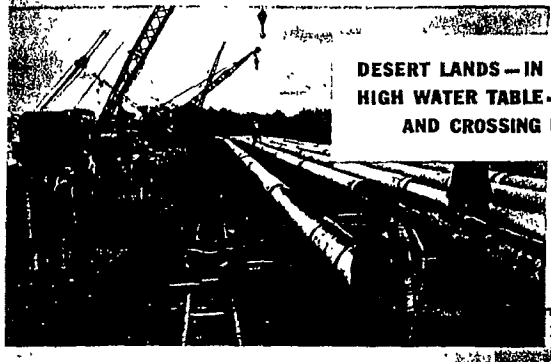
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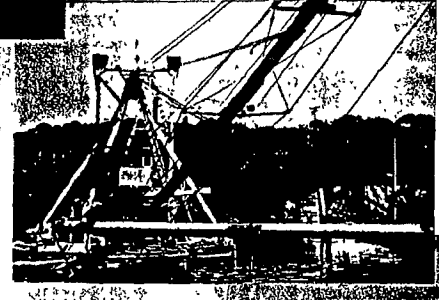
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Oct 1950



DESERT LANDS — IN MARSHY GROUND — AREAS OF HIGH WATER TABLE — SUBMARINE LOADING LINES AND CROSSING UNDER RIVERS AND BAYS



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REG U S PATENT OFFICE

PIPE COATING

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CORROSION DAMAGE PREVENTION

High resistance of corrosion has been substantiated by numerous installations. Check-up proves Somastic coated pipe in use 20 years, and ready to serve years to come.

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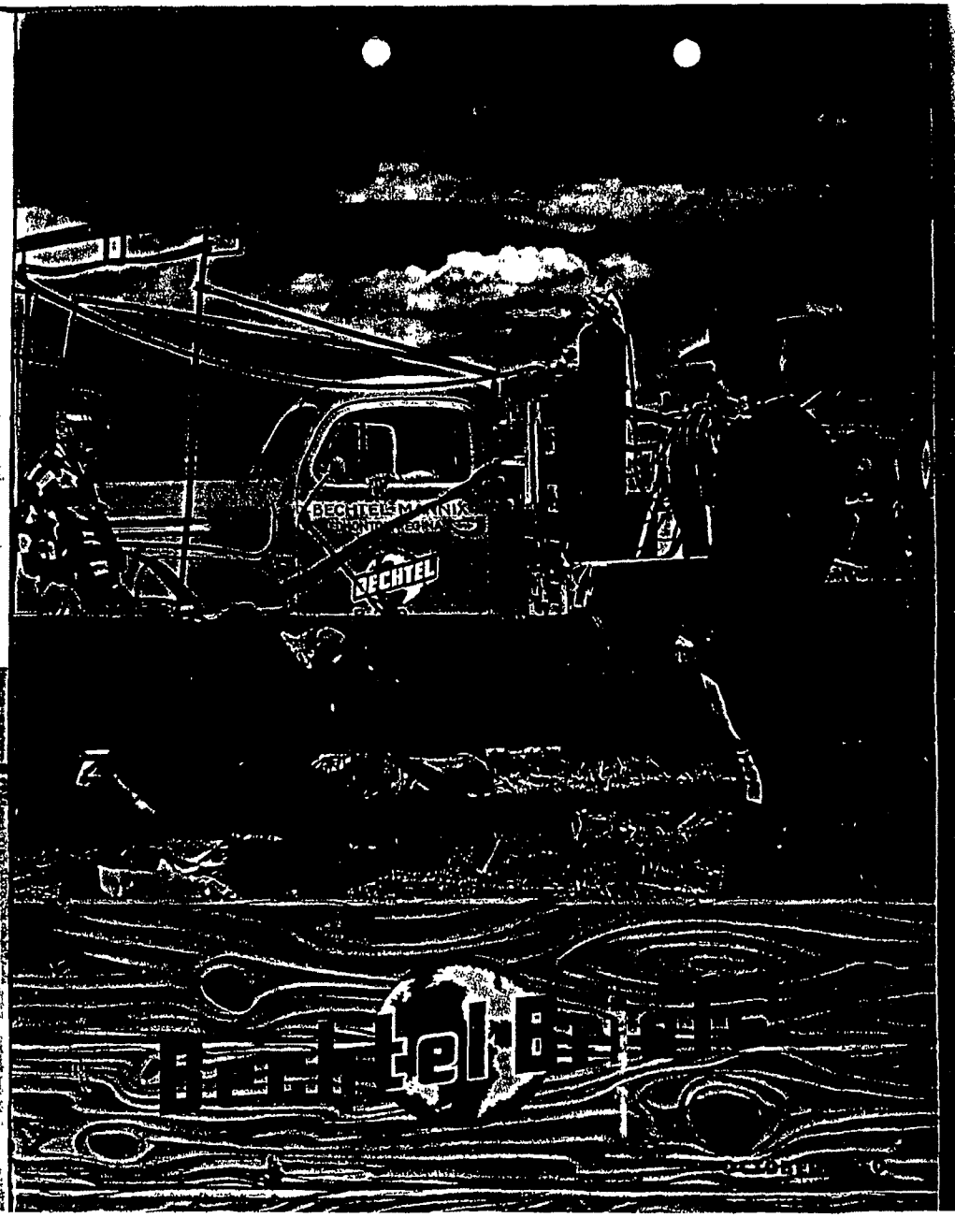




