

AT 100 YEARS OF AGE, SEATTLE STARTS NEW ERA OF GROWTH

HER CANAL LOCKS LINK PUGET SOUND WITH FRESH-WATER LAKES



MT. RAINIER DOMINATES THE CITY'S SCENIC SPLENDOR



SAILING AND FISHING ENTICE HER SPORTSMEN OUT OF DOORS

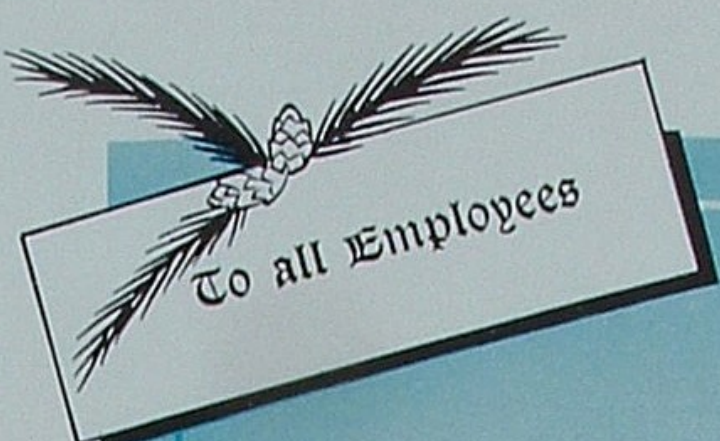
LUMBERING RETAINS A HIGH PLACE IN HER VARIED INDUSTRY



**"On Tour"**

NOVEMBER - DECEMBER 1952

# On Tour



VOL. 14, NO. 10  
NOVEMBER-DECEMBER 1952

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*The pleasant excitement of the Christmas Season comes and goes all too quickly, but the great tradition of this Holiday can be with us the year round. . . . the tradition of exchanging honest and sincere good wishes. The spirit of Christmas does not end in a day, nor does the wish for a Happy New Year end on January 2nd.*

*Our MERRY CHRISTMAS to all Union Oil people hopes that the spirit and blessings of Christmas will remain throughout the year. Our HAPPY NEW YEAR is for all 365 days of 1953.*

*Paul H. Taylor*



**"THE LARGEST CITY OF ITS AGE IN THE WORLD,"** is a Chamber of Commerce claim for the city of Seattle. Whether or not, after careful analysis, such a fact remains impressive, it does reflect some of the vigor that has hewn our Pacific Northwest into one of the most appealing and energetic corners of America.

Exactly one century ago, Seattle existed only as the name of an Indian chief. He was Chief Sealth (somehow pronounced Se-at-lee) of the Duwamish and Suquamish tribes, who became and remained a friend of the early white settlers. Builders of the first cabin on Alki (Chinook word for bye-and-bye) Point jokingly referred to their seedling metropolis as New York Alki. Later, when a townsite seemed assured, they honored their Indian friend by adopting his name—although with slight modifications in pronunciation and spelling. So, even the city's name is rooted in a tradition of friendship.

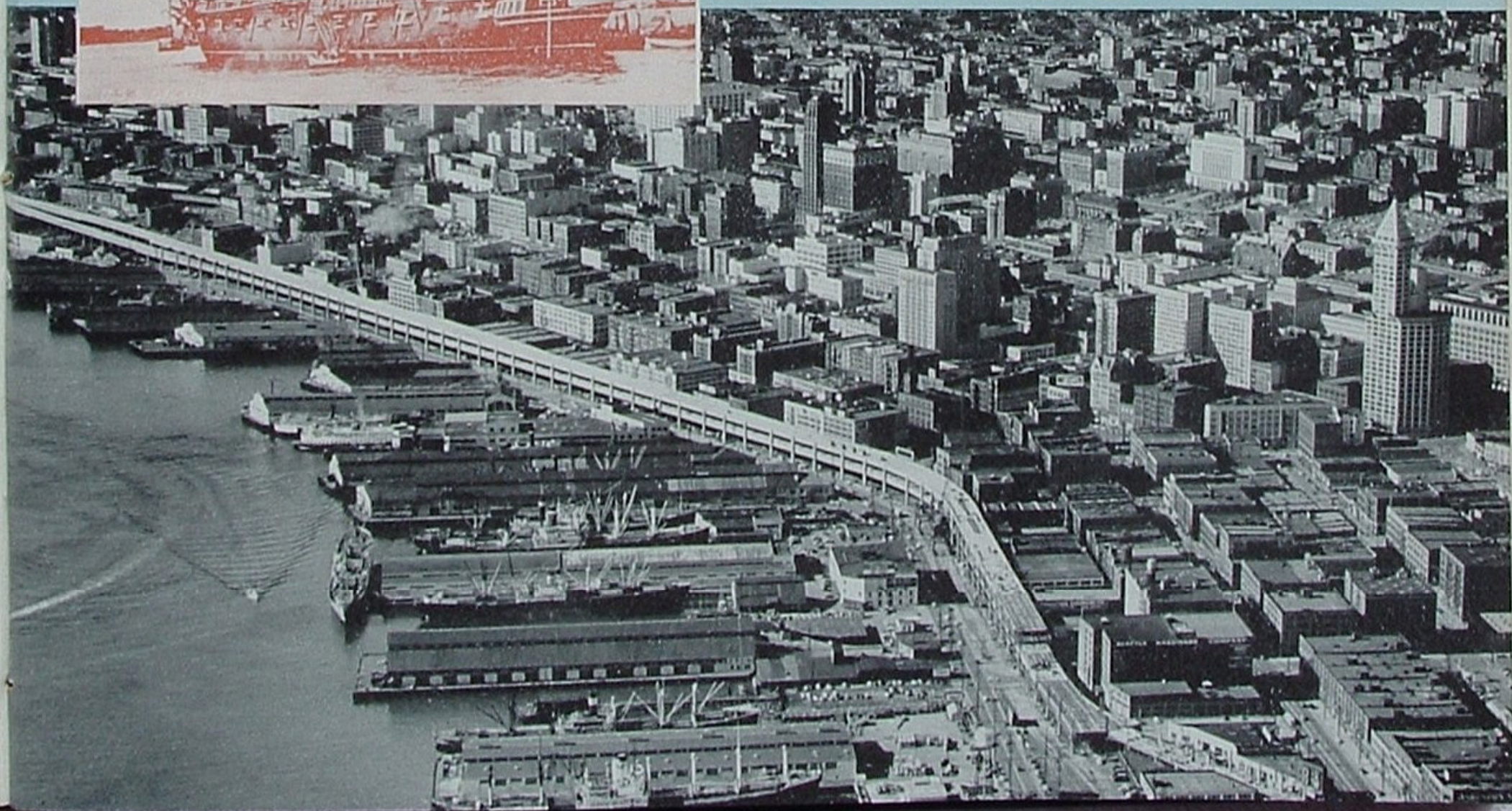
The founding of Seattle is credited to a stouthearted group of pioneers who landed at Alki Point in 1851

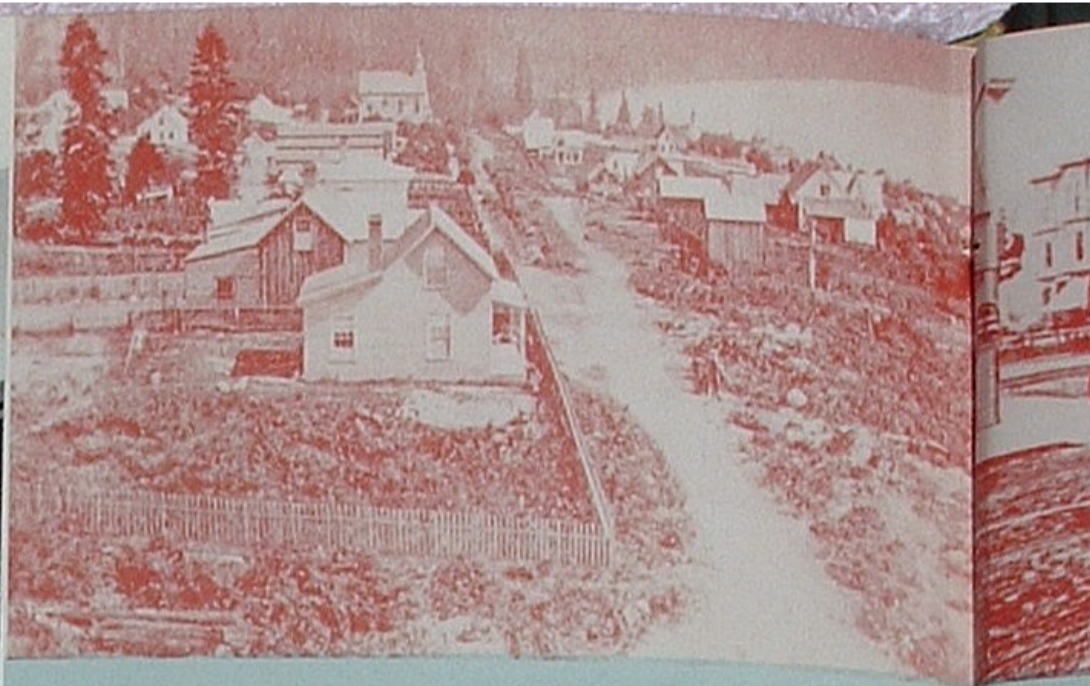
By Gudrun Larsen

# SEATTLE'S FIRST CENTURY



*Above, the Seattle waterfront as it appeared in 1887, and, below, the U. S. Sloop of War "Decatur," whose marines and cannon discouraged an 1856 massacre.*





Interesting in comparison are Seattle's Fourth Avenue of 1870, above, and a typical Thirteenth Avenue area of 1952, left, where Union Oiler J. W. Hunt resides.

from the schooner *Exact*. They had been preceded in the Puget Sound area by fur traders of Hudson's Bay Company, and in 1850 by John C. Holgate who looked appraisingly at the Duwamish River Valley and then returned to Oregon to enlist neighbors, ox teams and farming equipment. But the Alki Point families—named Denny, Low, Boren, Bell and Terry, numbering 12 adults and 12 children—were the first to land and stay put on Elliott Bay. In fact, they were nearly obliged to stay. For no sooner had their chartered boat dropped passengers and baggage on the muddy shore than she set sail again back toward Oregon. With Indians as an audience and stormy weather urging them on, the newcomers went to work with axes. By evening of the first day, they had a roof over 24 heads.

That Seattle measures its beginning from 1852 rather than 1851 is due to a change of location made by the

founders after a year of pioneering. During their first winter, they were visited by the brig *Leonesa*, which had come northward in search of fir piling for new San Francisco wharves. By felling and trimming a cargo of piling, the Alki Pointers obtained needed supplies and started the lumber industry that has remained a pillar of their city's economy. Alki Point, however, afforded limited stands of timber and an anchorage too shallow for larger boats. So, most of the families moved in 1852 to the east shore of Elliott Bay. Their original land claims today are marked by a forest of office buildings with an unbroken margin of ships and wharves, including the properties and facilities of Union Oil Company.

During this first century, Seattle has had far more swashbuckling adventures than are indicated in its present-day appearance and circumspect behavior.

*Yesler's Cook House, where a good meal could be had for 25 cents, is thought to have been Seattle's first cafe.*



*The city's first fire engine, purchased in 1870, boasted steam pressure, but had to be pulled by "shanks' mare."*





Right, Union Oilers Patricia Cochran, Dick Noland and Mary Spears ride a museum cable car whose horse-drawn forerunner, above, served the city back in 1884.



In 1856, hostile Indians attacked the town's 300 inhabitants, killing only two whites, but burning every outlying home beyond a protective line of blockhouses. Presence of the U. S. Sloop of War *Decatur*, undergoing repairs at Yesler's Wharf, provided sufficient marines and fire-power to discourage the intended massacre.

In post-Civil War days, the Northwest apparently suffered either a surplus of marriageable men or a shortage of marriageable women. To modify the unbalance, Asa Mercer, who later became a builder and first president of the city's university, brought two shiploads of women from the Atlantic Coast by way of Cape Horn. Many were widows of Civil War soldiers who had fallen in battle. The women, known as "Mercer girls," undertook the trip in spite of numerous eastern newspaper warnings. That their intuitions proved sound is evidenced by the fact that the proudest of Seattle residents

today trace their lineage to "Mercer girls."

