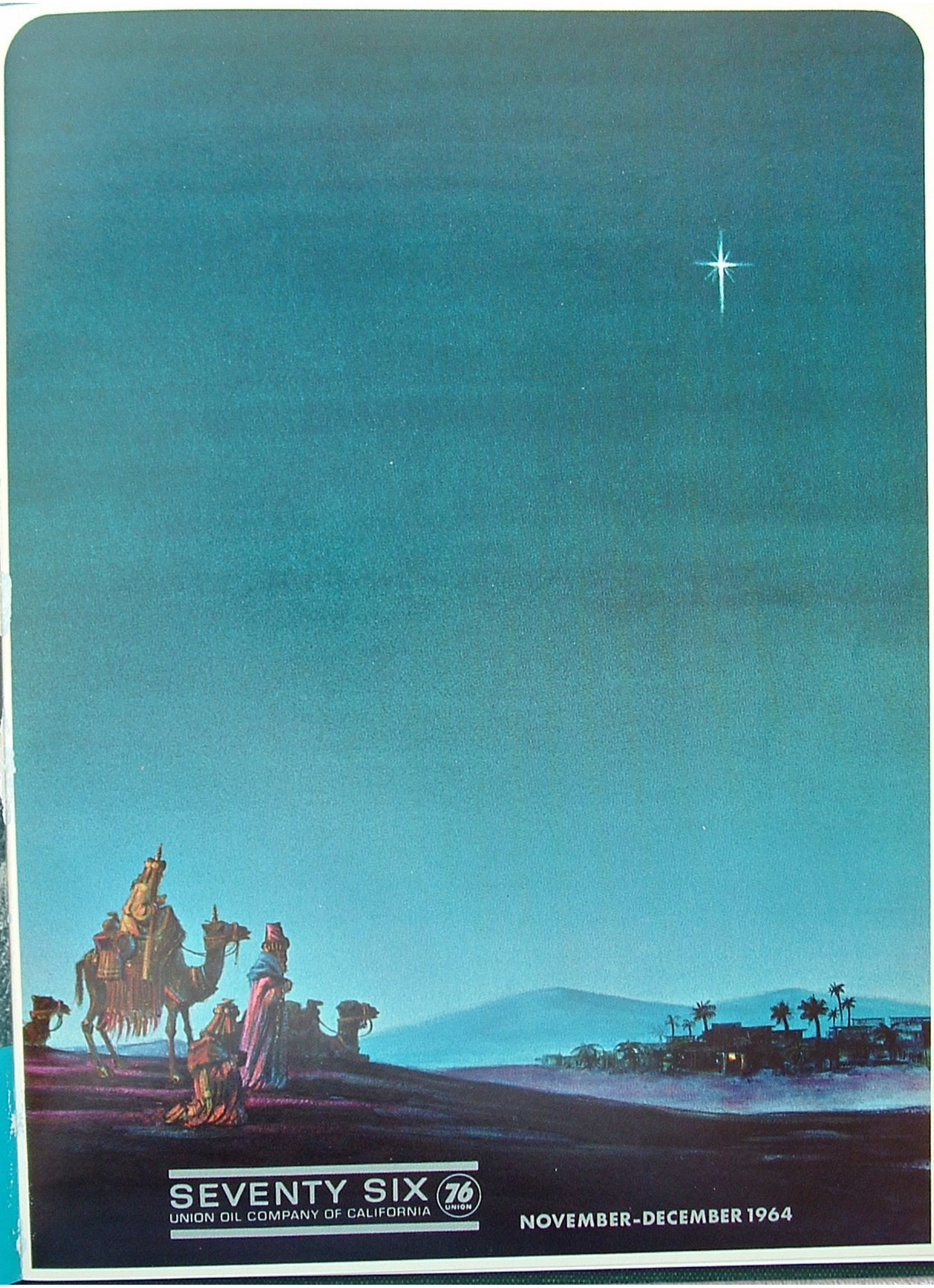

SEVENTY SIX
UNION OIL COMPANY OF CALIFORNIA
76 UNION
NOVEMBER-DECEMBER 1964

'Then you can keep Christmas'

Henry Van Dyke wrote a comment on the observation of Christmas that expresses the real spirit as I am sure most of us would have it.

"It is a good thing to observe Christmas Day. The mere marking of times and seasons, when men agree to stop work and make merry together, is a wise and wholesome custom. It helps one to feel the supremacy of the common life over the individual life. It reminds a man to set his own little watch, now and then, by the great clock of humanity which runs on sun time.

"But there is a better thing than the observance of Christmas Day, and that is keeping Christmas.

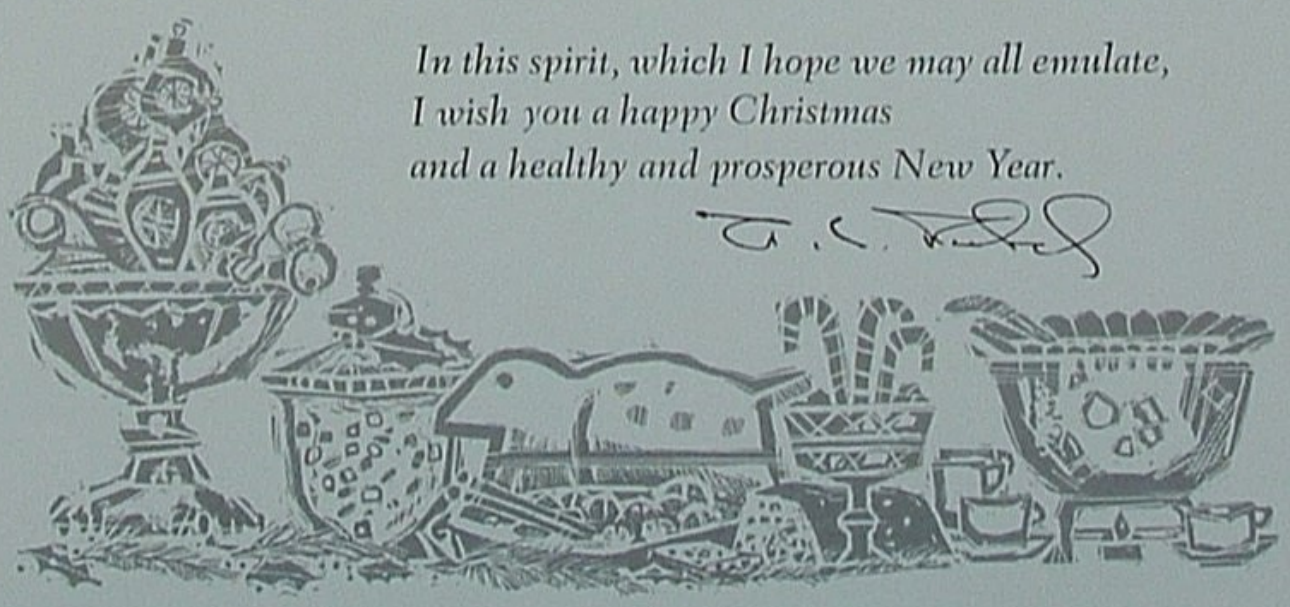
"Are you willing to forget what you have done for other people, and to remember what other people have done for you; to ignore what the world owes you, and to think what you owe the world; to put your rights in the background, and your duty in the foreground; to see that your fellow-men are just as real as you are, and try to look behind their faces to their hearts, hungry for joy; to own that probably the only good reason for your existence is not what you are going to get out of life, but what you are going to give to life; to close your book of complaints against the management of the universe, and look around you for a place where you can sow a few seeds of happiness—are you willing to do these things even for a day?

"Then you can keep Christmas.

"Are you willing to stoop down and consider the needs and the desires of little children; to remember the weakness and loneliness of people who are growing old; to stop asking how much your friends love you, and ask yourself whether you love them enough; to bear in mind the things that other people have to bear in their hearts; to try to understand what those who live in the same house with you really want, without waiting for them to tell you; to trim your lamp so that it will give more light and less smoke, and to carry it in front so that your shadow will fall behind you; to make a grave for your ugly thoughts and a garden for a day?

"Then you can keep Christmas."

In this spirit, which I hope we may all emulate,
I wish you a happy Christmas
and a healthy and prosperous New Year.



Letters

We invite readers to participate in an exchange of ideas and information. Address: Editor, Seventy-Six; Union Oil Company; Box 7600; Los Angeles, California, 90054.

Memories

• In the September issue of SEVENTY-SIX, the picture of the Woodland, California, service station was like meeting an old friend. ("Half a Century of Service Stations").

At that time (1923) I was working in the old Engineering Department and helped build that original station. Photo was taken several years later.

CLARKE S. MEAD
Yucaipa, California

Young Storyteller

• We have all really enjoyed your coverage of Cheryl Rabe's story "How the Grasshopper Got His Name" in the September issue of SEVENTY-SIX. Cheryl has been quite a celebrity around here since the issue came out!

WILLIAM BAKER, Principal
Santa Clarita School
Saugus, California

New Designs

• I was particularly interested in the report in the September issue on the progress made in service station design in the past 50 years. Service station designs are more or less taken for granted... so it was good to see just what changes have been made in a half century and the reasons for doing so.

JOSEPH CEFALI
San Pedro, California

Electronic Dispatch

• "A Long Right Arm for Pipeline Dispatchers" (September, 1964) answers questions which I hadn't realized existed. I found myself intrigued by the way your company has taken advantage of the electronics age and put it to use in the movement of petroleum products. I'm glad that automation has not blackened the future for employees, but rather has opened up a new field which offers a chance for higher pay and more rewarding work.

RUSSELL HAYNES
Los Angeles, California

SEVENTY SIX
UNION OIL COMPANY OF CALIFORNIA

VOLUME 8 NUMBER 9 NOVEMBER-DECEMBER 1964

New Oil from Old Wells 2
Injection of live steam into old wells improves recovery of oil.

Holiday Turkey 6
Oscar Orlopp actually "invented" the giant holiday bird.

Oleum's Unowax Dicer 8
A space-age machine and the men who operate it.

Business Highlights 10
A summary of developments throughout Union Oil in the last month.

Hurricane Hilda 12
A report on the storm that hit Louisiana, as seen by Union Oilers.

Kenneth Kingman Takes Early Retirement 16
A man who has met many challenges seeks new horizons.

The Santa Maria Will Sail Again 17
Badly damaged in a collision and fire, the tanker will be repaired.

Oleum Builds Its Own Unifiner 18
The people at Oleum Refinery engineered and built a Unifiner.

Spotlight on Union Oil 20
Expanding and broadening the scope of our "In Focus" section.

Herbert C. Hoover 22
A tribute to the former president who dedicated Union Oil Center.

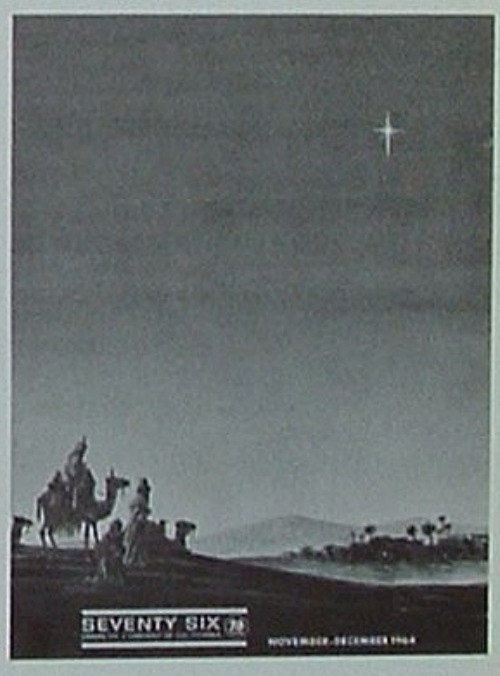
ABOUT THIS ISSUE

If you like turkey you are sure to like Oscar Orlopp, the man who made big turkeys what they are today. F. Leland Elam, a Sacramento writer-photographer who specializes in California agriculture, produced the article for *Seventy-Six*.

You'll be glad to hear that the tanker *Santa Maria* wasn't destroyed in the Alaskan collision and fire; details on page 17.

A new department, *Spotlight on Union Oil* takes the place of *In Focus*. We hope *Spotlight* will be more flexible than the exclusively pictorial approach of *In Focus*.

The picture of the late President Herbert C. Hoover on page 22 was chosen by Mr. Hoover's long-time secretary, Bunny Miller, who says it was one of his favorites. Philippe Halsman took the picture on Mr. Hoover's 88th birthday anniversary.



COVER: For the holiday season this year, we thought you would like to see a traditional Christmas cover. Seventy-Six magazine commissioned artist Jerry Baker to produce this original tempura watercolor rendering.

Published by
PUBLIC RELATIONS DEPARTMENT
Earl M. Welty ..... *Director*
F. L. Springmann ..... *Assistant Director*
EDITORIAL STAFF
Peter Craigmoe ..... *Editor*
Thiel D. Collett ..... *Contributing Editor*
Jean Taylor ..... *Production Assistant*

Photos by Russ Halford

Not a man from Mars, but an operator dressed in a safety suit. Aluminum helmet has mirrored, one-way eyepiece to reduce heat.

NEW OIL FROM OLD WELLS

UNION OIL CENTER

IF YOU WANT TO STOP a conversation among oil men, just bring up the subject of the steam soak. Mere mention of this dramatic new form of thermal recovery will bring an embarrassed silence to the group. Oil men know what it is, but until recently they haven't been talking about it.

For months, a rock wall of secrecy has veiled new developments in thermal recovery. The advantages of gaining a competitive edge–even temporarily–have dictated keeping one's mouth shut. But behind this veil of silence, oil men knew, lay one of the year's most exciting developments in oil recovery. At stake could be the key that forces nature to yield more of her tightly held storehouse of heavy oils from under the ground.

