



"On Tour"

On Tour

VOL. 10, NO. 11
NOVEMBER
DECEMBER
1948

In This Issue

POSO CRUDE PUTS TO SEA Continuing the adventures of crude from oil well to consumer	3
INDUSTRIAL SUMMARY Monthly digest of Company operations	7
LOGGING FOR OIL ON THE OLYMPIC An account of our wildcating in Western Washington	10
UNION OIL'S 58th BIRTHDAY DINNER Honoring 35, 40 and 45 year employees	16
BUSINESS TRIP TO THE ARCTIC Flying Salesmen cover our northernmost marketing area	18
OUR COLORADO SHALE DEPOSITS Questions and answers of "REPORT FOR '47"	20
UNION OILERS	
IN MY OPINION	
SERVICE BIRTHDAY AWARDS	23

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ON TOUR is published monthly by Union Oil Company of California for the purpose of keeping Union Oil people informed regarding their company's plans and operations. Reader participation is invited. Address communications to ON TOUR, 617 West 7th Street, Los Angeles 14, California.

THE COVER

Mountains of the Olympic Peninsula, here seen in their wintry mood from a vantage point near Seattle, are the setting for this month's report of Company drilling activities in the state of Washington. See Page 10.

Once again we come to that
season of the year
when there should be

"PEACE ON EARTH,
GOOD WILL TOWARD MEN."

And even though
this is a troubled world,
we in this land

may have blessings
for which we can be thankful,

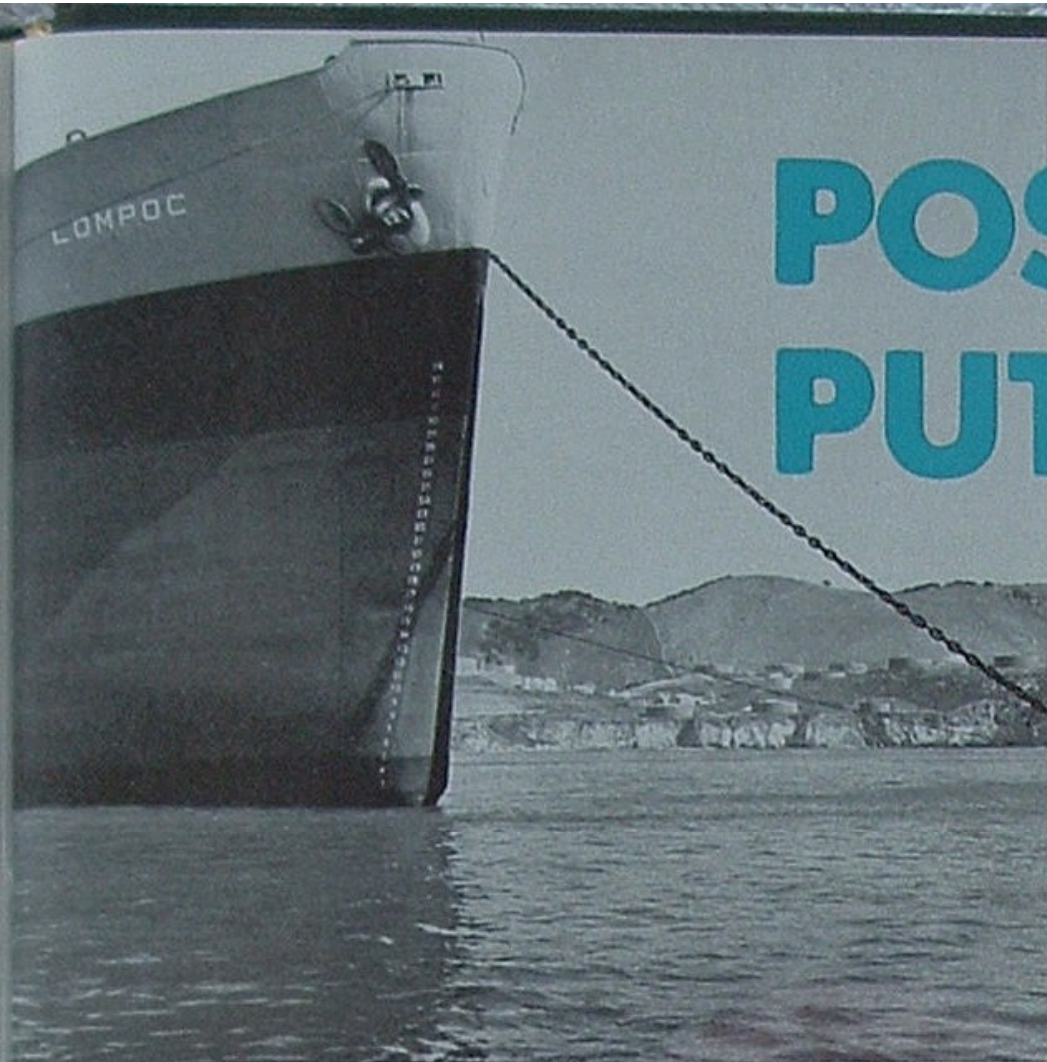
We have a happy future
of a free people.

When we wish each other

A MERRY CHRISTMAS
AND A HAPPY NEW YEAR,

it has a special meaning.
For here such wishes
can come true.

Reese H. Taylor



POSO CRUDE PUTS TO SEA

This is the third chapter of a narrative dealing with the adventures of Mt. Poso crude from the time it leaves the well until it is delivered in finished-product form to Union Oil customers.

SEAMEN will give you a variety of answers as to why they call a short coastwise voyage the "milk run". But one of their most plausible explanations is that in former times, when ships carried no refrigeration facilities, it was only on such short trips that crews were treated to the luxury of fresh milk.

On today's modern tankers fresh milk is considered neither rare nor luxurious. Nevertheless, the 210-mile nautical journey taken by Poso crude from our Port San Luis pipe line terminus to Oleum Refinery is still referred to unofficially as the "milk run".

Although all of our Union Oil tankships can be assigned to the transportation of crude oil, most of such work is done at present by the L. P. ST. CLAIR, SANTA PAULA and LOMPOC. These are our "black oil" ships. Their chief functions are to bring crude to our coast refineries and to carry fuel oils to our marine terminals scattered throughout the Pacific area. A change-over to transporting gasoline, kerosene or any other products that are low-flash or light in color involves a thorough cleaning and ventilating of tanks to prevent product contamination; hence, the assignment of some ships to black oils and others to light refined.

Several times each week one of the three "black oil"

ON TOUR

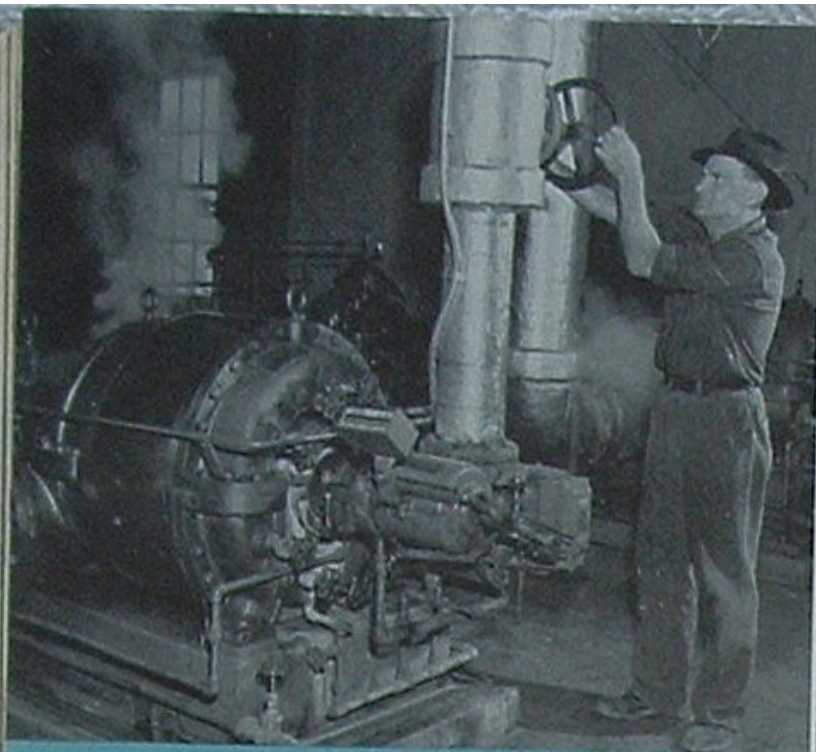


The first step in loading crude aboard the LOMPOC at Port San Luis is undertaken when (L-R) Les Johnson, dock foreman, Jim McMillan, terminal foreman, and First Mate Warren Faulkner plan the operation.

