacArthur approved my recommendation, counter to his prior order to build the road over the Owen Stanley Mountain Range from Moresby to Buna.

Although we had contemplated developing an air base in the Buna area, before we were able to get forces up there the Japanese had landed. They had taken a position there. Then they were marching and advancing over the Owen Stanley Range, threatening Port Moresby, which was held by the Australian troops.

General MacArthur said, "We have to build a road from Port Moresby over to Buna. " He called me in. He said, "Pat, we want to build a road with the greatest speed possible from Port Moresby over to the Buna area. "

I was surprised at that because I had thought the rugged Owen Stanley Mountain Range was the best defensive feature that we had to protect Port Moresby because the Japanese had to come through rugged jungle and over extreme heights and whatnot. I also said it would require a great diversion of engineer effort and affect our whole development program.

He said, "We want to build that road. " So I said, 'I'll submit a plan. " The next day I submitted a plan and draft chart indicating that we had to divert practically all the engineer units that we had from other vital airdrome construction at Milne Bay and elsewhere to do it, and indicating how it could be done with the great effort involved. At the end, I said, 'Sir, I still recommend that we not build the road, because as it is now it's also one of the best defense features that we have for the control of Port Moresby, and the continued construction of these other facilities is more vita l."

After listening, he said, "Pat, your logic is quite sound. We won't build the road. " That's one time I got General MacArthur to change the orders he had given me. But he decided then it was desirable to get some form of access across the range. They thought there was a possibility of developing a port at Abau, farther east, and wanted to check the potential road conditions across the Owen Stanley there to the north coastal area.

Jack Sverdrup, my deputy, and I proceeded there to Abau and assessed the situation. He made a trek across the mountains and submitted a report

indicating the great difficulties of such road construction. He came up with the recommendation that instead of building such a road there, we develop some native-built airfields in that general route, which we could easily and readily develop. And it was decided that we would utilize that method. Those fields, as well as several later ones at Bena Bena and Mount Hagen in the Markham Valley, were built by native labor and hand tools largely under the direction of Mick Leah, an Australian officer on my staff who had lived for many years in New Guinea and knew the native language and customs.

Q: Did General MacArthur have a firm understanding of the engineering problems confronting you?

A: Well, I don't think anybody other than those who were directly involved would have a real appreciation of the problems and difficulties. But I think he sensed it generally.

I know he thought particularly highly of us. I recall one day he came in while General Kenney [then Major, later Lieutenant General, George C. Kenney] and I were in discussion. He came in, threw his arms around both of our shoulders, and said, "How are my two aces today?" Which I thought was a great tribute. He had been an engineer officer, and I think to that extent he had a greater appreciation of what the engineering problems were than possibly if he had been a commander who had come from the infantry or some other branch.

Q: You mention George Kenney. What was your opinion of George Kenney?

A: George was an able commander in the capacity in which he served. He was very forceful, very direct, quite blunt, obstinate, and persistent. I think he was fortunate, too, in having General Whitehead as his subordinate commander, commanding the Fifth Air Force. I thought that General Whitehead was a little closer to the situation, closer to his fly-boys. He was working night and day. His one interest was in the Fifth Air Force, and he was very insistent on his demands on the engineers and he kept pressing, pressing, pressing. But General Kenney, as senior commander in overall charge, had a good relationship with General MacArthur. He was a very fine senior air commander.

Q: Apparently General Kenney was able to correct the damage that had been done to the Air people by the relationship that George Brett had established.

A: Yes. The relationship with Air and GHQ was a very good one. Sometimes there were individual differences. Somehow Whitehead sort of felt he had strong differences with Colonel [A. G.] Matthews. Colonel Matthews was in the Port Moresby area and handling much of the airdrome construction there. Mattie was a very firm, independent person. A couple of times they had rather strong differences, so much so that Whitehead wanted to have Colonel Matthews relieved. We all felt that Whitehead failed to appreciate the tremendous engineer effort required to develop the vast airdrome installation with our limited resources under the intensified time schedule desired. But Mattie was a wonderfully able worker. He also was prone to spurt out some words he might have regretted later. I used to say that Mattie could do very effective work and then in a few minutes of saying the wrong thing he could sort of lose the advantages of everything well he had done. Some of these expressions were his own worst enemy.

Q: You had a lot of trouble with the Air Force people wanting more permanent-type facilities and also wanting to gain control of the engineer aviation battalions. You remained very firm in your conviction and convinced MacArthur that construction had to remain under one agency and that would be controlled by the chief engineer.

A: Yes. General Kenney particularly-and Whitehead, too-wanted to have some of the aviation engineers. Figuring that the aviation engineers were sort of part of the Air Force, they felt they should be assigned to them and operate directly under their control. If they had been, I think they would have been used somewhat on maybe building Air Force clubs and certain other refinements for better quarters and whatnot, which we were not providing because we felt that efforts should be concentrated on the main operating essentials.

I know that these issues came up so frequently that one time George Kenney put in a letter to our headquarters requesting the assignment of certain aviation engineer units. I wrote out an endorsement, rather lengthy and for General MacArthur's signature, indicating what the policy would be.

I pointed out that airdromes were but one item—that in order to get an air base, you needed roads; you needed port facilities; you needed port improvement; you needed petroleum tanks and pipelines; and that it was necessary to have priorities as to whether it was going to be roads, ports, or whatever it may be dependent on greatest initial need. It was necessary to centralize the engineer units, the equipment, and whatnot so that they could be allocated to where the need was greatest, where the priority was greatest.

I pointed out that, for example, insofar as the Air Force construction was concerned, we had far more of other than aviation engineer units engaged on that construction. We had general service regiments and others as well as the aviation engineers. In some cases, Navy Seabees were also engaged on that, but under my centralized control.

