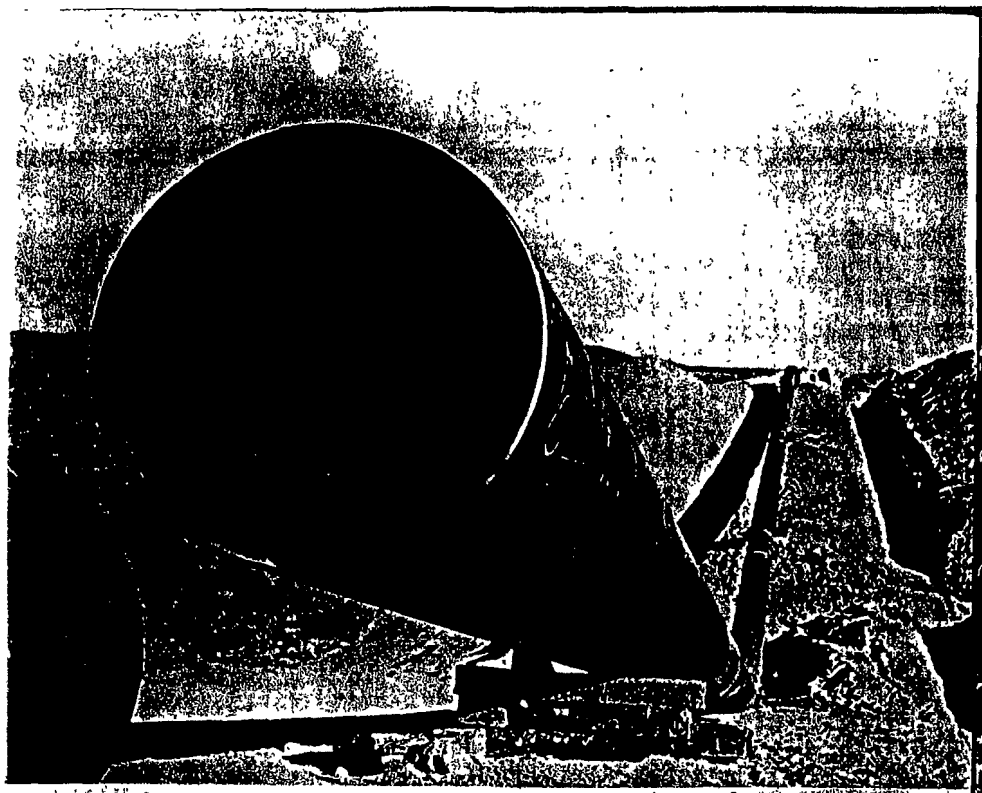
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Sept 1950



The world's largest fuel energy line—another job for Bechtel experience

NO DETOURS

PIPE LINES GO THROUGH··
NOT AROUND--THE TOUGH SPOTS

★ Old hands at taking the rugged route, Bechtel pipeliners are "at home" when and where the going gets rough - - in foreign lands or here in America.

DESIGN · ENGINEERING · CONSTRUCTION

BECHTEL CORPORATION

LOS ANGELES SAN FRANCISCO NEW YORK
TULSA

BECHTEL



A BUILDER & HIS FAMILY

CHAPTER FOURTEEN

By ROBERT L. INGRAM

If here there's a will—

Plenty of labor was available. Heavy equipment was a horse of a different color. The dredging job was a big one with no time to wait for equipment from the States. The Philippine Government owned the only available dredge. It was not for hire, authorities stiffly pointed out. Colley and Ferris talked the matter over. "There's only one out," the two Georges decided. President Quezon himself" The President was at Baguio, ill, with visitors barred. They decided to try, anyway. An old friend got Ferris in—on a Thursday. By Monday the big dredge was on the job at Cavite.

Getting steel was the next problem. Practically none in the Islands. Someone had seen a stock of it. Where? At Hong Kong! The Japanese surely knew about it, trying to get it would be risky business. No other choice—so up to China by air, a taxi cruise of the town, a quick deal, and then a brush with the Hong Kong authorities over—of all things—typhus shots! But the steel went to Manila, right under the Japs' noses.