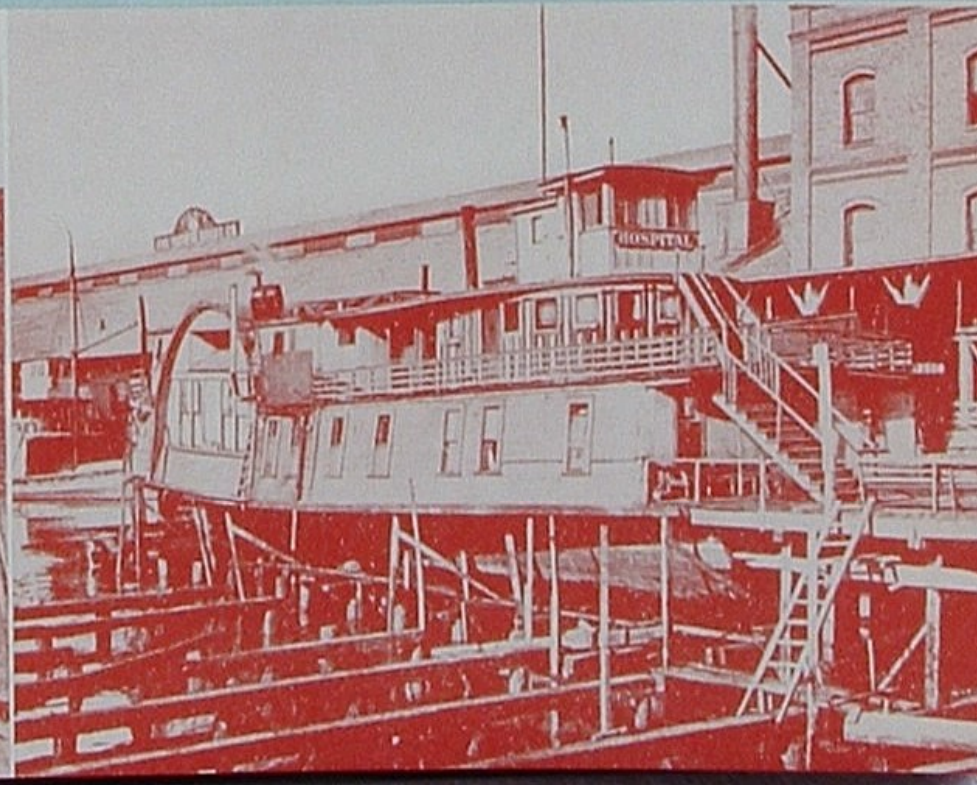
Anti-Chinese riots in 1886 resulted in a voluntary exodus of oriental laborers who had been drawn there by thousands of job opportunities in building the railroads. But along with some 40,000 new residents to occupy Seattle by 1890, orientals were made welcome. An International District and Chinatown are features of the city's hospitality.

A great fire, started by an overturned glue pot, gutted 65 acres of business district in 1889, but failed to discourage the determined minds and broad shoulders that had built the city. Everything was quickly reconstructed on a grander and more permanent scale, giving Seattle a unique appearance of cleanliness and modernity.

The Klondike Gold Rush in 1897 undoubtedly brought greater development in Washington than in Alaska. When the *S. S. Portland* unloaded a ton of Alaskan

Small wonder, therefore, that a fire of 1889, started by an overturned glue pot, razed 64 acres of business district.

Wayside Emergency Hospital of 1899 was actually the hull of the old side-wheeler "Idaho" moored on Jackson Street.





Left, Denny Hall, first building on the University of Washington campus, was so well constructed that today, above foreground, it still serves an educational purpose.



Above, Salmon Bay is home port for the Puget Sound fishing fleet, hence the location of a busy "76" marine dock.

gold in July of that year on a Seattle dock, a feverish migration was born. People and supplies flocked from everywhere to Puget Sound. Probably more remained there to feed the northward migration than ever reached the gold fields of Alaska and Canada. From that time until now, Seattle has remained the principle transportation and provisioning center for our northernmost frontier.

Hardly had the Klondike fever begun to ebb before California's over-abundance of *black gold* started seeking markets wherever they might be found. And certainly among the *earliest birds* on Puget Sound was Union Oil Company. The oldest tankship log preserved by our Marine Department records a visit to Seattle on August 5, 1903, by Union Oil's *Steamship Argyll*. Whether she delivered cargo or merely stopped to pick up an Alaskan pilot on that occasion is not stated in the log. However, from that date forward Seattle became a port of call for such Company tankships as the *Whit-*

Over 200 Union Oilers of a considerably larger group working in Seattle posed for this photo in the office yard.





*Seattle industry nearly burst its seams in 1897, right, in supplying the Klondike Gold Rush. Soon thereafter Union Oil bought a terminal site, above, on Elliott Bay.*



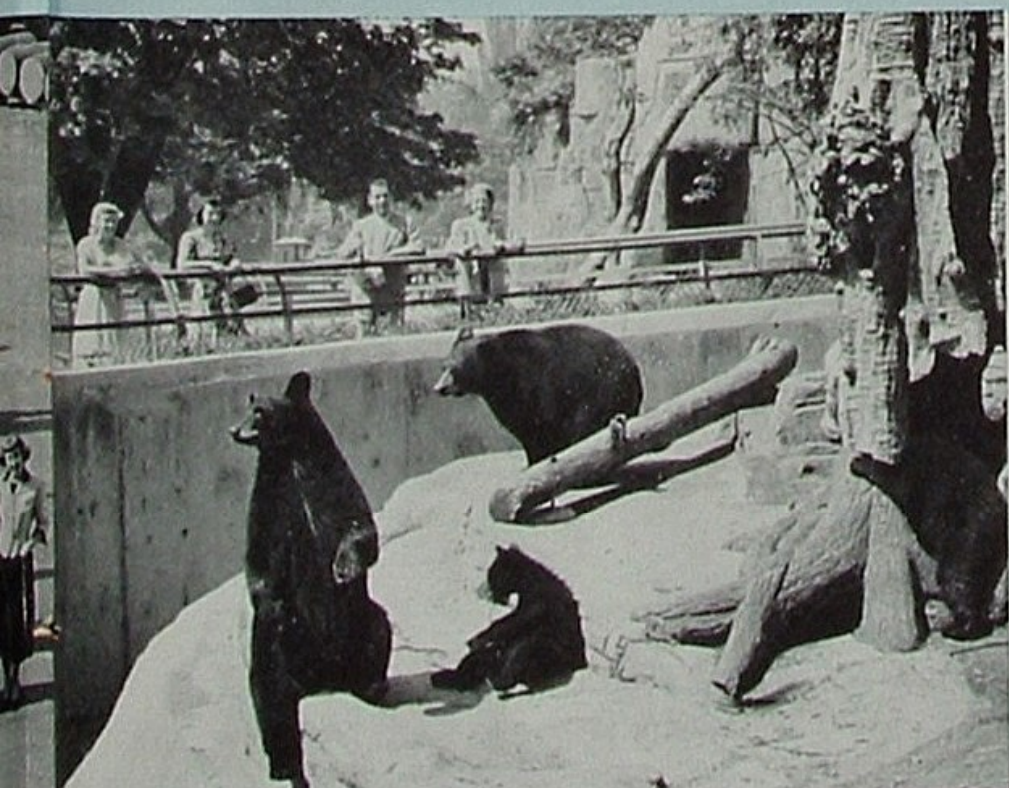
tier, Lyman Stewart, Santa Maria, Santa Rita, Lansing and their numerous successors. Their early cargoes of 21-gravity fuel oil, benzine, naphtha, kerosene, distillate and motor spirits (gasoline) were distributed for several years through Seattle jobbers. The Company's first storage tanks were erected on leased property near Duwamish Waterway in 1907. And in 1909 we set up housekeeping permanently; a section of Elliott Bay frontage, originally claimed by the pioneering Bell family, was purchased by Union for \$350,000. It is here and on adjoining lots more recently purchased that our Seattle Terminal and Northwest Territory offices are located.

Partly because Company history is linked with that of Seattle, but more especially because the future holds promise of a greatly magnified relationship, Union Oilers have taken spirited part in the 1952 Centennial and in wishing Seattle many happy centuries to come.

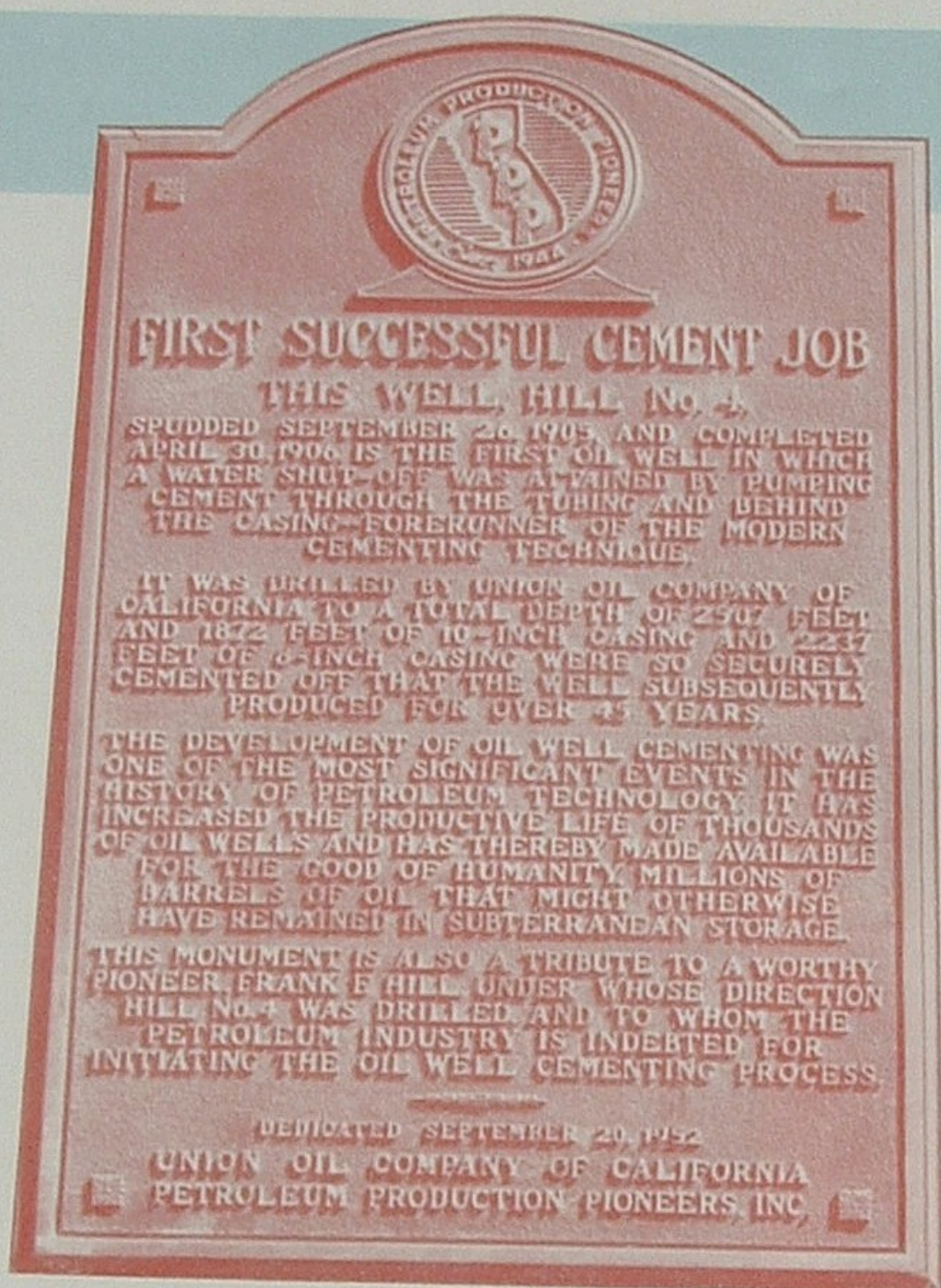


*Woodland Park Zoo is one of the city's many outdoor attractions that interest Union Oilers Sunday afternoon.*

*But on Monday you'll find them in lumber yards, aboard ships, everywhere, serving the petroleum needs of 1952.*

