

And the angel said unto them, Fear not; for, behold, I bring you good tidings of great joy, which shall be to all people. □ For unto you is born this day in the city of David a Saviour, which is Christ the Lord. □ And this shall be a sign unto you; ye shall find the babe wrapped in swaddling clothes, lying in a manger. □ And suddenly there was with the angel a multitude of the heavenly host praising God and saying, Glory to God in the highest, and on earth peace, good will toward men.

St. Luke, 2:10-14



NOVEMBER-DECEMBER 1963

SEVENTY SIX 
UNION OIL COMPANY OF CALIFORNIA



Los Angeles Refinery's "Rusty" Haire and Bud Mangold check out Pete Tolmasoff's oxygen equipment (above) while (below) Norris Hartsell and Jim Leech discuss a garden-type hazard. Such attention to safety earned LAR its record.

Safety is no accident

THE NEW SAFETY RECORD recently established at Los Angeles Refinery is 20 months or 2,465,156 man-hours without an on-duty disabling injury. Because it was one of the finest achievements in the nation this year, we asked the safety supervisor to tell us how his 738 co-workers accomplished such a feat.

Bud Mangold replied: "That safety record was no accident. Every area and installation within refinery bounds is studied safeguarded and regularly inspected to eliminate hazards. All equipment and tools have to pass rigid tests. Safety rules and procedures are established and, most important of all, the workmen themselves faithfully and rigorously observe them.

"Here's another thing. We delegate safety responsibility where it belongs—to the separate operating groups themselves. Their foremen conduct safety meetings and watch over their broods like mother hens.

"Of course other big industrial plants take the same precautions we do. Why then the outstanding records here and at Oleum Refinery? I believe it's a matter of good morale. When 738 working people resolve to improve a safety record, accidents seem to stand off at a respectful distance. As long as this good morale prevails, we'll make new records and be safer at work than a home."

THE END

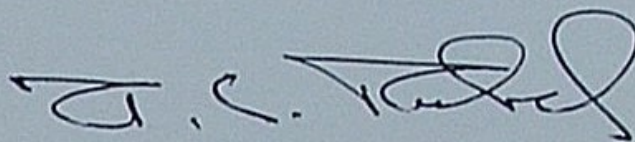


MERRY CHRISTMAS!

Again we approach the Holiday Season with a sense of having successfully discharged our duties as measured by the progress of the company and its service to the community during the years.

Again may I express my sincere appreciation for your contribution, which has made this success possible. Particularly may I thank those who serve in our far-flung operations—Hong Kong, Singapore, Japan, the Philippines, Spain, Argentina and Australia.

May all of you and your families enjoy the merriest Christmas and may the New Year bring you continued health and happiness.



President

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is a Union Oil Company of California trademark. It also symbolizes the American freedoms won in 1776, which made possible this nation's industrial development and abundance. Our SEVENTY-SIX magazine, published monthly, mirrors industrial freedom through the thoughts, skills, accomplishments and appreciations of Union Oil people. We invite readers to participate with us in an exchange of ideas and information. Address correspondence to The Editor, SEVENTY-SIX, Union Oil Center, Los Angeles 17, California.

COVER—As nearly as modern research can determine, this was the scene of Christianity's beginning . . . of mankind's first awakening to the hope of a Merry Christmas, at Capernaum.

Published by
PUBLIC RELATIONS DEPARTMENT
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The Greatest Story Ever Told

EARLY LAST SPRING, SEVENTY-SIX received an urgent invitation from Union Oil marketing people in Reno. They advised that "76" products in truck-and-trailer lots were being used to film "The Greatest Story Ever Told," a super production portraying the ministry of Christ.

"Bring a photographer," they urged, "and we'll take you to the old city of Capernaum on the Sea of Galilee, just as it appeared 2,000 years ago."

We wondered what part petroleum could play in such an ancient drama.

Later, as we neared the movie location on Nevada's Pyramid Lake, the petroleum question was answered:

On a level area beside the lake, several hundred portable homes and house-trailers had already formed a temporary city on wheels. Caravans of trucks and trailers were arriving over the Indian reservation road, some from as far distant as Arizona, California, and Idaho. A steady influx of passenger vehicles was swelling the city's population to thousands of actors, extras, workmen, supervisors, directors, technicians, artists, cameramen and the scores of others needed to film such a documentation.

Corrals a short distance from the noble city were beginning to fill with biblical sheep, asses, and camels. But it was plain to see that the real beast of burden for this big encampment was petroleum. Two shining tanks, labeled "76," provided a convenient store of energy for all the vehicles in sight. The *pitch* of biblical times was on hand, in refined form, to yield not only motive power but light,

To film "The Greatest Story Ever Told," Producer-Director George Stevens chose Nevada's Pyramid Lake as the setting for Capernaum and the Sea of Galilee. Modern craftsmen and tools were challenged to duplicate buildings and living conditions of 2,000 years ago.

heat and refrigerating energy for the *multitude*.

Apart from the mobile city, a Sea of Galilee setting presented interesting contrasts. Craftsmen with modern trucks and tools were putting the finishing touches on Capernaum. A dump truck moved cautiously, almost reverently, through the narrow village gateway. A workman in checkered shirt employed a small gasoline-powered pump to transport water from the Sea to the mortar box of a stone mason. Other men were studiously removing tire marks, tin cans, and stray bits of paper from ground that bore no record of such inventions 2,000 years ago.

On a shore adjacent to the village, fishing boats of long ago were being gently carried to the water's edge by fork-lift trucks. The least expensive of these boats, we were told, was built at a cost of \$8,000, due to the research and handtooling necessary to make them historically authentic. An opening engineered into the bottom of each boat was there, we suspected, to accommodate a small outboard motor, as a means of compensating for contrary winds or actor oarsmen.

Promptly at noon, workmen climbed into their trucks and raced toward a big dining tent in the mobile city. As they moved out of sight and hearing, a temple-like calm settled over Capernaum.

One member of our Union Oil threesome, who had seen the real Sea of Galilee, remarked that the Pyramid Lake location seemed almost identical. The artistry of the set builders had successfully reversed time. We wouldn't have been surprised to see a robed figure of the Christ move from the village gate toward the beached fishing boats.

You know the story as well as we do:

He came walking into the sunrise of Christianity quietly, intelligently, persuasively, peacefully. Hardly a word in the descriptions of his ministry tells us whether He was tall or short, dark or fair, literate or illiterate. But His imperishable words leave no doubt as to His wisdom, courage, honesty, incorruptibility and great compassion for all mankind:

"Ye have heard that it was said by them of old time, Thou shalt not kill; but I say unto you, That whosoever is angry with his brother without a cause shall be in danger of the judgment... Agree with thine adversary quickly... If thy right hand offend thee, cut it off... Whosoever shall smite thee on thy right cheek, turn to him the other also... Whosoever shall compel thee to go a mile, go with him twain.

"Love your enemies. For if ye love them which love you, what reward have ye? Do not even the publicans the same?... Take heed that ye do not your alms before men, to be seen of them... Judge not that ye be not judged... Ask and it shall be given you; seek and ye shall find; knock and it shall be opened unto you."

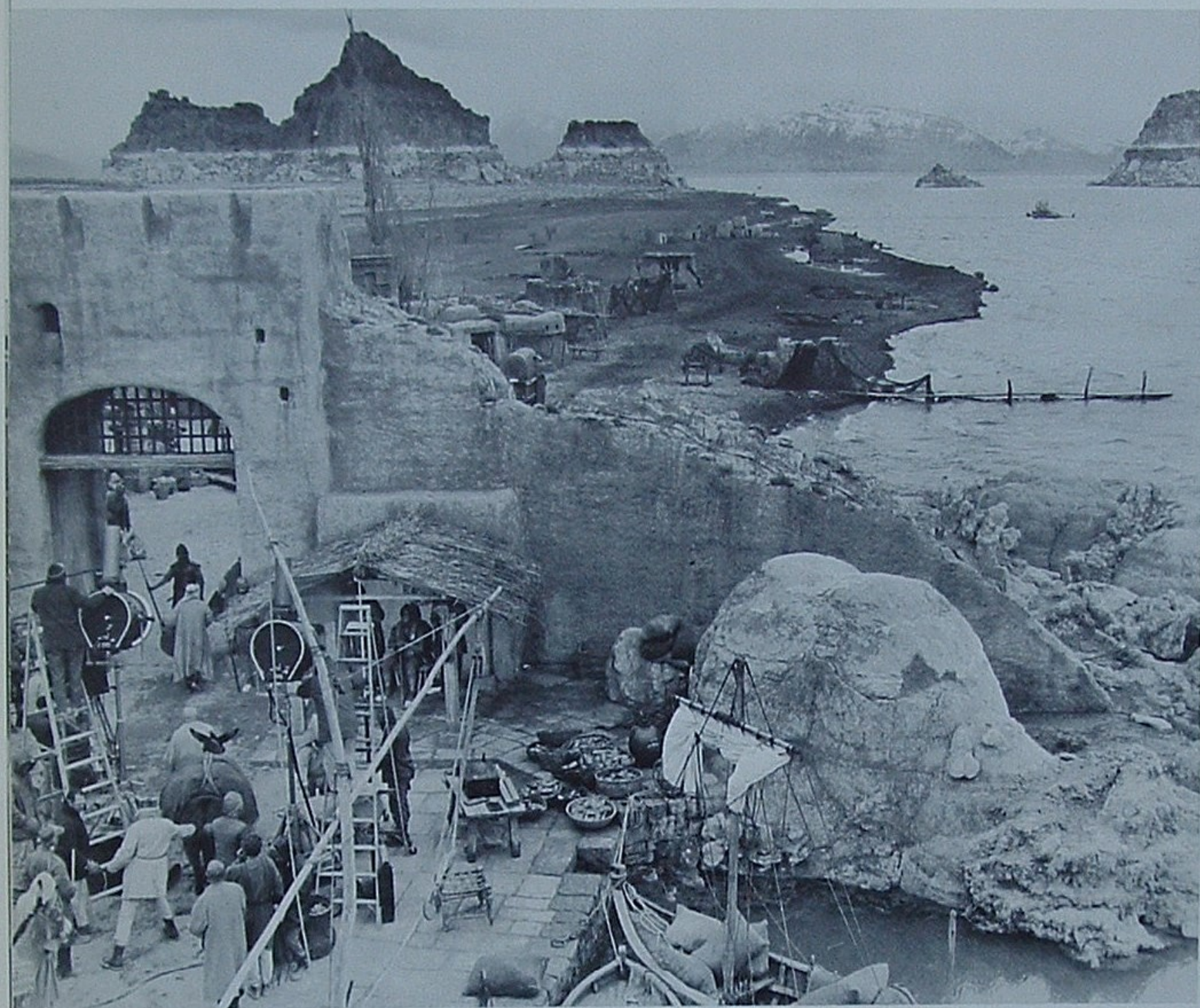
continued



A temporary city-on-wheels for the movie "multitude" was convoyed hundreds of miles to location. Union Oil, foreground, served the production in an off-stage beast of burden role.

