

# TUDOR NEWSLETTER

SPRING 1981

## STOCKHOLDER'S MEETING

On April 25 and 26, 1981, the stockholders of Tudor Engineering Company held their annual meeting in Napa, California at the Silverado Country Club. Those in attendance from the Corporate and San Francisco offices were Louis Riggs, Robert Janopaul, Stanley Froid, Paul Potter, Oral Conyers, David Willer, Tevis Thompson, David Alden, Hugh Brown, Donald Croft, Fred Estep, Robert Ganse, Roberto Iniguez, Grant Larsen, James Meyer, Robert Myrdal, Thomas O'Neill, Jim Ricereto, Don Rose and Rainer Rungaldier. From the Atlanta office of PB/T were Douglas Mansfield, Frits Fenger, and Wil Pacheco. From the Boise, Lewiston and Riverton offices were Davis Toothman, Theodore Purcell, Steve Alters, James Grow, Richard Orton and Don Armstrong. Joining the group from the Seattle office were Keith Bull, Michael Harrington and Bela Vadasz. Completing the regional representation was John Williams from the Denver office.

During the course of the stockholders meeting, discussions and presentations were made that covered the past, present and future business operations of the company. It was agreed that the year 1980 was a successful year. In looking to the future, it was recognized that the new Administration in Washington D.C. and the changing emphasis on government-funded programs could have a profound effect on our business. Some time was devoted to developing strategic plans to adjust our business operation to better cope with these changing economic conditions.

Another important matter that involved all stockholders was the election of the Board of Directors of Tudor Engineering Company. Elected to serve on the Board this year were five directors: Louis W. Riggs, Robert N. Janopaul, Paul E. Potter, Keith D. Bull and Douglas J. Mansfield. The Board chose the following officers:

Louis W. Riggs - President  
Robert N. Janopaul - Executive Vice President  
Paul E. Potter - Senior Vice President  
Keith D. Bull - Vice President  
Douglas J. Mansfield - Vice President and Secretary  
Oral I. Conyers - Vice President  
David C. Willer - Vice President  
Michael B. Harrington - Vice President  
Theodore H. Purcell - Vice President  
Tevis T. Thompson - Vice President, Treasurer  
and Assistant Secretary

## FROID/TOOTHMAN RETIREMENT

During the April 23, 1981 Board Meeting of Tudor Engineering Company, the Board acted upon retirement requests from Stanley H. Froid and David C. Toothman, both of whom were Senior Vice Presidents and members of the Board of Directors. The effective date of retirement from regular employment for Stan and Dave was June 30, 1981. They will continue to be involved with Company activities in the role of Associated Consultants. Stan joined Tudor in 1951 and Dave in 1967; since those dates, both have made substantial contributions to the growth and vitality of the Company.



Stanley H. Froid



Davis C. Toothman

## SF PERFORMING ARTS GARAGE



In the late 1930's, shortly after completion of the Opera House, San Franciscans began talking about the need for a symphony hall. Following the war, interest resumed but a general obligation bond issue for a symphony hall was roundly defeated by the voters in 1965. The bond measure would have included financing for an adjacent 800 space garage. Recognizing that the symphony hall would have to be financed by contributions, its sponsors then embarked on a campaign to assemble the needed funds from private sources. The garage, however, would now be financed by revenue bonds.

Tudor's participation in the project began early in 1975 following selection of a site for the symphony hall and garage - in the Civic Center across Grove Street from the Opera House. At about the half-way point in garage design it was determined that the garage site was needed for a rehearsal hall. A new site was found for the garage, on Grove Street west of the Opera House, and planning and design commenced once again early in 1977.

A year later, within the week prior to advertising for garage construction bids, legal action was brought against the City which delayed the project for three years. Finally, in February 1981 all legal questions were resolved, and advertising for construction at last proceeded. (In the meantime, the Louise M. Davies Symphony Hall had been designed, financed, built and dedicated, and the Rehearsal Hall is now nearing completion.)

The low garage construction bid of \$4,498,000 was under the estimate by three percent. Demolition of the existing buildings on the site is now under way and it is expected that construction will commence in mid June. Tudor will play a continuing role in the project, providing engineering services during construction.

The 620-space garage is a free-standing structure with four parking levels above the ground, one level at grade, and one below ground level. The structure will be faced with architectural concrete matching the finish of the Symphony Hall and Opera House extension. Cast-in-place concrete columns, girders and shear walls, and precast double tees constitute the framing system. The facility is owned and will be operated by the San Francisco Parking Authority, Tudor's client.

From its inception, garage design has been under the direction of Don Croft. A number of Tudor engineers and drafters have participated in its several stages; most recently Chris Fazio updated the plans for advertising, bid documents and specifications were prepared by Grant Larsen and Paula Dierkop, and Jim Meyer ran interference for the project.

## CITY OF KUNA SEWER PROJECT

Design work on the Kuna Sewer Project is moving along. The collection system is almost complete and the treatment ponds and disposal field are about 50 percent complete.

The collection system design team of Don Payne, Jim Spofford, Tim Burgess and Gary Ames has resolved the problems of designing the sewer around existing utilities above very irregular bedrock, while providing service to all existing homes. Neal Eagar helped the team locate existing services in many of the critical areas.

Bob Mayers and Tim are working on the treatment and disposal field design. This will be the only reuse treatment system in the Boise Valley.

Bob also helps Rick Orton keep the project books. There are five funding agencies involved with seven different programs. So far the only clear consensus between the funding agencies, the City, and Tudor is the vast difficulty of keeping track of everything.

## CITY OF GARDEN CITY

The City of Garden City has just received grant approval from the Environmental Protection Agency for investigation and rehabilitation of portions of its sewage collection system. A contract between Garden City and Tudor has been signed by the City and approved by EPA. Our principal effort will be in inspection services with work anticipated to begin this summer and to continue into 1983.

Tudor's ongoing consultant agreement as City Engineer for Garden City has developed into a very good working relationship. Stan McHutchison represents Tudor as City Engineer since Dave Torgeson's recent departure. It is expected that Tudor's professional affiliation with Garden City will last many more years.

## BRUNEAU SEWER PROJECT

The Bruneau Sewer Project is finally drawing to a close now that problems encountered with the groundwater at the lagoon site have been solved. Under the direction of Paul Kunz with the help of Chief Inspector Neal Eagar, a solution was reached to construct a permanent buried drain. The State has approved the additional construction and the grant increase is being processed. Hopefully, Bruneau will be able to begin using its new system in late July.

## WEST BOISE SEWER DISTRICT

The West Boise Sewer District's new project, Number 11, has been going along very smoothly under the watchful eyes of Sabin Landaluce as inspector. Paul Kunz is pushing the paperwork through and keeping his eyes on the Highway District and their compaction testing program. The construction should be completed about 20 days ahead of schedule on a 90-day completion time.

## BOISE UPDATE

Milt Carlson arrived from the San Francisco office to lend a hand in the Boise office drafting room for a couple of weeks in May.

Roger Brassfield transferred in May from the Seattle office to the Boise office to replace David Torgeson, who was recently married and has moved to Vermont.

## WEST SEATTLE FREEWAY BRIDGE

The West Seattle Bridge project will provide a mile long, elevated freeway link between Seattle and West Seattle, crossing over the East and West Waterways of the Duwamish River and Harbor Island. The new freeway link will replace a section of antiquated expressway and a heavily damaged bascule bridge. Original project estimates established cost in the range of \$155,000,000.

The main span over the West Waterway is 590 feet long and provides a vertical clearance of 140 feet for navigation. Construction is well underway on this first major portion of the project. Low bid was based on the cast-in-place box girder alternative method of constructing the superstructure.

Design of the last major contracts, the East and West approach interchanges, is nearing completion with a June target date for advertising.

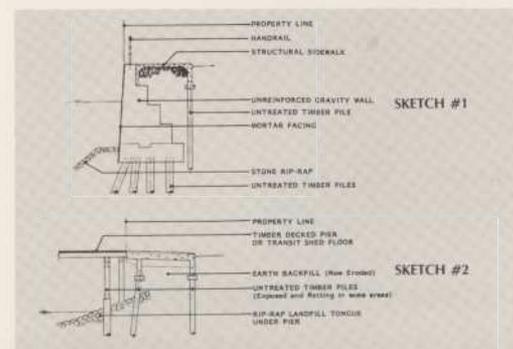
Tudor's Seattle Office, as a member of the joint venture Seattle Bridge Design Team, has been responsible for design of the Harbor Island Structure, structural design standards, and surface roads. In addition, Tudor managed the design of utilities and electrical work on the project, including the complex, multiple detour designs required to maintain heavy peak traffic flows during construction.

It is usual practice to list those individuals contributing to a project design. In the case of this major project it is appropriate to state that everyone in the Seattle office has played an active part.

## SEATTLE FERRY TERMINAL

The Seattle office of Tudor Engineering Company has been retained by TRA, a Seattle architectural firm, to design the structural and traffic related portions of the new Seattle Ferry Terminal. Included in the project is the inspection and renovation of approximately 1200 linear-feet of the seawall and structural sidewalk, originally constructed in 1916.

When Seattle was founded in 1851, the waterfront was located much farther east than it is today. In the early part of this century, the present shoreline between South Washington Street and Madison Street was established. Between 1911 and 1916, concrete gravity-type seawalls with structural sidewalks (Sketch #1) were built at the ends of Washington, Yesler, Columbia and Madison Streets. Structural sidewalks (Sketch #2) were constructed to complete the pier areas between the street-end seawalls.

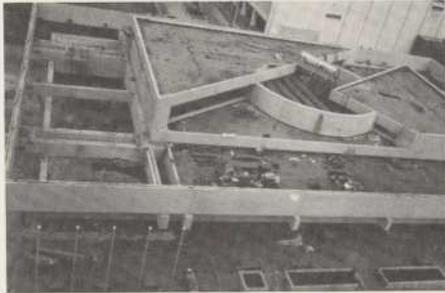


The street-end seawalls are unreinforced concrete walls built on untreated timber piles driven to firm bearing 40 to 60 feet below street level with a top elevation of 2.5 feet above extreme low tide. The sidewalks attached to the wall are reinforced concrete ribbed slabs which are supported by the seawalls along the water edge and by piling-supported curbs along the land side. The sidewalks between the street-end seawalls are also pile-supported structures.

The seawall and sidewalks are in various stages of deterioration. As part of the contract, Tudor will be responsible for (1) the physical inspection of the seawall and sidewalks including representative testing and sampling of the pilings; (2) the development and analysis of three alternative designs for restoring the seawall and structural sidewalk; and (3) the preparation of the preliminary design and PS&E of the recommended alternative.

## MARTA'S FIVE POINTS STATION

On May Day Wil Pacheco escorted Bob Janopaul, Dave Willer and Tom O'Neill on a tour of MARTA'S largest station. The Five Points station, costing in excess of \$45 million, is a four-level station with a mall at the plaza level. The cylindrical drum roof with solar monitor and glass is a focal point from the plaza as well as from the concourse level directly below. The precasting and erection of this massive 75-foot diameter drum was quite an engineering and construction achievement. The plaza level presents an environment for relaxation with many benches and beautiful planters.



Below the plaza level is the concourse level; the beehive of activity. This is the main-stay of the station and the transfer point from the east/west lines to the north/south lines and vice versa. From this level you may enter the MARTA ride store to purchase a monthly transcard or charter a bus. Or you may walk through the tunnel entrance to the famous Underground Atlanta. Also by tunnel access you may enter Rich's Department Store (the oldest department store in Georgia). From this level you may view the beautiful station art work known as the "Eiseman Facade". The sculptured artwork was removed from the front of the old four story Eiseman building prior to demolition. It was taken down piece-by-piece labeled, crated, and stored for over one-and-a-half years. However, recently the facade has received some adverse publicity. Not only are the statuettes bare from the waist up, but, similar to San Francisco, there are pigeon problems in Atlanta. Of course the pigeons found their "ole roostin" grounds in the newly-erected Eiseman facade. What is to be done about them? Ideas ranged from putting diapers on them to shooting the little varmints. Frits Fenger, besides all of his other expertise, has been appointed the pigeon expert. The climax will be in the next chapter of, "You Can't Roost Here".



The next lower station level is used for revenue service, serving the east/west lines from Avondale to Hightower. On the lowest level, work continues in preparation for revenue service by December 1, 1981. This level not only serves the north/south rail lines but also houses the brains of the station such as train control rooms, auxiliary electrical rooms, emergency power supply (EPS), uninterrupted power supply (UPS), and the HVAC equipment.

A few statistics about the Five Points Station:

It is equivalent in height to a six-story building (yet is considered a subway station).

The concourse level has approximately 160,000 square feet almost the size of three football fields.

There are 27 escalators.

The contract documents for Five Points totalled 1,026 drawings and two volumes of specifications.

The marble was imported from Italy.

## FAIRFIELD MAINTENANCE FACILITY

Tudor Engineering Company was recently selected by the City of Fairfield for planning and design of a \$2 million public works facility. The facility will serve a mixed maintenance fleet including city vehicles, transit buses, fire engines and police cars. The project includes a preliminary program development phase followed by preparation of contract documents. Bob Janopaul is Principal-in-charge with Gary Weinstein to serve as Project Manager. Ken Heilig will provide technical direction for the project with assistance from Don Croft, Oral Conyers, Lou Salaber and Grant Larsen.

## NEVADA IRRIGATION DISTRICT

Tudor was recently selected to provide all engineering services for Nevada Irrigation District's Bowman, Jackson Meadow and Combie Hydroelectric projects. These three projects will have a total installed capacity of ten megawatts and are scheduled to be under construction no later than 1983. Current activities include preparation of final FERC applications and negotiation of power purchase agreements. Nevada Irrigation District is one of the most aggressive developers of small scale hydropower. The Rollins hydroelectric project, for which Tudor provided all engineering services, was one of the first small hydro projects to come on-line during the re-birth of the industry. Tudor is indeed pleased to serve as NID's engineer for the development of this next phase of hydropower development.