BECHTEL CORPORATION

SOMASTIC DIVISION

FOR INFORMATION WRITE TO BOX 457, WILMINGTON, CALIF.



A BUILDER & HIS FAMILY

CHAPTER FIFTEEN

By ROBERT L. INGRAM

The second stage of the work comprised additions to the plant and mining pit, increasing the daily capacity to fifty thousand ore tons, and the construction of a complete community for workers. The community was no small job itself—five hundred forty-two housing units, two large dormitories, two schools, two stores and major additions to an existing hospital. Two who were active at San Francisco on figure work for the Southwest mining projects were Frank C. Sewell, a key administrative man continuously since Dad's Northwestern Pacific work, and Brantley M. Eubanks, Alice Bechtel's husband, whose service started at Hoover Dam, included the Bay Bridge painting job and some of the early refineries.

Dad Bechtel, as mentioned, once took a brief fling in mining, but in a small way and as a mine owner. Otherwise, before Morenci there was no precedent in the family for mine construction. Here was another new field, but most of the problems were familiar to these old hands at earth moving and concrete work. Even the massive installations of classifiers and flotation cells were taken in stride, after the schooling at Hoover Dam on the cement, gravel and blending plants. Experience at Morenci demonstrated again that given good men and methods, good performance is a sure thing. At least the officials of Defense Plant Corporation thought so. For in December of 1941, when the first Morenci excavations and foundations were still the principal show pieces in the Bechtels' mining exhibit, they were retained to design, procure materials and build a second large open pit copper mine and processing facilities near Globe, Arizona, for operation by the Castle Dome Copper Co., Inc.

1942-'43: The second mine—Castle Dome, at Miami, Arizona

This was the Miami project, and among other things it marked John M. Rogers' freshman year with the firm. Rogers was an experienced mining engineer. A friend of Van Rosendahl's, he casually dropped in one day at the San Francisco office, and then—as Warren Bechtel adds—"before he could catch a deep breath I had him on the job down in Arizona." The hot, arid country around Miami offered a pretty fair rehearsal for the Middle East, where John Rogers would see postwar service. Almost at the outset he got in on some good "shooting" when the constructor's powder gang shot off the entire top of Castle Dome in a single blast! Altogether, eleven million tons of overburden were stripped from the ore body to streamline this big mountain. When the benching was done Castle Dome looked like an immense terraced garden ready for landscaping.

Miami was designed to process ten thousand ore tons daily. In operation it exceeded specification by approximately twenty per cent. As at Morenci, construction included the necessary auxiliary facilities and housing, as well as water and electrical systems. The job was completed in April of 1943, whereupon the mine builders moved across the international border to Cananea in the state of Sonora, Mexico.



Ken and Steve Bechtel, Felix Kahn, Edgar and Henry Kaiser, at Marinship—another Six Companies reunion.