So we indicated the policy would be that all construction forces would be unified, would be utilized where they were most needed. We said, insofar as aviation engineer units were concerned, as and when air facilities were completed and we had the forces available, we would then assign some limited aviation engineer units to the Air Force, but only for the maintenance and so on of these completed fields. That would be very minor and the priorities were such that almost never would we be able to have excess aviation engineer units. But anyway, it was signed by MacArthur. That settled that issue once and for all. Kenney had to accept the fact that the aviation engineers were not just for the Air Force but part of the overall construction effort.

Q: Who came up with the idea of establishing the United States Army Service of Supply (USASOS) setup in the Pacific, and why?

A: It was decided, I think, by headquarters, by general headquarters, I think particularly by General Marshall, who is sort of a G-4 type and had been deputy to Sutherland. He was a supply-type man. I think he was the one. I think it was a proper type organization to have in any case. But knowing he was going to head it, I think he was primarily concerned in having it set up. It was a desirable and proper command.

Q: Did its establishment alter your situation any?

A: Not particularly. At first I was also chief engineer of USASOS as well as the GHQ command. Later, after I had asked for Tenny Ross [Colonel Lewis T. Ross] from the States, he came and I resigned in his favor. Tenny was chief engineer of USASOS, and I remained on my one principal job as chief engineer at GHQ.

Q: What was Richard Marshall like?

A: Marshall was, I'd say, primarily an administrative logistics type. He wasn't a combat type. He was slow and mild-mannered in talk and manner. But he served very well in that field of service and supply. I think that was his special characteristic in the overall matter of responsibilities and duties and whatnot.

Q: Did the situation change with the service and supply when General James L. Frink took over?

A: I think Marshall came back as deputy chief of staff at our headquarters and Frink became commander there. Frink carried on very well as commanding general of USASOS. I think he had a concept of what its mission was and handled his responsibilities very well. One concern he had was getting the proper personnel to be the base commanders and getting personnel for his staff. But I think he handled it very well.

Q: Despite MacArthur's order that US Engineers' Service Command in New Guinea did not come under General Sir Thomas Blarney, who was in command of the Allied Ground Forces, Major General Cyril A. Clowes overruled Matthews with respect to some construction work at Milne Bay. MacArthur had to then establish the Combined Operations Service Command under the New Guinea force, a joint US-Australian organization with Dwight Johns in command. There must have been severe problems then of coordination in New Guinea on the construction aspect with the Australians that led to such an order?

A: Yes. We have to keep in mind that in this initial phase the only forces that were in combat with the Japanese over in New Guinea were the Australians. And General Blarney was the Australian commander-in-chief, and those

forces were under him. When our first American units went over, they were not combat units. The first units that went over to New Guinea were my engineer units. We got them in just as fast as we could and dispersed them to their respective development areas. So the overall command over there was under General Blarney.

Later on, as other American units came in, he still remained in command. That meant you had Australians and Americans; and then you ran into some conflicts in connection with priorities, allocation of supplies, and so on. So it was decided that we should have a joint command made up of both Australians and Americans to handle a lot of the logistics problems and service problems. We set that up and Dwight Johns was selected to head it. He did it very, very well.

Q: Could you discuss the significance of terrain, weather, and tropical diseases to your efforts?

A: You might say that that comment might apply to much of the entire theater. Few people realize Australia is the same size as the United States. You could take the United States and you could put it into our overall theater about five or six times, considering Australia, New Guinea, the Admiralties, the Borneo area, the Philippines, and on up to Japan. So our terrain was vast. That area was also unmapped and uncharted.

One engineer problem was that we had to go to great measures to handle the mapping. For instance, shortly after my arrival from Bataan I set up an early conference between the Air Force, the Navy, the Australian Air Forces, our mapping agencies, and others in setting up the common grid zone, standardizing scales, setting up responsibilities for who was going to make which maps, how we were going to control them, setting up distribution channels and so on. I was greatly pleased with the success I had in effecting an overall coordination of our highly important mapping effort.

With our terrain in New Guinea, in the operating areas up in the Philippines, and also, I think, the operating areas up in Australia, unlike Europe, we lacked maps, ports, and developed highways. Unlike Europe, we had no railroads. We had no finished highways. We had no telegraph, telephone lines. We had no utilities. We had no hardware stores nor any appreciable industrial capacity. We were in the jungle. We were susceptible to malaria

and fever; and we were in an area which was subjected to intense torrential rainfall.

In our operations we were going to be required to land in a certain area which was devoid of any form of development and overnight sort of build a community for 20-, 30-, 40,000 people, build airdromes where there was nothing, hack down the jungle. The engineers' task, by reason of just the terrain and all the background conditions, was almost insuperable.

Corporal George Foster, 2d Pioneer Battalion, 7th Division, chops logs to fit into a bridge construction over a swampy area of road to Lao, New Guinea, 9 September 1943.

Q: You mention the problem of maps. As with airfields, the Air Force did not particularly understand the engineer requirements for good aerial photography.

A: The Air Force commanders were concerned with their own air operations, concerned with enemy air operations; and insofar as reconnaissance was concerned, their primary objective was to get photography of enemy air installations, finding planes that could possibly be caught on the ground, and just getting generally tactical reconnaissance photography.

Now aerial photography for mapping has to be rather precise. It has to be taken at a certain elevation. It can't have too much deviation in altitude or in tilt. In taking the photography, you want to get photos useful for maps. For some of these, you wanted maps for potential airdrome sites, for beach conditions where we were going to land and make an invasion, for base development. It was not of too much interest to the Air Force, but it was of interest to the engineers because we had to get those photographs to make maps and get them made and distributed to the affected invading task forces in *advance* of these various operations.

We had great difficulty therefore in getting aerial photography for mapping requirements. I think we finally overcame it after long, difficult problems by getting the assignment of specific aircraft for that purpose. We had to train the pilots. We set up an Air Force liaison group of such pilots with our map reproduction personnel and our map personnel had a liaison group with the aircraft pilots. We thus worked out a very good operating procedure whereby they understood the requirement and the needs and were able more effectively" to get photography where we needed it and when.