## CAPITOLA POWER PROJECT

Tudor Engineering Company, in association with Law Engineering and Testing Company of Atlanta, Georgia, was selected in April to provide final design engineering and construction management services for a small hydroelectric project in North Carolina. The project, known as the Capitola Power Plant, is located on the French Broad River in the town of Marshall, North Carolina. Marshall is in the northwestern section of the state, near the scenic Blue Ridge Mountains. The Capitola project, which is being developed by the French Broad Electric Membership Corporation, is located at an existing dam which was formerly used to provide power for an adjacent factory. The installed capacity of the new installation will be 3,000 kilowatts, generating approximately 17 million kilowatt-hours annually. This project will probably be the first new small scale hydro project to go on line in the Southeastern United States and, as such, is very important to the Tudor/Law association through which it is hoped to promote further business in the Southeast.

## SP LAND COMPANY HYDRO

On April 1, Tudor entered into a contract with Southern Pacific Land Company to provide engineering services for development of small scale hydroelectric potential. SP Land Company owns nearly 500,000 acres in California, primarily located in the Tahoe and Shasta/Trinity areas. Southern Pacific is moving more and more toward the development of the natural resources, and one major resource is the water which flows through their land. This water, falling through the rugged terrain of Northern California could potentially generate a substantial amount of hydroelectric energy. SP has asked Tudor to prepare an inventory of all the potential hydroelectric sites which conceivably could be developed in the next ten years. They have also requested Tudor to investigate several institutional and environmental factors in an effort to help develop a master plan for the long range development of this natural resource. Hans Pokorny has performed most of the work on the project with assistance from Dave Church, Barbara Inaba, and George Schneider. Tom O'Neill is in overall charge of the work effort. Thus far, approximately 75 sites have been identified each of which could have an installed capacity of more than 500 kilowatts. The total potential capacity of all the sites is approximately 300 megawatts. Tudor is very hopeful of being able to provide future engineering services to SP Land Company in its development of hydropower; SP has recently authorized Tudor to proceed to the next stage of development on one of the most promising projects.

# NORTH FORK STANISLAUS RIVER HYDROELECTRIC PROJECT

The North Fork Stanislaus River Hydroelectric Project is a \$425,000,000 multipurpose project for development of the North Fork Stanislaus River and tributaries as an economical source of energy and water supply to meet regional and local demands.

The Project was initially conceived in 1947 when Calaveras County Water District first applied for water rights. In 1959, Tudor Engineering Company was hired by the District to prepare a feasibility study of the project. As a result of the study, various agencies expressed interest in purchasing the generated power. In 1963 the District filed for a license with the Federal Power Commission; however, due to many circumstances the Project never materialized and remained dormant until 1974 when it was again revived. During this period Tudor and the District continued to develop new schemes and alternatives in order to come up with a solution that would be environmentally feasible, would provide optimum power development, and would conserve and regulate river waters for the future needs of Calaveras County. Because of environmental considerations, the Project has been reduced in size from that which was originally conceived.

The Project will consist of the following features, which will provide 192,000 acre-feet of storage, 205 megawatts of installed capacity and 585 million kilowatt-hours of energy annually:

- North Fork Diversion Dam – A concrete gravity structure, 50 feet high.
- North Fork Diversion Tunnel – A ten-foot diameter horseshoe section tunnel, 11,300 feet long.
- New Spicer Meadow Dam – A rock-fill dam with upstream concrete face, 250 feet high.
- New Spicer Meadow Reservoir – Surface area 2000 acres, 189,000 acre-feet storage.
- New Spicer Meadow Power Plant – Total installed capacity 5000 kilowatts.
- Beaver Creek Diversion Dam – A concrete gravity dam, 15 feet high, and a seven-foot diameter horseshoe type tunnel, 1000 feet long.
- McKays Point Diversion Dam – A concrete arch type structure, 170 feet high.
- Collierville Power Tunnel – A thirteen-foot diameter horseshoe section tunnel, 40,100 feet long.

Collierville Penstock – A steel penstock 6380 feet long, 6.5 to 8.0 feet in diameter.

Collierville Power Plant – A two unit power plant with a total installed capacity of 200,000 kilowatts.

Collierville Afterbay Dam – A concrete gravity structure, 51 feet high.

An amendment to the original license application for the Project was filed with the Federal Energy Regulatory Commission (FERC) in 1975. After several years of solving the environmental problems and reaching agreements with federal, state and other public agencies, FERC has given every indication that the Project will be granted a license by September, 1981.

In November 1979, the District selected Bechtel/Tudor as the Engineers for the Project and on December 11, 1979 a Contract for engineering services was formalized between the District and the Engineers. The services include final design, construction management and start-up of the Project. Bechtel and Tudor have agreed to divide the work in such a way that Tudor will be responsible for:

- North Fork Diversion Dam and Tunnel
- New Spicer Meadow Dam, Reservoir and Power Plant
- Beaver Creek Diversion Dam and Tunnel
- Collierville Afterbay Dam

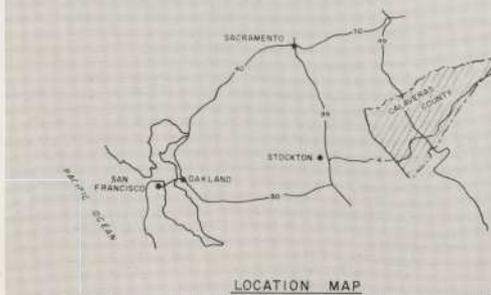
The Project's power purchaser is Northern California Power Agency (NCPA). The power purchase agreement between the District and NCPA was signed on July 2, 1981. In order to complete field geotechnical work this summer, Bechtel and Tudor started final design efforts on the project on June 8, 1981.

The present schedule anticipates completion of the procurement specification and drawings for New Spicer Meadow Power Plant by October 31, 1981. Bidding documents for all other project features will be completed by April 30, 1982, and project operation is presently scheduled to commence in July 1985.

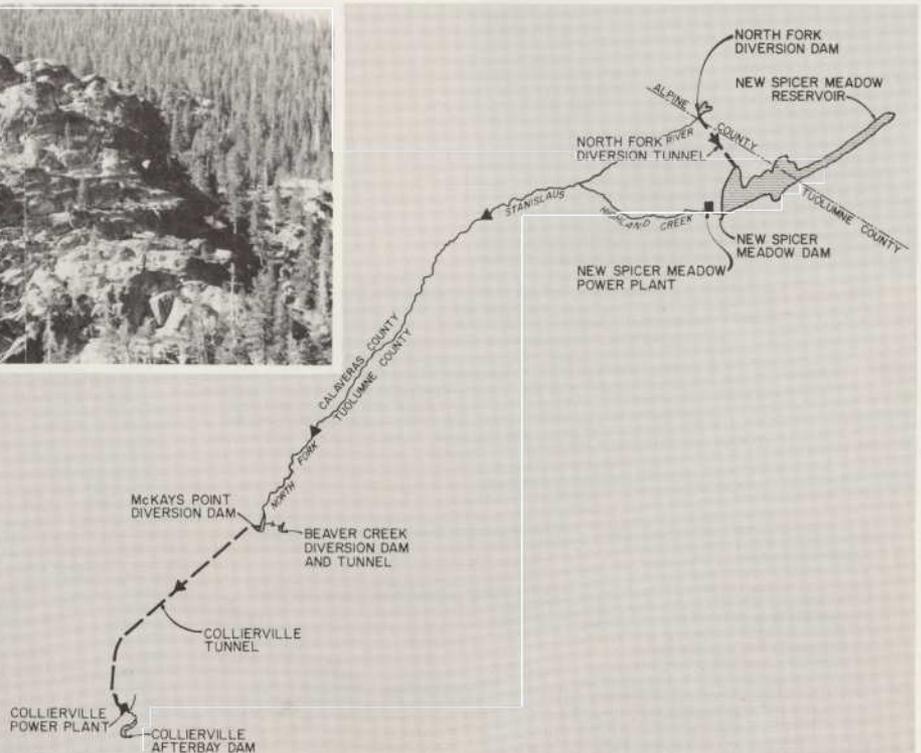
Bob Janopaul will be Tudor's officer in charge and Roberto Iniguez will be the Project Manager. Tudor's project staff will build up from a minimum of 10 people at the beginning of the design effort to a total of 50 people at the peak period.



LEFT ABUTMENT NEW SPICER MEADOW DAM



LOCATION MAP



## MEETEETSE WATER TREATMENT PLANT

The Town of Meeteetse, located in northwest Wyoming, was one of the first small Wyoming towns to upgrade its water system to comply with elements of the Safe Drinking Water Act. Historically, the town used water from the Wood River with disinfection being the only treatment. Regulatory authorities placed the health hazard potential "in a class by itself," due to a high upstream incidence of hepatitis. Tudor was retained as the technical consultant in 1978, and arranged a funding package containing over 80 percent grants. The construction contract was awarded in May, 1980, and construction proceeded through the harsh Wyoming winter, hampered at times by unreliable equipment delivery.

The water plant at Meeteetse is just about through with its "start-up blues." Except for punchlist work the plant is finished and operating automatically. Unexpected poor water quality in this low-runoff year caused Bob Stannard to put in some late nights trying unconventional treatment techniques and chemicals, but the plant is now fully operational.

## SHOSHONI WASTEWATER

The Town of Shoshoni, a typical Wyoming energy boom town, was required to perform an EPA Step I plan. Riverton personnel made the study and showed the Town how to utilize the treated wastewater to turn its sagebrush desert location into a lush garden paradise. Working with a myriad of agencies, a plan, described by the State as one of the very best ever written for Wyoming, was approved, with one slight problem. The problem: no further EPA funds for this outstanding project. Undaunted and following Tudor's advice, the Town has authorized design of a smaller scaled system.

## CLARKS FORK FIELD TRIP



A reconnaissance trip to the Clarks Fork of the Yellowstone River in northwestern Wyoming by John Williams and Chuck Spinks from the Denver office and two representatives of the client, Tri-State Generation and Transmission Association, Inc., was successful despite a disabled plane, rain, a long drive over rough dirt roads, and potential danger from cranky grizzlies.

Several proposed dam sites were looked at, including one site which involved hiking several miles to the canyon rim from the nearest road. Later discussions with an instructor at the local junior college revealed that the party was only two miles from a ridge reportedly over-populated by grizzlies just waking up from hibernation and not in the mood for visitors. The trip included on-site investigations of the geology and terrain at alternative locations for the proposed dams, and a talk with a biologist at North Western Community College in Powell on possible environmental problems. Besides grizzly bears, the area is inhabited by deer, elk, wolves, mountain lions and numerous small game animals.

## RIVERTON UPDATE

Tudor's office in Riverton is expanding to the top floor of the current building with the move planned for sometime in July. In addition to needed additional space, the office will now have windows!

## SF OVERHEAD TROLLEY WIRE



Tudor was recently selected by the San Francisco Public Utilities Commission to prepare a preliminary engineering study of renewal of the overhead trolley wire and power supply system along Market Street. Subject to funding availability, the project will lead to the preparation of contract documents for the new overhead system.

Market Street is the most significant street in San Francisco for public transportation. Now that the streetcar service is in the Muni Metro subway, the time has come to initiate the process that will lead to the final completion of the Market Street Beautification Project. This provides the opportunity to rehabilitate the existing Muni overhead system in this area and to initiate improvements to the system for a safer and more efficient Muni service.

Among the factors to be considered in the project will be the possible effects of installation of four sets of trolley coach wires (two sets in each direction); the effect of articulated trolley buses (similar to those shown in the picture), a comparison of conventional rigid vs. European elastic overhead types; and the implications of streetcars (possibly "historic" old cars), should they remain on the surface of Market Street.

One of the interesting facets of this project is the adoption of the trolley coach as the major transit mode on Market Street. The technical history of the trolley coach as a transportation mode is not well known.

The inception of the omnibus powered by electricity from overhead wires followed shortly after the first electric street railways were introduced in the 1880's. Further development of the "trackless trolley" did not, however, receive any great impetus until its first major application in Salt Lake City in 1928. During the following twenty years, the mode became popular when transit properties wished to phase out streetcar trackage while continuing to make use of existing power distribution facilities.

Trolley coaches achieved their greatest level of use in the early 1950's, when over 6500 vehicles were employed on 54 systems in North America. However, from the early 1950's through the early 1970's, the trolley coach disappeared as quickly as it had appeared in the previous two decades. By 1975, only ten transit systems in North America still retained TC operations, of which only five are in the United States, including Seattle and San Francisco.

Today, in the face of the energy crisis, there is rekindled interest in this all-but-ignored mode of transportation. During the last several years, every trolley coach operator in the United States and Canada has purchased new vehicles. This time period has also seen the introduction of new technology in propulsion systems and overhead hardware, and in the complete rebuilding and expansion of existing systems. The rewiring of Market Street may be one of the most challenging and innovative of any of these undertakings.

For this project, Tudor is associated with the firm of Chase Rosen & Wallace of Alexandria, Virginia, which prepared the state-of-the-art trolley coach studies for the U.S. Urban Mass Transit Administration.

Tudor's efforts will be led by Bob Janopaul, as principal-in-charge; Gary Weinstein will be project manager; Don Moore, Grant Larsen, Ken Heilig, and Bill Holmberg will participate in various aspects of the project.

