MAY 1965

SEVENTY SIX

CHAIRMAN A. C. RUBEL RETIRES

YOU RUN UP against a problem when you write a biographical sketch about a man like A. C. (Cy) Rubel. Which one of him do you write about? Here you've got a man who was president, chief executive officer, and chairman of the board, and who helped "train" two presidents of Union Oil—Reese H. Taylor and Fred L. Hartley.

When you write about a man like that, you write about A. C. Rubel, dynamic leader and master of team play. You choose your words carefully and the biography has a dignified tone. Then you remember back to November 1961 when the Union Oil Girls' Club put on a show called the "Royal Revue." One of the acts was a corny cowboy band—and the cowboy with the red 'kerchief trying to drown out the guitars was Cy Rubel, the "hottest musical saw in the West." And there goes your dignified tone.

Or you sit in on Rubel's first press conference after he became president following the death of Reese H. Taylor in 1962. Rubel, 67 years old, had come out of retirement to take over the presidency. To the press, there was a big questionmark after his name. The question: Was he really in the driver's seat—or would he merely hold things together until another, younger man could be selected?

At that press conference a determined A. C. Rubel told a reporter: "I did not take this job as an interim position. I am not here as a caretaker. I hope a successor will be selected within a reasonable length of time—after all, I'm 67. But as long as I hold the job, I'll be an active, operating president." The questionmark was erased. And Rubel justified his statement: Since 1962, Union Oil has had three years of record growth and earnings. That was Rubel, the dedicated executive, speaking—and acting.

Then there's engineer Rubel, the exploration man. When he was appointed director of production in 1936, Union Oil had crude oil reserves of 262 million barrels. These were concentrated in California. First as director of production, then as vice president, he guided a successful search for oil that exploded from California to cover the world. And to more than double our reserves to today's 603 million barrels.

Or Rubel, industry spokesman, awarded the Anthony F. Lucas Gold Medal for outstanding contribution to the oil business. Or Rubel, the civil leader, a trustee of colleges, of the Southern California Cancer Research Institute and of the Orthopaedic Hospital. Or Rubel, the American, rancher, cattleman, active in politics . . . forceful hand behind the Boy Scout movement, chairman of a "Scout-O-Rama" that set a national pattern . . . a director of the Freedoms Foundation of Valley Forge who says and believes, "To a man of imagination, education and initiative, there are no limits to the opportunities under our American system of free enterprise."

But about the time you get wrapped up in writing about serious, thoughtful A. C. Rubel, honored and respected by his peers . . . here comes Cy again. This time he's sitting in a big green leather chair at another news conference. He's having fun like a kid with a secret while reporters needle him about retiring. The date is March 5, 1964, and executive vice president—soon to be president—Fred L. Hartley is sitting beside him.

From the depths of his chair Rubel finally told the reporters, "It was my job to put through the things Reese started. Now we have an organization ready to carry on the affairs of the company. As for my retirement . . . it's not going to be very long. I don't intend to be the Archie Moore of the oil industry."

The official retirement date came last month, April 26. Rubel, leader, executive, hot man on the musical saw, engineer, industry spokesman, American; Rubel hung up the gloves. And set another Union Oil "first": the first president in the company's 75-year history to retire twice. This time, he says—rod and gun in hand—"it's for keeps."

This sign is a symbol of
Union Oil Company of California.
The trademark, 76, also symbolizes the
American freedoms won in 1776
that make possible this nation's industrial
development and abundance. SEVENTY-SIX magazine
mirrors industrial freedom through the thoughts,
skills, accomplishments and appreciations of
Union Oil people. We invite your
participation in an exchange of ideas and
information. Address: Editor, Seventy-Six,
Union Oil Center, Los Angeles, California 90017

SEVENTY SIX

UNION OIL COMPANY OF CALIFORNIA

Our Cover: Margaret Merrill of
Marketing Services is one of a dozen
Union Oil women pictured in
a photo essay beginning on page 6

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The bird with the beak for leaks

Natural gasoline leaks helped solve a scientific mystery that began with Aristotle.

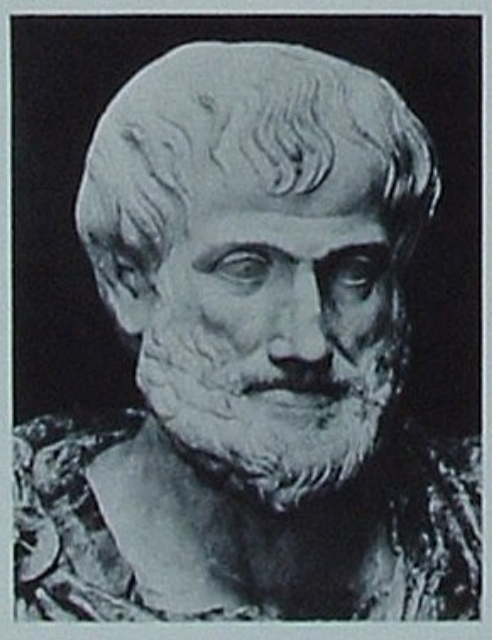
A LEARNED dissertation on the turkey vulture? No, we're not kidding. It's a serious matter to Dr. Kenneth E. Stager, senior curator of ornithology at the Los Angeles County Museum. And it's a matter of dollars and scents to Union Oil Company.

And if you want still more mystery, a retired Union Oiler has answered, of all people, Aristotle, for the Greek philosopher is said to have asked if vultures had a sense of smell. John James Audubon, naturalist and artist of considerable achievement (he left something to be desired as a scientist), seemingly laid Aristotle's question to rest in 1826 by asserting that although vultures might smell they have no olfactory sense.

We're glad that Ralph Openshaw, retired area superintendent for the Torrey Canyon-Del Valle area, never read Audubon's report, given to the Natural History Society of Edinburgh. Otherwise he might never have put the turkey vulture's bloodhound-like capabilities to profitable use for the company.

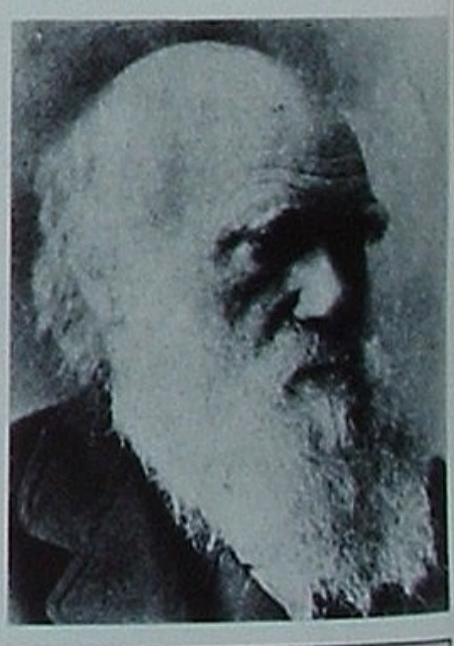
But then, not everyone really believed Audubon. Charles Darwin, a man who preferred to find out things for himself, took time out during his famous cruise aboard the H.M.S. *Beagle* to study Andean condors—the vulture's cousin—but

(Editor's note: When writer Carol Schwalie of Chemical Week magazine asked how Union Oil Company employed turkey vultures to find leaks in natural gas lines, we thought she was giving us the bird. But we soon learned she wasn't fooling. Moreover, a Union Oiler's knowledge of bird lore helped solve a long-standing scientific dispute.)



ARISTOTLE
He raised the question

AUDUBON
He was wrong



DARWIN
He kept it alive

continued

he came to no firm conclusions. Other ornithologists debated whether the turkey vulture might be able to smell out his prey, but no one went out of his way to study the bird thoroughly.

That is... until Dr. Stager. In 1935, while conducting field experiments in Riverside County, California, he noted the frequent appearance of turkey vultures, and postulated that they had a sense of smell. But he was busy on another project and did little more than note his conclusion in a log.

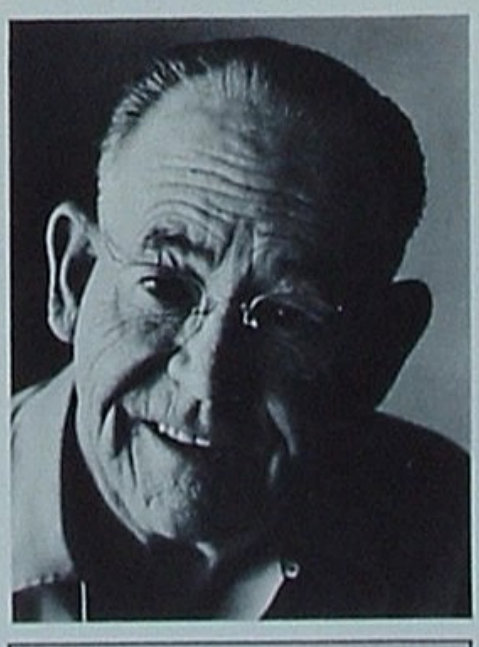
Came World War II and Stager was sent to Burma. In 1946-47, while doing field work in Mexico, he again had a flash of insight into the turkey vulture's sense of smell, but once more had to shelve any direct experimentation.

As it stood, more than 2,200 years had passed since Aristotle had brought up the subject, and no one had yet found the answer. Well, today, thanks in part to Ralph Openshaw, Dr. Stager can claim Audubon was wrong. Audubon's research was incomplete, according to Dr. Stager, who asserts that the turkey vulture has a well-developed sense of smell which he uses to find his dinner. Stager grants that condors and black vultures lack olfactory organs and thus are forced to hunt by eyesight alone—or follow the trail of the turkey vulture.

If this bit of knowledge seems far removed from any practical application, don't forget that Sir Alexander Fleming uncovered some odd bits of mold during a 1929 experiment and no one found any use for it for a dozen years, when it was developed into penicillin. Then, too, Albert Einstein's seemingly simple equation—$E=mc^2$—found little practical application either—until World War II. Despite the apparent im-

JAMES BROWN
A chance remark

VERNON BARRETT
He got the point



RALPH OPENSHAW
He had the proof

DR. KENNETH STAGER
He laid the question to rest

practicality, unanswered questions pique the curiosity of men of knowledge, and no true scientist can sit still until he finds the answers.

For that matter, though, Dr. Stager might never have looked into a subject as remote as the turkey vulture's beak had it not been for a chance conversation between a Beverly Hills attorney and James S. Brown, a Union Oiler from Orcutt, California. It took place in 1960 on the fantail of a sailing yacht, the *Jada,* quietly anchored at Howland's Landing at Santa Catalina Island.

Aboard the yacht was Vernon Barrett, an attorney and friend of Dr. Stager. Barrett was a guest of the owner, Howard Wright, a Los Angeles attorney. Also on board was Wright's nephew, Brown, now area superintendent for the Orcutt area but then an engineer at Del Valle field.

It was a relaxing day; everyone was enjoying the sun and the sound of the water gently lapping against the hull. When the conversation turned to birds, a topic scurried up by a passing flock, Barrett mentioned Dr. Stager's 25-year long, on-and-off studies of turkey vultures and the scientific dispute that seemingly indicated they had no sense of smell.

"Why, certainly they have," Brown interjected. "For 25 years we've been using turkey vultures to find leaks in our natural gas lines."

Barrett, immediately alert, pressed for details. Brown confessed he knew the facts only by hearsay, but referred him to Openshaw, his boss.

A few days later, Stager visited Openshaw at his home in Fillmore, California. The retired Union Oiler told the scientist that in 1938 he had learned that turkey vultures are attracted to the odor of ethyl mercaptan, the compound that gas companies introduce into natural gas to give it a distinctive odor.

"I was working as an assistant foreman," Openshaw said. (His boss then was K. C. Vaughan, now senior vice president for Exploration & Production.) "There were some leaky gas lines and we decided to put marcaptan in the gas lines. We figured we could smell it and find the leaks."

Openshaw soon found a shortcut for his detective work. Turkey vultures, apparently attracted by the odor, gathered near the gas leaks. At first he paid little attention to this fact. But soon a problem cropped up for which he could make use of this newly found information. The Pipeline Department, seeking natural gas to power its pipeline compressors, decided to use an old, abandoned six-inch oil line running from Orcut Hill 42 miles to Avila.

"We got to checking gas consumption on the line," Openshaw said, "and found we were losing more than we were using." To find the leak, he again decided to use ethyl mercaptan and sniff for leaks while walking the pipeline.

What neither Openshaw nor anyone else knew at the time was that the pipeline had shifted from its original pathway. Apparently the hillside had sloughed off in the years since the pipeline was built, causing the line to bow out about 40 feet along a 300 foot section. (It was there that the leak occurred.)

Later a spur rail line had been built alongside the pipeline right-of-way, and surveyors' maps indicated the pipeline ran parallel to the rail spur. Openshaw continues:

"We walked the pipeline, following the map, but found no trace of mercaptan odor. Yet we had put enough stink in there to make a pinhole leak smell up the place like a skunk works." (Skunk odor, by the way, is butyl mercaptan.)

One day Openshaw was driving by in a pickup when he saw turkey vultures collecting across the rail line. "There's your leak," he called to the passing linewalkers, who were upwind of the spot. The men, however, insisted the pipeline ran east of the railway tracks and not west, and they pulled out the map to prove it. Openshaw told them to go west nevertheless.

"I saw the birds and I felt certain our leak was over there," he said. "The men went over to smell, and sure enough they found it." Openshaw's work with turkey vultures later passed into Union Oil's folk lore. Somehow, Brown learned of it and, fortunately, passed it on to Vern Barrett.

As a result of Dr. Stager's eye-opening visit with Openshaw, he launched a full-scale investigation into the life of turkey vultures. He began field experiments using ethyl mercaptan gas at P. A. Doheny's Cerro Viejo ranch not far from our Torrey Canyon field. Later he moved to Rancho Sespe between Torrey Canyon and Santa Paula. To give geographic scope to his findings, Stager also conducted experiments while on field trips to Mexico, Brazil, Bolivia, Burma and India.

Utterly convinced of the validity of his research, Dr. Stager published the results in June, 1964. So, for the first time in history, the age-old question of the turkey vulture's schnozzle was laid to rest.

Stager gives the full credit to Openshaw in his paper, entitled, *"The Role of Olfaction in Food Location by the Turkey Vulture (Cathartes Aura)."* He said:

"The decision to conduct field tests with ethyl mercaptan as an olfactory attractant for turkey vultures came as a result of conversations with field engineers of Union Oil Company of California.

"According to Ralph Openshaw, a retired employee of the company, his organization had used turkey vultures to aid in locating leaks in large natural gas lines."

Stager then described, in detail, the procedure Openshaw used in finding the leak in the pipeline at Orcutt Hill in 1938. He concluded by saying:

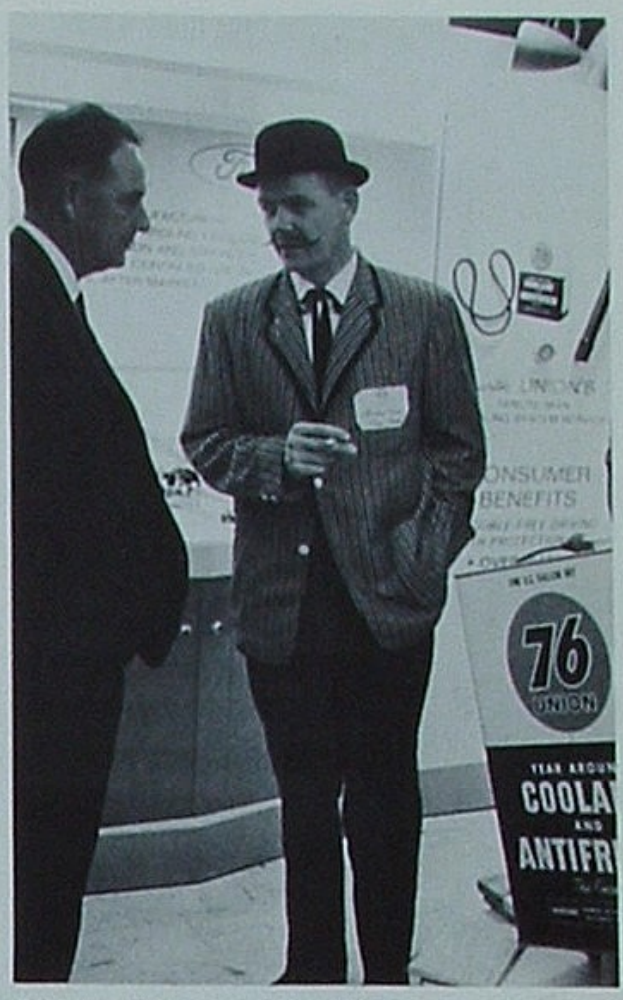
"As a result, the field engineers of Union Oil Company have long ago recognized the turkey vulture as possessing a well-developed sense of smell."