Our cameraman couldn't resist this scene of today's water carrier in checkered shirt, lifting the Sea with a gas powered pump.





"And leaving Nazareth, he came and dwelt in Capernaum, which is upon the sea coast, in the borders of Zabulon and Nephthalim."

Greatest Story *continued*

He often spoke in parables:

"A certain man went down from Jerusalem to Jericho and fell among thieves, which stripped him of his raiment, and wounded him, and departed, leaving him half dead. And by chance there came down a certain priest that way: and when he saw him, he passed by on the other side. And likewise a Levite, when he was at the place, came and looked on him, and passed by on the other side. But a certain Samaritan, as he journeyed, came where he was: and when he saw him, he had compassion on him. And went to him, and bound up his wounds, pouring in oil and wine, and set him on his own beast, and brought him to an inn, and took care of him. And on the morrow when he departed, he took two pence and gave them to the host, and said unto him, Take care of him; and whatsoever thou spendest more, when I come again, I will repay thee. Which now of these three, thinkest thou, was neighbor unto him that fell among the thieves?"

No words in history have had a greater impact on human minds and our social conscience. Countless millions of people have attempted in some degree to pattern their lives according to His Christian example. Thousands of churches and religious organizations have been founded on the New Testament promises of peace and immortality. Whole nations have tempered their laws and relationships with Christian justice and motivation.

Even this Merry Christmas that our SEVENTY-SIX staff extends to Union Oil people everywhere owes its origin to the Man of Galilee. His indeed was the greatest story ever told.

The motion picture by that title is being filmed by George Stevens Productions, Inc., in Cinerama and 70mm Panavision for release by United Artists Corporation during mid-summer of 1964. George Stevens is both producer and director. Max von Sydow, the distinguished Swedish actor, portrays the Christ.

THE END



C. E. Rathbone elected Vice President

C. E. (Ted) Rathbone, director of marketing for the past two years, was elected a vice president at the board of directors meeting on September 30.

In Rathbone's background are 34 years experience with the company. His biography reads like a complete list of marketing department jobs combined with a directory of West Coast cities.

He started out as a drum and barrel clerk at Los Angeles in 1929. He stayed in Los Angeles for a quiet nine years as a bookkeeper, order clerk, and service station clerk. Then he bought a suitcase and an airline ticket and began to travel.

From 1938 until 1960 Rathbone held positions ranging from service station superintendent to territory manager, retail, in Seattle, Eugene, Portland, Sacramento, Oakland, San Francisco, Los Angeles and Pasadena. He began repeating cities on the mainland, so he spent three years as manager in Honolulu. Along with the variety of cities went a variety of assignments: wholesale managerships, retail managerships, staff positions.

In 1960, he moved into the home office as manager of retail planning. His responsibilities were expanded to include all phases of marketing development; then, in 1962, he became director of marketing.

As vice president, Rathbone continues to direct Union Oil's retail and commercial sales in the western states and its branded marketing activities in the east.

Rathbone's home is in Glendale, California. He majored in engineering at the University of Arizona. THE END



Jennifer Garry and Janet Tucker review their trip.

DO SECRETARIES and stenographers know what they are writing about? Do they ever see their company's operations first hand, particularly if the work is technical or remote?

It took two of us Sydney secretaries about a year to get on first-hand terms with Union Oil Company's field operations in Australia. My companion on the venture was Janet Tucker, secretary to Doyle T. Graves, Union Oil Development Corporation's resident manager in Australia. I am Jennifer Garry, secretary to the company's public relations director, Lindsay Campbell.

Have you ever heard of a flying magnetometer? Stratigraphic test? Seismic survey?

Well, I hadn't until I joined Union. I went along day to day inventing interminable shorthand outlines for these terms without ever quite knowing what they were about. Then Janet and I decided to take some of our vacation time and spend a weekend on Moonie Field.

We flew from Sydney into Brisbane for an overnight stop, then, next morning at the Brisbane airport, hitched a ride to Toowoomba in the company's chartered Cessna aeroplane. Snow Richards, pilot and owner of the Cessna, has printed a large 76—Union's trademark—on his plane.

Within an hour, we had landed at the Toowoomba Aero Club field and were driving toward the city. Toowoomba, with a population of 50,000, is the only city reasonably convenient to Moonie Field, so serves as the operating base for Union Development Corporation. We toured the offices and met members of the staff to whom we had fre-

Two off-tour Sheilas go...

ON TOUR

By JENNIFER GARRY

quently spoken on the phone, but this was our first face-to-face.

Next morning we arrived at the office early to hear drilling reports come in on the field radio from the three rigs—two drilling wildcats and one drilling a development well on Moonie Field. Supplies of pipe were needed at Boomi No. 1, a wildcat drilling in northern New South Wales, but rain the previous night made transport impossible. The drilling foreman was told he would have to wait for the road to dry out before the pipe could go through.

Soon after morning coffee, we again hitched a ride in the Cessna, headed for Moonie Field. On the 100-mile flight we took a good look at the famed Darling Downs, an immense area of black-soil country, intensely farmed, which extends from Toowoomba to the edge of the Brigalow scrub from which black gold soon will be flowing.

We buzzed Dilbong, homestead of the Cossart family. Moonie Field was originally part of the Cossart's property. We had hoped, time permitting, to visit the property and spend an afternoon riding the boundary. But Snow had another flying job waiting for him back at Toowoomba.

Hank Zutz, toolpusher in charge of the rig drilling Moonie No. 17, was at the airstrip and we talked him into taking us to the rig. We made a quick tour of the well just as they were preparing to come out of the hole for a bit change. Then, off to the camp for lunch. Danny, the cook, served us steaks of almost dinosaur proportions.

The camp is not a glamorous boom town, but amenities are good. Men sleep in comfortable quarters with separate

AT MOONIE FIELD

showers and laundries for washing and drying their clothes. Wives and families of the married men live miles away in Toowoomba or Brisbane.

The climate at Moonie is harsh and the life lonely. Heavy dust clouds the camp in summer and winter. We saw a roughneck going about his regular Saturday afternoon chore of cleaning a heavy layer of dust and mud off his car.

A large percentage of the staff is Australian with a sprinkling of Americans, Canadians and French who have come to instruct Australians in the techniques of oil drilling, an operation completely new to this country.

A green roughneck is included in a team of experienced men and, within a month or so, is integrated into his new job. Australian roughnecks with the ability and experience will eventually replace overseas staff as drillers and toolpushers.

At night, the men not on tour (pronounced "tower") of duty watch television in the recreation hut, play cards or listen to the radio. They are allowed three cans of beer when they come off duty; apart from that, there is no alcohol on the field. Those on weekend leave usually make off for Toowoomba or Brisbane. These men are tough, hard-working; their life on the field is not one of riotous living and big spending, as one imagines from Hollywood films.

Hank drove us back to Moonie No. 17 where the drillers were just starting to bring the bit out of the hole. This is a lengthy job, as each section of drillpipe has to be brought to the top, unscrewed and stacked before the bit comes up and is changed.

Such operations take skill and timing. They are usually completed by three roughnecks at the rotary table of the rig, grappling and unscrewing the pipe—a derrickman about 75 feet up in the mast of the rig, stacking each length of drillpipe—and the driller at the controls.

Janet and I furiously fired questions at Hank, both of us aware that it was not possible to take in all we wanted to know in one day. I, of course, had left my list of carefully prepared questions back in Sydney.

After a few hours of this, the boys at the well were bored to death by two female secretaries asking interminable questions and using technical terms out of context. We got the message it was time for us to get back.

Farewelled by Hank, bundled into the plane by Snow, we circled once more over Dilbong, sad that we had lacked the time to ride that boundary. Winging homeward we were still bewildered about such things as the viscosity of drilling mud and the use of nitrogen in hydraulic blowout preventers. But feeling very adventurous and frontierish, we were just dying to reach Sydney and find victims who would listen to our experiences in the scrub.