## CALTRANS/SP COMMUTE TRAINS

A recent agreement between the California Department of Transportation (CalTrans) and the Southern Pacific Railroad to maintain and to improve commute train service on the San Francisco Peninsula led CalTrans to seek expert assistance in the field of commute rail operations. Tudor Engineering Company, in association with the Urban Transportation Development Corporation (UTDC) of Toronto, was selected by CalTrans to evaluate the existing system and to recommend a maintenance program and improvements for train operations and to specify acquisition of new locomotives and cars. Under a separately awarded contract, in association with Barton-Aschman Associates of San Jose, Tudor will also participate in station planning for the Peninsula commute line.

Improved and expanded rail commute services can provide important and needed mobility to California's major urban areas. Commute rail is not only a very energy-efficient mode; it has tremendous passenger capacity which can be utilized to relieve growing highway congestion at a comparatively low cost. Without so much as turning a shovel or displacing a single family, the ridership on existing commute rail lines can be increased substantially. Increased fuel costs, highway congestion, and urban area parking problems make moving a large number of people to concentrated working areas a necessity rather than a luxury. In California, the Peninsula commute rail service has demonstrated the ability to move large numbers of people to a relatively concentrated area quickly and efficiently.

Heavy commute rail as a Mass Transit mode has not, however, been a popular subject among transportation planners until recently. Most of the existing commute rail systems are in the East; many are in run-down condition and have a poor public image. The railroads have disliked commute service due to its intensive use of labor, interference with freight operations and financial deficits.

There are, nevertheless, major advantages to commute rail in its ability to utilize existing at-grade railroad lines and off-the-shelf or even used rolling stock. The lack of the need for costly electrification is another advantage of diesel-powered commute trains.

On the Peninsula, Tudor and UTDC will assist CalTrans in developing a systems operations plan, writing specifications for new locomotives and cars, and evaluating maintenance requirements in cooperation with Southern Pacific. CalTrans and its consultants hope to apply to the Peninsula line the superior elements of advanced commute train technology available from experience on the Toronto GO Transit system and Chicago area commute railroads.

It is expected that the studies will result in a recommendation to convert the trains to push-pull operation. This permits the locomotive to remain continuously coupled to one end of the train, pulling it in one direction and pushing it the opposite way. While pushing, the locomotive is controlled by the engineer sitting in a cab located in the first car of the train.

Bob Janopaul will be the principal-in-charge for Tudor, with Gary Weinstein and Ken Heilig working on the project.



## ACEC SERVICE AWARD



Louis and Pat are shown receiving an American Consulting Engineers Council Service Award in Las Vegas on May 6th at the ACEC Annual Meeting for their outstanding contribution to that organization.

Louis has served as ACEC National Vice President for the past two years. During that time he provided liaison with twelve state organizations on the national level through personal visits and/or correspondence on important issues. He also acted as a National Officer overseeing the International and Communications Divisions of ACEC. Among his duties were included the planning of the 1980 FIDIC Meeting in San Francisco and establishment of a national ACEC public relations program for consulting engineers.

Pat has contributed her time and creative talents extensively during this period, earning the respect of all who worked with her through her ability to tackle the planning of the most complicated social functions—from a luncheon for hundreds of people to Spouses' Programs for ACEC conventions.

## W.W. DAVIS TO ECUADOR

Bill Davis retired from Tudor Engineering Company last year but by no means did he retire from the business community. Instead he signed up with the International Executive Service Corps, an organization which places retired executives in the role of consultants in companies throughout the world. These assignments are temporary, usually lasting for not more than three months, and are usually located in underdeveloped countries whose business and industry can most benefit from the wealth of knowledge retired executives have to offer in all areas of business.

Bill was assigned to an import/export company in Ecuador in search of someone to improve its productivity, program efficiency and internal auditing. Bill and Blanche left for Guayaquil last September. During their three-month stay, they split their time between company offices in Guayaquil and Quito.

Both Bill and Blanche had previously lived in South America (Blanche in Guayaquil) so they knew the area, customs and expectations. In no time Blanche was speaking Spanish again and bargaining with the locals for everything from food to an ironing board. Bill encountered more of a language problem in his work, trying to get employees to understand accounting procedures through an interpreter who knew nothing about accounting in either language.

By the end of their tour, Bill and Blanche had made many new friends (including Roberto Iniguez' brother who lives in Guayaquil). The company profited greatly from Bill's extensive knowledge.

## SARAH WESTSMITH TO ENGLAND

On May 18th, Sarah Westsmith and her mother boarded the San Francisco flight of British Airways for London embarking upon a new adventure of traveling and living in England. Even though Sarah is on an extended leave of absence, she says her future plans are indefinite. We do look forward to seeing her back in San Francisco for a possible visit by the end of the year.

## LWR PRESIDENT OF SAME



Louis Riggs was installed as the President of the 22,000 member Society of American Military Engineers at its 61st Annual Meeting in San Diego, California, on May 1, 1981. He is the fourth civilian in the history of the Society to serve as its President. Louis has chosen as his theme, "Military Engineers—Partners in Rebuilding the Nation's Defense". He is asking all engineers, military and civilian, to work together in supporting the new Reagan Administration in rebuilding the U.S. defense posture around the world.

Tudorites joining Louis and Pat Riggs at the Annual Meeting were Mike and Judy Harrington and Jim Ricereto. Mike is President of the Seattle Post of S.A.M.E. Jim, who is on the Board of Directors of the San Francisco Post, was installed as a Director of the national organization.

The photo shows Louis in one of his first official duties on May 13 presenting honorary membership to Secretary of State Alexander M. Haig, Jr. in Washington, D.C.; accompanied by Walter Bachus, Executive Director, and General Joseph Bratton, Vice President. As an honorary member, the Secretary of State joins a distinguished group of Americans including Generals of the Armies John J. Pershing, Douglas MacArthur and Dwight D. Eisenhower.

## ON THE HUMAN INTEREST SIDE . . .

Steve Alters spent a long weekend at his mining claim on the South Fork Clearwater River, but won't let on if he found the yellow gold or just got a sunburn.

Bob Beal, taking advantage of a moment's rest, has cleaned his office walls of the maps, charts, and memos from the Central Orchards Sewer District construction days.

Trevis Green has led the survey crew to the far reaches of Idaho County and returned with all intact and in good health.

Bruce Larsen says he enjoyed the two weeks the survey crew spent in the little town of Kooskia one night.

Dale Bowers now has our plan file in order and we can locate most any drawing on a moment's notice.

Sheri Johnson spent Easter Weekend in Troy, Oregon, attending a community dinner with many of her relatives and the rest of the town's 24 souls.

Robert Moorhead pulled special activities duty in April and judged 8th grade General Science projects at the regional Sciences and Engineering Fair, and spoke with high school juniors about the opportunities in civil engineering at the annual Lewis Clark State College Career Expo.

## MARCH OF DIMES WALKATHON

The Bay Area March of Dimes conducted a walkathon on April 26th. The course was 32 kilometers and thousands of people participated in the walk. Gate Gelana and his wife Barbara joined the San Francisco walkers and successfully completed the entire 32 kilometers. Thanks to those Tudor employees who sponsored Gate and his determination, \$250.00 was raised for the March of Dimes.

## BAY TO BREAKERS

On the 17th of May, ten of the hard and semi hard-core runners from Tudor's San Francisco office took to the streets to compete in the 70th annual Bay to Breakers race.

The race unofficially started with most of the runners meeting at the office as early as seven in the morning. For most of the hard core runners this time was used very wisely performing the proper warm up and stretching exercises. For the not-so-hard-core runners, this was a time of deep meditation trying to figure out a way to justify the difference between the comfort of a nice "warm" bed at home to the 7.63 miles of torture that was waiting ahead.

The original plan was one in which the strong were to take care of the weak and the weak were to rely on their help; i.e., we start together, stick together and finish together. So much for plans....

Officially the results were a little different. After two minutes into the race Ulrich Lemcke was spotted disappearing into the pack in pursuit of the "dreaded" Hayes street hill. He finished in 56 minutes (his wife had demanded that he be home by 10:00 a.m. to finish the dishes). His version was that he was spurred on by the rumor of an unclothed female runner at the front of the pack. Running up the Hayes street hill, Ulrich became discouraged, but the theme from "Rocky" blasting from the speakers of every second Victorian apartment kept him going. The stretch through Golden Gate Park was all downhill; no problem there. Said female was never located.

George Schneider and Derek and Joanne Bolton kept an even pace with a team of surgeons pushing a gurney...just in case, until the third mile or so when they had attained enough confidence to break away towards the Pacific. Ocie Williams, speaking of the "Bay to Breakers Run," said that if you are not in the seeded division of runners, you might as well find a groove somewhere in the midst of the 60,000 and enjoy the run. That's exactly what he and Brian McDermott did and enjoyed a comfortable race. Greg Reichert, joined by his future bride Yoshimi Yamamoto at 30th Avenue and John F. Kennedy Drive, finished the final one and one half miles together. Mark Nothafft and Frank Chiappella spent the middle portion of the race pursuing Lady Godiva minus her horse. Mark's heart and legs were unable to keep up with his desire and she quickly outdistanced him. Gary and Cheryl Durham treated the race as a marathon warmup and finished without breaking into a sweat. Jim Ricereto brought two neighborhood friends that left him in the crowd to pursue good times; even so, he finished in 69 minutes, his best time yet.

Following the race, the group was treated to a fabulous brunch at the home of Derek and Joanne Bolton.



## NEW FACES FOR . . .

### . . . denver

On April 30, 1981, Nelson Jacobs ("Jake") started work for Tudor in Denver as Manager of Hydroelectric and Water Resources Projects. Nelson has 20 years experience in water resources development, much of it overseas. He spent over seven years in Thailand and Ceylon (now Sri Lanka) while working for Engineering Consultants, Inc., and, he has been working for the Bureau of Reclamation in Denver for 13 years. Nelson's position with the Bureau as Power Planning Coordinator gave him the responsibility for special studies involving hydroelectric and pump storage development. Nelson was born and raised in the town of Holland, Michigan, and graduated from Michigan State University in 1961. He and his wife, Dawn, have four children: two boys and two girls, ranging in age from 10 to 22 years old. When Nelson is not busy taking care of his half acre yard, he plays golf and sings with his church choir.



### . . . san francisco

Lou Salaber, who originally joined Tudor in January, 1964, is returning to the fold after a 3-year stint working as a soils engineer. Lou was employed as a project engineer for Don Hillebrandt Associates, a geotechnical consulting firm located in San Francisco. Besides playing in the dirt with everything from a pick and shovel to large truck-mounted power augers, Lou produced foundation investigation reports on a variety of buildings, from single-family dwellings to multi-story office/condominium structures.



Chris Baez, recent addition to the San Francisco staff, was born in Managua, Nicaragua. She lived in several different countries in Central America before coming to Santa Rosa, California to attend school. In 1977 Chris returned to Nicaragua and worked as a secretary and as an assistant bookkeeper at the American Nicaraguan School. Because of the Revolution, she returned to the United States the same year. She worked in the contracts department of a large automobile agency in San Francisco before joining Tudor in May of this year. Chris likes being with people and in her spare time enjoys dancing, walking along the beach and visiting Sausalito.



Geoff McCavitt joined the Hydro Design group at Tudor on June 8, 1981. He recently graduated from San Jose State University, with a B.S. in Mechanical Engineering. While at San Jose State, Geoff's emphasis was power and fluids. A native of the San Francisco peninsula, Geoff currently lives in Palo Alto. His leisure activities include sailing, backpacking, fishing, swimming and reading.



Lisa Harris, the new San Francisco Receptionist, has lived in the Bay Area all her life. She has attended Chabot College in Hayward and Bethany in Santa Cruz where she studied business, travel, tourism and religious education. She plans to return to night school to finish her degree in travel/tourism. She enjoys sewing, skiing, tennis and hiking.



## CARACAS NEWS:

Miguel Cornejo, Tudor employee since 1972, has been involved in projects in Lima, San Francisco and Panama, and lately in Caracas, Venezuela with the joint venture firm PBTB working on the Caracas Metro Rapid Transit System. Miguel was in charge of the Propatria Yard Area office (Area Interphase Manager) since 1979 during the construction of the first line of the system. The office provided the coordination of interphasing between civil/structural and system-wide contractors and between engineer/inspection groups. The office also provided design services during construction of all yard phases.

Miguel, his wife Lia and children Maria Lia, Maria Pia and Miguel Estuardo are all returning in the near future after fulfillment of all immigration requirements needed by a Peruvian family.



## CONGRATULATIONS TO . . .

Mike Grow, son of Lewiston's Jim Grow, who placed first in his weight class and first overall in the Golden Gloves Boxing Tournament for the western United States and went on to compete in the National Golden Gloves Boxing Tournament in Toledo, Ohio. Proud Papa Jim, himself a former Golden Gloves finalist, went along to Toledo as ring manager.

Paula Dierkop, Tudor San Francisco, specification writer, who has been installed as President, San Francisco Chapter of the Society for Technical Communication. As President, Paula will be working actively with over 500 members of three Bay Area chapters to promote professional training and career development for technical writers and editors.

Tevis Thompson upon receiving an MBA degree in Management from Golden Gate University Graduate School of Business Administration, this June.

Bob Stannard was married on April 9 to a former Tudor employee, Liz Metzke. Bob and Liz met while working together on the Thayne Project. They are making their home in Riverton where Bob is trying to teach Liz to flyfish and Liz is trying to teach Bob to washdish.

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THE TUDOR NEWSLETTER is published by Tudor Engineering Company for the information and enjoyment of its employees, their families, and friends.

CONTRIBUTING AUTHORS: Don Armstrong, Barbara Cooper, Don Croft, Roberto Iniguez, Barbara Iverson, Jim Meyer, Bob Moorhead, Tom O'Neil, Wil Pacheco, Ed Peters and Chuck Spinks.