Q: You mentioned the other day that you had also known Colonel Karl H. Polifka, who was a specialist in aerial reconnaissance and mapping. Had you met him while you were down in the Southwest Pacific?

A: Yes, though I have no special recollection of any special contact or conference that we had.

Q: One of the major problems you had in the Southwest Pacific was lack of properly constituted and equipped engineer units for the requirements of the theater, which were more in the area of construction than of combat. For instance, you had too few engineer aviation battalions. You had engineer battalions and engineer general service regiments that were not really properly trained, equipped, or prepared for construction tasks. You had to

retrain, convert, re-equip, and upgrade those units you did receive. How much of a burden did that place on you as chief engineer?

A: Well, I was not the one that did it individually other than by continuing specific directives to the commands and later setting up an engineer school-really a function of the United States rather than the theater. I was the one, however, who had to direct it. But the main problem I had was trying to get across to the War Department the problem and the need for additional equipment and so on. In order to get that across, we recommended numerous changes in the organization and equipment for these engineer units.

I did try to set up a theater stockpile of equipment which we could allocate and transfer to various areas as needed. But we got nowhere with the War Department. They lacked an understanding of that. They had set up this so-called supply project system. If you wanted to get a certain amount of equipment, you first had to send in to the War Department plans for the proposed operation. Say you're going to make a landing somewhere. Let's say later we're going to land up in Mindanao. You have to set up a program as to what you were going to do on that operation and then what equipment, special equipment, special facilities, and materials we'd need to support it. That would go to Washington. I think it was reviewed by the Operations Division of the General Staff and then by various supply staffs and so on. It took a long time. Generally, they'd make just a few changes, if any.

Finally, it would be approved and that would be the basis for requisitioning these items of equipment. Well, by that time that particular operation has been executed and past. All we could do then was utilize the supplies and the equipment that they had finally approved for the previous operation that was just over; and we'd have to use them for the next one, though completely different, while we were waiting approval for the so-called operational requirements for that next operation. And you should keep in mind that the engineer requirements were different for each operation, unlike, for example, quartermaster requirements for rations, which varied basically only directly with the numbers of troops involved.

There was a lack of vision as to the rapidly moving situation in our theater in that you couldn't send all the way to Washington and get prior approval for specific requirements for each operation. They should have delegated to

the theater authority to assemble its own central reserves and trust in the judgment of the people out there as to what would be needed. I think that the whole supply situation would have been greatly improved had they done so.

So that was one of the problems we had in trying to get the extra equipment that we needed to reinforce these units. One of the principal ways we did it, after many delays, was to finally get approval of revising the tables of organization and tables of equipment for existing engineer units.

Q: The War Department planning structure, then, was terribly over-centralized and not responsive at all to your needs?

A: Yes. For instance, insofar as the projected invasion of Europe was concerned, here was a major operation. There I can understand that theater sending in its plan well in advance, including the basis for need for units, equipment and supplies, and so on, for steel landing mat, for petroleum tanks and oil pipelines they were going to require, requirements for fuel, and SO forth.

Here's a situation that is months ahead, maybe a year ahead of the projected operation. There is plenty of time to review it and give approval and time to procure, ship, and receive the equipment and supplies and thus get it in time for your operation. But in frequent, quick-moving operations such as we had in the Pacific, we had many operations a short time apart, that procedure was just not practical.

Q: What type of engineer unit would have been best suited for your operations?

A: Well, the construction battalions, the general service regiments, the aviation engineer battalions. However, they would all, I think, have to be modified, given some extra equipment and so on, and given extra organization and training so that you had two or three operators for each piece of equipment instead of one. It is a scandalous waste of a valuable piece of equipment, which has the capability of the equivalent of 20 to 50 units of manpower, unable to be utilized when most needed because of lack of an operator. But that was where we had to make adjustments within the theater in order to do it and to get the maximum production out of these units.

Q: You had a lot of trouble, along with your other problems, with Class II and Class IV engineer supplies. You got the same apparent response from the War Department and Army Service Forces you had in other things, which wasn't very good in meeting your needs?

A: Well, basically I think I explained that. If we had been able to build up the theater supply of what we felt we needed to have in reserve, be it asphalt, be it pipeline equipment, pile drivers, or authorization for them so we could get them when needed-because you have to remember that we were thousands of miles from the United States to the principal ports in our theater, and then up to several more thousand miles from the principal ports where they would unload to the operation areas. We had a massive problem from the time you received authority to the time you had procurement, the time you got priorities on rail transportation in the US, loading at ports, moving, in competition with other Air Force, Ordnance, Signal and QM requirements and getting it to some principal port in our theater, and then from there, getting it to some small area of projected operations. There was a great time lapse, and it was not appreciated or understood by the War Department or the supply agencies at home. There was even a lack of such understanding within the theater itself on the part of some staff, supply, and transport personnel.

Q: As chief engineer of the Southwest Pacific Theater, how much were you involved in the theater's overall strategic planning?

A: We were brought in mainly in connection with the engineer phase of such plans. The engineer phase, of course, was a vital one in practically every one of our operations. Any time we went in to any area it was for the primary purpose of establishing an air base to support a subsequent similar operation.

Usually we would pick a place not too heavily occupied or held by the Japanese. But we'd seek a potential place somewhere near it, either this side or the other side of it. We'd go in relatively unopposed and therefore requiring little in the way of combat action. The primary purpose was to establish this air base, which was basically the engineers' task.

So it was a matter of making the landing, construction of ports, if they were to be built, putting in pipelines, tank farms, roads, the airdromes, support

facilities, taxiways, hardstands, and in some cases hospital aid stations, and some form of utilities—water supplies. So in connection with plans, and in particular the logistics phase of it, we were consulted and submitted our estimates and so on and our requirements to attain that task. Sometimes we didn't get all that we asked for. Most of the times we did not. But within limitations, they did support us.