THE END

Australian Slangue

Australians, like oil men, have a slanguage all their own. Here are a few of some 10,000 Australianisms and their meanings:

Abo, *aborigine*
Aussie, *Australian*
Blow-in, *a newcomer*
Bonzer, *good, excellent*
Bumper, *a cigarette butt*
Bush or Outback, *inland country*
Whip the cat, *cry over spilt milk*
Cobber, *a friend*
Dinkum, *true or honest*
Drop one's bundle, *become panicky*
Duffer, *a cattle thief*
Game as Ned Kelly, *courageous*
Graft, *hard work*
Hop, *a policeman*
Joey, *a young kangaroo*
No good to gundy, *worthless*
Riding the boundary, *riding the fence line*
Rouseabout, *a handyman*
Sheila, *a girl*
Squatter, *large ranch owner*
Cattle station, *cattle ranch*
Woop Woop, *backwoods town*

Refining and Marketing Division

HONORS

30 AND 35-YEAR EMPLOYEES

AT TWO PARTIES held October 9th at the Ambassador Hotel in Los Angeles and October 16th at the Fairmont Hotel in San Francisco, the Refining and Marketing Division honored its 110 employees who had achieved 30 and 35 years of continuous service. Union Oil's "thank you," presented in the form of a gold watch to every 30-year employee, was received by 46 men and one woman. (The 35-year employees had received watches in previous years.) Silver jewel boxes in which the watches were encased were announced as presents for the watch recipients' wives, most of whom were in attendance.

Spokesman for the department managers, who served as hosts, was Senior Vice President Fred L. Hartley. In his welcoming remarks he pointed out some interesting contrasts between the company's status now and 30 or 35 years ago:

It was the "boom" year of 1928 when the 35-year men came to work. Union's 46 active drilling crews increased crude oil production from 10 million to 16 million barrels in a single year. A new concept in service station design, "modified Spanish," was created. Our first aviation representatives were being assigned. We operated 12 tankships (capacities 55,000 to 75,000 barrels), one of which, the SS La Brea, delivered its first full load of Union Oil products to Sydney for the Australian market.

In contrast, the 30-year men came to work in 1933, a year of retrenchment. This was the era of the "New Deal,"

NRA and PWA. Jobs and money were scarce. Profits, if any, were low. Competition was intense. We curtailed crude production to 11 million barrels and slowed refinery output accordingly. Nevertheless, Union had the foresight to build a million-dollar lubricating oil plant at Oleum and introduced "Stop Wear" lubrication, the foremost automotive maintenance service of its day.

Today, 1963, one of Union Oil's three supertankers will carry nearly as much oil as the entire 12-vessel fleet did in 1928. A \$20 million Unicracker is under construction at Los Angeles Refinery. Early in 1964, Union's Australian company will commence producing oil where we delivered it in 1928—Australia. Our pipelines are among the world's most modern and efficient. Sales of our products have increased from \$91 million in 1928 to \$562 million in 1962.

The Senior Vice President concluded: "Each of you has played an important part during this interesting and important period of the company's history, and we thank you for your efforts."

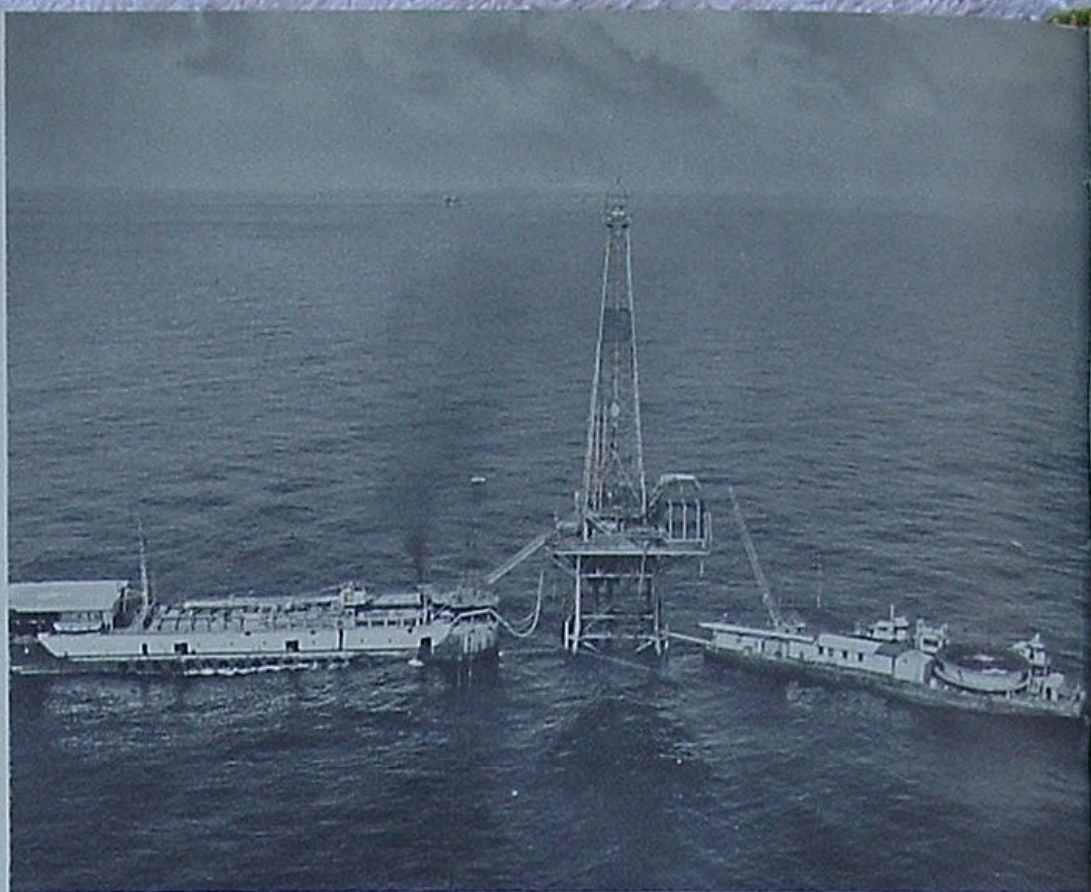
THE END



Watch recipients, all 30-year employees, at San Francisco were (above, seated from left) George Fish, Michael McNamara, Douglas Harvey, Angelo Banducci, Charles Fitzgerald, Leon Young, Uriah McMahon, Evelyn Cederlund, Darrell Povey; (standing) Roy Nichols, Charles Narry, Donald Davidson, James Cooper, John Dailey, Louis Accomazzo, Charles Powell, Ralph Cairney, Larry Adams, Thomas Killelea, Francis Gibbons, Daniel Ratkovich and Joseph Leptich. Recipients at Los Angeles were (below) Lloyd Bruce, Raymond Haynes, George Rowe, Arthur Hill, Lawrence Grisham, Norris Hartsell, Henry Anderson, John Towler, Gerald Rilea, Jack Dill, Harvey Elder, Howard Said, Clyde Baldosser, Ken Clark, Edward Reed, Charles Duncan, Malcolm Kent, Paul Grand and Aubrey Fraser.



now they're using



pipeline on a spool



HOUMA, LOUISIANA

DISCOVERING OIL is only part of the picture. Once you find it, you have to get it to market. Union Oil engineers faced this problem in the Gulf of Mexico last spring when the Block 208 field came in. Long experienced in offshore natural gas production, Union this time was working on its first offshore crude oil field.

How to get the oil—some 3,100 barrels a day so far—from the field to shore was easy. They hired a barge. It's cheaper than building a sixty-mile long pipeline. The barge, with a 30,000 barrel capacity, could haul a week's production in one trip.

Collecting a week's output in one place was the next step. Union engineers did this by building an offshore platform with five rectangular tanks that could hold 25,000 barrels of crude oil. If production goes up, the barge could make two trips a week.

Getting the oil from the wells to the storage tanks took a little more thought. Here's why. The Block 208 field in the Ship Shoal area of offshore Louisiana is a half-moon shaped arc, about three miles in diameter. Formerly called the Lost Dome, it follows the perimeter of a huge underground salt plug. In this arc, there are seven production platforms, called 208-A, -B, -C, -D, -E, and 209-1 and -3.

So far, A, B, C, and 3 are producing. The five storage tanks are situated on the 208-A platform, nerve center for the field. Each outlying platform has four or five wells, and most of the wells are flowing from two underground formations. A lot of gathering lines were needed.

Usual procedure for installing a gathering system, according to District Production Engineer Ron Cernick of Houma is to weld together forty-foot long joints of pipe and lower the pipeline to the bottom of the sea. This is a slow, tedious, and costly operation.

About that time the Gurtler Hebert Co. of New Orleans approached Union engineers with an idea. A long pipeline is flexible, they said. Why not weld the pipe together on land, spool it onto a reel and lay it down like telephone companies do their submarine cables? Gurtler Hebert had tried it, even on heavy pipe, and it worked.

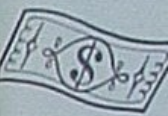
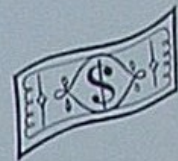
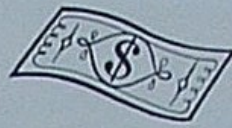
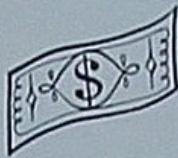
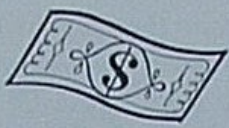
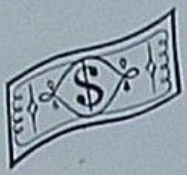
One day last spring a barge with a fifty-foot spool began unreeling five-mile long lengths of polyethylene-coated pipeline on Union Block 208. In two working days, they had placed 37,000 feet of gathering line, most of it four inch pipe. Cost was \$4 a foot, vs. \$7.50 a foot for the conventional way.

"It worked fine," said Cernick.

THE END



YOUR MISSING MONEY:



When you're sick or injured, the company's Sick Pay and Disability Income plans keep the dollars flowing in right up to r

AFTER YOU'VE ADJUSTED yourself to a regular Union Oil check or two a month, nothing disturbs the pleasant routine of life like having a pay day come up missing.