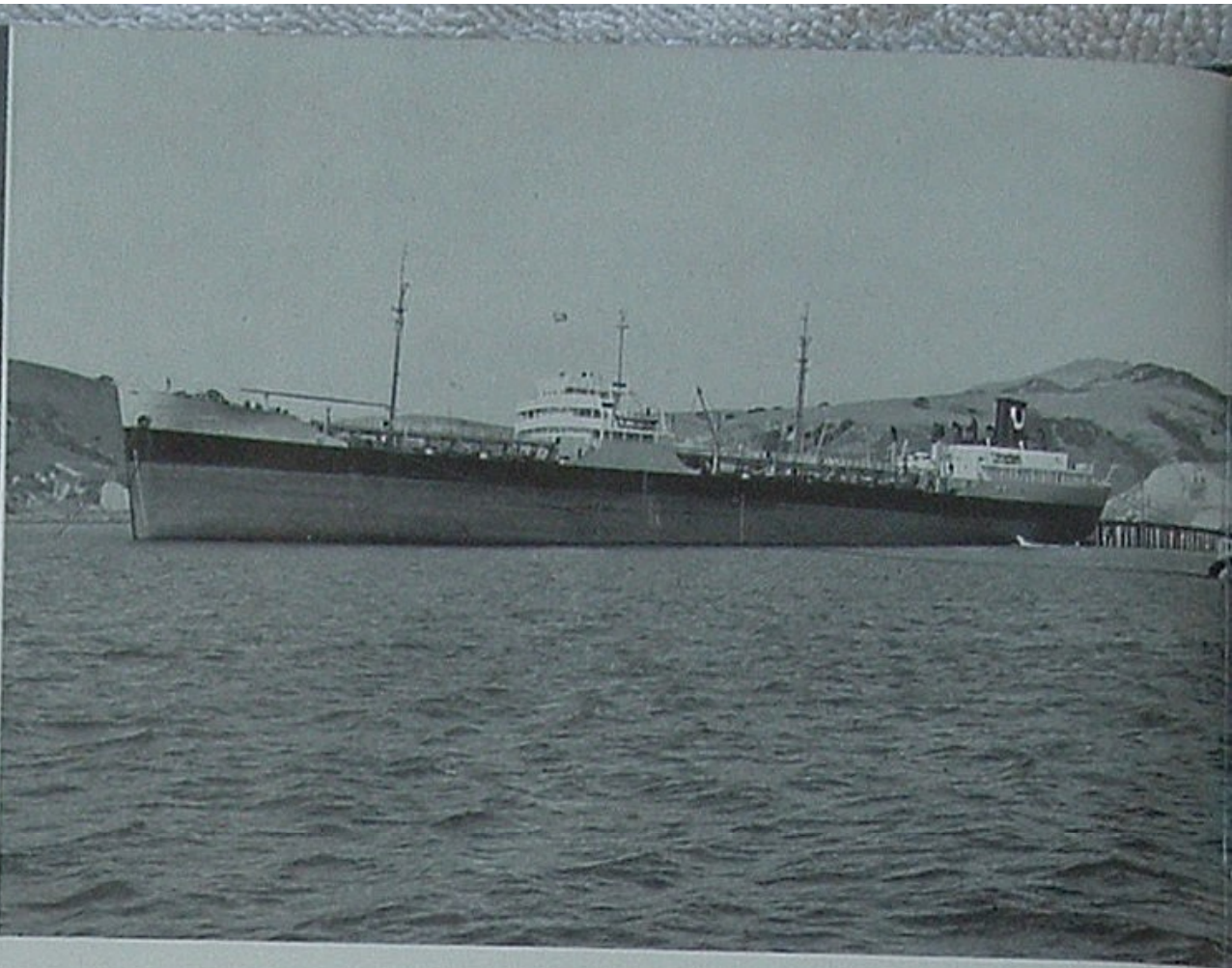


(Above, L-R) Don Browning and Bernard Humphrey, wharfmen, use a tractor and dolly to good advantage in moving heavy loading hose on Port San Luis dock (below), where Poso crude puts to sea.





Senior Engineer Bill Esplin (above) starts Avila's steam-turbine pumps moments after the LOMPOC (right) has been brought to a safe mooring by her Captain Olof Ekstrom (below).

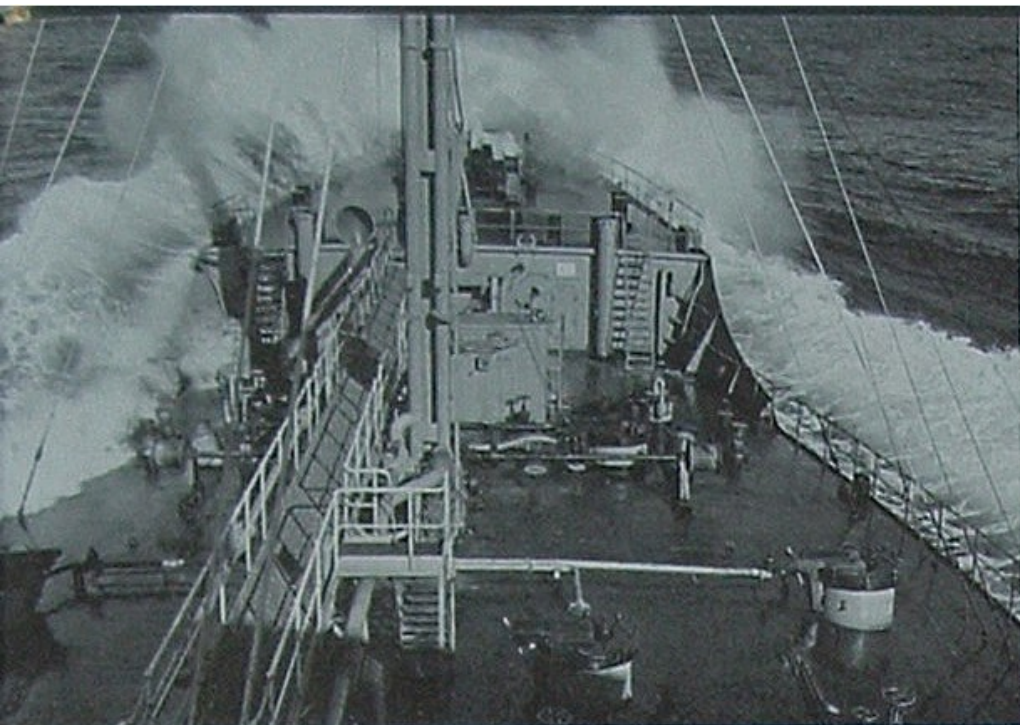


carriers is seen rounding the breakwater at Port San Luis and steaming in for a cargo. Tying up at the dock is a delicate marine operation requiring expert seamanship and long acquaintance with local depths, tides and ground swells. The big tankers usually turn around several hundred yards seaward from the dock, drop anchor, and then back slowly in to their loading position. As a swell often keeps the ship in motion, she must remain some 20 feet away from the dock, and is held in this position by mooring to anchored buoys. This making fast of lines on the buoys calls for skilled help from Union Oil's tug the AVILA. In rough weather many an unpublicized battle has been fought at Port San Luis to keep tanker and dock from damaging each other.

Once secured, the tanker immediately lifts discharge hoses aboard and begins unloading her salt-water ballast or any refined products she may be carrying to Avila

Seen on photographic watch at Oleum are officers of the "black-oil ship" L. P. ST. CLAIR, (L-R) Captain Laurits Petersen, First Mate Robert Banner, Second Mate James Ross, Radio Operator "Sparks" Allen Renning, Third Assistant Engineer Jean Parkhurst, First Assistant Engineer Fred Nevins and Chief Engineer Frank L. Wilson. These men perform a valuable service in transporting crude from pipe line to our refineries.





Enroute to Oleum, tankships often get a thorough "washing down" without cost from Father Neptune. Then, with all pennants flying on such an occasion as Navy Day, the SANTA PAULA (right) presents a picturesque and creditable appearance as she moves silently into San Francisco Bay.

storage. Ballast cannot be dumped promiscuously into the sea, but is pumped some two miles by pipe line to a ballast tank at Avila, where it must be separated before being released. The staunch hoses connecting tankship and pipe line are eight inches in diameter and cost nearly \$2000 per 50-foot length; they are moved mechanically by tractor, derrick and winch and are secured by bolts to the tankship's pipe flanges.

Next, or simultaneously, other hoses come aboard to permit the loading of crude cargo. During these preparations the mate on watch is ashore discussing with the dock foreman the types of oil to be loaded and planning how to handle the cargo. Poso crude is generally shipped in quantities of 35,000 barrels or more, which amount requires approximately one-third the cargo space of our larger tankers. When loading plans are complete and all else is in readiness, a telephone call goes through to the Avila tour engineer to start pumping.

At Avila two modern steam-turbine pumps handle the stevedoring burden. They can move oil at the rate of 12,000 barrels an hour and will completely fill our largest tanker in about eight or nine hours. Although the LOMPOC and SANTA PAULA have a rated cargo capacity of 140,000 barrels of gasoline or refined oils each, they are limited to 104,000 barrels of heavy crude or 115,000 barrels of light crude.