'43-'44: Over the border

In many ways the work at Cananea was comparable to that just concluded at Miami. Processing capacities were about equal; there were similar installations and structures. Stripping accounted for ten million tons of overburden, just a million less than at Miami. Cananea had its own peculiar features, however. One was the chore of training nine thousand Mexican Nationals with a U. S. staff fixed by Mexican Government regulation at ninety-six people. Nine thousand had to be trained in order to get half that number of workers. As fast as the natives learned to run the tractors and trucks, churn drills and power shovels, off they went to other parts of Mexico where such unusual skills commanded a high premium!

In recapitulation: Bechtel-sponsored and group operations were occupied with strengthening the nation's sinews for war—such projects as advance bases, cantonments, training camps, a military port of embarkation, shipyards and shipbuilding. Direct work, on the other hand, was concerned mainly with facilities for producing the materials of war—steel, copper, oil, gunpowder. As previously recorded, steel and copper called for heavy construction, which meant WABCo, while oil refining and powder manufacture—being process industries—were within Bechtel-McCone's special field. Both companies also were active in the development of electric power for war industries — WABCo by building mountain roads along the Pit River in California to serve Pacific Gas and Electric Company hydro-electric installations, Bechtel McCone by engineering and building a steam-electric generating plant at Henry Kaiser's Fontana, California, steel mill.



CASTLEDOME, MIAMI, ARIZONA—*construction of open pit mines calls for the services of a flexible organization—here included in the construction of three open pit copper mines with a combined capacity exceeding 72,000 ore tons daily.*

1941-'43: The Bechtel perennials—rails and pipe lines

In addition, land transportation by rail and pipe line was being geared to meet the heaviest demand in history, requiring the kind of heavy construction typical of so much past work. W A B C O Co carried on an extensive construction and maintenance program for the Western Pacific Railroad. Bechtel sponsored partnerships laid pipe lines in the Far West, the mid-Continent, and the East. Lines were built across the plains of Kansas and Texas. In Iowa and Nebraska twenty four miles of large-diameter pipe was laid underwater at twelve river crossings. In California a four-hundred mile gas line was converted to carry oil, and in Ohio and Pennsylvania two sections of "Big Inch," the War Emergency Pipe Line, were built. Al Berlander as a superintendent on the latter got a lot of good experience with big diameter pipe for his postwar work in Arabia. These contracts covered the period 1941-1943.

1941-'45: Refineries—in the U. S. Bechtel-McCone built fourteen during the war

Bechtel-McCone's refinery engineers and field crews kept going around the clock, erecting plants to produce a variety of petroleum products—a de-waxing plant and an asphalt plant at Oleum for Union, a Houdry unit at El Segundo and a lubricating oil plant at Richmond, the latter two for Standard.

All were built in 1941 and 1942. Add to these, between that time and the end of the war, ten more refineries of eight basically different types, engineered or built or both, for six major oil companies. Two were butadiene plants supplying products for the manufacture of synthetic rubber. The biggest refinery of all was a complete 100-octane aviation gasoline plant engineered and constructed at Richmond, California. U S air power grew tremendously from mid-war on. Every minute counted in the race to keep the supply of aviation fuels abreast of increasing naval and military requirements. Bechtel-McCone's men held up their end—the big 100-octane plant at Richmond went "on stream" just eleven months after construction began. A fine record for Heinie Hindmarsh, Harry Benner, Al Orselli, Jim Brady and the others, on a job complicated by extensive excavations and foundations, some of them put down through deep tidal mud.

Jobs by group members included a mystery project

As group partners the Bechtels participated in construction of the Los Angeles Harbor Breakwater, of docks at Mare Island Navy Yard, others at San Diego and Pearl Harbor, of the Norfolk (Arkansas) Dam and powerhouse, and excavations at Mirraflores Locks in the Canal Zone. Another job, done by Morrison-Bechtel McCone, helped prepare production facilities that dealt the crowning blow to Japan, although at the time the contractors had no idea why they were building big storage tanks at Hanford, Washington. Along with the rest of the world, they found out later. The tanks were for the plutonium project of Manhattan District, key production center for the atom bomb.

If it needed further substantiation, the group idea certainly proved itself during these years, especially from the standpoint of its members' capacity for work. Two more projects remain before the inventory of war construction is complete. They were totally dissimilar. Each was the largest of its kind, both presented some of the knottiest problems engineering brains had been called on to solve. They were, respectively, the previously mentioned Canol Project and the Birmingham Aircraft Modification Center.

