"On Tour"

# On Tour

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## In This Issue



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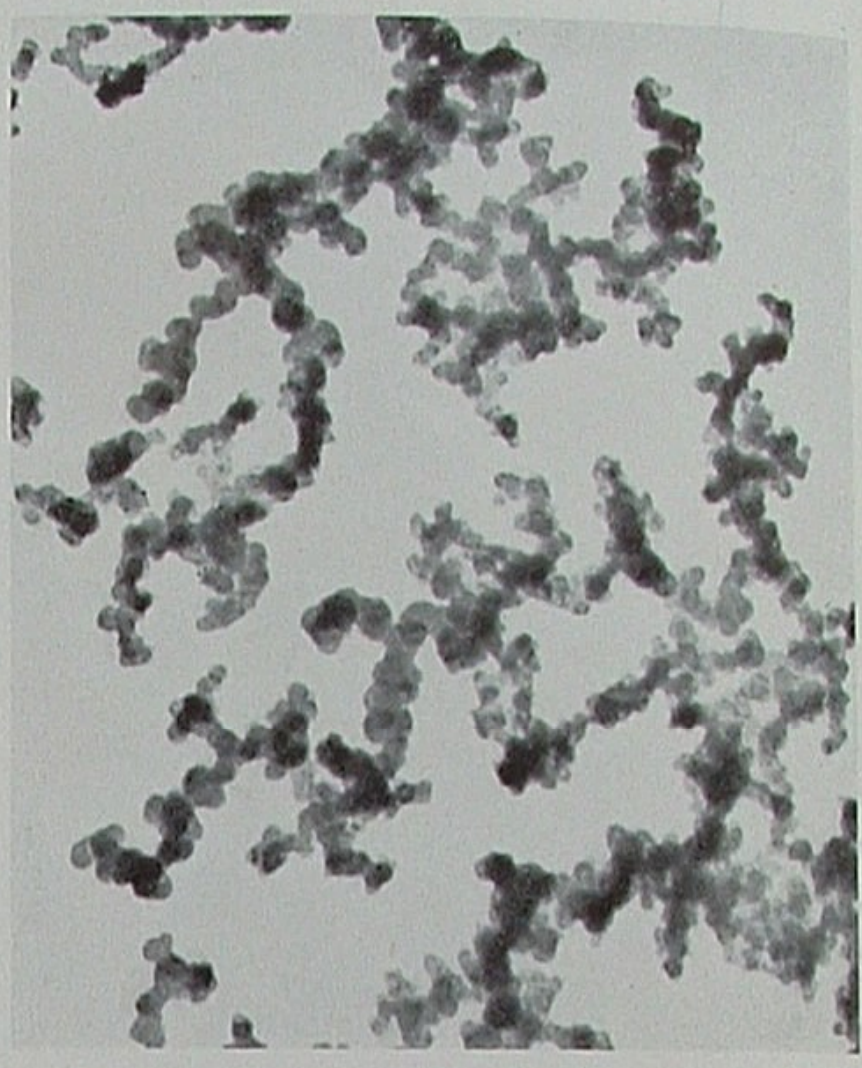