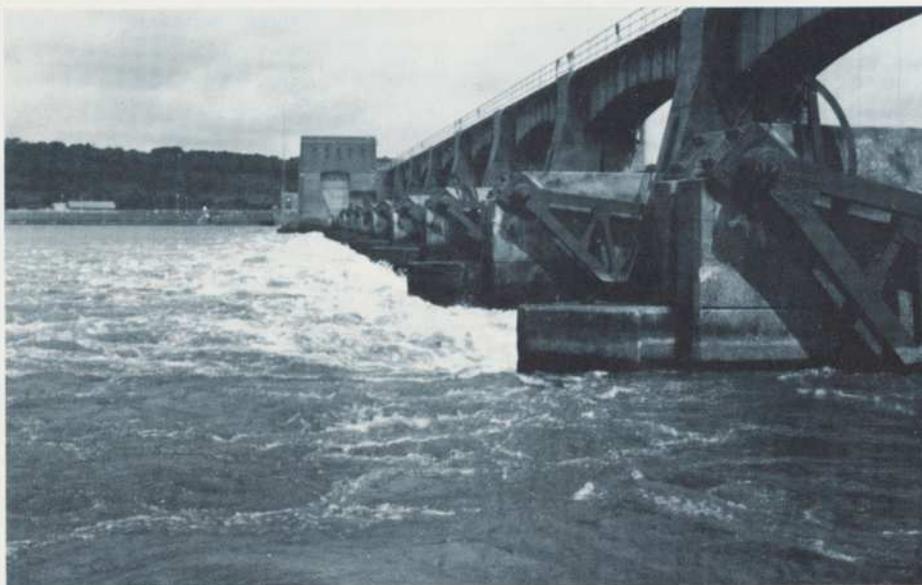
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# TUDOR QUARTERLY

SUMMER 1981

## NEW HYDRO PROJECTS IN IOWA



*Lock and Dam No. 14*

Tudor was selected in August to do a feasibility study and to prepare the FERC license application for addition of a hydroelectric plant to Saylorville Dam near Des Moines, Iowa. Tudor will act as prime consultant, with Shive-Hattery & Associates of Cedar Rapids, Iowa as a subconsultant, in preparing the \$100,000 study for the city of Ankeny, Iowa. The city currently has the preliminary permit to study the hydroelectric potential at the dam. Saylorville Dam is a Corps of Engineers' flood control structure about 105 feet high and 6,750 feet long, and the preliminary estimates of the hydroelectric potential are from 3 to 5 megawatts at a head of 35 feet.

Tudor will also be working with Shive-Hattery & Associates on a \$300,000 study to add hydroelectric facilities at Lock and Dam No. 14 on the Mississippi River near Davenport, Iowa. Tudor is awaiting notice to proceed from the city of Le Claire, Iowa, which holds the preliminary permit for the project. The preliminary capacity estimate for the site is 25 megawatts at a head of 10 feet. Lock and Dam No. 14 is one of a series of structures built by the Corps of Engineers to allow navigation on the Mississippi River throughout the year. Both projects will be managed from the Denver office by John Williams and Nelson Jacobs.

## NOOKSACK FALLS POWER PROJECT

Puget Sound Power & Light Company, a privately-owned electric utility which supplies power to over 521,000 customers in the State of Washington, has recently engaged Tudor to study and to report on the feasibility of enlarging and modernizing one of their small hydroelectric facilities on North Fork Nooksack River, located in the very scenic Mount Baker National Forest.

The facility, called the Nooksack Falls Power Project, began operation in 1906, and except for a short shutdown period in 1930 when the diversion dam was relocated, has been producing power since that time. Most of the 220 feet of available head at the powerhouse is due to Nooksack Falls, a spectacular 170-foot vertical drop just upstream of the plant site.

As it exists today, the facility consists of a diversion dam, a 2,060-foot long aqueduct to the penstock, an overflow type surge tank, a 540-foot long by 5-foot diameter steel penstock, and a powerhouse with a single 1.7 megawatt generator and four Pelton impulse wheels. All four impulse wheels operate on the same continuous shaft to the generator. The aqueduct merits further mention since it consists of a rectangular concrete conduit, a six foot diameter wooden pipeline, and a small horseshoe type tunnel which was excavated during the early mining days in that region. The existing powerplant is of early design, and estimates of efficiency range from 40 percent to 55 percent. This lack of efficiency is due in part to the wear from the huge quantities of sand and coarse rock particles which currently pass through the turbines.

Tudor's responsibility during this study is to assess the feasibility of eliminating sand in diverted flows and enlarging the facilities to utilize additional discharge which is currently spilled at the diversion dam. Although the study is still in the early stages, it is anticipated that the optimum capacity at the site will be near 7.0 megawatts. The upgrade of the project would include construction of a new dam and intake structure, enlargement of the aqueduct and, most likely, the construction of a new powerhouse containing two Francis turbines.

### *Nooksack Falls*



## BOISE PROJECTS

### BRUNEAU SEWER PROJECT

The Bruneau sewers began operations in early August 1981. Cell No. 2 (the southern lagoon) is functioning while work continues on Cell No. 1. Excessive groundwater continues to be a problem and will delay completion of Cell No. 1.

### WARD PARK

A regional park is being planned for Meridian, Idaho. Facilities will include two softball fields, a swimming pool, numerous picnic sites and an outdoor theatre with a shelter set in a natural bowl. Tudor has been selected and informed that funding is available. Currently the Recreation District is waiting for a grant.

### GARDEN CITY

Tudor is preparing drawings and specifications for internal repair of portions of the city's sewer system. The project is intended to remedy the infiltration/inflow problems by internal grouting. Stan McHutchison has the design work approximately 75 percent completed. The minority firm of Centrac has been hired to assist.

## ALOHA — KITANO HYDROPLANT

The San Francisco office, in conjunction with Axel Johnson Engineering Corporation (equipment supplier) and Kennedy/Jenks Engineers of Honolulu, has just completed a feasibility study on a hydroelectric power plant proposed for the Island of Kauai, Hawaii. The study, commissioned by Kekaha Sugar Company, a division of AMFAC Incorporated, would utilize flows of an existing irrigation ditch in west central Kauai. The project would develop an 800-foot drop in elevation to produce electrical energy.

The recommended project development consists of an intake structure, a 9,100-foot long buried steel penstock (diameter 28 inches at the intake structure, decreasing to 24 inches near the powerhouse) and a 1,500 kW powerhouse with either a Turgo or a Pelton turbine. It would produce approximately 7.7 million kilowatt hours of energy per year with a capital cost of approximately \$2,000,000.

Phase 2 of the work has just been authorized. Tudor is sending Don Scapuzzi to lay out the penstock route and Kennedy/Jenks will prepare the required environmental documents.

### KUNA SEWER PROJECT

The Kuna sewer project consists of two phases: Phase I — Collection system; Phase II — Treatment and disposal facilities.

Funding of the project has been established with IDHW, EPA, EDA, HUD and FmHA all participating. Tim Burgess and Jim Spofford have completed the Phase I design and submitted it for review. Paul Kunz provided in-house review. Rick Orton, Bob Mayers, Don Payne and Randy Witt have completed about 85 percent of Phase II.

### ENVIRONMENTAL ENGINEERING LABORATORIES

Lab work has shown an encouraging increase during the summer. New contracts for testing or special studies have included the following:

Northwestern Contract, at the City of Boise's Lander Street Sewage Treatment Plant.

Cyprus Mines' molybdenum mine at Thompson Creek near Challis, Idaho.

Two contracts with the Bureau of Land Management.

The project is typical of those expected on volcanic islands in the Pacific. There are few major streams or rivers in the region. However, even minor streams can be developed because of major elevation drops, fairly constant flow throughout the year, and the high cost for alternative electricity. In Hawaii, all fuel for electrical generation is imported, with the cost of electricity exceeding 10 cents per kWh (vs. 4-5 cents in San Francisco). Tudor, in conjunction with Axel Johnson, is presently investigating several other hydroelectric job prospects in the islands.

Hugh Brown is the project manager for this job with much of the feasibility work performed by Don Guild, Greg Reichert, and John Wurschmidt and assistance from Geoff McCavitt and Sam Chan.



*Scenic Hawaiian Waterfall*

## ALASKA SMALL HYDRO

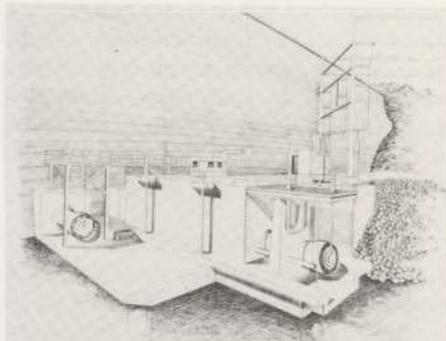


Tudor, in association with DOWL Engineers of Anchorage, Alaska, was recently awarded a contract to perform feasibility studies on four small hydroelectric sites in rural Alaska. The sites are intended to service small isolated fishing villages which currently utilize small diesel generators. Gordon Little and Dave Church will be the primary San Francisco participants; Jack Bjork from Seattle will help Gordon and Dave on the initial fieldwork.

Two sites are on Kodiak Island, and another north on Bristol Bay, a primarily Eskimo area. The fourth site is at the tip of the Alaska peninsula where the Aleutian Islands start. This last site is farther from Anchorage than it is from San Francisco to Denver!

Work on the project is currently underway and the completed feasibility studies are due January 31, 1982.

## MONTICELLO BID OPENING



The hour of 2:00 having arrived on August 4, bids were opened on Solano Irrigation District's Contract No. 647-2 for the construction of the Monticello Power Plant. Eleven bids were received, with the low bid being submitted by Syblon-Reid Company of Folsom, California. The total amount of the low bid was \$4,960,900 with the second and third lowest bids being in the amounts of \$5,148,000 and \$5,160,000. The engineer's estimate was \$5,280,000. All in all, it was a very successful bid opening with all parties involved being quite satisfied. The project bonds have been sold and the Notice to Proceed has been given to Syblon-Reid, with construction to begin immediately.

## MIAMI DOWNTOWN PEOPLE MOVER

The Miami Downtown People Mover (DPM), now in the final design stage, will provide local transportation in Miami's central business district, and will interface with the Dade County Metrorail system which is now under construction. The DPM will be built by Westinghouse as a turnkey project. Tudor is a member of the Westinghouse team of engineering firms.

The four-mile system will feature Westinghouse vehicles and control systems. Westinghouse is a leader in people mover technology, with seven people mover systems now in operation or in the late stages of construction, including passenger shuttles at airports in Seattle, Miami and Atlanta. The Westinghouse system uses rubber-tired vehicles with a vertical axle guidance system located below the cars. The Miami DPM will be the first such facility located in a preexisting urban setting, and the first people mover in the United States to interface with a heavy rail mass transit system.

Having to work within the constraints imposed by the existing structures and roads presents considerable challenge for the design engineers involved in the project. The guideway will consist of multi-span continuous steel "I" girders with concrete running pads, supported on reinforced concrete piers. Most of the guideway will be located over sidewalks and streets where both vertical and horizontal clearances are limited. The structural engineers must contend with curved guideway girders on radii of as little as 75 feet. (The minimum turn radius for the BART, MARTA and Dade County Metrorail systems is 1,000 feet).

Design of the DPM guideway structures is being performed by PB/T, a joint venture of Tudor Engineering Company and Parsons, Brinckerhoff, Quade and Douglas, who have previously collaborated in the design of the BART, MARTA and Caracas Metro mass transit systems. Tudor also participated in the design of the Dade County Metrorail guideway structures. Paul Potter is the principal-in-charge for the project and Tudor's representative on the two-man Executive Committee of the PB/T joint venture. Rainer Rungaldier is Project Manager for the PB/T effort. The substructure and alignment are being designed in PBQ&D's Miami office, and the superstructure is being designed by Tudor in San Francisco under Mike Goldberg's leadership. The job is presently staffed by Walter Zien, Wu-Chieh Chen, Steve Gold and Don Yamagishi.



The Miami Metrorail (upper level) and Downtown People Mover (lower rail) will interface at Government Center Station, as shown in this artist's rendering.

## OAKLAND WHARF

The Corps of Engineers has selected Tudor to design a complete structural rehabilitation of aging Pier 7 at the Oakland Army Base, close to the Bay Bridge toll plaza. Construction costs are estimated at around \$10 million. The project has been slow in

development. Don Croft and Rainer Rungaldier have worked on separate preliminary phases since 1977. Rainer and Don are now joining forces for the main event. Bob Janopaul, also long familiar with the project, is Tudor's principal-in-charge. Negotiations are expected to be concluded soon and work may begin in early October.

## SAME IN SEATTLE



The above photo shows Louis Riggs, National President of the Society of American Military Engineers, and Mike Harrington, President of the Society's Seattle Post, with Senator Henry "Scoop" Jackson at a special dinner meeting of the Seattle Post, May 26th. Mr. Riggs attended the meeting to present a Distinguished Service Award to Senator Jackson. The award was presented in order to recognize the Senator as "a great American, for his leadership of our Country's energy policy and in the rebuilding of our Nation's defenses." This was the first time the Society had made this award.

Mr. Riggs also presented one of the Society's annual awards for engineering excellence to the U.S. Coast Guard Civil Engineering Branch, 13th District.

Also attending the meeting were Keith and Diane Bull and Judy Harrington.

## QUEEN OF THE VALLEY HOSPITAL PARKING

A traffic and parking study undertaken for Queen of the Valley Hospital in Napa led to an assignment to design approximately 500 new and much-needed parking spaces. The hospital is about to embark on a \$40 million expansion program and it was necessary to provide the new parking spaces in advance of the major construction work both for construction worker parking and so that required additional parking would be immediately available upon completion of the hospital expansion.

