FILE NAME: .ŜŎKűŜf ó.9/ I ú

DATE: мфпф

DOC#: .9/ I лнм

DOCUMENT DESCRIPTION: ¢ℕJI·ŘŜ W2dzℕJyƖ·f ! ℕJűλŎfŜ π .ŜŎKűŜf .ℕJλŜŦă

date ? 1943

BECHTEL

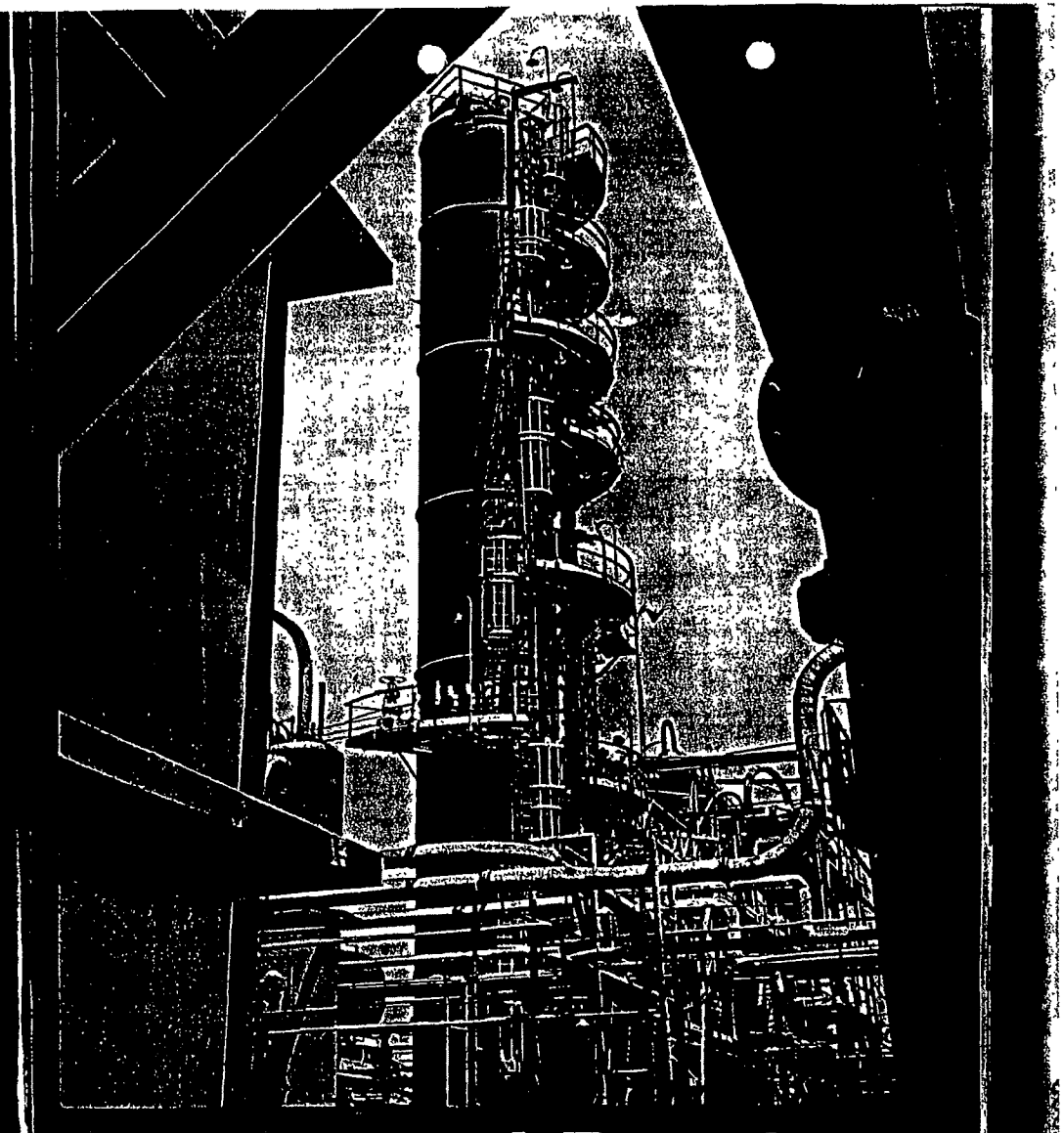
☆ AN ORGANIZATION THAT HAS TO ITS CREDIT EXPERIENCE IN EVERY PHASE OF ENGINEERING AND CONSTRUCTION

Bechtel designed and Bechtel built—The outstanding performance of plants now operating in the process industries—demonstrates that well-designed facilities develop from careful interpretation of clients' needs.