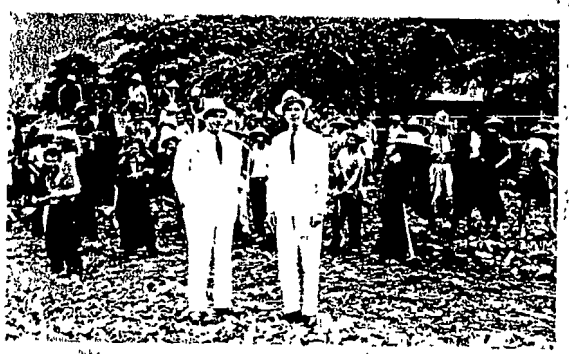
That was the way things were done during those frantic final weeks. It was a race and everybody knew it. The fifth column around Manila knew it. They watched politely and were careful to spell George Colley's name correctly on their blacklist. By fall Japanese observation planes had seen enough to earn him a high place on the roll of those to be liquidated.

"I pray to God . . ." MacArthur said

General MacArthur was interested in the naval work. He called Ferris in for an hour's talk. Young man," said the General, "it does my heart good to hear about the plans you and Colley are carrying out. I pray to God you will finish in time—but I do not think you will."

History records the Philippine disaster of December 8th, 1941. First, Clark Field—then Manila felt the Japs' air onslaught. American airpower in the Philippines had been destroyed—on the ground. Thereafter only time and courage stood before the fall of the Islands. And of Guam as well, where Jack Pomeroy's organization had started work in July. Guam—that years-long center of the whole political maneuver to appease Japan — Guam, where Clark Eldridge and seventy-seven good construction men were taken prisoners. Jack Pomeroy, Harry Morrison, and W. V. McMennimen were there just before the outbreak. Jack intended to stay, Mac planned to go on to Cavite, but a typhoon intervened. Thereupon he decided to return to the mainland for Christmas, and finally argued Jack Pomeroy into coming along. By this narrowest of margins the three of them missed being war casualties. They met Earl English on the returning Clipper, homebound on one of his San Francisco to Manila commuting trips for Steve. At Honolulu they picked up George Ferris who had come in from Manila, and left by Matson Liner on December 5th. It was that close!

Cavite, 1941. George S. Colley, Jr. and Harry Koons of the top Bechtel staff, with Filipino laborers. EDITOR'S NOTE—Sept. 1, 1950: *I am very happy to report that George Colley, Jr., Vice President, I.B.E., is in Dhahran, Saudi Arabia; Harry Koons is superintendent on the U. S. Rubber job in San Francisco.*



c. 10, 1941: Fires at Cavite

After the first attacks in the Philippines had cleaned out the American air force there, the enemy came over at will on their bombing runs. On December 10th the coup de grace was given to the partially completed installations at Cavite and out on Sangley Point. With no more worth doing there, Commander Wilson took them over to Mariveles to build emergency airfields and ammunition tunnels in the mountains. From then until that dark day when the little yellow men arrived, the contractors' forces were put to work on odd jobs in an attempt to bolster the weak land defenses. Most of the men were taken prisoner in Manila and spent three miserable years at Santo Tomas and Cabanatuan. Some, like Chuck Snead, did not return.

"San Francisco and Manila"

Back in San Francisco, Steve Bechtel was badly upset. Bechtel men had faced danger a thousand times—it was part of the game—but this was something different. Men waiting for the inevitable, like caged animals, was not to his liking. He was in no way responsible for their plight, but it was as characteristic of the sons as it had been of Dad Bechtel to feel a close kinship with the organization's people. George Colley, of course, was Steve's close friend from childhood on. After Cavite fell and while the men were still working around Manila, Steve telephoned George every night, more for encouragement than anything else. On one of these calls—it was December 28th—George said, "You won't hear from me again for about a month." He didn't elaborate. They both knew the Japs had tapped the line. A week later Chuck Snead cabled. Colley had escaped to sea.

Manila to Kuching, the first lap

With him went his wife, Marjorie, Harry and Mrs. Webber of his staff, Dr. Ashton Laidlaw of Shanghai, and a very important brief case containing records of the work. They put out in a small pleasure launch, inching their way through two mine fields in the black of night, drawing a warning shot from Corregidor before establishing identity. The chances of reaching Australia seemed slim, for the enemy's navy had been seen to the north, and patrol vessels even now might lay across their course. Colley's plan was to travel at night and hide during the daylight hours. After ten nights they reached Balabac across the Straits of Mindoro, switched to a native sailboat known as a "kumpit," and prepared to run the gauntlet of small Japanese craft known to be ahead. Traveling thus, here through what George merely calls "bad weather," they made Sandakan in Borneo, to find the Japs already in possession of part of the island. Here they hid out in a tidal river, while attempting to obtain a more seaworthy craft. The nearby town fell into Jap hands, and George decided to swim down river to a native settlement in the hope of finding a boat. Part way there a crocodile took after him, and soon Colley was perched high in a mangrove tree with Mr. Croo patiently waiting below. He was still there when the Japs came several hours later, sweeping the river in a launch. The others had been captured by a separate patrol.