When income stops, outgo hurts. House payments, car payments, utility bills; in a remarkably short time these can go through a savings account like a vacuum cleaner—if the money stops coming in.

Working together, Union Oil's Sick Pay and Disability Income plans assure you the money *won't* stop at a time when you need it most: when you can't work because of sickness or injury.

Only one of these plans is responsible for any of your missing money—you do contribute to the Disability Income Plan by payroll deduction. There's no deduction for sick pay. However, it cost Union Oil close to \$800,000 last year.

If the name "Disability Income Plan" sounds unfamiliar—that's because it's a new plan. On January 1, the Disability Income Plan will take the place of Disability Benefit Insurance which has been in force—with improvements, of course—since 1936.

The Sick Pay and Disability Income plans were put together to take care of people, of individual men and women each with a slightly different problem. In a short article such as this, we don't have room to discuss the differences,

the exceptions. So if you have a question about your particular case, please read the official texts of the plans or talk to your personnel representative. Now:

SICK PAY PLAN

The Sick Pay Plan keeps your income at its normal level when you're away from work for a relatively short time because of sickness or injury.

Other plans take care of your income after you've used up your sick pay. The Disability Income Plan is one of these other plans.

When do I become eligible for sick pay?

After one year's accumulated service with the company. If you have time off for sickness or other reasons, it may take you a little more than 12 months to accumulate a year's service.

How many dollars sick pay do I receive each week?

Monthly salaried employees receive their regular pay. Daily rate employees get their vacation rate.

How many weeks sick pay do I get?

After the first year, you're eligible for one week of sick pay for each year of service. The maximum is 26 weeks for 26 or more years of service.

continued

MONEY: No. 5

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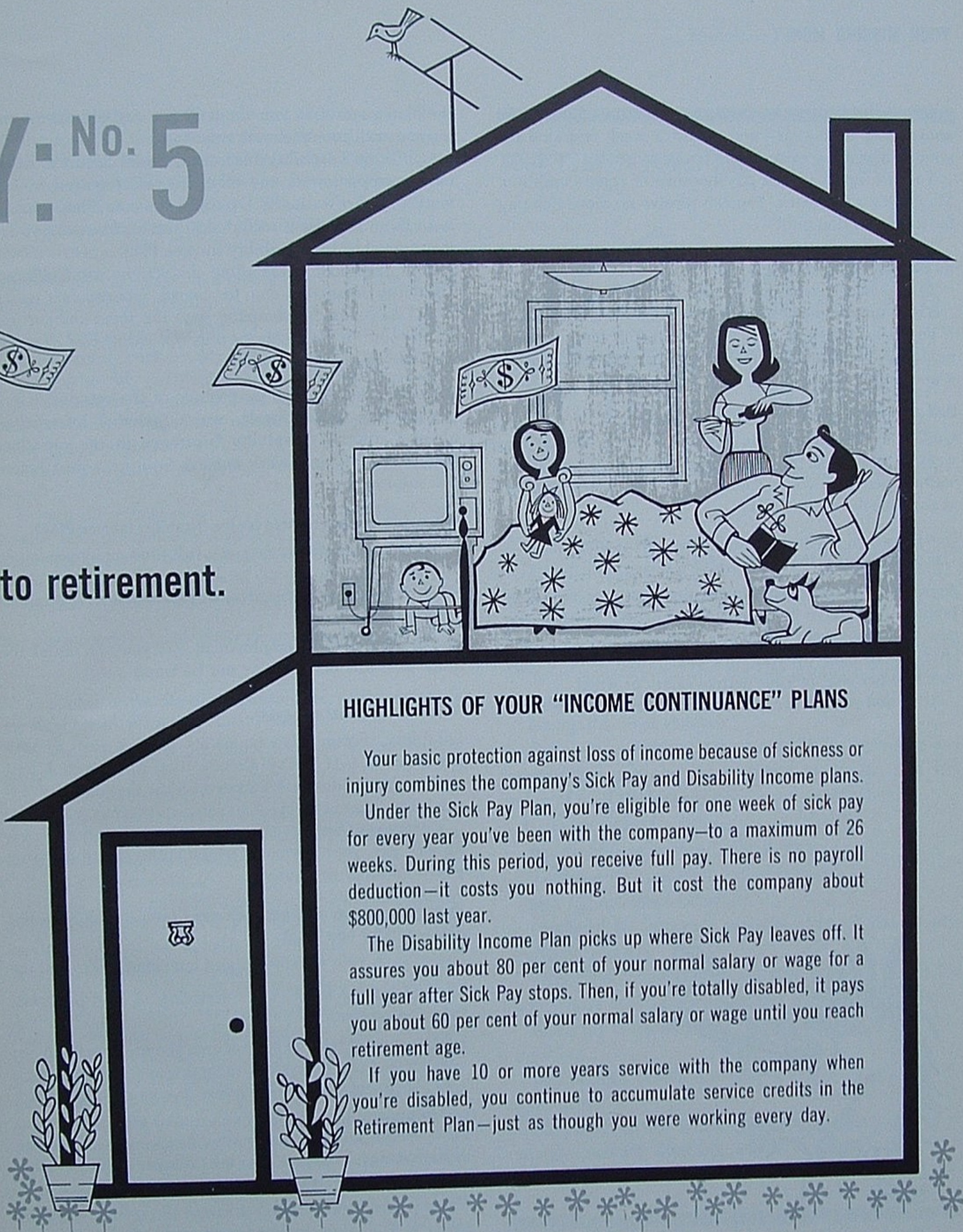
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HIGHLIGHTS OF YOUR "INCOME CONTINUANCE" PLANS

Your basic protection against loss of income because of sickness or injury combines the company's Sick Pay and Disability Income plans.

Under the Sick Pay Plan, you're eligible for one week of sick pay for every year you've been with the company—to a maximum of 26 weeks. During this period, you receive full pay. There is no payroll deduction—it costs you nothing. But it cost the company about \$800,000 last year.

The Disability Income Plan picks up where Sick Pay leaves off. It assures you about 80 per cent of your normal salary or wage for a full year after Sick Pay stops. Then, if you're totally disabled, it pays you about 60 per cent of your normal salary or wage until you reach retirement age.

If you have 10 or more years service with the company when you're disabled, you continue to accumulate service credits in the Retirement Plan—just as though you were working every day.

YOUR MISSING MONEY *continued*

Generally, your sick pay is renewed on your service anniversary each year—and an extra week is added for your extra year's service. There is an exception:

You use up your sick pay because of some condition. Maybe it's a bad back. You can receive no more sick pay for that condition until:

1) there's been a two year gap when the company pays no sick pay for the condition;

2) you have been back at work for 130 working days.

These requirements apply only when a condition recurs. If you're out with your back this year and catch the mumps next year, you're eligible for full sick pay for the mumps—a new condition.

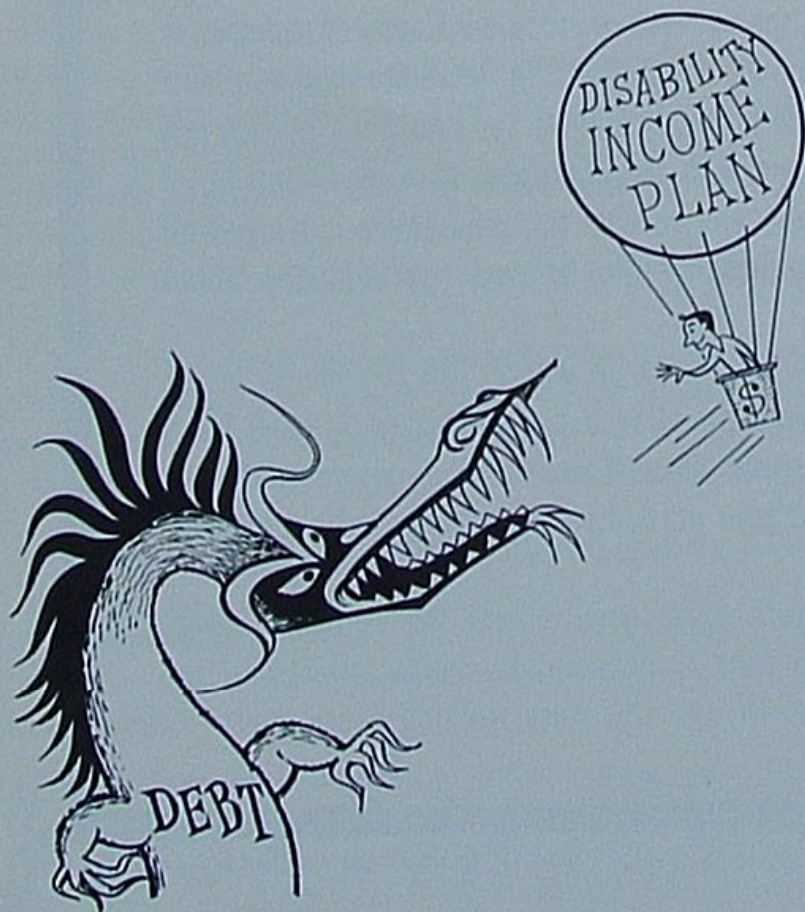
Do I pay income tax on sick pay?

Under the present law, you pay no tax on the first \$100 a week of your sick pay after the first week. There is no waiting period if you're injured or if you're hospitalized at any time during an illness.

THE DISABILITY INCOME PLAN

As we said, the new Disability Income Plan goes into effect January 1. If you're ill or injured and unable to work, the new plan keeps your salary at a high level for a full year after you've used up your sick pay. "High level" means about 80 per cent of your normal salary or wage.

After that year, if you're unable to do any kind of work,



the plan guarantees you about 60 per cent of your normal income until you reach retirement age.

California Disability Insurance, Social Security, workmen's compensation, and other benefits required by law work together with the Disability Income Plan. Income from these benefits is included in the total amount you're guaranteed by the Disability Income Plan.