Stager's report, which runs to 64 pages, contains a great deal of other documentary material too. But for our purposes, the important point is this: The project might never have gotten underway but for a chance remark aboard a sailing yacht at Catalina Island. And had not James Brown recalled Ralph Openshaw's nearly forgotten 1938 detective work, Aristotle's question might never have been answered. (76)

* * *

Dr. Stager is preparing a manuscript of his research on turkey vultures for publication in a future issue of Natural History magazine, published by the American Museum of Natural History. Watch for it.

Revue unveiled new Minute Man III tire with sonic tread.



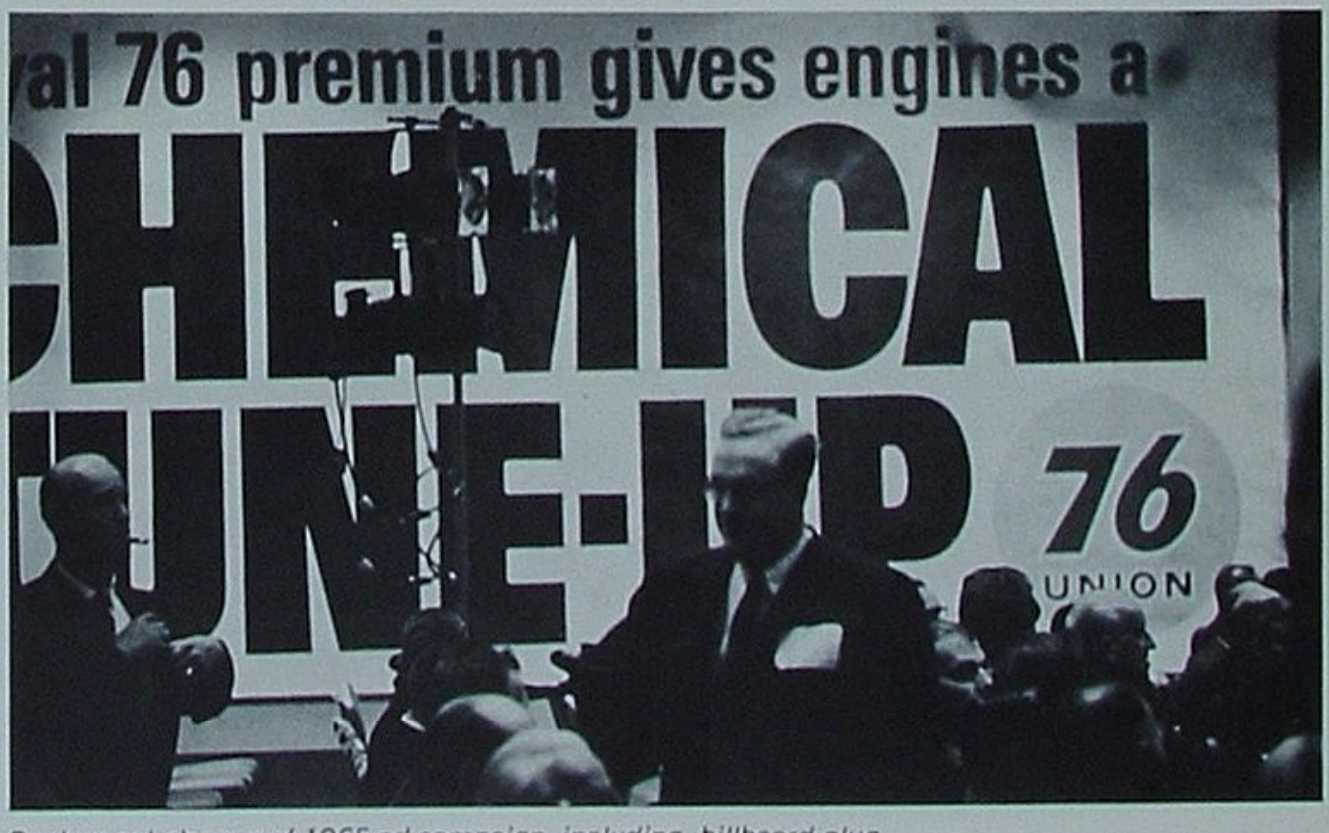
Display of 76 coolant-antifreeze.

Mythical dealer Heber Jentzsch's blunders cause charm teacher Miriam Birch to shudder.

Winners: dancer & Super-Royal Triton.

1965 Dealer Show

This spring, as it has for years, Union Oil Company introduced its newest products to Minute Man dealers with a dazzling revue in 14 western cities. The 1965 show, entitled Diamond Jubilee, saw the unveiling of a new Minute Man III tire and a permanent 76 antifreeze and coolant. Marketing officials outlined the company's 1965 advertising campaign, and a drawing at each performance saw dealers win door prizes. When the shows were over, dealers gathered at display booths to look over the latest service station equipment. A special Union Oil display commemorating the company's 75th anniversary was an "extra". Here are highlights.



Dealers got closeup of 1965 ad campaign, including billboard plug.

WOMEN AT UNION OIL

The Gals Play Important Roles in Keeping Operations Moving Smoothly

From its founding a century ago at Colonel Drake's well, the oil industry has belonged largely to the realm of men. Drilling, production, refining, transportation, even marketing required brawn and a tough, competitive spirit in a world that was often grimy – even dangerous.

As the industry grew – and became more competitive – more people were needed in ever-more complex office positions, and women began filling roles in the office, library and laboratory. Today, nearly one employee in five at Union Oil is a woman. The contributions they make are significant; the careers they follow are interesting, challenging, rewarding. They find careers as secretaries, key-punch operators, sparkle girls, pricing analysts, statisticians, clerks, nurses, geologists and paleontologists.

Their presence provides strength in reserve for their departments. Many fill in on daily operations when their bosses are on vacation or in the field. Patricia Wehl buys stationery, office furniture and drafting supplies for the Pacific Coast Division. Not long ago, everyone else happened to be out of the office when an emergency requisition came in. Needed were thousands of feet of casing for a well that had just come in; speed was essential. Because Miss Wehl knew her job, she was able to pinch hit for the regular "tubular goods" buyer.

Women, with their grace and charm, contribute greatly to keeping operations running smoothly. Their natural attention to detail pays off, too. A couple of years ago, a truck loaded with heavy boulders from the Santa Paula mountains ran off the road. A passing Union Oil employee witnessed the accident and, while driving to the scene to render first aid, radioed an emergency message to Virginia McCutcheon in the Santa Paula office. Thanks to her alertness and diligence, an ambulance was quickly dispatched to the scene and the driver was taken to a hospital where he recovered. Teamwork helped save a man's life.

Competence on the job brings wide respect, and women at Union Oil are earning their share. During Norma Carmichael's career as a price and policy analyst in the California South Coastal Division, she has trained countless salesmen in marketing policy and pricing. She deals with every petroleum product from asphalt to wax. Of her abilities, division sales manager Clay Petray says, "She is the only person in the division I wouldn't argue with."

Women have earned professional recognition too. Elizabeth Watson at Union Oil Center is a geologist; Ora Willett at Dominguez, California, is a paleontologist. Research librarians Jean Pesina and Carmen Flint are chemists first, librarians second. Juanita Schmidt, a petrographic technician, possesses a rare skill seldom found outside an oil company or university.

On these pages, SEVENTY-SIX magazine salutes the gals – bless 'em – by bringing you a picture report on a few of the nearly 1,000 women who help make Union Oil the *finest* company anywhere.

Analyst's assistant Margaret Merrill, shown on our cover, too, analyzes raw data for reports on sales, budget calculations, monthly summaries of performance against goals, weekly tire, battery and accessory sales reports.

Patricia Wehl of Pacific Coast Division, E&P, buys stationery, drafting supplies, file cabinets, furniture, surveying equipment, chemicals, sand and gravel.

In Refining & Marketing Division, Irma Greene puts together Planning Department's one- and five-year plans – key guidelines to future operations in the division.

Charlotte Mann in the corporate Secretary's Department watches over a variety of important documents, records, contracts, leases, and the minute books for boards of directors. Before filing, she sees that documents conform to authorizations.

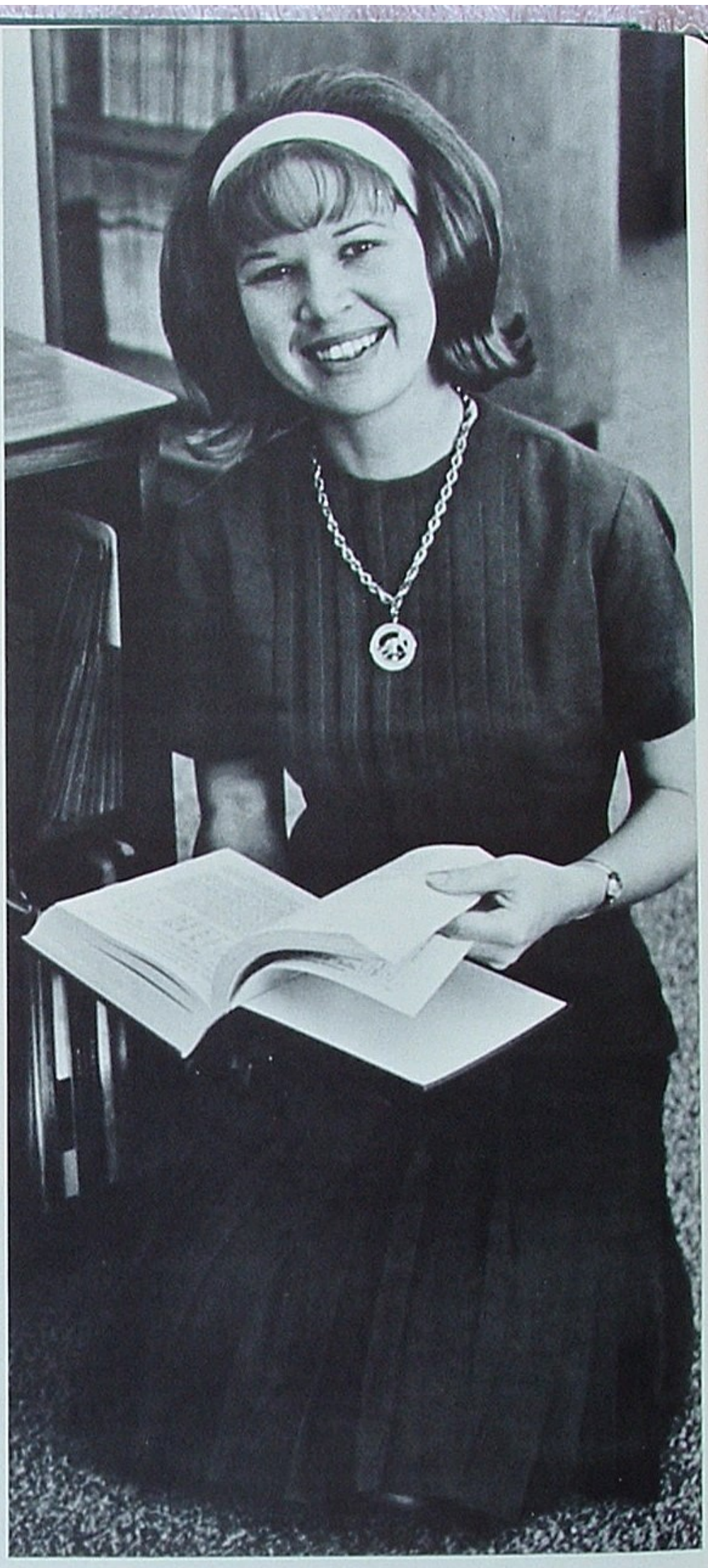
continued

WOMEN AT UNION OIL

continued

Besides typing, filing, taking shorthand, Virginia McCutcheon of Santa Paula, California, field office runs a communications center for 40 radio units and 9 telephone lines that link drilling rigs, geologists and foremen with field headquarters.

In the chemistry laboratory at Oleum Refinery in the Bay Area, Mrs. Betty Kimmich uses an infrared spectrophotometer to identify the presence of certain molecules characteristic of polymers (plastics).



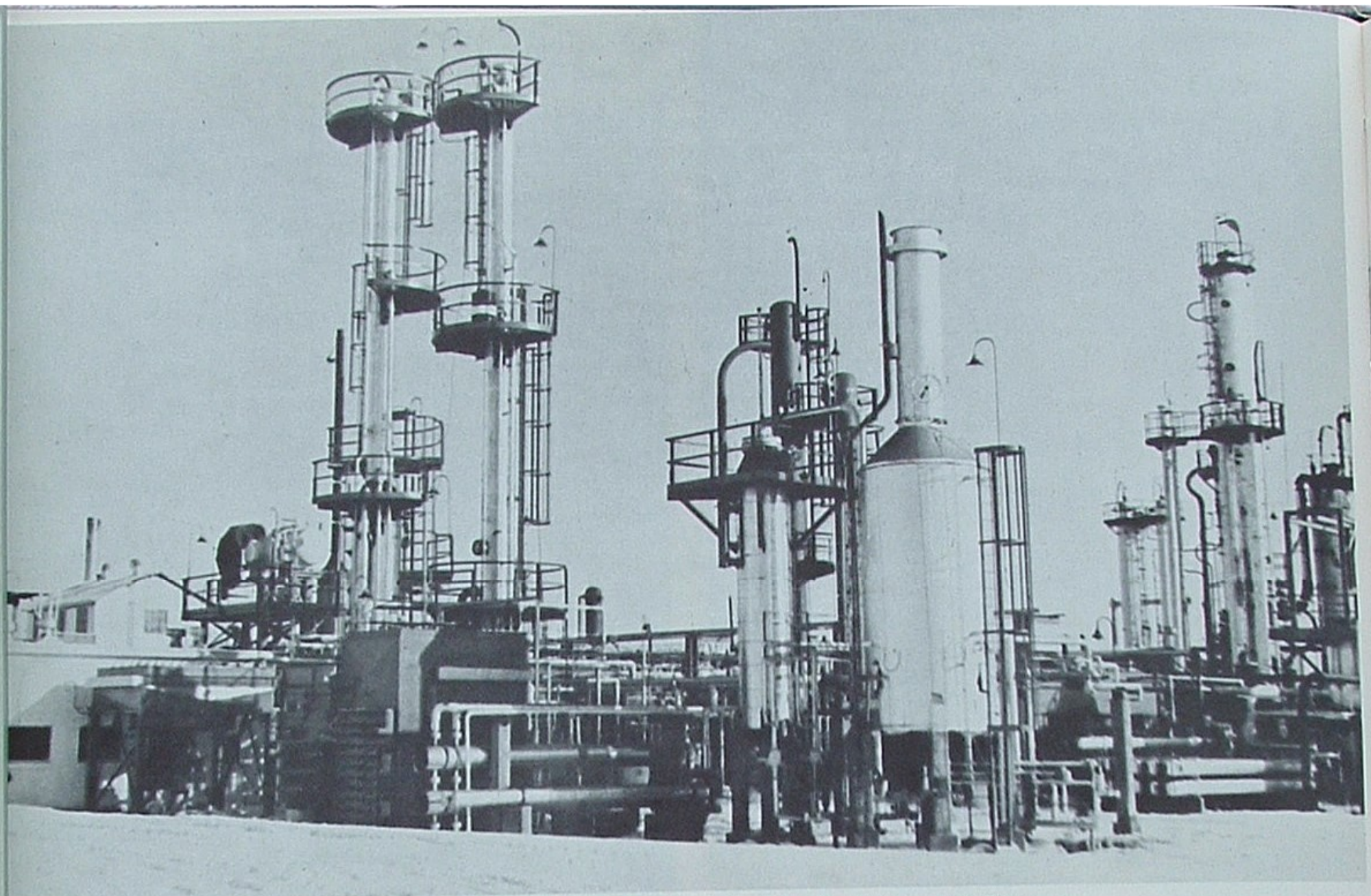
Exploration and production statistician Jo Ann Suter searches for documentary material for a survey on world oil reserves. She works in Reserves, Valuation and Planning Department.