It is well known that all major oil companies are engaged in thermal recovery, at least in California. The process aims at boosting the amount of thick, crude oil that can be wrested from the tar-like California oil sands.

Oil men know that if these heavy oils could be recovered, they could be refined into gasoline, asphalt and dozens of other products. To learn something about the problems and prospects of thermal recovery, SEVENTY-SIX magazine interviewed Bill Owens, director of secondary recovery for Union Oil. Here is a report of that interview:

Q. What is thermal recovery?

A. It is a technique employing heat to increase recovery of heavy oil from the ground. One of the best ways to get heat to the bottom of an oil well is with steam. Broadly speaking, there are two ways of employing steam. One is called steam drive, where you inject steam into a center well to produce oil from surrounding wells. In theory, it is not unlike water injection drive in a waterflood project.

The other system is called the cyclic process, steam soak, or more popularly the "huff and puff" method. Here you inject steam into a well for a couple of weeks; then the same well is put to the pump. The result should be increased oil recovery. It is this method that has been drawing interest of oil men lately.

"It's like finding new oil fields," says Bill Owens.

Q. What is the theory behind this "huff and puff" or steam soak?

A. It's really simple. Heat from the steam settles in the rocks near the well bore. The heat, in turn, thins down heavy, viscous crude oils so they will flow into the well bore.

Q. Is that all there is to it?

A. Not quite. There is an added benefit in that the steam cleans up deposits of paraffins and asphalts that

continued

NEW OIL FROM OLD WELLS *continued*

often plug up an oil formation or well bore.

Q. Does the steam soak work everywhere?

A. No. Best results are obtained where the oil is viscous and the formation is shallow. We've learned that steam injection works best in wells less than 3,000 feet deep. Cost

"We reduce viscosity by heating the oil with steam."

increases with depth, because injection pressures must be higher; also, you lose more heat on a deep well.

Q. When did you begin working with steam recovery?

A. Let's take it from the beginning. The first patents were issued in 1865, but no one did much with it at the time. In the nineteen-thirties, several operators tried a steam project, but the process became practical only as high-capacity steam generators were developed for our type of use.

Furthermore, there has been a change in emphasis from steam drive to steam soak. Until a year or so ago, few persons thought seriously about steam soak. Now it's becoming common.

Q. What kind of recoveries do you look forward to?

A. There's no way to tell yet. But we know this much. In the heavy crude oil fields we often considered ourselves lucky to get 10 per cent of the oil out of the ground. Now, with thermal recovery, we're beginning to think in terms of doubling this and more. That would be like finding new oil fields.

Q. Has it worked out this way in practice?

A. Not yet. You recall that we call this the cyclic process —inject heat, produce oil and then inject heat again. It will take several cycles before we can get any definite fix on increased recovery.

First-cycle results are generally encouraging. Typically, we have initial production increases from three- to ten-fold. We've had our failures, too. The process isn't a cure-all, and requires the proper kind of favorable conditions.

Q. Then it doesn't appear that "huff and puff" is a panacea for sick oil fields?

A. Hardly, but we hope it takes a respectable place alongside other forms of improving recovery.

Q. What are the other forms? Would you explain?

A. Gladly. When you get involved in improving oil recovery, there are really only three things you can do. First, you can improve the permeability of an oil formation; that is, you can loosen up a tight oil zone so the oil will flow easier. This is frequently done by fracturing or cracking the rock with chemicals and sand, injected under tremendous pressures.

Next, you can increase the energy that drives oil in a formation to the well bore. Waterflooding and gas injection are well-known examples of this.

Finally, you can reduce the viscosity of oil — again, to make the oil flow easier. One of the best ways we have for doing this is to heat the oil by steam injection.

Q. So the steam soak is really just part of the overall picture?

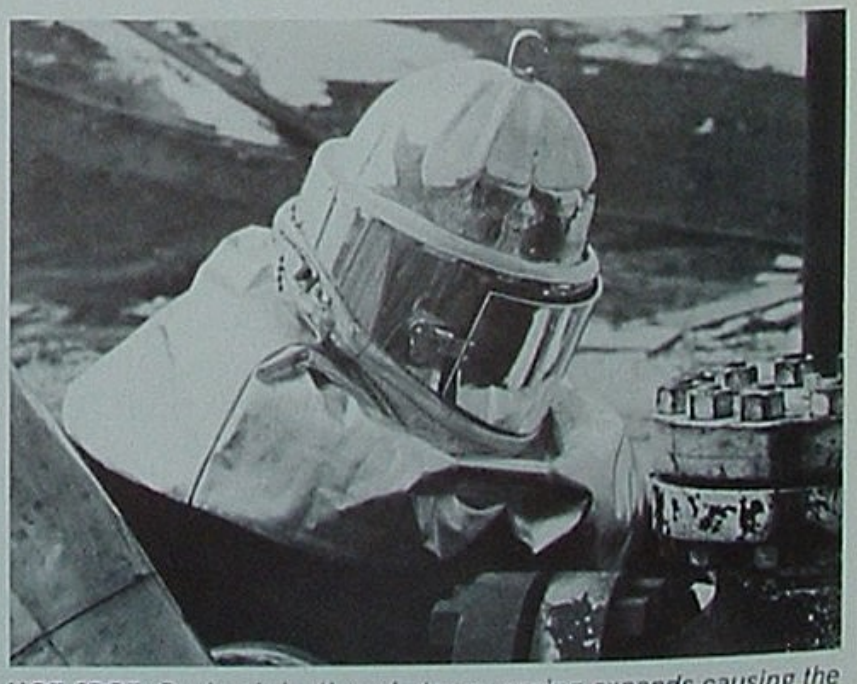
A. Precisely. In the future we may be using steam in conjunction with other techniques. We can foresee a combined waterflood with steam soak not too far in the future. Other companies have reported on steaming in conjunction with fracturing.

Q. Where do we stand now?

A. Union has a comprehensive program in thermal recovery. To date, we have steamed in thirteen separate oil fields and have plans for many more. In addition, we plan further work in other methods of thermal recovery, such as steam drive.

The principle of thermal recovery sounds simple, and it is. The important things are economics and profit. Steam and heat cost money, and the extra oil recovery has to pay for this and still yield a profit.

Remember this: the thick crude oil from our California reservoirs sells for only a third of a cent per pound. We're working on a thin margin.



HOT SPOT: *During injection of steam, casing expands causing the wellhead to rise out of the ground. Unit is at Guadelupe field.*

THERMAL PORTRAIT: *Operator Richard J. Penny of Guadelupe poses in front of skid-mounted thermal unit. Fuel is natural gas. Steam generator has rated capacity of 17,500 pounds of saturated steam an hour.*

Q. Let's turn to the people involved. Who are some of those engaged in thermal recovery?

A. For many years, and long before my time, Union has had far-sighted and progressive people working on thermal recovery. They "built the bridge" for us and acquired the heavy oil reserves we now work with. In thermal research, Union is a pioneer.

Several years ago, we set up a joint team of Research and Field people to get something done—Bob Hawthorne from Research and Don Forster from Exploration and Production. Working with the field people, they surveyed the thermal potential and recommended a series of experimental tests. That's what we are building on now.

Q. How about the people in the field?

A. We are using a sort of two-platoon system. One group handles the surface, steam-injection equipment; a second group takes care of the reservoir engineering.

For example, Jack Anderson runs the surface equipment out of Bakersfield and Jack Bailey ramrods the steamer in Santa Paula; Chet Budd, in Bakersfield, handles the reservoir engineering for both areas. Don Mason and Darwin Sainz keep things hot at Orcutt while John Tyler and Juan Pedretti are in charge of the steaming in the Los Angeles Basin. Vane Suter, Pacific Coast Division secondary-recovery engineer, has the responsibility of tying all the district results together and keeping up with the fast-moving program.

Oh, I almost forgot the biggest booster of all for thermal recovery. He's been talking about it for more than 25 years.

Q. Who is that?

A. Cy Rubel, our former boss and now Chairman of the Board. For a quarter of a century he's been predicting that the age of steam would return, and it looks like he's right.

STEAM RETURNS: *Expansion of surface steam lines is accommodated by swing joints. Lines exposed on surface are insulated.*

Here is the man who decided to breed a giant turkey.

The bird, a 51-pound tom, struts for a 10-pound hen.

Oscar Orlopp, the man who invented the giant

Holiday Turkey

By F. LELAND ELAM

OROSI, CALIFORNIA

ON NOVEMBER 26 American soldiers of the U. S. First Cavalry Division sat down at Inchon, Korea, for a Thanksgiving Day dinner of turkey and cranberries. That same day, at a Geary Street restaurant in San Francisco, customers helped themselves to huge portions of roast bird and steamed dressing. At a German restaurant in Tokyo the menu featured turkey and candied yams. In Singapore, a Chinese family that had never heard of Thanksgiving ordered a new delicacy at the corner restaurant: turkey steak.

In each case the turkey—specially bred for size—came from the Oscar Orlopp & Sons turkey ranch about 20 miles southeast of Fresno, California. Orlopp and his three sons, Paul, Louis, and Jim, have in the past 34 years developed a remarkable strain of broad-breasted turkeys that find a ready market throughout the world.

The Orlopps sell 75,000 birds a year under the Norbest brand through the Turkey Growers Cooperative of Central California. Another 70,000 turkey poults go to growers who will raise them to market size. Further evidence of the Orlopp skill at turkey breeding comes from the fact that turkey growers all over the United States buy four million Orlopp turkey eggs every year.

The Orlopp operation consists of three growers—Paul, Louis and Jim—at seven locations. Orlopp turkeys not only grace holiday tables throughout America, but also German, Dutch and Belgian housewives find Orlopp turkeys a delight. And there is a ready market for Orlopp birds in Japan, Hong Kong and Singapore.

The rise of the Orlopp family to an international position in the turkey world is a story in which quality plays a top role. It was in 1930 that Oscar Orlopp left the Los Angeles area to buy the original acres for his ranch near Orosi. That year he started 500 turkey poults, but Oscar claims he had no plan then of becoming a big turkey grower.

By 1935, however, he concluded that if he were to get into the turkey business in a serious way, he had better

Turkey breeder Oscar Orlopp stands amid flock of his broad-breasted bronze toms.

start his own breeding program. Herein was the key to his success.

Orlopp's first research project consisted of 62 hens and two ideas: first, he believed he could develop a breed of extra large turkeys that could be raised efficiently and profitably; second, he believed—against industry skepticism—that such birds would sell. Today the Orlopp toms range from 30 to 53 pounds dressed, and are sold to the armed forces, to restaurants, and to institutions. The hens dress out at 16 to 33 pounds.

"Every year," Orlopp grins, "the marketing people tell us this will be the last year we will be able to sell large birds. But this has never proved to be so.

"As a matter of fact," he continues, "the demand has been for more and more of our heavy birds, until today we market all over the world."

To raise tom turkeys to such sizes—and to do it profitably—the turkey grower must breed into his birds a so-called weight factor. The fact that Orlopp has done this is a vote for his nomination as the dean of turkey breeders. It took 10 years to achieve his genetic success, but it has paid off.

Orlopp & Sons raise both bronze and white turkeys. Some years back there began a demand for white turkeys; the processors liked them because—unlike the bronze birds—the white turkeys had no pin feathers. Recognizing a potential market, the Orlopps in 1952 began to breed them in a program that would produce white turkeys as large as the big bronze toms. The Orlopps have them today, a feat regarded by fellow turkey growers as remarkable.

Why the interest in big birds? The answer is simple, Orlopp says. First, a turkey grower stands to make more money from an efficiently grown large bird. Second, as the size increases, the bird carries a larger breast; it is from such quality breasts that you get the fine turkey steaks served at so many restaurants today. Third, even if you're not looking for a giant bird, a turkey bred for large, meaty breasts and thighs makes for better eating—not only during the holidays but any day of the year. Orlopp's biggest turkey to date has been a 64-pound tom that dressed out at 53 pounds—enough to serve a platoon. Now he is working on a 75-pound bird.

From his modest beginning at turkey farming 34 years ago, Oscar Orlopp has always felt that the best was none too good for his ranch. He believes this has contributed significantly to his success. Orlopp's passion for quality translates into specifics. When he bought the ranch in 1930, he also acquired a 1929 Caterpillar tractor and introduced its inner workings to Union Oil gasoline, oil and lubricants.

"It has never had any other products used in it," Orlopp declares, "and today we are still using it for cultivating our acreage.

"As a matter of fact," he continues, "we use only Union Oil products here. Every piece of mobile equipment we have—eight tractors, nine cars and eleven trucks—has never had anything but Union Oil products in it.

"We know quality when we see it and we use it. Union Oil products have always been at the top of the quality list around here, and we grew up on quality." ⑦⑥

The 1929 tractor uses Union Oil products exclusively.

Woodrow Fleshman controls thickness of Unowax blend by adjusting valve; molten plasti-wax pours onto steel belt.

Critical appraisal of operations.