Your paycheck stubs show deductions for California Disability Insurance and for Social Security (it's called "F.I.C.A."); but the company pays the same amount you do for your Social Security plus the entire cost of workmen's compensation benefits.

Because such a high percentage of the company's employees live in California, we've included information about California Disability Insurance in the questions that follow. If your work outside California, just ignore this information.

When do I become eligible for the Disability Income Plan?

After three-months service as a full time employee.

When do I become eligible to participate in California Disability Insurance?

On the first day of employment. (If you are under the State plan this may or may not be true.)

When do my benefits begin?

Disability Income Plan payments start as soon as your sick pay ends. If you've already used up your sick pay, the Disability Income Plan starts on the first day of a new disability. There's no break in your income.

During your first year of service when you're not eligible for sick pay, your payments begin on the eighth day after you become ill or injured.

How much money do I get each week from Disability Income Plan—and for how long?

Depends on your rate of pay and how long you're laid up.

For the first 52 weeks after disability income payments start you receive:

- 80 per cent of the first \$200 of your weekly base earnings;
- 60 per cent of the next \$200 of your weekly base earnings;
- 40 per cent of your weekly base earnings over \$300.

("Base earnings" means your wage or salary not counting overtime pay, bonuses, or other incidental pay. Average commissions for the past year are included in the earnings of service station employees.)

Say you've been with the company three years and your salary is \$100 a week. The first three weeks you're away

from work you get sick pay: the full \$100 a week. Then, for the next 52 weeks you get 80 per cent of your salary, or \$80 a week from the Disability Income Plan. Or, suppose you make \$250 a week. You'd get your sick pay, then: 80 per cent of the first \$200 or \$160 a week plus...60 per cent of the remaining \$50 or \$30 a week...for a total of \$190 a week.

After the first 52 weeks, and all the way until 65 if you're unable to work, you receive:

60 per cent of the first \$400 of your base earnings plus 40 per cent of your weekly base earnings over \$400.

The top weekly payment in any case is \$400 a week.

So the employee earning \$100 a week would receive disability income payments of \$60 a week; the \$250-a-week man would receive \$150.

To give you an idea what kind of money we're talking about:

If both these men were 35 years old when they were totally and permanently disabled, they'd both receive Disability Income Plan payments for the next 30 years!

The \$100-a-week man would receive a total of \$94,640.

The \$250-a-week man would get \$236,080!

Do I pay income tax on Disability Income Plan benefits?

No.

As a member of the Disability Income Plan, what happens to my other benefit plans if I'm totally disabled?

After the first year of disability, you pay no further premiums to:

...the Disability Income Plan.

...the Life Insurance Plan (a portion of your life insurance will be continued at no cost to you for as long as you live and are totally disabled.)

...the Retirement Plan.

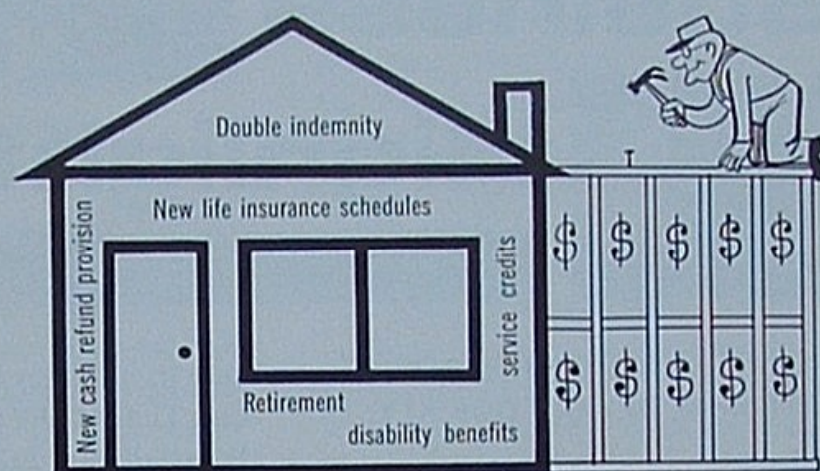
Further, if you have 10 years service with the company at the time you're disabled, you continue to accumulate service credits in the Retirement Plan, just as though you were coming to work every day.

The Sick Pay Plan and the Disability Income Plan: These are your major protection against loss of income due to sickness or injury. Other company plans—for which there is no payroll deduction—protect you against other interruptions in the flow of paychecks: paid vacations, paid leaves of absence, full pay while on jury duty, when subpoenaed as a witness, or while serving on an election board.

Your income is protected and the pay days come regularly when you work for Union Oil—and when you authorize those deductions for its benefit plans! THE END

Next month: the Life Insurance Plan

YOUR BENEFIT PLANS ARE EVEN BETTER!



On January 1, 1964, your benefit plans will be even better! Substantial changes have been made in three of the plans—those dealing with disability benefits, life insurance, and retirement.

This month's article tells about the new Disability Income Plan. In January we'll cover the Life Insurance Plan, and in February, the Retirement Plan.

Among the other changes:

There's a uniform retirement age: 65 for both men and women. (Women who are employed at present may still retire at 60 if they have the necessary qualifications.)

Free life insurance policies on your family.

Double indemnity for accidental death.

Payments for accidental dismemberment.

New life insurance schedules.

Continued life insurance coverage—free—if you are permanently disabled.

Retirement formula based on your earnings during the best five of final 10 years—instead of the final five years.

New cash refund provision for your Retirement Plan contributions.

New 'widow's benefit' if employee dies in 10 years before retirement.

Continued service credits toward retirement income if you are receiving Disability Income Payments.

Business



Highlights



UNION'S NEW MINIMUM-SIZE PLATFORMS PAY OFF QUICKLY

One of the big costs in developing an offshore oil field in the Gulf of Mexico is the drilling platform. A big platform alone can cost a million and a quarter dollars.

Actually, there are several types of platforms. One is a self contained platform that has its own stores of drill pipe, casing, mud, and supplies. Another is a smaller platform that

gets its supplies from a floating tender. The smaller platform is cheaper to install, but daily costs for the tender are high. Moreover, delays because of bad weather add to the expenses.

A big question among offshore oil operators has been: "How much can we reduce platform size and still operate without a tender?" Most operators believed they had already shrunk deck area to its bare minimum.

Union Oilers in the Gulf Division's Southeast Louisiana District have helped find a better answer to this question. Working with Baxter Drilling, Inc., District Superintendent Irion LaFargue, District Drilling Engineer Warren Sexton, and Petroleum Engineer Ed Dupaquier have come up with a platform measuring 66 by 112 feet. This is about half the deck space required by a conventional self-contained platform.

Because an industry rule-of-thumb says that increasing deck space by fifty per cent doubles the installed cost, Union's minimum-size platform means installation costs have been lowered substantially. At the same time, daily operating costs are one-third less than with a tender-served rig.

Union's first such platform has been installed in 103 feet of water off Louisiana in our Ship Shoal Block 208 field. A total of 10 wells, in 2 rows of 5, can be drilled from the 8-



The offshore oil producer's motto goes like this: The smaller the platform, the cheaper it is. The cheaper the platform, the quicker the oil field pays out. Here are four offshore drilling setups. LEFT: a mobile drilling ship used for exploratory drilling; BELOW: four-pile platform and tender; RIGHT: sixteen-pile self-contained platform; FAR RIGHT: Union's new eight-pile self-contained platform. Stationary platforms are used for developing drilling. See story above.



pile structure. After drilling, the rig will be taken off the platform, and the platform will be used for producing the wells.

At least two other producing companies are planning "minimum-size platforms" of their own, and a number of drilling companies are preparing to build rigs to fit such structures.

WE'LL SPONSOR TV COVERAGE OF L. A. BLADES, S. F. SEALS

Ahoy, Los Angeles and San Francisco sports fans. You'll be able to follow your favorite hockey team live on TV again this year. For the third consecutive year, Los Angeles TV viewers can tune in to Channel 11 for Union-sponsored coverage of the L. A. Blades. The company has contracted to sponsor 13 of the games.

Bay City TV fans can watch the Seals in action via 10 Union-sponsored games on San Francisco's Channel 2.

Several years ago, as an added attraction to the TV coverage, we distributed hockey tickets through an invitational program for our credit card customers. This brought so much response that it is being repeated again this season, both in Los Angeles and San Francisco.

• • •

Speaking of television advertising, here's a good one. It took place in mid-September. Remember the excitement of Los Angeles baseball fans when the Dodgers invaded Busch Stadium for a three-game series against the St. Louis Cards? The second game went to 13 exciting innings before the Dodgers won.

Because of the interest in the race, and with the cooperation of the Dodgers, we televised the series September 16-18 for Los Angeles Dodger fans.

Audience ratings were phenomenal. Telephone surveys indicated that, of TV sets in home use, some 55 to 60 per cent were turned to these baseball telecasts. Figured conservatively, this comes to almost three million viewers, and the cost to Union was nominal.

ALGAS MONOPOWER DIVISION: NEW TOTAL ENERGY SERVICE

A special "Monopower" division of our subsidiary, Algas Industries, is now offering marketing consultation to natural gas utilities in the "total energy" field, as well as consulting, design, and engineering service for companies interested in total energy plants.

Under the Algas "total energy concept," engines or turbines operating on natural gas, L.P.G., or oil are the only source for electricity, heat, and air conditioning in manufacturing plants and other installations.

MINUTE MAN PUMPS PUT ON NEW ORANGE, BLUE MAKEUP

"Nice figure, but average face."

This was the sentiment of Union Oilers responsible for seeing that our service station equipment presents the *Finest* appearance. The objects of their attention were our new service station pumps.