Q: Since you had so many logistical problems and you frequently received units minus their equipment, you must not have been overly impressed with the operation of the Army Service Forces under Bill Somervell?

A: Well, they had a terrific task with the requirements for the European Theater, the India Theater, our theater, support to our allies, including the Soviet Union, and so on, as well as their domestic program in the American theater. But we felt in many instances that they could have done a better job.

We also felt that there was a failure certainly in the early phases of the war for the War Department in connection with its mobilization program to have the long-range view or imaginative view as to just what requirements would be. They, of course, knew that if you organize so many divisions and then you have more divisions, they could point with pride to the number of combat divisions that they had set up, organized, trained, and equipped. But a division without balanced logistic support, or any other unit without logistic support, is sort of an independent something that's not capable of its full potential.

For instance, later on we put in requisitions for engineer equipment companies, engineer maintenance companies, and of course our construction units, spare parts units. And I had to make a forceful presentation within our own theater headquarters for their inclusion in our overall limited authorization of total troop strength. But they just had been set up in the War Department Mobilization Plan only after receipt of our request. They would ultimately get approval and then they would go out and seek and try to organize and train such special units and send them out to us, but months to a year later.

Q: With little prospect of sufficient additional engineer units, equipment, or supplies, you relied heavily on improvisation shortcuts to complete your assignments. Could you discuss some of those shortcuts and improvisations?

A: One thing—I wouldn't say it was an improvisation or shortcut, but there was the matter of working the units overtime. As I say, [we doubled] the number of operators and training them so that we would have additional operators for more shifts for our critical equipment.

There'd be certain little construction procedures-for instance, in the construction of an airdrome, in not just going out and digging up fill material and hauling it on over, but we'd seek to get it, let's say, from a side hill. Instead of digging and uploading the trucks, we'd prepare a parallel road with a lumber tunnel-like structure with open top whereby you could excavate the side hill material and have it flow right into the trucks located on the road underneath the slide area.

We tried to utilize every measure and means we could. I issued a number of technical memos indicating many such shortcuts. I can't think of them right now.

Q: How useful was pierced steel plank (PSP) to your construction?

A: Outstandingly useful. For hasty airdrome construction, it was just ideal. There was a matter of clearing the site and mainly providing good drainage. But then, with the steel landing mat whereby you could spread the load of the impact of the plane coming down, it was very, very helpful for the quick construction of airdromes. Of course, it was not the solution for permanent-type airdromes, but that was not our consideration. But for operating requirements, it was invaluable.

Q: Dust was one of your thornier problems. Did you ever really solve that problem?

A: Well, in some cases where it was very, very dusty, in addition to clearing the field, we would get, say, a form of hay, put that over the cleared field prior to putting the steel mat in. As a temporary solution, it worked very well to hold down the dust.

We could not, of course, put in a sprinkler system or anything like that. But considering the fact that during our war of movement these airdromes were not being used for long periods-I mean, we had them prepared for the duration of the need of that particular base before we'd advance to the next one—measures such as that did correct it. I don' t know if we had a major problem with dust.

Q: In November 1942 Colonel Art Trudeau visited MacArthur and you trying to sell the idea of the use of the engineer special brigades. You strongly supported getting brigades for use in the Southwest Pacific and MacArthur agreed. Can you tell us a little about that?

A: Art first came to me because I'd known him before, and he made his presentation as to what the amphibian brigades were, what the potentials were and so on. I sensed that they would be vitally needed and could be utilized very well in our theater because we were going to have a lot of water movement in connection with our various operations. If we had to rely on the Navy we'd have to rely on requests to the Navy, which was not under our direct control. They had larger vessels and so on and had to have protection on their every movement, and there would be various problems.

Whereas if we had our own small floating force it could be assigned, let's say, to a task force commander, where in addition to its use in the actual landing it would be available to the task force commander and under his control in connection with resupply problems, lateral shore-to-shore tactical movements on the waters adjacent to his area.

We had a long discussion. We made up a joint submission and proceeded to report it. General Trudeau outlined it; I reinforced it; and MacArthur listened attentively and our recommendation was approved to apply for three engineer special brigades, then [called] engineer amphibian brigades. Of course, that's a sizable chunk of men, and as there was a ceiling on total personnel on our approved troop list, one had to sort of fight if you wanted more engineers or artillery or other service units within the total personnel limitation. But after our presentation MacArthur approved the request for the full three engineer amphibian brigades, as he appreciated their great potential in subsequently planned landing operations.

I might add that the Navy had been given the opportunity to organize and develop such amphibian units, but their morale had been badly shot after the loss of our fleet at Pearl Harbor and they were interested solely in the construction and development of a fighting force of large ships. Whereupon the mission of developing an amphibian force was assigned to our Corps of Engineers. Later on I sensed an envy or jealousy on the part of the Navy over the Army having its own amphibious force. Later we submitted our recommendations for other additional special units from the Engineer Amphibian Command to reinforce these brigades.

Q: How valuable were those engineer special brigades to the victory in the Southwest Pacific?

A: Extremely valuable. They were very useful in connection with the initial landings. As I say, in our theater we kept the boat and shore regiments together so that we had an integrated team. Over in Europe, as I understand, they took the boat units away and the Navy operated the boat phase of the landing operation; and all they had of the engineer special brigades were the shore units, the unloading parties and so on. But we had the boat and shore elements and they were very useful in the initial landings. The shore units were helpful not only in handling supplies and so on that were off loaded. We also trained and utilized them as other engineer units, improving roads and so on in that contact area.

They were also helpful even after the initial landings. They were then kept stationed there under the control of the task force commander so they could be utilized on lateral missions, shore-to-shore missions, in the general area because there was a great and frequent need for their use for such purposes.

Q: Bill Heavey commanded the 2d Engineer Special Brigade that arrived in Australia in February-March 1943. You then had a problem of getting their LCVPs and LCMs over to the theater. You finally solved that problem by having the boats broken up and reconstructed in Australia. Could you discuss that particular problem?