OLEUM'S UNOWAX® DICER

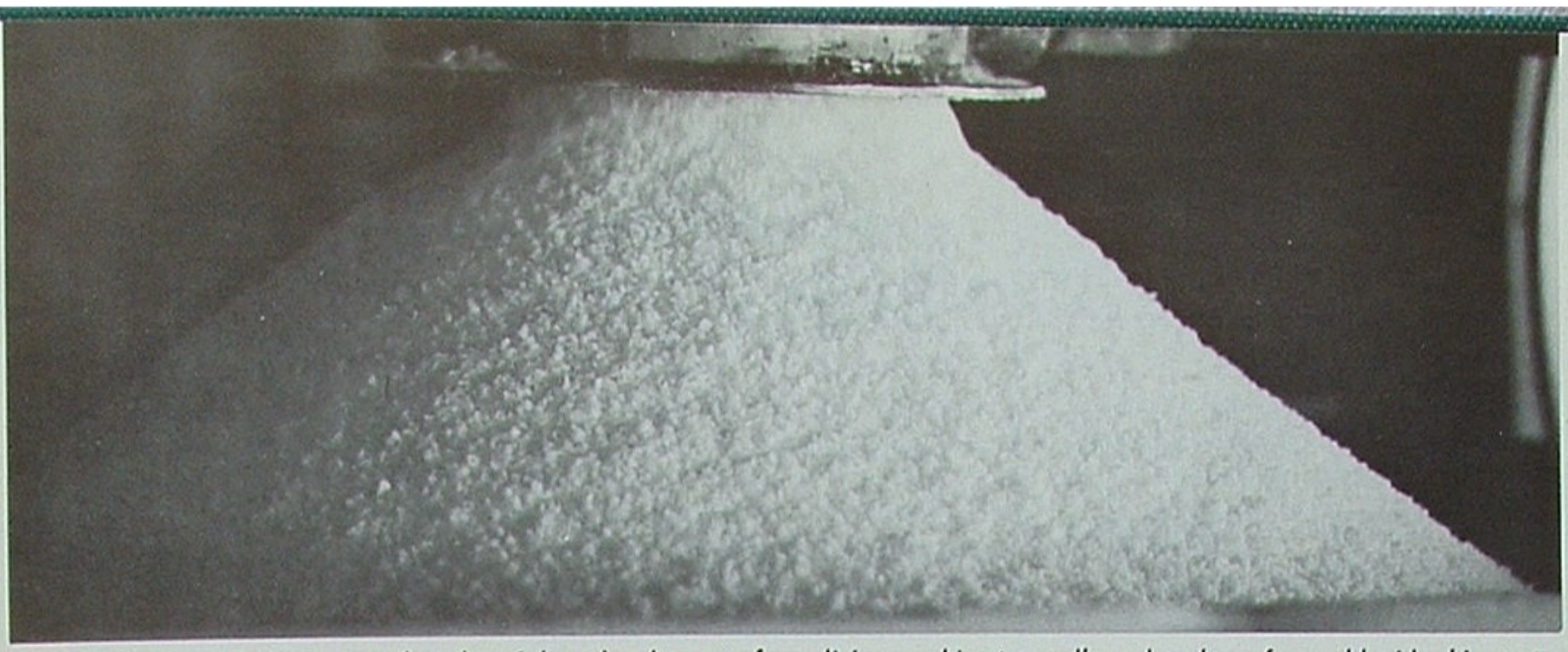
Photos by Russ Halford

OLEUM REFINERY

SOMETIMES a product is so good it creates problems. Union Oil's Unowax blends, mixtures of paraffin wax and plastic, are one example. This space-age product, used by the packaging industry to coat such products as milk, bacon and butter cartons, combines the strength and flexibility of plastics with the desirable flavor and moisture barrier of wax. Our product's greatest asset — toughness and flexibility — came back to haunt us on the market front. Packaged in slabs, these plasti-waxes were difficult to manipulate; cutting up the slabs was an almost impossible task; melting the slabs for coating applications was expensive and time consuming. Some form other than slabs was desirable.

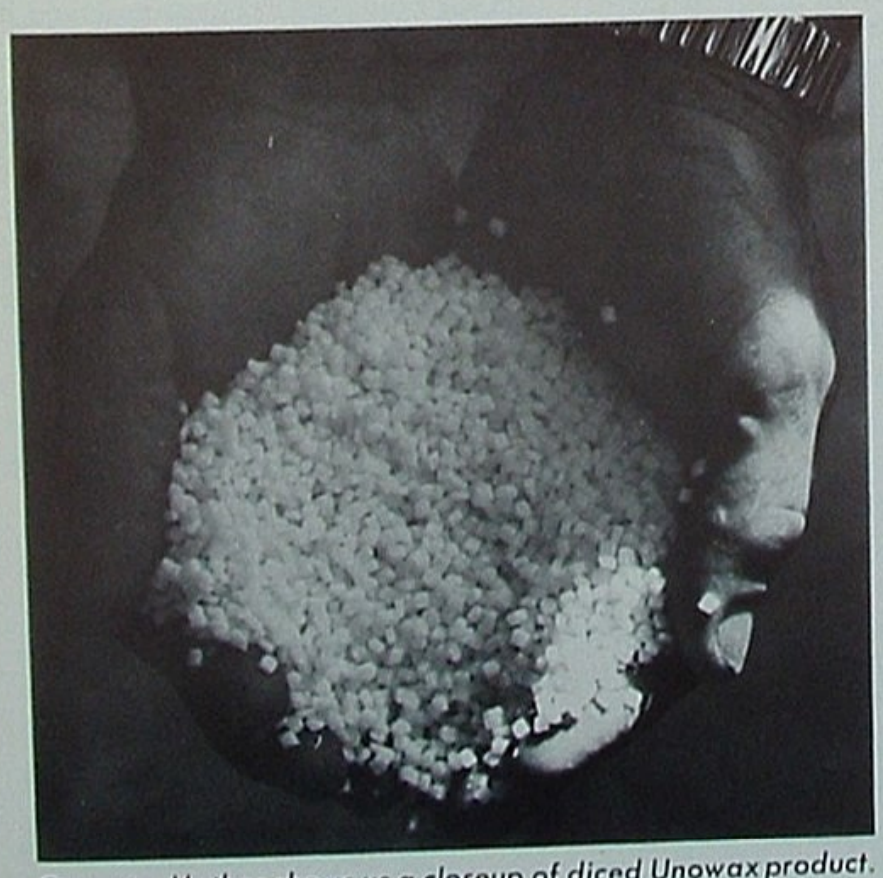
Today our plasti-wax product is diced into tiny cubes that can be shoveled, weighed, melted and easily packaged for shipment to any part of the world. The dicing is done in the Unowax Dicing Room on the south side of the wax building at Oleum Refinery. The room is sunny, clean, and fully air conditioned. Operators wear white coveralls to keep out dust, and don earmuffs to deaden the noise — which is considerable.

An endless stainless steel belt runs over a film of cooling water; the melted Unowax blend pours onto the steel belt in a thin layer, is cooled by the water into a pliable film about 18 inches wide, and then is sent into the dicing machine where a maze of knives chop the thin sheets into cubes ⅛ inch square. While running the Unowax Dicer, our operators keep a sharp eye on the machine's performance, as can be seen in these pictures. (76)



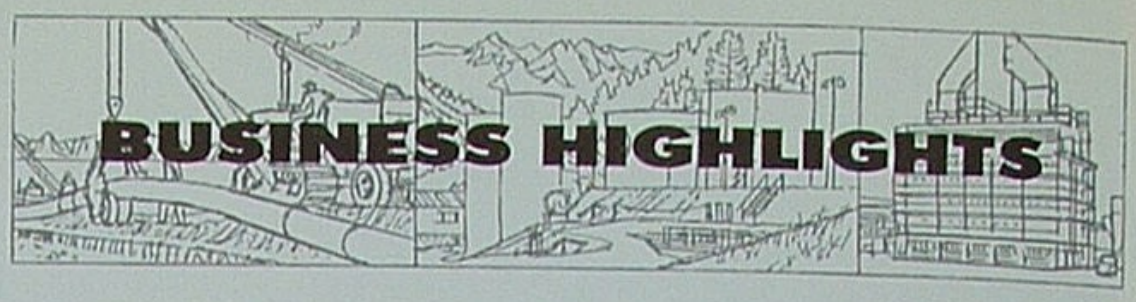
Diced Unowax product—easy to shovel, weigh and melt—pours from dicing machine to cardboard package for world-wide shipment.

Frank Mathos scrutinizes dicer.



Operator Mathos shows us a closeup of diced Unowax product.

Mathos and Fleshman adjust feed of dicing machine at Oleum.



UNION IS A BIG WINNER IN OFFSHORE LAND LEASING

Union Oil Company, bidding alone and jointly with Standard Oil of California, paid $6.8 million in October for the right to drill for oil on 170,000 acres of Pacific Ocean seabottom off Oregon and Washington.

At an October 1 sale of federal offshore lands, Union and Standard acquired 166,750 acres on 29 tracts. A lone Union bid for 5,760 acres on another tract in the Coos Bay, Oregon, area also was successful. Union's share of the bonus money for the lands, in water from 180 to 480 feet deep, was $6.8 million.

The offshore Oregon and Washington area is of considerable interest to the oil industry because of its potential as a source of crude oil for the expanding West Coast market. Consequently, bidding was brisk, with a total of 101 tracts in the 900-square-mile area being awarded to 10 oil companies. These companies paid $35 million for the right to drill these offshore prospects.

Union's plans call for evaluating these prospects next year. Because of winter storms and high seas, drilling will presently be confined to the summer months.

80,000-BARREL TANK GETS PLASTIC & FIBERGLASS PATCH

A recent cleaning and inspection of an 80,000-barrel tank at Los Angeles Refinery revealed severe bottom corrosion. Extensive repair work would be necessary before the tank could be placed in service as one of the feed tanks for LAR's new Unicracker.

The Refining Department, always looking for a better way at a lower price, decided to use a plastic liner to patch the tank much like fiberglass is used to patch fishing boats.

One plastic, polyester isophythalic, has been used for about six years in various patching jobs, including coating tank bottoms. Estimates say this can be considered a permanent, trouble-free installation lasting 10 or even 20 years.

After cleaning and preparing the old steel tank bottom, a 1/16-inch-thick plastic lining—reinforced with fiberglass—was laid over the 120-foot diameter tank bottom. This lining, similar to that used in the construction and repair of a fiberglass boat, was carried 18 inches up the side of the tank shell so the top edge of the plastic would be above the water level. This formed a complete plastic pan, bonded to the steel bottom and shell, and preventing corrosion from water (it is the water, not the petroleum, that corrodes steel tanks).

Besides a two-week time saving, the plastic patch costs $16,000 less than a conventional repair job.

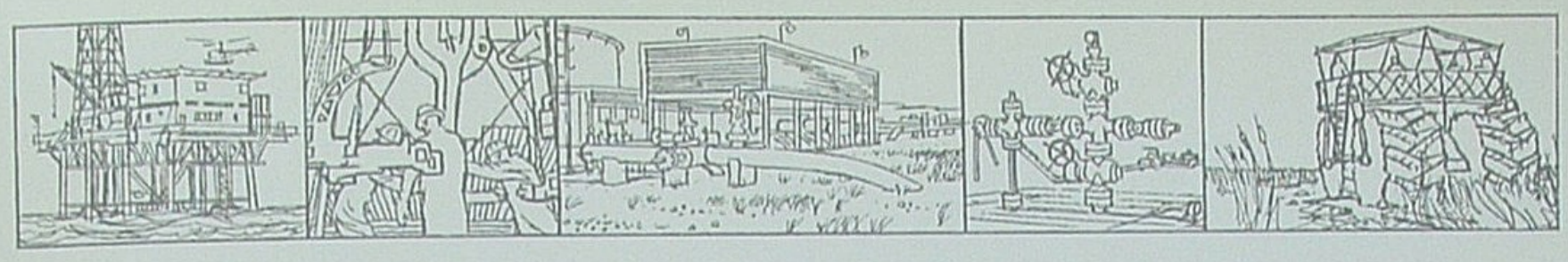
U. O. FOUNDATION WILL MATCH CONTRIBUTIONS TO COLLEGES

The Union Oil Company of California Foundation has announced it will now match employee contributions to both privately and publicly financed colleges and universities of their choice—dollar for dollar up to $500 a year.

Previously only contributions made to privately financed schools were eligible under the program. Contribution forms and complete information are available from the secretary of the foundation at Union Oil Center.

MASTER BIDS FOR PRINTING SAVE US TIME AND MONEY

It takes about 2,500 business forms to keep the paperwork flowing smoothly at Union Oil Company. To keep the forms flowing smoothly, the Purchasing Department recently sent out about 1,600 copies of active company forms to



our various printing suppliers. These printers were asked to quote on these forms, with the understanding that they would be the supplier for the next two years if they were the successful bidder.

Printers, like most business concerns these days, are specialized in the type of work they perform. This is largely the result of the printing equipment itself and the experience of the personnel.

Therefore, we grouped the forms into specialized categories—such as flat, snapout or continuous forms—assuring us of printers who were best qualified in their fields.

There are two advantages to bidding a large number of forms at one time: first, the volume permits printers to cut their costs and share their savings with us; and second, because the source of each form is now preestablished, procurement time is saved by not having to solicit bids on each form before it is ordered.

NEW TERMINAL AT ANCHORAGE BEGINS FULL-TIME OPERATIONS

Our new Anchorage Terminal went into official operation late in September when the first tankerload of gasoline, diesel, stove oils, solvent and aviation fuel were discharged into the new storage tanks.

The significance of this achievement can be understood when one recalls that it was almost six months to the day earlier, March 27, that our products terminal at nearby Whittier was destroyed by the Alaska earthquake and fire.

Immediately following the disaster, various company departments got busy on the problem of where our terminal should be rebuilt. Construction had to be completed before the Alaskan winter set in and froze up the harbor in Anchorage. While this was going on, marketing operations continued from facilities that were hastily repaired, thanks to the dedication of our Alaska employees.

Although not fully complete (the buildings will be constructed next year), our new storage facilities will carry us through the winter and meet the high demand for heating oils and other petroleum products.

CREDIT CARD HOLDERS CAN CHRISTMAS SHOP BY MAIL

Union Oil credit card holders have a chance to do their Christmas shopping early and painlessly this year.

Starting in early November, they were offered a selection of nationally advertised, fully guaranteed—and specially priced—merchandise which can be purchased on their regular credit card accounts or on a new revolving credit plan. The items offered range in price from $9 to about $30.

