



Team leader Bechtel relies on tight organization for job quality.

Constructi

Ten times around the world each year, Stephen Davison Bechtel, is constantly checking project quality, wooing clients anywhere his four vice presidents have decided his employees can make millions in engineering, construction and management.

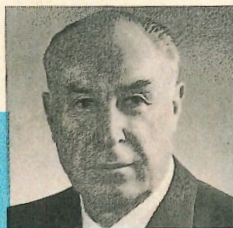
So effective is the 48-year-old pipeline's technique and organization that nearly 75% of the work of the San Francisco-based group of pipeline companies is repeat business, from private clients. The construction value of 105 current jobs, a survey by ENR and McGraw-Hill World Wide bureaus shows, is over \$40 billion.

Bechtel (pronounced BECK-tel) officials will not disclose such totals. The privately owned company, financial information is "absolutely sacred," says one public relations man.

The firm, often ranked first on lists of top designers and contractors, has worked for over 240 clients in recent years. New ones appear regularly, often after months or years of work by high-level staffers in various places. For example:

- Egypt, which Bechtel will work with the \$356-million SuMed oil pipeline. The company had studied the same system there about 20 years ago.

Top management runs a three-company group



John F. O'Connell
President, Bechtel, Inc.

O'Connell, 63, guides the operations of the pipeline and production service, mining and metals, labor relations, security and safety, and community and public affairs activities. After receiving a college degree in industrial education, he joined Bechtel at its Sausalito, Calif., shipyard in 1942. He was president of the National Constructors Association in 1954 and has served as Bechtel's alternate on a variety of Presidential commissions.



Edgar J. Garbarini
President, Bechtel Power Corp.

Garbarini, 63, handles nuclear and other thermal power projects (currently the firm's biggest money-maker) and the hydro and community facilities division. He first worked at Bechtel in 1934, but a year later returned to the University of California, Berkeley, where he had taken his BSCE with honors, for four years of research before rejoining the firm in 1940. He has worked on refinery projects, and once managed the firm's mining and metals division.



Jerome W. Komes
President, Bechtel Corp.

Komes, 62, directs a number of corporate services, including financial accounting, procurement (\$1 million a year), investments, computers, legal and insurance, social development and manpower services. He, too, began in a Bechtel shipyard, in 1941. He chairs Bechtel's finance and coordinating committees and is executive sponsor for more: quality improvement, business development, personnel, construction and engineering.

Man of the Year: Stephen D. Bechtel, Jr.

• Russia, where Bechtel may ultimately design \$1.4 billion worth of pipelines, refineries and a Moscow trade center for Occidental Petroleum Corp., Los Angeles, and El Paso Natural Gas Co. Steve Bechtel terms the move "normal, keeping tuned to what's going on."

• Alaska, soon to be crossed by a \$4.5-billion oil pipeline. The logistics study contract Bechtel signed with the owners last year has been extended to cover construction management.

• Coal liquefaction and gasification plants and breeder reactors all lie in the near future that Bechtel's scientific development operation is studying for the company that senior vice president Robert A. Cheatham, Bechtel Corp., describes as "in the business of exporting American know-how."

With such prospects, the only immediate problem of great concern that Steve Bechtel sees is more down to earth: "Our in-house studies show that the growth in skilled craftsmen and the supply of engineers are not keeping up with demand." And because Bechtel could need as many as 50,000 salaried employees by 1980, he must continually search the globe for managers to handle them.

A team operation. In 1898, the company was started with a mule team when W. A. Bechtel hired out on an Indian Territory railroad project in what is now Oklahoma. In the mid-1930s, his son Stephen took over the heavy construction company, soon took it overseas, got it into turnkey work, and, during 1949-50, guided it into construction of an experimental breeder reactor in Arco, Idaho, said to be the first nuclear source of electricity.

Meanwhile, Steve Jr. was obtaining a civil engineering degree at Purdue University, a masters in business administration at Stanford University and 12 years of field and office experience with the firm, mainly on pipelines. He took over from his father in 1960.

Since then, because the firm's volume has almost constantly risen—and without a loss for over 25 years—Steve Jr. has established the operation as a group of three, primary operating companies (see box). "That was a very intelligent move, because once you get too big you may lose the kind of personal attention necessary to a service business," says Edgar F. Kaiser, chairman of Kaiser Industries Corp., Oakland (ENR's

Man-of-the-Year in 1968). Each company's president is responsible for generally related projects.

The three presidents form the Office of the President, with Bechtel as chairman. They are among comparatively few of the 4,000 headquarters-building employees who ever see Bechtel outside an elevator. When he arrives between 7 and 8:30 a.m., he rides to the 14th floor, then to keep at 155 lb, walks up the stairs to his office, 23 floors above the city's financial district.