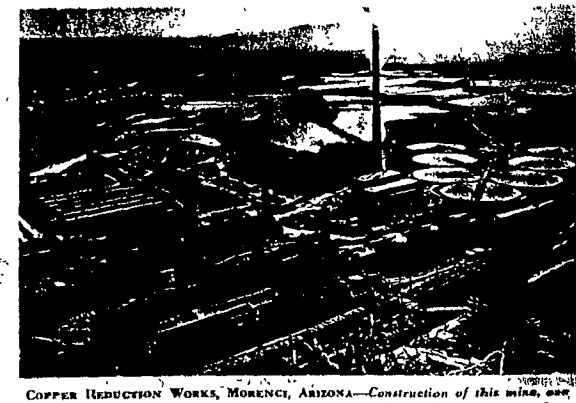
1942-'44: Canol opened a new frontier

"Canol," wrote its historian, Richard Finnie, "is an epic of the North and parts of the North where, in the words of Robert W. Service, 'the mountains are nameless and the rivers all run God knows where.' But Canol is also a war story." It became one of the biggest pioneering jobs of all time, growing out of the enemy's threat to Alaska in the spring of 1942. Nor was the threat remote. Less than one month after construction began on Canol, the Japs moved into the Aleutians. Two conditions were essential to a successful Alaskan defense: access to the United States by a land route and a self-contained petroleum supply. Both called for quick action. Prior to completion of the Alaska Highway not a truckload of supplies could get to the Territory by land; before Canol, not a drop of gasoline or oil.

When the Army's Corps of Engineers got the green light on the Canol Project late in April, 1942, they invited three firms to undertake its construction, W. A. Bechtel Co., H. C. Price Co., and W. E. Callahan Construction Co., an old line Dallas and Los Angeles concern. In May a contract was executed between the War Department and Bechtel Price-Callahan, a pretent partnership of these three firms and six associates, among them Bechtel-McCone, J. H. Pomeroy & Co. Inc., Gunther and Shirley Company, and R. A. Conyes. The Standard Oil Company of California was named to consult on design and construction, and the firms of J. Gordon Turnbull and Swerdrup & Parcel were retained as Architects-Engineers.



COLUMBIA STEEL MILL JOB, PITTSBURG, CALIFORNIA, 1941: *looking north across Morgan Mill sub-foundation towards Rod Mill Motor Room. Also in the foreground is W. A. Bechtel No. 2 transit mix truck.*



COPPER REDUCTION WORKS, MORENCI, ARIZONA—*Construction of this mine, one of the world's largest open pit copper operations, involved building a copper reduction plant, a smelter, power house, water system, tailings disposal system, and the engineering and construction of housing and community facilities.*

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.*

Portraits



JUMPY SIDES

Sometimes it takes a write-up of this kind to learn a man's first name. We'll wager a good California silver dollar that not one out of five of "Jumpy" Sides' best friends can tell you that a long ways back, when he first entered kindergarten many years ago, the teacher called him Jamison Stewart And—We think its nice that a fellow like Jumpy can have a nickname hung on him that stands out about as prominently as a well-known trade mark like Frigidaire or Deep Freeze, which seemingly these days represent far more than a particular manufacturers' product

It is a little hard to say just when 'Jumpy" Sides actually joined up with the Bechtel family, but we do know he was exposed to the getting-acquainted process in the early 30's, when he was loaned by the Rust Engineering Corporation, with whom he then was affiliated, to Babcock & Wilcox, who were fabricating the huge 30-foot penstock piping on Hoover Dam. He spent seventeen months in the big steel mill and then transferred from the shop to the penstocks as superintendent over all penstock installations Since each of these 30-foot tubular sections was made of 3-inch thick steel, "Jumpy" had an excellent chance to put his previous heavy construction experience to good use.

Born in Blacklick,—yep—that's it Blacklick —Pennsylvania, he, as a youth, helped his father in the family lumber and coal business His early experience interested him in general construction work, so that after two years at Allegheny College, followed by two more years at Carnegie Tech, he joined the Engineering Division of Jones & Laughlin Steel Company at their Aliquippa Works as a construction engineer and later superintendent in the field directing steel plants and their facilities. From 1927 to 1941, which included the time he was on loan to Babcock & Wilcox at Hoover Dam, he was a member of the Rust Engineering organization at Pittsburgh, Pennsylvania, where his specialty included the erection of industrial metal treating plants; stress relieving units; soaking pits, billet and open hearth furnaces These jobs led him on to being general superintendent of building construction, responsible for the complete erection of continuous strip mills, seamless tube mills and later other industrial installations including pulp and paper plants.