Credit card holders in Alaska, Hawaii and Montana are excluded from the program either because of the difficulty of getting the merchandise to them before Christmas or because of local time-payment restrictions.

The same mailing carried a reminder that our 76 Autoscrip in $5, $10 and $20 books makes a welcome Christmas gift. (Employees can order 76 Autoscrip through the Credit Card Center in San Francisco.)

UNION OIL FOUNDATION AWARDS 15 SCHOLARSHIPS

Over the past five years, 29 principal U.S. engineering schools report, their average enrollment in petroleum engineering courses has decreased 44 per cent. Such a decrease could foreshadow a severe shortage of trained technical and professional people for us—and for our always-expanding industry.

For many years Union Oil Company has helped students both scholastically and financially through a summer job program. Many of the men who have worked in our summer program have returned to the company when they completed their education.

As a direct method of encouraging more students to consider petroleum engineering as a career, the Union Oil Company Foundation is granting scholarships to undergraduate students at selected colleges and universities throughout the United States; so far in the 1964-65 period, 15 students at 10 universities have received scholarships.

In addition to the petroleum engineering scholarships, the foundation makes direct, unrestricted grants to many liberal arts as well as technical institutions of higher learning.

U.S. MILITARY BUYS NEARLY 100 MILLION GALS. JET FUEL

U.S. military jet planes will fly at least 31 million miles in the next six months on Union Oil Company-produced jet fuels. The U.S. Defense Fuels Supply Center in Washington, D.C., has awarded our company contracts for delivery beginning October 1 of the following jet fuels:

- 20,958,000 gallons of JP-4 jet fuel from Los Angeles Refinery;
- 42,042,000 gallons of JP-4 jet fuel from Oleum Refinery;
- 1,050,000 gallons of JP-4 jet fuel from Cut Bank Refinery; and
- 17,774,000 gallons of JP-5 jet fuel from Los Angeles Refinery.

Under these and previously awarded contracts, Union will supply the Defense Department with 97,112,400 gallons of jet fuels between October 1, 1964, and March 31, 1965. This volume would propel a four-engine jet airliner 1,242 times around the earth, or, in a straight flight carry it 31 million miles. In the case of single-engine jet planes, this would be considerably in excess of 31 million miles. (76)

HOW UNION OILERS MET THE CHALLENGE OF *Hurricane*

TUESDAY, SEPTEMBER 29, dawned with a bright sun along the Gulf of Mexico as our Gulf Division managers gathered in Austin, Texas, for a budget meeting. At 10 o'clock that morning they turned their attention to drilling plans for the year ahead.

Elsewhere in the Gulf Division, our people were busy at the day's work. In Houma (see map next page), production engineer Don Skeele sketched a gas-lift design for the Caillou Island field. At sea on the Ship Shoal 208-A platform, construction foreman Sherman Ditch boarded a helicopter for Dulac. At Caillou Island, assistant foreman Charles Bergeron watched a wire line crew at work. In the Caillou office, field operator Norman Parker sharpened a broken pencil; production reports were due.

In the Abbeville area 75 miles west, offshore production foreman J. C. Broussard started his car; he was driving to Intracoastal City. Construction foreman Weldon Doucette was at the Rockefeller Game Preserve six miles west of Pecan Island laying a board road for a drilling rig.

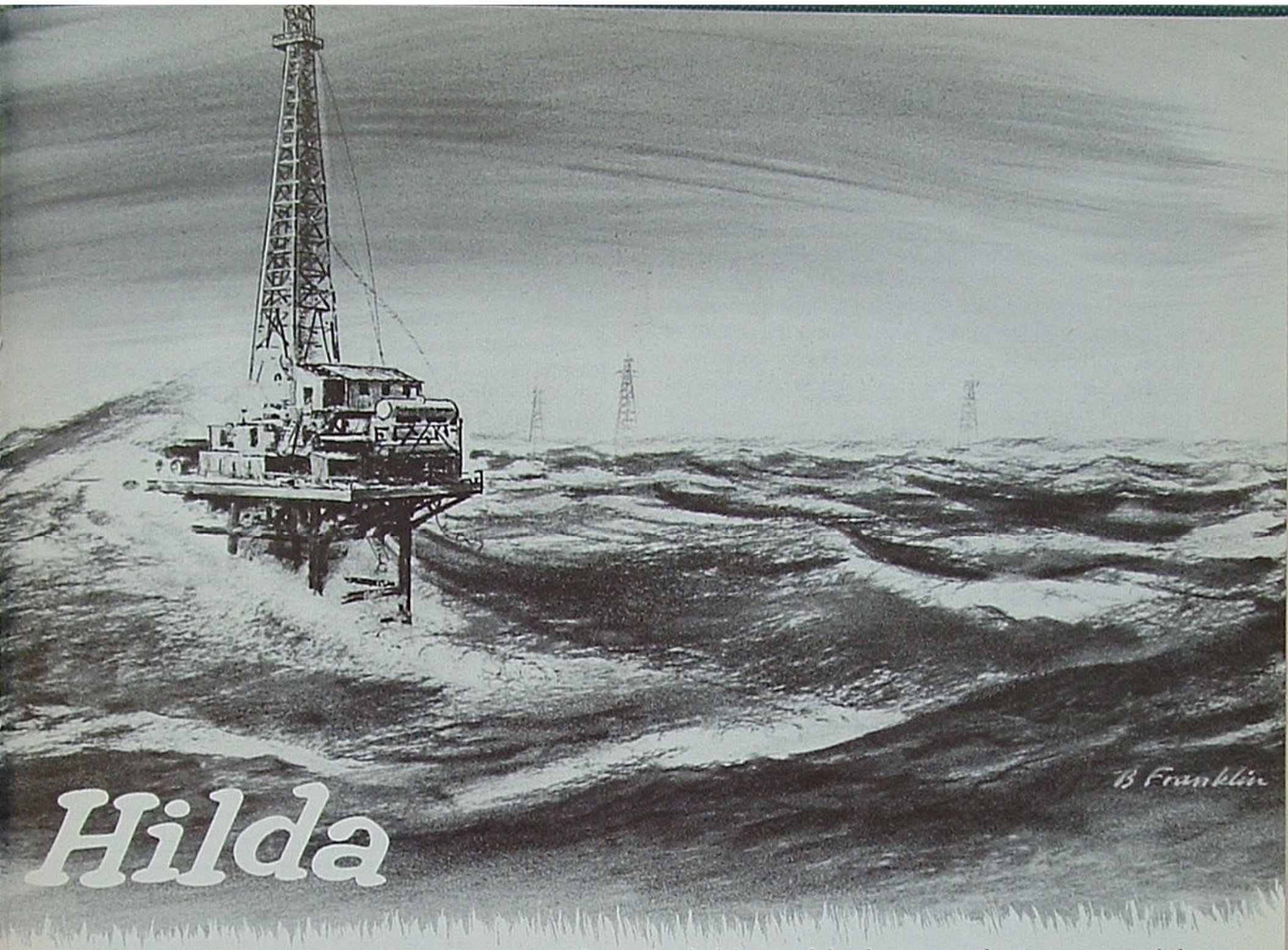
None of these men knew that serious trouble was brewing hundreds of miles south in the Caribbean Sea. It didn't seem like much. Early that morning, midway between the western tip of Cuba and the Yucatan peninsula, a moist, warm air mass spiraled upwards. The strong gusts that followed, however, convinced a Mexican fisherman to set sail for home. This was hurricane weather.

At precisely 10 a.m. the teletypewriters in our Houston, Abbeville and Houma offices began tapping out a message from A. H. Glenn & Associates, our weather advisors: "Tropical Storm Hilda, bearing winds of 40 mph, is forming in the Caribbean." The warning was relayed by radio to all Union Oil outposts in the Gulf of Mexico.

In Houma, production supervisor Tyler Brinker read the short message and drafted an evacuation plan. At the Ship Shoal 208-A platform, field operator Edmund Merton heard the warning with a touch of alarm. He had put pigs (cleaning plugs) in the pipelines that carry crude from the satellite platforms to the main oil storage platform. Merton spent the day clearing the pipelines. A mile to the southwest, on the 208-E platform, drilling foreman Roland Perrin told a toolpusher to get the rig in condition to abandon.

South of Abbeville, J. C. Broussard was still driving to his office in Intracoastal City when the message came in on his car radio. As a native of the Gulf Coast, J. C. was all too familiar with the pattern. He could picture the storm forming in the Caribbean: Winds would whirl, counterclockwise, around a calm eye up to 40 miles in diameter. Inevitably the winds would pick up force, until they reached 150 or possibly 175 mph—all the while the storm would move slowly northward to the mainland. J. C. had once heard that, in one minute, a hurricane could release energy equal to 100 A-bombs. He stepped on the gas.

All over the Gulf Division, Union Oilers stepped on the



Hilda

gas. For an hourly report, here is the log of Hurrican Hilda, as reconstructed from interviews by SEVENTY-SIX magazine:

10 A.M. WEDNESDAY, SEPTEMBER 30:

Weather report: Hilda, now a hurricane with 80 mph winds, is 350 miles south of New Orleans and traveling slowly northwest.

In Austin, district superintendents George M. (Buckshot) Harper of Abbeville and A. I. (Irion) Lafargue of Houma leave the budget meeting, board a plane and fly to their posts. The weather looks serious.

In Houma, Ty Brinker reads the 10 a.m. weather bulletin and orders evacuation of all offshore platforms. Sherman Ditch tells his construction crews to come ashore too. Roland Perrin at the 208-E platform orders his drilling crew to start out of the hole, break down the drill pipe, set blowout preventers, fix storm chokes and evacuate.

At the 208-A platform there is pulsing activity. Ed Merton tells his 18-man crew to tie down the crane, shut in all wells, lash down drums, windows, doors. At the last minute they remove meat from the freezer and take a crew boat to Dulac.

In Abbeville, the situation isn't as critical. J. C. Broussard tells his men to evacuate the offshore platforms but leave the gas wells flowing. If the storm threatens, a helicopter crew can shut in later. In the Abbeville office, production clerk Audrey Broussard (no relation) faces her end-of-the-month hustle to get production reports mailed to Houston.

10 A.M. THURSDAY, OCTOBER 1:

Again the day dawns calm, the seas clear. But far out in the Gulf, Hilda's winds have increased to 105 mph; the storm is building up strength.

In Houma, Ty Brinker orders onshore wells shut in. The lowlands may be flooded. Charles Bergeron sees crew boats safely berthed in the bayous north of Houma. Utilitymen Dan Detraz of Caillou Island and Wilbur Bodin of Pagie Lake, having finished seven-day tours, are driving to Abbeville. At 10 o'clock they stop in Morgan City for coffee.

In Abbeville, J. C. Broussard dispatches a helicopter crew to shut in offshore gas wells. At Tigre Lagoon 15 miles east, foreman Percy Le Blanc tells Emile Dugas to pump all empty oil tanks full of water.

10 P.M. THURSDAY, OCTOBER 1:

The night is quiet in the Atchafalaya swamp north of Morgan City, but drilling foreman Kenneth Ditch receives orders to secure his rig, the Williams No. 1 wildcat. They are 15,000 feet down and the job takes six hours. After laying down drill pipe, they open seacocks (so the barge won't float away in case of floods) and secure the hatches. It is 4 a.m.

continued

Hurricane Hilda *continued*

10 A.M. FRIDAY, OCTOBER 2:

Puffs of wind blow up leaves on shore, but the Teletype brings more ominous news: 200 miles in the Gulf, Hilda's winds are a screaming 150 mph. This is going to be a big one.

People in the Houma office crowd around the weather map, drinking coffee, talking quietly about the oncoming storm. "It's coming our way," one says. Many plan to evacuate up north to safety. The sheriff orders businesses to close, and everyone goes home.

In Abbeville, Buckshot Harper orders the onshore wells shut in. The wind is getting close. Audrey Broussard, her production reports finished, picks up her daughters and drives to Baton Rouge. The rains begin.

THE DAY OF THE STORM

6 A.M. SATURDAY, OCTOBER 3:

Hurricane Hilda enters the Eugene Island and Ship Shoal oil production areas of the Gulf of Mexico. In the storm's path lie hundreds of millions of dollars of offshore oil platforms belonging to a score of companies. Thirteen will be destroyed. Ashore, people are sleeping.

10 A.M. SATURDAY, OCTOBER 3:

At sea the winds reach 160 mph. In the Ship Shoal 208 block, just east of the eye, steady blasts of 150 mph pitch waves to 60 feet high. Tons of water crash over deserted platforms, severing flow lines, bending catwalks like rubber bands and smashing tool sheds to rubble.

In the Eugene Island area, Hilda bears down directly on the A-platform of Block 276, situated in 180 feet of water. Hurricane winds—possibly tornado blasts—shriek through the drilling rig and derrick. Wind-whipped waves crest 58 feet high. Suddenly, and without a human eye to witness the event, the platform shudders, slowly the entire deck tilts westward. Additional giant waves smash the weakened structure, finally carrying it under the seas. Only the water remains.

Back ashore, people have taken refuge or driven north to safety. In Baton Rouge, Audrey Broussard is in a dress shop trying on a new frock.

6 P.M. SATURDAY, OCTOBER 3:

The eye of Hilda crosses the Louisiana coastline, flooding marshland and Bayou and stirring up a flurry of wind-blown water in the swamps. The rainsoaked earth is soft, and the 110 mph winds tear at the loose roots of oak and pecan trees. Electric power lines are severed by falling trees. Telephones go dead; TV and radio sets blink out. Shingles begin ripping off roofs; dogs whine; children cry; women pray; and men try to look brave.