There, the presidents converge from their corner offices to "reexamine and reshape" the organization and the projects it will pursue, says Power Corp. president Edgar J. Garbarini. "We stay in that room until we are unanimous," adds Jerome W. Komes, president of Bechtel Corp.

Bechtel is the most well-rounded of the problem-wrestlers, says John F. O'Connell, president of Bechtel, Inc. "He knows the financial and general management about as good as anybody, and he knows more about what's going on on the jobs."

The vice presidents reporting to the presidents—who are also on the three companies' 20-member boards of directors and the seven-member executive committee that ultimately approves

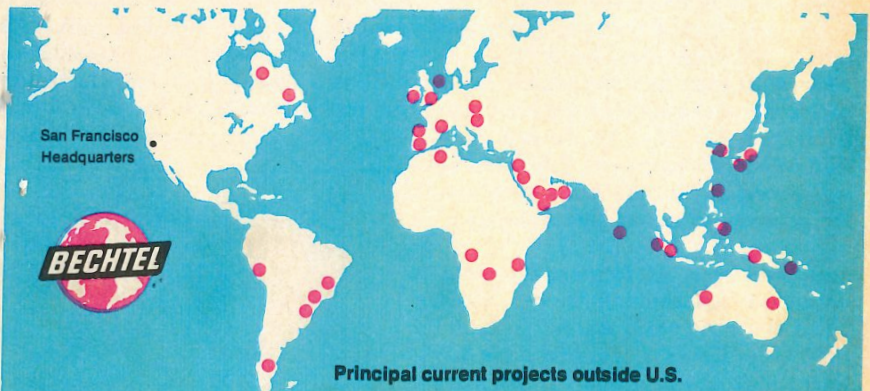
project plans—control various divisions and roughly 150 managers within them. Explains vice president Cheatham: "The divisions are profit centers, responsible for getting business, keeping clients, getting the jobs done well, and making a profit."

With those systems operating, the planning for 10 to 15 years ahead in the Office of the President can be guided toward the diversity that is crucial to the firm's growth. But one new area or project is always related to another. When Cheatham's mining and metals division plans a mining process plant, for instance, the chemical and refinery division has "chemical process engineers that we can always arrange to borrow."

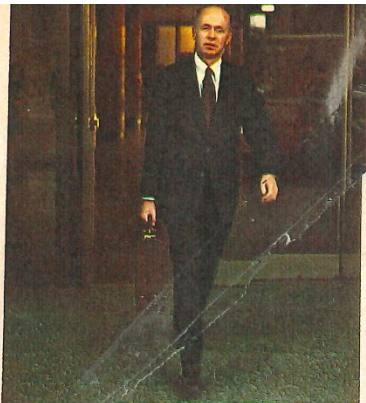
Further assuring orderly diversification is Bechtel's "main desire that we're known for the quality of our work" instead of its quantity, says Harry O. Reinsch, executive vice-president of Bechtel Power Corp.

However, problems do occur. One oil company official declined to comment on Bechtel because of current irritation on a foreign project he would not identify. But Bechtel himself recently established a quality improvement committee headed by Komes of Bechtel Corp. "It's to make certain the work we

Projects have had Bechtel in 91 countries



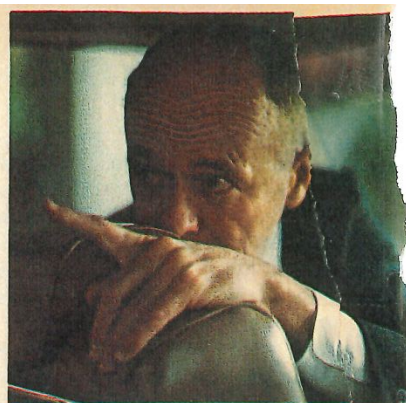
ENERGY AND MINERAL RESOURCES typify billions of dollars worth of design-construct work 20,000 Bechtel employees handle from 18 permanent world offices: Oil pipelines in Alaska, the Mid-East and Africa; dozens of nuclear powerplants from Oregon to Sweden; lead and zinc mining facilities in Greenland. The firm is also working on North and South American transit and building hotels around the world, with prospects for a trade center and other work in the USSR. It's "curious about China," which it may enter through Japan. The 76-year-old company has "exported American know-how" to all continents.



Bechtel is often on the run . . .



seldom seen in the office . . .



traveling out to check projects.

sell is of maximum possible quality," Komes says.

Bechtel expectations extend into executive ranks, O'Connell notes. "If the most you can do is a medium-good job, well . . . there have been instances around this company of people who were not ready to retire. Steve saw to it that they were well taken care of, but he got someone else doing the job."