1942-45: Borneo

First on the leper island of Berhala and then at Kuching they learned what life was like in a Japanese prison camp. Food was bad, some of the time there was not enough to subsist on. Treatment was worse. Harry Webber and nine others were executed for infractions of camp rules. How, for survival, George and his companions managed to set up a food smuggling network, and how he put out a "trap line" of rusty tin cans to catch syrup drippings from a sugar warehouse in that damp climate, are examples of ingenuity he recounts in the privately published book of his experiences, *Manila, Kuching and Return.*

The "return" in that book title came three weeks after August 20, 1945, when the camp commandant called them in to announce the historic atom bomb incidents and the armistice. Not until September 11th, following threat of a wholesale slaughter, did the Australians arrive to insure their freedom. On September 12th, Marjorie Colley, who had been held separately in the women's quarters, was reunited with her husband, and they walked the long distance from the prison camp to Kuching. Arriving there, you can imagine their delight to see evidence of American strength again, in the form of the LCT *Wild Willie.*

A story-book ending

To Labuan they went on the *Wild Willie,* enjoying every minute of the trip. At Labuan they were told a special plane was on the way to pick up George Colley and wife, a courtesy which should have aroused their suspicions. Because the next evening in Manila the reason for the special plane was apparent when George and Marjorie came to the happy ending of their war story. Waiting to welcome them was Steve Bechtel all the way from San Francisco!

1941: Action on the home front

While work went ahead on Naval bases in the Pacific, the men at home had an Army Base and Port of Embarkation to design and build, at Oakland's outer harbor on San Francisco Bay. It became the heart of the Army's Pacific overseas supply, pumping the lifeblood of food, munitions and equipment westward in a steady stream. The W. A. Bechtel Co. engineered this project in 1941. The following year, construction valued at eleven million dollars was carried out as a group venture under Bechtel sponsorship. Some of the supplies that cleared through Oakland came from two other projects built by the organization. These were facilities for the manufacture of munitions. One job consisted of additions made to an existing Hercules Powder Company installation at Belvedere, New Jersey. The other was a completely new plant, engineered and constructed by Bechtel McCone at Louisiana, Missouri, and known as the Missouri Ordnance Works.



Apra Harbor, Guam—If here Pomeroy's organization was operating in 1941 showing Cabras Island quarry.



A LOOK ACROSS THE PASIG RIVER, MANILA, IN FEBRUARY, 1948—The temporary Quezon bridge, built by the U. S. Army Engineers, bears a heavy burden of civilian traffic. Just beyond are the clustered long buildings of the War Damage Commission which have arisen from the charred ground where barracks of the American 31st Infantry stood before the war.

Basic materials: . . . Powder . . . Steel . . . Copper

Warren Bechtel, who negotiated the Belvedere contract, pointed out that after an explosion in 1940 at Kenville, New Jersey, the United States was left virtually without facilities for the manufacture of smokeless powder. Belvedere remedied that situation, and the Missouri Ordnance Works added materially to Uncle Sam's explosive output. As happens so often, some of the same Bechtel people worked at both ends of apparently unrelated projects. Perry Yates and Russ Quick went east on construction of the powder-making facilities that furnished munitions to the Pacific through the Oakland Army Depot they had just finished building.

If powder was short, so were copper and steel. The Bechtels helped in the solutions to both problems, steel at Pittsburg, California,



where in mid-war foundations and additions were made to the Columbia mill; copper in Arizona and Mexico. Warren, as recorded, pioneered the Bechtels' war construction program with the first Phelps-Dodge contracts at Morenci, Arizona. Under increasing pressure for copper, Morenci began to grow until, when he finally took his men off the completed job, it had become one of the world's largest open pit copper mining operations. Like the Canol Project to come, there was an element of hedging in the enlargement of U. S. copper production. After the enemy's initial success in the Pacific, American sea routes were vulnerable. Had the Japanese cut sea access to Chilean copper, the supply of this metal would have been nearly as critical as rubber or tin.