At four Ed Merton's lights fail; George Bergeron's quit at five; and at six Roland Perrin's go out. In Abbeville, a tree falls near Buckshot Harper's house shortly after six, dousing the lights. Ken Ditch, wondering how his rig is doing in the Atchafalaya swamps, hears the 10 other persons in his home gasp as an oak tree falls over his power line. It is dark; the rain pours; the wind blows. "Will it never end?" he asks.

8 P.M. SATURDAY, OCTOBER 3:

Hilda passes Deer Island, Pagie Lake and Lake Palourde fields and nears Bayou Pidgeon with slightly declining winds of 100 mph. The storm is breaking up over the mainland. In Thibodaux, Ken Winch wonders how the cypress trees are doing at Lake Palourde; Ken is dressing his children for bed. His wife, Lois, a nurse, is on duty at St. Joseph's Hospital, treating the injured from Morgan City.

In Baton Rouge, Don Skeele jokes about the dog-and-cat fights in the hallway of his hotel refuge. "After all," his wife, Margie, reminds him, "People couldn't leave their pets behind."

In Abbeville, Buckshot Harper turns up the radio to hear the Texas-Army game over the moaning winds. At that moment, the roof blows off Dan Detraz's house and his family runs for shelter next door.

2 A.M. SUNDAY, OCTOBER 4:

Along the seacoast the winds are dying down. People are going to bed. Further North, Hilda's much-reduced winds pass the Union-Mobile gas plant at Riverside without structural damage. In Baton Rouge, Audrey Broussard witnesses the eye of the storm.

"We stepped into a patio protected by a utility room," she recalls. "Branches and limbs were flying everywhere. Then, suddenly, everything calmed down. After hours of howling winds, the stillness was eerie. We were in the eye of the storm."

Ten minutes later the backlash winds from the opposite direction pick up. Everyone hurries inside for ham sandwiches. "There were 18 of us huddled around a two-burner butane stove," she said.

THE AFTERMATH

10 A.M. SUNDAY, OCTOBER 4:

The winds are gone; Hilda, now downgraded to a tropical storm, is over Mississippi. In Houston, division manager Charles Bowden and production manager Ed Sands board a plane to inspect storm damage. At Eugene Island, they discover the 276-A platform is missing.

Along the Gulf Coast, conditions are chaotic. Lights, water, telephones—all utilities are out. Marshes and canals are flooded. Trees are uprooted. Many roofs are missing. Irion Lafargue spends two hours trying to get electric power restored to draw bridges so crew boats can be moved; no luck. Charles Bergeron drives around Houma rounding up men; many are still being detained at refugee shelters. In Houma, Ed Merton of Ship Shoal 208 is bedridden with a cold.

Assessment of damages begins. Ty Brinker drives to Lake Palourde, happily discovers only minor damage. In Abbeville, Buckshot Harper finds the office flooded; there are no lights, no water, no telephones. J. C. Broussard drives to the homes of eight operators, asking them to meet a five o'clock crew boat. Ken Ditch, his road blocked by a

fallen oak, is sawing the tree in two.

10 A.M. MONDAY, OCTOBER 5:

Hilda is spinning out over Florida; in Houma, roads are being cleared, some phones and lights are restored. The seas in the Gulf of Mexico are too rough for work boats to reach deep water platforms. Irion Lafargue flies over Block 276 looking for the A-platform. The search is in vain—the platform is beneath 40 feet of muddy water.

Charles Bergeron flies to Caillou Island; part of the walkways are missing. Don Skeele finds no serious damage at Deer Island. Vic Weber reports Pagie Lake equipment survived.

The Abbeville office still being without utilities Buckshot Harper transfers operations to Intracoastal City. J. C. Broussard is happy: the Vermilion Block 14 field, put on production Sunday night, has delivered 100 million cubic feet of badly needed natural gas. At Tigre Lagoon, Percy LeBlanc dispatches a mobile crane to lift a heater-treater that tipped over in the storm. Weldon Doucette finds his board road in the Rockefeller Game Preserve intact.

10 A.M. TUESDAY, OCTOBER 6:

Roland Perrin is back drilling at the Ship Shoal 208-E platform. Don Skeele, continuing his survey, reports Bayou Pidgeon has escaped damage.

The seas are still pitching. Divers survey damage to offshore platforms, but the waters are too murky for critical appraisal.

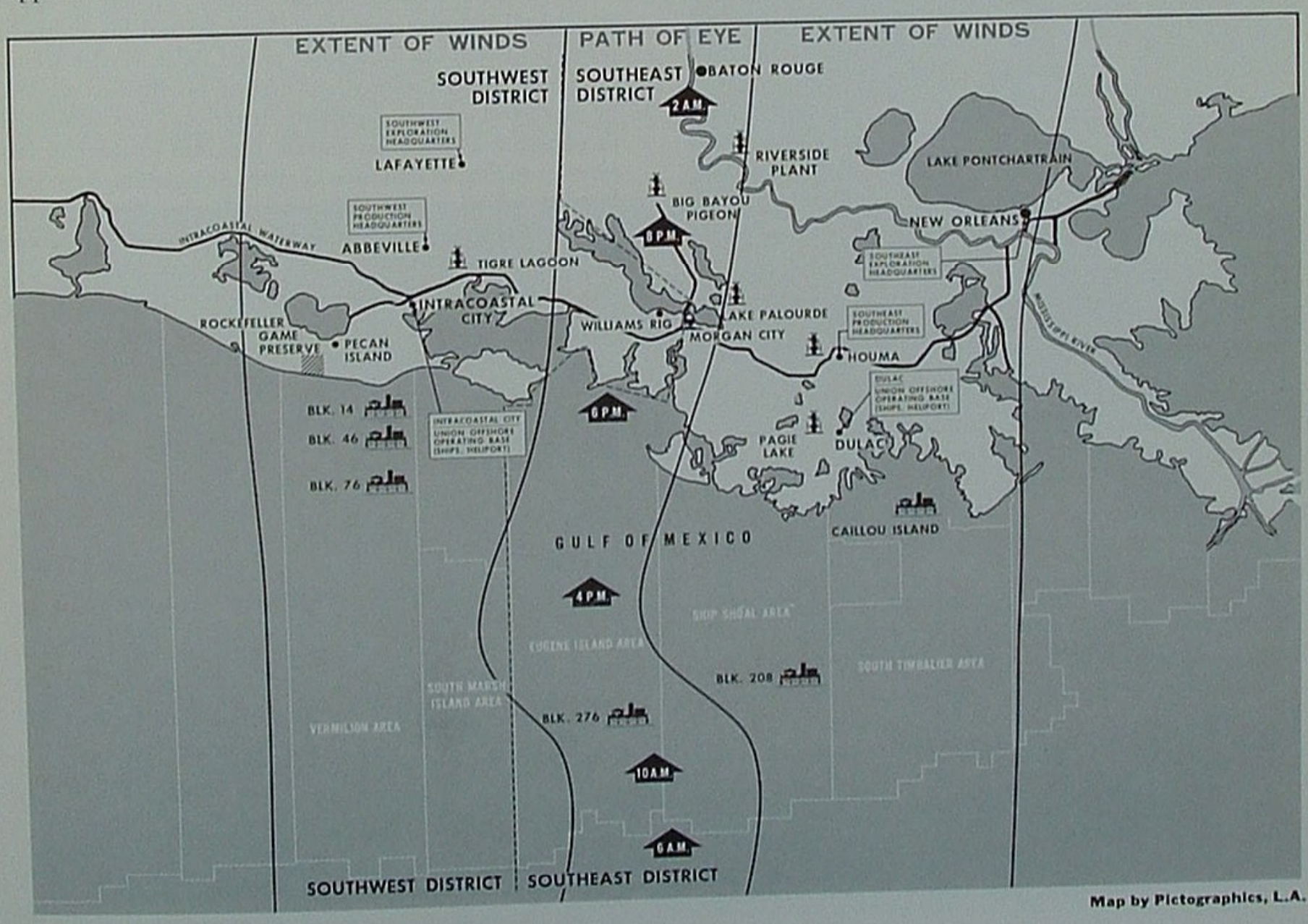
In Abbeville, Dan Detraz tells his insurance man the contractor wants $650 to repair his roof. Audrey Broussard shows up for work in a new dress. Ken Ditch arrives at the Williams wildcat in the Atchafalaya swamp; the storm broke 18 window panes.

In the marshlands, operators experience one peculiar difficulty getting fields back on production. Mink, nutria and other marsh animals, exhausted from swimming in the floods, have taken refuge on the well platforms. The operators use sticks to knock the animals off the platforms.

° ° °

By Tuesday operations are back to normal. Union Oil has taken its punches from Hilda, but the nearly $2 million in damage is only a small part of the $50 million or more of destruction visited upon the entire oil industry. Slightly more than half of the damage suffered by Union is the loss of the 276-A platform in the Eugene Island area and damage to other platforms—both covered by insurance.

Construction foreman Sherman Ditch of Houma, to whom most of the repair work fell, summed up Hilda this way: "This is the first hurricane to hit offshore production. Flossie hit in 1955 before we had any platforms out there. Audrey in 1957 went west of them. Hilda dealt us a mighty blow, but all was not catastrophic. Not one of our wells was blowing wild; the storm chokes held. As for us personally, we had a pretty scary time of it but no one was injured and few of us suffered any property damage. For this, we all thank the good Lord." (76)



Map by Pictographics, L.A.

Kenneth E. Kingman takes early retirement

Kenneth E. Kingman

UNION OIL CENTER

THE RETIREMENT on November 1 of Kenneth E. Kingman, president of Polar LMG Corporation, a Union Oil subsidiary, terminates a long-standing career of valuable service.

A soft-spoken man, appearing almost reserved in his more casual relationships with others, Kenny was, nevertheless, effective in getting important jobs done. His quality of being a good listener stimulated the confidence of others. He had the knack of selecting capable people and of developing and using their talents to best advantage.

His management associates describe him as "a man who will listen tirelessly to your arguments for or against doing a thing a certain way, but, when the die is cast, will not tolerate doubt or hesitation."

Kingman contributed much to Union Oil's refinery program. In 1929, soon after being graduated from California Institute of Technology, he joined Union Oil as a research chemist at Wilmington. He played a prominent part there in the pilot-plant development of Triton Motor Oil, then in 1937 was transferred to Oleum Refinery to supervise the company's manufacture of lubricants. He returned in 1945 to Los Angeles Refinery as manager, in 1949 stepped up to manager of manufacturing in head office, and in 1951 to vice president; in 1956 he was elected a director and member of the Executive Committee. Prior to his recent appointment as president of Polar LMG Corporation, Kingman was senior vice president in charge of manufacturing, industrial relations and transportation, and later in charge of subsidiaries.

In his zeal to get jobs done, he was careful to develop those under his supervision and never to trample on anyone's rights. He negotiated frankly with individuals and organizations, arrived at just working agreements, and was quick to refresh either side in an argument if the agreements were violated. His fairness won the confidence of both union and company negotiators.

The calm, analytical, engineering approach he made toward oil industry problems characterized his efforts in other fields too. As a member of the Palos Verdes school board, in the area where the Kingman family then resided, he predicted a large population boom and was influential in planning a school expansion program to meet it. His services to the Air Pollution Control Association, American Institute of Chemical Engineers, Merchants and Manufacturers Association of Los Angeles, National Association of Manufacturers, Western Oil and Gas Association, Rotary Club and others, have invariably merited the stamp of conscientiousness and foresight.

Typical of the technical problems handed to him throughout his career was the most recent one Union Oil had challenged him to pioneer — that of heading the Polar LMG Corporation. This embryo subsidiary has as its major objective the tankship transport of methane gas (in liquid form at temperatures around 260 degress below zero) from our Kenai gas field in Alaska to the markets of the Far East. Kingman has done much of the difficult groundwork on this extremely challenging project.

Although attaining his 35th year of company service (and celebrating his 35th wedding anniversary) in 1964, Kenny decided to take early retirement. His plans for the future include extensive travel, some "pilot-plant" studies of a new family boat, and more time with his family. Kenny lives with his wife, Margaret Sparling Kingman, in Pasadena. Their family includes a daughter, Ann, two sons, Stuart and William, and eleven grandchildren.

Union Oil regrets to see a man of Kingman's solid character leave. But with him goes gratitude for a job well done. (76)

THE TANKER SANTA MARIA WILL SAIL AGAIN

ANCHORAGE, ALASKA

THE UNION OIL chartered tanker *Santa Maria*, damaged in a collision and fire near Anchorage October 19, isn't lost. Despite news reports of a fiery death we're happy to report the 550-foot long ship, although severely damaged, will be rebuilt.

The collision occurred in Anchorage harbor on the afternoon of October 19 during an incoming tide where the sea-level varies by as much as 32 feet between high and low tides, giving rise to tricky tidal currents in excess of six knots. Three members of the 38-man crew were injured and one crewmen is missing and presumed lost.