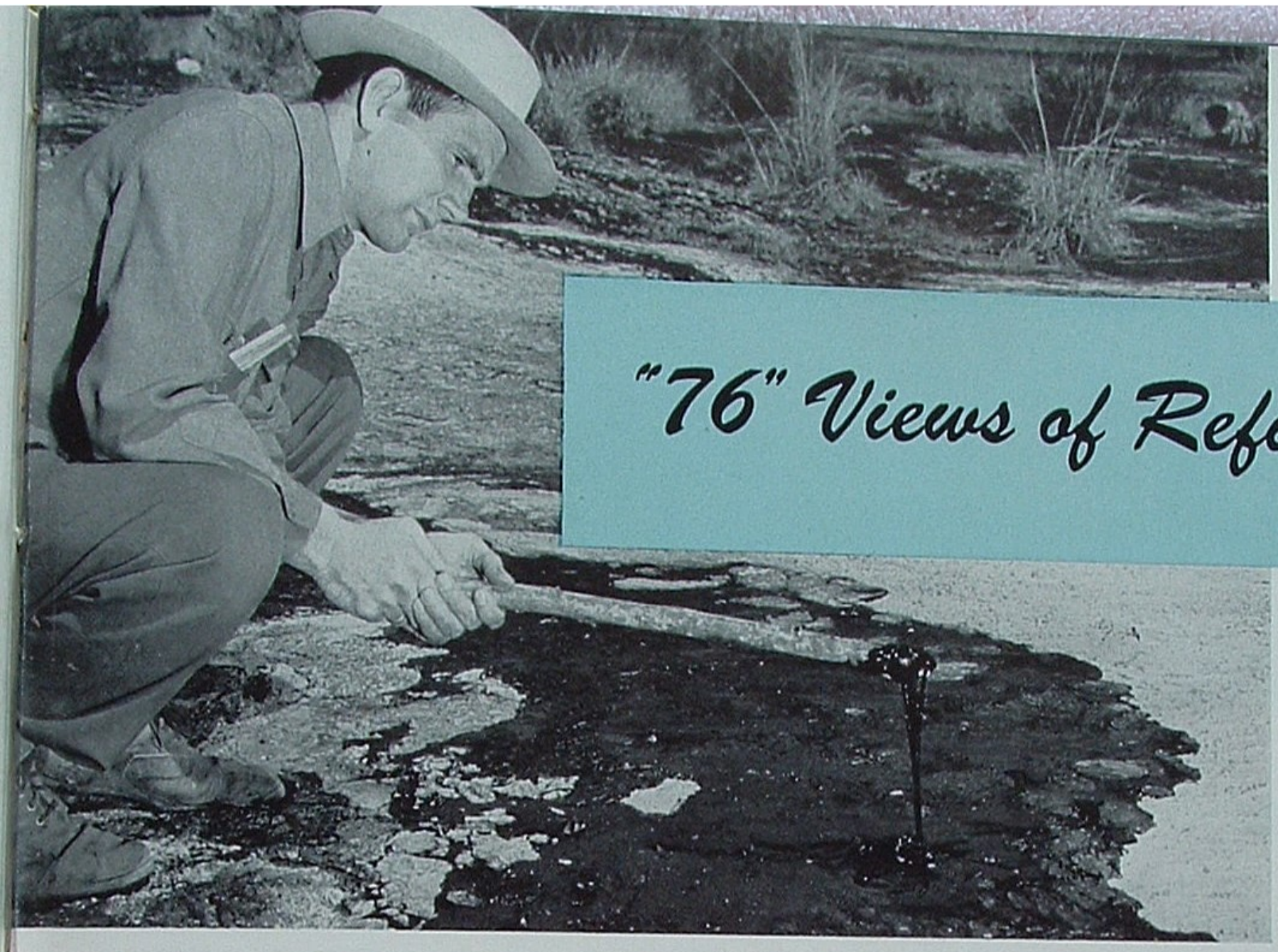
# The Cover

THE above photograph, an achievement of our Research Department's electron microscope, represents one of man's nearest approaches to seeing an individual atom. The smallest visible particle in the photograph possibly is made up of 40 or 50 carbon atoms. Each group or chain contains several thousand atoms. If a human hair were similarly magnified and photographed, it would require a picture some 50 times the size of this one merely to show the hair's width.

So, it has remained for the scientist and artist to give us a visual concept of how atoms behave. Our cover this month might be described as a group picture of four hydrogen atoms that have combined with one carbon atom to form a molecule of methane, the simplest of all petroleum compounds.