For years, we have dressed our pumps in white. This garb recently was enhanced by adding porcelain enamel signs colored orange for Regular 76, and blue for Royal 76. Although our pumps were attractive, there was still something missing. Someone, perhaps a sharp-eyed Sparkle Girl, finally pinpointed the problem: Our pump dial faces had no makeup.

Because we had standardized on one make of pump, we were one of this pump company's largest customers. Our sheer volume of purchases permitted the manufacturer to supply our pumps with colored dial faces at a nominal cost.

Unlike the makeup on most faces, our pump dial faces retain their color. This is because the dial faces are made of porcelain enamel, which does not fade.

Under this program, almost nine hundred pumps of this design now in service have exchanged their original countenance for orange and blue faces. All pumps purchased in the future will receive their makeup at the factory.

PIPELINE IN THE ROUGH ON TAR CREEK OIL LINE

Northeast of Santa Paula, California, where Union Oil was born 73 years ago, is the quiet town of Fillmore. And just north of Fillmore, in the mountains towering over the

continued



Business Highlights *continued*

coastal hills, is one of the most rugged oil patches in California.

This area, the Sespe Field, is prominent in the early history of Union Oil Company. It is the site of some of the Hardison and Stewart Oil Company's first California oil production, discovered late in the 1880's after more than a year of discouraging dry hole drilling.

The first Union Oil lease tank, Tank No. 1, was built in the Tar Creek area of the Sespe Field. Although the tank was erected before the turn of the century, it is still being used. And the original pipeline transporting oil from Tank No. 1 and other lease tanks in the field is still in use too.

Compared with modern, underground pipelines, this line is in a class of its own. It is the smallest diameter pipeline in our system—two inches—and it is actually strung over the rocky terrain and steep bluffs, and suspended across canyons and streams. It is susceptible to falling boulders and landslides, and is hidden in places by brush and trees. This is pipelining in the rough.

At least once a month our pipeline gaugers make a trip into the Tar Creek field to ship the accumulated

oil out through the pipeline where it eventually ends up, after a journey through the Torrey line, at our Los Angeles Refinery.

It is accepted pipeline practice, while oil is moving through our lines, to "cover" the lines—checking to be sure that a break has not developed which would allow oil to run out on the ground.

In contrast to modern methods of covering pipelines by airplane or auto, the Tar Creek line must be covered by foot or by the seat of the pants—walking, climbing and sliding down the steep slopes to follow the line from the isolated leases atop mountains to the main gathering tank at the foot of the mountains. A break in this line, if not caught early, could release a flood of oil down the canyons and creek beds.

Such is pipelining on the Tar Creek line.

MODERN SCIENTIFIC WEAPONS WINNING THE CORROSION WAR

As you know, many chemicals used in a refinery are highly corrosive. Because of this, corrosion engineers are vitally interested in what's happening to the insides of pipes and vessels

at our refineries. In the past, the only way to see if everything was up to snuff was to shut the unit down, and tear it open. Unfortunately, this meant you had to stop making gasoline, oil, jet fuel or whatever else the unit produced.

Even then, the only way to test a long piece of pipe was to hit it with a hammer. If the pipe rang true, it was good. But a jarring clunk hinted of corrosion troubles. In recent years, improvements have been made, but they failed to satisfy modern engineers.

Today, refinery men employ ultrasonics, TV tubes, even gamma ray photography to "see" inside of refinery pipes and columns. By putting these marvels of science to use, some real money-saving breakthroughs have been made in the war against corrosion.

For instance, to learn when a high pressure pipe needs replacing, engineers hitch up instruments similar to sonar and television. They spray ultra-sonic sound waves on the pipe in question, and read the results on an oscilloscope. The "scope" uses a TV tube to register the thickness of the pipe. If the pipe is too thin, corrosion engineers frown and make plans for repair. If the pipe is thick enough, everyone smiles. Best of all, however, these tests can be made while the unit is merrily turning crude oil into Royal 76, jet turbine fuel or some other product.

For really "seeing" inside a unit—be it a vessel, distillation column or valve—engineers have turned to a form of X-ray photography. Instead of using actual X-ray equipment, they use a portable source of low energy radioactive material that gives off gamma rays.

The film used for these photos is similar to that used in chest X-rays. But in a refinery, where large vessels have thick steel walls, some exposures are as long as twelve hours.

Robert Portlock and Shorty Clark (foreground) coming down the mountain at Tar Creek. This is pipelining in the rough.





Oscilloscope used to spot corrosion in our refineries.

Ultra-sonic eyes and gamma ray photos have spotted corroded piping; they have found broken springs inside of valves; they have seen bubble trays tilted ajar in distillation columns; and they have spotted coke or corrosion deposits collecting inside vessels.

Ultra-sonics, "scopes," and gamma ray photos are just a few of the scientific weapons that win day-to-day battles in reducing costs.

20 ZONE GAS WELL, OFFSHORE LOUISIANA

The Block 14 Field, Offshore Vermilion Parish, Louisiana, discovered in March, 1956, is regarded as one of the major natural gas producers in the Gulf of Mexico. To date 22 wells have been drilled, and 19 are dually completed. Late in September the company announced a deep-pool addition to the already thick pay sands of Block 14. A gas well drilled to 16,000 feet in the southern part of the 5,000 acre block encountered 800 feet of gas-condensate in twenty zones. Reason for the interest is that ten of the zones—comprising about 350 feet of gas sands—were below depths previously penetrated. Union is joint operator for Union and Pan American Petroleum.

AIR FORCE MISSILEMEN SIGN UP FOR THE FINEST PRODUCTS

Vandenberg Air Force Base near Santa Barbara, California, is the focal point of America's Air Force missile testing and training program. Our *Finest* Air Force missilemen are now using the *Finest* petroleum products in their cars.

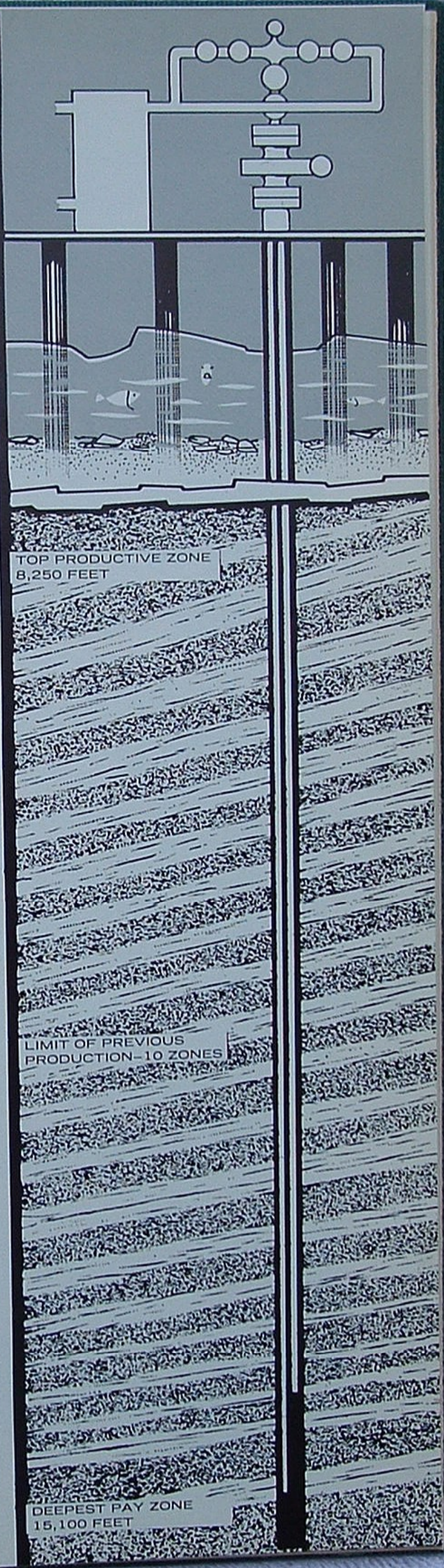
The U. S. Air Force base exchange at Vandenberg is now featuring 76 gasolines and lubricants, and Union tires, batteries and accessories. We were the successful bidder to supply, beginning in mid-October, the *Finest* products for the next twenty-two months.

UNION WINS JET FUEL BID FOR OUR MILITARY FLIERS

The U. S. Defense Petroleum Supply Center has awarded the company a contract for 80,703,000 gallons of JP-4 jet fuel for delivery from our California refineries. Another 400,000 gallons will be supplied from the Cutbank Refinery in Montana. The contract covers the period from October 1, 1963, to March 31, 1964.

Another award from the DPS Center for the same period covers 48,421,800 gallons of JP-5 jet fuel delivered from Los Angeles Refinery.

Competition for this business is extremely keen. It is noteworthy that the difference in price between the next lowest bid for JP-4 fuel and the company's bid for some of the gallonage from the California refineries amounted to \$.00028 a gallon.





Union Oilers concoct
"76 Goo" for a...

100 TON BLOCK LAUNCHING

By BILL PAPPAS

N EAR EUREKA, California, two parallel breakwaters, called jetties, extend seaward more than a mile to provide ships a navigable entrance into Humboldt Bay. But more than a half-century of pounding by spectacular ocean waves threatened to wash away the stoutest barriers men could construct. At a cost of \$2,300,000 the U.S. Army Corps of Engineers has had to rebuild the jetty tips with immense blocks of concrete and quarried rock.

This time the jetty builders are trying something new. Around the base of each jetty they are placing a perimeter of 100-ton concrete blocks. These it is believed will take the brunt of the ocean's onslaught by arresting the destructive force of tides and waves.

The necessity of pouring the 100-ton blocks as near as possible to the dumping point raised an interesting problem. Once such a weight of concrete is poured and hardened, how can you most easily tip it over and into the sea?