Quality without fanfare. The executives' jobs often include the culling of information that Bechtel wants to see about the company's clients, schedules and costs. No one likes to surprise him.

During construction of the Bechtel headquarters office in 1966 and 1967, for example, he once wondered aloud to a project staffer what the view would be from the top, the executive floor. Soon afterward, the man rushed him a packet of photos that could only have been taken from a helicopter hovering at Bechtel's future window level.

Though Bechtel sited the headquarters in the city's then seedy South of Market section, later proximity to all major city transportation led his father to say, "It proved to be the best decision we could have made. I thought he was wrong at the time, but I didn't say so, because he makes the decisions in our company."

Bechtel bases his decisions on tightly organized information from below. "You don't come and ask, 'What shall I do?'" says Robert L. Bridges, a partner in the local law firm that handles some of the Bechtel group's outside legal affairs, and currently the only director who has not been an officer. "Steve wants a succinct statement of background, the facts which lead to a request for a decision, a statement of the exact decision that's wanted, and then your exact recommendation."

Like nearly everyone else who has dealt with Bechtel, General Motors

Corp. chairman Richard C. Gerstenberg points out that "Steve has a hell of an inquisitive mind, what we call a great coefficient of curiosity." Bechtel, who holds 2,000 of GM's 285 million shares of stock outstanding, is a director of that company, and earns \$16,500 annually as a member of the board's finance committee.

Bechtel's companies have never built anything for GM. But Gerstenberg appreciates his "broad-gaged interests. His exposure to what's going on in other countries and the development of those countries and their future prospects are what's most important to us." Bechtel, he says, provides knowledge at nearly every monthly GM board meeting in New York City.

Information pours toward Bechtel even as he travels. When one of the company jets touches Bechtel down at its Oakland, Calif., hangar, a waiting aide darts forward with an airload of mail for him. He reads and marks it in the front seat of his brown Cadillac sedan as a company driver whisks him the few miles to his home in suburban Piedmont. There, where other houses

front baronially on the wooded lanes, Bechtel's lies hidden behind a low hill at the end of a drive.

Company ownership is not exposed either. The Bechtel family is the majority shareholder, with only those ranking at vice president or above permitted to buy any of the remainder. The number of shares that each owns is confidential, as is the value of shares and the size of the Bechtel majority. The number of shares an officer may hold increases with his rank. But each man's contract requires that all the shares be sold to other eligible officers, or to the corporation, if he leaves or dies.

Public figures about the firm's financial status are equally sketchy. In 1971, it reported to the San Francisco Chamber of Commerce a net worth of \$110 million, assets of \$250 million and sales of \$1.5 billion. It did not divulge profits. It has reported nothing since.

Bechtel's contract awards that were reported to ENR leapt to \$3.4 billion in 1972. The firm's report for 1973 has not been filed, but ENR figures indicate at least \$8.4 billion.

Several financial writers believe that Bechtel may be the largest privately owned firm in the U.S., though two grain-handling companies, Cargill and Continental, may be larger.

Worldwide visibility. The reluctance to attract public attention characterizes all of Bechtel's highly traveled executives. Last year, at the splashy Moscow press conference announcing the company's formal entry into Soviet work, the heads of the client firms did all the talking. Bechtel himself was not there. Raphael M. Dorman, the vice president in charge of commercial development who had laid most of the groundwork, sat quietly on the sidelines.

Bechtel's own reputation follows him around the world. In a Honolulu hot bar late last year, an Australian eng



His prospects look limitless.

neer claiming to have worked on a Bechtel project was asked if Steve had ever visited the site. "Sure," he answered jovially. "He was there two days and nearly wore everyone into the ground looking around. He's a mountain climber, you know."

Bechtel does "give a project a pretty comprehensive review as a construction man," says executive vice-president Porter E. Thompson, of Bechtel, Inc., who has traveled with him. Bechtel's mountain recreation is limited to hiking. But he also hunts and fishes, and he plays tennis, golfs with an 11 handicap, and sometimes takes his family on pack trips. "Steve has a fine family life," says Edgar Kaiser, "better than some of us."

Nearly every month, Bechtel spends two or three of his normal 12-hour days in Washington, D.C., where he has served on several presidential commissions. In 1970, President Nixon appointed him to the National Pollution Control Council, and to the National Commission on Productivity in 1971.