A: Transportation, of course, was always a problem. One of the particular problems was deck space on transports. There's a limited amount of deck space for large planes, for large pile drivers and other cranes and heavy equipment. There was just so much limited space for them.

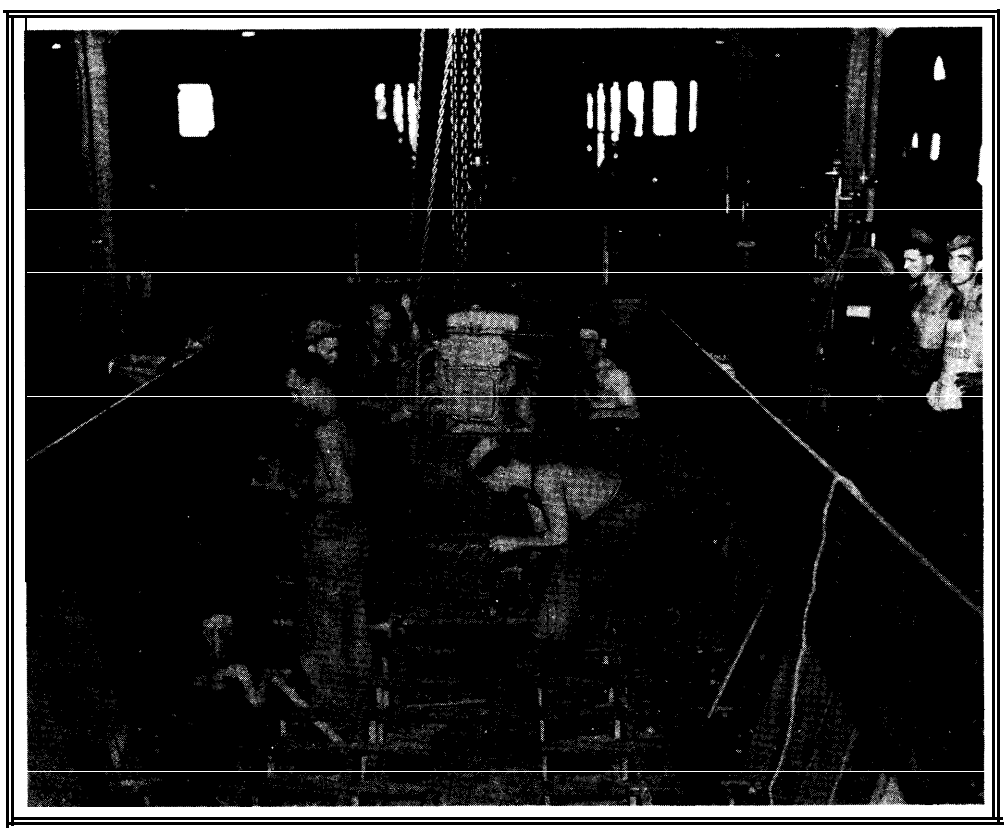
Assault boat construction by the 411th Engineer Battalion at Cairns, Queensland, Australia. Though the assembly plant is incomplete, building the Higgins boats has already started. 19 March 1943.

For instance, these LCMs would have to reshipped on the deck space, the limited deck space. That restricted the numbers of craft that we could get. So we decided if we could get these boats shipped over in parts, in sections, so they could be loaded on the ship in the hold, and assemble them out here, that would resolve the situation. We got authority to set up a boat-building command, which we set up initially at Cairns in Queensland, Australia. Then later on, as our operations proceeded further forward up in New Guinea, we transferred them over to Milne Bay in New Guinea. That boat-building command was very, very helpful.

Incidentally, in connection with the LCM, we wanted to get the maximum capacity that we could possibly get. So we decided to get an extra section, midsection, to put in there. So instead of, let's say, five sections or six

sections or whatever it was, we had this additional section, about 5 feet extra length. It not only gave us greater capacity on the LCM, but by reason of the changed hull characteristics we were actually able to increase the speed of the LCM by a knot. The boat-building command boat assembly plant] was an excellent phase of assistance in connection with that vital problem. We assembled thousands of boats. I hate to think of the number that we built.

Q: What was the reaction of the Navy to MacArthur's decision to employ the engineer special brigades in the theater?



The 411th Amphibious Engineer Battalion installs an engine in a knocked-down landing craft on the assembly line in Cairnes, Queensland, Australia, 11 April 1944.

A: I don't think the Navy reaction was as strong in the theater, let's say, as I felt it was in Washington where the Navy Department sort of resented the Army taking over, you might say, what might otherwise be considered a Navy function.

We got pretty good cooperation from the Navy in our theater. In fact, toward the end of the war Admiral Barbey [Rear Admiral Daniel E.], who commanded the Navy amphibious force [7th Amphibious Force], in his reports paid great tribute to the effective work that the engineer amphibian brigades did.

I think as a result, though, possibly of some pressure on the part of the Navy in Washington, the names of those units had to be changed from engineer amphibian brigades to engineer special brigades. Of course, that was not because of anything in our theater. I think it was a Washington decision.

Q: Spare parts and maintenance for the special brigades were also somewhat of a problem because the Navy handled that.

A: The Navy handled the procurement of parts and so on for our floating craft. But it was very difficult to get spare parts. Some time later I was ordered back to Washington to present in person a number of problems I had taken up with General Somervell and his staff on their first and only inspection of our theater. I had presented a number of engineer problems and recommended solutions. So they ordered me to Washington. I took about a hundred sheets of problems that I had submitted with recommendations as to where and what action was needed. One of them was in connection with procurement of Navy amphibious craft, spare parts, and related items.

So they arranged a conference where I appeared before the Navy. I pointed out that there was a serious problem that we had there. It was difficult to get landing craft from the States over to the theater. It was even more difficult to get them up to the operating areas where they were needed. We were operating under adverse conditions. We had loss of propellers in landing on uncharted coral beaches. We had loss of various critical parts.