1941-'44: Morenci

Morenci is located in southeastern Arizona, not far from the New Mexico line. It is an old mining district, dating from the erection of a small blast furnace there in 1872. Development on a large scale did not take place until 1942, when Louis S. Cates and associates of the Phelps-Dodge Corporation started operating the present copper reduction works, which efficiently utilizes ore assaying only one per cent copper. Its construction took place in two stages. The first units consisted of a reduction works, with an initial daily capacity of thirty thousand ore tons, a smelter, power house, water system and tailings disposal facilities. Under a separate contract the construction graded and disposed of residual matter from the processing plant for the period of one year.

EDITOR'S NOTE

BECHTEL BRIEFS *is privileged to present in a series of installments "A Builder and His Family," written and copyrighted by Robert L. Ingram.*



Glenn Buchanan, Bechtel Equipment Manager.



Maud Calders, Secretary.



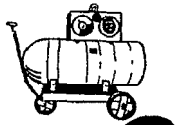
Russell Batt, Purchasing Agent.



Dave Jones, Office Manager.



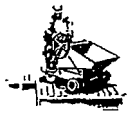
Colonel W. C. Muller, Accounting.

















Bechtel Equipment

EQUIPMENT, the heavy machines and trucks used by our field men, plays one of the most important parts in getting our jobs done on schedule and within the bid. The job of providing proper equipment at the right time to Bechtel construction crews is that of the Bechtel Equipment group managed by Glenn C. Buchanan

Buck Buchanan's background especially fits him for an assignment as manager. As a trained engineer he has held many responsible supervisory positions on Bechtel Construction jobs in the field. He is eminently familiar with construction problems, job personnel and the value of good equipment. Few men with the wealth of practical experience, such as he has in the petroleum construction field, have as good a theoretic background. Not only is he a graduate of civil engineering from Stanford University, but he has two years of specialized post-graduate work in structural engineering to his credit from the Wilson Engineering School, New Hampshire, Connecticut

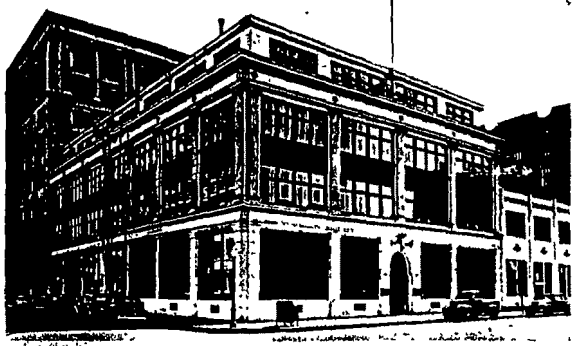
First of their functions is to provide our superintendents with the most modern tools in the best condition for each need. This requires the constant vigilance of Russell Batt, Purchasing Agent, who must investigate each new design and evaluate it in terms of Bechtel needs. Over a thousand items of really heavy equipment are now on their active rental list

Both Glenn and Russell act as consultants to the field in advising the range of equipment necessary, and much of their time is spent in the field noting effectiveness of use and proper maintenance. In fact, Glenn averages over 20,000 miles a month, or the equivalent of five times around the earth a year.

In the Mills Tower office Dave Jones takes care of the control function, Colonel Muller keeps the financial score and Maude Calders handles the secretarial end. All are versatile in that each can double in brass to handle each other's job, if necessity dictates, in buying, renting, selling, ordering maintenance or storage between jobs

With Bechtel construction crews maintaining their reputation or fulfilling today's schedules, the tightest in history, and depending on them to furnish the vital item of tools, Bechtel Equipment is a small group doing well on a big job

Bechtel Purchases New Engineering Building



101-111 California Street, San Francisco, Calif.

VICE PRESIDENT J. P. Yates announces that the San Francisco Engineering functions will be housed under one roof in the near future. This has been made possible by the purchase of buildings and property at 101 California Street.

There are two connected buildings with a total usable floor space of over 47,000 square feet. The larger of the two structures has four stories and a basement. There is air conditioning and acoustical ceilings throughout. Adjacent and connected is the smaller structure of one floor, mezzanine and basement.

As soon as alterations are completed, sometime soon after the first of the year, the Engineering groups now located at 142 and 250 Sansome Street and 62 First Street will move into the new location.