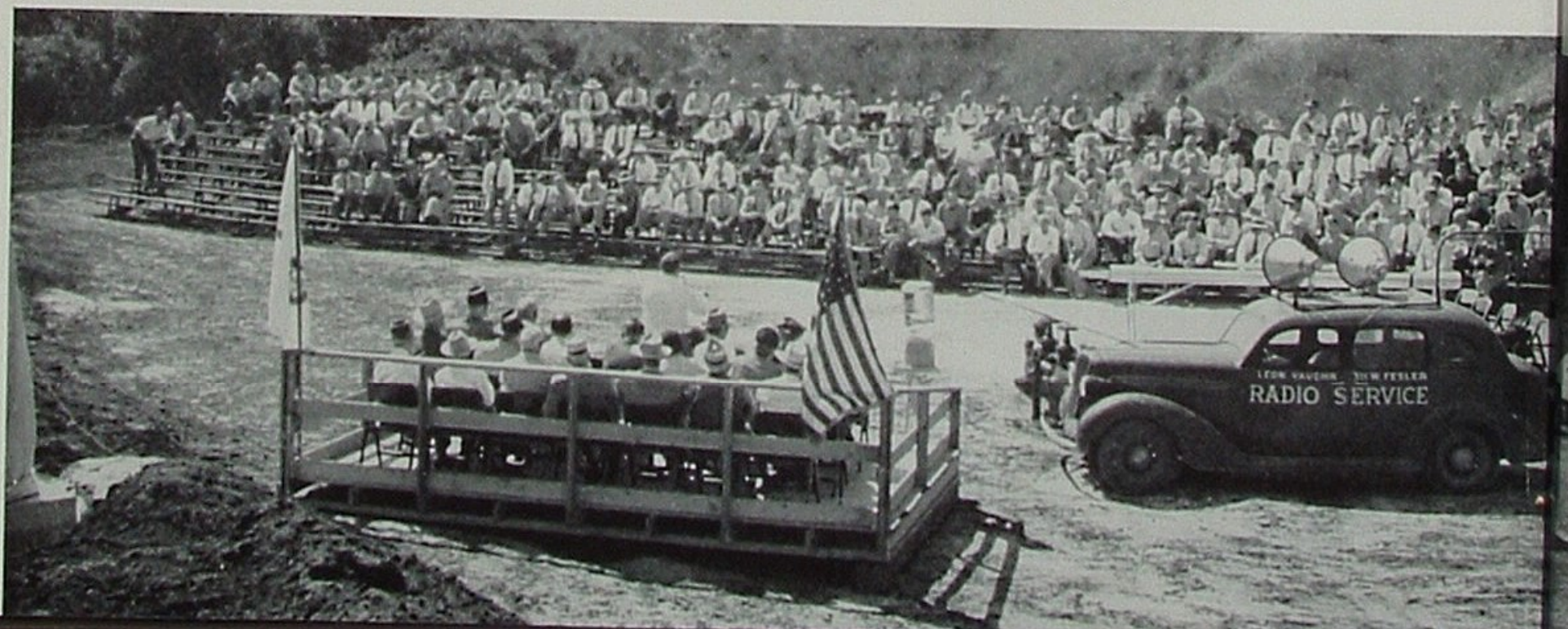


PETROLEUM PRODUCTION PIONEERS  
UNVEIL PLAGUE COMMEMORATING



Prominent at the unveiling of our "cementing" monument were, from left, Vice President A. C. Rubel, Mrs. W. W. Orcutt, widow of the famous Union Oil geologist, guest of honor Frank F. Hill.

More than 250 Petroleum Production Pioneers journeyed to the Lompoc Field for the September 20th dedication.





# The First Successful Cement Job

**F**ORTY-SEVEN YEARS AGO, in the Lompoc Field, a group of Union Oilers led by Frank F. Hill faced one of the most discouraging problems encountered by drillers of their day. While drilling a series of oil wells, they penetrated subterranean streams of water which, once tapped, persisted in following the drilling bit down into oil formations.

Practically the only remedial technique known at that time was to drive a length of casing (large pipe) through the wet zone, anchoring its tapered shoe (lower end) firmly enough in some rock formation beneath the water-bearing layers to effect a water shutoff. Occasionally this method worked. More often it shut the water off only partially or temporarily. Frequently such wells produced so much water and emulsion that it was found more economical to abandon them.

At Lompoc, Frank Hill struck upon an entirely new idea—that of using cement. He felt certain that cement would form a water-resistant bond or dam between the wet zone and casing. But getting cement back of the casing at great depths presented quite a problem.

Using a special dump-bailer designed by Hill, Union Oilers made the first cementing attempt in 1903. After drilling through a water zone, they dropped 50 feet of cement on the well bottom; then lowered a string of casing into the wet cement, forcing the latter to fill up open spaces and rock pores around the pipe. The crew then drilled through the cement plug inside the casing and found to their elation that the hole was free of water. This method was repeated several times with equal success.

However, during the drilling of Hill No. 4 at Lompoc in 1905, the dump-bailer cementing technique failed to work. For some reason, not enough cement got behind the casing to form a seal. Accordingly, Frank Hill proposed another innovation. First ordering a string of

casing installed through the wet zone, he then devised a cylindrical packer that could be attached around the lower end of a tubing (smaller pipe) string and lowered to the well bottom. Cement was then pumped down through the tubing and behind the casing, the packer acting to prevent cement from building up inside the casing. Again the idea proved sound and a water shutoff was successfully completed.

A number of improvements have been added to oil well cementing techniques during the intervening 47 years—several of them by Hill and other Union Oil engineers. But the idea originated under the nose of Mother Necessity at our Hill No. 4 during the winter of 1905-06. It was quickly adopted by the entire petroleum industry and is credited with saving thousands of wells and countless barrels of oil. In fact it is a state law in many areas that oil and gas resources be protected through approved cementing practices under the direction of state mineralogists.

Keenly appreciative of past achievements to which the oil industry owes much of its greatness, Petroleum Production Pioneers, Inc., an organization of the West's foremost oil men, elected to make Frank Hill's achievement a matter of permanent record. They convened in the Lompoc Field on September 20, 1952; summoned as their guest of honor and principal speaker Frank F. Hill himself; and, next to the famous old well, unveiled a bronze plaque. It preserves for future generations the story and location of a truly great accomplishment.

Perhaps few people will find their way to the plaque located in a remote corner of our property. But those who do should find it a source of inspiration. And hopefully they will accord an approving thought to the men who placed it there.

*Guest Speaker Frank F. Hill recalled from memory how a water shutoff saved the well—still producing after 47 years.*



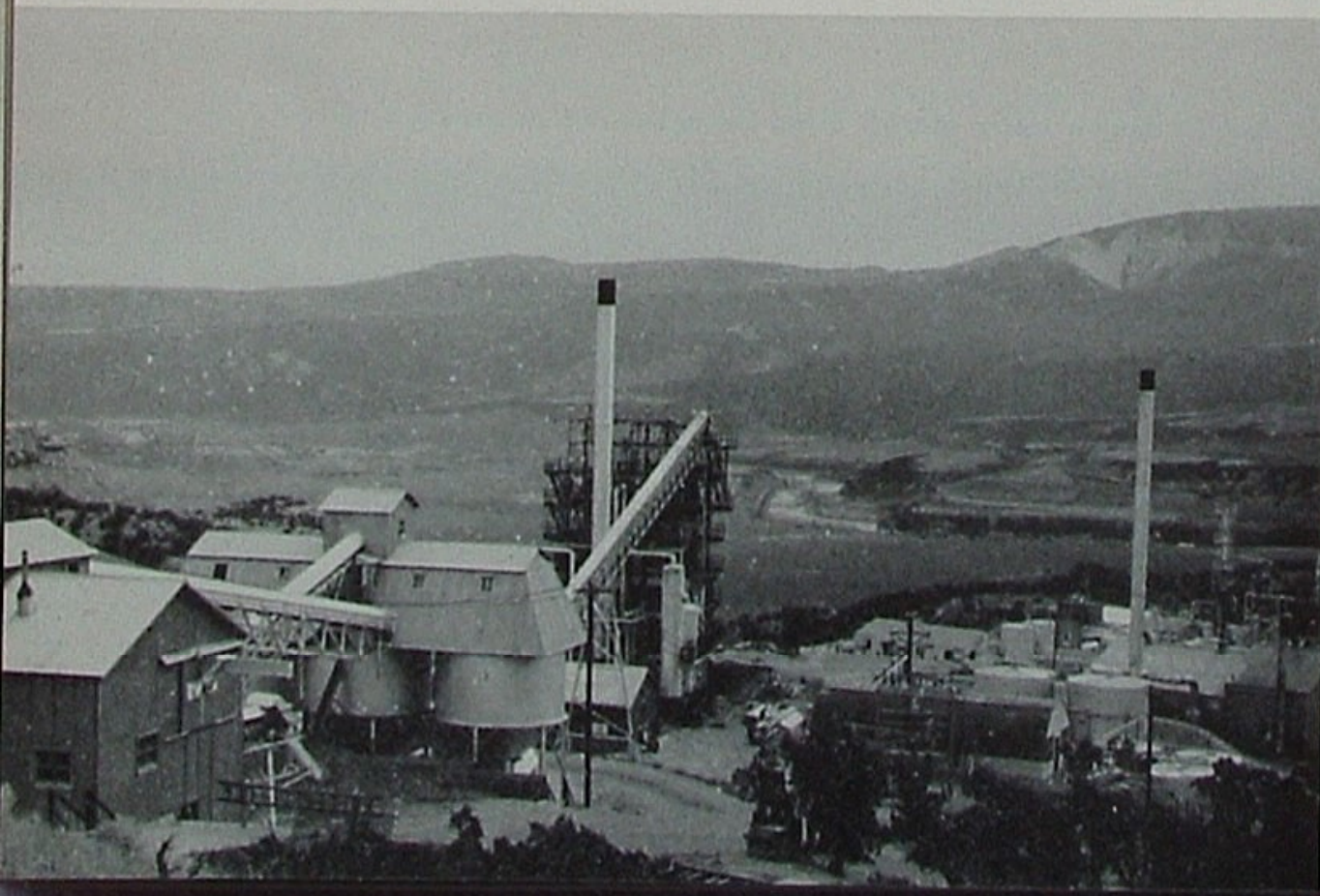


Over 20 square miles of property owned by Union Oil in Piceance Creek Basin of Northwestern Colorado will yield 30 gallons of oil per ton from a 70-foot thick layer known as the "mahogany ledge"—richest oil shale in the U. S.

## The Present Status of OIL SHALE

Address by Reese H. Taylor, President  
Union Oil Company of California  
To Texas Mid-Continent Oil & Gas Association  
Annual Meeting—Fort Worth, Texas  
October 15, 1952

Obtaining an appropriation from Congress in 1944, the U. S. Bureau of Mines opened an experimental test mine near Rifle, Colorado. They have done excellent work in engineering economical methods of mining this oil shale.



MR. CHAIRMAN and members of the Texas-Mid-Continent Oil and Gas Association, it is a distinct privilege to attend this meeting, and I wish to thank your Committee for giving me the opportunity of addressing you. I believe it only fair to announce that the subject of my talk today was given to me by Bob Windfohr, and I sincerely hope you will find some interest in this discussion of "OIL SHALE."

They say that the late Bill Knudsen of General Motors was sitting in his office one day when an assistant rushed in, all out of breath and completely upset because a certain report was missing. How could they act?

Knudsen quieted the young man down and said very calmly, "There are two kinds of reports. One says you can't do it. The other says it has been done. The first kind is no good. The second kind you don't need."

This report that I've been asked to give you this morning—on oil shale—is somewhere in between Bill Knudsen's two categories. It doesn't say that it *has been done*. But, on the other hand, it doesn't say that you *can't do it* either—at a price. Like so many other problems that face us today, it depends to a great extent on what developments take place in the next five or ten or fifteen years. And, if you'll accept that qualification, I would like to try to bring the oil shale situation up-to-date.

As most of you know, oil shale is found in many 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 was slow and in which abundant organic matter lived or was accumulated.

The most extensive oil shale deposit in the United States is the black shale of the Chattanooga formation—which extends into Indiana, Kentucky, and Ohio and is also found in fourteen surrounding states. However, the best of the oil shale of the Chattanooga formation will probably not yield over fifteen gallons of oil per ton of shale.

So this morning we will concern ourselves with the richest oil shale deposits so far discovered in the United States, those located in the Green River formation of Colorado, Utah, and Wyoming.

Some 60 million years ago, southwestern Wyoming, northwestern Colorado, and northeastern Utah had a warm, moist climate and contained two large lakes. The Wyoming Lake, known geologically 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 ex-

tent. They are relatively flat-lying and are not known to be faulted or fractured.

Since oil shale is resistant to erosion, it has formed the tops of three plateaus—one in each of the states of Colorado, Utah, and Wyoming. The Colorado River and its tributaries have cut deep valleys through these plateaus—a very considerate act on the part of Mother Nature which greatly facilitates the mining and processing of these particular formations.

Of the three major structures, the Piceance Creek Basin of northwestern Colorado contains the thickest and highest grade oil shale deposits known in the United States. Its mahogany ledge, a group of 70' thick oil shale beds that average 30 gallons of shale oil to the ton, contains an estimated 100 billion barrels of shale oil reserves—over three times our present proved U. S. petroleum reserves.