On-the-spot Union Oil research came up with quite an interesting technique. We concocted a petroleum substance that, for want of a better name, is thus far known as "76 Goo." It consists of a layer of Unowax over which is spread another layer of our Red Line Cup Grease No. 2. This "Goo," placed in the bottom of a concrete form, is covered with a sheet of plywood, then with the 100 tons of concrete pour.

After about seven days of curing time, the big 11-foot square block is ready to be launched. The launching is done by releasing compressed air into an air-jack mechanism installed under one edge of the concrete form. Just a puff of air tilts the block enough to send it sliding—on its "76 Goo-d" bottom—into the sea.

THE END

Mrs. Everett Small, president of the Exceptional Children's Foundation (ECF), recently presented an oil portrait to Charles Perkins as an expression of appreciation for 11 years service in behalf of the retarded. Perkins, director of purchasing, R&M, is vice president of the ECF, and has served two terms as president. He is a member of the board of the National Association of Retarded Children, and is on a committee to study mental retardation for the L.A. Welfare Planning Council.



When Minute Man Bill Lunt retired as a Union Oil dealer in Stockton, California, recently, he could look back on a rare achievement: 42 years in one city as a Union Oil Dealer. Just before retiring, he was serving the grandchildren of some of his earlier customers of the Roaring Twenties. Bill was photographed at his retirement party with Retail Sales Manager S. A. Russell (left), and District Sales Manager Wally McClure.

Smiling sweetly after she was elected Miss Union Oil Center Credit Union is Sue Pellett, pretty statistical clerk in Economics and Corporate Planning. Miss Pellett reigns for a year.



The picture above was taken 23 years ago in Holtville, California, when Union tank truck driver Dave Fosse (center) signed up Jim and Joe Birger for Union Oil products. The Birgers had just arrived from Canada to set up a business. The photo below was taken recently, visual proof of the Birgers' loyalty to the sign of the 76.





Earl Lash (left) of Advertising and Merchandising, home office, was low scorer in the 37th annual Union Oil employees golf tournament held at Fox Hills Country Club in Los Angeles late in September. He is pictured here with tournament director Don Craggs of Exploration and Production receiving his trophy. Lash shot an 81 to outscore 290 Union Oil golfers.

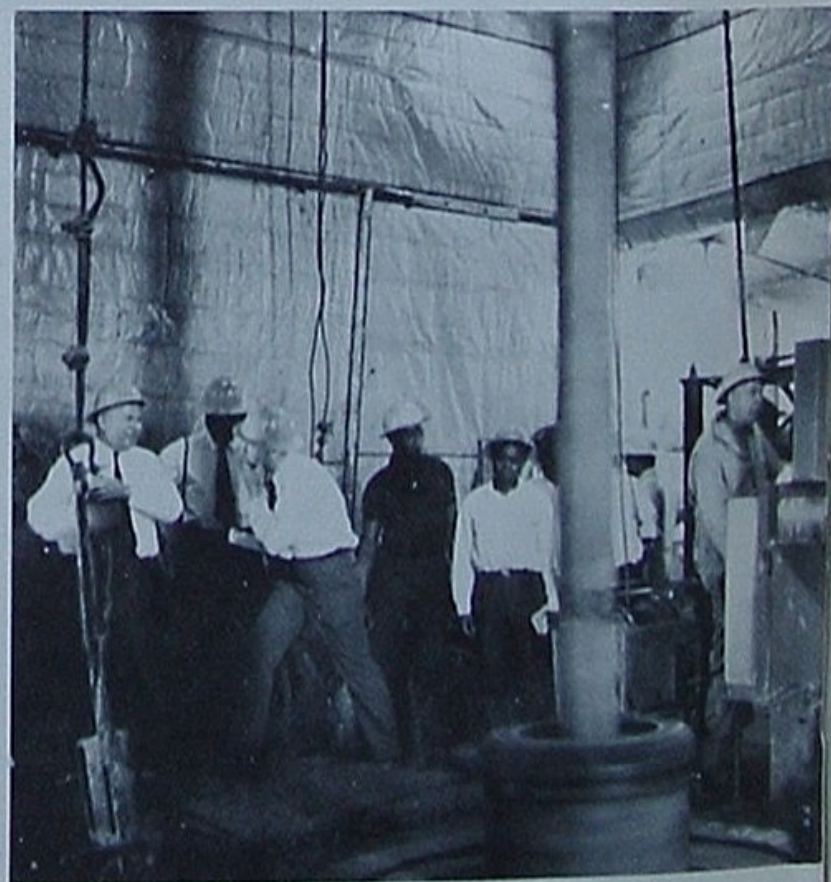
September 19 was homecoming day at Los Angeles Refinery for 79 retired employees. Refinery Manager John Hopkins hosted the event which saw Senior Vice President Fred Hartley and Refining Vice President John Towler on hand to renew old acquaintances. Los Angeles Dodgers Pete Reiser and Red Patterson entertained with anecdotes about the ball team that later won the World Series.



In the past when we shipped lube oil to Alaska, it was loaded into barrels at Portland Terminal, hauled by rail to Seattle, and loaded into a ship for delivery to Anchorage. For bulk movement of oil, this was costly. When the Alaska Railroad awarded us a contract to supply lube oil for fiscal 63-64, it made arrangements to transport entire tank cars from Seattle to Whittier, Alaska, by barge. No more barrels. Now a full tank car is loaded out at Portland Terminal, hauled by Northern Pacific Railroad to Seattle, barged to Whittier, and moved to Anchorage via Alaska Railroad. Shown greeting the first tank car load of Triton RR 40 oil were G. V. Randall, chief mechanical officer of Alaska RR, and T. B. Cooper, Anchorage manager.



Sixteen African students studying in England and France spent 45 days last summer visiting the United States as part of a U.S. State Department sponsored Fulbright scholarship program. While here they visited industrial and commercial firms, schools, cultural and sight-seeing spots. In Los Angeles they toured the Sansinena oil field, and had a first hand look at drilling. "What if they strike gold?" one student asked.





Frederick Folts of Los Angeles Refinery received a special thank you—a photograph—when he showed up at a Red Cross Bloodmobile in Torrance recently. Mrs. Robert Orsini, blood chairman for the Torrance Red Cross chapter, noted that over the years Folts had made 58 other one-pint donations of blood.



Dispatcher Arlan Haroldsen of our Edmonds Terminal (right) was pictured recently at the plant of Work Opportunities, Inc., of Edmonds where local handicapped persons are employed to assemble floats for fish nets, build electronic parts, package hardware, and clean plastic tubes for aircraft use. Haroldsen works closely with handicapped organizations, is president of the Snohomish County United Cerebral Palsy Association, and is a board member of the Washington State Cerebral Palsy group.



E. L. (Woody) Hiatt

In Memoriam:

ELWOOD LEROY HIATT

E. L. (Woody) Hiatt was an expert who knew his chosen field, literally, from the bottom up: for 30 years, his specialty was moving Union Oil's raw materials and products.

He started learning the business on a tank truck at La Grande, on the high desert of eastern Oregon. This was his home country. He was born at Baker, just 56 miles from the marketing station; he attended Eastern Oregon College at La Grande.

Hiatt was not only a good big man physically, he was also a smart one. He came off the tank truck to travel the Northwest as a marketing station and plant superintendent and, finally, as traffic manager in Seattle. He started south in 1944 to become distribution manager in San Francisco.

From San Francisco he moved to Home Office, as assistant to the vice president in charge of transportation. Hiatt, himself, was elected vice president (in charge of transportation and distribution) in 1954.

During 1960 and 1961, he was in Montana overseeing all Glacier Division operations: exploration, production, refining, and marketing.

Then, in 1962, he was called back to Home Office, he was responsible for all the company's crude oil supply, and its marine, pipeline, and refinery and bulk sales department.

Last May, Hiatt became seriously ill, so ill that by November 1 he retired at the age of 55. On Saturday, November 16, his illness became critical and he entered the Hospital of the Good Samaritan in Los Angeles, where he died the following day.



AWARDS

CORPORATE DIVISION

November 1963

30 YEARS

BERTA A. GILLESPIE Union Oil Center

20 YEARS

PAUL H. HAFNER Research Center

15 YEARS

WILLIAM F. BRADFORD Research Center
 GEORGE E. HURST Research Center
 M. W. KETTERINGHAM Research Center
 MAURICE P. MOORE, JR. Research Center
 GORDON E. MOORES Research Center
 UJINOBU NIWA Research Center
 ALEC O'CONNELL, JR. Research Center
 ROBERT PAVLOVICH Research Center
 EDWARD A. PULLEN Research Center
 JOHN W. SCHEFFEL Research Center
 L. B. TACKETT, JR. Research Center

10 YEARS

CLAUDE S. BRINEGAR Union Oil Center
 HOWARD L. JEPSON Research Center

December 1963

25 YEARS

ISABELLE G. HILL Research Center

20 YEARS

MARTIN W. GOULD Research Center
 WARD W. HOWLAND Research Center

15 YEARS

ROY A. WILLIAMS Union Oil Center

EXPLORATION & PRODUCTION

November 1963

35 YEARS

MINOR I. ROBERTS Dominguez, California

20 YEARS

LEONARD VEAZEY Abbeville, Louisiana
 LLOYD M. VINCENT Abbeville, Louisiana
 GUERNEY L. WADE Union Oil Center

15 YEARS

WILLIAM F. BOLDING Houston

10 YEARS

GRACE R. OAKLEY Dominguez, California
 TERRANCE J. OCONNOR New Orleans, Louisiana
 CHARLES W. POST Houston
 JOSEPH L. WILSON Tulsa, Oklahoma