At Brea, California, Carmen Flint (foreground) and Jean Pesina, both assistant research chemists, keep scientific library up to date. Typical volumes are entitled "The Chemistry of Cationic Polymerization."

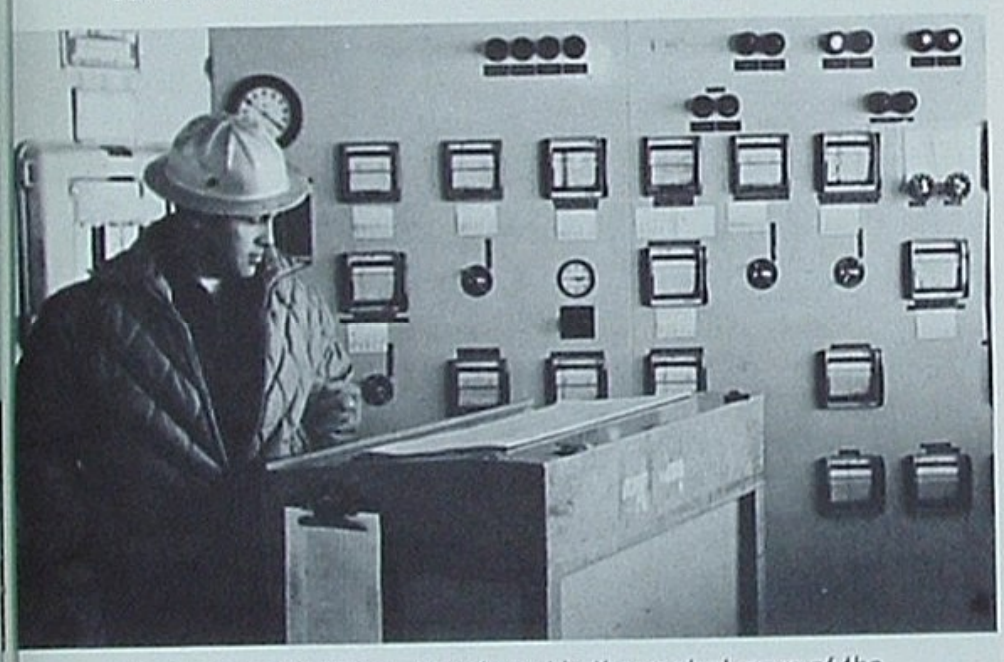
In the California South Coastal Division, still our biggest volume market area, price and policy analyst Norma Carmichael has trained countless employees in sales policy, pricing and bidding—from asphalt products to wax.

Secretary Edna Miner enjoys her work. We took her picture while she was setting up a conference table for her boss, Joe McCullough, manager of industrial relations for the Pacific Coast Division.

Petrographic specialist Juanita Schmidt of Research Department uses a photomicroscope to identify minerals in core samples of rock. Samples are shaved as thin as 1/1000 of an inch.



Cut Bank has new naphtha Unifiner, bigger reformer, improved midbarrel Unifiner. Here is the new Unifiner.



Controlman Ed Miller at the board in the control room of the new naphtha Unifiner. Many controls were moved inside.

Joe Topley, instrument repairman, ascends iced-up cooling tower. Innovations have improved cold-weather operations.

CUT BANK'S UNIFINER

Local know-how helped improve cold-weather operations at our Montana plant

CUT BANK, MONTANA

THE knowledge of supervisors, foremen, operators and maintenance crews at our Cut Bank Refinery has been put to work to prevent Jack Frost from interrupting the daily routine here.

Winters in Cut Bank are cold and bitter; the refinery is situated on U. S. Highway 2 just east of the Rocky mountains and only 25 miles from the Canadian border. Winter temperatures of 30 below zero are not rare.

For many years the men at Cut Bank have suggested ideas for improving operations at the refinery during cold weather. Among them:

—During storms and blizzards, the cooling tower fan is reversed periodically to permit the tower to warm up and melt accumulated ice.

—When exposed oil lines are left idle for a few days, they are filled with stove oil, which doesn't readily freeze. If the weather gets worse, the lines are drained and filled with dry natural gas, which won't freeze even in the worst that Montana's winters have to offer.

—Dry natural gas (instead of air) is used to actuate outside instruments that might otherwise ice up from moisture in the air during below-freezing weather.

Even exhaust air, normally wasted, was put to use to combat bad weather. In the reformer, warm exhaust air is ducted to an outside instrument enclosure, keeping the instruments at a snug, warm temperature during the coldest days.

These innovations—and many others—were introduced to cope with winter operations that are almost never encountered in California refineries.

Today, when new units are designed for Cut Bank, the cold-weather know-how of Montana personnel is often combined with the process know-how of our Engineering & Construction designers. Last year's $750,000-renovation at Cut Bank is a case in point. A 600-barrel-a-day reformer was enlarged to 935-barrel-a-day capacity. A new, 1,100-barrel-a-day Unifiner was built to treat gasoline stocks. Another Unifiner, for treating diesel and other mid-barrel products, was improved to turn out cleaner fuel than ever before.

Thanks to suggestions from Cut Bank personnel, the engineers incorporated many modifications into the equipment. Herb Nelson, a refinery head operator, noted that fuel gas lines were a potential trouble spot. "These lines should be heated and well insulated," he said, "otherwise, on cold, windy days, water and hydrates will freeze and plug the lines." This could lead to an emergency shutdown. Nelson noted, too, that field instruments should be installed in steam-heated enclosures to prevent freezing.

Because Cut Bank ideas were incorporated into the final designs, many instruments that normally are installed outside the control room are now placed inside.

Inside the control room, boardman Ed Miller comments, "Today we have almost twice as many instruments on the board, but we can tell better what is going on."

In addition to winterizing, the engineers who designed the Cut Bank equipment introduced several cost-cutting methods that warm the hearts of cost-reduction officials. In one case, Unifiner catalyst that is normally discarded by Los Angeles and Oleum Refineries is now shipped to Cut Bank for use in the new naptha Unifiner.

The reuse of catalyst is entirely logical in Montana. Montana crude has less sulfur and nitrogen than does California crude. Consequently, the treatment needed to desulfurize products manufactured from Montana crude is far less severe than California refiners face. Thus, catalyst that has lost its ability to treat products from California crudes profitably is put to good—and profitable—use at Cut Bank.

While enlarging the Cut Bank Refinery, the engineers built for tomorrow. To increase the capacity of the reformer and assure "quality ability" for the future, a third reactor was added to the gasoline reformer. The new reactor has more than twice the catalyst capacity of the other two reactors combined. The third reactor was included both to increase capacity and to improve the quality of products being treated.

On-site construction of the new Unifiner-reformer complex was supervised by a veteran of Cut Bank, Don DeBuse, who formerly was Cut Bank's plant engineer. During the construction phase last summer, DeBuse was transferred to Engineering & Construction. Today he is product supply coordinator in the Refining Department at Union Oil Center.

"I understand Cut Bank's plant is running well," DeBuse said. "I wish they would send me back to inspect it—I miss the good fishing in Montana."

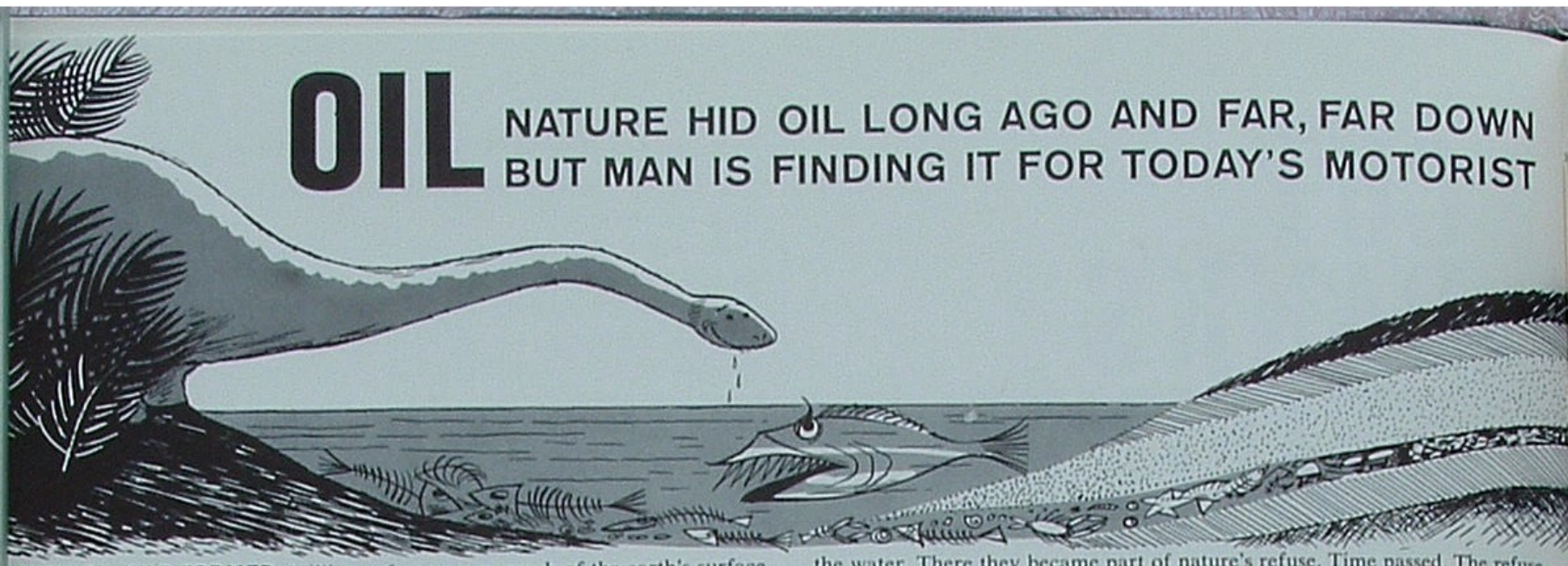
Personnel at Cut Bank say they are enthusiastic about the equipment. Forrest Allinder, superintendent of plants, said final tests were completed during the winter, one of the longest and bitterest cold spells in years. Despite temperatures that plunged to nearly 70 degrees below the freezing point, a scheduled major turnaround was completed, the unit was purged and started up. "We've finished the shakedown operation and are almost ready for our second scheduled turnaround," he said.

Others at Cut Bank agreed on the equipment's operation. Controlman Jim Smith said the winter weather—now giving way to spring—gave the plant a "thorough test" of the design innovations. Treater Russ Sewell, a man who likes to be shown, said, "I thought we might have trouble with winter operations during the startup, but other than the usual minor complications everything went just fine. The plant seems to have been well designed."

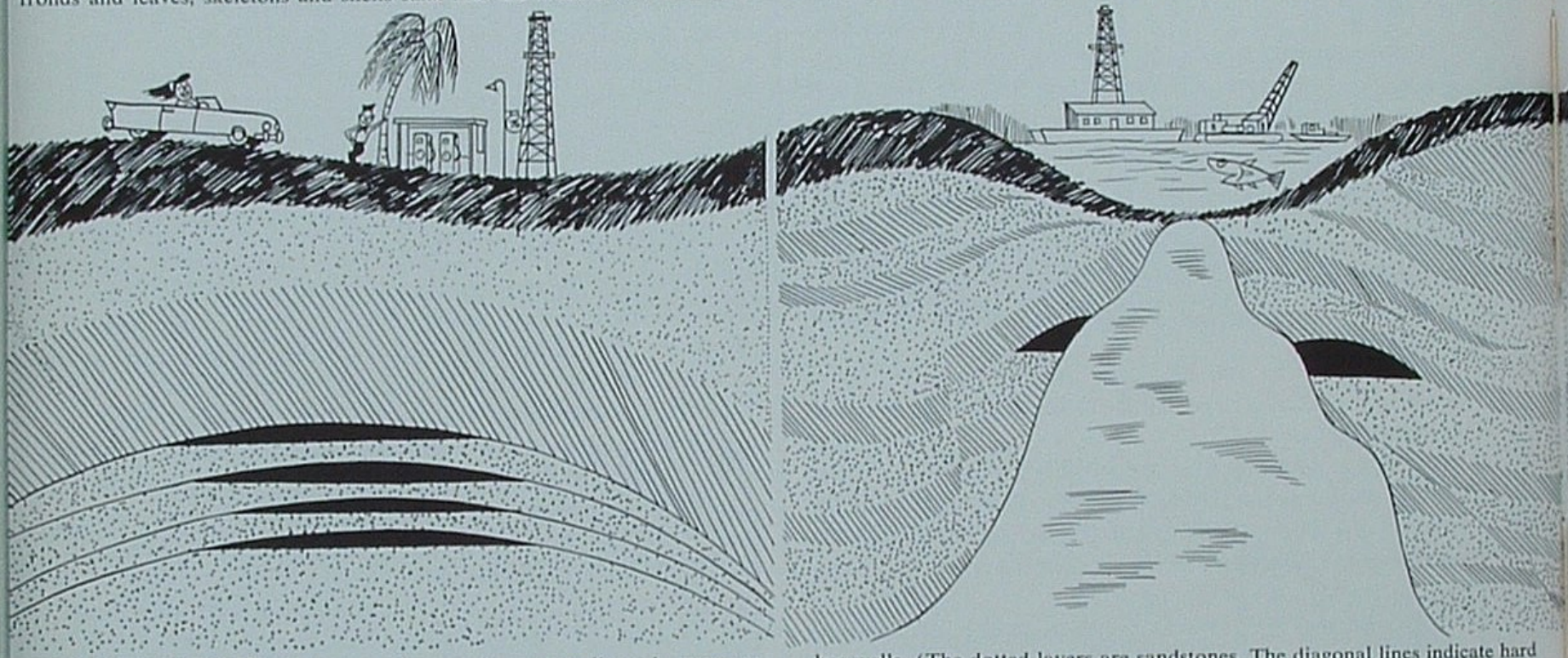
And well designed it was. Planning began more than three years ago, and designs were modified many times to incorporate local suggestions. Says Allinder, "We wanted to provide equipment that would assure us continued quality improvement for the future. In this case, we have enough 'quality ability' to carry us through for many years." (76)