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. The rock is strong and tough but soft enough to be carved with a knife. When ignited it burns rapidly and gives off a high heat. As all of you know, the shale does not contain oil but Kerogen—an organic solid which breaks down into oil and coke when heated above 750 degrees Fahrenheit. The gravity of the oil thus obtained averages 20-22 degrees API.

So much for the general background.

My own Company first became interested in the Piceance Creek Basin deposits in the early 20's. Right after World War I, as many of you remember, there was a period of petroleum shortages here in the United States. All of us were casting around for new sources of raw material. Consequently, Union Oil Company bought 20-odd square miles of some of the richest of these deposits located near the town of Rifle in northwest Colorado.

Shortly after the purchase, however, a whole new flood of petroleum discoveries was made in California. In fact, we had petroleum running out of our ears. So nothing further was done with the properties until 1943-1944.

At that time, the Bureau of Mines began to take an interest in oil shale as a possible source of liquid fuels for the future. In 1944 they asked Congress for an appropriation to carry on some experimental and development work in oil shale mining techniques. The appropriation was granted and an experimental test mine was opened near Rifle, Colorado.

At this point I'm going to have to make a semi-public apology.

I don't think any of you here this morning are unaware of my opinions about the overall efficiency of the average government bureau. Certainly I've spoken my piece often enough in oil circles about the waste, the inefficiency, and the loss of individual incentive that go hand in hand with any government-operated enterprise. My opinion on this—as a general principle

—hasn't changed.

But I will have to acknowledge that the government engineers from the Bureau of Mines who went to work at Rifle certainly came up with an exception that proved the rule.

Here is what happened.

The very first step these young engineers from the Bureau of Mines took—which seemed pretty sensible—was to call in several coal and hard-rock mining specialists from all over the country. They asked these men to make an outside appraisal of the problems and techniques involved in mining this particular Piceance Creek Basin shale.

After careful study, the specialists said that the shale would have to be mined from the 70 foot beds that were exposed along the canyon walls by conventional open-pit methods—by digging in from the side and shoring up the chambers or caverns as you went along. Mining in this way, with conventional equipment, would get the raw shale out to the crushers and retorts at mining costs as high as \$4.50 per ton.

This figure came as quite a shock. With shale that assayed 30 gallons of oil to the ton, it meant that the mining costs per gallon of shale oil alone, before retorting, refining, or transportation, would amount to 15c—more than the price per gallon of finished gasoline. (But that was the estimate.)

If the Bureau of Mines people had accepted that report as the final word, I wouldn't be talking to you about shale oil today. But to their credit they didn't. Instead they went to work. They made some modifications on conventional heavy mining equipment. They discovered that they could eliminate shoring altogether and mine out rooms or chambers 100 feet square and 70 feet high by leaving pillars of unremoved shale to support the chamber roofs. They developed methods of blasting that cut their dynamite costs from approximately 50c per ton to 6c. And they did a number of other things.

As a result of these improved techniques, they can now mine oil shale on a commercial basis for 56c per ton—1/8th of what the experts estimated it would cost seven years ago.

While all this was going on, our research people at Union Oil were working on the retorting phase of the project—how to extract the oil from the shale on an economical basis.

Because of the vast amount of material to be processed, we felt that the shale had to be crushed and retorted as near the mine portals as possible—preferably right below them where gravity feeding could be used to move the tons of mined material.

Since the shale ledges are 1,000 to 3,000 feet above the valley floor in a region that is semi-arid, water for heat exchange purposes was a serious problem.

Consequently, our people set out to de-

velop a retort that didn't require water. The solution they came up with was about as ingenious as anything that has come out of our laboratories in years. I can say this because I had absolutely nothing to do with it.

Starting out with the fact that shale creates its own heat by burning off the carbonaceous material that exists in the rock, Union Oil designed a retort that was fed from the bottom and burned at the top. As the hydraulic rams at the bottom of the hopper push the cold shale up into the retort, the top layer burns. Hot gases from this combustion are drawn, by blowers, down through the unignited shale which is slowly rising. At the first stage these hot gases heat the shale sufficiently to separate the shale oil from the rock. Then, as the combined hot gases and evaporated shale oil reach the successively lower and cooler layers of upcoming shale, the oil gases condense into liquid form and are drawn out the sides at the bottom of the retort.

Thus the shale itself not only supplies the heat for the process but also provides the cooling and heat exchange as well. When you combine this with the fact that the retort effects a hydrocarbon recovery of approximately 100%, and that even the ashes that form on the top automatically drop over the edge into specially designed chutes for waste disposal, you can see that the whole operation comes just about as close to commercial perpetual motion as anything in recent years.

In 1950, after ironing all the wrinkles out of the model, we built a pilot shale oil retort in California at our Wilmington Refinery. This retort has a 50-ton per day capacity, and we have run it on shale shipped from Colorado. Consequently, we are fairly well versed in the techniques and requirements of retorting shale oil and refining it into conventional products.

The result of all this activity during the last seven or eight years is that today the major engineering, mining, and manufacturing problems of producing refined products from Colorado oil shale on a commercial basis are pretty well solved. We know, in a broad sense, how to do it and what it requires.

The next phase to consider is the economic side of the question. How will the cost of shale oil products today stack up against comparable products derived from petroleum? On this one, we probably have more high-priced talent to testify for us than was ever assembled on one project in the history of the oil industry.

Last year, at the request of Secretary of Interior Chapman, the National Petroleum Council set up a Committee on Synthetic Liquid Fuels Production Costs. This Committee was asked by the Secretary of Interior to study the economics of producing synthetic fuels from coal hydrogenation, coal synthesis, and oil shale. Besides the main Committee—which included about a dozen oil company presidents, including

myself (and which, in true industry fashion, promptly delegated all the hard work to someone else)—there were five sub-committees: a sub-committee on production, on raw materials, on processes, on engineering, and on economics. These sub-committees, together with an untold number of departmental personnel from the companies represented, have already devoted well over a million dollars worth of time and talent to exhaustive studies of two of these three synthetic fuel possibilities.

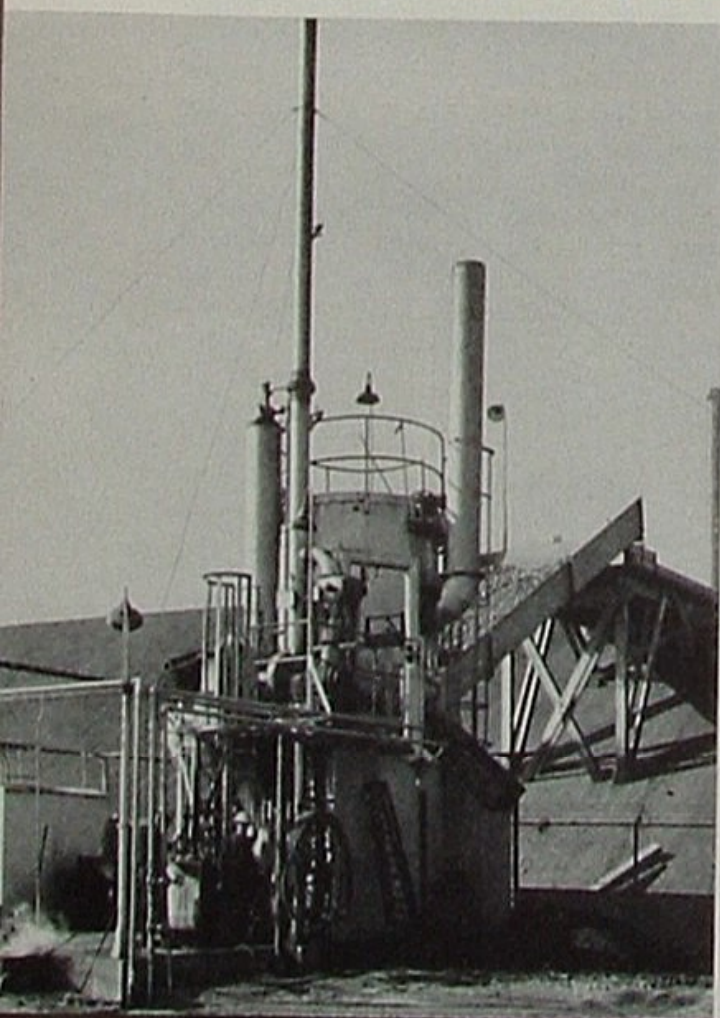
Their study of coal synthesis has not yet been completed. And of their findings on the production costs of coal hydrogenation and coal synthesis, I will say nothing. Plenty has been said on this subject already.

But their figures on *oil shale* were very interesting. Not only did our National Petroleum Council Committee's estimates match up quite closely with those arrived at independently by the Bureau of Mines, but both sets of figures showed that the economic feasibility of producing liquid fuels from oil shale is closer than many people think.

For purposes of the study, our Committee took finished products at Los Angeles as a base for the comparison. The figures would apply equally to finished products at Chicago or St. Louis, for, in both instances, the pipe line haul from western Colorado would be about the same. But Los Angeles was chosen because the demand for petroleum products on the Coast, in relation to the rate of development of new petroleum reserves, has increased so rapidly.

The study showed first that the shale oil should be partially refined at a central refinery near the mines. Second, that this refinery, to be efficient from an economic

*This retort of Union Oil design, using carbonaceous material in the rock for fuel, extracts oil from shale with an efficiency of nearly 100 percent.*



standpoint, should consist of at least two units, each with a raw shale capacity of 25,000 B/CD—or 50,000 barrels in all.

To keep 50,000 B/CD of shale oil feeding into the refinery units, four base mining and retorting units would be required—each capable of mining and retorting 20,000 tons of oil shale daily.

And now let's get at the costs. All told it is estimated that these plants and mines would cost 305 million dollars. In addition, 27 million dollars more would be needed to supply housing for employees in the area. So that makes a grand total of 332 million dollars for a complete set-up capable of mining and processing 50,000 barrels of raw shale oil daily.

When all the costs of operating such a plant are added up, including a 6% return after taxes on the capital investment (a very low rate of return for this kind of venture), and the pipe line charges to Los Angeles are added, we find that a gallon of gasoline produced by this process would cost 16.2c at Los Angeles. The present equivalent price of gasoline at Los Angeles is approximately 12c.

By building five plants of this basic unit size in the area, and thereby increasing the efficiency of pipe line shipments, the cost of the finished gasoline could be reduced to 14.7c per gallon. But this would require a capital investment of 1½ billion dollars.

Before we jump to any conclusions from those figures, however, we should consider three points.

*First*, there is no provision in these figures for the cost of raw shale—before it is mined. Unlike crude oil reserves, there is no accepted figure for the value of shale oil reserves in the ground. And there won't be any such figure until the production of shale oil becomes commercially feasible. Only then will a market for oil shale come into existence which will establish oil shale reserve prices. Until that time, we can't calculate what the value of the raw shale would add to the cost of the finished products.

*Second*, the investment per-barrel-a-day of processing capacity for an oil shale operation is high—\$8,400 per daily barrel of liquid production. There is no comparable figure for petroleum because of the difficulty of establishing an accurate measure of the cost of finding petroleum reserves. But we all know that the investment per-barrel-a-day of petroleum is lower than \$8,400.

*Third*, and finally, a 6% return after taxes on an investment of this kind—the figure used by the NPC Committee in estimating operating costs—is admitted by everyone concerned to be too low. The Committee itself stated in its report that a more realistic figure would be 15%. The risk of obsolescence in a venture of this kind is too high for a 6% return.

In spite of these qualifications, however, the NPC Committee report does indicate that the production of shale oil, on a commercial basis, is closer to realization than

many people appreciate. Any substantial increase in the costs of producing petroleum or any further major economies that might be developed in oil shale processing operations, would bring the two raw materials pretty well in line.

At least there is this to be said for oil shale: we know in advance where vast quantities of these reserves are located. We don't have to look for them; they are accessible and ready to mine. When you realize that 1.4 square miles of Colorado shale will produce 12,500 barrels daily for 20 years—and that there are hundreds of square miles of these deposits already located—you can see that oil shale reserves are not comparable to petroleum reserves. Finding the latter is an expensive proposition and this expense must be reflected in the price, or value, of the oil underground. Finding oil shale reserves, on the other hand, is a comparatively simple proposition.

How fast the commercial production of shale oil will come about is anybody's guess. The one thing I *am* sure of is this. If the American people are going to *realize the full potential* of the oil shale with which providence has endowed them, they will have to make absolutely sure that this tremendous natural resource is developed—when it is developed—by private industry.