With this background of experience, when Cal Ship started building Liberty ships at Terminal Island, 'Jumpy' directly associated with the Bechtel interests, this time as production manager under its general manager J K Doulan. He stayed at Cal-Ship until the end of World War II, advancing to works manager and ultimately became vice president of California Shipbuilding Corporation.

When the war ended in December, 1945, "Jumpy' transferred to the Joshua Hendy Iron Works as a general assistant to the President, John A McCone He later became vice president-general manager of that company where he remained until his recent transfer to the top management group of Bechtel Corporation in July, 1950. Special assignments as a Division Manager at the moment occupy "Jumpy's" time under the direction of Vice President J. P. Yates and President S D Bechtel.

Californian's since 1941, the Sides family include his wife, Dorothy, and daughter, Diane, the latter now a Junior at the University of Arizona Pending location of a suitable home in the Bay Area, the Sides family still reside in Los Angeles, but it is expected that they will shortly be confronted with the problem of deciding whether it will be Marin county, the East Bay or "The Deep Peninsula"



L. to R.: Oscar Hiller, President, Butte County Bank of Arco, Idaho; Gordon Dean, Chairman, U. S. Atomic Energy Commission at Arco; W. E. Sims, Bechtel Corporation superintendent; and C. A. Bottolfsen, Secretary, Arco Chamber of Commerce. This photo is through the courtesy of the AEC Idaho Operations office.

AEC Chief Visits Arco Plant —Says He Is Well Pleased

Gordon Dean, AEC chief, told newsmen in a press conference at Idaho Falls recently that he was well satisfied with progress of the Arco plant which, he said, in some instances is ahead of schedule.

He indicated there was no speed-up anticipated due to the international situation and lauded AEC personnel on the job they are doing He estimated that construction of the three reactors and the chemical separation plant will be completed in about two years.

In comparing the Idaho AEC plant with other operations, Dean said that this plant has a bright future since it is primarily a peacetime project, but one of its important objectives right now is to develop atomic power for the propulsion of submarines This knowledge may later be developed on an extensive scale for peacetime use 'We will probably continue along the same lines as first announced for the ten-year program of experimental breeder and materials testing, but we will not necessarily stop there if something good turns up."



Well Deserved



J. Roy McAuliffe

His many friends in and out of the Bechtel family will be more than pleased to learn, through a recent announcement by IBI President Van W. Rosendahl, that J. Roy McAuliffe, Project Manager of Tapline and a veteran with many years of Bechtel foreign service, has been elected a Vice President of International Bechtel, Inc.

THIS MONTH'S COVER



Wherever pipe lines are built in this world of ours, men of the Bechtel organization will be found — whether it be in the Middle East, Canada, the United States, Venezuela or elsewhere.

This month's cover presents an interesting and typically Canadian color photo taken by Richard Frantz of a scene along the Trans-Canada Interprovincial Pipe Line constructed between Edmonton and Regina by Bechtel-Mannix.

Vol. V No. 10

Published in October, 1950, By and For The Employees of Bechtel Corporation, Engineers and Constructors.



Just before departure for the Middle East on Saturday, September 16 from New York. Mr. Bechtel points out on the globe his itinerary of the trip. From L to R.: Barbara Lassen; George Coughlin; Florence Cornerstone, Mr. Bechtel's secretary from San Francisco; Mr. S. D. Bechtel; George Keeney, Bechtel Briefs Editor; Mary Stephenson; Arthur Shaw; Mary Philbin; Richard Murphy; Ray Russell.

Steve Off Again

Six months away from his favorite foreign Bechtel activities spot is about as much as S. D. Bechtel, Chairman of the Board of International Bechtel, Inc., can stand. As a result, he and Mrs. Bechtel flew the Atlantic on September 16th, destined for the Middle East once again IBI operations there, including the huge 1000-mile 30-31 inch Tapline project, as well as other work in the oil-producing fields for Arabian American Oil Company, The Bahrein Petroleum Company and the Iraq Petroleum Corporation will afford Steve the opportunity of visiting his "folks in the field," as he fondly calls them.