I indicated the special spare parts that we vitally needed and pointed out that maybe 2 or 3 cubic feet of this and that made operable a whole big landing craft, and we could get those critical parts up to the operating area where

these craft were being utilized far more easily than replacement craft. So I stressed that, stressed the importance of spare parts.

During this conference some commander of the Navy was there who had been engaged on the procurement of the landing craft. He said, "We can produce landing craft; we can produce spare parts; but we can't produce both. " I was just shocked. But I think I did get the impression across, and I think the production and subsequent flow of spare parts were improved.

They had charts showing wonderful increased production of new landing craft. They had a chart going up and up and up. And I don't think they wanted to reduce their record of completed craft through any added concentration on spare parts.

Q: You mentioned your trip to Washington and you told me the other day that that was the only trip you took to Washington during the war, and that you'd had an opportunity to stop by at Tarawa on the way.

A: Well, on my return I decided that I wanted to see how they were operating in the Central Pacific Theater compared to what we were doing. In my inspection of their theater, along with their engineer, I made a stop at Tarawa, which had just been taken over by the marine force. I was astounded at what I thought was a wasteful loss of life and the way that operation had been conducted, because they went right on in and went right smack into the center of the Japanese opposition. It was a most gallant but, I thought, a wasteful operation. I made a mental comparison of what MacArthur would have done. He would have landed in these small adjacent, unopposed sections of the Tarawa Atoll. And then under cover of heavy artillery fire they would have advanced flankwise. I think that MacArthur, while he would have taken a few days longer, would have accomplished that with far less loss of life and casualties-a procedure consistently employed in our theater.

Then from there I went on over and observed the operations on Roi and Namur [Kwajalein] very shortly after their landings. Those are the next two islands westward. I observed their actions. I did sense that the Central Pacific was far better loaded with equipment. Of course, they had full use of the Navy. I also sensed that their operational areas were more simple than ours.

In other words, they were on coral islands, not rugged mountainous jungle, with very good coral base for airdromes. The one problem would be water supply for a large force. But they seemed to be better equipped with equipment, personnel, naval support, and so on for their requirements than we were in the Southwest Pacific.

Q: Did the arrival of Walter Krueger's Sixth Army brighten your prospects because of additional engineer units that came out under Sam Sturgis, who was Sixth Army engineer?

A: Well, I don't think that the arrival of Sixth Army brought with it much in the way of additional engineer units. We were very, very pleased to have General Krueger and his staff in the army command to arrive out in the theater, perhaps in connection with our projected future operations. As proved out later, having Sam Sturgis and his engineer staff and so on available to handle the engineering phases of our task force operations subsequently was a great advantage.

However, I might say that Sixth Army, and I think this applies to some of the—particularly the combat units, the divisions and others that came out to us—I sensed that they had been too much immersed in what you might say was the Louisiana maneuver type of operation. Of course, in the Louisiana maneuvers they were operating in areas where they had railroads, telegraph lines, good roads, utilities, water supply, and ready access to good logistic support. In an operational theater such as ours, they'd be operating without all of that. I don't think they sensed what the problems would be without that logistic support that was already available to them during these maneuvers of the type that they had there in Louisiana. They stressed the combat phase but did not have experience or appreciation of what the logistic phase was that they would have to provide here, which was already there for them at that time.

Q: Orville Walsh and William Ely came out with Sturgis, with the Sixth Army. You've already talked a little bit about Orville Walsh. What about Bill Ely?

A: Bill was a quiet acting, relatively unassuming type of individual, but he had a keen mind. He was not one that was buzzing around all over the place;

but in a slow, methodical, careful way he was an excellent engineer officer and staff officer. He performed very, very ably.

Q: What prompted you to write your article for *The Military Engineer,* which was entitled "Military Engineers in War, " that appeared in the February 1943 issue? (See Appendix H.)

A: I haven't seen it for a long time, but just glancing through it quickly, I think it was an excellent article to be considered by all combat engineers at that time with the war on.

I sensed that many of our engineer officers didn't have the proper concept of just what their functions were. I sensed that maybe some of those who were training them possibly didn't. So I tried to point out what I felt—you know, desirable characteristics that a combat engineer, military engineer should have in time of war. And I tried to point out that these are some of the things that each one could strive to attain as far as he could to make himself well qualified as an engineer officer.

Q: Do you believe that the characteristics you mentioned in your article are still important for military engineers?

A: Absolutely.

Q: If you had to pick out one of the characteristics that you mentioned as the most important, which one would it be?

A: That's rather hard to say. Assuming that you have somebody who is basically trained and has some background and professional experience, energy and conscientious continuing application to duty and effort to contribute all of his energy to the job at hand are all vital. I saw so many instances of not just engineer officers but others who just didn't seem to be dedicated enough. They'd just not do their best.

Q: The first engineer special brigade operation was on 29-30 June at Nassau Bay, and it went badly due to high waves, but the beachhead was

successfully established. Did you worry excessively about the success of this operation?

A: Well, we were concerned. When you say it went badly, actually it was a successful operation. The amphibian units that went in there went in under almost impossible conditions. You had waves of—I don't know whether they were 12 feet or more—with these small craft required to make this landing. It was not their timing on that landing. Those orders and timing were issued by the high command. They went in. They performed their task. They got their forces ashore without casualties. A number of the boats were wrecked, but they were able to execute that mission under virtually impossible conditions. I think it was a great tribute to our engineers, our amphibian engineers that were involved.

Q: You had the 871st and 872d Airborne Aviation Engineer battalions, which were used at Tsili in Markham Valley under Colonel Harry Woodbury. What was your opinion of the effectiveness and the usefulness of such airborne engineer units?

A: Well, for certain types of operations where they have to be airborne to the site where they are going to work, I think they are very, very valuable units. But by and large, their equipment is so light and so small that after that phase is over and you're going to use them, say, as regular aviation engineer units, their equipment is so light and frail that you have a lot of trained manpower but the equipment is not effective in turning out mass construction under quick time.