The reasons for this are obvious enough to anyone who has studied the history of the world's oil development. In every instance, a nation's progress in the development of its petroleum resources *has been in direct ratio* to the degree to which private industry has been allowed to develop those resources. Our own country is the most outstanding example of this.

Here, where the industry has been permitted to develop along privately-managed lines to a greater extent than in any other country, we have far outstripped the oil industries of other nations. In fact, progress has been so rapid and extensive that for a number of years there was a widespread belief that providence had endowed the United States with more than its share of petroleum deposits.

But the more we learn about petroleum geology, however, the more this belief is discredited. When we take an oil geologist's map of the world today, and make a rough approximation of the areas considered *favorable* for the development of oil, we find that not more than ⅓th of those favorable areas lie within the boundaries of the United States.

Yet 1/3rd of the proved oil reserves in the world are located within the United States.

In other words, we've *discovered* much more of the oil nature gave us than other nations have. And if you throw in the work our American oil men have done in foreign countries, you find that our U. S. oil industry has found more than 2/3rds of the crude oil reserves so far discovered in the entire world.

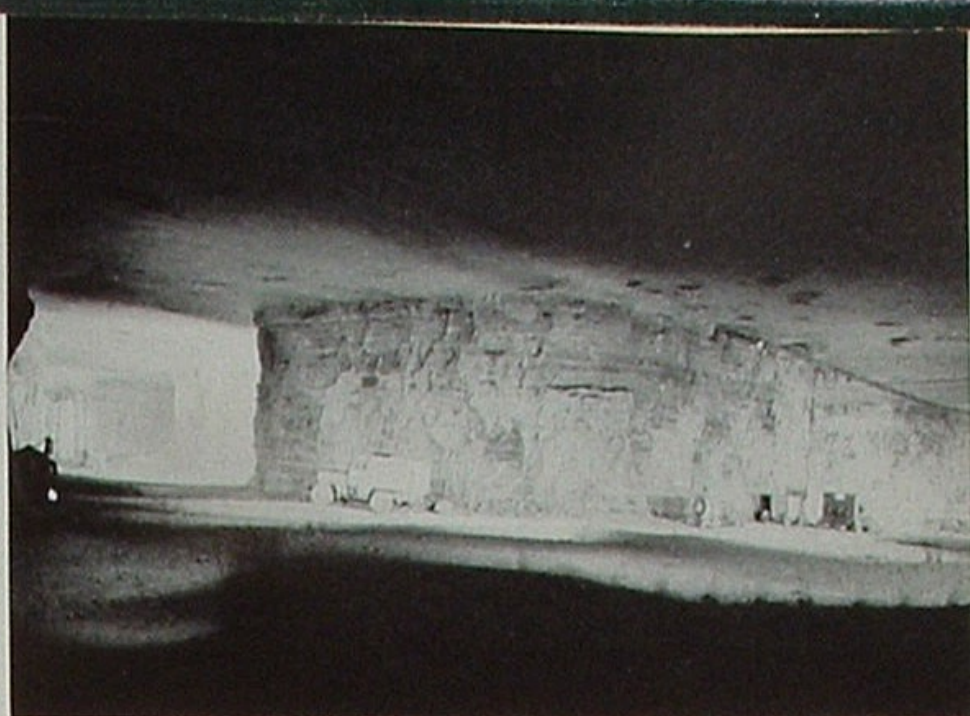
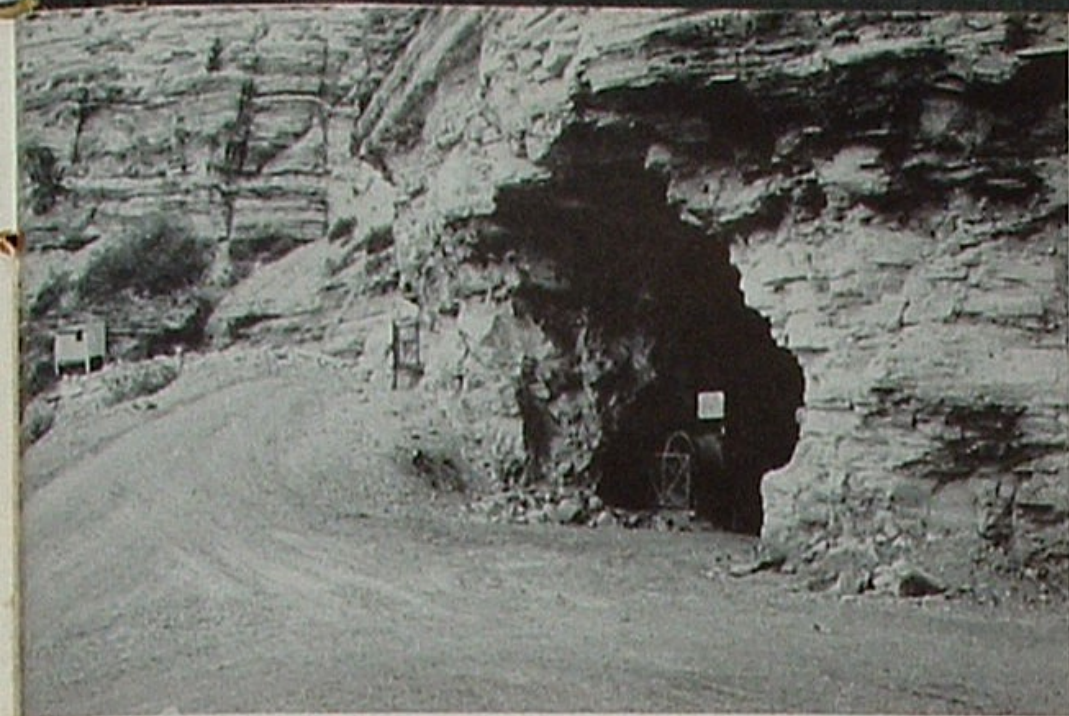


photo courtesy U. S. Bureau of Mines

Furthermore, the progress in exploration and development has been matched by our progress in refining, transportation, and marketing.

No matter which way you turn, you find that a privately-managed oil industry does a far better job of developing a nation's resources than even the best run government-managed industry.

One of the most convincing demonstrations of this principle in our time, is the case of Mexico versus Canada. Up until 1938, when the Mexican government expropriated the oil industry in Mexico, that country was well on its way to becoming one of the major oil producing areas of the Western Hemisphere. Canada, on the other hand, was practically undeveloped. If the Mexican government had continued to allow private oil companies and private individuals to develop the oil resources of the country, I have no doubt at all that much of the non-domestic efforts of the American oil companies would have been directed to that area. Certainly Mexican oil presented the most likely prospects in the areas immediately adjacent to the United States.

But as soon as the government took over the Mexican oil industry, private industry was frightened away. In search for other outlets, it entered Canada where—even though the prospects for oil were practically unproven—the government did give every assurance of allowing private industry to operate unmolested.

The results of all this are today, of course, history. Mexico, with an oil industry that is largely government-managed, is very little farther along in the development of its oil resources than it was in 1938 when the expropriation took place. Canada, on the other hand, which was practically starting from scratch in 1938, is literally booming.

Now there may be some who will argue that the reason for Mexico's lack of progress, since the government decided to develop its own oil resources, is due to the lack of skill and experience of the men assigned to the task.

But it is my contention that no matter how skilled the personnel may be, nor how

broad their experience, no government-operated enterprise can ever approach the efficiency of a privately-managed enterprise—nor match its progress. This has been demonstrated dozens of times in our own lifetime and literally hundreds of times in the recorded history of the human race.

There are at least four good reasons for this—probably more.

*First*, a government-run enterprise has no profit and loss yardstick by which it can measure the efficiency of its various operations and departments. In a government-run enterprise, an operation or a department may be running at a staggering loss—or performing a completely uneconomic function—but it never shows up on a balance sheet.

*Second*, a government-run enterprise of this type usually becomes a monopoly with no outside operations of a similar nature with which to compare it. In other words, there is now way of proving its worth or efficiency. And there is no competition to spur it on to better performance.

*Third*, a government-run enterprise smothers human incentive. No matter how ambitious and energetic government employees may be when they start, sooner or later the majority settle down into the old bureaucratic attitude of "don't stick your neck out, don't take a chance—they can never hang you for what you didn't do, but they can sure throw you out for making a mistake." This is no more than you can expect from human nature when you remove wage incentives from economic considerations and eliminate profit incentives altogether.

*Fourth* and finally, a government-run enterprise finds it difficult, if not impossible, to anticipate and meet the economic needs and wishes of the public. Without a free market, there is no way for the public to express its relative demand for different products at different prices. And since a government-run enterprise is financed out of tax funds rather than from private investors, there is no way for it to measure the relative desirability of different capital expenditures by submitting those proposals to a free investment market.

In view of all this, the American people

could hardly do a greater disservice to future generations of this country than it would by permitting the Federal Government to go into the oil business by way of building and operating oil shale plants. For there is no doubt in my mind that oil shale will play a major part in the economy of those future generations. And if they are going to make as much progress in their time with oil shale, as we have in our time with petroleum, it is absolutely imperative that they leave the development of this great new natural resource to private industry.

*The Bureau of Mines people discovered they could mine out rooms 100 feet square and 70 feet high—leave pillars of unremoved shale to support the rock ceiling—reduce dynamite costs of blasting from 50 cents to 6 cents per ton of shale—and so on. As a result of these improved techniques, they can now mine oil shale on a commercial basis for 56 cents per ton—one-eighth of what the experts estimated it would cost seven years ago.*

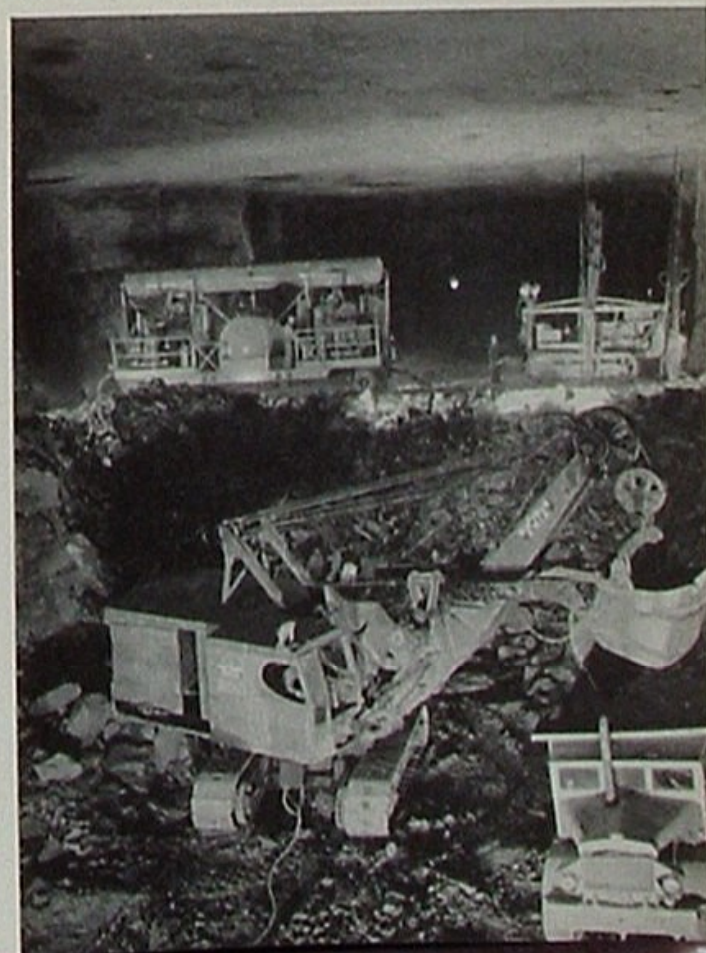


photo courtesy U. S. Bureau of Mines



Heading our Industrial Relations Department are Vice President W. C. Stevenson and Manager C. M. Harnois.



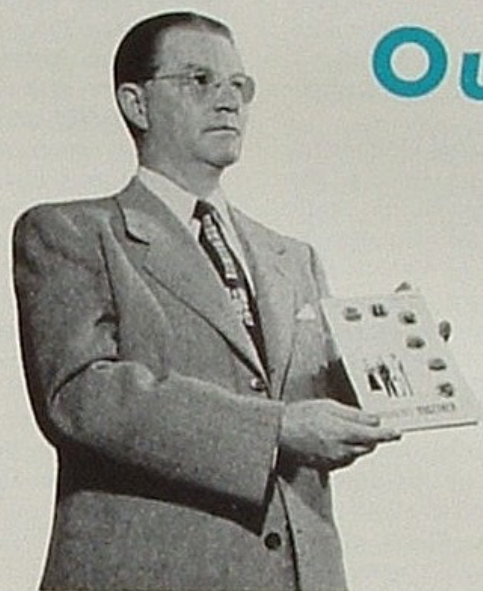
Gene M. Clay, left, is secretary to John P. Rockefeller, who supervises employment and technical recruitment. Homer J. Law, below, guides employee policy development.