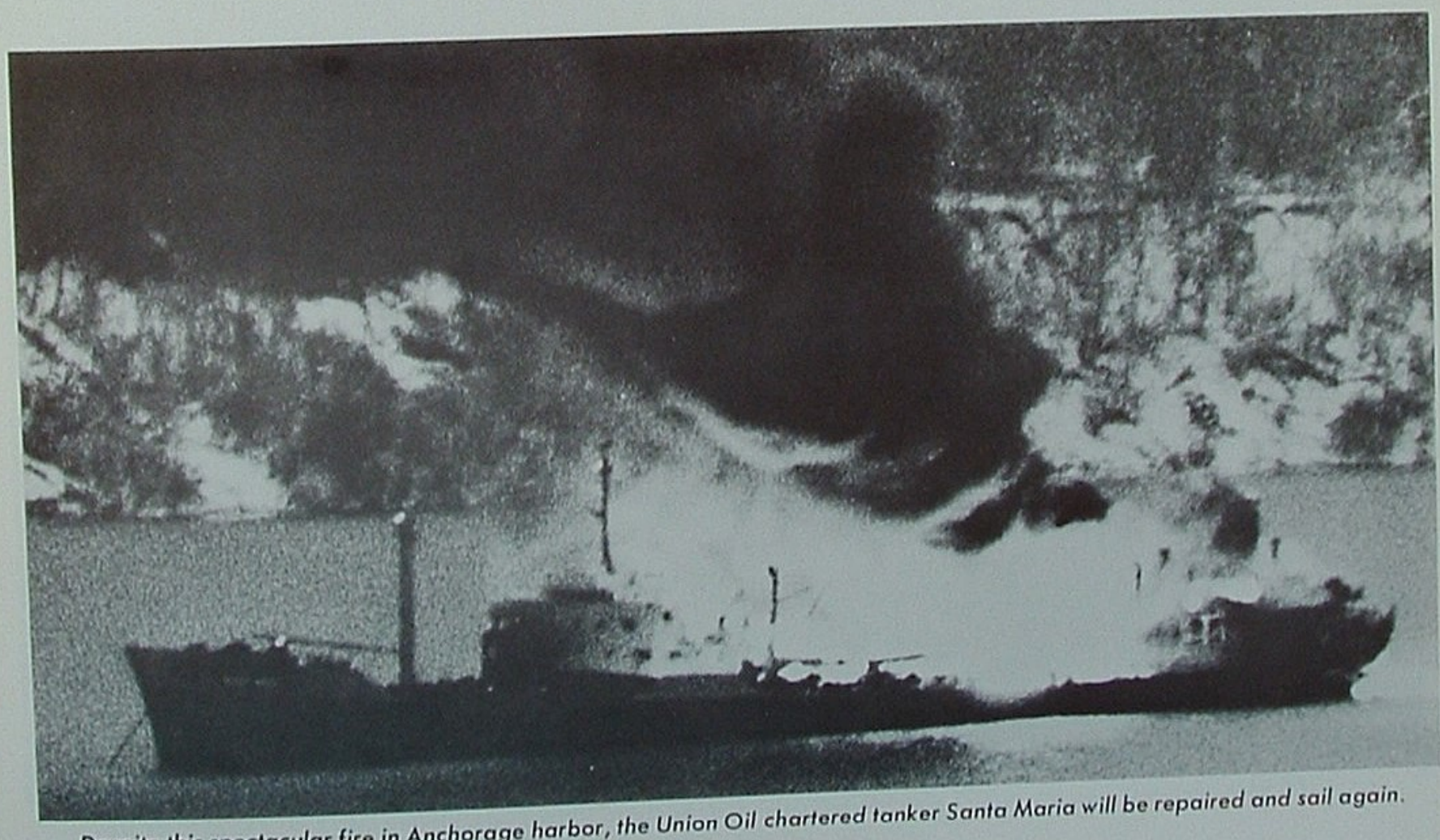
One of the 17,000 ton tanker's 31 petroleum compartments was ruptured in the collision, spilling Regular 76 gasoline on the water. The spectacular fire that resulted gave rise to widespread news reports that the tanker was destroyed. Fortunately, a rainstorm smothered the flames and a wind blew fuel that spilled on the water away from the ship.

Actually only about 7,000 barrels of product were lost. At least 110,000 barrels of gasoline, heating oil, diesel and aviation fuel were saved.

There was no fire damage to the forward part of the ship and very little in the engine room which was flooded; the greatest damage in the engine room may be from salt water corrosion. When crewmen fired up the ship's boilers several days later, however, the equipment worked. Nevertheless, the *Santa Maria* was towed to Seattle for drydocking and repairs which were expected to take six months. The other vessel, the tanker *Sirrah*, was not extensively damaged and with temporary repairs was able to steam to San Pedro, California, for permanent repairs.

The 12-year-old *Santa Maria*, which has delivered more than 43 million barrels of products in 350 voyages for the company, was on the second of four special trips to Alaska to fill the newly rebuilt Anchorage Terminal before winter ice blocked the channel. The vessel had been loaded with 135,000 barrels of products but had discharged 18,000 barrels at Kodiak the day before. Although the *Santa Maria* was unable to complete its last two voyages, arrangements were made for an adequate supply of products for our Alaska customers.

The *Santa Maria* is owned by the Figueroa Tanker Corporation and is under charter to Union Oil. The Pacific Coast Transport Company is the operating agent for Union Oil and the *Santa Maria's* crew members are employees of Pacific Coast Transport. The *Santa Maria* was insured and the small cargo loss was self-insured. 76



Despite this spectacular fire in Anchorage harbor, the Union Oil chartered tanker Santa Maria will be repaired and sail again.

Photo by Richard Brooks

In one of Oleum's biggest jobs, the people engineered, designed, built and started up Unifining Unit 229, one of eight we run.

OLEUM BUILDS ITS OWN UNIFINER

Engineering-Design-Construction-Startup

OLEUM REFINERY

UNIFINING IS Union Oil Company's own patented method of removing troublesome sulfur and nitrogen compounds from petroleum stocks being refined into high-quality gasolines, diesel and jet turbine fuels.

Although a Unifiner may be employed in one of several refinery processing schemes, it is most frequently linked with a Platformer (or other type of reformer), a refining process that employs a platinum catalyst to re-form relatively low-quality refinery stocks into high-energy gasoline stocks.

The Unifiner-Platformer marriage is of two-edged importance to refiners; primarily, the Unifiner supplies the Platformer with an impurity-free feed stock; unless removed, the nitrogen and sulfur compounds in the feed would poison the valuable platinum catalyst, rendering it ineffective. Moreover, the products of this combined Unifining-Platforming process are right at the top of the premium-quality scale. The Unifiner-Platformer combination has meant better products for our customers, also a substantially higher yield of premium fuels for each barrel of crude oil.

The success of Unifining is demonstrated by the full-capacity operation of eight such units in our own refineries and the licensing to date of more than 200 additional units to refiners throughout the world. About three-quarters of these Unifiners are linked to Platformers or other reformers used in making high-quality gasoline. The others are called Mid-barrel Unifiners and are employed in processing diesel and jet turbine fuels.

Here's why the refining world has so readily endorsed the Unifiner. The presence of sulfur in gasoline, diesel and jet turbine fuels increases their acidity, the acid compounds attack bearings and other engine parts, and the resulting corrosion may cause early engine failure. On the other hand, Unifined fuels — those free of acid-forming compounds — contribute to the efficient engine performance and long engine life.

The demand for Unifined stocks has been so brisk, in fact, that Oleum Refinery last year was experiencing difficulty in producing enough Unifined fuel to meet growing market demands. Our engineers pondered ways to increase production, and they came up with a plan that turned out to be the biggest project Oleum has handled in many years.

Here was the situation. An Oleum Unifiner known as Unit 230 was processing a mixture of both light and heavy naphtha. Light naphtha is a petroleum stock that is further refined into finished gasoline; heavy naphtha goes into diesel and jet turbine fuels.

Unifining a mix of these two naphthas was necessary because there was only one Unifiner to do the job. After unifining, the mixture of light and heavy naphtha was separated by distillation. The light naphtha went to the Platformer, Unit 231, for re-forming and upgrading into premium gasoline stock. The heavy naphtha used for diesel and jet fuel, didn't require Platforming, so it was sent along to the products-blending unit.

Clearly, Unit 230 was being called upon to do two separate jobs. Bacause some of the naphtha being processed in the Unifiner was destined for the Platformer, the Unifiner's entire output had to be virtually free of sulfur and nitrogen compounds—else these offending compounds would poison costly platinum catalyst in the Platformer. Because the heavy naphtha didn't go to the Platformer, it wasn't necessary to process it to the same degree that Platformer-destined stocks required.

So our engineers at Oleum designed a second Unifiner, calling it Unit 229. By careful design and making maximum use of already existing equipment in Unifiner Unit 230, it was possible to have the second Unifiner operating with a minimum of new equipment. The new Unifiner, Unit 229, is employed in removing acid-forming sulfur compounds from the heavy naphtha used for diesel and jet fuel. The original Unifiner, Unit 230, concentrates exclusively on light naphtha, preparing these stocks for the extremely sensitive catalyst situation in the Platformer. Today, as a result, a higher volume of feed stock can be handled by the two Unifiners. In a nutshell, Oleum has met the rising demand for Unifining's premium products by engineering an $800,000 remodeling job.

And the people at Oleum did it all by themselves; the only help from home office was an economic study that confirmed earlier reports from Oleum. Our people at Oleum handled the engineering, design and construction; Oleum maintenance crews installed the new facilities, and an Oleum crew started up the new unit without outside help. What's more, the twin Unifiners perform even better than plans had predicted. (76)

Pittsburgh Insurance Man Says Triton Gives Him Perfect Engine Performance

R. MAXWELL STEVENSON is a Pittsburgh, Pennsylvania, insurance man who believes in using the *finest*. Just the other day he bought a 1965 Chrysler Imperial, but not before he wrote to Union Oil Company to tell us about the "excellent automobile experience" he had using Royal Triton in his 1957 Imperial LeBaron four-door hardtop.

"I have driven my 1957 Chrysler 120,000 miles," Stevenson wrote to chairman A. C. Rubel, "enjoying perfect engine performance. During more than seven years the valves have functioned perfectly and neither engine head has ever been removed. Compression in all cylinders is still comparable with a new engine and oil consumption is presently less than a quart per thousand miles.

"Anyone desiring trouble-free, enjoyable motoring can have it by purchasing a car with a good motor, such as Chrysler, and using Royal Triton. I expect... to continue using your fine product in my new 1965 Imperial."

Hauk Named Superior Court Judge; Resigns Legal Post with Union Oil

A. ANDREW HAUK, assistant counsel in the Legal Department, has been appointed a judge in the Los Angeles County Superior Court. The appointment was made by California Governor Edmund A. Brown.

Hauk was graduated magna cum laude from Regis College, Denver, in 1935, and received a doctor of science of law degree from the Yale Law School in 1939. He has been an instructor in law and was an assistant U.S. District Attorney before serving in the U.S. Navy in World War II. He joined Union Oil in 1951 and has been particularly active in matters involving trial and appellate practice. Upon receiving his appointment as a Superior Court judge, Hauk submitted his resignation to Union Oil.

Hazel Corcoran Is Elected Director At Desk & Derrick Club Convention

THE DESK & DERRICK Clubs of North America seek to promote an understanding of the oil business among women who work in the industry. When 582 members and delegates gathered in San Francisco for their 13th annual convention September 25-26, they:

- Elected Hazel Corcoran of Union Research Center, Brea, California, as West Coast director;
- Held a score of business meetings and workshops;
- Were entertained by the Los Angeles County Sheriff's Rhythm Possee, Sheriff Peter Pritchess, M.C.;
- Heard Cy Rubel demonstrate his professional skill on the musical saw;
- Listened to Howard Vesper play the trombone, and, in his capacity as president of Standard Oil of California, Western Operations, Inc., deliver a speech on "Oil—Your Business and Mine."
- Heard J. R. Fluor, president of the Fluor Corporation, make an address entitled "From Signal Hill to Singapore," which reviewed the position of the international engineering contractor in today's industrial technology.

Credit for the success of the convention goes to Union Oil's Laurette Luce of San Francisco, who was general arrangements chairman.

OUTNUMBERED CHAIRMAN: *A highlight of the Desk & Derrick convention in San Francisco was a breakfast hosted by Carole Swanson of E&P Accounting in Los Angeles for 13 Union Oil affiliates and A. C. Rubel, chairman. Present for pictures (L-R) were: (foreground) Hazel Corcoran of Research; Madeline Alexander of Global Marine in Los Angeles; Blanche Kelley of Union Oil Center; Phyllis Gallant and Connie Bender of Sacramento; Allene McCormick of Bakersfield and Laurette Luce of San Francisco; (facing camera) Jo Beth Hogan of Roswell, N. Mex.; Ruth Fischer and Pat Clark of San Francisco; Joyce Wernsman of Unigas in San Francisco; and Marjorie Monahan of San Francisco; (standing) Pat Tyndale of W. H. Barton Co., Union consignee in Orange County; Cy Rubel and Carole Swanson of Los Angeles.*

Joe Dodson of Escondido Provides Service (and Clothespin) with a Smile

WHEN JOE DODSON, Union dealer in Escondido, California, says service, he means service. To show you what we have in mind, here's what happened the other day.

A motorist drove into Dodson's "76" station with a serious problem. A skunk—yes, a polecat—had climbed up into the fender well of the motorist's car, defying all efforts to get it out.

Dodson thought a moment, then put the car on the rack, gingerly grabbed the varmint by the tail, put it in a sack and turned the whole works over to local Humane Society. Joe, who has had experience with the stripped critters before, claims that if you grab them by the tail with their feet off the ground, they can't spray you.

Better remember that now. But if you do forget and ever run afoul of a polecat, call on Joe Dodson's service at Highway 395 and Washington. He'll be glad to tell you the address of the local Humane Society; if that's too late, he'll give you a clothespin.

Employees & Retirees Join Anna Lapp In Celebrating Her 90th Anniversary

MISS ANNA LAPP retired from Union Oil on October 1, 1938, which means she has been drawing a pension for a greater number of years than many of our younger employees have been living. When Miss Lapp celebrated her 90th birthday anniversary in San Fernando on September 27, several retirees and two employees were among the 37 guests who turned out to present her with a money tree. Appropriately it contained $90, which is better than 90 candles on your cake.

90 YEARS YOUNG: *Pictured at Anna Lapp's birthday party (L-R) are retirees Bill Sellers and John L. Niceley, Don Heintzelman (husband of retiree Margaret Beattie Heintzelman), Ina Buell of R&M Accounting, Mrs. B. A. Woodford, Mrs. Heintzelman, retiree Ben Woodford, and Alice Russell of R&M Merchandising.*

Safety Display at Research Center Wins Recognition by Highway Patrol

ONE REASON there hasn't been a lost-time accident at Union Research Center during working hours in the last three years is that Marty Gould is enthusiastic about his work. Gould, fire and safety specialist at Research Center, knows that accidents can be prevented by effective education.