The design work was completed under the direction of Don Moore, and consisted of rehabilitation of an existing parking lot, increasing its size from 100 to 160 spaces, and design of a new surface parking lot with 420 spaces, as well as related utility work. Construction bids for the project were tightly grouped and the low bidder was comfortably below the engineers estimate. Construction is on schedule and is expected to be completed in mid-November.

# MALAYSIA MINIHIDRO STUDY

Tudor Engineering Company and Stanley Consultants Inc. are currently preparing a series of hydroelectric reconnaissance studies in Malaysia. Tudor participation on this project started in February 1981 and will be essentially completed on October 31, 1981 when the report is submitted to the government of Malaysia.

Tudor played a very important role on the project and had under its responsibility the most important tasks of the study: the field reconnaissance work, the preliminary designs, the feasibility analysis and the preparation of the feasibility report. The success and accomplishments in the perfor-



The crews: Gordon Little, Ian McAlister, Jack Bjork, Hwong, Ann, Dave Church, Yee.

"We want to run a penstock through this?" Jack Bjork

Gordon Little at the home of his local brushers.

mance of these tasks were mainly due to the dedication of the employees that participated in the work.

All the participants should be commended for the work they have accomplished, however, special recognition should be given to Jack Bjork, Joe Carson, Dave Church and Gordon Little for their involvement in the field reconnaissance work, which turned out to be the hardest and most difficult of all tasks. They had to fight the hot and humid jungle weather, vegetation where everything that grew seemed to have stickers and thorns, and the insects, reptiles and animals of the region, such as snakes, leeches, wild elephants, monkeys, and tigers.

Everybody had different experiences to relate; Joe Carson grimly recalls being sick for a month after drinking coffee made from water dipped from a river. Jack Bjork was most impressed with the jungle leeches. "If you like ticks," Jack says, "you'd fall in love with leeches." Dave Church's most memorable experience was getting 15 bee stings in one day. Gordon Little encountered a swimming cobra one day while wading up a jungle stream and found that he could run, crawl and wiggle faster in knee deep water than a cobra can swim.



Thousands of these friendly natives greeted us along the trails — yes, that's a leech.

Elf Joe Carson and Ann at home in the jungle.

Other participants who performed specific duties are Tony Lea, who was involved in the preliminary reconnaissance work, and Horace Burrier, Tom MacLennan and Kurt Scholz, who were involved in the optimization and preliminary design of each site. Although the optimization and design work was mainly in the office, those engineers did suffer some of the consequences of the weather, insects, and spicy foods.

Brian Grant has under his responsibility the task of putting together the entire feasibility report. This is not an easy task since he has to edit sections of the report written by authors from the Midwest, California, Australia and Malaysia, and to come up with a report using British vocabulary for submission to the client.

Roberto Iniguez has been involved in coordination of some of the technical efforts in Malaysia and the personnel needs between the San Francisco Tudor office and Malaysia. He had the difficult task of trying to keep happy all the individuals assigned to the project.

Most of the group took advantage of the travel and managed to get in some interesting side trips coming and going or on brief furloughs during the assignment. Dave Church enjoyed Thailand, Bali and Singapore. Jack Bjork did the same and also toured China, the Great Wall included. On the way home, Joe and Kay Carson had a lengthy stay in Japan with students who had previously stayed with them in Napa. Gordon Little had previously spent considerable time in Asia and made brief stops in Hong Kong and Singapore. Horace Burrier will be going to Indonesia and China, Tom MacLennan stopped in Hawaii, Kurt Scholz traveled in Asia and Europe and Brian Grant will also be doing the same, and Roberto Iniguez spent a couple of weeks in Australia and Hawaii.



Dave Church, Ann and crew with their Land Rover replacement.

### DENVER PICNIC

The Denver office held its annual picnic in July with over 30 people present. Barbecued chicken, cooked by John Williams, provided energy for the hard-fought volleyball games. Frequent trips into the lake to retrieve missed shots provided an excuse to cool off, and the aggressive playing resulted in a broken foot which left Nelson Jacobs in a cast for several weeks. Pam Stimpson planned the picnic to coincide with her birthday. Several of the children tried to help Pam with the candles on the cake, but they refused to go out despite all of the wind generated. Perfect weather and a group of friendly people provided a nice environment for the day.

### RIVERTON PICNIC

The Riverton office and the Casper office held their picnic at Bass Lake. The weather cooperated most of the day and the food was ample and excellent. The following pictures tell the story.



#### Denver

*John and Janet Williams; the boss finally gets to try some of his cooking.*

*Pam Stimpson overflowing with birthday cheer.*

*Poor Dad! Debbie Jacobs comforts her dad after Nelson broke his foot playing volleyball.*

*Charl Spinks flirting with the photographer as Chuck Spinks looking on.*

*Cliff Bjorgum demonstrating his claim that the best volleyball players always have a beer in hand.*

#### Riverton

*Relaxin'*

*It works better if you both paddle the same direction.*

*Vic Wire and Don Armstrong.*

*All smiles, Kevin Brown.*

### BOISE PICNIC

The annual summer picnic, organized by Ted and Pat Purcell, was held at Dave and Loreen Toothman's summer home in Centerville. Approximately 70 employees, spouses, children and friends attended. Swimming, horseshoe pitching and eating were enjoyed by all.

On the day before the company picnic, several Boise employees organized the First Annual Tudor Boatathon, Sunbust and Boogie at Lucky Peak Reservoir. There were four boats and approximately 25 employees, family members and friends.

### LEWISTON PICNIC

The Lewiston summer picnic was held on Saturday, July 18 at the Nez Perce Historical Park at Spalding, Idaho. All the Tudor employees and most of the James W. Grow and Associates employees joined in for a most pleasant afternoon under the shade trees at the park. As usual, Steve Alters performed his wonders on the barbecue grills, and the rest of the crew took advantage of his expertise and thoroughly enjoyed the victuals.



#### Boise

Ted Purcell and Dave Toothman were cooking lunch and checking out the action across the street.

The shade between the cabin and the pool was a popular spot for eating, drinking and conversation.

Loreen Toothman relaxing in the shade by the pool.

Paul Kunz making yet another attempt to get up on skis.

#### Lewiston

"All right, all right! I'll cook it some more!" Steve Alters

Picnic scene.

Travis and Nancy Green, Jeff Johnson, Becky Hubbard and Bruce Larsen.

Community Baby

Bruce Larson, Jeannie Beal with Trevor Alters, Bob Beal, Travis Green, Cookie Fuller, Pamela Beal and Nancy Green.

Photographer/Engineer Bob Moorhead.

## SAN FRANCISCO PICNIC

For the past few years the San Francisco office picnic committee has been searching in vain for a sunny day and convenient location to celebrate their annual outing. June 6 and Del Valle Regional Park, located three miles south of Livermore, proved to be the winning combination this year.

Although the convenience of the location was disputed by some, the weather, activities and food proved to be an ample reward for all. The park offered many activities, including soccer, volleyball, fishing, hiking, sailing and wind surfing. The lunch was a culinary delight, including abundant supplies of barbecued salmon, chicken, beans, bread, salad, desserts and beverages.

## SEATTLE OFFICE PICNIC

The Seattle office held its annual picnic, August 16, at Nolte State Park near Enumclaw. Although the park features a lake with an improved area for swimming, most Tudor activity centered around the shaded picnic and volleyball areas. An enthusiastic game of volleyball drew many players, but in the picnic area one could also see fiercely competitive games of Boggle, cribbage and diet-forgetting. Keith Bull retained his title as an extraordinarily fine salmon chef. It was difficult to choose among the many dishes contributed by Tudor staff and families; however, Eva Vadasz's strudel deserves special mention.



### San Francisco

*Oak Point picnic area provided a nice area to eat lunch on the banks of Del Valle Lake.*

*Side-by-side softball and volleyball games provided plenty of action for players as well as spectators.*

*Enjoying BBQ chicken and salmon are Beth Janopaul, Don Guild, Louis Riggs and Liz Guild.*

*Gary Durham, Frank Chiappella and Brian and Debbie McDermott relax around the refreshment area.*

*Fred Estep and Bob Janopaul find a shady spot for a little relief from the sun.*

### Seattle

*The orgy begins.*

*Mujib Ahmed, Dick Rudolph, Pete Paterson, Rosemary George, and Jim Schroeder.*

*Pete Paterson wins another point by spiking the volleyball past Holly Hoel.*

*Eva Vadasz, Diane Bull and Baby Alia Ahmed.*

## NEW FACES FOR . . . ...san francisco

The San Francisco office welcomes new employees from left to right: Walter Anton, formerly Assistant General Manager and Chief Engineer for East Bay Municipal Utility District and also formerly with Tudor. Walter Anton is now Vice President and Manager of Engineering for the San Francisco office; Jim Flannery — Word Processing Operator; Vrej Ratavoussian — Electrical Engineer; Andrew Yeung — Civil Engineer; Paul Lindstrom — Proofreader; Dorene Thornton — Civil Engineer; Bambi Pineda — Accounting; Wayne Huber — Civil Engineer; Art Curry — Drafting Trainee; Alan Nelson — Civil Engineer; Jon Kaneshiro — Geologic Engineer; Richard White — Senior Drafter; Tony Zepzauer — Office Clerk.



### ...denver

Tonda Gusman — Receptionist.



### ...boise

Suzanne Howell — Laboratory Technician.



## LEWISTON OFFICE UPDATE

Tudor Engineering Company, on July 1st, sold the surveying operations located in the Lewiston office to James W. Grow. After three years of combined operation, it was decided that Jim Grow would re-establish his surveying business and that Tudor would begin phasing down engineering operations in Lewiston. Bob Beal and Bob Moorhead will remain in Lewiston until the current projects are completed, operating as a project office directly under the Boise office. Steve Alters started the relocation process involved in moving from Lewiston to San Francisco. As soon as Steve can arrange suitable housing, Gail and the boys will be settling in the Bay Area.

## NEWS IN BRIEF

Neal Eagar and his sons, Jack and Billy, spent part of their vacation at a family reunion in Eagar, the town of their roots. Eagar, a community of about 3,000, is in the high country of east central Arizona. Neal's great grandfather founded the town in 1880 while Geronimo and the Apaches were trying to keep the white man out.

Dale Bowers, senior drafter at the Lewiston office, has taken a three-month leave of absence to become a photographer for the missionary effort of the Evangelical Fellowship of India. Dale is living in New Delhi, but will be doing quite a bit of travelling around India to photograph various activities for inclusion in a booklet and slide presentation to be prepared upon her return.

## CONGRATULATIONS TO...

Steven Gold, Barbara Inaba, Mark Nothaft, Sally Simone and Lemma Wendim-Agegnehu of San Francisco who received their Civil Engineering registration from the State of California.

Greg Reichert and Yoshimi Yamamoto who were married on July 3, 1981 in Oakland, California. Greg is an engineer in the San Francisco office.

Jeff Stevens, an engineer in the Denver office, and Lucy Jones, who were married on June 20, 1981 in San Francisco.

Nate Matasy and Pat Tipton, on their marriage on August 8. Nate is the Lewiston/Wyoming construction inspector.

Gary and Diane Ames of Boise on the birth of their son, Kasey, on June 21, 1981.

Walter Zien, an engineer in San Francisco, who received his United States Citizenship.

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THE TUDOR QUARTERLY is published by Tudor Engineering Company for the information and enjoyment of its employees, their families, and friends.

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# TUDOR QUARTERLY

FALL 1981

## SEATTLE STREETCAR UNDER CONSTRUCTION

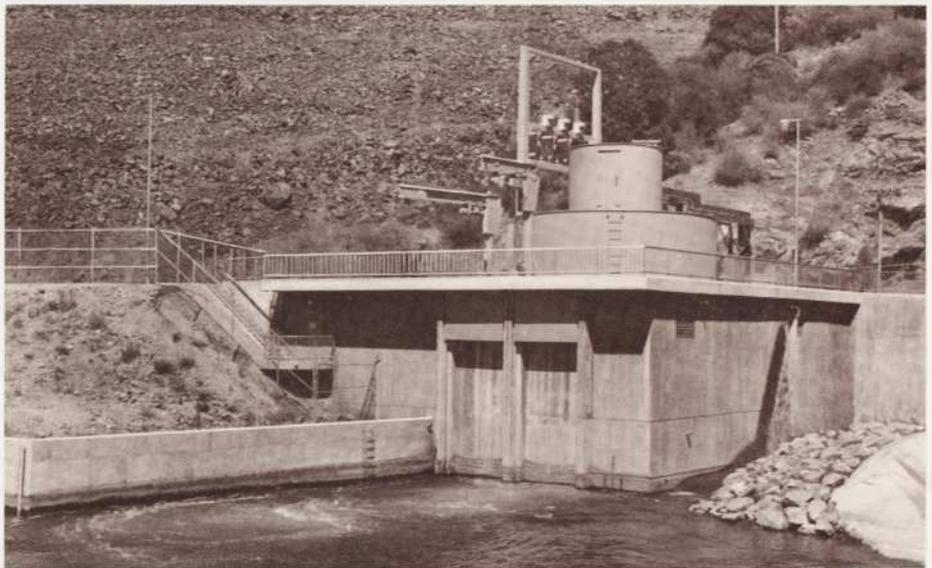
The accompanying photograph shows track rehabilitation and a car stop foundation – two of the features of the Tudor designed Waterfront Streetcar now under construction in downtown Seattle. The City of Seattle issued a notice-to-proceed to Westcoast Electric in August, nine months after receiving contract documents from Tudor, having spent the interval dealing with financial, legal and procedural issues. Westcoast's bid of \$1,363,000 was 2 percent below the Tudor estimate.