Ethel Farnsworth, left, and Flossy Parker handle secretarial and clerical duties for departmental management.

## MEET THE PEOPLE WHO COMPRISE

# Our Industrial



PEOPLE are by far the greatest asset of any corporation. For behind every plan, improvement and accomplishment are the hands, minds and loyalties of men and women.

Recognizing this obvious yet oftentimes overlooked fact, Union Oil Company has for many years regarded the field of human relations as one of its paramount concerns. Management has looked at every new employee not only for what he is today but for what he may become tomorrow. It has been the Union Oil aim to fill every job with the most compe-

G. G. Chappell, left, is in charge of supervisory training. Below are J. A. Bernhard, Mabel Brown and R. K. Overpeck, who recruit, interview and induct Home Office employees.



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Margaret Osteraas is clerical assistant to John Y. Quayle, supervisor of labor economics, whose major concern is to keep Company wage patterns in line with laws and contracts



Supervisor C. H. Miller, left, and Representatives J. G. Fulton, J. F. McGowan, L. K. Craton and S. A. Titus are specialists in wage and salary administration problems.

## Industrial Relations Department

tent person available; to offer the employee every feasible incentive and opportunity for personal development; and to see that he is fairly compensated for services rendered.

The group into whose custody much of the Company's human relations program is entrusted is known as the Industrial Relations Department. It is located in Home Office, Los Angeles. It is a *staff* rather than a *line* organization, meaning that it serves largely in an advisory capacity to the operating and other staff departments.

In accompanying photographs, ON TOUR is pleased to introduce the men and women of this department. They report to Executive Vice President W. L. Stewart, Jr. Heading the department is Vice President W. C. Stevenson, and recently appointed as manager of Industrial Relations is Creston Harnois. The following is a brief description of departmental functions under their

direction.

EMPLOYMENT AND TECHNICAL RECRUITMENT activities are managed by J. P. Rockfellow with his staff assistants, J. A. Bernard and R. K. Overpeck. They are instrumental in recruiting and employing Home Office and professional personnel. When a new employee is inducted, his introduction and training are initiated by this group directly or through indoctrination programs administered by them. Mr. Rockfellow personally visits various technical schools and universities in quest of qualified graduates to fill the Company's ever-growing requirements.

POLICY DEVELOPMENT, under Homer J. Law and his stenographer assistant, is concerned principally with the research and development of personnel policies and benefit plans. Here a watchful eye is kept over the entire field of industrial insurances and benefits including what

C. H. Van Marter, fire prevention engineer, uses classroom techniques in training employee fire fighters.

J. E. Hill, right, supervisor of fire prevention and safety, has Engineer J. T. King to assist him with safety training programs.

T. D. Collett and R. C. Hagen are editor and assistant editor of the Union Oil publication "On Tour."





*Stenos Dorothy Dwyer and Helen Hampton assist H. J. Law and G. G. Chappell in policy department and training.*

other employers are doing. The supervisor assists other departments in the handling of individual cases in a manner that will best safeguard the employee's and the Company's interests consistent with the framework of the various policies and benefit plans.

**FIRE AND SAFETY**, under supervision of James E. Hill, uses the specialized services of Fire Prevention Engineer C. H. Van Marter and Safety Engineer John T. King. They promote a balanced program of training in safe practices and recommending safeguards to prevent injuries and property losses. Through their research and adoption of constantly improving methods, the average Union Oiler is safer on the job than on the highway or in his own home.

**WAGE AND SALARY ADMINISTRATION** is under the supervision of Charles H. Miller, who is assisted by Starr Titus, James Fulton, James McGowan and Leroy Craton. Their work requires continual studies of rates of pay and methods of compensation used by the Company, also up-to-the-minute information on wage and salary trends in the petroleum and other industries. In their studies of Company jobs, they are assisted by job analysts of other departments. After evaluating such analyses, the Wage and Salary group recommend rates of pay and salary ranges. Finally, they assist all departments in administering the Company's wage and salary

*Marguerite Mead and Lina King handle clerical and stenographic work of wage and salary administration group.*



*Helen Watt and Marjorie Rutledge aid J. E. Hill, C. H. Van Marter and J. T. King in safety and fire prevention.*

policies in order to assure fair and equitable compensation throughout.

**LEGISLATION AND LABOR AGREEMENTS** are the concern of Supervisor John Y. Quayle and his clerical assistant. Through delegated study of rules, regulations and trends pertaining to wages, hours and working conditions, Company managers are given trouble-saving advice in negotiating labor contracts and in maintaining an equitable administration of wage policy Company-wide.

**SUPERVISORY TRAINING PROGRAMS** are administered under Supervisor G. G. Chappell, a stenographic assistant, and various training supervisors in other operating departments. Their objective is to provide continuing programs for the development of leadership, improvement of management techniques, and preparation of supervisors to assume higher executive responsibilities. Through this forward-looking program comes a large proportion of the men who manage our business and operations.

**EMPLOYEE PUBLICATIONS** are the responsibility of Editor T. D. Collett, Assistant Editor R. C. Hagen, and numerous correspondents throughout the Company. They function to provide a medium of two-way communication through which the plans, activities and accomplishments of all Union Oil departments may become better known and our people better acquainted.

*Draftsman LaRue Wiles and Stenographers Florence Benty and Mildred Surenkamp are with the wage and salary group.*







# INDUSTRIAL SUMMARY

● **COMPTROLLER'S** At the request of the Exploration Department, due to increased activity in the Williston Basin area, an accounting office is being established in conjunction with field headquarters at Bismark, North Dakota. T. M. Ragland, formerly of Field and Refinery auditing, has been transferred to the new office as division accountant.

This will be the sixth of such offices which provide supplemental Comptroller's Department accounting services at various field locations.

In the policy year ended September 30, 1952, the aggregate of death and total permanent disability claims under Employees' Group Insurance policies was \$878,750. This compares with \$395,750 during the preceding policy year.

A request was recently received by the Company from the Los Angeles Chapter of the American Red Cross for any assistance that could be rendered in simplifying some of their accounting procedures. R. L. Cain, systems auditor, has completed a review of the handling and offered several suggestions which will mean a substantial reduction in clerical work.

Mention was made in ON TOUR of January, 1952, of a new gauging device developed by L. J. Anderson, Gauge Tables, which has been patented by the Company. Subsequently, an article describing the Anderson Liquid Gauge Recorder appeared in the August 20th issue of the National Petroleum News and some one hundred inquiries have now been received from various individuals and oil companies, including letters from Stockholm, Sweden, Rotterdam, Holland, and Dakar, Africa. In view of the manifest interest, the Company is proceeding with arrangements for the manufacture and distribution of this instrument.

*from Irving J. Hancock*

● **MANUFACTURING** The production of Union 7600 motor gasoline has increased 18 per cent during the past year as the result of improved refining techniques. In addition, the quality of this premium gasoline has been improved.

The operation of our Edmonds Refinery during 1952 to date has been very satisfactory, with asphalt production for the entire year of 1952 anticipated as double the tonnage produced during the first seven months the refinery operated in 1951.

The government restriction on the use of tetraethyl lead used in motor fuels has been removed. This restriction had been in effect for the past 18 months and had resulted in considerable expense and worry to petroleum refiners to maintain the quality of motor gasoline and to meet increasing demands of the motoring public for motor gasoline.

*from K. E. Kingman*

● **MARKETING** Final results in the three-month Royal Triton Round-Up sales incentive campaign conducted throughout our eastern marketing area confirm the high standing indicated in preliminary reports. The total sales of Royal Triton, T5X, Unitec, Unoba and Red Line AP Gear lubricants reported by the 25 participating distributors amounted to 112 per cent of their combined quotas. Since quotas were established by adding 15 per cent to estimated normal sales, final figures indicate a sales increase in excess of 25 per cent above normal.

Under Union Oil Company supervision a new \$100,000 retail unit has been built for the Post Exchange at Fort Richardson, near Anchorage, Alaska. The station is operating 16 hours a day with a crew of 12 men each shift, in addition to the cashier and manager. Estimated gasoline sales are 70,000 gallons per month. The station opened just in time to participate in the winter change to sub-zero crankcase, transmission and differential lubricants. Sale of tires and batteries, in preparation for the severe weather, is exceptionally high.

We have received a contract from the Armed Services Petroleum Agency for a total of 1,320,000 barrels of Bunker Fuel Oil, to be delivered by December 13, 1952. As a part of the contract, Union will blend this fuel with cutter stock supplied by the Navy to produce specification quality Navy Special Fuel Oil. This unique arrangement is brought about by the short supply of

cutter stock on the West Coast coupled with heavy demand for special quality fuel oil by the Navy.

Under the sponsorship of the Western Association of State Highway Officials, an asphalt test road has been built near Malad City, Idaho. The purpose of this test road is to determine scientific data on various types of asphalt construction. Union Oil Company will cooperate in the test by contributing a part of the fuels, lubricating oils and greases for the trucks to be used in running the test.

*from Roy Linden*

• **FIELD** The Field Department spends a considerable amount of its allotted funds in reimbursing other operators for the work and services they perform for us as the operators for joint accounts. At the present time, for instance, we are operating 31 active drilling wells, while 16 wells in which we have an interest are being drilled by others. Our share as non-operator of a joint account may vary from one-eighth to one-half.

Important examples of this type of operation are being conducted in our Gulf Division. Earlier this year, the Republic Natural Gas Company made a discovery, now called the "Ewing Field," for our joint account in San Patricio County, Texas, and since then has drilled five producing wells, each with an initial flowing production of approximately 150 barrels per day of 41-gravity. In the north portion of the Tigre Lagoon Field, Phillips Petroleum Company very recently completed the jointly-owned Broussard 1 well as an important gas-condensate completion. Our interest in this lease is 49½ per cent. The Texas Company is engaged in a program of exploratory drilling for the joint account on the flanks of the Bay Junop salt dome in Terrebonne Parish, Louisiana. Union and Texas each have a one-half interest in this venture.

Turning far to the north, a very promising exploratory program has been under way for some time in the Fort St. John area, in northeastern British Columbia. This work is being done by Pacific Petroleum, Ltd., and our interest in the project is one-eighth. Already very substantial reserves of gas have been established over a wide area on this prospect. A large portion of our other operations in Western Canada is conducted by the Hudson's Bay Oil and Gas Company for our joint account.

In this connection, a type of joint operation which is becoming more and more prevalent in exploratory work is the "farm-out." This is a method used to minimize cash outlay in evaluating prospective oil lands and involves the assignment of leasehold rights in exchange for the drilling of one or more exploratory wells. Under one type of "farm-out," the operator assuming the obligation to drill, in return for the assignment of a fraction of the leasehold rights, will drill a well free of cost to the party from whom he acquires the "farm-out." An alternative procedure is to give the operator taking the "farm-out" the lease title to selected tracts of leased acreage, the first party retaining a protective acreage position. The information obtained from the operator's drilling is available to the first party and



*For having exceeded a million man-hours without experiencing a lost-time accident, our Research and Process Department has been cited by the American Safety Council. Executive Vice President W. L. Stewart, Jr., left, passed the award to the department via Vice President C. E. Swift.*

enables his decision as to the disposition of the leases he retains. The terms of "farm-out" agreements vary in type considerably and are being used by the Company to help evaluate its extensive leases in several areas, principally at present in the Rocky Mountain and in the West Texas Divisions.

*from Sam Grinsfelder*

• **RESEARCH and PROCESS** In order to effectively correlate Research investigations with Manufacturing problems, Coordinating Committees have been established for all projects which bear directly on current and projected refinery operations. Members of the several committees comprise representatives from the Research Division, Manufacturing Process, Manufacturing Economics and the Oleum and Los Angeles refineries. Similar committees of Research and Field Department personnel have been operating for some time to guide production research activities and have proved to be very effective.

Rowland C. Hansford, Research Division Group Leader, served as chairman of the Gordon Research Conference on Catalysis held recently in New London, New Hampshire. The week-long conference, sponsored by the American Association for the Advancement of Science, was attended by top research men engaged in catalysis research at industrial and university laboratories. Hansford is recognized as a leading authority on the theoretical aspects of catalytic cracking.