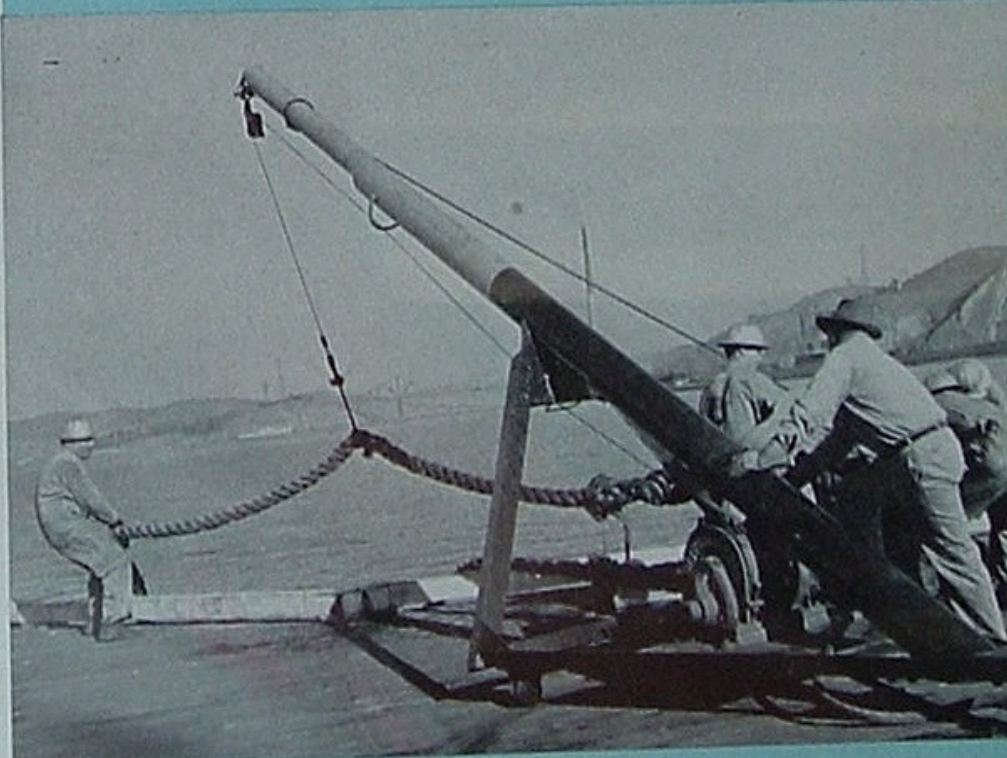
With the last barrel of oil aboard in the "topping off" routine, hoses are quickly disconnected, the tug AVILA follows the captain's orders in releasing mooring lines, and the tankship steams northward at about 14 knots.

Between 15 and 18 hours later, San Franciscans watch the "U" ship glide silently under Golden Gate Bridge and steer abeam of Alcatraz Island. An hour more and she hoves to off Oleum dock awaiting a berth or tide or comes directly in to start unloading.

At Oleum too there is a trick to berthing. Tides race



"White meat and about this thick," suggests Seaman Frank Klockman of the ST. CLAIR as Ralph Silzell, second cook, does the carving.



On the receiving end of a tankship's heaving and mooring lines are a group of refinery men. The rope calls for well-conditioned muscles.



(L-R) While Seaman Fred Jones gauges a cargo tank, Ted Warnecke, marine cargo gauger, and First Mate James Ross check the figures.



Above: Wharfinger Milton Selleck opens a 10-inch gate valve as the St. CLAIR begins pumping Poso crude to Oleum storage. Below: The ST. CLAIR is seen discharging the last of her crude cargo as a Liberty-type tanker loads refined products destined for Hawaiian Island delivery.

swiftly in and out of the great bay. A slight miscalculation of their direction and force can easily result in expensive damage to ship plates or dock structure. One trick of navigating here under certain tide conditions is to drop anchor well out in the stream, letting it drag as the tanker pushes sidewise up to the wharf. This keeps the bow out of mischief while the forward motion and stern are held under engine control. And with a powerful tug on hand to give a push when needed, the job is usually done quickly.

Several Oleum Refinery men are on hand to assist in tying the vessel and speeding her unloading. Heaving lines are tossed from the tankers decks, followed by a half-dozen heavy mooring lines. The wharfinger, who is in charge of all dock operations, usually controls the winches and derricks by which hoses are again lifted aboard. The marine cargo gauger joins the mate on watch, and together the two men gauge all ship cargo tanks.

With every valve properly adjusted and a 16-inch line cleared to the refinery's receiving tank, Poso crude is again started moving. This time pumping equipment aboard the tanker supplies the impetus, driving the oil through a mile or more of pipe at a rate of between 6,000 and 7,000 barrels an hour.

Thus, Poso crude comes to the end of its nearly 400-mile march from oil well to refinery. In a future issue of ON TOUR we shall next introduce some of the processes and Union Oilers by which it is manufactured into useful and well-known refined products.





INDUSTRIAL SUMMARY

Company's Strike-Bound Plants Returning to Normal Operation

INDUSTRIAL RELATIONS

During early November, Union Oil Company conducted negotiations with representatives of the Oil Workers International Union (CIO) in an effort to settle the strike called by this union on September 4, 1948. Although a settlement had not been reached at the time ON TOUR went to press, all parties appeared hopeful that a prompt resolution of the issues would be obtained.

Wage increases, retroactive to last July, were reflected in the November paychecks of all unorganized employees. Additionally, wage agreements were reached with the A. F. of L. Teamsters' Locals at Los Angeles, San Francisco, Portland and Honolulu; with the Independent Union of Petroleum Workers representing certain employees in our Field, Pipe Line, Automotive, Purchasing and Marketing Departments; and with other unions representing employees in Montana, Maltha Refinery and Portland, Oregon.

PIPE LINE DEPARTMENT

The natural gasoline pipe line from Norwalk Pump Station to Los Angeles Refinery, which was converted to domestic gasoline service to aid in the distribution of domestic gasoline during the strike, was returned to natural gasoline service late in September. Distribution of domestic gasoline from the loading rack installed at Torrance Tank Farm was discontinued October 30. During the month of October, distribution from this rack totalled 174,000 barrels.

MARINE DEPARTMENT

During October, all ships of the tanker fleet were operating normally with no detentions occasioned by labor difficulties.

The S. S. A. C. RUBEL made deliveries of products from Aruba, Netherlands West Indies, to Company marketing terminals in Chile at the ports of Valparaiso and Antofagasta and into customer storage at Cruz Grande. The S. S. SANTA PAULA made a delivery of fuel oil to the International Railways of Central America at the ports of San Jose, Guatemala and La Union, El Salvador.

The S. S. VICTOR H. KELLY was engaged for the greater part of October in a voyage to Alaska, where bulk stocks at Company marketing terminals at Whittier, Juneau and Ketchikan were replenished.

The S. S. LOMPOC was withdrawn from service and entered the shipyards of the Everett Pacific Shipbuilding and Dry Dock Company at Everett, Washington, on October 9 for drydocking, painting, U. S. inspection, and voyage repairs. The work was completed and vessel returned to service on October 13.

FIELD DEPARTMENT

During October, the Field Department returned, in large measure, to the former rate of drilling scheduled before the strike interrupted operations. In August we were running 19 strings of tools. By the early part of October we were reduced to 12 strings. By November 10 there were 18 strings of tools in operation again.

An item of interest is the recent completion of Torrey No. 81 for 95 barrels per day. This well is in the old Torrey Canyon Field, which was discovered in 1896. The old field, perched on a hill top south of Piru, has produced oil throughout all of its 52 years. At one time production had declined to approximately 140 barrels per day for the entire field, but recent development has increased the rate to about 700 barrels daily. Torrey Canyon Field is located on mineral rights fee land held by Union Oil Company.

In the Rocky Mountain area, a contract has been let to drill Government No. 1 in the Moxa Unit, north of Church Buttes in southwestern Wyoming. This will be a 12,000-foot test.

The Company's interest in previous holdings and current acquisitions in the Powder River Basin in Wyoming will aggregate approximately three-quarters of a million acres. Several wells are being contemplated for our own account and jointly with others. This area will see considerable Company activity in the immediate future.

In Southern Louisiana, the fourth producer to be completed in our Tigre Lagoon Field, Le Blanc No. 1, has

given the productive area a one-and-three-quarters miles extension to the northwest.

● **LOS ANGELES
REFINERY**

As of November 3, President Reese H. Taylor announced that all Company plants affected by strike conditions during the preceding two months were approaching their pre-strike throughput and working conditions. At Los Angeles Refinery, completely normal operations had been resumed. All units there were running on a normal basis and producing the following products:

- 80 Octane Aviation Gasoline
- 91 Octane Aviation Gasoline
- 115/145 Octane Aviation Gasoline
- M-72 Motor Gasoline
- Kerosene
- Stove Oil
- Diesel
- Solvents
- Extracts
- Unitrol
- Navy Special Fuel Oil
- Light Domestic Fuel Oil
- Bunker Fuel Oil
- Industrial Fuel Oil
- Asphalts
- Road Oils
- Mercaptans

All of these products were being produced to the same standards and specifications as existed before the strike. Our "76" and "7600" motor gasolines had been withdrawn temporarily from the market. But this was undertaken in order to maximize the production of aviation gasoline for the military. A return of "76" and "7600" to the civilian market by mid-November was anticipated.

Los Angeles Refinery was fully staffed and those employees within the refinery were operating on a normal schedule, going to and from the plant and working a forty-hour week. Consequently, no job vacancies existed at Los Angeles Refinery at that time and future job vacancies were dependent upon vacancies occurring due to the usual reasons, such as resignations, discharges, deaths, etc. Accordingly, word was sent to all Los Angeles Refinery employees remaining on strike, and who do not desire to wait for such future job openings, that to all who were eligible and made application therefor the Company was making available termination allowance in accordance with the termination allowance schedule. However, it was announced that strikers who had been guilty of misconduct or who had already resigned and secured jobs elsewhere, would not be eligible for termination allowance. The Company also volunteered its services in endeavoring to find other employment for employees eligible for termination allowance.

● **LOS ANGELES' SIXTH AND
MATEO MARKETING STATION**

The situation at our Sixth and Mateo Marketing Station in Los Angeles was the same as at Los Angeles Refinery. The plant was fully manned on November 3 and there were no job vacancies. Those involved in the strike were being accorded the same fair treatment as the refinery workers.

● **JIM McNEILL
ADVANCED**

Effective October 15, 1948, J. M. McNeill was appointed assistant to the vice president, reporting to Ronald D. Gibbs, and with headquarters in Los Angeles. McNeill will be responsible for all contracts covering the sale, purchase, exchange and processing of natural gas by and for the Company.