Construction activities include selective rehabilitation of 1-1/2 miles of track, installing overhead power cables, erecting and equipping a complete maintenance barn, and constructing seven car stops with passenger platforms. The system is scheduled to begin passenger service in the spring of 1982. Bela Vadasz is managing engineering services during construction.

### *Waterfront Streetcar Tracks*



## ROLLINS POWER PLANT DEDICATION



*Rollins Power Plant*

It started as a gleam in Dave Willer's eye in 1974 and on August 15 1981, the \$8.5 million Rollins Power Plant stood glittering in the Sierra sun as it was dedicated to the memory of Albert W. Scurr, longtime manager of the Nevada Irrigation District. The dedication was the culmination of seven years planning, design, and construction management efforts by Tudor for the Nevada Irrigation District.

The Rollins plant is one of the first on line of small hydroelectric developments spawned by the rapid rise in the price of oil, beginning in 1973. Operating at a head of 208 feet and with flows up to 750 cubic feet per second, the 11 megawatt plant will produce 70 million kilowatt hours of electricity and return almost \$300,000 per year to the District. Drawing on his experience, beginning with the Exchequer Project, Fred Estep served as Resident Engineer during construction with the assistance of Joe Culpepper.

## IDAHO CITIES FLOOD STUDY

Tudor was selected by the Federal Emergency Management Agency to conduct Flood Insurance Studies for four small cities in central Idaho: Salmon, Horseshoe Bend, Kamiah and Kooskia. The project is a typical flood study involving field surveys to establish river cross-sections and profiles, computer-aided hydraulic analyses, and determination of predicted flood levels.

Paul Kunz is the Project Engineer, assisted by Jim Spofford. Don Payne is heading up the field work.

## KAHLOTUS WATER SYSTEM

The Town of Kahlotus, Washington, selected Tudor for the renovation of their water system. The Tudor work effort will include both design and construction services. The project consists of two wells, approximately 6,000 feet of water line and a \$75,000 reservoir.

Bob Beal is Project Engineer from the Lewiston Office. Boise support is provided by Stan McHutchison.

## USBR HYDRO STUDY COMPLETED

After almost two years of work by more than 20 people in the five Tudor offices, the Low-Head Hydroelectric Study for the Bureau of Reclamation has been completed. Work on the project started in December 1979 under the management of Gordon Little in San Francisco. In 1980, as the work progressed from inventory to reconnaissance studies, the project was moved to Denver with John Williams as Project Manager.

The final phase of the study has kept most of the Denver office busy for a large part of 1981. Reconnaissance reports on 86 potential hydroelectric sites were produced, and the final summary report was submitted in November. The Project Engineer for Phase III, Chuck Spinks, was assisted by Cliff Bjorgum and Jeff Stevens in Denver, as well as engineers from other Tudor offices who put in short stays in Denver.

## ROCKY MOUNTAIN HYDRO



Mission Dam Outlet Works

The Denver office is continuing to offer hydroelectric engineering services to irrigation districts in the Rocky Mountains. The Flathead Irrigation District in northwest Montana has hired Tudor to study the feasibility of adding hydroelectric plants at over 30 sites. Nelson Jacobs, the Project Manager, with help from Cliff Bjorgum, has prepared five preliminary permits on eight sites with a total potential of about 10 MW. Further studies will be made on the sites showing the most potential.

The design of the penstock and intake structure for the Garland Canal Project is proceeding, with Sal Todaro handling most of the design work in Denver. The overall management of the power plant design is by Andy Yeung in San Francisco, while the Denver office is responsible for the design of the penstock and intake and for part of the construction management. Construction is expected to start by the spring of 1982.

## WYOMING WATER PROBLEMS

The months of July and August provided the Wyoming staff with a number of water problems involving several local municipalities.

**SOUTH SUPERIOR** - The town of about 600 people in southwestern Wyoming learned in July that their drinking water contained as much as 30 times the allowable level of radioactivity. Bob Stannard immediately began coordinating emergency supplies and a long term replacement of the water supply system for South Superior.

**MIDWEST** - The town of about 650 people in central Wyoming had methylethyl ketone (MEK-paint thinner) and zylene (destroys kidney tissue) show up in their drinking water. Residents were reported to be fainting when taking showers due to the amount of the MEK. Don Armstrong and Bob Lebeda faced a town meeting of very upset residents and used a quickly manufactured water treatment model, built by designer Vic Wire, to demonstrate how activated carbon would remove the problem.

**DEAVER** - The town of about 200 people in northern Wyoming experienced a lake "turnover" in July and requested help in adjusting the Tudor-designed plant to clean up the drinking water. Don Armstrong and Kevin Brown spent a day with the operator and showed him how to make the water crystal clear.

**MEETEETSE** The town of about 500 people in northwestern Wyoming completed construction of a Tudor-designed water treatment plant and for the first time ever had good, clear drinking water during the spring and summer snow melt and runoff.

## SEWAGE TREATMENT

The City of Spirit Lake faced a problem during the construction of its sewer system when construction funds ran out and the system was left uncompleted. Tudor has just been authorized to undertake the design to complete the wastewater treatment facility. Tudor has worked closely with the Coeur d'Alene office of the Idaho Department of Health and Welfare and the State EPA office in Boise to complete this unusual Step I Facility Plan and secure a Step IV grant to complete the design and construction phases of the project. Completion of the treatment facility is anticipated in 1982. Bob Moorhead, in Lewiston, is heading up the project with support from Rick Orton.

## HYDRO FEASIBILITY FOR TACOMA WATER

The Seattle office recently completed a hydroelectric feasibility study for the City of Tacoma which recommended installation of a 750 kW power plant at the City's Portland Avenue water reservoir.

The Portland Avenue Reservoir is a 50 million gallon facility serving the nearby Tacoma Tideflats, a waterfront industrial area. It receives approximately 25 mgd from another reservoir which is 10 miles away and provides a net available head of 277 feet.

The proposed installation would be a unique application of hydro facilities to a water supply system; it would use the existing supply conduit into the reservoir as a penstock and would operate on the head between the reservoir and the system supplying it. These features presented a number of interesting design problems. The principal design issue was how to avoid harmful pressure rises in the supply conduit if the hydro turbine were shut down suddenly. Tudor's recommended solution was installation of an impulse turbine with pressure regulating features, rather than a Francis reaction turbine.

The remainder of Tudor's analysis revealed that the project was feasible. Installation should be straightforward and is estimated to cost \$1.7 million. The project would produce approximately 5.5 million kilowatt hours annually at a cost of about 38.6 mills per kilowatt hour in 1983, the first year of projected operation. The cost/benefit analysis, based on relatively conservative assumptions, showed a favorable result, partly because the City could receive a billing credit from the Bonneville Power Administration. There are no significant legal, social, or environmental problems connected with the project. The City of Tacoma has indicated that they would like to proceed with the project as soon as the financial market is favorable.

## LWR IN DENVER

Louis Riggs spent a day in the Denver office in October to talk to the office staff and to give a presentation at a meeting of the Denver Post of the Society of American Military Engineers. As the new National President of SAME, Louis was the distinguished visitor at the meeting. The topic of the meeting was the USBR Low-Head Study being completed by Tudor, and was presented by John Williams and Chuck Spinks.

## PHILLIPS OIL SHALE

In conjunction with ERTEC, Inc., the Denver office has just completed preliminary mining studies for the Phillips Petroleum Company's Mahogany Shale Project located in western Colorado. The work involved the evaluation of mining methods, concepts and equipment for mining oil shale, and disposal of spent shale for a 55,000 barrel per day oil shale retorting project. The Phase I report includes selection recommendations of several mining methods and associated mining equipment for more detailed engineering studies in the next phase. ERTEC did the surface mining studies and evaluation work. Tudor was responsible for evaluating underground mining, the commercial feasibility of modified in situ retorting, and surface and underground disposal of spent shale. Planned mine production is approximately 30,000,000 tons per year with an equal volume of spent shale to be disposed.

## LAKE SISKIYOU HYDRO



Box Canyon Dam

A FERC License Application for the Lake Siskiyou Power Project was completed in November. Tudor is currently assisting the Siskiyou County Flood Control and Water Conservation District on power purchase negotiations for this project, with final design scheduled to begin in early 1982. Construction of the project should be completed during the first part of 1984.

This project will consist of the installation of a powerhouse at the base of Box Canyon Dam, an existing concrete gravity structure on the Sacramento River. The powerhouse will contain two 2500 kW, horizontal Francis turbines. An interesting feature of the project is the multiple port intake tower which will provide the ability to withdraw water from various levels in Lake Siskiyou. This will allow the project operators to control the temperature of the river downstream from the project for purposes of fishery enhancement.

Box Canyon Dam was built in 1968 for recreation, flood control, and fishery enhancement. Tudor has been involved with various aspects of the power project since 1977.

## ACTIVITY IN DENVER

The Denver Office has been busy the last few months with lots of work and lots of help from the staff of other Tudor offices. Assistance from other offices has included Jack Bjork, Tony Rodrigues and Wanda Ferguson from Seattle, and Bob Toothman and Lemma Wendim-Ageghneu from San Francisco. Bob Janopaul has spent considerable time in Denver working with the staff on project development activities and contract negotiations. Dale Bowers has transferred from the Lewiston, Idaho office to Denver after a long trip to India. Not all of the transfers were into Denver, however, as Cliff Bjorgum left Denver for a 6 month tour in San Francisco to pick up additional hydro design experience. As the work load in Denver continues to increase the prospects are good for continued close working relationships with the other Tudor offices.

Ed Barbour, Tudor's new Chief Economist, left for a week in Alaska on his second week on the job with Tudor. Ed is working with Gordon Little on the Alaska Hydro project.

## HYDRO IN SEATTLE MAKES GAINS

The growing hydroelectric development group in the Seattle office received a major boost in early November when the Puget Sound Power & Light Company authorized Tudor to prepare three feasibility studies. These studies will be of potential hydroelectric projects on three tributary streams to Lake Shannon, on the Baker River, seventy miles north-northeast of Seattle.

On the same day the authorization from Puget Power was received, the Springfield Utility Board also selected the Seattle office of Tudor to perform a feasibility study. This study will be of the hydroelectric potential at Fern Ridge Dam, an existing Corps of Engineers' facility near Eugene, Oregon.

The work from Puget Power was particularly gratifying to Tudor, as it implied that Puget Power was pleased with the work in progress on the Nooksack Falls Project. As Puget Power is very active in the development of small hydro sites throughout the Puget Sound region, it is hoped Tudor can develop a long-term relationship with this utility company.

## ALASKA SMALL HYDRO

Tudor Engineering, with DOWL Engineers and Dryden & LaRue of Anchorage, completed their field work for the Alaska Power Authority's four Mini Hydro Feasibility Studies in Southwestern Alaska. Gordon Little reassembled part of his Malaysian field team for the project with David Church, Project Engineer and Jack Bjork in the bush, laying out the facilities. George Schneider will be putting together the studies in San Francisco.

With the exception of a 30 foot dam proposed for the treeless tundra near the Eskimo village of Togiak, the hydro installations each will consist of up to a mile of penstock developing 200 to 300 feet of head from small mountain basins and producing 200 to 500 kW. These high head systems are located near the Aleute villages of Old Harbor and Larsen Bay on Kodiak Island and King Cove on the Alaska Peninsula. Tudor is to proceed with final design on all sites proving feasible.

This year brought adventure in hydro sites exploration in Alaska and Malaysia and the similarities were apparent to the people who travelled to both. Easiest access is by game trail although the Kodiak grizzly does not clear as many high branches as the elephant (seven Kodiaks were seen in one day). The alders are as dense and the Devil's Club as thorny as the jungle. The bugs are worse in Alaska, but no leeches. They are both wet. The chief difference? Yes, Alaska is colder and occasionally you can actually see where you are going. No hotels in the Alaska bush, but there was Dora's boarding house at Larsen Bay. You slogged through the cold drizzle and mud, chased the hogs from the gate, negotiated around the fish slime on the porch, pushed into the crowded kitchen and sat down to a meal of whatever their subsistence living would provide — a haunch of venison, a platter of halibut or a cauldron of king crab.



Jack Bjork at the King Cove Site

## TAKE ME OUT TO THE BALLGAME



*Darryl Tyson - Outfielder and Official Model*



*Tommy John O'Neill - Pitcher, 3rd base coach and southern gentleman*



*Joe Lawrence and Paul Kneitz - Outfielders, beer drinkers and novice heroes*

Along with spring came the beginning of another season of slow-pitch softball for the San Francisco office. Twenty-nine players signed up and a good time was had by all in a "B" league where the emphasis was on having a good time, drinking a little beer or soda and playing a very sociable game.

Several practice games were played to tune up skills prior to the start of league play. The team started slow, losing the first two league games, then improved and won the next seven in a row. The next two games were lost by a total of three runs and the Tudor team finished out the season with a stirring come-from-behind victory winning 19 to 11. Trailing 10 to 7 in the last of the sixth inning, 17 batters went to the plate while scoring 11 runs.

It seemed like everyone had their turn being the hero by getting a timely hit or making a defensive play with the exception of Glenn Hough, who gave new meaning to the word "overachiever" by making spectacular catches and winning the batting average and home run title.

During the course of the season the 6th floor challenged the combined 5th and 4th floors to a game to decide the bragging rights for San Francisco. One game was won by each, but the 6th floor came out ahead by being treated to beer, soda and snacks during the first game.

The company furnished new uniforms, as can be seen in the accompanying photos. Black hats and shirts with red and white trim were by far the classiest uniforms in the league.



*Heather "Eyes on the ball" Hayes - Outfield Person*



*Mosi Williams - Assistant coach and trencherman*



*Mark Nothhaft - Catcher and tennis instructor*

## END OF THE YEAR SINGLES & DOUBLES

The popularity attained by the last Big 8 tournament prompted the Tudor San Francisco Ping Pong Committee to organize the end of the year singles and doubles tournament.