Dr. Orville L. Polly, Research group leader who served as architect of the drawing, describes it as follows:

"The model shows a system of overlapping circles that might be thought of as paths over which electrons comprising the atom travel. In the methane molecule, the carbon atom consists of circles forming four sides of a cube, one electron per blue circle. In order to fill all corners of the cube, four orange circles, each representing a hydrogen atom, are attached, making the assembly 'neon-like' in structure. Actually, the blue and orange balls in the model denote, not electrons, but points of electron interaction. The circles themselves are the electrons, which are not points but waves."



# "76" Views of Refining

## 1. Crude Oil

is one of the oldest servants of mankind. It was used 3000 years ago by the Sumerians for caulking boats. The early Egyptians called asphalt "mum" and used it for mummifying their dead. To make Noah's Ark seaworthy, the instructions, as recorded in Genesis, were to "pitch it within and without with pitch." This same product of the oil seeps was most probably used as a mortar for constructing the Tower of Babel. The infant Moses' floating crib of bulrushes was waterproofed "with slime and with pitch." Both the Babylonians and the ancient Incas of Peru built roadways and floors of asphalt. Hannibal in 250 B. C. routed an enemy fleet by spreading mineral oil on the water and lighting it. History records many other bits of evidence proving that oil was known to and used by nearly every generation.

However, it is only within the past hundred years that men have succeeded to any great extent in mastering petroleum sciences and techniques. Drilling of the first oil well in Pennsylvania in 1859 opened an era of abundant oil supply. Increasing supplies and demand prompted the development of better refining methods. And, as our experience with petroleum grew, it was discovered that crude oil was a far more useful and versatile substance than anyone had ever imagined.

Looking at crude oil—that black, sticky substance seen seeping to the surface or being pumped out of our earth today—it is hard to associate this raw material with mankind's welfare and happiness. Yet, crude is being transformed daily into hundreds of useful products. These include the pitch of ancient times; the heating gas, fuel oil, gasoline, kerosene, lubricating oil and grease so familiar to our present generation; and hundreds of less familiar products used extensively in the manufacture of chemicals, paints, building materials, foods, medicines, insecticides, synthetics and explosives.

The uses of petroleum are steadily expanding. Chemists have already studied over 3000 substances found in oil, each having individual characteristics that distinguish it from other compounds of the petroleum families. Scientists tell us that this work of identification and classification has only begun. It may never end because the number of possible petroleum compounds appears to be nearly as endless as infinity.

Our intention in this narrative is to present an illustrated story of oil refining in a manner that will make it interesting and informative to everyone. So do not be frightened by the following short detour through the subjects of atoms and molecules. Even a brief acquaintance will be quite helpful to a general understanding of refining processes.


CARBON HYDROGEN OXYGEN

## 2. Atoms

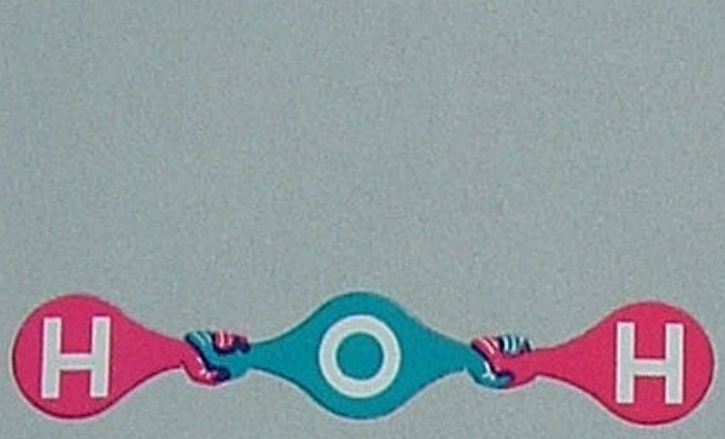
are the building blocks of this earth and the entire universe. Slightly fewer than 100 varieties have been identified, and physicists do not expect to discover many more. But, just as the 26 letters of our alphabet have been arranged and combined to form more than a half-million words in our English dictionary, so have these atoms been arranged and combined to form countless millions of compounds. Our bodies, the earth at our feet, the vegetation, the water we drink, the air we breathe—all substances in all of their shapes and varieties—are composed basically of atoms.