Jim, whose birthplace was Eddyville, Kentucky, graduated from University of Southern California with a degree in petroleum engineering. He was employed by Union Oil in July, 1933, serving as a roustabout and production clerk, later in a variety of Field engineering capacities. In March, 1941, he was made production foreman at Santa Fe springs. Following his service in the U. S. Navy from 1942 to 1945, he became division petroleum engineer at Santa Fe Springs, district foreman at Richfield-Brea, and special field engineer at Head Office.



**OLEUM
REFINERY**

At Oleum Refinery, however, the situation was not yet back to normal as of November 3, and there were still some jobs available. Indications were that a normal straight time operation would be achieved in the very near future. The following units, representing about 90 per cent of Oleum's refining facilities, were in operation:

Distillation Unit 31
Distillation Unit 67
Cracking Unit 70
Coker Unit 200
Distillation Unit 211
Lube Oil Dewaxing Plant—Unit 210
Phenol Lube Oil Treating Plant
Edeleanu Naphthenic Lube Oil
Treating Unit 201
Continuous Acid Treater
Greasemaking Plant
Lube Oil Compounding Plant
Asphalt Plant
Oil Packaging Plant
Lube Oil Canning Plant

When Oleum Refinery is fully staffed, the Company has volunteered to accord the same treatment to those whose jobs have been taken as it is currently doing in the case of former employees in the Los Angeles area.

Meanwhile, the Company is anxious to fill all jobs remaining open at Oleum and is inviting applicants of many skills, experienced and inexperienced, to apply. Many good jobs are available. People who accept these jobs are assured the status of permanent employees in the usual sense of the word.

President Reese H. Taylor, in one of the personal bulletins he has been sending to all employees since the strike's beginning, had this to say: "We sincerely regret that this strike ever took place. The issues that are causing the hardship are the results of the strike and not the issues that caused the strike. The Company wishes to aid those without jobs in every reasonable way. But we feel that the betterment of all our employees must come before the interests of any one group.

MARKETING Notwithstanding strike conditions, gasoline sales during September increased 16 per cent over September, 1947.

Upon recommendations of District 5 Regional Advisory Committee, National Petroleum Council, gasoline deliveries to the retail trade from September 11 to October 19 were on an allocation basis, starting at 75 per cent of July, 1948, deliveries and increasing to 90 per cent. Allocations were removed on October 19. Vice



**VIC NORDQUIST
NEW FRESNO DSM**

The appointment of V. O. Nordquist as district sales manager at Fresno has been announced effective September 1. Vic, who was born and reared in Salt Lake City, attended Southwestern University in Los Angeles. He came to work for the Company at Los Angeles in 1920 as an office boy. Experience in various clerical assignments resulted in his promotion to district auditor in 1928. Subsequently he became district accountant at Phoenix and Portland, sales supervisor at Seattle, district sales manager at Reno and Sacramento, and special representative in Chicago.

President Arthur C. Stewart was appointed chairman of District 5 Regional Advisory Committee. A matter of major concern to the committee is provision of military requirements on the Pacific Coast. During one of its early meetings the committee was visited by Max W. Ball, director of the Oil and Gas Division, Department of the Interior, Washington, D. C.

In order to meet our government commitments during the strike and at the same time prevent public inconvenience, we discontinued marketing "76" and "7600" gasolines for several weeks. In their places, a single grade of gasoline was sold under the industry label "M-72". However, "76" and "7600" were reinstated November 17th.

Logging for



Oil on the Olympic

By Fred W. Bush

UNKNOWN to most people—even in the state of Washington—the great northwest long has been an attraction to oil prospectors. Particularly on the Olympic Peninsula, west of Seattle, oil and gas seeps have been found and studied for more than 50 years.

As early as 1902, one company, using a Canadian pole rig, drilled for oil to a depth of 550 feet. Cable tools went as deep as 3000 feet in seven other tests dating from 1912 to 1932. At least nine additional wells were drilled, mostly with rotary equipment, between 1932 and 1941, the deepest of these running to 6310 feet. In two instances oil was found, but not in commercial quantities.

Farmers in the Hoh River area have used well seepages for many years as a means of kindling fires. During the gasoline rationing of World War II, coastguardsmen stationed on Olympic Peninsula collected seepage from the open wells, strained it through chamois skin, and found the product reasonably satisfactory as fuel for their private cars.

Early oil explorers brought their drilling equipment from Long Beach, California, to Seattle by ship, a distance of 1500 miles at a cost of \$6 a ton. From Seattle to Oil City, 200 miles away, the next transportation step cost \$10 a ton. But to move equipment the remaining two miles from Oil City to the Hoh drilling site cost an additional \$20 a ton. In other words, two miles of freight transportation over the bluffs, steep

hills and dense underbrush of the peninsula was just \$4 per ton more expensive than 1700 miles of shipment and transshipment by water. These transportation costs have not changed very much in proportion even today.

Union Oil Company of California became actively interested in the Washington oil picture about 10 years ago. Like the earlier explorers, we were attracted by the many oil and gas seeps, called "bear wallows" locally. Such evidences are an indication that nature has at least provided petroleum source-beds. But whether or not oil could be found in commercial quantities was, and is, the question.

One of the first Union Oil geologists assigned to Olympic Peninsula was Max L. Krueger, who made some preliminary investigations in about 1938. Later exploration was continued under the direction of Chester Cassel and John Hazzard. In January 1946, the Ex-





Discussing a unique problem encountered during a Schlumberger electric log operation being conducted on Milwaukee Land Company No. 1 are (L-R) Walter W. Heathman, Jerry Carlson and Fred Bush, author.

ploration Department created its Washington Division and named W. Layton Stanton as division geologist.

However, geologic exploration was difficult. The Olympic Mountains, rising in the middle of the peninsula, have pushed through the terrain, breaking up earth strata, leaving great unconformities, and generally damaging the stratigraphical picture that might otherwise be obtained. Furthermore, a heavy mantle of underbrush and timber severely handicapped field geologists in locating outcrops. Eventually they were forced to take to rivers and creeks in search of stratigraphical information. In fact, we have coined the title of "creekologists" for any field geologists who have worked in this area. But they have done an excellent job in acquiring necessary information under extremely adverse conditions.

A story is told in Washington regarding woes of the Olympic's underbrush. It seems that a contingent of United States Army men, stationed in Guatemala, South America, and assigned to duty in a dense jungle, became fed-up with the heat and jungles of the tropics. They asked for transfer to a cooler climate. In due time they were reassigned to duty on the west side of Olympic Peninsula. It required only one month of service here to convince them that Guatemala underbrush was by no means the world's worst. They asked for a transfer back to South America again.

Backed by a considerable fund of information regarding seeps and physical samples of oil and a fair idea of surface geology, but by no means a helpful pattern, the Company decided we should not leave this part of Wash-

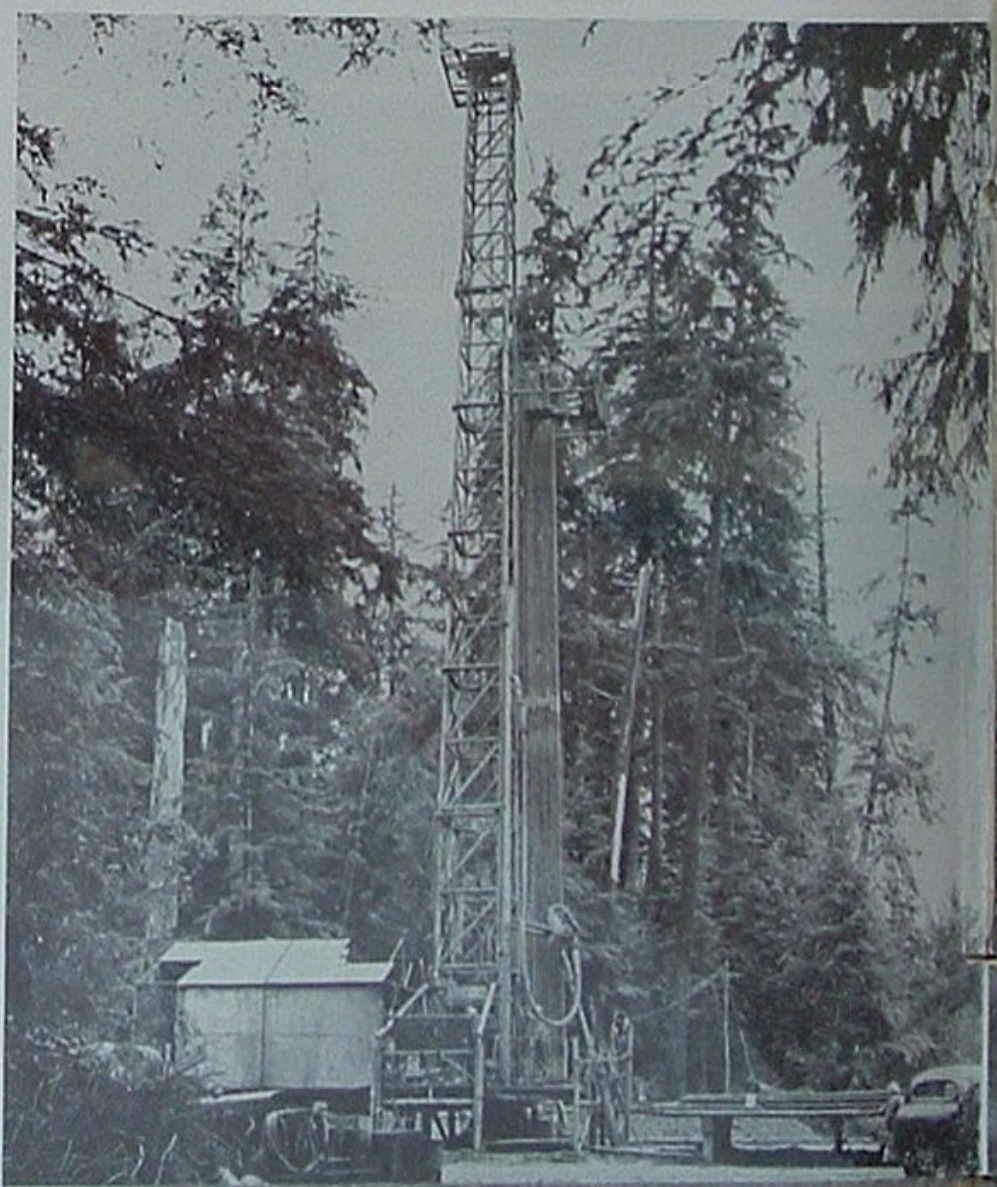
ington unexplored. After some leasing had been done, the seismograph crew was directed to "shoot a line" where possible along the peninsula for the purpose of locating "highs." This crew encountered, not only the surface obstacles familiar to geologists, but at least one sub-surface barrier in the form of great boulders through which it was impractical to drill with light equipment. However, based on both geological and geophysical studies, our leasing program was continued, giving the Company drilling control over several hundred thousand acres of land in western Washington.