As expected, the infamous Wu-Chieh Chen won first place. Mark Nothaft took

the second spot and has expressed hopes Chen would find another sport. Third and fourth places were won by Mike Goldberg and Joe Lawrence. Mike not only had to overcome No. 4 seed, Paul Potter, but later had to face his boss, Rainer Rungaldier. Joe Lawrence showed a great performance by crushing the No. 2 seed, Gate Gelana.

The consolation singles was won by Hans Pokorny. He beat the famous Sam

Chan, who has developed into one of the top contenders.

In doubles Joe Lawrence and Ulrich Lemcke beat the team of Mark Nothaft and Don Scapuzzi.

The consolation doubles was won by Roberto Iniguez and Darryl Tyson who beat Bambi Pineda and Steve Graham.

Celebration took place at the Pizzeria Uno.

# CENTRAL OREGON HYDRO

After a delay of almost one year, Tudor has begun feasibility studies of five potential projects in central Oregon. The projects, Wickiup, Haystack, Mile 45, Mile 51 and Prineville, had all been stalled by the lack of funds from the Department of Energy Small Hydro Loan Program. In late September, as the last gasp of the DOE Loan Program, loans were issued for the first four projects, all owned by the North Unit Irrigation District. At Prineville, as it became evident that no loan funds would be available, the owner, Ochoco Irrigation District, elected to proceed with internal funds. At present, all five studies are underway.

Hydroelectric development in central Oregon will provide an unusual challenge to the Tudor staff. In addition to the two irrigation districts and five projects mentioned above, the Central Oregon Irrigation District has a sixth project, the Central Oregon Siphon Power Project, for which Tudor is providing engineering services. The feasibility study for this project, prepared with a DOE loan issued before the February stoppage, was completed in August. Tudor is awaiting notice to proceed with the license application. The three districts hope to market and to maintain the six projects jointly, a task made difficult by the range of configurations and seasonal operation characteristics of the projects. Three projects would be located at canal drops and would operate only during the summer months; two would be located at existing dams and would operate intermittently throughout the year; and the sixth would utilize a return of diverted flows to the natural river and would operate year-round, with higher output during the winter months. The districts will look to Tudor for advice as to how this joint development can be accomplished so that each district receives a fair share of the total revenue. This role for Tudor will require innovative solutions and will provide an interesting aspect to the overall development process.

Although the Siphon feasibility study was prepared in the San Francisco office under the direction of Greg Reichert, the current studies are assigned to Seattle office where Pete Paterson and Jack Bjork will assume responsibility for the work. Dave Alden is serving as Project Manager for all the projects.

## CHEVRON PARKING CENTER DEDICATION



*Chevron Vehicle Test and Parking Center*

A ceremony was held on October 16 at which the Richmond Chevron Vehicle Test and Parking Center was formally dedicated and opened to use. The ceremony was attended by more than 60 persons representing Chevron Research Company, the owner; F.P. Lathrop Construction Company, the contractor; M.B.T. Associates, the architect; Tudor Engineering Company, structural engineers for the project; and the mechanical and electrical consultants. Tudor was represented by Don Croft, Karen Chew, Steve Gold, Jim Meyer and Grant Larsen.

At a luncheon hosted by Chevron following a walk through the facility, Don Croft was singled out by the owner, the contractor and the architect, as having made a vital and essential contribution to the project without which the construction would not have proceeded so well.

The solution to the structural system involved precast double Tees, 65 feet in length, cast-in-place concrete columns and girders, and cast-in-place shear walls. The building foundation consists of a system of precast concrete piles and grade beams. The ramp system includes a double helical ramp at the north end of the building and a "speed" or service ramp for test vehicles at the south end of the building providing access only between the ground level and the second floor.

The ground floor of the structure, providing 15 feet vertical clearance, will house a motor vehicle test center similar to those at the General Motors Test Center and the Ford Test Center. More than 100 test vehicles will be used to improve vehicle exhaust emission quality and to test and improve motor vehicle fuels and lubricants.

The second floor of the structure, providing approximately 110 parking spaces, is used to park the test vehicles themselves. The top three levels of the structure are used for employee parking, with a total of approximately 340 spaces. The structure was completed in fourteen months, although not all of the motor vehicle test equipment has been installed yet. Total cost of the structure exceeds \$10 million.

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## THE CACHE LA POUFRE

On October 27, a team consisting of Bob Janopaul, John Williams, Nelson Jacobs, Ed Barbour, and Lemma Wendim-Agegnehu gave a presentation to the Colorado Water Conservation Board. The fol-

lowing week Tudor was selected by the Board to do a feasibility study of the water resource development potential on the Cache la Poudre River in Colorado. The study, with a fee of \$300,000, will be managed by Nelson Jacobs in Denver, and will require the participation of up to 15 engineers over a one year period.

## NEW FACES . . .

Tudor welcomes new employees from left to right:

### . . . for san francisco

Gustavo Arboleda Civil Engineer  
 Jack Biederman Project Manager  
 Cesar Formoso Electrical Engineer



Sabine Jentzsch Accounting  
 John Richardson Civil Engineer  
 S.T. Su Civil Engineer



Steven Van Til Civil Engineer  
 Anne Rogers Wager Marketing/Engineering  
 Charlotte Wheeler Proofreader



Gerald Gibney Project Development Manager  
 Eva Spatenka Structural Engineer



### . . . for denver

Ed Barbour Chief Economist  
 Jerry Cross Civil Engineer



Frank Techar Geologic Engineer  
 Sal Todaro Civil Engineer



### . . . for riverton

Jim Gores Project Manager  
 Jim Nuse Designer



## SEATTLE STAFF VISITS OTHER TUDOR OFFICES

A dozen members of the staff from the Seattle Office have been traveling to other Tudor offices during the past quarter to help out with peak work loads. Bela Vadasz and Dick Rudolph were in San Francisco to work on the Calaveras and Jones Fork Hydro Projects. Engineers Debbie Hirschel, Harry Jasper, DeWitt Jensen, Pete Paterson, and Jim Schroeder have all made extended visits to San Francisco working on a variety of hydro projects. They were joined by Drafters Rosemary George and Jim Richardson — Jim subsequently made a permanent transfer to S.F. Drafters Wanda Miller and Tony Rodrigues helped out in both San Francisco and Denver. The current long distance champ is hydro site evaluator Jack Bjork, who returned from 3 months in Malaysia only to take off for more site studies in Colorado and Alaska.

## TUDOR OFFICE IN ATLANTA

On November 6th, Tom and Sandra O'Neill left San Francisco, heading east for Atlanta, Georgia. Their arrival in Atlanta on November 16 marked the beginning of a Tudor branch office operation in the Southeastern United States. The ground work for this operation started in early 1981 when Harold Whitney, Assistant Vice President of Law Engineering and Testing Company, and Robert Janopaul, Executive Vice President of Tudor Engineering, worked out the framework for a joint Tudor/Law hydro engineering operation in the Southeast. Through the joint efforts of Tudor and Law, several projects have been developed including the final design work for the Capitola Project in North Carolina, FERC preliminary permits for the City of Cookeville, Tennessee, and value engineering and optimization studies for Alabama Electric Cooperative on the Demopolis Project.

Latest reports from Atlanta indicate that Tom has settled into space provided in Law's Marietta office while he and Sandra spend their spare time looking for a house in Cobb County, Georgia.

## CONGRATULATIONS

Geoff McCavitt and Janet Gilmore were married on September 26 1981 at St. Thomas Aquinas Church in Palo Alto. The couple now live in Palo Alto.

Sarah Westsmith and Richard Mayes were married October 24 1981 at the Sonoma Mission in Sonoma. The happy couple have made their home in Anchorage, Alaska.

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# TUDOR NEWSLETTER

WINTER 1981

## TUDOR HONORED BY ESCMT



The Bay Area Engineering Societies' Committee for Manpower Training (ESCMT) presented Tudor Engineering Company an award in recognition of the number of trainees it has sponsored and their high success rate in completing the program and achieving full-time employment. Robert Myrdal, Office Manager in the San Francisco Office, accepted the award on behalf of Tudor Engineering.

The participants in the on-the-job training program attend class one day a week and return to work to practice what they've learned. During this training period, they are given the opportunity to work on a variety of jobs to get a full range of experience.

The most recent Tudor graduate from this program is Diane Alexander, an electrical drafter. During her training she gained a great deal of experience working on small hydro projects. Diane has been taking architectural drafting since her graduation. She would like to be able to work on electrical, architectural and structural drawings for the Company and, eventually, become a designer.

Other Tudor graduates from this program have been Marco Boccara, Hernando Orozco, Darryl Tyson and Steven Wong.

## MARTA SAFETY AWARD

In February, 1981, the MARTA Construction Safety Award was presented to Contractor and Construction Management personnel who played key roles in making 1980 a record safety year in MARTA construction. The 1980 incident rate of 2.8 represents the third consecutive year that MARTA's lost time injuries were below the national average for heavy construction. John Murray of PB/T received this award in recognition of his efforts as Project Safety Manager for the MARTA Project. Mr. L. W. Riggs, Tudor Engineering and Mr. H. L. Michel, Parsons Brinckerhoff, Quade and Douglas, Inc., commended John on a job well done.



## STANFORD TUNNEL PROJECT

In early March, after a three hour interview in Tudor's offices on February 4, (followed by a second interview a month later,) the Stanford Linear Accelerator Center (SLAC) announced that Tudor had been selected to enter into negotiations to provide architect/engineer services for approximately \$20 million in conventional facilities on a new high-energy physics project at SLAC, to be known as the Stanford Linear Collider (SLC). The major features of the new SLC work are to be a 2700-meter long tunnel in a roughly circular shape, and a central major structure to house experimental physics equipment. The tunnel will be of relatively small size, still to be determined, but presently estimated at perhaps 9 feet to 10 feet in diameter.

The SLC Project is designed to investigate the basic nature of matter and energy by colliding particles of very high energy; the resulting complete annihilation of matter temporarily produces pure energy, followed by a "fallout" of newly created particles of matter which, at these high energies (100 Gev), is expected to include predicted, but hitherto unseen, particles.

Dr. Burton Richter, a recent Nobel prize winner, is the Project Manager for the SLC Project. Robert Janopaul will be the principal-in-charge, Don Rose will be Project Manager, Heinz Mueller will be Project Engineer, and Don Scapuzzi and Glenn Hough are among those expected to be active on the job. As subcontractors to Tudor, Jacobs Associates, Keller and Gannon, and Earth Sciences Associates, will provide specialized services. Negotiations are expected to be completed in March with start-up in April or May 1981. Phased design will span several years.

## DAVE WILLER VICE PRESIDENT

Louis Riggs and the Board of Directors announced the appointment of David C. Willer as Vice President of Tudor Engineering Company. Dave will be responsible for hydroelectric projects in the western U.S. He joined the firm in 1966, and has been involved in a variety of water resources projects in the U.S. and overseas.

Dave is a well-known spokesman for private industry promoting the use of small hydro as a viable alternative energy source. In the past year, he was invited by both the White House and the governor of California to be present for major announcements pertaining to government progress in stimulating the growth of hydroelectric energy. He is the author of numerous technical papers on this subject and has been involved in more than 70 hydroelectric projects.

Dave graduated from the University of Iowa in 1952 with a B.S. in Civil Engineering and received his M.S. in Civil Engineering from the University of Southern California in 1958. He is a registered professional engineer in California and Montana. He is a member of the American Society of Civil Engineers, the International Congress on Large Dams, the U.S. Committee on Large Dams, the Society of American Military Engineers, and the Engineer's Club of San Francisco.



CONGRATULATIONS,  
DAVE!

## DENVER UPDATE

The Denver Office recently acquired two new staff members, increasing the total Denver staff to ten. Both Karl Huttner, a Senior Designer from San Francisco, and Jeff Stevens, a Civil Engineer from Riverton, transferred to Denver. Karl is returning to the Denver area after spending a few months in San Francisco, and will be working primarily in the preparation of drawings for the site reports for the Water and Power Resources Service Low-Head Hydro Study. Jeff, who has spent the last six months in the hydro training program in San Francisco, will be working on the preparation of reports and studies for various hydroelectric projects.

Several new hydroelectric projects have been started in Denver. The largest is the Clark's Fork Hydroelectric Project for the Shoshone Irrigation District. The first phase of the Project, which is a reconnaissance study, is being financed by the Wyoming Water Development Commission. It includes two major dams near Cody, Wyoming, with a total installed capacity of 150 MW. At least six other small hydroelectric jobs will help to keep the staff busy in the coming months.

The Low-Head Hydro Study for the Water and Power Resources Service is moving ahead on schedule, with the criteria for the regional flood hydrology established for the seventeen western states. Six of the total of almost 90 appraisal level reports have been completed, and the site field reconnaissance work being coordinated by the Denver personnel is almost fifty percent complete.

## BORROWED PEOPLE

Early in 1981, the Seattle Office was fortunate in being able to utilize five San Francisco people for about a month. They came up to help get over a "bulge" in our West Seattle Bridge Replacement Project, and included:

Mike Goldberg	)	Engineers
John Wurschmidt	)	
Chris Fazio	)	Drafters
Marcia Jennings	)	
Paul Wilton	)	

Oral Conyers has made several trips to Seattle to report on his Review of the constructability of the West Seattle Bridge and approaches, which has been occupying him in San Francisco.

Our thanks for their timely help!

The Denver Office has also been in need of additional support, so Kurt Scholtz and Paul Kneitz from San Francisco were there for a couple of weeks. Kurt was working on the design drawings for the mechanical, electrical and civil facilities of the Turnbull Power Project, and Paul was assisting on the WPRS Low-Head Hydro studies.