No one has ever seen one of these sub-microscopic particles. The largest is so infinitely tiny that even the powerful electron microscope has never singled one out. Nevertheless, science knows a great deal about atoms. Besides isolating and classifying each of the known varieties, scientists have determined their weights and other physical properties. They know the manner in which various atoms combine with each other. In recent years they have also succeeded remarkably in splitting the atom into its component parts, thus opening up an amazing new source of energy and knowledge.

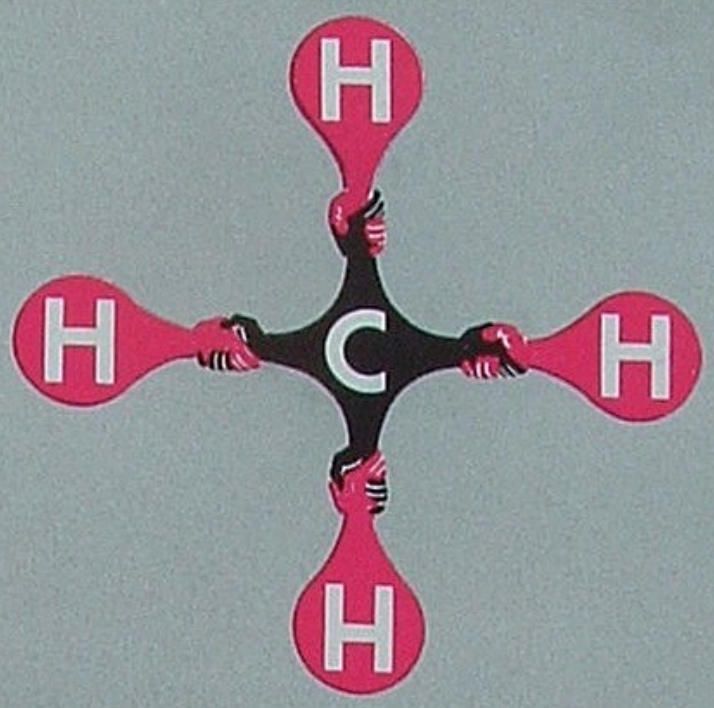
Petroleum is composed almost entirely of only two kinds of atoms, hydrogen (H) and carbon (C). That is why chemists often refer to petroleum oils as hydrocarbons. Evidently the many different substances in oils represent carbon and hydrogen atoms joined in many ways. Some crude oils in addition contain substances in which oxygen (O), nitrogen (N) and sulfur (S) atoms are present.

We shall be more concerned with the substances in petroleum than we are with their atomic composition. But in order to understand the substances more fully we should know something about the different ways atoms can combine with each other. Each kind of atom —carbon, hydrogen, oxygen, etc.—has its own peculiar "combining habit", or *valence*, as the chemist calls it. In the accompanying drawings we have indicated the valences of several atoms by equipping them with hands. Hydrogen, with one hand, is said to have a valence of 1. Oxygen, shown with two hands, has a valence of 2; and carbon, as found in petroleum, has a valence of 4.

The thing to remember about these atoms is that they are great politicians. They insist on keeping their hands busy by taking a firm grip on each other or by grasping any other palm within reach. When two hands are joined, the coupling is called a *bond*.