Wildcatting

Finally by early spring of 1947 we were ready for drilling. Our first well, known as Phoebe Parker No. 1, was spudded in on the following July 17 in Grays Harbor County. It offered no encouragement except for a small amount of gas that was identified. Five other wells were drilled in the same area, none of which has produced anything of value except experience. To date we have drilled a total of nine wells in Washington. A number of others either are now being drilled or are in the process of being planned.

Marking the first time that a major company has operated two strings of tools in Washington, Union Oil is using one rig capable of reaching 6000-foot depths and

This portable rig drilling Milwaukee Land Company No. 1 is capable of a 6000-foot depth. A National 75 also in Company use on the Olympic Peninsula can go to 10,000 feet using its 700 horsepower.





a new National 75, of 700 horsepower, which can drill to 10,000 feet. The equipment is owned by Fillmore Drilling Corporation of Bakersfield, California, whose M. I. "Tiny" Fillmore has been on the job since its inception. Union Oiler Walter W. Heathman is serving as manager of our drilling operations in Washington.

Drillers in the northwest are running into a number of problems to which they were not accustomed in other fields. Arranging for necessary supplies and equipment is difficult because most firms catering to drilling activities are located some 1500 miles away. Much improvising has been required to obtain an ample water supply. Another serious problem has been the caving tendency of formations.

The drilling of our Weyerhaeuser No. 1 provided a good example of what wildcatting on Olympic Peninsula can mean. To reach the site it was necessary to acquire five miles of right-of-way over an old logging road. The long-abandoned road was mantled with a growth of small trees, saplings and underbrush. It had to be cleared by tractor, then graded and ballasted with gravel.

Paleography

To supplement research work in the Washington program, Harold Billman, micro-paleontologist, established

Transportation of supplies is one of the major problems of wildcatting in Washington. Two miles through rocks and dense underbrush costs \$4 per ton more than 1700 miles of transportation by water.



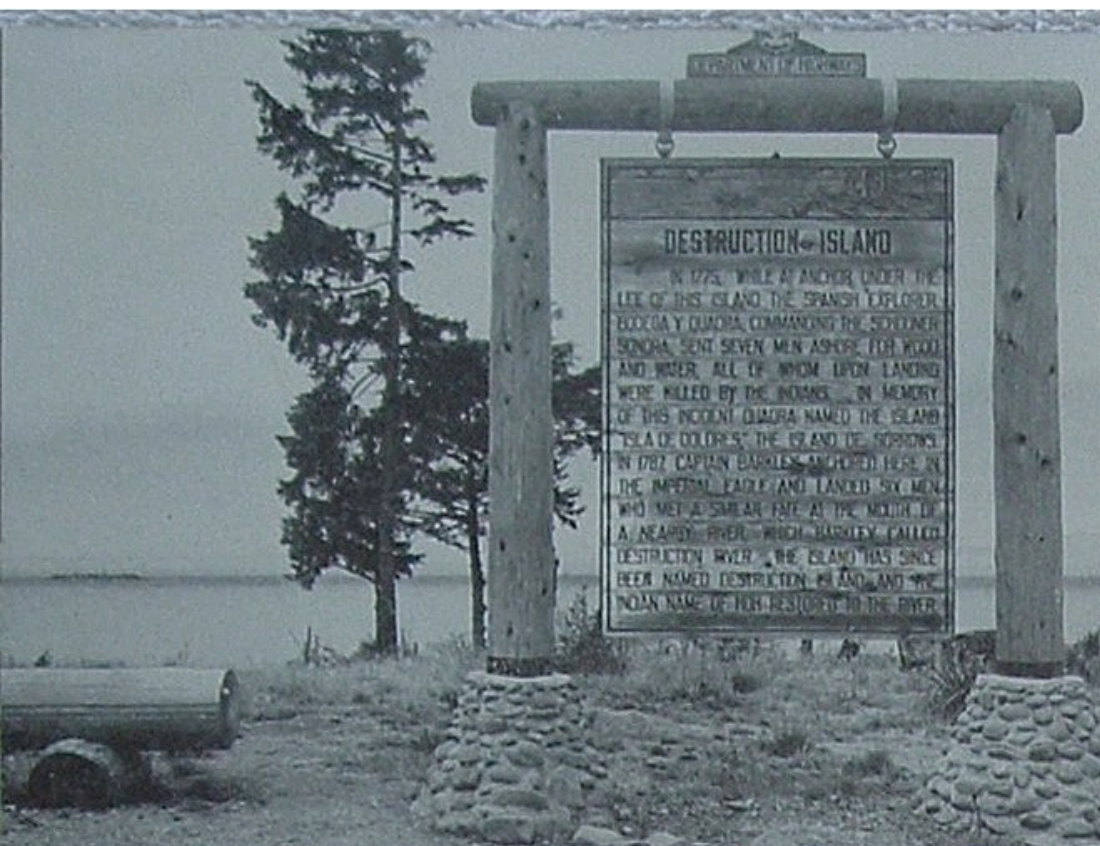
Company field geologists Fred Meyer (left) and Bob Carlson, who have spent considerable time on the Olympic Peninsula, came to some new conclusions after a study of core samples from the well.

headquarters at Olympia, with laboratory equipment to study formation, ages and periods in the area. Many previous theories established have been supplemented or declared erroneous through this actual study of cores and surface samples.

Cores are checked in conjunction with actual drilling. Whenever drilling occurs in a section that might have basic correlation, identification of cores has been made within five hours after recovery. The information developed through our micro-paleontologist assists in organizing an efficient drilling program.

Folk Lore

If there is a place in the United States that can qualify as the last land frontier, it is probably Olympic Peninsula. Located in the extreme western part of Washington, this primitive area is bounded by the Pacific Ocean on the west, Straits of Juan de Fuca on the north, Grays Harbor on the south, and Hood Canal to the east. Rising in its central portion from north to south is a spectacular wall of mountains, the Olympic Range. One highway, U. S. No. 101, enters and circles the area, but it was not completed until 1931. An estimated 50 billion board feet of timber are contained in its borders. The principle industries are fishing and logging. Five Indian reservations occupy the peninsula and represent a con-



Thirteen men were killed by hostile Indians on Destruction Island in 1775 and 1787 while attempting to find wood and fresh water for their ships. Modern explorers receive a friendly welcome.

siderable portion of its population, although during the past few years other settlers have been attracted in growing numbers.

The man who probably did most to champion construction of U. S. Highway No. 101 around the peninsula was Ed A. Sims, who is said to have made a million dollars in the fish canning industry. He finally pushed his highway proposal through the state legislature and saw the difficult engineering feat completed in 1931. That there were some petroleum intentions behind his road building efforts was demonstrated when he later spent his entire fortune in exploring the Olympic's oil seeps for commercial quantities. Sims died bankrupt but is remembered as one of the state's most conscientious oil and gas explorers.

Of the Olympic Indian reservations the two largest are the Makah, containing 27,095 acres, and the Quin-

The late John Huelsdonk, known as the "Iron Man of the Hoh," typified the stout-hearted men who broke trail for civilization into the rich forests and streams of this forbidding last frontier.



Marine scenics such as this one near Kalalock on the Washington coast have prompted the Department of the Interior to designate a mile-and-one-half-wide section of coast as a National Park Strip.

aielt, containing 175,079 acres. During the last 25 years two billion board feet of timber have been cut on the Quinaielt Reservation alone, leaving two and one-quarter billion board feet of uncut timber remaining. According to the Tahola Indian Agency, which supervises Indian affairs in western Washington, only one member of the Ozette tribe remains on the reservation of that name. The Quinaielt and Queets tribes, in addition to their logging and fishing occupations, have played host to the white man for many years. In canoes powered by outboard motors, they escort many sportsmen to the excellent hunting and fishing grounds on the reservation.

Among the wild life and game abounding on Olympic Peninsula are deer, elk, bear, cougar, wildcat, marmot and mountain goat. Farmers even today construct eight-foot elk fences to keep elk herds out of their pastures, orchards and gardens.