OIL

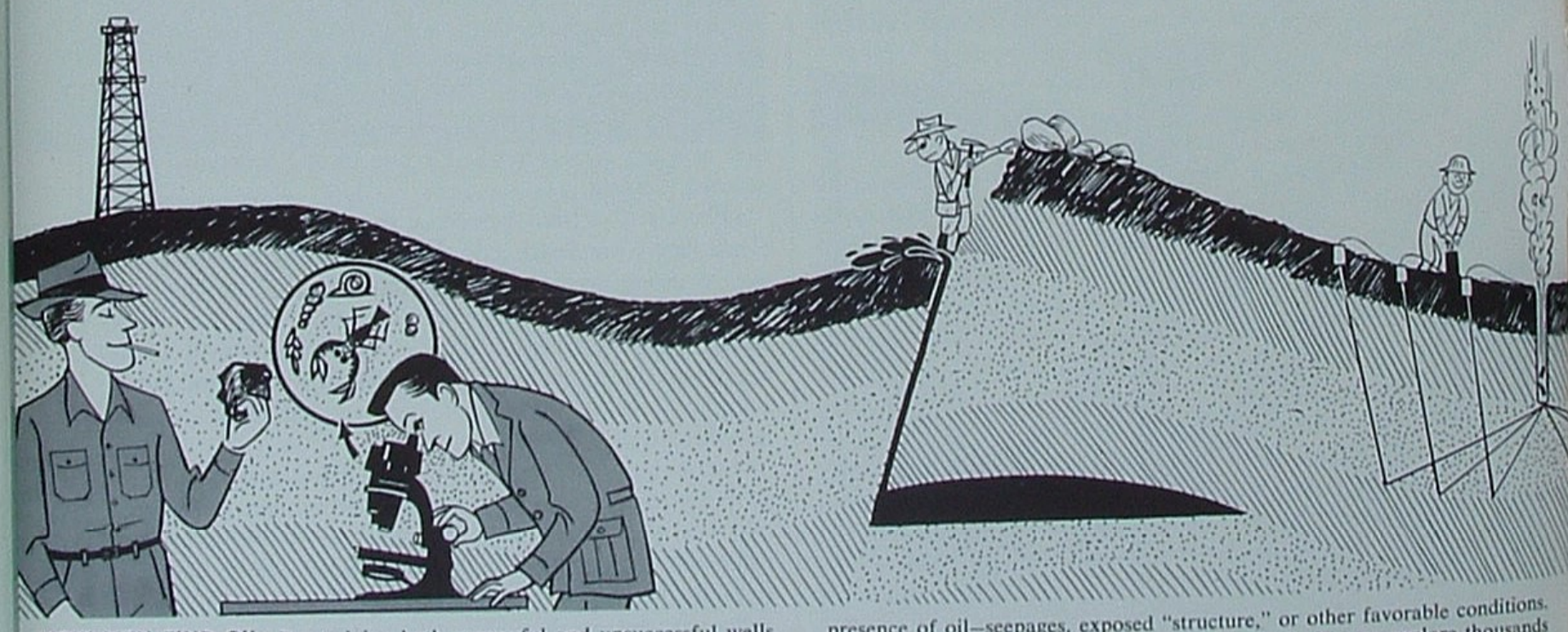
NATURE HID OIL LONG AGO AND FAR, FAR DOWN BUT MAN IS FINDING IT FOR TODAY'S MOTORIST



HOW OIL WAS FORMED: Millions of years ago, much of the earth's surface was covered with swamps and inland seas. There was an abundance of plant and animal life in these shallow waters. As the plants and animals died, their fronds and leaves, skeletons and shells sank into the muck at the bottom of the water. There they became part of nature's refuse. Time passed. The refuse was buried in mud. Sand and silt were piled on top of it. These deposits grew thicker and thicker; and the mud was compressed tighter and tighter. Eventually, pressure changed the mud into siltstones and shales. The same pressure –plus heat–slowly transformed t shales hardened. As they did, the stones. While this was going on, t the deep-lying rocks were arched

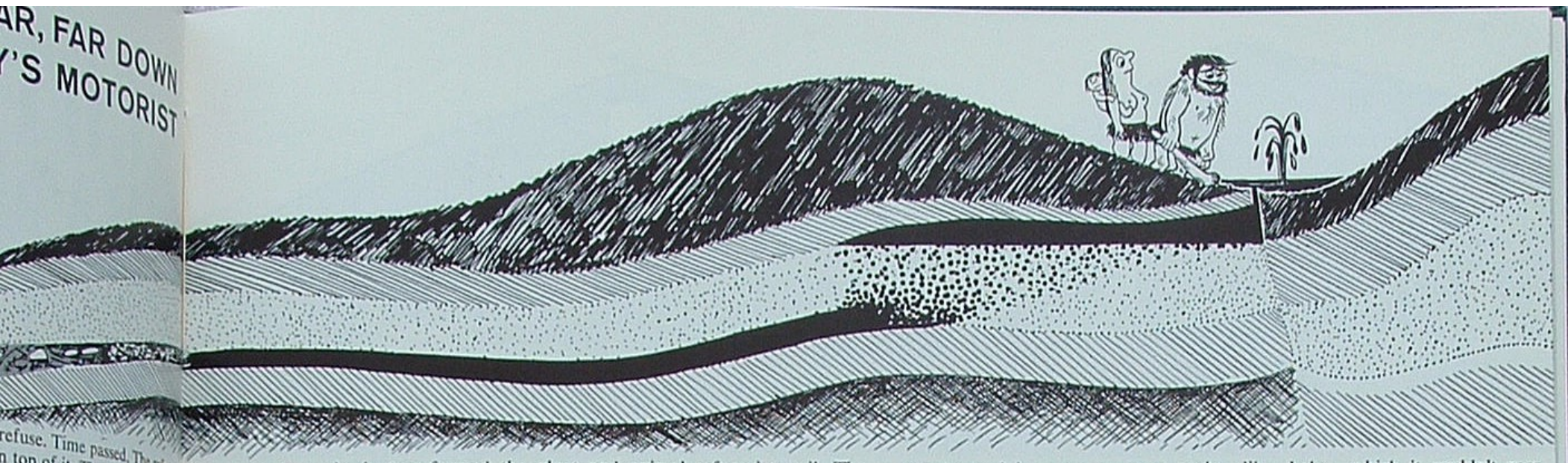


HOW OIL IS TRAPPED: Underground reservoirs are usually under pressure. The pressure is caused either by gas or water–or both–pushing against the oil. Unless something got in the way to stop or trap it, the oil would keep traveling. Shown here are a few typical traps that occur in fields where Union Oil has wells. (The dotted layers are sandstones. The diagonal lines indicate hard shales. The layers that look like brick are limestone.) The arched layers at left, for instance, could be the Rio Bravo, California, field. Rio Bravo crude contains a lot of gasoline. Down along the Gulf Coast of Louisiana and Texas, oil is often trapped aga way up through the formation Canada has an extensive progr remnants of an ancient sea.



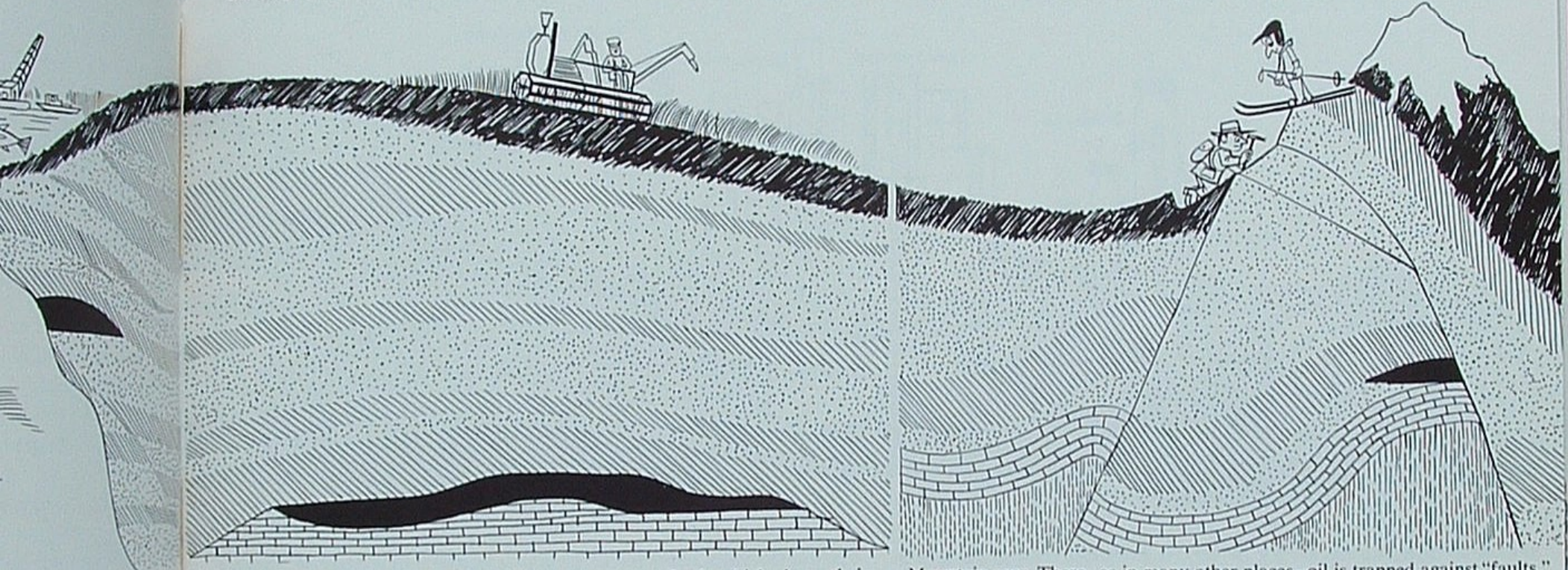
HOW MEN FIND OIL: By studying both successful and unsuccessful wells, geologists have learned to identify the conditions under which oil may be found. (They have also learned to identify oil-bearing rocks by the fossils they contain.) Sometimes there are signs on the surface which point to the presence of oil–seepages, exposed "structure," or other favorable conditions. When there are no surface indications, geophysical crews explore thousands of feet underground. They set off miniature explosions. The shock waves travel down into the earth and are reflected back by the different layers of rock. Delicate instruments re experts can chart the curves general shape of the surface presence of a trap. H

AR, FAR DOWN
'S MOTORIST



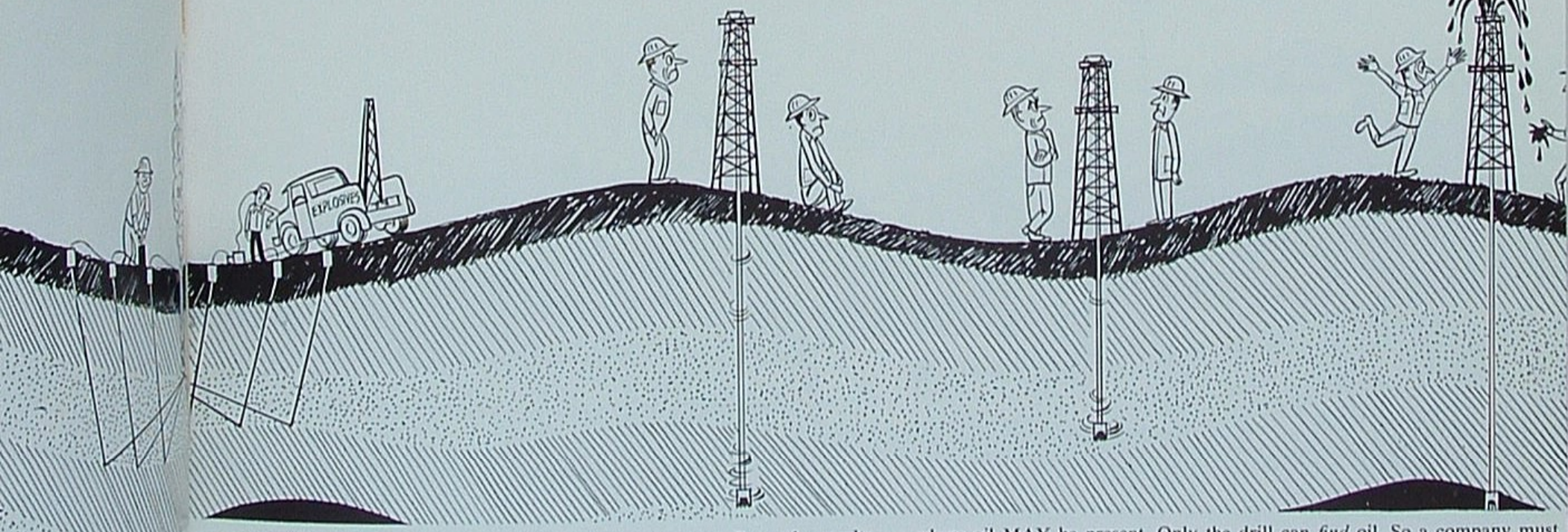
refuse. Time passed. The refuse
n top of it. These deposits grew
essed tighter and tighter. Even-
s and shales. The same pressure

–plus heat–slowly transformed the plant and animal refuse into oil. The shales hardened. As they did, the oil moved into more porous rock, like sandstones. While this was going on, the earth's crust was shifting and folding. As the deep-lying rocks were arched and bent, oil was forced upward until it was trapped by more compact rocks – like shales – which it couldn't pass through. There it stayed, held in the pores of the rock. Sometimes reservoirs leak to the surface through earth faults. These leaks are called "seepages." They led to the discovery of many of our early-day oil fields.



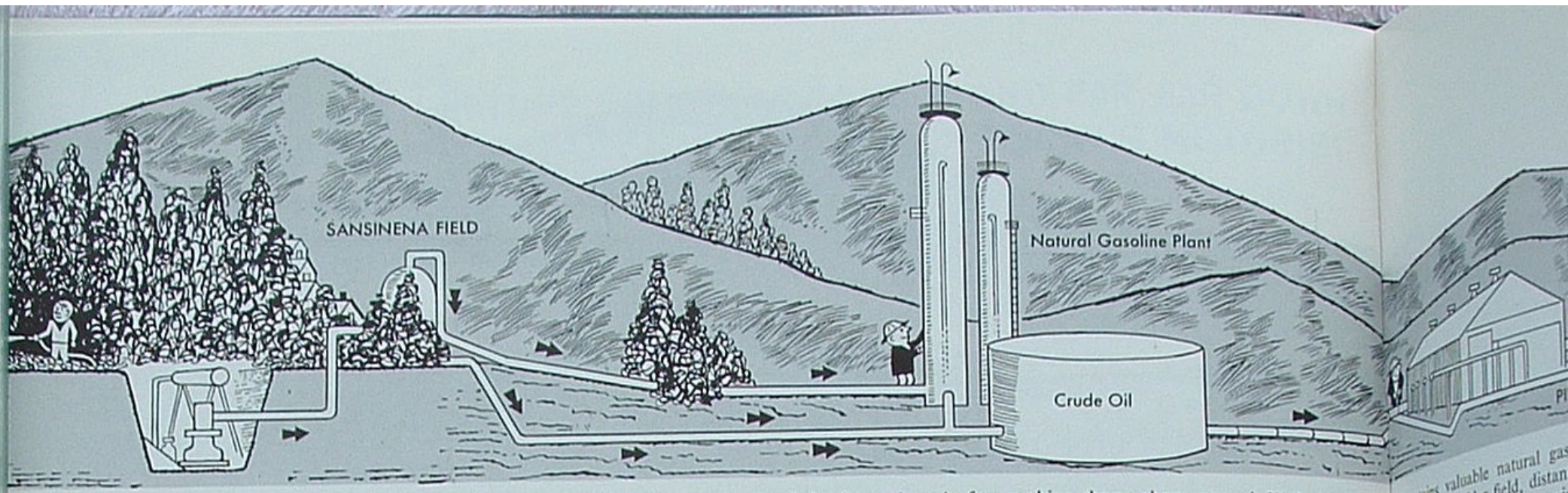
The diagonal lines indicate hard
mestone.) The arched layers at
alifornia, field. Rio Bravo crude
e Gulf Coast of Louisiana and

Texas, oil is often trapped against immense plugs of salt which shove their way up through the formations. In Canada, where Union Oil Company of Canada has an extensive program, geologists find oil in old limestone reefs, remnants of an ancient sea. Union Oil has producing wells in the Rocky Mountain area. There–as in many other places–oil is trapped against "faults." Faults are places where rock layers have split and slipped, allowing a more compact layer to seal off an oil formation. Now and then, the rock layers will slip. When the slippage is severe enough, we feel it as an earthquake.