As I say, they are a specialized unit. I think the value is—and that's their primary purpose-when you have an airborne operation into some distant, relatively inaccessible area and you land them and their equipment as they did in some of the early operations in which they were used. But later on, when it was not necessary to send them airborne, we tried every which way we could to get heavy equipment and make it available to them and use what you might say is normal-sized equipment to get maximum production.

Q: During 1943 General Eugene Reybold, Chief of Engineers, tried to gain from General Somervell a more liberal supply policy for the theater for items of Class IV supply. Did his intervention help at all?

A: Well, I don't know specifically what he was doing or what he was trying to do with General Somervell, although I had tackled him with virtually the same sheaf of problems I presented to Bill Somervell. I know that that was in line, I think, with the recommendations and so on that I had about getting away from the project supply system and instead providing, you might say, a theater reserve of supplies and equipment. It was in conformity to or parallel with the same views and objectives that I had on numerous matters as far as the engineers were concerned.

Hugh J. Casey was promoted to major general on 20 February 1942. This portrait was done by Army artist Captain John Cullen Murray in 1944.

Q: Did you know General Reybold very well?

A: Yes, I knew him very well. He had come out to the theater on inspection. We took him around, showed him what we were doing, and also stressed with him the numerous problems we had—you know, need of equipment, need of setting up a theater reserve. It may be in connection with our presentations and discussions there that possibly he was making this presentation to General Somervell.

Q: In 1943-1944 operations, each objective and task force assigned to it were different. So task forces were structured for each case. Little in the way of standard operating procedures or standard tables of organization applied to this kind of operation. So task force engineers were appointed to do the best they could on the basis of their own experience to conduct combat and

construction support. How did you go about selecting the task force engineers?

A: That was sort of primarily the Sixth Army function—the task force. It was under Sixth Army; it was appointed by Sixth Army. So Sam Sturgis, let's say, would have the primary responsibility of setting up the task force engineer complement, with our assistance. For example, even the organization of the corps engineer staff was so paltry that even they were inadequate either for corps task force or subordinate task force engineer operations. We were always in very close communication with Sixth Army, or later Eighth Army, with suggestions as to which officers could be made available.

But recognizing this problem, we sent in recommendations to the War Department for organization of an engineer construction brigade headquarters and headquarters companies patterned on and somewhat comparable to the engineer special brigade headquarters. It pointed primarily toward what we felt was needed in such a headquarters to organize appropriate task force engineer headquarters groups.

Q: With respect to the task force commanders, were there- any task force engineers who particularly distinguished themselves by their operations?

A: Well, I'm sure there were some, but by and large they all did well. Based on my memory as of now, I wouldn't want to pick out or indicate any special ones because I can't remember.

Q: Were there any that may have ruined their careers by inadequate performance?

A: Not that I know of. If they had, I think I would be cognizant of that.

Q: Colonel William Wanamaker was the task force engineer for Krueger's operations in the Admiralty Islands in March 1944. He apparently had all kinds of trouble due to poor organization and the lack of cooperation from the naval construction battalions?

A: At the higher echelons we had reasonably good relations with the naval Seabees. One problem that you had with the naval Seabees, they were made up of older men—very well-qualified personnel in the construction field, because they'd been taken largely from construction organizations in the States. They had very good equipment. They had higher ratings and so on in their organizations as compared to our Army engineer units. But they did sort of think on more permanent-type construction, rather than the military operational type such as we were involved with.

One thing, they felt that almost the first priority after a landing would be to provide a good living area for their command in the way of quarters, tent floors, water supply, and so on. And then, having gotten bedded down well, they would proceed with construction. Whereas with our Army construction units, our primary objective was, as soon as you land, you get in there and start working on the airdrome. At night or at other times, insofar as you could, you could putter around and take care of your living requirements.

That was one general difference in our thinking. And you have different commanders and different units. I think in Wanamaker's case you probably had more trouble with the specific Seabee commander, some of whom felt that they wanted to be under Navy command rather than operating under Army supervision and direction.

Q: The experience of Wanamaker in the Admiralties led you to get MacArthur to effect a reorganization that placed the naval construction battalions directly under the control of the task force engineer.

A: Well, I thought that was basically the situation throughout. Possibly in Wanamaker's case some of these Seabee units were under Navy control working solely on specific Navy operations. However, basically, throughout our operations, our task force commander and his task force engineer controlled all the engineer units attached to that task force, whether they were the Australian engineers, the RAAF work units, the Seabees, the aviation engineers, or whatever.

Q: For the Hollandia operation of April 1944, which was the largest to date for both assault and base construction, planning began well in advance and was planned by a team from Sixth Army and USASOS. Did this make the

subsequent transfer to USASOS easier and did it make for better planning for the entire operation?

A: I'd say yes. After all, our procedure was that the task force would go in in charge of that specific operation. The task force commander had priority on the call forward of materials, equipment, and other elements in that command, though subject to the provisions of the operations instructions issued to him by our higher headquarters. Thus the task force engineer and his engineers operated under his command. That didn't mean that the task force commander, who knew nothing about engineering, would interfere and get involved in that; but it was still his mission, his authority.

The task forces were to initiate the construction of these dromes, bases, or whatnot immediately after landing. When the combat phase was over, if there had been one, it was our procedure to turn the responsibility for construction of these installations over to USASOS—frequently turning over most of the engineer units that had been operating under the task force to USASOS, and supplementing them with other units assigned to the USASOS base commander. Being able to plan and work together prior to the turnover, I think, effected better coordination and a smoother transfer of work. The work continued to go on without interruption. It effected a smooth transfer of responsibility.

Q: While your selection of landing areas was always very carefully made to avoid Japanese concentrations, weren't you a little surprised at the lack of effectiveness of the Japanese defenses and obstacles, use of mines, and their general engineer work?