Although there hasn't been a lost-time accident during working hours at Research Center since June 7, 1961, some Union researchers have been involved in off-duty accidents. Gould became concerned, and before the Labor Day weekend this year he put up a display that all at Research Center could see as they left for home.

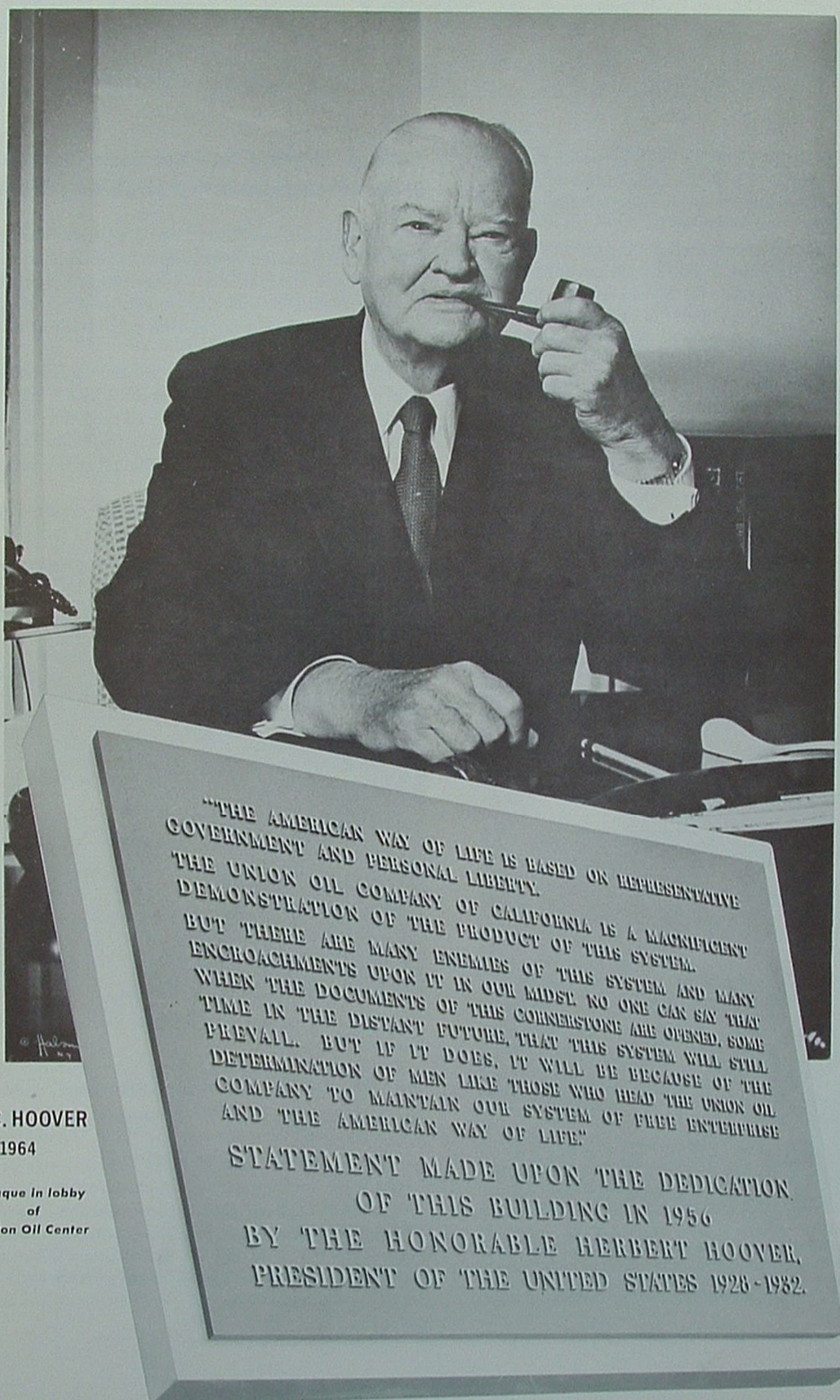
The display, entitled "Signs of Life," depicted photographically what could happen if a motorist fails to heed a

traffic sign. The photos came from the files of the California Highway Patrol.

The Highway Patrol was so impressed with the display that officials dispatched a team to photograph the exhibit and pass on the idea to other industries. How effective was the display for Union researchers? "Well," Gould replied, "we didn't have any weekend accidents."

° ° °

Speaking of safety, the Portland, Oregon, Marketing Terminal has completed three years without a disabling personal injury. As of July 17, the 60 Union Oilers at the terminal had completed 386,657 hours of work and won a safety recognition award. 76



HERBERT C. HOOVER
1874—1964

Plaque in lobby of Union Oil Center

AWARDS

EXPLORATION & PRODUCTION

November 1964

35 YEARS

JOHN L. TERRY ..... Santa Maria, California

30 YEARS

HOWARD T. COURTNEY ..... Orcutt, California
WILLIAM M. MOFFITT ..... Santa Fe Springs, California

25 YEARS

ROSE A. PELOUS ..... Union Oil Center

20 YEARS

GEORGE W. STEPHENS ..... Brea, California

15 YEARS

CHARLES W. CARY ..... Bakersfield, California
HERBERT S. HARRY ..... Union Oil Center
LUCILLE HINES ..... Union Oil Center
RICHARD D. STEWART ..... Bangkok, Thailand

10 YEARS

RONALD E. DODD ..... Vermilion, Louisiana
JESS C. ELLIOTT ..... Andrews, Texas
LYNDEN A. HERBERT ..... Huntington Beach, California
GRANT E. KELSO ..... Coalinga, California
CALVIN MILES ..... Montebello, California
THEODORE OKEY .. Santa Fe Springs, California
DONALD L. OLSON ..... Toowoomba, Australia

December 1964

40 YEARS

M. M. McALLASTER ..... Dominguez, California

30 YEARS

DONALD F. DUNLAP ..... Orcutt, California

25 YEARS

CHARLES F. BOWDEN ..... Houston, Texas

20 YEARS

SILAS A. GOULD ..... Santa Maria, California
JASON W. HODGE ..... Sansinena, California
ALVIN O. TIMMONS ..... Santa Paula, California

15 YEARS

MARGUERITE B. FINE ..... Midland, Texas

10 YEARS

GLENN G. WEICHERT ..... Houston, Texas
WILLIAM T. WITHERS ..... Houston, Texas

REFINING & MARKETING

November 1964

40 YEARS

JAMES S. BASSETT ..... Great Falls, Montana
THOMAS J. COLLINS San Luis Obispo, California

35 YEARS

WALTER M. RIDING .. Midway District, California

20 YEARS

ATHAN R. CARTER ..... Bakersfield, California
ROY C. DAVIDSON ..... Phoenix
JAMES L. FLETCHER ..... Los Angeles Refinery
KENT W. KUEHL ..... Los Angeles
MAXINE R. NAREY ..... Seattle
ERNEST F. PEIRANO ..... Stockton, California
FRANK J. ULBING ..... Los Angeles Refinery

15 YEARS

WYLIE CLARK DAY ..... Los Angeles Refinery
ROGER M. LEVAN ..... Seattle
DORIS L. PATRICK ..... Sacramento
ROBERT O. WHITE .. Santa Fe Springs, California

10 YEARS

L. J. BALLESTRAZZE Torrance District, California
EUGENE L. CONNOR ..... Portland
JOSEPH E. MASON ..... San Francisco
JOHN H. MOORE ..... Portland
C. D. VALLANDINGHAM ..... Sacramento

December 1964

40 YEARS

OTHA A. HAWTHORNE .... Los Angeles Refinery

35 YEARS

H. W. BRAGG ..... Union Oil Center
OLIVER B. GOLDSMITH ..... Union Oil Center

30 YEARS

WILLIAM V. CRIDDLE ..... Union Oil Center

25 YEARS

CLIFFORD C. BRAATEN ..... Oleum Refinery
T. W. PROUDFOOT .. Santa Fe Springs, California

20 YEARS

GEORGE L. ANDERSON ..... Ventura, California
RALPH B. COSTA ..... Oleum Refinery
CECIL J. GOAD ..... Los Angeles Refinery
PAUL O. GOODER ..... Union Oil Center
ROBERT W. KNOLL ..... Seattle
C. J. PIETERICK ..... Oleum Refinery

10 YEARS

GEORGE L. BURT ..... Edmonds, Washington
JOHN W. BURWELL ..... Los Angeles Refinery
E. K. FRANKLIN ..... San Francisco
RUSSEL F. GROESBECK ..... Union Oil Center
MARY L. HEFFLEY ..... Oleum Refinery
F. M. LUDINGTON ..... Richmond, California
CLIVE C. ODENRIDER ..... Ephrata, Washington
WAYNE S. RALLINGS Torrance District, California

CORPORATE

November 1964

30 YEARS

MYRON E. SMITH ..... Union Oil Center

25 YEARS

EARL AMOTT ..... Research Center
JAMES F. COOK ..... Research Center

December 1964

35 YEARS

KENNETH E. KINGMAN ..... Union Oil Center

25 YEARS

THOMAS F. DOUMANI ..... Research Center

20 YEARS

JOHN SEGO ..... Research Center

10 YEARS

GEORGE C. BOND ..... Union Oil Center
JAMES E. SCHUETZ ..... Union Oil Center

continued

SERVICE EMBLEMS

continued

SUBSIDIARIES

December 1964

30 YEARS

FRANK A. CULLING ..... Unoco, Hong Kong

DEALERS

November 1964

25 YEARS

R. V. BEHNKE (October) .... Whittier, California
E. D. DOUTHIT ..... Phoenix

20 YEARS

LINCOLN SUPER SERVICE .. Stockton, California
G. E. TOOT ..... Tonto Basin, Arizona
J. W. TOOT ..... Tonto Basin, Arizona

15 YEARS

STANLEY HARTER ..... Bakersfield, California
DEL V. KING (October) .. Santa Paula, California
W. D. KILLION ..... Ventura, California
S. A. MacPHERSON .... Pleasant Hill, California
E. N. MANWILER ..... Oregon City, Oregon
A. W. MIILU ..... Pleasant Hill, California
E. T. MONAHAN ..... Yuba City, California
K. RIBARICH ..... Richmond, California
WILLIAM ROOT ..... Tacoma, Washington
KENICHI SANJUME &
THOMAS M. SHIGEMITSU dba
KAHUKU SERVICE ..... Kahuku, Hawaii

10 YEARS

ROBERT D. CAMPBELL ..... Las Vegas, Nevada
B. F. CHOATE ..... Springfield, Oregon
V. P. KIRKPATRICK ..... Corona, California
DON NOBLE ..... Yakima, Washington
JACK PETERSEN ..... Rossmore, California
WAYNE SEWELL ..... Ogden, Utah
HACK TOWNSEND dba
TEJANO SERVICE ..... Arivaca, Arizona
HARRY WILCOX ..... Long Beach, California
HOMER WILLIS (July) ..... Roy, Montana
WILLARD WILSON ..... Jacksonville, Oregon

5 YEARS

H. W. AKARD ..... Whittier, California
TOM L. BAIRD ..... Jewell, Oregon
TONY BURNSIDE .... San Bernardino, California
FRITZ GILBRETH .... Medical Lake, Washington
DUANE GOLDEN ..... Compton, California
CHARLES GRAHAM .....Glacier, Washington
R. J. HALVORSON ..... Klamath Falls, Oregon
ALVIN JENSEN ..... Shelton, Washington
K. I. B. CORP., dba
THE SERVICENTER .... San Diego, California
CARLYLE SAMPSON Pacific Palisades, California
C. D. SEYMOUR ..... Glendora, California
L. E. SMITH ..... Placentia, California
R. B. TAPP ..... Pomona, California
HOWARD ULRICH dba
A STREET PARKING ..... Yakima, Washington
ELMER E. WIGGERT ..... Grants Pass, Oregon

December 1964

40 YEARS

LEE MERCANTILE CO. ..... Whiteriver, Arizona

30 YEARS

PAUL T. McCLELLAN ..... West Stayton, Oregon

20 YEARS

W. J. BAXTER ..... Oakland, California
BLADE CHEVROLET .... Mt. Vernon, Washington
M. D. MELLO ..... Norwalk, California
EDWARD RODINI ..... Yuba City, California

15 YEARS

ROBERT C. COPENHAVER ..... Albany, Oregon
HOWARD EBERT ..... San Jose, California
NORRIS JORGENSEN ..... Eugene, Oregon
AMOS M. LAUER ..... Los Angeles
W. L. SCHMICK ..... Sprague, Washington

10 YEARS

E. M. CHENEY ..... Pauma Valley, California
J. E. COULOUCH ..... Morro Bay, California
GEORGE INAMURA dba
KAPIOLANI SERVICE ..... Honolulu
COLEMAN READ ..... Smithfield, Utah

5 YEARS

ROGER BIDDLE .....Seattle
DON BROWN (May) .....Seattle
PHILIP A. DRAUSE ..... Toldeo, Oregon
GEORGE S. MORIKAWA dba
GEORGE'S UNION SERVICE ..... Honolulu
JAMES A. NEELY ..... Sacramento
PAUL PLUNKETT ..... Brawley, California
JENS P. SPRING dba
NORTHERN AVIATION .. Great Falls, Montana
CARL P. STROM ..... Toldeo, Oregon
ARTHUR VALENZUELA .. San Gabriel, California
C. L. WILSON dba
WILSON'S SUPER SERVICE
Clearmont, Wyoming