At the annual meeting of the AIME Petroleum Branch, held at the Statler Hotel, Los Angeles, October 23 and 24, T. J. Nowak, Research Engineer, presented a paper describing a method developed by Union Oil Company by which it is possible to tell accurately into what part of the producing horizon water is being placed when it is injected for water flooding.

*from C. E. Swift*

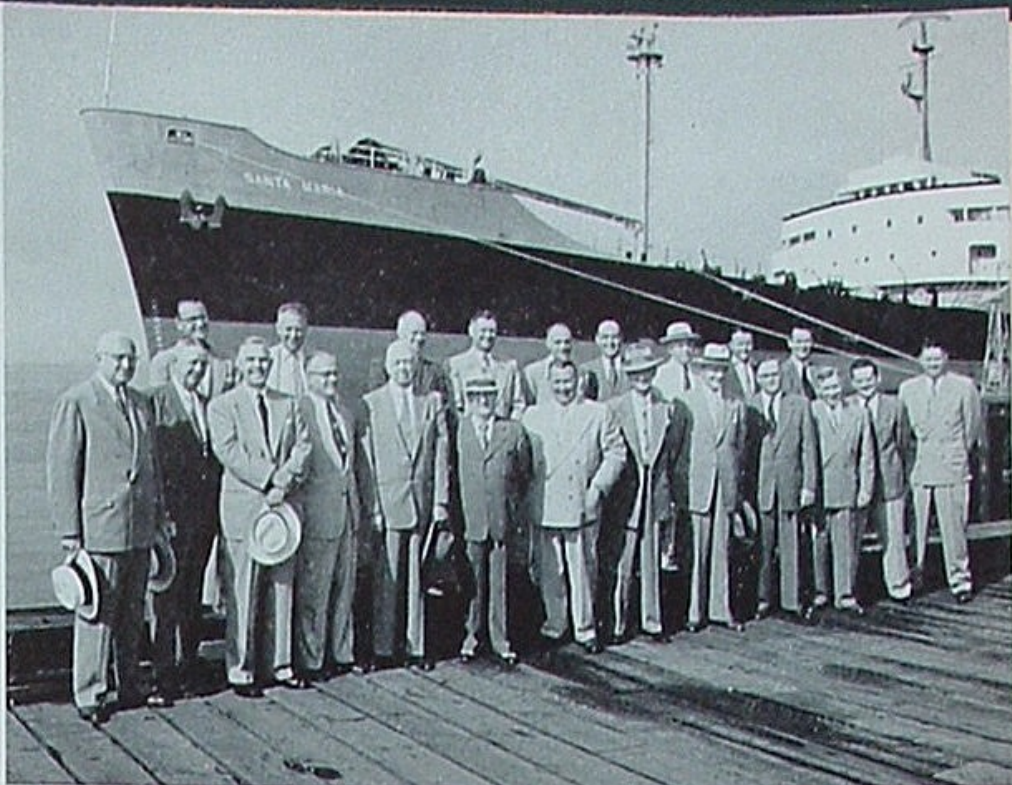
# Queen of the Pacific

**F**EW vessels of the tankship or freighter variety have attracted more interest than our SS SANTA MARIA during her first few months in Union Oil service. Here is a rundown of her most noteworthy accomplishments:

Since coming out of the Baltimore, Maryland, shipyards on May 23, 1952, she has made seven trips through the Panama Canal, enroute to or from Atlantic Coast and Gulf of Mexico ports. Before 1952 has elapsed, she will probably add two more Canal trips to this impressive interoceanic record. Between times the swift ship has made no less than seven voyages from California refineries to marine terminals on Puget Sound and the Columbia River, and two voyages to San Diego.

But at every port of call the vessel has found time to be congenial. Hundreds of employees have been welcomed aboard. City officials and businessmen have responded eagerly whenever invitations have been extended to pay the ship a call. And of course Captain Peterman and crew rarely get in and out of a port without attracting scores of seafaring men. In every instance the SANTA MARIA has proved gracious and hospitable.

Furthermore, she has already logged the saving of human lives. Approaching San Diego on September 11, Third Mate R. R. Bertram spotted three men rowing a tiny skiff toward shore. The tanker was ordered to circle and pick them up. One of the men, being towed on an inflated rubber mattress, was in grave danger of succumbing to exposure and exhaustion. His two companions in the skiff were near exhaustion after losing their tunaboat to heavy seas and spending eight hours fighting for survival. They more than all others have reason to think of the SANTA MARIA as a benevolent queen of the Pacific.



Mayor Allan Pomeroy was among this group of distinguished Seattle leaders invited aboard the Santa Maria Sept. 5th.

Unexpected visitors William Weber and William and Arthur Campbell were lifted aboard Sept. 11th when Mate M. M. Bertram and Capt. W. H. Peterman, right, led rescue.

photo courtesy of Union-Tribune Pub. Co., San Diego



Union Oil families, below, paid the ship a visit on October 23rd. Among them were, left, Mrs. Ronald D. Gibbs, Mrs. Reese H. Taylor, young "J. M." and "Maggie" Taylor.



# Union Oilers




▲ **SECOND BASS-MAN** in a league noted for striking at either a high or low pitch is District Sales Manager Earl C. Engen of Yakima, Washington. He sings with the Camerata Club Male Chorus of 60 voices and is shown above with Choral Director Stanley W. Lebens, right. The group enjoys widespread popularity in the Pacific Northwest.

from Gudrun Larsen



▲ **AT THE HOUSTON CONVENTION** of Desk and Derrick Clubs held recently in the Shamrock Hotel, Union Oiler Blanche Kelley, who was first vice president of the national association, served as program chairman. She appears above at the left of guest speaker Walter S. Hallanan, president of Plymouth Oil. Over 1000 women attended.

from the Oil Industry Information Committee



▲ **PARTICIPANTS** in a highly successful Industrial Relations Conference held in Los Angeles October 13 through 16 included, from left, (seated) D. Kimmell, H. Webb, F. M. Knight, C. Shamblen, H. Goforth, D. Y. Wilson, E. N. Fagg, B. Whitney, A. Bley, T. Wickham, L. S. Kelsey; (stand-

ing) S. Reiner, G. Smith, R. D. Roberts, N. King, P. Noland, J. Pate, H. Zirnite, W. Miller, R. Lightfoot, C. Perkins, R. Rogers, H. McLaurin, T. M. Ragland, V. Frederickson, K. Vaughan, C. Gjerde, R. Dalbeck, J. Euston, A. Anderson, L. Sweet, F. Barr, L. Smith and H. Keans.



▲ **J. HAL ROGERS** of Central Territory was one of the featured speakers at a large gathering of Sacramento businessmen at the Hotel Senator on August 12. His talk on the transportation and distribution of petroleum from well to consumer was enthusiastically received. Many who heard him responded with congratulatory expressions and letters.

from Ethel Cline

# Sports



➤ **WALLY COLE**, left above, is the son of our district sales manager at Santa Barbara, Wiley A. Cole. Son Wally and his pal, Charles Miller, recently astonished yachtsmen of the Pacific Coast with their home-built *Malolo*, a twin-hulled Polynesian-type boat called a catamaran. Thirty-one feet long and with narrow hulls spaced

10 feet apart, the odd craft can easily support a 35-foot mast and cloud of sail. Its design, which originated among natives of the South Seas and has been further improved among the Hawaiian Islands, promises an upswing of speed records and sailing enthusiasm in Santa Barbara waters.

from Dumont Kimmell



➤ **ROBERT H. BUNGAY**, manager of engineering and construction in our Manufacturing Department, Home Office, appears at right, below, with indisputable evidence—a 151-pound Marlin caught with heavy tackle on September 27 off Balboa, California. Bob brought the big swordfish to gaff after one hour and 25 minutes of exciting toil.

from Gerry Woods

➤ **LARRY C. BURKLUND** of Northwest Territory had greater difficulty explaining to Lloyd Parker, left, how he caught this 10-pound salmon. Several hours after losing the fish because of a parted line, Larry was amazed to see the salmon swimming around his boat and practically begging Chuck Dalzell, right, to lower the net. (Notarized!)

from Attorney Walter Scott

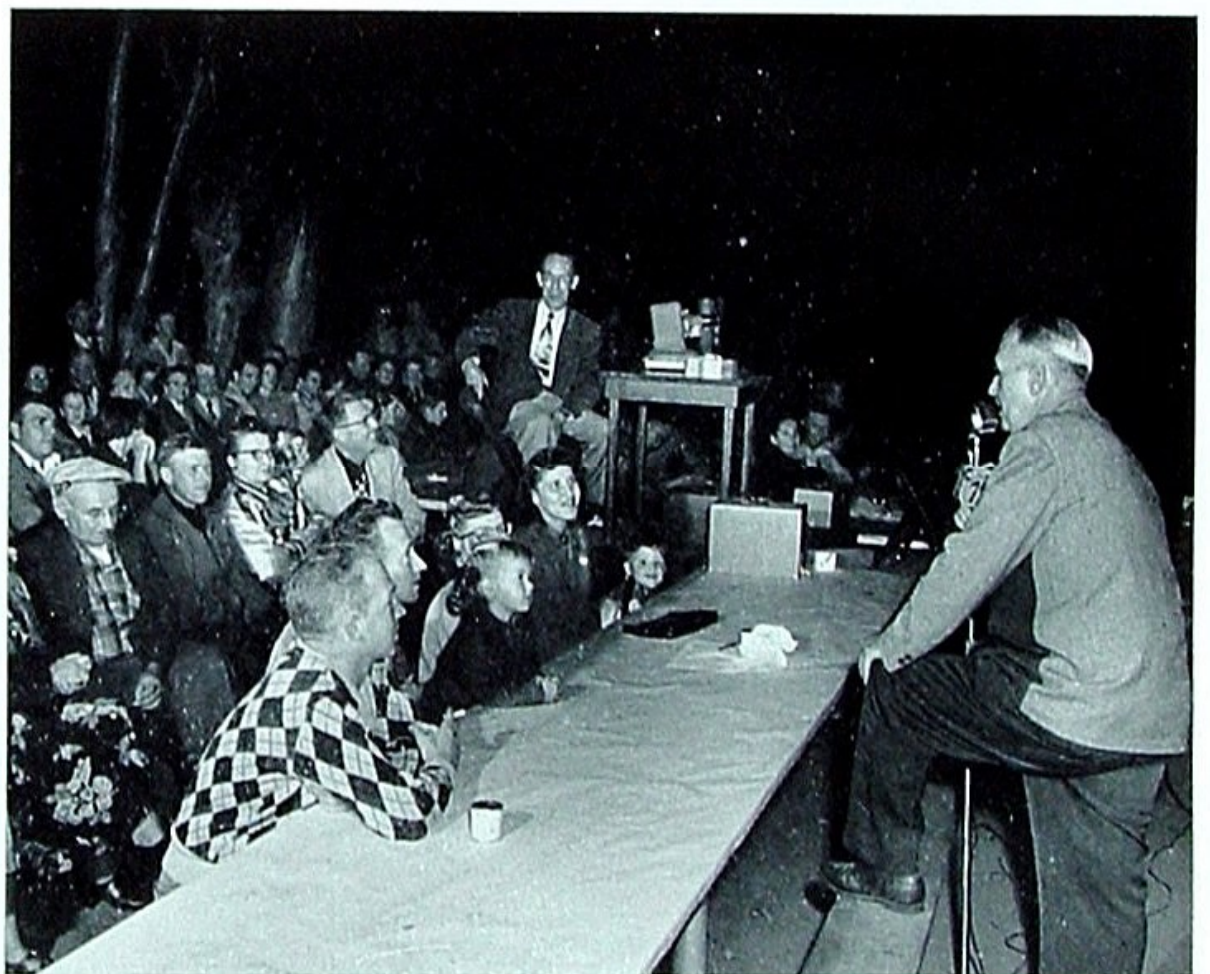




▲ **TOP TIMBER TUMBLERS** of the Quartet Summer Bowling League in San Francisco were these two Union Oiler four-somes. At left, Phylis Garcia, Laverne Minkle, Anna Keane and Beverly Mulligan obviously avoided gaining

first place in order to win the largest trophy. However, Virginia Head, Mary Sheridan, Lucille Scoff and Frances Manthey seem no less pleased with four smaller statuettes and the championship.

from Ethel Cline



▲ **A SCOTCH FOURSOME** tournament hosted by the Los Angeles Refinery men's Golf Club on September 27 ended with Ross Hanson of Brea, Ed Hendricks of LAR, and Barbara Ulmer and Elsa Class of Los Angeles winning the *lows*. "Nineteenth Hole" activities, including dancing, made the day a completely smashing success.

from Nadine Deleree

▲ **AMATEUR NIGHT** at the Stearns Lease picnic ground on October 14 attracted 143 Union Oilers of the Brea-Richfield District. Following a pot-luck dinner of "The Finest" quality and proportions, the crowd remained for an outdoor theatre showing of some 240 colored slides photographed by Company "shutter bugs" during the vacation season. The exhibitors were

V. E. Washbon, R. D. Russell, M. S. Page, Ira E. Triggs, Harold Keans, Arthur Reas, Carl C. Noyes and Jess MacClocklin. Master of Ceremonies Harold Keans, above, warned the spectators to go home rather than waste their time looking at his fuzzy double-exposures. But everyone stayed; saw a flawless set of slides; and mentioned passing the hat to buy Harold some new glasses.