BECHTEL CORPORATION

SAN FRANCISCO

LOS ANGELES NEW YORK



Bechtel Briefs

A BUILDER & HIS FAMILY

By ROBERT L. INGHAM

CHAPTER FIVE

Caribou: where a college boy licked the mud problem

Behind the scenes in the Bechtel family, however, the Caribou situation did not develop quite as smoothly as indicated by Mr. Peterson. W. A. had been seeking contracts with the big power utilities for a long time; he was anxious to get started and show them what his organization could do. But he had to wait for a tough job, and Caribou was just that. It called for tunneling through mud, and waste disposal proved difficult and costly. Part of this work was subcontracted to several of his best railroad tunnel men, who were having trouble with this problem. Steve came up during the college vacation and figured out a way to save money on getting rid of the excavated material. He made a financial arrangement with the subcontractors on a conditional basis, his idea worked beautifully, so he went back to the University that fall with a respectable nest egg.

1923: Natron Cut-Off, the later contracts

It will be remembered that W. A. made two cuts for the Southern Pacific between Natron and Oakridge, Oregon, in 1910. During the early and mid-twenties the railroad extended this section to make it a through route, the Cascade Line. The 270-mile link, from Natron to Black Butte near Mount Shasta, was opened to freight and local traffic on September 1, 1926, and to through traffic the following April. Warren and Steve Bechtel separately took part in its construction. With Dad's backing, Warren took a subcontract under the Utah Construction Co., for five miles, from the end of track below Oakridge, up Salt Creek Canyon to McCredie Springs. The work was done in 1923 and 1924.

Warren tried out the new tractors

Warren Bechtel's venture on the Natron Cut-Off brought about an important improvement in methods—the first use of the tractor in heavy construction, probably for the west and possibly the entire country. The Oregon mud was soft and deep that winter. Even big teams were unable to move the heavier pieces of equipment. Faced with a stalemate, Warren remembered that the new tracklaying-type tractors, which he had seen on large-acreage California farms, were able to get traction on soft ground where horses and mules were helpless. He sent down to San Leandro and got some agricultural tractors. They were the old Best sixty-horsepower machines, predecessors of the present Caterpillars.

He picked up some Athey trailers from war surplus stock, hooked them on behind the tractors, and first showed the way to move equipment and materials that has become the standard with contractors the world over. Warren remembers that the Natron contract called for SP to build and maintain all construction roads, and that to the acute dismay of the railroad's engineers, his big tractors tore their roads to shreds! But he got his equipment over the wet ground when the outlook seemed hopeless, finished the work on schedule, and pioneered a revolutionary advance in construction practice.

1923: Diesel power in Arizona

Steve was down in Arizona at this time, on the Gila River. As project chief, he was building the SP's main line extension into Phoenix from the former main line running between Tucson and Yuma. He had married Laura Adeline Peart at Hanford, California, in September, 1923, and she went with him to set up housekeeping out on this job. There Steve added another "first," the first diesel-powered shovel, a Bucyrus Model 50-B, driven by an Atlas 110-horsepower, four-cylinder 9 x 12 diesel engine. H. L. Livingston of Bucyrus-Erie remembers this shovel well and points out that it is still working at an Oroville rock plant formerly owned by Bechtel and Kaiser.