One of the many thrilling sports of this region is cougar or "cat" hunting, as the natives call it. A pack of about five dogs is usually needed for the hunt. The cats sometimes attain a length of 10 feet and a weight of 350 pounds. They will run from a hunter and his dogs, but are dangerous fighters when cornered.

Among the most perplexing obstructions to Olympic road building is the Hoh River. It is a powerful stream whose waters rush down from the snows of Mt. Olympus and from three icefields known as the Hoh, Blue and White glaciers. The swift and treacherous river does not allow any silt to settle until it reaches the Hoh lowlands at the mouth, where it has built up a rich deposit of alluvial silt. Log bridges, by which men first attempted to span the river, were usually washed out at least once a year. A later suspension bridge, inspired by early oil men, escaped the water but has now deteriorated to an almost useless load limit of two tons. Therefore,

the least expensive alternative oil prospectors face today is to construct six miles of logging-type road along the north side of the river at a cost of \$150,000.

In acquiring leases, Union Oil land men became very well acquainted with the families of this area, most of whom are descendants of hardy pioneer stock who literally had to hew their farms out of the wilderness.

Perhaps the most legendary of these pioneers was John Huelsdonk, known as the "Iron Man of the Hoh," who came to the peninsula in 1890 as a young man of 22. He acquired his nickname one day while walking along the 20-mile trail from Forks to the Huelsdonk home. A traveler who happened to be proceeding in the opposite direction along this trail was amazed to come upon John carrying a Monarch cook stove on his back.

"Pretty heavy load to be carrying through the brush, ain't it?" inquired the traveler.

"No, the stove ain't so heavy," John replied, "but the 100-pound sack of flour in the oven makes it a little clumsy."

John Huelsdonk has passed away, but Union Oil now holds a number of oil and gas leases with his descendants in the Hoh area.

Although parts of the Olympic Mountain Range are acclaimed as being more beautiful than the better-known Canadian Rockies, some of the peaks have been viewed by only a very few white men. An area of 1,647,520 acres has been set aside as Olympic National Forest. Also next to the Pacific Ocean the Department of the Interior has condemned and reserved a strip on and one-half miles in width for eventual development into a National Park or scenic attraction.

Thus, Union Oilers are helping to blaze trails into a frontier containing great scenic as well as industrial possibilities.

Conclusion

There is a good general reaction on the part of Washington people to Union Oil Company's exploratory project. Nearly every person senses the potential worth of our efforts. If, for instance, we were successful in bringing in a good gas field, the economics of the state would be very favorably affected. Contrary to the general belief, Washington at this time does have a power shortage. And power is the important nucleus around which most industries must be built.

An interesting characteristic of the Washington gas we have been able to capture and test is that its BTU (British Thermal Unit) rating is approximately twice that of manufactured gas now in use there.

After three years of intense exploratory work in this practically virgin territory, Union Oil employees who



Indian residents of the Olympic Peninsula earn their livelihood as loggers and fishermen. Also, in their staunch canoes equipped with outboard motors, they pilot sportsmen to a fine big-game area.

are close to the Olympic Peninsula activities remain hopeful and enthusiastic. But wildecating is always and everywhere an expensive gamble. Once in a great while you strike a good new field and are "in the chips." More often you sink a fortune in "dry holes" and turn away unrewarded. The Olympic oil picture as of this date is "dry" but still interesting and inconclusive.

This early suspension bridge conquered the rampaging waters of the Hoh River, but its two-ton capacity is no match for present day loads of drilling equipment. Our trucks are obliged to bypass it.





Union Oil's 58th Birthday Dinner

This service emblem bearing three diamonds and four rubies, the first of its kind ever awarded, is the proud possession of John E. Reed.

HARDLY could there be a more fitting way to celebrate the anniversary of a company's founding than the one resorted to traditionally by Union Oilers. As near to October 17th as possible, on which day back in 1890 Union Oil Company of California came into being, veteran employes from nearly all departments and localities within the Company are summoned to Los Angeles. Their eligibility for invitations as honored guests consists solely of having achieved 35, 40 or 45 years of continuous service. Also invited to participate in festivities are the various executives, department heads and managers with whom the honored guests are associated organizationally.

Host at this year's celebration on October 18th was

President Reese H. Taylor. Sitting down with him at a delicious birthday feast in the California Club were 41 employees. Of the 21 guests of honor, 17 were 35-year men, three had attained 40 years of service, and one had less than three months remaining to complete his 45th year.

There were birthday presents in evidence also. To each 35-year man the Company presented a gold watch fittingly inscribed. Men of longer service, who had received watches in 1943, were pleased with the addition of a new diamond to their service pins. To John E. Reed, 45-year man, was presented the first three-diamond pin in Union Oil history. Mr. Taylor made each presentation.





ARTHUR G. ROSEMAN, 35-YEAR MAN

NOTES FROM THE TABLE CLOTH

Aware that Union Oil people, like most others, are addicted to the art of doodling, your newsboy lingered for a moment after the birthday dinner to glean the following table-cloth statistics and sketches:

A total of 14 Union Oil employees have been presented with 40-year emblems. Of this number, W. W. Orcutt has passed away and Frank Hill, Cecilia Griffin, Fred M. Woodard, W. P. Correll, Sr., and C. L. Tostevin



WILLIAM P. CORRELL, SR., 40-YEAR MAN

have retired. The eight 40-year employees still in active service are J. E. Reed, A. C. Powell, Alice O'Dea, F. O. Pressey, J. D. Rearden, M. Del Monte, F. M. Higuera and Fergus Grant.

The year of 1948 saw the addition of 17 men to our 35-year club, namely, Clark W. Root, Horace G. Iverson, William H. Richards, Wreford Clark, George H. Anderson, Albert Barton, Arthur G. Roseman, William H. Steele, Roy O. Nelson, James J. Federspiel, Frank L. Pyle, William D. Sellers, Horace E. Cattermole, Frank C. Boyd, Lucius L. Farnum, Joseph L. Horvat, and Carl G. Tornquist.

John E. Reed, with 45 years to his credit by January 1, 1949, has the longest service record in Company history. However, two employees, Horace Cattermole and William Sellers, who were employed when only 14 years of age, may possibly become 50-year men. Cattermole is seven months younger than Sellers.



JOHN E. REED, 45-YEAR MAN

The average Union Oil employee is 40 years of age and has 10.1 years of service with the Company.

During the year 1948, ninety 10-year emblems were presented to eligible employees, while 552 ruby and 24 diamond settings were added to other pins.

The 2834 employees active in 1948 who have received service emblems are classified into the following service groups:

<i>Years of Service</i>	<i>Employees</i>
10 to 15	724
15 to 20	646
20 to 25	711
25 to 30	536
30 to 35	163
35 to 40	46
40 to 45	8



Business Trip To The Arctic

By Gudrun M. Larsen

We have not yet attempted the proverbial marketing improbability of selling refrigerators to the Eskimos; but there is nothing at all imaginary about our competing with whales for oil business as far north as the Arctic Circle.

Once or twice each year Stan Barlow, aviation representative for Northwest Territory, covers our extensive and expanding marketing area in Alaska. His assignment is to contact Union Oil employees, dealers, distributors and proposed distributors along that great frontier. Like salesmen everywhere, he constantly seeks new accounts, strengthens bonds of service and understanding with established customers, and carries an order pad, Form 207. Geographically, this about how he does it:

From Seattle to Annette Island it is a slow journey by boat and a rather impossible one by car. However, Stan accomplishes the trip in a few hours in his Beech Bonanza plane, No. NC76E, stopping once enroute at Port Hardy. Having an important contact to make with Tom Hansen, district representative at Ketchikan, he is obliged to leave his land plane on Annette Island and charter a float plane for the watery landing strips of the Inside Passage.

Returning to his Beech Bonanza craft, he then proceeds to Juneau, where he is joined by R. M. Akervick, district representative. The two make an air inspection of Company plants at Petersburg and Wrangell, then continue on to business contacts at Haines, Skagway and Gustavus.

Back at Juneau again, Akervick leaves the plane and watches as Barlow starts northwestward along the Gulf of Alaska over Cape Spencer, Yakutat and Cordova. At the head of Prince William Sound the easily



At Anchorage Stan Barlow (right) picked up W. E. "Red" Thompson as co-pilot of their sales expedition to Kotzebue on the Arctic Circle.

identified Union Oil plane attracts a waving greeting from employees at our Whittier terminal before continuing on to Anchorage. This latter port of call marks the location of Merrill Field, said to be the busiest airstrip in the world per capita. Here "Red" Thompson, district representative at Anchorage, offers his services, and together the two air-minded Union Oilers cover all aviation accounts at Anchorage, Fairbanks and distant Kotzebue.

On checking the map, you will find that Kotzebue is located on the Arctic Circle, just a hop across the Bering Strait from Siberia. So, in accompanying the local Union Oil distributor, Archie Ferguson, on an inspection

tour of barges and storage at Keewalik, Barlow and Thompson come very close to qualifying as the world's northernmost salesmen. Incidentally, Ferguson flies his own plane along this sales outpost of the Arctic Circle and proudly displays his "76" insignia on the plane's fuselage.

On their return trip the flyers call on accounts at Gandle, Nome, Galena on the Yukon River, Manley Hot Springs, Nenana and Fort Yukon.