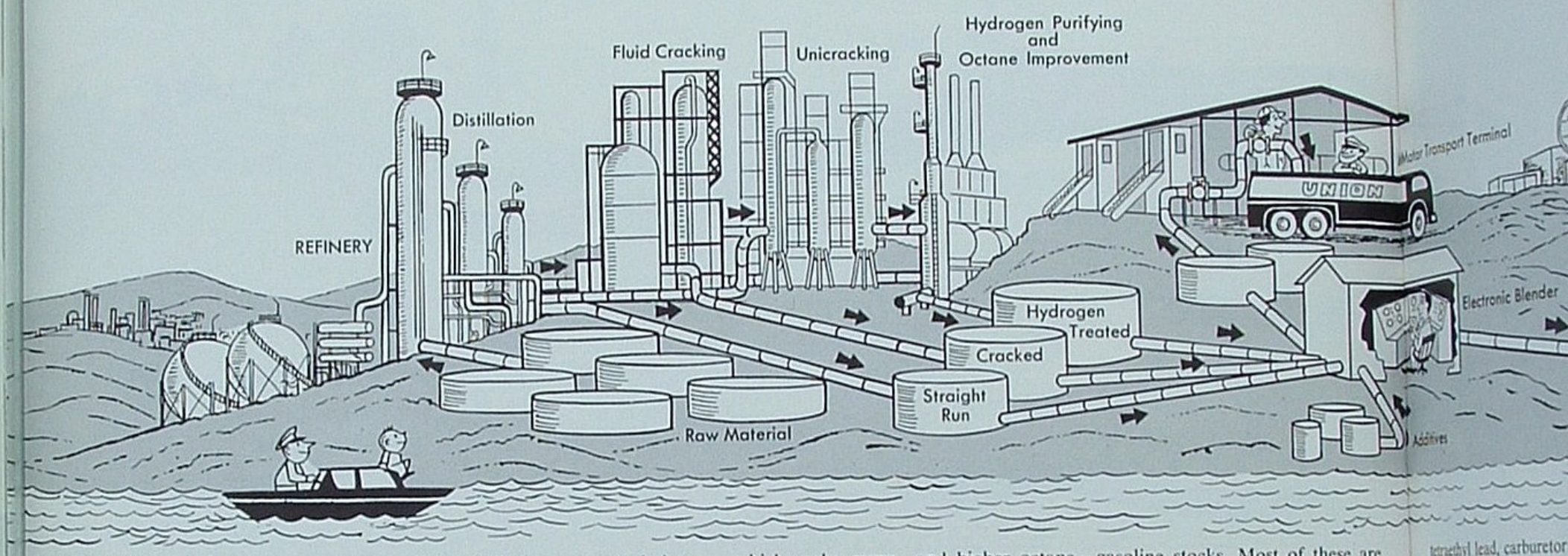


e," or other favorable conditions
ysical crews explore thousands
The shock waves

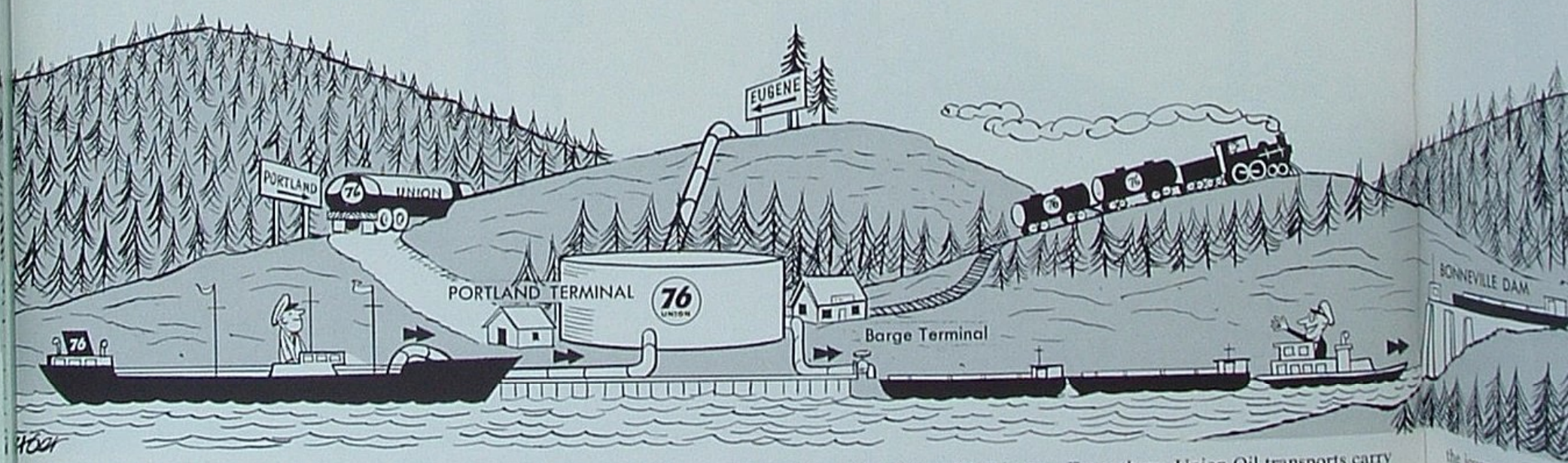
rock. Delicate instruments record these reflections on tape. From the results, experts can chart the curves of the underground layers. At other times, the general shape of the surface of the ground–hills, perhaps–will indicate the presence of a trap. However, in all these cases, the geologist can merely say where oil MAY be present. Only the drill can *find* oil. So a company must invest between $75,000 and a million or more in a wildcat well. And one time out of 33 the wildcat bit hits. Because of the demand for oil and the difficulty of finding it, companies spend tremendous sums on exploration.



THE SEARCH FOR OIL to bolster California's declining reserves has taken the driller into cities. When wells are drilled near homes, they are sound-proofed to keep from bothering the neighbors. After the well is completed, the site is landscaped, and often nothing shows above ground. Wells in the urban Sansinena field, for example, produce oil from which gasoline is made. They also produce natural gas. The gas is wet, like foggy air—but this fog contains valuable natural gas



AFTER CRUDE OIL reaches the refinery, it is distilled to separate it into gasoline and other "fractions." (A little over 30 years ago, this "straight-run" gasoline was all we sold.) Heavier oil from the stills flows to cracking plants which make more—and higher octane—gasoline stocks. Most of these are hydrogen-treated and "reformed" to improve their quality further. Then they are blended with the cracked and straight-run stocks plus various additives: tetraethyl lead, carburetor



PORTLAND IS A MAIN distribution point for Oregon and Washington. Products are shipped from there by pipeline, transport truck, and tank car. Gasoline for Walla Walla, however, is transferred to barges. The barges go up the Columbia to East Pasco, Washington. From there, Union Oil transports carry the gasoline either to large service stations or to a marketing station (for delivery by local trucks to small stations). A dealer handles the last lap of the journey when he fi

tural Gasoline Plant

Crude Oil

g shows above ground. Wells in th
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is wet, like foggy air—but this fo

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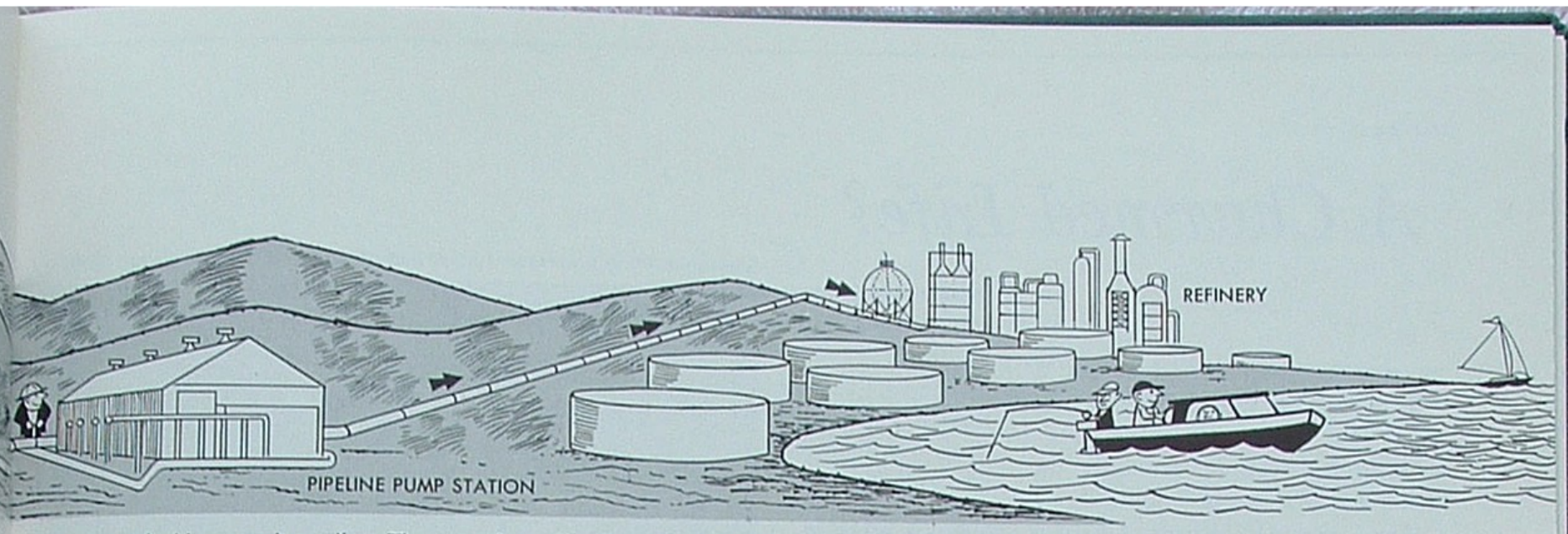
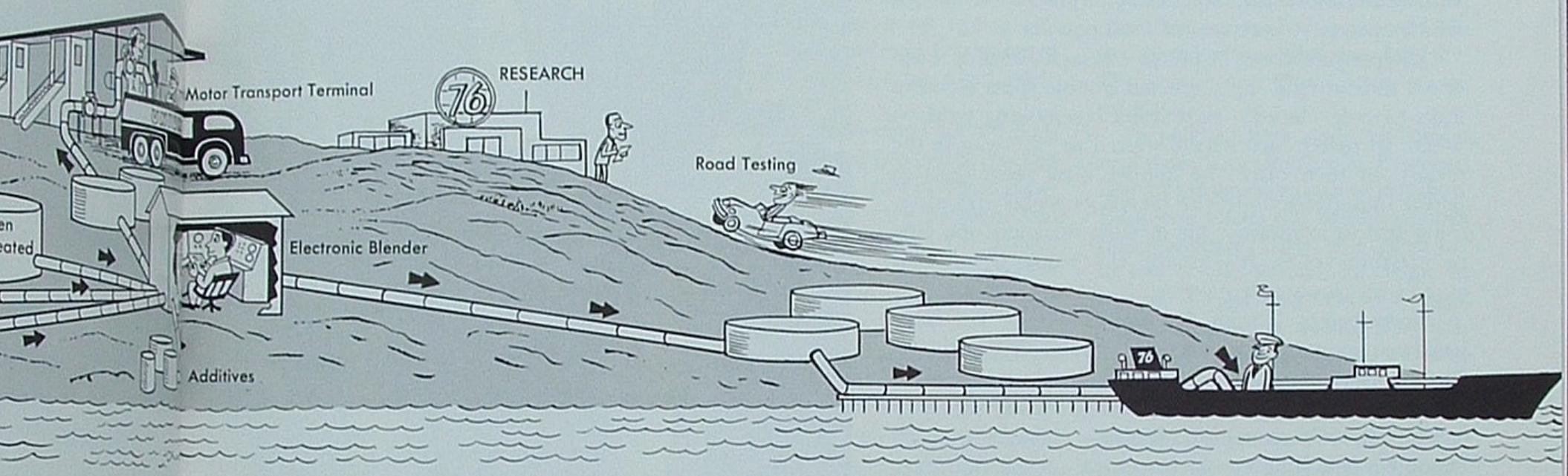
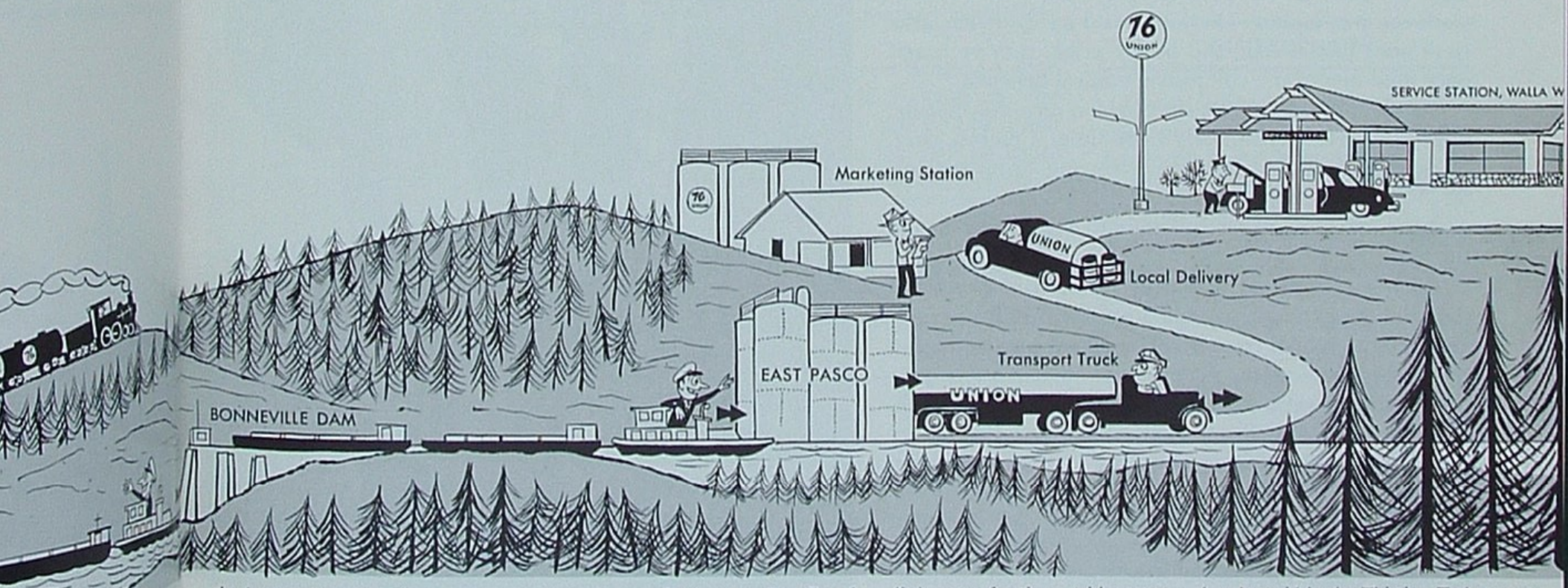


contains valuable natural gasoline. The natural gasoline is removed in a plant at an older field, distant from homes. It is blended into the crude oil and sent to the refinery by pipeline. Part of the remaining "dry" gas is sold, to be burned by homeowners and by industry. Part is forced back into the ground where it will push out more oil. This is one way oil companies lengthen the life of oil fields, conserving an essential natural resource.



gasoline stocks. Most of these
ove their quality further. Then the
t-run stocks plus various additive

tetraethyl lead, carburetor cleaner, and so on. This finished gasoline (for our example) is loaded aboard a tanker and shipped to our Portland (Oregon) Terminal. So we can be certain Royal 76 and Regular 76 gasolines are today's finest, and that they will be even better tomorrow, research men work in the laboratory and in cars on the road looking for ways to improve quality. This quest, spurred by competition, is the reason you can buy high-octane fuels rather than the straight-run gasoline of 30 years ago.



m there, Union Oil transports
marketing station
the last leg

the journey when he fills a customer's tank. From refinery to station, Royal 76 and Regular 76 have traveled 1,900 miles. They are the *finest* sold anywhere—two gallons do the work of three 1932 gallons. Yet the customer pays little more for them, without taxes, than he paid in the Thirties. Today, your gasoline dollar buys more than ever before!