The youngest "construction stiff" on wheels—like father, like son

From Arizona, Steve went north to the Natron job. The contract was for concrete work—retaining walls, culverts and viaducts. With Steve, Jr., who had been born in the meantime, Steve and Laura re-enacted Dad and Mother Bechtel's earlier roles by creating a home on wheels. It wasn't quite the same, though Bill Waste, who visited them, reports finding a rebuilt Ocean Shore Railroad observation coach transformed into an outfit car, replete with modern comforts! The car was called "WanTeeKan." It was named by Mother Bechtel who coined the word by combining the halves of three "baby names," the pronunciations each of her sons as toddlers had used for their given names—"Wan-Wan" for Warren, "Tee-Tee" for Steve, and "Kan-Kan" for Kenneth. And in "WanTeeKan" the youngest Steve, generation III, was following in father's steps—out on the job from infancy.



Mud and motorcycles. Steve burned up the French countryside as a Dispatch Rider—photographed just before the Armistice in 1918 at Camp Mont Mont Loir-et-cher.

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.*



Famous for food—these kitchen cars were W. A.'s special pride.



Shop and camp on wheels—a Bechtel work train.

1925: W. A. Bechtel Co., a corporation

Up to this time W. A. Bechtel operated his business as an individual or with a partner. By 1925, growth of the organization and the responsible part taken by his sons in its projects caused him to form with them and his brother Arthur, W. A. Bechtel Co., a corporation. It was one of the largest western construction firms, and the contracts on which its corporate life began included train sheds, railroad tunnel enlargements, and snow sheds in the Sierra Nevada. The latter job is noteworthy for one of the earliest uses of pre-cast concrete slabs. This work on the Southern Pacific's main line "over the hump" centered at Emigrant Gap, above Colfax.

Opportunities multiplied as two generations teamed up to capitalize on Dad's hard-won reputation. Warren went to Nevada County in charge of Bowman Dam, built for the Nevada Irrigation District. It was then the second largest rock-filled dam in the world, and the first dam built by the Bechtels. Although less than thirty airline miles from Grass Valley, California, from the standpoint of access Bowman Dam proved the most remote Bechtel jobsite until Canol, sixteen years later. "We were really cut off from civilization," Warren said, "and we had to get everything in there to carry us from Christmas until the end of April." "Everything" meant more than equipment and construction supplies. They built a camp, complete with hospital, and brought in large stocks of food. Some of it was on the hoof—one hundred head of cattle, with the necessary slaughterhouse and storage facilities. There was one head of livestock, however, that Warren didn't order. Steve, up on the Natron Cut-Off, used to swap supplies with Warren at Bowman. On one such shipment an item prescribed earlier by Laura Bechtel's pediatrician for young Steve's benefit came along, and Warren was amazed to receive one milk goat, usefulness outlived!

1925-'26: Bowman Dam

As a supplement to the Bowman Dam construction, Bechtel-Utah took over a contract to build twenty thousand feet of 9 x 9½-feet water tunnel, part driven through rock and part timbered. "We just about lost our shirts on this one," Warren recalled. "We took over after the orginal contractor ran into trouble in the early stages. We struck water that filled the tunnel to half its depth; months were needed to work our way out of the difficulties. On top of that, the District's money gave out and we finished the job on our own account, taking bonds that were sold later at a loss."

But Bowman also had its brighter side. Kenneth Bechtel came up and oversaw the grouting with good results. Perry Yates was a young engineer starting out with Fred H. Tibbetts Co., and assigned to the construction of an adjoining diversion dam and flume. Warren and Perry became hunting companions, a friendship was formed with the Bechtels that matured at Hoover Dam and culminated in Perry's association with the Bechtel interests. From Bowman, he went to the East Bay Municipal Utility District's Mokelumne project, where he worked with Gus Ayers, father of Bechtel Corporation's Bill Ayers. The western construction world, for all its accomplishment, as a small one indeed!

1927: Kenneth—a superintendent

In 1927 Kenneth Bechtel first took complete charge of construction in the field. Like the rest of the family he started with railroad work, not far from the scene of Dad's first job. Ken went to central Kansas and built butterfly sheds at a large Santa Fe station, using the pre-cast concrete slab technique the firm employed on the SP's Sierra snow sheds.



Railroad builders—Dad and the boys during construction of the Natron Cut-Off.