## SPECIAL VISIT

Joseph D'Amico visited the Boise Office for three days during February to share his wide knowledge of the NBI word-processing system's capacities. He left Boise word processors (Barbara Iverson and Mary Holmgren) with a whole new bag of tricks for use of the NBI System 3000.

## MALAYSIAN MINIHYDRO STUDY

Work on this project commenced on January 2, 1981. On January 30, R. Iniguez and J. Carson of the San Francisco Office departed for Malaysia where they were involved in the planning of the required preparatory work prior to commencing field reconnaissance efforts. During visits to the field they were able to see, in one day, one black cobra, two elephants and four water buffaloes – a welcoming party which, according to local engineers, was nature's way of greeting newcomers to the area. By coincidence our men were in Kuala Lumpur (K.L.) during Chinese New Year's (February 5) celebrations. They were invited to private parties, where they enjoyed Chinese hospitality, including good food and spirits.

Other Tudorites scheduled to go to Malaysia are: D. Church and T. Lea, who left for K.L. in February, and J. Bjork, H. Burrier, K. Scholz and T. MacLennan who will be travelling during the months of March, April and May.

## LEWISTON UPDATE

A mild winter in Lewiston kept the snow off the ground, but the tight money situation limited our ability to take advantage of the weather for surveying and land development...*now* the word is that the mild winter may limit the snowpack in the mountains and lead to electrical power shortages during next summer, as most of our electricity is generated at hydroelectric plants...

*Project review and assignments:* Bob Beal has been spending most of his time on the Lutes Subdivision and Craftwall/Walla Walla Projects, now that the Central Orchards Sewer District work has quieted down...Nate Matasy spent much of the mild winter inspecting subdivision improvements at the Sunset Palisades Unit 3 Project...Dale Bowers has been busy with everyone's projects now that she is the only one licensed to use a drafting pencil at Lewiston...Jim Grow has been drumming up business where he can and trying to keep the surveyors busy...Steve Alters has been out beating the bush, but the private sector is awaiting cheaper money and the public sector is awaiting additional funding from whatever sources they can muster...Robert Moorhead has busied himself with the Weippe and Spirit Lake Facility Plans and with odd jobs for Nez Perce County...Sheri Johnson has been answering the phone as usual and trying to decipher the handwritten drafts left on her desk by the rest of the office...Trevis Green and Bruce Larson have been handling all the survey work that has come their way, but still have had time to get the equipment readied for the hoped-for spring rush.

## OFFICE SHIFTING

During November, Steve Alters directed that a few changes be made in the office assignments at Lewiston. And so...

Bob Moorhead moved into Dale Bowers' office.  
Dale Bowers moved into John Perry's office.  
John Perry moved into Nate Matasy's office.  
Nate Matasy moved into the old computer room.  
The computer room was moved into the old blueprint area.  
The blueprint machine was moved into the library.  
The library was moved into the computer room.....

## TUDOR'S HOLIDAY SEASON

### BOISE CHRISTMAS PARTY

Tudor employees and guests, fifty-strong, assembled at the Crystal Ballroom for the annual Christmas Party on the evening of December 19th. Bob and Beth Janopaul were Boise's special guests for the evening. Don and Linda Armstrong, Steve and Gale Alters, and Jim and Doris Grow traveled from Riverton and Lewiston to add to the out-of-town contingent at the party.



Mike Moore, Colette Godfrey "No, not until the wedding" (The wedding was a week later.)

Dave Toothman ostensibly repairing a shoe belonging to Connie McHutchison. (Note the threatening glance in the last photo.)

Jim Spofford telling himself a joke. His date is rightfully ignoring him.

Stan McHutchison, Connie McHutchison, Dave Toothman, Linda Armstrong, Loreen Toothman, Don Armstrong. "Say Ah, Boss!"

Bob Janopaul & Dave Toothman demonstrate age-old separation of the sexes when dance music begins.

Ted Purcell dancing with chair.

David Torgeson & Linda Swan dancing together.

Everybody dancing together.

Roger & Jill Mason, Noni & Sabin Landaluce, "Rockin'" Neal Eagar.

Gary Ames, Noni Landaluce, Sabin Landaluce, Gail Alters.

# TUDOR'S HOLIDAY SEASON

## SAN FRANCISCO CHRISTMAS PARTY

The San Francisco Office held its annual Christmas Party at The Engineers Club on December 6th with hors d'oeuvres and dinner enjoyed by almost 200 people. Guests were especially honored this year by a surprise visit from Santa Claus who provided gifts and good cheer to all. Dancing and socializing continued into the early morning with everyone in high spirits.



Those enjoying the evening included (left to right), Stan Froid, Joan Ganse, Bob Ganse, Agnes Helgesson, Les Helgesson, Barbara LaVigne, Bert LaVigne.

Keith Bull, Debbie McDermott, Bob Myrdal, Diane Bull, Tevis Thompson, Sue Myrdal, Brian McDermott, Fran Thompson.

Dave Alden, Jack Cooper, Louis Riggs, Barbara Cooper, Grant Larsen, Jim Lammie, Pat Riggs.

The festivities get off to a good start with animated conversation during the cocktail hour before dinner.

Campton Mock, Aurora Salcedo, Diane Alexander, and Eric Canson are surprised by our roving photographer, Mark Nothaft, who did a snappy job of picture taking during the evening.

Santa Claus gives presents to Bob Janopaul (top) and Pat Riggs (middle). (Rumor has it that it was really Grant Larsen under all that white hair.)

Louis Riggs presents 15-year Tudor Service Awards to (left to right), Fred Estep, Robert Iniguez, Don Croft and Bob Myrdal.

# TUDOR'S HOLIDAY SEASON

## LEWISTON CHRISTMAS PARTY

The Lewiston Office Christmas Party was held on December 5 in the Riverview Room at the Lewiston Elks Club. All twelve employees were present, as were special guests Ted and Pat Purcell of Boise. A special presentation was made to Bob Beal - his 10-year Tudor Service Award. As entertainment committee, Sheri Johnson and Robert Moorhead made presentations of special gifts to all the employees:



Bob and Jeanette Beal protecting Bob's ten-year Tudor Service Award.

Jim Grow presented with his gift, an old boxing poster.

Steve Alters, Gail Alters, Ted Purcell. (See if you can tell this picture from the 1979 edition.)

For Ted Purcell, a model of the Titanic.

Bob Beal is awarded a section of C.O.S.D. sewer pipe.

Steve Alters gets the alarm clock set for the 5:00 a.m. baby feeding.

Bruce Larson receives road maps so he can find his next survey job.

Nate Matasy tries on his nose mitten for size.

Robert Moorhead is presented with his very own memo typewriter and dieter's utensils by Sheri Johnson.

## TUDOR'S HOLIDAY SEASON

### DENVER CHRISTMAS PARTY

The first annual Christmas Party for the Denver Office was held at the Executive Tower Inn on December 20th. The evening was planned as a dinner-dance, with a special entertainment program provided by a magician. Chuck Spinks, as Master of Ceremonies, presented Office Manager John Williams with his own personalized (THE BOSS) coffee cup. Unfortunately, guests expected from River-ton and San Francisco were fogged in in Boise and were unable to attend.

### SEATTLE CHRISTMAS PARTY

On Saturday evening, December 13, about 60 Seattle Office employees, wives, husbands, friends and guests attended the 1980 Christmas Party. We were honored to have Louis and Pat Riggs as our guests. The affair was held again at the Mercer Island Beach Club. A delicious dinner was followed by a short program, during which Lin Wilson received his 15-year award, and Einer Handeland was given his award for 10 years with Tudor. The evening was rounded out by dancing to the music of a good band.



Chuck Spinks presents John Williams with his own personalized (THE BOSS) coffee cup.

Chuck and Charl Spinks and George Merlo get in the act.

George Merlo toasts "The Boss."

The magician.

Pam Stimpson and George Merlo, all smiles.

John and Janet Williams assisting the magician.

Louis Riggs presents Lin Wilson with his 15-year Service Award.

Don Hoel talks with Mary Bickerdike; Keith Bull and Pat Riggs enjoy the music.

Einer Handeland acknowledges his 10-year Service Award.

## WYOMING CHRISTMAS PARTY

The Riverton Office held their Christmas Party on December 13 at the Valley View Supper Club.

Paul Stober and Larry Gaddis along with their wives came down from Casper and spent the night. The meal was excellent and the music was very good. Dave Toothman and his wife Loreen got weathered in in Boise and were unable to attend. We had eight beautiful, hand-made Christmas centerpieces which were given out during the evening.

FUN WAS HAD BY ALL!!!

## PB/T IS NO. 1 WITH UNITED WAY



During the 1980 United Way Campaign year, PB/T was once again ranked number one within the Atlanta Engineering Community for their support of United Way. Through the efforts of J. V. Baglio and his volunteers, PB/T's total contribution was \$23,100. On February 10, 1981, Joe attended an award ceremony to receive the 11th Annual Pacesetter Award for PB/T. Congratulations from H. L. Michel and L. W. Riggs were extended to Joe Baglio for his supportive efforts in this achievement. In 1980, Parsons Brinckerhoff and Tudor continued their policy of matching 50 cents for each employee dollar which helped exceed the annual goal.

## SLY CREEK CONTRACT AWARDED

The Sly Creek Project is continuing into the construction phase. Twelve bids, indicating considerable contractor interest were obtained. A successful bond sale of \$16,000,000 was made on March 17 to finance the Project — one of the first sales of tax-exempt bonds made under the "Windfall Oil Profits Legislation". The low-bidder, Kirkwood-Bly Inc. of Santa Rosa, was issued a Notice to Proceed on April 1, but had already started preliminary planning work prior to that date.

The Project is still following the original schedule set up in 1979. Completion is scheduled for February, 1983, but Kirkwood-Bly anticipates improving on this date. The Tudor team described in the last newsletter has now been complemented by the addition of Fred Estep and Joe Culpepper, who will follow through on the construction site management and control. When last seen, these two were dusting off their stopwatches in preparation for an effort to beat their own record for their speedy and successful performance at Rollins.

## ROUND ROBIN TOURNAMENT

Due to the great success of last year's tournament, the San Francisco Ping Pong Committee this year organized a new kind of tournament, of the "round robin", rather than simple elimination, form. The "round robin" is a tournament in which each player, formidable or not so formidable, can pit his ability against different calibers of players. In elimination tournaments, on the other hand, the less expert player is apt to get crushed by more experienced players. As was expected, the 24 participants, playing at noon and after work, took close to four months to complete the tournament, and shared some very interesting moments during its progress.

The champion was, again, the fearless Wu Chen, who, from the record, seems completely unchallenged; he had a couple of close calls, though, mainly when competing against Don Yamagishi and Darryl Tyson. They were, however, unable to "crack the cookie." He is too good.

Second place is held by a player discovered by Tudor in the Cameroons and known mainly for his reverse backhand topspin smash that proves to be a devastating stroke when it works. His name: Gate Gelana. He is good.

The No. 3 spot was taken by Mark Nothaft, a very devoted player of the game, who has great command over an extraordinary variety of strokes and spins, is able to destroy almost any caliber of player, and is worth five other men .... when it gets down to tournaments.

Last year's runner-up, Paul Potter, had a couple of obstacles on his way up — L.A. transit? — and finished 4th. The main upsets came from famous John Wurschmidt, who, though he hasn't been seen since, is reported to be in Seattle, and from "upper and downer" George Schneider, who is still in the office.

Fifth to eighth places were taken by Ocie Williams, Don Yamagishi, Darryl Tyson and George Schneider (in order); at one time these players each seemed more concerned about not becoming Number Eight than about being Number One.

Our last year's doubles winner, Rainer Rungaldier, decided to retire to the senior citizen rankings. Player Paul Kneitz collapsed — that is, he withdrew — after the first match.

Ulrich Lemke and Hans Pokorny deserve special attention for catching up with Wu...that is, from the back.

At the pizza party — special thanks to Bob Myrdal for saying "yes" — things rolled with ease; there was no arguing about thick or thin crust, anchovies or no anchovies, etc. After some ten pitchers of beer had been consumed, the First Annual Round Robin Tournament came to an end.



The Champ, Wu-Chieh Chen and his wife Marilyn.



The Winners. Front Row — left to right: Gate Gelana, Wu-Chieh Chen, Mark Nothaft, Don Yamagishi. Back Row — left to right: Darryl Tyson, Paul Potter and Ocie Williams.

## NEW FACES FOR . . .

### . . . seattle

Ed Peters, Senior Engineering Planner



### . . . riverton

Bob Lebeda, Mechanical Engineer

### . . . san francisco

Susan Bennett, Word Processing Operator; Milton Carlson, Senior Designer; Marcia Chattman, Word Processing Operator; Glenn Dearth, Water Resources Engineer; Glenn Hough, Geotechnical Engineer; and Marcia Jennings, Drafter.



## CONGRATULATIONS TO:

...grandparents Pat and Louis Riggs on the birth of their first grandchild, Patrick Louis, born on February 13, 1981 to their daughter and son-in-law, Katherine and John Stimson.

...Lemma Wendim-Agegehu and his wife Sehin Ketema on the birth of their daughter Bistratte Lemma on November 20, 1980.

...John Johnson, Seattle Office drafter, who received a signal honor recently, when he was chosen Volunteer Fireman of the Year by the Fire Chiefs in his District.

...Steve and Gail Alters, on the birth of their third son, Trevor John Alters, on Thanksgiving Day, November 27, 1980.

...Robert and Cecilia Mayers of Boise on the birth of Ryanne Elizabeth, born February 4th; she measured 21 inches and weighed in at 7 lbs. 10 oz.

...Frank and Roberta Bliss on the birth of their son Ethan Roy on February 28, 1981.

...Mike Moore and Colette Godfrey who were married on December 27, 1980.

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