A Charmed Life?

YOU'D expect to find Adrian W. Sheldon of Orcutt somewhat halt or scarred after learning the nature of his job. For, as the saying goes, a man who's always looking for trouble generally finds it. That's what Sheldon is — a sort of trouble shooter.

On Union Oil records, Adrian is listed as a pressure vessel inspector. That means he is responsible for checking and approving or condemning all equipment in his field subject to dangerous pressures. Included are pipelines, absorption plant stills, stabilizers, boilers, compressors, gas and steam injection equipment — some of which operate at pressures of 2500 pounds.

The pressure vessel inspector necessarily spends much of his time around the suspected trouble spots — where leaks have developed — near suspicious looking welds — where corrosive forces have started to eat away at the metals. In such places he applies x-ray techniques to detect imperfections in the metals or welds and ultrasonic devices to measure the metallic thickness of a pipe or pressure vessel. It's usually the weakest link that attracts his closest attention.

Nevertheless, Adrian Sheldon is one of the best-preserved men in Union Oil Company. Think of it: Throughout 29½ years of intimate contact with potential danger, he never met with a lost-time injury — hardly received a scratch or a sprain — not once was sick enough to stay home — lost no time — took no leaves of absence.

His "charmed" life, as he calls it, seems almost contagious. He has never been present when another workman was injured. His wife and three daughters also have been just as hale and hearty as he; they've never once used one of the company's medical benefits.

As for traffic accidents, the Sheldon record is equally impressive. He drives nearly 2,000 miles a month, over all types of roads and freeways, averaging 40 inspections on 2500-pound pressure vessels in half a dozen California counties. Yet, he's never had an auto accident on or off the job.

"Don't cite me as a perfect example of anything, though," he admonished when we asked him to verify company personnel records. "The doctor put me in the hospital just before my 30th year to stitch up a hernia. And I once parked my car in front of the house with the keys in the ignition; they later found the car in San Leandro — wrecked — but not one of my tools missing."

Even so, Adrian Sheldon couldn't dampen our enthusiasm. We believe his is one of the best safety records in Union Oil history — despite the high pressure.

Shelton holding a wooden sucker rod used in the days he began work.

continued

BUSINESS HIGHLIGHTS

BIG CALIFORNIA WELLS

Union Oil recently completed its largest producing well drilled in California in a decade.

During its initial test period, McKittrick 58X-8—the third well in Union's extension of the Railroad Gap field in the west San Joaquin Valley—flowed at a rate of more than 3,100 barrels a day from two producing zones.

The fourth and fifth wells on the 270 acres of fee land began drilling shortly after 58X-8 came in.

NEW GULF PRODUCTION

Union Oil and Pan American Petroleum have purchased from Superior Oil Company a 5,740 acre block of gas and condensate production adjacent to our prolific Block 14 gas field in the Vermilion area about 15 miles off the coast of Louisiana.

The purchase, for $42 million, was on a 50-50 basis, with a $6 million down payment.

The new lease is expected to contribute significantly to our gas and condensate production in the Block 14 field, one of the largest gas fields in our Gulf Division.

Block 14 production was discovered in March, 1956, and in September, 1963, the company found a deep-pool addition to the field. Union Oil is operator for Union and Pan American in the Block 14 field.

WATCH FOR GOLDEN GATEWAY

San Francisco's historic Embarcadero may never be the same again. As part of a mass urban redevelopment project, the old produce district of the Bay City soon will blossom with high-rise buildings with shiny aluminum walls. The look of the Sixties is coming to an area of downtown San Francisco bordered by Market Street and Broadway, from Battery Street to the Embarcadero.

Among the landmarks of the future are a high-rise apartment and several office buildings, the most prominent of which will be a 24-story Alcoa office building.

Here's where we come in: A 1,500-car garage covering two city blocks and called the Golden Gateway Parking Garage will be constructed in connection with the Alcoa building. The garage, largest in San Francisco, will dispense the *finest:* Union Oil will supply the petroleum products.

TALLMAN ISSUE SETTLED

The U.S. Supreme Court has overturned a lower-court ruling that had jeopardized the validity of oil leases in the Kenai National Moose Range in Alaska. The new ruling is expected to cause a spurt in Alaskan exploratory drilling.

The Supreme Court reversed a decision in the James K. Tallman case that had questioned the title of Union and other operators in the area on leases issued by the Department of Interior prior to 1958.

MONTANA MINUTE MEN

In our Glacier Division, the U. S. Air Force Minute Man missile complex is being beefed up under a subcontract held by the American Bridge Division of U. S. Steel.

Union fuels and lubricants are being used on this year-long job. Union products, you may recall, served contractors on the original installation of these Montana missiles.

HONOLULU TO VEGAS

Most of us mainlanders dream of an island holiday in Hawaii, but what do the citizens of our 50th state long for? The secret is out: They want to see the mainland.

Two Union Oilers made this "dream trip" recently as winners of a "Las Vegas Bound" gasoline sales contest in Hawaii. First prize winner was Ben Yamamoto, who received a 10-day, all-expense trip to Las Vegas, Nevada, for doing the best job of increasing sales at his Pearl City service station. Second-place winner was Donald Gau, who enjoyed a five-day tour of the Nevada recreation spot. The third-place winner was George Nagano, who got what all we mainlanders want: an expense-paid weekend "Island Holiday." In all cases, the dealers "poured on the service" and offered extras to attract new customers.

THE FLEET'S IN

Ocean fishing is one of the foundations of the economy in the Pacific Northwest and Alaska. Union Oil, always prominent in serving the fishermen, has acquired the petroleum business of the huge Purse Seine Vessel Owners' Association, headquartered in Seattle.

The association has a membership of some 250 far-ranging fishing-boat owners who sought a petroleum supplier that could deliver products over a wide geographic area. The volume of their petroleum requirements is significant both in Puget Sound and Alaskan waters. The company is proud to welcome this group to the family of Union Oil customers.

BUSINESS HIGHLIGHTS *continued*

STATIONERY WAREHOUSE MOVES

The Los Angeles Stationery Warehouse has moved. Operations resumed at its new location—the D-level of Union Oil Center—on May 3.

By moving into previously unused space, the following advantages accrue to the company: The former warehouse in South Los Angeles can be sold, with proceeds increasing working capital. Service to Union Oil Center will be improved without reducing service elsewhere. Moreover, operating expenses will be reduced significantly.

The moving operation was not without problems. Limited ceiling height on the D-level required modification of pallet racks and the lift truck. Ceiling height of the parking ramps also created problems in moving materials to the new site.

In spite of these difficulties, the transfer was completed over a long weekend almost without a hitch. It required 22 truckloads to transport about 120 tons of material consisting of 896 company forms, 384 stationery items plus racks, shelving, furnishings and a large volume of printed matter for the Marketing Department.

Employees using the services of the Stationery Warehouse should send requisitions directly to its new home, Union Oil Center.

DEVELOPMENTS AT MOONIE

At our Moonie field in Australia, additional development drilling has increased production to a total of 7,400 barrels a day. During the past two months, five wells, numbered 18 to 22, have been completed at initial flowing rates of 580 to 900 barrels a day. To date, more than 2 million barrels of oil have been produced from the Moonie field.

At the Alton field, 60 miles southwest of Moonie, development drilling is continuing. So far seven wells have been completed but are shut in.

NEW ALASKA PIPELINE

In Alaska, preliminary work is underway on a 42-mile natural gas delivery line from the Union-Marathon Kenai gas field to the giant Swanson River oil field.

When completed, Kenai gas will be delivered at rates up to 100 million cubic feet a day to be used in pressure maintenance at Swanson. Deliveries are to be made under a unique rental arrangement whereby Union and Marathon have the right to re-produce (withdraw) the gas after depletion of the Swanson field.

Late in the year we will be drilling several additional Kenai gas wells as additional supply for this project.

75,000 HORSES AT L.A.R.

The Los Angeles Refinery is supplied with electrical power by the L. A. Department of Water and Power. Prior to completion of the Unicracker at L.A.R., the electrical hi-line system supplied power to the refinery through three substations. The Unicracker, hydrogen plant and related refinery changes required adding a fourth substation and, incidentally, increased the electrical workload by more than 50 per cent.

Previously L. A. Refinery was billed each month for about 17 million kilowatt hours; now the meter reader is recording about 25 million kw/h.

What is a kilowatt hour? It is roughly the amount of electricity required to power the average electric flat iron for an hour's home ironing, or to power an automatic washing machine for an hour and a half. We used to say the refinery's electrical usage was equal to the electricity used in the homes of a city of 60,000 houses. Today our mythical city has grown to 85,000 houses.

In contrast to the homeowner's use, L.A.R.'s main power consumption is in electric motors. Prior to the Unicracker, we had approximately 60,000 horsepower of motors hooked up. Now, with the Unicracker onstream, there is an additional 15,000 horsepower. That's 75,000 h.p.—a lot of horses.

JET FUEL AWARDS

The U. S. Defense Department has awarded Union Oil Company contracts for 82 million gallons of JP-4 and JP-5 jet fuel for delivery to the U. S. Air Force and Navy during the second and third quarters of this year.

The awards were made on competitive bidding.

In terms of gasoline, 82 million gallons would fill the tanks of all the cars and trucks in Alaska, Arizona, Hawaii, Idaho, Oregon, Utah, Washington and Wyoming.

REFINERY IN CANADA

Union Oil Company of Canada, an 83 per cent owned subsidiary, announced plans in April to build a $5 million refinery at Prince George, British Columbia.

The plant will be capable of converting British Columbia crude into a "full spectrum" of petroleum fuels from gasoline to fuel oil. In addition to a crude distillation unit, the plant will employ the Unifining process for the production of sulfur-free furnace oil and truck diesel fuel. Furthermore, there will be catalytic reforming capability for the production of high octane regular and premium grade motor fuels.

Union of Canada has substantial crude oil and natural gas reserves in western Canada. In British Columbia, crude production is approximately 4,000 barrels a day. The company has been actively engaged for many years in exploration and development of crude oil and natural gas in British Columbia.

THE FINEST FLATWARE

Dealers in Los Angeles have pronounced highly successful a consumer promotion offer of high-quality National Silver Company stainless steel tableware.

The offer consisted of boxed sets of satin-finish, leaf pattern flatware that sold for 99 cents with the purchase of eight gallons of gasoline. Units ranged from basic, four-piece place settings to sets of tablespoons, teaspoons, serving spoons and other accessory pieces.

The flatware, as befits Union Oil's reputation for the *finest*, is comparable in quality to high-priced flatware sold in fine stores.

SANTA MARIA UNIT

March 1 marked a milestone in the history of one of Union Oil's older California oil fields. On that date unitization of the Santa Maria Valley field became effective, and Union took over operation of the new unit. The Santa Maria unit involves 347 wells and the interests of 12 operating companies and hundreds of royalty interest holders.

A unit agreement, a typical way of initiating a secondary recovery program, involves a joint operation of a producing reservoir. The unit is operated as a single field without regard to separate ownerships, with one company operating the unit and profits being apportioned according to percentage of ownership.

Establishment of the Santa Maria Valley unit, in which Union's interest is 58.37 per cent, will permit more efficient and economical operation through consolidation of facilities and–even more significantly–expedite secondary recovery operations in the field and greatly increase the amount of oil ultimately recovered.

HOME REMEDY CAUTION

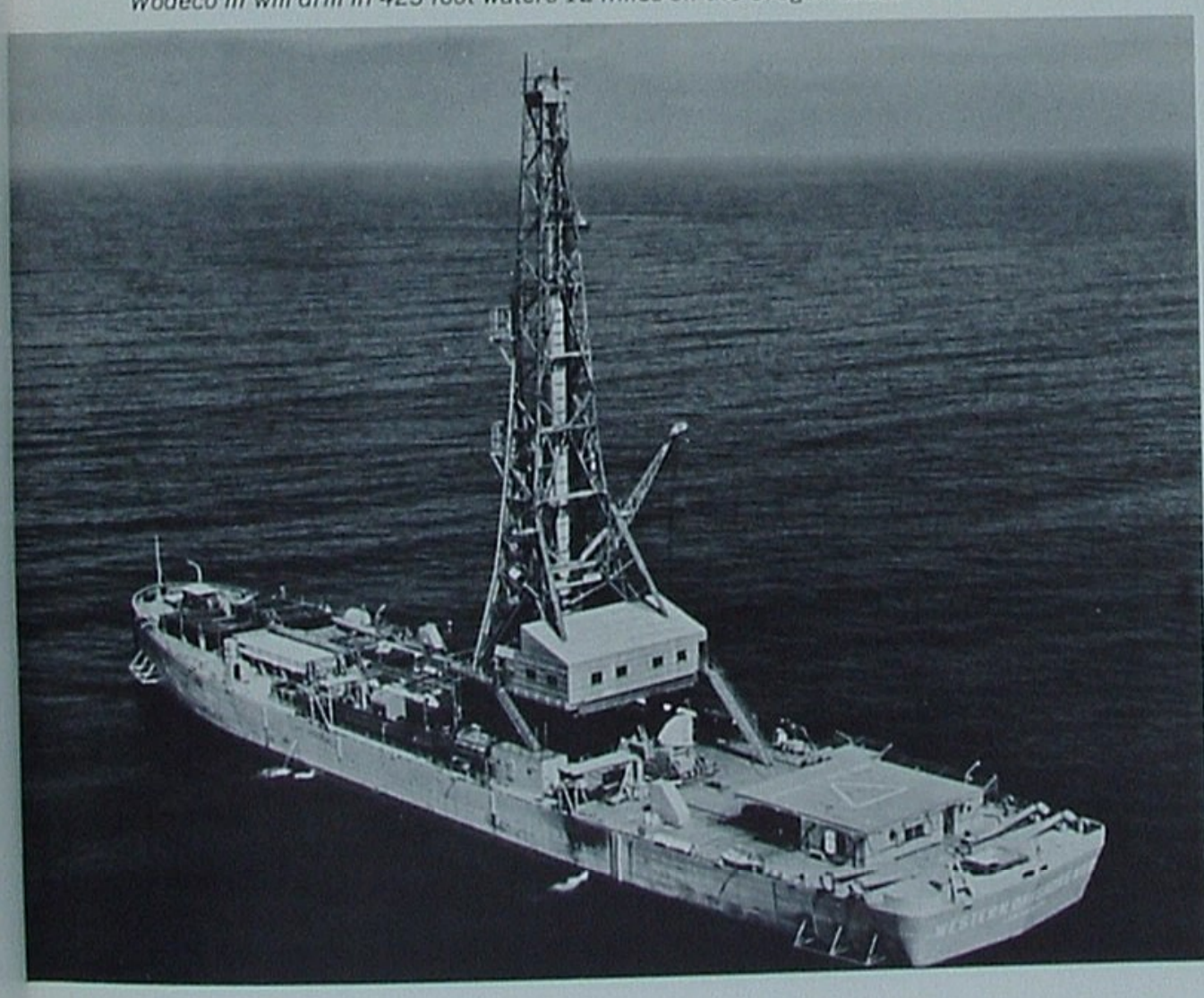
Home remedies are usually safe and beneficial – if they are used as specifically directed.