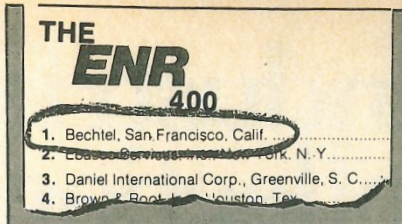
Bechtel, though a registered Republican, also served in 1967 on Democratic President Lyndon B. Johnson's Committee on Urban Housing. In 1972, he and his wife, Betty, jointly donated \$14,000 to various Nixon re-election committees and luncheons. According to federal election figures in the U.S. General Accounting Office, 20 other Bechtel officials contributed at least \$32,750 to Nixon's campaign and party.

In 1973, Nixon named Bechtel to the National Commission for Industrial Peace and to the Labor-Management Advisory Committee that advises the Cost of Living Council on wage standards. The latter opens White House ears, says one aide there. "Bechtel's one of the elite group that is listened to around here. Anyone on that committee has no trouble getting his views to the President."

Bechtel takes the time to serve on such organizations partly to spread the word about the construction industry. He claims to have been "appalled" years ago at how little other businessmen seemed to know about construction.

Some construction representatives in Washington see Bechtel's efforts differently. "He seems to turn up on all the committees and panels," says one of them, "and that's well and good. But, he is an independent dude, and that's unfortunate. Actually, he is representing himself, not contractors generally."

However, the Bechtel companies



No. 1 in '72 with jobs worth \$34 billion.

maintain no lobbyist in Washington. They depend on industry associations to present general views. The company's Washington executive office basically keeps abreast of federal legislation on "things like powerplant siting and land use, and agencies with insurance or tax or financing authority," says vice president E. Keith Thomson.

The office also assists clients, even to the point of helping them obtain project financing from diverse sources such as the Export-Import Bank and the Eurodollar market. "That's what Steve Jr. wants us to do, keep the clients happy," says Thomson, a former British Royal Air Force officer. His office also eschews the Washington cocktail party as a businessplace. "Marginal at best . . . a waste of time."

Deep in the energy field. Bechtel himself can afford to waste no time, especially in his constant search for new managers. Many are groomed by the executives, whom Bechtel charges with designating personal successors, discussed at regular "replacement meetings." He may encounter others at meetings of the Directors Advisory Group, to which bright young stars are rotated to present their views.

The firm uses several devices to attract and keep its executives, such as a program with a local university that allows them to obtain masters degrees in business administration while they work, but it also allows engineers to move up purely technical ladders.

Bechtel strives to find all kinds of employees who will match the description offered by Ferd F. Mautz, vice president, engineering, Pacific Gas & Electric Co., a regular client in San Francisco. Bechtel engineers, he says, are "very competent, very hard-working, and employ the latest management techniques so that they rapidly gain good control of a project. They establish and maintain tough schedules, are very determined, very self-confident, and very, very loyal."

Bechtel expects to have his increasing number of engineers occupied with resources and energy for most of the next 10 to 20 years. Energy particularly interests him, to the point that two of the

rare speeches he has made recently were devoted to energy problems that he said existed long before the public was generally aware of them. And he traveled to Russia two years ago, Spain two weeks ago, working on the program for September's 50th World Energy Conference, to bring some 4,500 persons to Detroit. He is chairman of the organizing committee.

Bechtel advocates U.S. independence on energy resources, though he's not sure that Nixon's goal of independence by 1980 can be achieved.

With two-thirds of his companies' work in the energy field, they have plenty to do. Bechtel is anxious for his possible Russian projects to proceed, though those and others could obviously be delayed if the USSR is not granted most-favored-nation status by Congress. "But we're not going to go out of business if they don't," Bechtel comments.

As Dorman explains, other nations provide new opportunities, too. "We're interested and curious about China," he says. "There have been some individual contacts and probings. I don't think we've found the formula to work in China ourselves as a group, but we've been invited to participate in several ways." They include the Canton Trade Fair, exchanges of technical papers and possible delegations similar to those that already have been exchanged with the USSR.

Also in the East, arrangements have been made in Japan, where Bechtel has an accord with two Tokyo constructors—Taisei Construction Co. and Kajima Corp.—aimed at multinational work in Asia.

Kenjiro Umeda, deputy general manager of Kajima's international division, sees Bechtel's firm as a company from which the Japanese can learn much.

However the pattern of expansion evolves, Bechtel doesn't see any limitation on the size of the Bechtel group of companies. "We have had a good pattern of growth. We've handled it so far, and I think we can continue," he says.

Growth within the Bechtel family has also been good, and this, too, affects the firm's future. Steve Jr. is now a grandfather, and two of his five children are sons who have worked at Bechtel. "I don't know" if any of the fourth generation might later take over, he says. "I would hope so." Though the decision is to be theirs, the outcome seems predictable. As Komes says, "We all have the wrong name to replace any of the Bechtels."