En route to Saudi Arabia the Bechtels will stop off at Beirut in Lebanon to visit with Arabian Bechtel Company Vice President Clark Rankin and the others who are getting ready to start the new Iraq Petroleum Company 30-32 inch crude oil line which will extend some 550 miles from the Mediterranean Coast over the rough country of Syria and Iraq into the Iraq oil fields This work is being done by Arabian Bechtel Company.

This season's visit will occupy better than a month of Steve's time, during which he will be able to get around all operations in the Middle East before returning to San Francisco about the middle of October by way of London, where the procurement of materials has been going on for the Iraq Petroleum line under the direction of Bechtel International Corporation Vice President Don Roberts.





J. Warren Evans

Chief of the construction branch, Idaho Operations Office, U. S. Atomic Energy Commission, is J. Warren Evans His staff of 10 supervises and administers all construction work at the AEC's 440,000-acre reactor testing station

Mr. Evans was born July 23, 1917, in Everett, Massachusetts, where he attended grade and high school He was graduated as bachelor of science from Massachusetts Institute of Technology in 1939.

Upon his graduation, Mr. Evans was employed by the Morton C Tuttle Company as field engineer in Bath, Me., Watervliet, N Y, and Boston, Mass In 1949 he joined the U S Engineer Department as junior engineer in West Springfield, Mass., and in 1941 he was commissioned second lieutenant in the Army Engineers. He served in New York, Miami, Alaska, Canada, Nassau and Manhattan District, and was discharged in 1945 as a major. He wears the Army Commendation Ribbon.

While in Canada he served as assistant operations officer on the Canol Project, where he met Ed Davis, Walt Sims, Jim Brady, Clark Rankin and many other Bechtel oldtimers who were then with Bechtel-Price-Callahan and Standard Oil of Alaska.

From 1946 to 1949 Mr. Evans was assistant construction manager for the George A Fuller Company, Contractors, in Boston He reported for duty at the Idaho Operations Office September 9, 1949.

Mr and Mrs Evans were married in 1941, and are the parents of a daughter, Jane Elise, both, and a son, John Warren, Junior.

From the Korea Front

Sept 19, '50

Dear Bill, Gene, and Ty.

I'll be damned if the Marine Corps doesn't expedite bodies for overseas shipment faster than Bechtel International. As you suspect I find myself 15 days from Bechtel's Vernon office and more than half way across the Pacific. It's no secret where we're going but where we hit and when is a very closely guarded secret. Unfortunately I'll find out soon enough on that score. Our indoctrination this time was very different from last time, as a matter of fact, I'm not too sure I've been indoctrinated. The morale of this unit is excellent but like most people, including me, I'm not too sure we know what the war is about. If you should hear let me know.

I am very hopeful that Korea may resolve itself to an incident. I can't conceive of Russia wanting war but do not feel so sure on Red China Carl Rabago ended up with a Rocket Battery and likes it very much. In that the future seems decidedly uncertain I thought it best to at least let you know while I can—what's up If any of you have a chance I know Lorene (wife) would enjoy seeing you.

I have several more letters to write so will conclude this one. I'll let you know when something happens although I believe you will know before you hear from me

Best of everything to everybody,

/s/ Capt. Frank Perry

Bechtel Field Office Mgr. Capt. Frank Perry, back with the Leatherneck, takes you in hand to ask Bill Ayers what the shooting's all about. How about some of you armchair generals dropping Frank a line and letting him know— Hdqrs Bty, 11th Marines, 1st Marine Division, F.P.O., San Francisco.

Safety

By Cecil W. Cole, Safety Supervisor

Are Any of the Following Causes of Accidents Affecting Your Job?

1. A scoffing attitude toward safety
2. Worrying about poor health.
3. Lack of sufficient sleep.
4. Worry about domestic or financial difficulties
5. Failure to get along with the boss.
6. Lack of interest in the job.
7. Quick temper
8. Opposition to machine guards and other safety appliances
9. Allowing attention to be distracted while at work.
10. Allowing mind to wander from job at hand.
11. Carrying a grudge.
12. Getting panicky when something goes wrong.
13. Putting the wrong interpretation on justifiable criticism.

What steps are you taking to correct any of the above causes of accidents?