CONSIGNEES & DISTRIBUTORS

November 1964

35 YEARS

K. D. NEYLAND ..... Stevenson, Washington
MANUAL F. PIMENTAL .....Tracy, California

25 YEARS

L. F. CADONA .....Tulare, California
RYAN'S SERVICE ..... Lowell, Arizona

20 YEARS

H. A. MOCETTINI ..... Greenfield, California

15 YEARS

ROBERT HENDERSON ... McKenna, Washington
JOSEPH P. JORDAN dba
FORT BENTON MOTORS Fort Benton, Montana

10 YEARS

JAMES L. COLEMAN ..... Wellton, Arizona

December 1964

50 YEARS

T. E. HARRISON ..... Santa Paula, California

15 YEARS

HOWARD CHRISTIANSON Arlington, Washington

10 YEARS

LAWRENCE E. JACOBSEN ..... Minden, Nevada

5 YEARS

BUFORD LATHIM ..... Connell, Washington

RETIREMENTS

October 1964

EARL W. ANDERSON
Collier Carbon & Chemical .... March 5, 1954
ORIN R. BAKER
Los Angeles Refinery ..... August 1, 1944
EDMUND C. BABSON
Los Angeles ..... September 15, 1948
CLARENCE R. HAND
San Francisco ..... July 16, 1917
ALLEN O. LOVELL
Los Angeles ..... May 1, 1928
MARJORIE I. REAGAN
Los Angeles .....November 1, 1947
MERLE R. RUEDY
Los Angeles Terminal ..... September 6, 1928
MIKE D. SHEA
Turlock, California ..... October 22, 1929
EDMUND O. TUDOR
San Luis Obispo, California .... May 18, 1925

RETIREMENTS

November 1964

KENNETH C. M. ANDERSON
Los Angeles .....July 25, 1925
LUCILLE S. CORBETTA
Oleum Refinery ..... October 28, 1942
GERTRUDE W. EATON
Los Angeles ..... June 15, 1942
A. FRANK EVERETT
Piru, California ..... May 27, 1922
GUY FRYMAN
Portland ..... June 27, 1944
IGNACIO GARNER
San Luis Obispo, California December 22, 1927
BLANCHE A. HACKETT
Los Angeles Refinery ..... May 7, 1928
LARS J. HALVORSEN
Oleum Refinery ..... October 4, 1945
KENNETH E. KINGMAN
Los Angeles .....December 12, 1929
WILLIAM MASSA
Orcutt, California ..... September 25, 1933
PAULINE H. MURRELL
Los Angeles ..... June 18, 1945
PERCY F. PETROSS
Los Angeles Refinery ..... February 24, 1948
ARTHUR WALLER
Los Angeles Refinery .....August 16, 1926
HAROLD S. WILLIAMS
Los Angeles ..... March 15, 1934
HARRY L. WILSON
Los Angeles Refinery ..... August 5, 1926

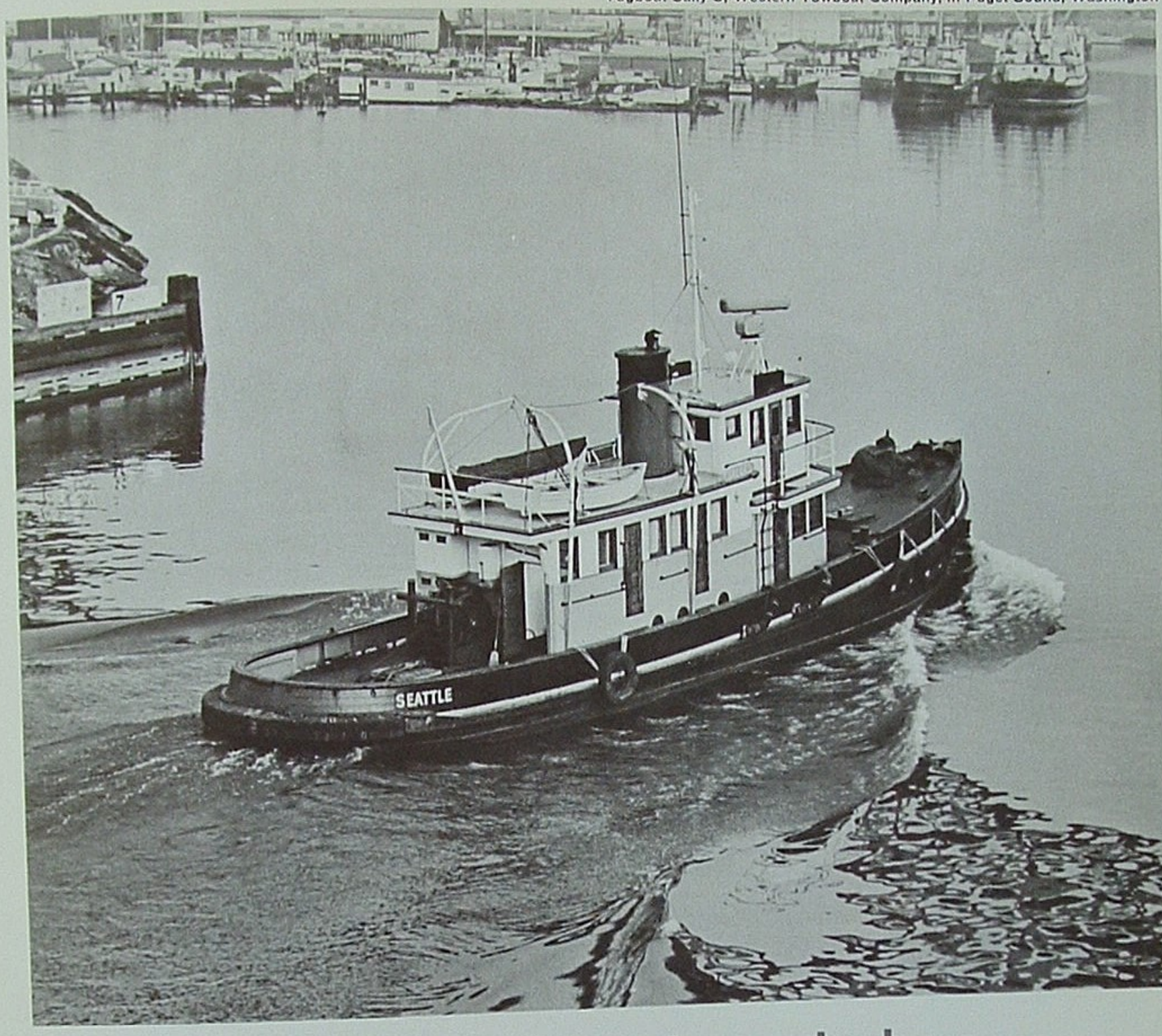
IN MEMORIAM

Employees:

JAMES L. BRADLEY
Pinole, California ..... October 10, 1964
KEITH BURGESS
Santa Monica, California .... October 17, 1964
EUGENE E. CARLSON
Woodland Hills, California September 21, 1964
MAURICE W. MORTON
Tulsa, Oklahoma ..... October 10, 1964
DONALD E. REEDER
La Mirada, California ..... October 7, 1964
JAMES E. SUTTLES
Houston, Texas ..... September 22, 1964
OREN M. TOTTEN
Long Beach, California ... September 29, 1964
PETER S. ZNAMENS
San Mateo, California .... September 14, 1964

Retirees:

RUTH R. BEHM
Los Angeles ..... September 29, 1964
VERNON SHAW FRAZIER
Long Beach, California ..... October 10, 1964
JACK R. GRANT
Wilmington, California ... September 30, 1964
WILLIAM H. GREEN
Brea, California ..... August 28, 1964
DELBERT HOLBROOK
Santa Maria, California ..... October 2, 1964
ELIAS H. HOLSTINE
Orcutt, California ..... September 16, 1964
LADDY W. JANES
San Pedro, California ..... August 25, 1964
JOE LIVELY
Lynwood, California ..... October 27, 1964
ANDREAS MORLAND
San Diego, California ..... June 3, 1964
FRED J. SPOO
Arroyo Grande, California September 23, 1964
JOSEPH F. STREEPER
Oakland, California ..... September 13, 1964
IVAN R. SWEARINGEN
Wilmington, California ..... August 20, 1964
GEORGE THEDENS
San Francisco, California September 22, 1964
TOMMY G. WRIGHT
Nipomo, California ..... August 27, 1964



Tugboat Sally S, Western Towboat Company, in Puget Sound, Washington

76 UNION

"No major overhaul on Caterpillar D-342 engine after 15,000 hours on Guardol"

Mr. Bob Shrewsbury, Owner, Western Towboat Company, Seattle, Washington

"The diesel engines in our tugs are similar to those used in trucks and other land equipment. But the operating conditions are different.

"Our engines work harder for longer periods of time. Take the D-342, for example. That's the same kind as in a D-8 tractor and we operate it at about 1,200 rpm for 5 days around the clock on the Alaska run.

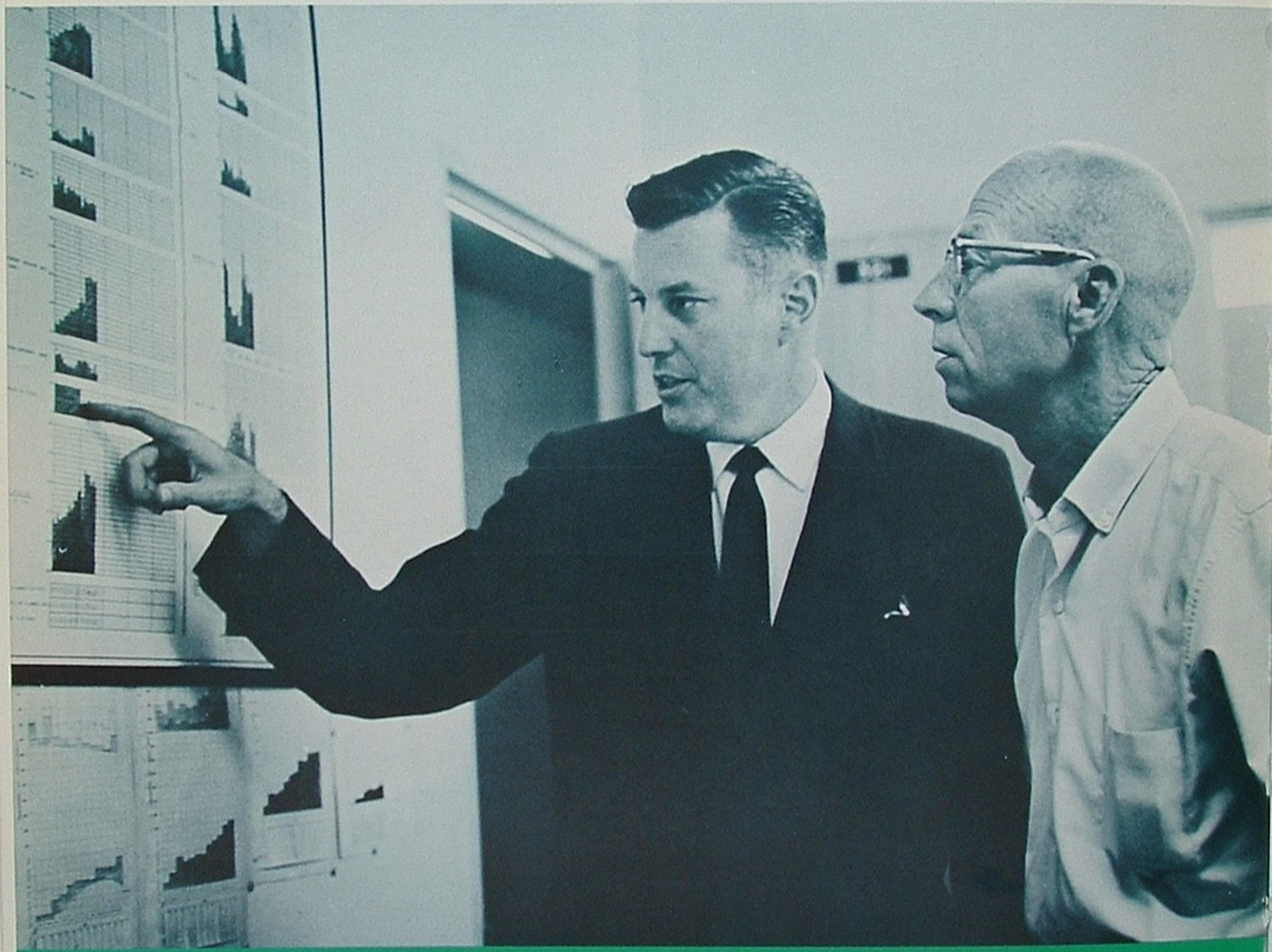
"After 15,000 hours, it has had only 2 valve grinds. That type of performance keeps me sold. I'd recommend Guardol to anyone who requires a Series 3 motor oil."

Guardol is an approved Superior Lubricant, Series 3 and also qualifies for API service DS. It meets all Caterpillar specifications for heavy-duty diesel engines and is used in the majority of Caterpillar gear cases and final drives. Why not call your nearby Union Oil representative today, for complete details about Guardol?

UNION OIL COMPANY OF CALIFORNIA 76 UNION

UNION OIL CENTER, LOS ANGELES 17, CALIFORNIA

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



How We Work ...

When Paul A. Wilson retired from Union Oil last August, he didn't retire from being a Union Oiler. This fall Paul and his wife, Ada, visited the World's Fair in New York. Enroute back to their home in Whittier, California, Wilson stopped at our Midland, Texas, office—the headquarters for our Central Division. There retiree Wilson was given the VIP tour by George Coombes, production superintendent. "Looks good," said former production man Wilson whose 10 years active participation in the Incentive Plan assures a continuing interest in the future operations of our company.