Unfortunately, all too often such medical remedies are abused and misused to the point of serious poisoning with, at times, a fatal outcome.

One cannot be too careful to be aware of the potency of some of these drugs and the harmful effects of their overuse, warns Dr. Richard Call, medical director. When in question, seek more information from your private physician or from the Medical Department.

Each year one or more Union Oilers is accidentally seriously poisoned. Be sure it doesn't happen to you.

Wodeco III will drill in 425 foot waters 12 miles off the Oregon coast.



THE WEST'S AUTOMOBILE CITY

Automobile dealers long ago capitalized on a car buyer's fancy for shopping around before buying a car. To make it handy, the car dealers banded together along one street, which soon got to be named Automobile Row: Van Ness in San Francisco, Figueroa in Los Angeles, Sandy Boulevard in Portland and Union Street in Seattle.

Here's the latest on Automobile Rows: A 60-acre plot of land on the outskirts of Riverside, California, will be turned into an Automobile City. Seven dealers, all of long standing in the area, have purchased the plot of ground and will move to this location. One of the dealers is De Anza Chevrolet, which features Union Oil lubricants.

OFFSHORE OREGON WILDCAT

The deep-water drilling vessel *Wodeco III* arrived off Newport, Oregon, during the middle of April to begin wildcat drilling operations on an offshore oil prospect held jointly by Union Oil and Standard Oil of California.

The *Wodeco III*, which had been working in Southern California waters, was scheduled to begin drilling shortly after April 15, weather permitting. It took two days to position the nine anchors needed to stabilize the huge drilling barge.

The first drill site is situated about 15 miles north of Newport and 12 miles off the coast in 425 feet of water. The location is on one of 29 federal lease tracts of 5,670 acres each held by Standard and Union. Standard is the operator for all drilling north of Newport, and Union will be operator for drilling operations conducted south of Newport. A helicopter base was set up at Newport Municipal Airport early in April.

Union and Standard acquired the 29 tracts offshore from Oregon and Washington last October at a U. S. Government land sale. Union also acquired a 100 per cent interest in another offshore tract northwest of Reedsport, Oregon.

Cost of exploratory holes in the offshore Oregon and Washington area is expected to exceed $750,000 each. (See SEVENTY-SIX, January 1965.)

IN FOCUS

A GOOD TURN FOR SCOUTING: *The Supervisors' Association at Los Angeles Refinery is credited with sponsoring the newly formed Boy Scout Science Explorers Post No. 6 — 76, first post of its kind in the West designed to give boys a thorough introduction to the petroleum industry. Present at the charter presentation on February 17, 1965, were, from left, Donald C. Hoberg, Neil T. Foster, Delbert B. Holm, Leo S. Pickelner, Senior Vice President K. C. Vaughan, Manager John M. Hopkins, Association President Donald L. Hanley, Raymond K. Baird and Thomas L. Freer.*

APPOINTED BY GOVERNOR: *Thomas H. Gaines, Jr., a supervisor at Los Angeles Refinery, has been appointed by Governor Edmund G. Brown to the Los Angeles Regional Water Pollution Control Board. His special services to the board will be concerned with problems of industrial waste. A graduate in chemical engineering from the University of Southern California, Gaines has served at the refinery in both engineering and industrial relations assignments. He is regarded as an authority on problems of air pollution and water pollution.*

DONAHUE BROTHERS RETIRE: *The "76" service station at Main and Bridge Streets in Watsonville, California, is being modernized "too" completely in everyone's opinion. As its brand new facilities swing open for business, customers and Union Oilers will find someone missing — the Donahue brothers, Steve and Tom. Steve has been Union's dealer at this location for 36 years; Tom joined him about 20 years ago in operating the station. Both have retired and were given a warm salute by Union Oil associates at the Roseter Hotel on February 4th. In the farewell picture are, from left, Steve Donahue, Consignee Stan Silverstone, John Grunewald and Tom Donahue.*

RETIREMENT A LA "CAT'S MEOW": *Among Union Oil retirees joining the parade to deluxe retirement communities are Rozinne and Harry Ritzer, here seen introducing their two prized felines, Whiskers and Snow White. Harry, who worked for many years at our Los Angeles Terminal, says, "We no longer envy the cats their easy way of life; we've joined 'em." The Ritzers live at Sun City, Calif.*

NAMED ENGINEER OF THE MONTH: *Frank H. Ott, supervisor of commercial merchandising for the Refining & Marketing division, Union Oil Center, was honored in a recent issue of the publication* Engineer of Southern California *as "Engineer of the Month." Frank joined the company at Oleum in 1936 as a chemist, moved to Research at Wilmington in 1937, and in 1945 began his long technical tenure in marketing.*

NEW E.M.P. ADMINISTRATORS: *Recently elected by Union Oil employees to three-year terms as Administrators of the Employees Medical Plan were Martin Manders of Process Engineering and Homer E. Rathbun of the Insurance Department. Other members of the present Board of Administrators are Bernard B. Brison, Richard S. Crog, Colin H. Chadband and Earl R. McCloud. Advisors to the board are Dr. Richard Call, E. A. McFadden, legal counsel, and D. S. Povah, Industrial Relations advisor and secretary. The 50-year-old medical plan operated by the board expended approximately $550,000 in 1964 for medical care.*

TURNING BACK *The* PAGES

This month's commentary comes from the May, 1925, issue of the Union Oil BULLETIN, predecessor of SEVENTY-SIX magazine.

"Last month the company established what is believed to be a world's record when a string of eight-inch casing was cemented in a well in the Rosecrans field at 5,692 feet . . . illuminative of the task that faces oil operators in areas requiring deep drilling."

(By way of modern comparison, the company earlier this year brought in its deepest producing well at Caillou Island, Louisiana, at 18,100 feet.)

* * *

The *Bulletin* also took note of Union Oil Company's active participation in paving the streets of Japan. "Plans are underway," it said, "to widen and completely pave the streets of Tokyo, Osaka, Kobe and Yokohama. Charles H. Talbot, Union Oil asphalt engineer, finds the Japanese engineers keen students of road construction. 'Union asphalt . . . has been used most successfully in Japan,' he reported."


LECTRA HAUL
PT 512
512
THE
BIG
TRUCK

Mere men are dwarfed by a monster truck undergoing tests at Pima Mining Co.

By RUSS HALFORD
Photos by the author

TUCSON, ARIZONA

WHEN YOU DRIVE through the gate at Pima Mining Company, you stop talking peanuts. Everything here is BIG. The hole in the ground is a HOLE. There are SHOVELS, BOULDERS, TRUCKS, PROCESSING PLANTS, nothing seems merely normal.

At the mine itself, copper ore is dug from an open pit by shovels that lift 13 tons at a scoop. The ore is carried away in a fleet of trucks that haul 65 tons at a load. This goes on 24 hours a day. It's a pretty cut-and-dried operation; men do their jobs quietly and efficiently.

But even these professionals have to stop and take a good look when the Lectra Haul 85-T rumbles by. Here is something special, a behemoth of steel and rubber that seemingly defies the laws of motion; here is a monster that moves fast.

When I arrived at the mine to take pictures of the truck for SEVENTY-SIX magazine—Pima is 25 per cent owned by Union Oil Company—I was turned over to Nick Nicholson, the mechanical superintendent, who, I'm told, is the best "super" in the open-pit mining business. Tall, slender, with an inquisitive face and hands that seem flattened and blunt. Nick keeps Pima's wheels turning. If someone told me Nick was born with a wrench in his hand, I would believe it.

What I like about men of Nick's ilk is that they never use the word *maybe*. His idea of a Cook's Tour of the 85-T had none of the "isn't-it-beautiful?" lingo; rather, it was spotted with phrases like "it does 30 m.p.h. up a 1½ per cent grade."

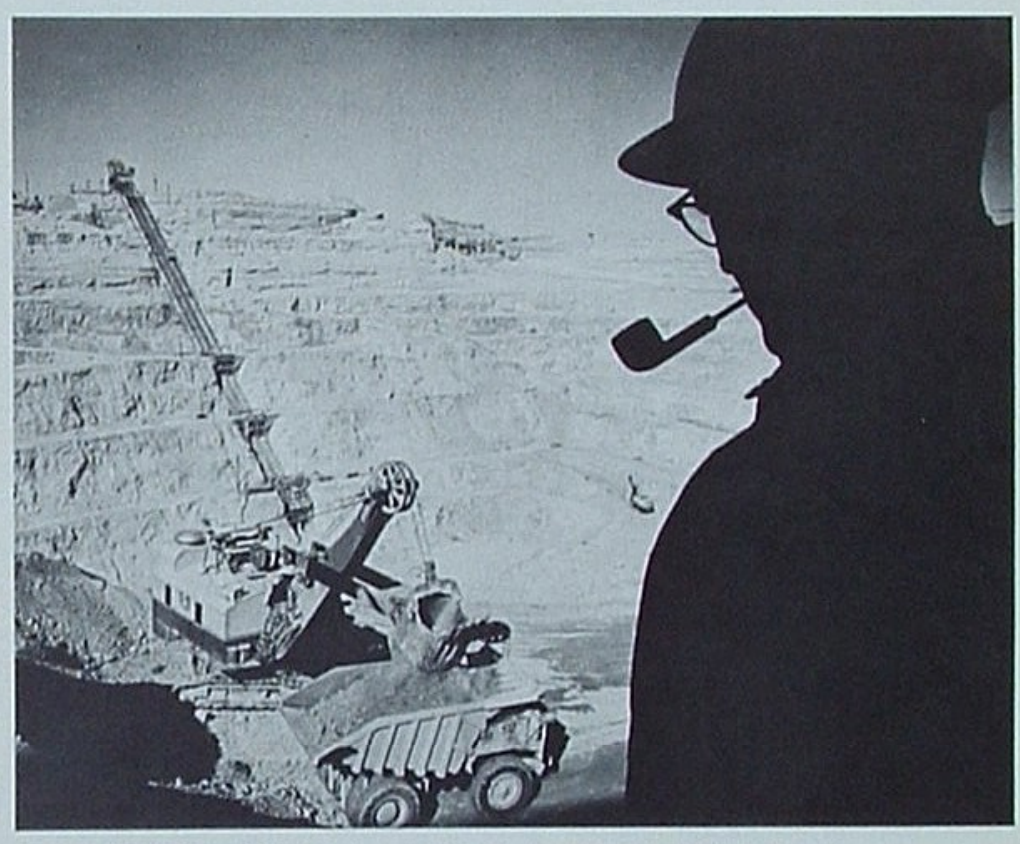
We walked across a football field of asphalt to what looked like a dirigible hangar; it turned out to be a first aid room for the big trucks. Nick said one difference between the 85-T and other trucks is that this one has electric drive. Each wheel is powered by an electric motor. A 700-h.p. diesel engine drives the monster's generator.

The maker of the 85-T, Unit Rig & Equipment Company of Tulsa, a manufacturer of oil field equipment, claims the 85-T is designed for the future. The frame and engine mounts are built to accommodate a 1,000-h.p. power plant. With larger engine and wheels, the maker says, the truck would become a 100-ton carrier.

"Even as an 85-ton hauler," says superintendent Nicholson, "it uses a fair share of Union Oil lubricants."

Why such big trucks? A. A. Friedman, resident manager of Pima Mining, said economics dictate the need for larger haulers. With a big truck, it can be profitable to carry low-grade ore to the mill. 76

Loaded truck rumbles up 1½ per cent grade at 30 m.p.h.



Open pit at Pima Mining dwarfs 85-ton truck and 13-ton shovel.

On long 7½ per cent grade, truck makes a good 5 m.p.h.

Mechanical superintendent Nick Nicholson talks with the driver of the huge 85-ton truck at Pima Mining Company.

SERVICE EMBLEM AWARDS

CORPORATE

May 1965

35 YEARS

LEWIS A. GIBBONS . . . . . Union Oil Center
MILTON W. LEE . . . . . Research Center

20 YEARS

GUY L. WALLER, JR. . . . . Research Center

15 YEARS

W. SMITH DORSEY . . . . . Research Center

10 YEARS

JEANNE M. HARNASCH . . . . . Union Oil Center

EXPLORATION & PRODUCTION

May 1965

30 YEARS

C. O. KATZENBERGER . . . . . Orcutt, Calif.
HUGH L. E. ROBERTS . . . . . Dominguez, Calif.

15 YEARS

JACK W. BAILEY . . . . . Santa Paula, Calif.
HARROL D. CAPERTON . . . . . Richfield, Calif.
O. A. DELEISSEGUES . . . . . Santa Maria, Calif.
CHESTER E. NORRIS . . . . . Guadalupe, Calif.
CLARICE T. TROMBLY . . . . . Union Oil Center
F. EARL TURNER . . . . . Orcutt, Calif.
RICHARD A. VIDAL . . . . . Cat Canyon, Calif.

10 YEARS

ELDON D. EAST . . . . . Brea, Calif.
JOHN S. HOFFMANN . . . . . Tulsa, Calif.
KELLY JOE PROCTOR . . . . . Odessa, Tex.
TEDDY D. SHUTT . . . . . New Orleans, La.
WILLIAM M. STANFORD . . . . . Santa Maria, Calif.
MELVIN E. WHITEDAY . . . . . Coalinga, Calif.

REFINING & MARKETING

May 1965

45 YEARS

JOSEPH N. BATEMAN . . . . . San Francisco

40 YEARS

CHARLES A. LEWIS . . . . . Oleum Refinery

35 YEARS

BETTY H. CARR . . . . . Union Oil Center
JOHN E. O'NEILL . . . . . Los Angeles Refinery
LINCOLN SERENE . . . . . Oleum Refinery

30 YEARS

L. C. BURKLUND . . . . . Portland
FRED W. BUSH . . . . . Union Oil Center
JOHN F. DUSSARD . . . . . Torrance, Calif.
WILLIAM C. MAYVILLE . . . . . Los Angeles
JOSEPH E. McHENRY . . . . . Union Oil Center
HARRY W. RIKE . . . . . Oleum Refinery
ALICE E. RUSSELL . . . . . Union Oil Center

20 YEARS

ERNEST S. ALLEN . . . . . Portland
ROBERT L. CROW . . . . . Oleum Refinery
LESTER W. DIXON . . . . . Stockton, Calif.
EDITH M. GATTO . . . . . Los Angeles Refinery
ROBT. N. GRANFELDT . . . . . Los Angeles
JAMES L. HESTER . . . . . Los Angeles Refinery
J. N. KOORENNY . . . . . Oleum Refinery
JOHN MACKEY . . . . . Los Angeles Refinery
JOHN E. NUNES . . . . . Oleum Refinery
LAWRENCE G. O'NEILL . . . . . Oleum Refinery
ELMER D. RICHARDSON . . . . . Sacramento, Calif.
KIYOTO SEGAWA . . . . . Hilo, Hawaii

15 YEARS

MORRIS BUE . . . . . Los Angeles
ROLAND M. CLIFFORD . . . . . Union Oil Center
HELEN ERICKSON . . . . . San Diego
JANE C. JACKSON . . . . . Seattle
JERRELL C. KIMES . . . . . Oleum Refinery
JOHN H. PEDERSEN . . . . . Los Angeles Refinery
GLADYS RYAN . . . . . Great Falls, Mont.

10 YEARS

JAMES R. BAGLEY . . . . . Seattle
GEORGE C. BLAKE, JR. . . . . Los Angeles Refinery
ROBERT C. BOGIE . . . . . Cut Bank Refinery
F. E. B. W. BURKMAN . . . Santa Paula Dist., Calif.
LEW G. DAVIS . . . . . Torrance, Calif.
VINCENT G. GERKEN . . . . . Los Angeles Refinery
WILLIAM L. HANSSLER . . . . . Los Angeles
CASPER J. HAYS . . . . . Santa Paula Dist., Calif.
KENNETH L. MIILLE . . . . . Redwood City, Calif.
ED F. SHARP . . . . . Union Oil Center
LEMUEL W. SMITH . . . . . Los Angeles Refinery
KEITH E. WALTER . . . . . Los Angeles Refinery
IRVING F. WARNER, JR. . . . . Union Oil Center

DEALERS

May 1965

40 YEARS

MARIANO MARTINEZ (April) . . . . . Upland, Calif.