IN THE PUBLIC INTEREST

"The Pacific Gas and Electric Co. comes in for some merited national attention in the current issue of Collier's magazine.

There is plenty of drama packed into the PG&E's day-to-day operations. The maintenance of a steady supply of gas for your stove and power for your washing machine calls for the co-ordinated efforts of a whole army of workers, and the efforts—at times back-breaking and at times heart-breaking—of these people make up the bulk of the story.

But the greatest struggle of all is the one that goes on, day after day and year after year, between the privately owned utility and the Government people who would like to add PG&E to the growing list of ex-privately owned utilities by setting up rival, tax-free power services.

Several factors have contributed to the success of the company's efforts to stay in business. One is the persistence of President James B. Black in arguing the case before Congress. Another is the fact that PG&E is at once a fine customer of the Government and a lavish taxpayer—$328,000,000 to State and Federal treasuries in the past nine years.

But the most important factor, we believe, is that PG&E has been efficient and progressive enough to provide good service at low cost. That is a powerful inducement for the people of California to keep the PG&E in business, and a hard argument even for the Government's articulate and plausible champions of Federal ownership to blow down."

The above editorial is reprinted by permission of the *San Francisco Chronicle* of July 6, 1950. It is of especial interest to us in that we are proud to have been able to assist the Pacific Gas and Electric Company in their ever-continuing program to supply more and better public utilities to the people of Northern and Central California. Today, Bechtel crews are pushing forward the Super Inch, a $64,000,000 project, to eventually bring into the area an additional supply of some 400,000,000 cubic feet of natural gas per day, and another Bechtel construction crew is rapidly completing a $30,000,000 steam electric generating plant near Antioch to add 300,000 KW of electrical energy to the Contra Costa area for industrial and domestic needs

BECHTEL Safety

By CECIL W. COLE, *Safety Supervisor*

By Teletype from Big Creek #4—

TO PERRY YATES—SF—

AUGUST 7—TODAY IS OUR HUNDREDTH DAY FOR THE POWER HOUSE AND RIGHT OF WAY CREWS WITHOUT A LOST TIME ACCIDENT.

CLIFF PEHL, PROJECT MANAGER.

That was news we really enjoyed reading. Our hats are off to the boys out there on the job, to Superintendents K. O. Taylor and George Saul and to Safety Engineer Syd Kelly.

But most especially to the foremen who have really made a safety program work. Every accident, even to the most minor, was discussed in foremen's meetings—How, Why and What are we going to do so that it never happens again.

The men who could do something about accident prevention investigated and got right out on the job and did something about it. A defective ladder scrapped—clean up an overlooked walkway—a projecting wire to be cut off—replacing a broken truck window—all little items but remedied before they had a chance to become serious.

The program really paid off. A HUNDRED DAYS and NOT ONE serious accident. Think of the time, money, pain and possibly human life saved by cooperation and teamwork of the safety-minded crews on jobs 1440 and 1488.

Union Oil Asphalt Refinery

Charles Draney, Bechtel Sales and Contract Manager announces the award of a contract to Bechtel Corporation by the Union Oil Company covering an asphalt refinery. The location of the new refinery will be at Edmonds, Washington.

Capacity is estimated at 65 thousand tons of paving asphalt, road oils and cutbacks per year. The products will be distributed in the Pacific Northwest and as far as Alaska to serve industry, irrigation projects and highway construction. Crude oil stock will be shipped by tanker from California to feed the unit.

Design is already under way in the Refinery Engineering Division under Chief Refinery Engineer Fred Meyer. Project Engineer on the job is Jake Lindenbaum assisted by Engineers Edward Boyer and Don Peterson. The drafting functions are headed up by Earl Brown handling Piping and Gordon Guthrie, Steel Structures and Vessels, directed by Chief Draftsman O. W. Chisholm.

Construction began on August 1st of this year with Fred Paul as Superintendent acting under Refinery Construction Manager Al Orsetti. The project includes the building of the refinery unit, blending tankage, shipping and receiving facilities.

THIS MONTH'S COVER

TOPPING OUT



At Southern California Edison's Big Creek No. 4 jobsite Bechtel - Morrison - Knudsen builders get ready to level off. Photo shows face of dam with 217,000 cubic yards of concrete already in place.

Ready to pour is the section about the intake transition form to convey the water from the reservoir and start it on its way through the tunnel, down the penstock and to the two 42,000 KW turbine generators.

Vol. V **No. 9**

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