Troubles? Nothing that an Alaskan couldn't take in stride! Bad weather grounds the plane at Nome for two days, just in time for a needed rest. A customer complaint at Manley Hot Springs is settled to everyone's satisfaction in jig time. Ed Tussaint, our dealer at Fort Yukon, who had to freight gasoline by air last winter when supplies ran short, this year places an order that will last. A portion of river in this area is so winding that one of our dealers must barge gasoline 125 miles to reach a spot that is only 60 miles distant by plane. But obstacles elsewhere are opportunities in Alaska.

Stops at Beaver, Stimson's Landing, Hughes-on-the-Circle Trading Post, and Tenana bring the salesmen back to the urbanity of Fairbanks and Anchorage. From there, Barlow streaks homeward alone by way of Whitehorse, Annette Island and Port Hardy.

The trip has covered in excess of 8500 miles, requiring 53 hours of flying time. Transportation costs have been surprisingly low—11 cents per mile including plane depreciation, insurance, hangar fees, service charges, gasoline, oil and maintenance charges. The results have been stronger relationships with dealers and customers, and increased evidence to Alaskans that Company products are game to serve them anywhere.



This is how our Whittier marine terminal appeared to Stan as he flew along the Gulf of Alaska bound for Merrill Field at Anchorage.



Archie Ferguson, Union Oil distributor at Kotzebue, dismounts from the aerial runabout with which he solicits oil orders in the Arctic.



In this Beech Bonanza at Hughes-on-the-Circle Trading Post, Barlow covered 8500 miles of Union Oil's northernmost marketing area.



Haines, Alaska, displays some northern scenery as well as a Company terminal that is receiving petroleum for the country's development.



Our Colorado Shale Deposits

Here are management's answers to some of the questions asked by employees during recent showings of the motion picture, "Report for '47".

In what parts of the country are shale deposits located?

Oil shale is found in most countries of the world and in most states of the United States. It was formed in lakes or seas in which the deposit of inorganic material (sand, clay, etc.) was slow, and in which abundant organic matter (animal and vegetable substances) lived or was accumulated. The better known foreign deposits of oil shale are in Scotland, France, Sweden, Estonia, Germany, Spain, Russia, Manchuria, Australia, Union of South Africa and Brazil.

The most extensive oil shale deposit in the United States is the black shale of the Chattanooga formation, which is richest in the state of Indiana, Kentucky, Ohio, and is also found in 14 surrounding states. The richest oil shale of the Chattanooga formation probably will not yield over 15 gallons per ton from any large tonnage. Less extensive oil shale deposits are found in Texas, California, Montana, Idaho and in many other states.

The richest oil shale deposit, and probably the one that will receive earliest commercial attention, is found in the Green River formation of Colorado, Utah and Wyoming.

Approximately 60 million years ago, southwestern

Wyoming, northwestern Colorado and northeastern Utah had a warm, moist climate and contained large lakes. The Wyoming lake, known to geologists as Gosiute Lake, probably emptied into the Utah-Colorado body known as Uinta Lake. Uinta Lake often existed as two lakes, since during dry cycles the eastern, or Colorado end, was separated from the Utah end. Consequently, three basins existed in which oil shale was deposited.

The deposits are over 3,000 feet thick and are remarkably uniform in lateral extent. They are relatively flat-lying and are not known to be faulted or fractured.

The oil shale is resistant to erosion and forms the tops of plateaus, one each in Colorado, Utah and Wyoming. The Colorado River and its tributaries have cut deep valleys through these plateaus.

The Piceance Creek Basin of northwestern Colorado contains the greatest thickness and highest grade of oil shale deposits known in the United States. Its mahogany ledge, a group of oil shale beds that average more than 25 gallons of oil per ton for a thickness of more than 25 feet, lies under 1,000 square miles of the Basin.

The oil shale from the Piceance Creek Basin is a magnesian marlstone that varies in color from light brown to black and resembles mahogany wood. It is thinly bedded, since 2,000 to 5,000 years of accumulation were required to form a foot. The rock is strong

and tough but soft enough to be carved with a knife. When placed on a fire, oil shale burns rapidly giving off a high heat.

Strangely enough, oil shale does not contain oil. It contains an organic solid known as Kerogen which breaks down into oil and coke when heated above 750 degrees F.

How extensive are shale oil properties owned by the Company?

Union Oil Company owns in fee more than 20 square miles of excellent oil shale property in northwest Colorado. Most of this land was purchased in 1923-1925 to serve as a future source of liquid fuel. Union Oil engineers are developing the necessary methods and processes for producing fuel and other useful products from this oil shale.

Does the Company have patents on the retorting process developed for shale oil recovery?

The Union Oil Company has applied for patents on a continuous retort which, because of its unique counter-flow principle, eliminates the need for large quantities of cooling water and heat exchangers. This feature, plus its simplicity, should make it a relatively low cost unit. The crushed shale (4-inch lumps and smaller) is fed into the bottom of the retort by means of a hydraulically operated piston. This moves the shale upward through a conical kiln where it is contacted by hot gases moving downward. The hot gases heat the shale, converting its Kerogen into oil and coke. The oil distills off, moves

downward with the gases, is condensed by the cold incoming shale, and flows from the bottom of the unit. Coke and ash move upward and are removed from the top. Before removal, however, the coke ignites with air near the top of the kiln and forms hot gases which heat the incoming shale. The incoming air and hot gases are moved downward through the shale by means of a suction blower at the retort's base.

How is the shale removed from shale deposits?

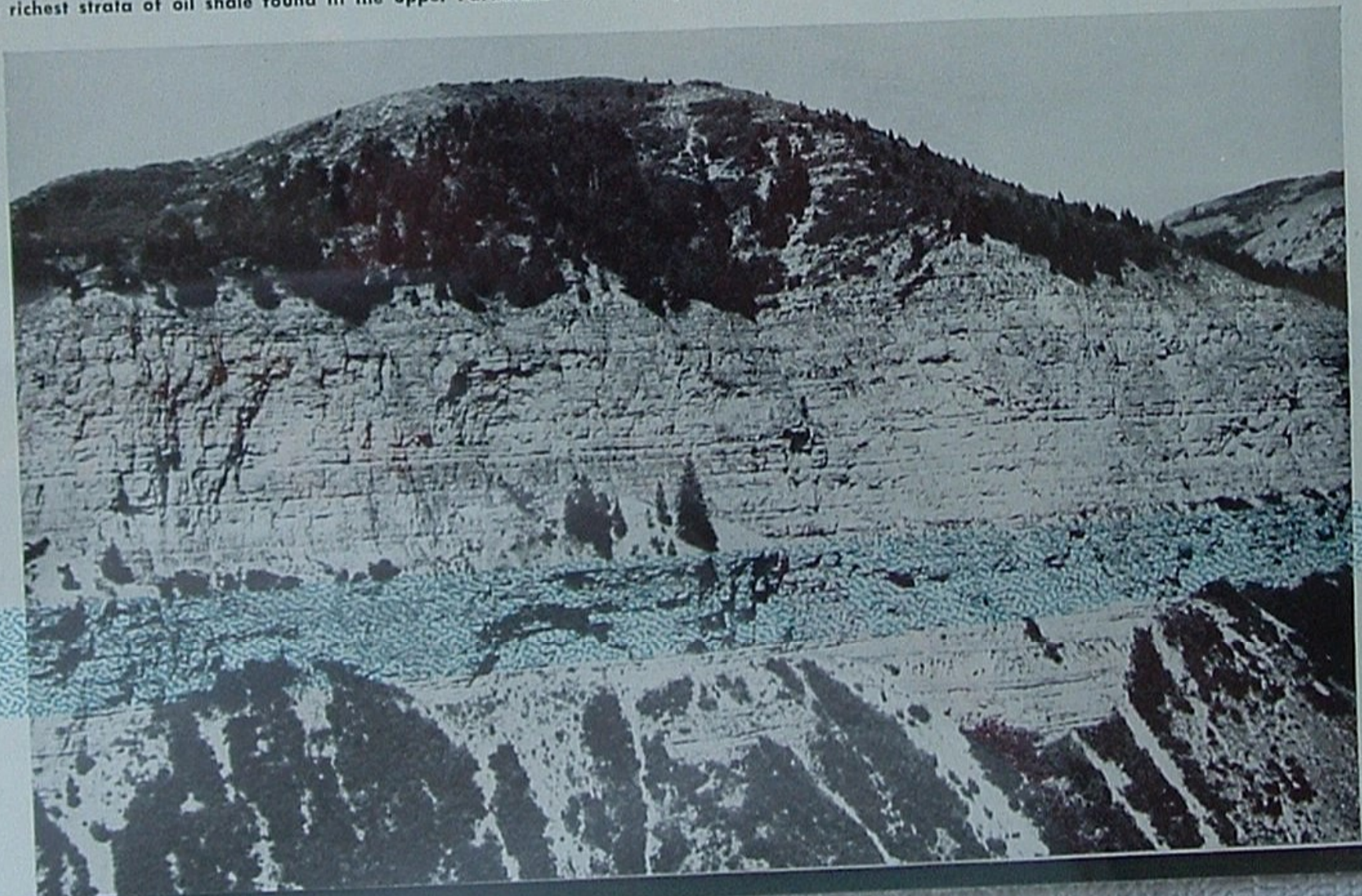
The oil shale beds lie flat, are uniform and continuous along a horizontal plane. Since the rock is strong, large openings can be made without fear of roof failure. The Bureau of Mines, at their experimental oil shale mine near Rifle, Colorado, have opened rooms 70 by 1000 feet that stand unsupported without any sign of weakness or failure. The most suitable method of mining probably will be from an open room, the roof of which will be supported by pillars of undisturbed shale.