## SERVICE BIRTHDAY AWARDS

### NOVEMBER 1952

#### EXPLORATION & PRODUCTION

Hilton, Ralph, Santa Fe Springs.....	35
Wiley, Lawrence O., Dominguez.....	35
Barnes, Henry F., Bakersfield.....	30
Jones, Leroy E., Santa Fe Springs.....	30
Lashley, Walter C., Dominguez.....	30
Leeson, Hubert H., Dominguez.....	30
Reas, Arthur F., Richfield.....	30
Salisbury, George W., Dominguez.....	30
Tinker, Truman R., Richfield.....	30
Lee, George S., Whittier.....	20
McAdam, Walter J., Cut Bank.....	10
Radspinner, Margaret F., Home Office.....	10
Ditch, Sherman J., Louisiana.....	10

#### PIPELINE

Nelson, James C., Santa Fe Springs.....	35
Pinder, William E., Santa Fe Springs.....	30
Thomas, Clarence F., San Luis Obispo.....	30
Peterson, John A., Santa Fe Springs.....	25
Sanders, Harry D., San Luis Obispo.....	25

#### MARKETING

McKenna, Horatio, Seattle.....	30
Carmichael, Norma E., Los Angeles.....	20

Flanagan, Charles J., Seattle.....	15
Gardner, Gail C., Pasco.....	15
Ottewell, Gordon F., Modesto.....	15
Turner, Cecil H., Oregon.....	15
Eidson, Eleanor E., Home Office.....	10
Fortiche, Julio E., Central America.....	10
Nardini, Nellie, Los Angeles.....	10

#### MANUFACTURING

Adams, William E., Oleum.....	20
Howell, Frank H., Wilmington.....	20
Parkin, Ernest M., Wilmington.....	20
Bowes, Earl T., Oleum.....	10
Estrada, Pearl K., Oleum.....	10
Hargrave, Thomas K., Wilmington.....	10
Lincoln, Delbert E., Oleum.....	10
Northrup, Helen M., Wilmington.....	10
Schmelzer, Howard L., Oleum.....	10

#### COMPTROLLERS

Putnam, Marvin S., Home Office.....	30
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#### INDUSTRIAL RELATIONS

Mead, Marguerite, Home Office.....	10
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### DECEMBER 1952

#### EXPLORATION & PRODUCTION

Brown, Charles A., Bakersfield.....	35
Paulson, Yancy, Orcutt.....	35
Boothe, Joseph F., Santa Fe Springs.....	30
Fowler, Robert, Richfield.....	30
Francis, Fred, Richfield.....	30
Grinsfelder, Sam, Home Office.....	30
Grizzle, Martin E., Dominguez.....	30
Kies, Roy E., Orcutt.....	30
Myracle, Alson C., Richfield.....	30
Pepper, Carl J., Orcutt.....	30
Brant, Harold E., Santa Fe Springs.....	25
Hanes, Russell D., Home Office.....	15
Kubler, Albert J., Richfield.....	10
Salmon, David W., Orcutt.....	10

#### MANUFACTURING

Bailey, George N., Oleum.....	35
Taylor, Vernon H., Oleum.....	35
Geithner, Rudolph, Oleum.....	30
Jones, Thomas O. M., Wilmington.....	30
Marcos, Arthur A., Oleum.....	25
Pires, Antonio L., Oleum.....	25
Siqueiros, Ernest, Wilmington.....	25
Smith, Harry A., Oleum.....	15
Souza, Antone, Oleum.....	10

#### PIPELINE

Reed, George E., San Luis Obispo.....	35
Gambetti, Victor, San Luis Obispo.....	30
Garner, Ignacio H., San Luis Obispo.....	25

#### MARINE

Kostowal, Henry J., Wilmington.....	30
Weidenhammer, Harlan H., Wilmington.....	15
Brookover, Stanley M., Wilmington.....	10
Dickinson, Dale A., Wilmington.....	10

#### RESEARCH & PROCESS

Bartella, Francis O., Brea.....	30
Jenkins, Vance N., Wilmington.....	20

#### COMPTROLLERS

Thomas, Elmer C., Home Office.....	30
Van Ness, Elise, Home Office.....	25

#### MARKETING

Monday, George E., San Francisco.....	25
Thompson, William O., Everett.....	20
Snodgrass, Raymond O., Seattle.....	15
Floyd, William P., Redwood City.....	10
Smith, Bonita E., Portland.....	10
Stewart, Mary M., San Francisco.....	10

#### AUTOMOTIVE

Slauter, Leslie B., Santa Fe Springs.....	30
Schmidt, Emil M., Santa Fe Springs.....	10

#### NATURAL GAS & GASOLINE

Gordon, Joyce A., Santa Fe Springs.....	10
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## Retirements



A grateful Company and host of well-wishing employees are bidding farewell to the following Union Oilers who have concluded long careers of Company service and are retiring:

#### WILLIAM ALLBEE

Automotive Department  
Employed 7/13/43—Retired 10/1/52

#### JOSEPH L. HORVAT

Oleum Refinery  
Employed 10/20/13—Retired 11/1/52

#### STUART C. DONALD

Marine Department  
Employed 10/6/26—Retired 11/1/52

#### RONALD G. WATKINS

Automotive Central Division  
Employed 5/3/29—Retired 11/1/52

#### JOHN C. BECK

Los Angeles Refinery  
Employed 3/17/11—Retired 12/1/52

#### OWEN J. MAGUIRE

Northwest Territory  
Employed 6/12/19—Retired 12/1/52

#### ARTHUR K. VIEWEG

Research and Process  
Employed 1/18/27—Retired 12/1/52

#### WILLIS B. ZUMWALT

Field Department  
Employed 8/28/22—Retired 12/1/52

#### JOHN MARTINS

Central Territory  
Employed 12/21/33—Retired 12/1/52

## IN MEMORIAM

With deep regret and with earnest sympathy toward their families and intimate associates, we report the death of the following employees:

On September 16, 1952

#### PAUL W. KOLB

Los Angeles Refinery

On October 2, 1952

#### JESS R. LOVELL

Northern Division Pipe Line  
Retired October 31, 1950

On October 16, 1952

#### ISAAC MAYFIELD

Southern Production  
Retired October 5, 1945

On October 18, 1952

#### MURRAY C. GOODELL

Marine Terminal  
Retired September 1, 1950

On October 20, 1952

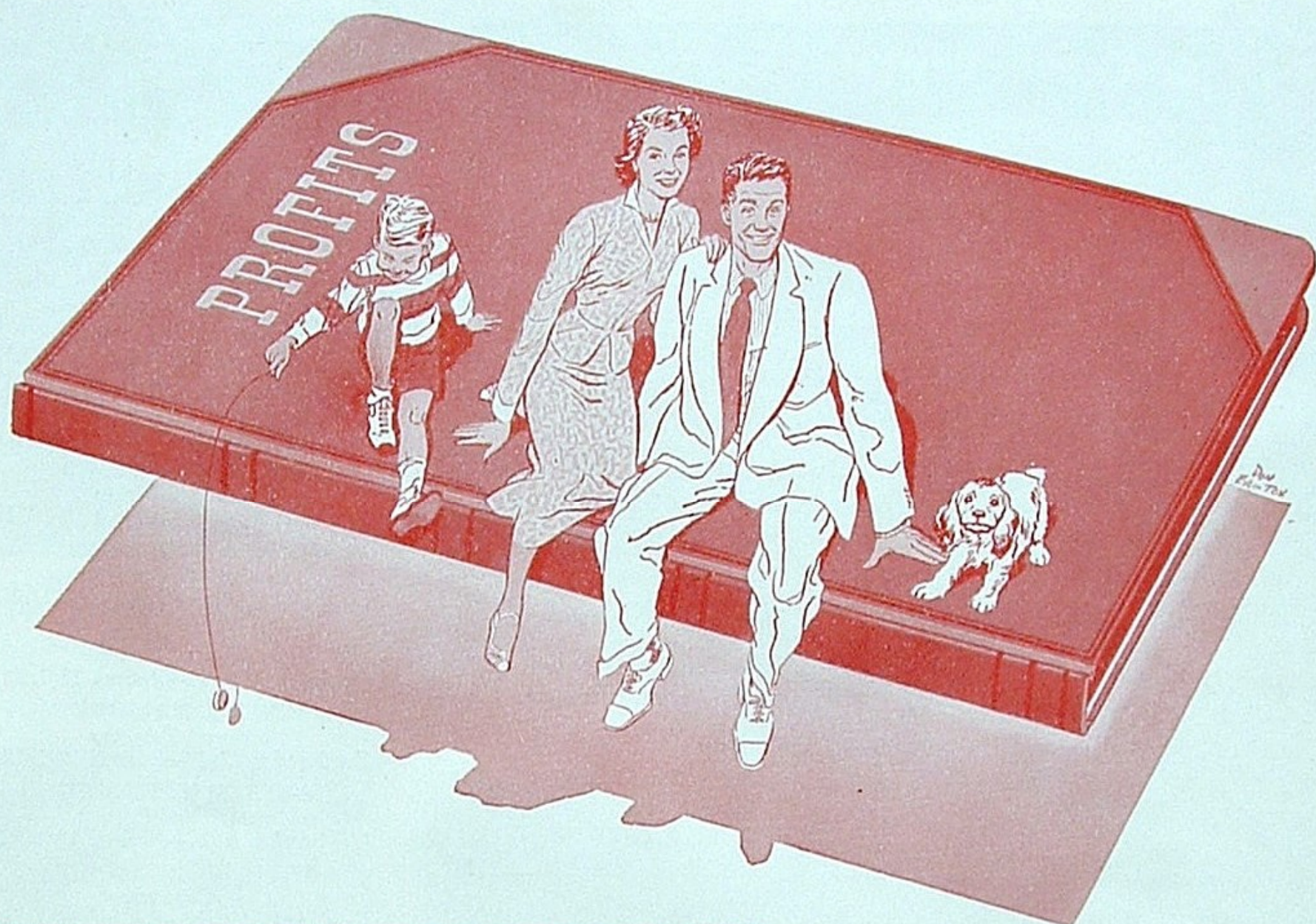
#### NICHOLAS KANSAGRAD

Oleum Refinery  
Retired September 1, 1935

On October 24, 1952

#### LILLIAN VIOLET DEWEESE

Research



## HOW THE PROFIT SYSTEM BENEFITS YOU

**1. Shortly after** the end of World War II we brought out a brand new super gasoline called 7600—a high octane aviation fuel adapted to automobile operating conditions. The performance of 7600 was so superior to anything the average motorist had experienced that it was months before we could supply our stations with enough to satisfy the demand.



**4. It didn't take us long** to decide on the desirability of increasing our facilities for making 7600—although the program represents an investment of many millions of dollars. For we reasoned that by maintaining the quality of 7600 we would get enough additional business to make a profit out of our investment.

**2. Today 7600** is still the top-quality gasoline in the West by a comfortable margin. For its quality has steadily improved from year to year. But in one way 7600 has been a rather embarrassing success—for we haven't always been able to keep pace with the demand for it.



**5. This profit incentive** is the driving force behind our whole competitive economic system. It has given the American people the best products, in the greatest abundance, at the lowest cost in the world. That's why any attempt to tax away this profit incentive is bound to lower the standard of living of every American.

**3. In order to keep up** with this demand we were faced with doing one of two things: (1) reduce the quality of 7600 so that we could make more of it, or (2) undertake a program to increase our output of high octane super quality gasoline.

MANUFACTURERS  
OF ROYAL TRITON  
THE AMAZING  
PURPLE  
MOTOR OIL!



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**UNION OIL COMPANY OF CALIFORNIA**  
INCORPORATED IN CALIFORNIA, OCTOBER 17, 1890

*This series, sponsored by the people of Union Oil Company, is dedicated to a discussion of how and why American business functions. We hope you'll feel free to send in any suggestions or criticisms you have to offer. Write: The President, Union Oil Company, Union Oil Building, Los Angeles 17, Calif.*