December 1963

30 YEARS

LAWRENCE NICHOLS Santa Fe Springs, California

20 YEARS

JOSEPH P. HEBERT Houma, Louisiana
 EDWARD D. HUEBNER Cut Bank, Montana
 PETER W. HUGHES Cut Bank, Montana
 HAROLD J. MATTHEWS Santa Fe Springs, California
 GABRIEL VEAZEY Abbeville, Louisiana

10 YEARS

MURIEL A. CAVES Union Oil Center
 JOHN H. OJALA Union Oil Center
 P. A. SMITHBERG Union Oil Center

REFINING & MARKETING

November 1963

35 YEARS

ROBERT E. CAKEBREAD ... Los Angeles Refinery

30 YEARS

FRANCIS J. GIBBONS San Francisco

25 YEARS

CHARLES Z. DICK Edmonds, Washington
 CHARLES L. SWAN Phoenix

20 YEARS

HENRY E. HASELWOOD ... Los Angeles Refinery
 IVER A. HILL Oleum Refinery
 GERRY F. RAYMOND Oleum Refinery
 GAROLD B. THURMAN ... Santa Maria, California
 PAUL J. WILLIAMS, JR. ... Los Angeles Refinery

15 YEARS

RALPH J. APEL Los Angeles Refinery
 STANLEY A. ARNOLD Union Oil Center
 PERRY L. BATES Oleum Refinery
 NEAL E. BOTTRELL Oleum Refinery
 JOHN J. BREEN Oleum Refinery
 WILLIAM L. CALOHAN Los Angeles Refinery
 H. V. CASEBOLT, JR. Oleum Refinery
 ROBERT H. CLARK Union Oil Center
 HARRY C. ENGELHARDT ... Los Angeles Refinery
 FLOYD A. FRENCH Los Angeles Refinery
 RALPH E. GODFREY Oleum Refinery
 LEO G. HANCE Portland
 HAROLD E. HAYS Oleum Refinery
 ANDREW J. HENRY Oleum Refinery
 WILLIAM F. HINES, JR. ... Los Angeles Refinery
 GERALD H. KEILLOR Los Angeles Refinery
 LARRY L. LANCE Los Angeles Refinery
 C. D. McEWEN Los Angeles Refinery
 MORLEY R. PENCE Los Angeles Refinery

HAROLD C. STRAND Los Angeles
 KEITH O. SUMMERS Los Angeles Refinery
 EUGENE H. WEILERT Los Angeles Refinery
 JOHN E. WESTWOOD Oleum Refinery

10 YEARS

EDWARD J. BERG Los Angeles Refinery
 BERNARD I. BURT Colusa, California
 JOHN B. CAMPBELL Union Oil Center
 R. E. COLCLASURE Los Angeles Refinery
 KENNETH R. HUGHES Los Angeles Refinery
 LELAND S. MACK Union Oil Center
 NORMAND J. OLIVER Los Angeles Refinery
 FRANK PERKINS Los Angeles Refinery
 ROBERT J. STOUGHTON Los Angeles Refinery
 WILLIAM L. THOMSON, JR. Oakland, California
 DONALD G. WEIR Los Angeles Refinery
 JOSEPH ZUANICH Los Angeles Refinery

December 1963

35 YEARS

ALLEN E. GROGAN Santa Fe Springs, California
 ELMER M. HANSON Richmond, California
 HERBERT W. MILBRAD Los Angeles Refinery
 KIERANS C. RIDGE Oleum Refinery
 WILLIAM L. TURNER Oleum Refinery
 EDMUND F. WELTON Los Angeles Refinery

30 YEARS

CHARLES R. FITZGERALD Oleum Refinery
 PERRY MARTIN Avila, California

25 YEARS

CLARENCE H. AYERS Las Vegas, Nevada
 LESTER C. EDWARDS Oleum Refinery

20 YEARS

EARL D. AMERINE Oleum Refinery
 JAMES R. CANNON Los Angeles Refinery
 ROBERT HERWAT Oleum Refinery
 VICTOR G. JONES Los Angeles Refinery
 PAUL W. MORGAL Union Oil Center
 HARRY C. PIATT Los Angeles Refinery
 JOHN R. ROGERS Los Angeles
 JOSEPH D. THAYER Oleum Refinery
 RICHARD C. WILLIAMS Santa Paula, California

15 YEARS

RICHARD E. BROWN San Diego
 FORREST H. FINNEGAN Union Oil Center
 P. J. HOHNSBEEN Union Oil Center
 ODES ORVEL KINSLOW Oleum Refinery
 RALPH W. PHILBROOK Los Angeles
 GEORGE A. WORKS, JR. Union Oil Center

10 YEARS

JAMES L. BARNHART Los Angeles Refinery
 ROBERT L. CULLING Union Oil Center
 JOHN E. FRIER Portland
 BRIANE T. GRISCO San Fernando, California
 ROBERT W. LOFSTROM Los Angeles Refinery
 JOHN D. PLETCHER Los Angeles Refinery

DEALERS

November 1963

40 YEARS

H. G. SUTTLE Noti, Oregon

15 YEARS

R. W. BROUILLETTE Santa Barbara, California
 L. A. LeDOUX Mount Angel, Oregon
 JERRY MALONE Palm Desert, California
 G. L. STEVENS Mount Vernon, Washington

10 YEARS

ORVILLE BAKER Fruitland, Washington
 GRULLI MOTORS Yerington, Nevada
 JAMES HARTWELL Long Beach, California
 VIC HOCHHALTER Santa Monica, California
 KENNETH J. LAVERONE San Juan Baustista, California
 RAY VENCILL Beverly Hills, California

5 YEARS

DONALD ADKINS Wapato, Washington
 B. A. BLOW Sumas, Washington
 JULIA CAMPEN Sequim, Washington
 RALPH P. JOHNSTON Placerville, California
 ALFRED LUCY Richmond, California
 LEON F. MOFFAT Ceres, California
 H. D. MONTGOMERY Hanford, California
 J. N. NAMSON Sherman Oaks, California
 DONALD SCHULTZ Scio, Oregon
 HOWARD SMITH Bakersfield, California
 W. F. WALLISER Sun Valley, California

CONSIGNEES—DISTRIBUTORS

November-December 1963

45 YEARS

L. J. HAMILTON Porterville, California

30 YEARS

C. R. DAVIDSON Lancaster, California

15 YEARS

JOHN M. BARRY Elko, Nevada

10 YEARS

BERG-FARGO MOTOR SUPPLY COMPANY, Denver
 AUTOMOTIVE OF YORK, INC., York, Pennsylvania

5 YEARS

KINCHELOE OIL COMPANY Dallas
 HUFFSTUTLER-WALTERS OIL COMPANY New Orleans

RETIREMENTS

October 1963

ROBERT AITA June 24, 1927
 Pinole, California
 VERNON B. FOSTER April 2, 1926
 Long Beach, California
 DOYLE KENNEY June 8, 1934
 Santa Maria, California
 HOLLIS E. MEREDITH August 14, 1928
 Bellflower, California
 HELEN M. MILOE June 9, 1935
 Burbank, California

ALLEN A. HENDRY May 6, 1918
 Anaheim, California
 LAWRENCE L. RINGEY March 14, 1947
 Newhall, California
 RONALD A. WILLIAMS August 17, 1929
 Avila Beach, California

November 1963

ALFRED ALEXANDER August 22, 1927
 Oleum Refinery
 LOIS J. BECKMAN November 16, 1938
 Seattle
 CHARLES C. BLEDSOE April 27, 1935
 Arroyo Grande, California
 ODIE BROWN May 10, 1924
 Whittier, California
 ROBERT O. CRAIN August 15, 1930
 Torrance, California
 MANUEL DE FIGUEIREDO June 22, 1942
 Oleum Refinery
 FRANK M. GRABIL May 25, 1943
 Nipomo, California
 HERBERT H. HAGAN September 21, 1933
 Oleum Refinery
 ELWOOD L. HIATT May 15, 1933
 Union Oil Center
 DELBERT LINCOLN November 23, 1942
 Oleum Refinery
 GERALD P. LILLIE December 17, 1945
 Oildale, California
 OWEN J. LOFTUS October 22, 1941
 Oleum Refinery
 DONALD K. MATTHEWS May 8, 1943
 Cutbank, Montana
 ANDREW F. NIEMANN May 16, 1929
 Union Oil Center
 FLOSSY B. PARKER July 30, 1942
 Union Oil Center
 ARVIN L. WEST July 26, 1943
 Santa Maria, California
 MERLIN C. WITTER September 1, 1919
 Union Oil Center

IN MEMORIAM

Employees:

JOHN H. CLARK September 24, 1963
 Oleum Refinery
 EARL S. QUINN August 24, 1963
 Oleum Refinery
 W. L. STEWART, JR. August 30, 1963
 Los Angeles

Retirees:

HELEN M. FRANKLIN August 25, 1963
 Los Angeles
 DORWIN F. FULLINGTON September 16, 1963
 Oleum Refinery
 McCLELLAN HAMILTON September 22, 1963
 Orcutt, California
 ALBERT GALLIERS August 31, 1963
 Fullerton, California
 LLOYD M. WILLIAMS September 6, 1963
 Oleum Refinery
 ROBERT W. WRIGHT August 18, 1963
 Santa Maria, California

UNION OIL COMPANY OF CALIFORNIA
P. O. Box 7600
Los Angeles 54, California

Where We Work...

In the world-wide search for oil, geologists use contour maps by the ream. Drawing these maps, which are plotted from geological data, has long been a costly and time-consuming task. Today these maps are made accurately and quickly by electronic computers. Lee Vogel, research associate at Union Research Center, shows how it's done. Information from core samples is recorded on IBM punch cards (stacked in foreground), which are fed into computer (background). An ink stylus controlled by an electromagnet draws contours onto one-inch square sections of map paper that is fed across roller.