So much oil shale must be handled per barrel of oil that transportation must be kept to a minimum. The crushing and retorting, therefore, will probably be done at the mine portal.

What is the gravity of oil produced from shale?

The gravity of shale oil from Union Oil holdings in Colorado averages 21 to 22° API. The oil is waxy and difficult to pump at low temperatures. It also contains nitrogen, oxygen and sulphur compounds, which will require the development of new refining techniques.

The richest strata of oil shale found in the upper Parachute Creek Valley is known as the mahogany ledge, indicated by the blue overprint.



Union Oilers



NO SOONER SOLD THAN DELIVERED

George Herrman, retail representative at Spokane, believes in delivering the goods while his sales story is still hot. During the Company's most recent Triton campaign, George hooked the above trailer to his car not alone for advertising appeal. On obtaining each new order, he would pull up the trailer and make delivery on the spot. In 58 working days he called on 587 dealers; acquired 85 new oil accounts; and sold 2445 gallons of Triton.



EX-BOMBARDIER HITS TARGET

Frank Kerth of Tacoma has accumulated a lot of valuable experience in the past 10 years. Starting with the Company as a service station salesman in 1939, he had become a manager by the time the Air Corps beckoned in 1941. After four years with the 95th Bombardier Group in the European theater, Sergeant Kerth came home to our wholesale organization in Tacoma. His recent promotion to retail representative there is considered well deserved.



DRIVER OF THE MONTH

Union Oiler Leonard Herman was honored as Arizona's safest truck driver. He has a record of 15 years of heavy truck driving without an accident or police citation. His quick thinking in extinguishing a service station fire has been praised by Company officials. Shown participating in the award presentation above are (L-R) N. E. Thompson, president of Arizona Motor Transport Association, Police Captain George Young, Leonard Herman, and Union Oiler Bert Park.



LOOKING AHEAD

Another Tacoma marketer who is beginning to see his years of sales experience pay promotion dividends is Leonard Hill, shown above with Bill Hyatt (left), one of the Northwest's very successful service station lessees. Leonard was recently appointed retail representative. He has been with the Company since 1942, starting as a service station salesman and advancing to manager. Two years of wholesale selling experience in Tacoma gave him valuable training for his new assignment.



HOLDING THE LINE AT HONOLULU

For several years Honolulu has held some enviable sales records including two service stations that consistently lead all other Company retail units in sales of gasoline. At left is the determined staff of salesmen who plan to keep the record intact. They are from left to right: John Moulton, assistant district sales manager, who has served the Company at Honolulu since 1934; Barney Schwalm, industrial service representative, a former technical trainee at Oleum Refinery and an industrial salesman at Alameda, California; Makoto Murakami who since his employment date in 1927 has worked at Honolulu as a service station operator, truck driver, salesman and, since September 1 of this year, as retail representative; Tom Blake, retail representative, who has advanced rapidly with the Company since his employment in 1947; Tokuzo Ono, salesman since September 1 of this year, whose record shows experience as a plantman, gauger, truck driver and clerk, in addition to four years of military service; and Robert Rath, native of Honolulu, who since 1935 has risen from clerk to district sales manager.

In my opinion ...



Dear Unsigned:

The British colony of Greater Hong Kong is a compact group of islands and peninsulas comprising the island of Hong Kong itself, the Kowloon Peninsula and the so-called New Territories, which together command the entrance to the Canton River.

Hong Kong harbor was first used as a naval base for British ships during the "Opium War" of 1839-42, and was ceded to Britain by the Treaty of Nanking. However, control of the entire harbor was not effected until 1898 when Great Britain obtained a 99 years' lease of the adjacent mainland and islands. The capital city of this colony was founded on Hong Kong Island, which had previously been almost uninhabited except for pirates. The city flourished principally after 1898. It has many Chinese and other oriental inhabitants, but western architecture and commerce dominate its appearance and economy. The name of the capital city is Victoria, to distinguish it from Kowloon and lesser cities of the Hong Kong area.

Dear Editor:

On Page 10 of the October issue you mention the founding by British interests of their city on the island of Hong Kong. Please tell us what is the name of this city. . . . No one seems to have ever heard of it.

(Unsigned), Los Angeles



SERVICE BIRTHDAY AWARDS

NOVEMBER, 1948

THIRTY YEARS

Campbell, Henry P., Central Territory
Cosbie, Ruth M., Central Terr. Purch.
Pyle, Ford, So. Div. Field

TWENTY-FIVE YEARS

Ashton, Harold B., Central Territory
Grainger, Rolla, No. Div. Pipe Line
Keans, Harold F., So. Div. Pipe Line
Maddy, Merle M., L. A. Refinery Mfg.

TWENTY YEARS

Cakebread, Robert E., L. A. Refinery Mfg.
Koehler, Lilly T., Southwest Territory
Ralph, Dale M., Southwest Territory
Roberts, Minor L., So. Div. Field
Scanlon, Henry M., So. Div. Field

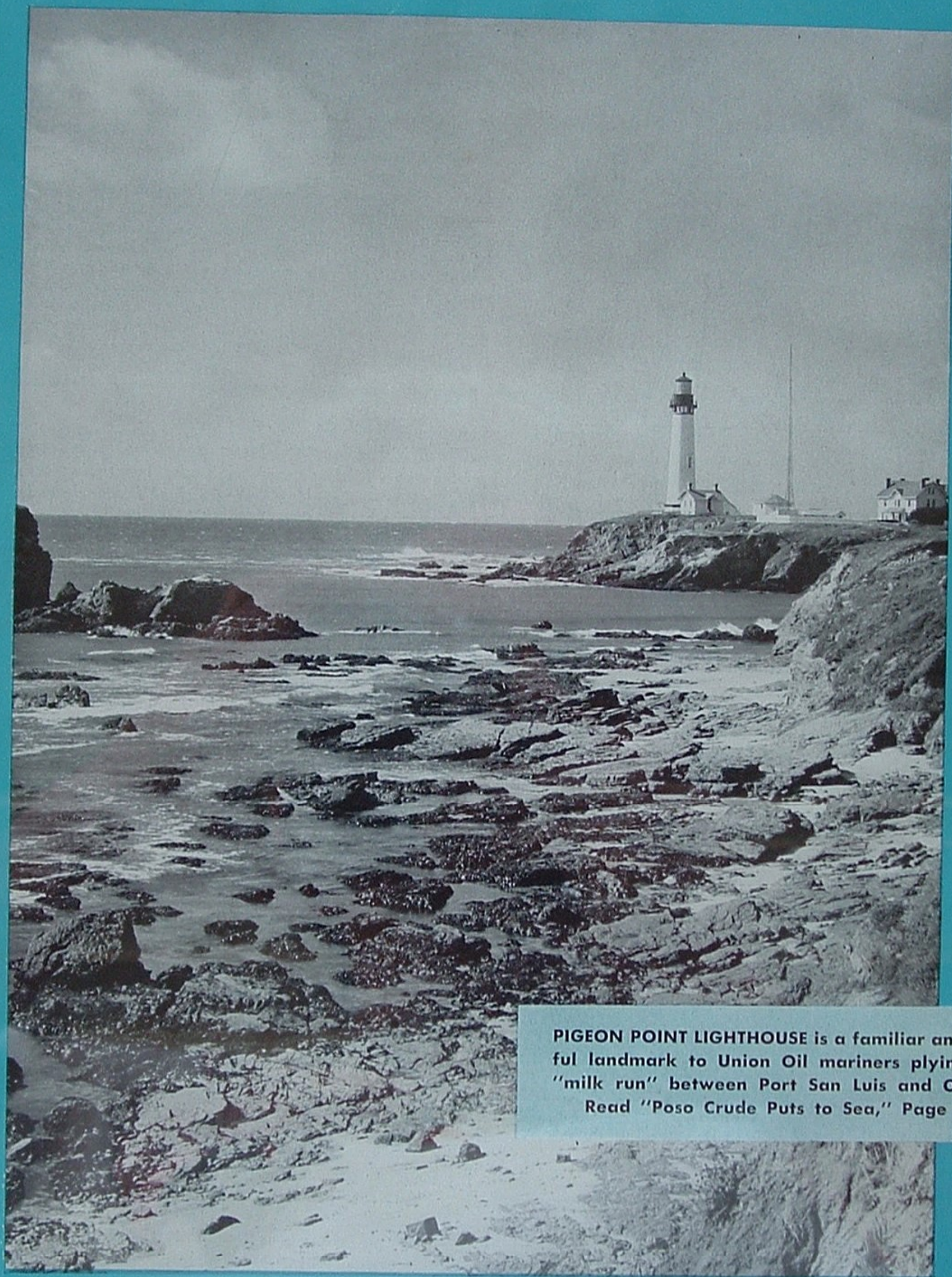
FIFTEEN YEARS

Baker, Harold P., Central Territory
Davidson, Cleo R., Southwest Territory

Gibbons, Francis J., Central Territory
Gillespie, Berta A., Southwest Territory
Norman, Alva, No. Div. Pipe Line
Sawyers, Dorothy J., H. O. Sales Services

TEN YEARS

Beckman, Lois J., Northwest Territory
Dick, Chas. Zinn, Northwest Territory
Kolts, Richard D., Northwest Territory
Swan, Chas. LaV., Southwest Territory
Taylor, Reese H., H. O. Executive



PIGEON POINT LIGHTHOUSE is a familiar and useful landmark to Union Oil mariners plying the "milk run" between Port San Luis and Oleum. Read "Poso Crude Puts to Sea," Page 3.