A: I was not surprised at the setup of the Japanese defenses. I think they concentrated on that, and I think they did very well in connection with local defenses–I mean, the utilization of bunkers and obstacles, booby traps, and hazards. I think they did that quite well.

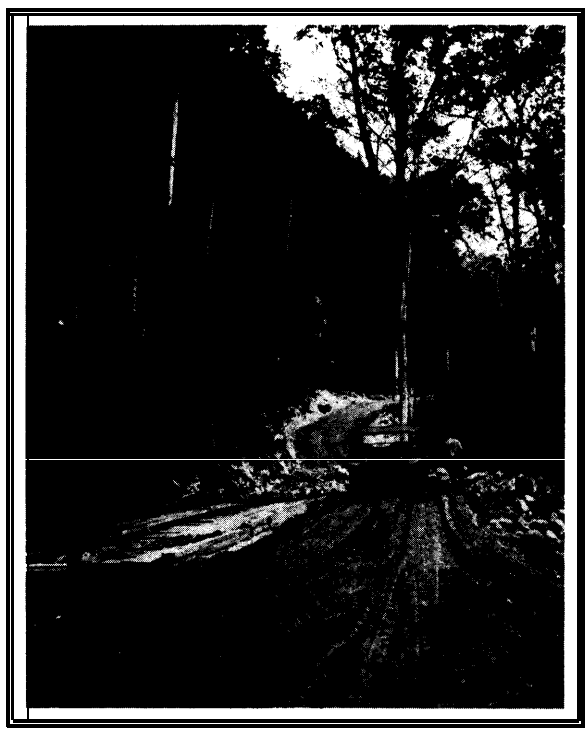
The Japanese, of course, were handicapped by having nothing relatively in the way of heavy engineer equipment. They did not have the equipment, for instance, for oil pipelines and storage tanks for the movement, storage, and distribution of gasoline or fuel. They were relying on bringing the stuff in by drums of gasoline, trucking them to an airdrome, and then taking these empty drums back, putting them on a ship, and sending them back

someplace to be refueled. And keep in mind that the empty gasoline drum is highly explosive.

The Japanese engineers were relatively heavily handicapped. I think they were far subordinate to the capacity of our American engineer units, which were well equipped and trained in the use of heavy equipment. The Japanese were using largely hand tools. It took 10 to up to 50 times, I guess, the amount of manpower to do what our equivalent units could do, and not nearly as well and certainly not as quickly. They were very deficient in engineer capacity, which I think they all recognized after the war.

Q: Their airfield construction was particularly poor, and airfields particularly poorly sited and drained. Can you explain that?

A: Well, as I say, I think it was, one, due to a deficiency in equipment, having to use hand tools and limited truck capacity and transport capacity; and they also were building their airdromes for a lighter type of aircraft. They were not operating with the B-17s, B-24s, and did not require the same length and width fields and the same strength of hardstand and runways as our Air Force required.



Cliffs around T jetty on a road from Bosneck to Nokmer on Biak Island, Dutch New Guinea, 5 July 1944.

Q: Do you remember anything that stands out in your mind about the Biak operation?

A: I'd have to refresh myself on that one. I know we ran into tactical difficulties which were ultimately surmounted; but as far as our engineer mission was concerned, it was very successful.

Q: When did it become apparent to you that an engineer headquarters higher than the task force engineer and regiments was going to be needed to control construction?

A: I think as we approached operations of the type and scope of Hollandia and Atape, rather than the prior, relatively smaller task force operations, I certainly visualized that some such organization would be needed with the invasion of the Philippines and certainly in the subsequent landing operations against Japan where our engineer forces would be massive in size. As I say, we recommended we get authority to set up these engineer construction brigade headquarters.

Q: How much did General Frink's establishment of a procurement and distribution division at Sydney and distribution branch with an engineering division at Milne Bay relieve your problems of procurement, supply, and distribution of engineer items?

A: Well, it was an approach. It wasn't the ultimate successful solution. It was an improvement over relying on going all the way back to USASOS headquarters in Australia. Setting up a forward branch with somewhat similar authorities and soon that they had at Headquarters USASOS brought closer to the area of need the facilities of such a command.

Q: That engineer troops had inadequate training for construction demands of the Southwest Pacific was obvious. Colonel Thomas Lane, who was your operations officer, ascribed this shortcoming to the emphasis after World War I on divisional or combat engineer operations during that war rather than on the less glamorous duties of engineers assigned to the Services of Supply in France. Therefore, the necessary logistical support experience

was never taught or gained in engineering training. Do you think Lane's appraisal is correct?

A: I think generally so, yes. In World War I the divisions in combat were just stuck in solid trench warfare-not a war of movement and so on. And of course, they had the Service of Supply in the rear. But the operations of the latter were mainly building up depots, construction of depots, operation of railroads, forestry operations, and so on. But you had no such thing as task forces.

During a war of movement you had to build and maintain supply roads, provide utilities, in addition to the combat engineer phase. But in World War I they certainly had nothing like the airdrome systems we had to provide and maintain in World War II. Those senior commands and headquarters who were thinking in terms of what had happened during World War I were far out-of-date compared to what the needs and requirements and problems were going to be under the situation which obtained in World War II, and particularly in a jungle theater and unimproved and undeveloped theater such as we had in the Southwest Pacific. They just had not had the opportunity to experience or apparently even visualize what those requirements would be.

Army Service Command and Return to the Philippines

Q: What were your primary considerations for the establishment of the Army Service Command (ASCOM) in July 1944?

A: It wasn't my idea to set it up. But General Steve Chamberlain was our G-3 operations chief on our GHQ headquarters staff. And he was ideally qualified to be G-3 chief of operations because-not because he was a tactical specialist, but he had been a logistics specialist. I think he had been in our G-4 general staff in Washington. So he had an appreciation and a concept of logistic problems attendant with all of our operations.

He had a special understanding of the need for engineers and supported me particularly in connection with filling our engineer requirements.