35 YEARS

V. J. K. CAPRON . . . . . Friday Harbor, Wash.

25 YEARS

EDSEL F. BIERBOWER . . . . . San Clemente, Calif.
ISOLA BROS. . . . . Modesto, Calif.

20 YEARS

BITA-HOCHEE TRADING POST . . Indian Wells, Ariz.
GEORGE HOWARD . . . . . Los Angeles
KEN T. McNAMERA . . . . . Los Angeles
W. R. PARKER . . . . . Los Angeles

15 YEARS

EARL AGRO . . . . . Carbonado, Wash.
R. CHASE . . . . . San Francisco
RALPH HOWARD . . . . . Ten Mile, Oreg.
FORREST M. LAKEY . . . . . Los Angeles

10 YEARS

J. AGIUS . . . . . Petaluma, Calif.
F. AGIUS . . . . . Petaluma, Calif.
W. S. BATES . . . . . Eugene, Oreg.
ROBERT A. CANO . . . . . San Pedro, Calif.
FRANK FIDUCCIA . . . . . Santa Ana, Calif.
V. B. KENNEDY . . . . . Beaver, Wash.
G. O. McCURDY . . . . . Salem, Oreg.
ROBERT E. MEULER . . . . . Vancouver, Wash.
HAROLD SCHAFER . . . . . Arch Cape, Oreg.
HARLAN G. THOMPSON . . . . . La Mesa, Calif.
YORK WYMAN . . . . . Alsea, Oreg.

5 YEARS

PETER R. BURNETTE . . . . . San Bernardino, Calif.
L. E. BRYAN . . . . . Exeter, Calif.
PAUL E. CRAIG . . . . . Santa Ana, Calif.
B. M. GOFF . . . . . San Leandro, Calif.
DONALD C. HARTMAN . . . . . Oracle, Ariz.
H. HUTCHINGS . . . . . Clearlake Highlands, Calif.
B. S. KAKU . . . . . Los Altos, Calif.
JACK MATHEWS . . . . . Sherman Oaks, Calif.
GLEN MATTESON . . . . . Hammond, Oreg.
H. T. McCLURE . . . . . Exeter, Calif.
HAROLD C. MORSE . . . . . Albany, Oreg.
G. NIELSEN . . . . . San Carlos, Calif.
JOHN NOSICH . . . . . Kodiak, Alaska
D. J. OETGEN . . . . . Los Angeles
FRANCIS POWELL . . . . . Leupp, Ariz.
EDMOND E. ROSS . . . . . Bend, Oreg.
A. L. RUPE . . . . . Essex, Calif.
H. C. STRUEVER . . . . . Los Angeles
WISHIRE TERRACE APTS. . . . . Los Angeles

CONSIGNEES & DISTRIBUTORS

May 1965

40 YEARS

HENRY GEIST . . . . . Forks and Pt. Angeles, Wash.
B. R. HARDEN . . . . . Veradale, Wash.

30 YEARS

"BUZ" BRYANT . . . . . West Stayton, Oreg.
CHARLES E. SHIPLEY . . . . . Brownsville, Oreg.

20 YEARS

KATHRYN C. BELL . . . . . Leevining, Calif.

5 YEARS

O'BRIEN OIL COMPANY . . . . . Duluth, Minn.

RETIREMENTS

April 1965

CLYDE BRUST
Los Angeles Refinery . . . . . November 29, 1926

EDWARD L. HASLETT
Stewart Tank Farm, Calif. . . December 28, 1926

DAVID C. McEWEN
Bakersfield, Calif. . . . . July 2, 1928

RALPH M. McGEE
Sansinena, Calif. . . . . May 1, 1934

WILBUR S. NAYLOR
Los Angeles Terminal . . . . . January 26, 1944

WILLIAM P. OSBORNE
Oleum Refinery . . . . . May 16, 1945

HARVEY B. SHARP
Brea, Calif. . . . . April 1, 1943

GEORGE E. SLAGILL
Los Angeles Terminal . . . . . January 3, 1938

THOMAS E. TRUESDALE
Santa Maria Pump Station . . . . . July 27, 1924

CARL O. WHITSON
Los Angeles Refinery . . . . . August 26, 1928

STANLEY G. WISSLER
Union Oil Center . . . . . January 1, 1925

IN MEMORIAM

Employees

WILLIAM C. BEST
Kaplan, La. . . . . February 14, 1965

LEO W. DOTY
Rodeo, Calif. . . . . February 13, 1965

O. G. GILBERT
Salt Lake City, Utah . . . . . February 3, 1965

Retirees

CLARENCE H. ABERNATHY
Sutter, Calif. . . . . February 20, 1965

CHARLES C. BRUNK
Los Angeles . . . . . February 17, 1965

ALFONZO CARDOZA
Rodeo, Calif. . . . . February 4, 1965

MELVIN H. EDWARDS
West Covina, Calif. . . . . February 2, 1965

CHARLES F. JOHNSON
Oroville, Calif. . . . . February 21, 1965

CLYDE H. MANN
Oakland, Calif. . . . . February 22, 1965

ERNEST J. MEDINA
Walnut Creek, Calif. . . . . February 22, 1965

The Mayor of Downey

Union Oiler becomes mayor for third time

SCOTT E. TEMPLE is an oil man and civic leader; an active man, he comes by both titles honestly:

As an oil man, he can look back to his great grandfather, Walter Chaffee, a founding director of Union Oil Company. His grandfather drilled a duster in Torrey Canyon, later grazed cattle there. Temple joined Union Oil in 1935, has worked as field operator, well puller, gas tester, meter inspector, field mechanic, assistant production engineer, drilling engineer, division scout, and now is industrial relations supervisor at Santa Fe Springs, headquarters for the southern (Greater Los Angeles basin) district.

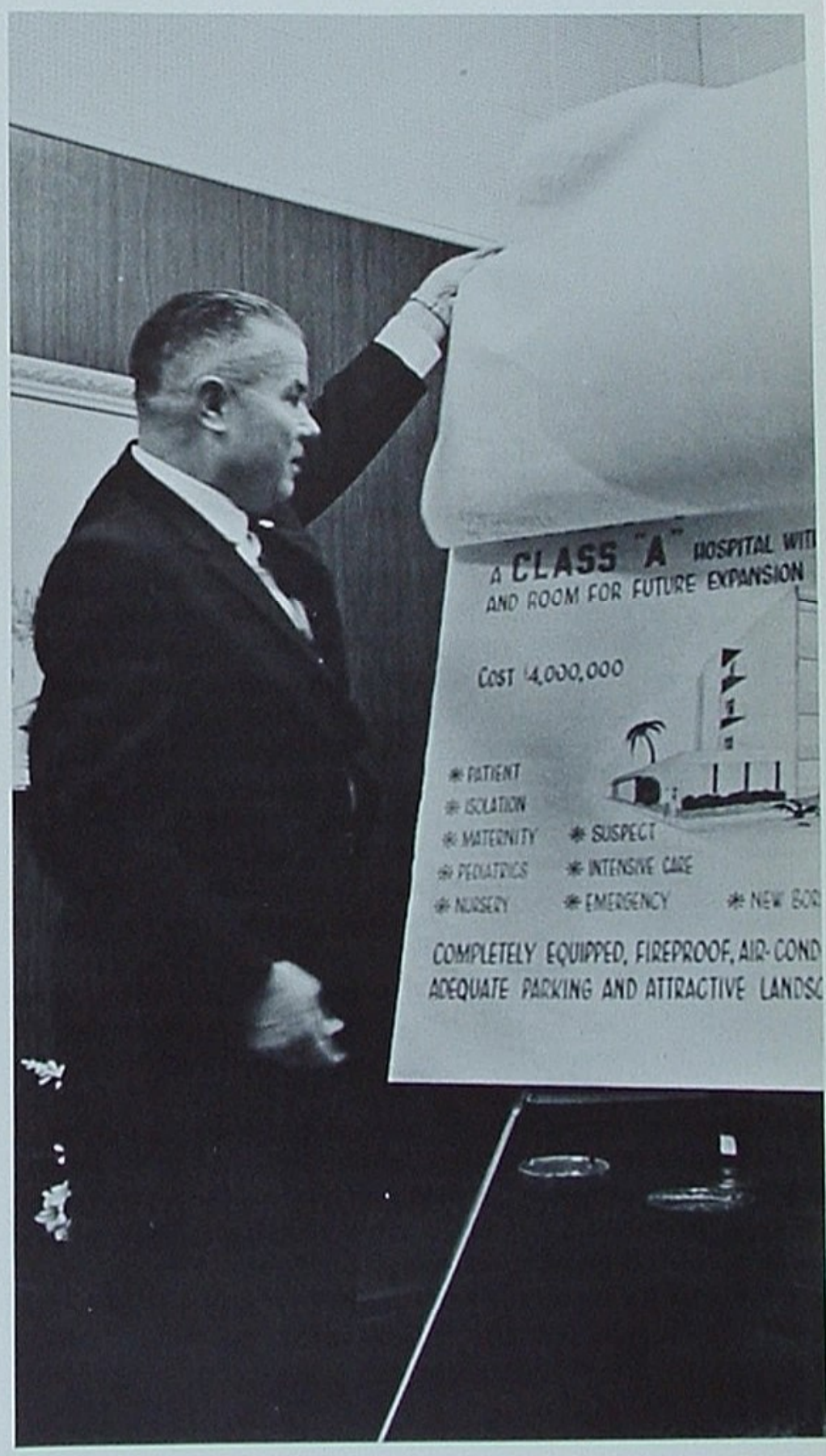
As a civic leader, Temple's activities are extensive too: the Downey, California, school board, park and recreation board, Boy Scouts, Kiwanis, P-TA, Southland Water Committee, Civil Defense, L. A. County Sanitation Board, Central Water Basin Association, two advisory committees for Cerritos College, Southeast Mosquito Abatement District, and charter member of the Downey City Council. On April 27, Temple was again installed as mayor of Downey—for the third time. (He has been vice mayor three times too.) The one-year term of office is elective in the city council.

Mention Downey and Scott Temple is a walking chamber of commerce. "When we incorporated in 1956," he says, "Downey didn't have a pencil to call its own." Today the community of 93,900 citizens has no bonded indebtedness, a $1 million annual surplus, 30 schools, 105 policemen, five fire stations, six parks, two hospitals and an assessed valuation of $175 million. Downey is the home of the Apollo space rocket, has the lowest crime rate in California, was recently named best managed city of its size in America, and has the lowest tax and fire insurance rates in Los Angeles County. The city spends only 3½ cents of each tax dollar to run the city government, and nearly 500 of its citizens participate in 23 citizens committees to advise the city council on topics ranging from city planning to taxes.

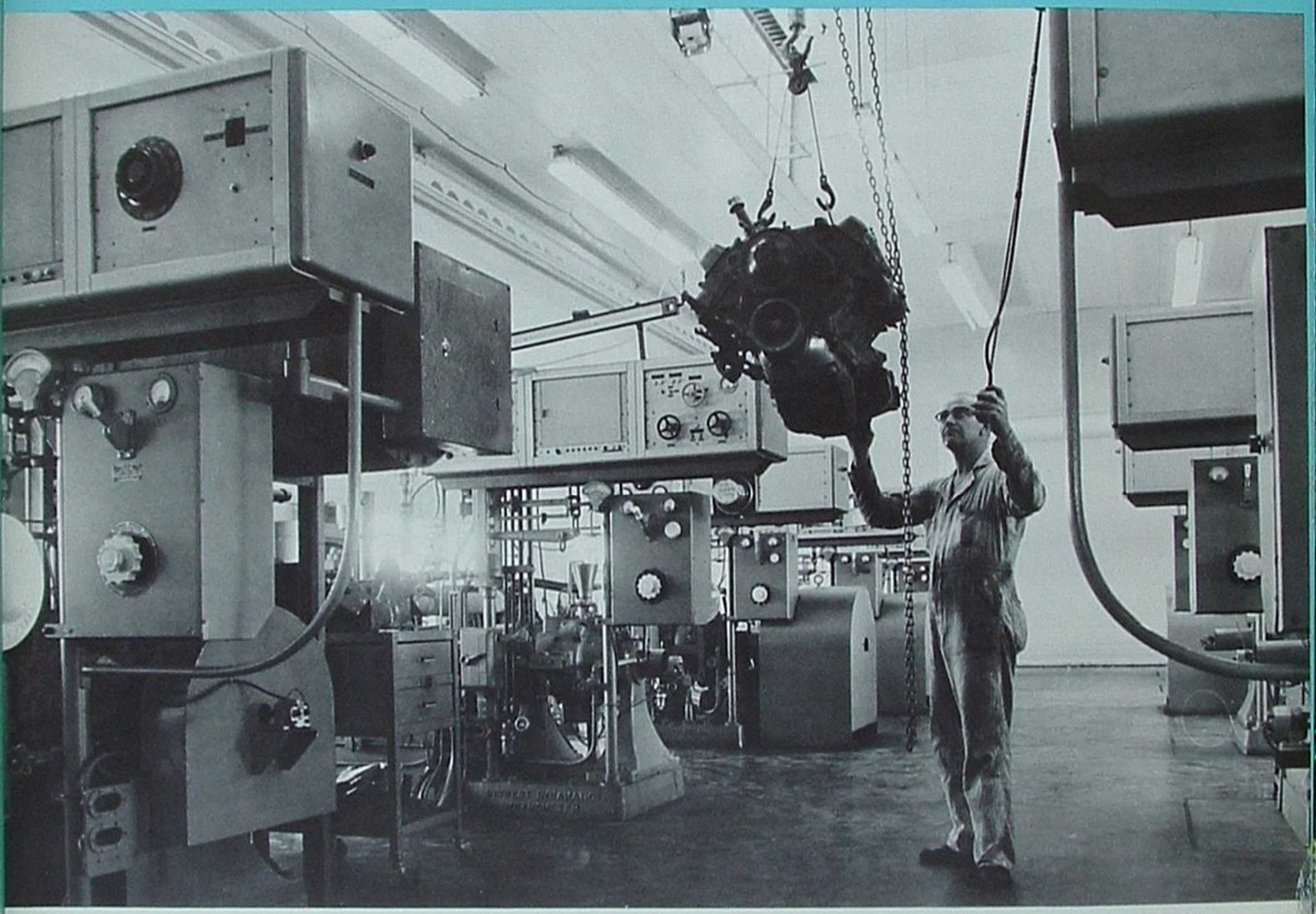
Downey has a sister city, too, Guadelajara, Mexico, thanks in part to Temple who spearheaded the affiliation and now is coordinator of the program.

Of his outside activities, which are confined largely to weekends and evenings (Downey has a full-time city manager), Temple says, "Government should be kept as close as possible to the people. Control of your tax dollar is assured this way. Government is business and should be run like a business if you want to keep it out of the red."

Downey's record is evidence that its citizens live by what they believe.



UNION OIL COMPANY OF CALIFORNIA
P. O. Box 7600
Los Angeles, California 90054



WHERE WE WORK

Many months — even years — of careful research and testing go on behind the doors of our Research Department before a new product is put on the market. The introduction of Royal 76 premium gasoline, with its chemical tuneup, was a case in point. The final series of tests, conducted by the Product Research group, included careful laboratory tests followed by grueling road tests. Here, at our Research Center's automotive engine test lab, Paul L. Whipp hoists an engine from a testing block. Next, it will be torn down and carefully examined for wear. Only those products that pass with flying colors ever find their way to the market place. Then you know they are the **finest.** 76