WATER




METHANE

## 3. A Molecule

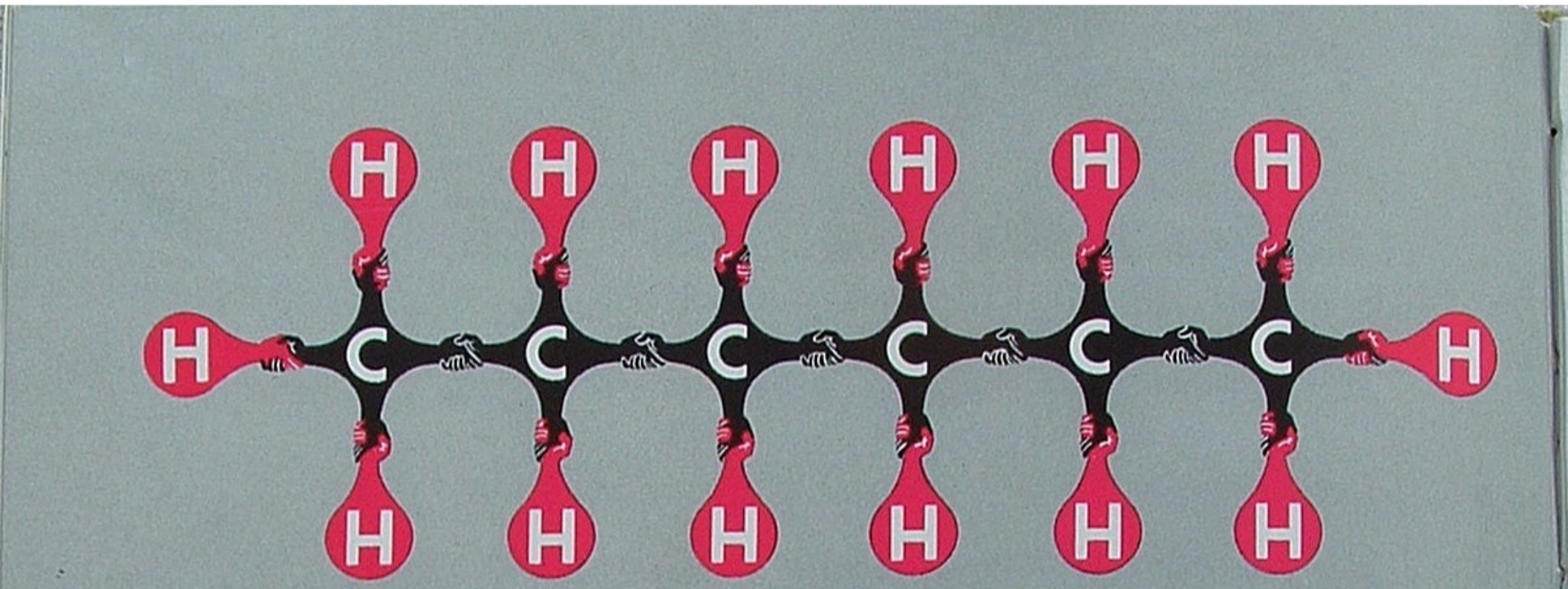
is usually defined as the smallest particle or unit of a compound that has been formed by the chemical union of two or more atoms.

For example, above, when an atom of oxygen (O) grasps in each of its two hands the hand of a hydrogen (H) atom, the resulting compound is water ($H_2O$). The smallest possible unit into which water could be divided without destroying its identity as water would properly be called a molecule of water. Stated in another way, a molecule of water is two atoms of hydrogen chemically combined with one atom of oxygen. An interesting fact about this union is that hydrogen and oxygen normally are invisible gases when existing separately, but in combination they form a visible fluid.

Similarly, when an atom of carbon (C) clenches hands with four atoms of hydrogen (H), the resulting compound is methane ($CH_4$). Here too are some interesting facts: Carbon, a dense solid, boils at the extremely high temperature of 6300 degrees F. Hydrogen, one of the lightest of gases, boils at the sub-zero temperature of -423 degrees F. In combination they may produce one of the lightest of petroleum gases, which boils at -253 degrees. As commonly happens, the identity of the individual atoms is lost.

Before continuing on to a quick examination of hydrocarbon molecules belonging to several different families, it is important that we understand a less intimate way in which substances associate with each other. Once the atoms have formed into a vast number of hydrocarbon substances, these substances are not opposed to congregating in crowds. When various molecules thus mingle or "rub shoulders" without joining hands (combining chemically), the collection is known as a *mixture*.

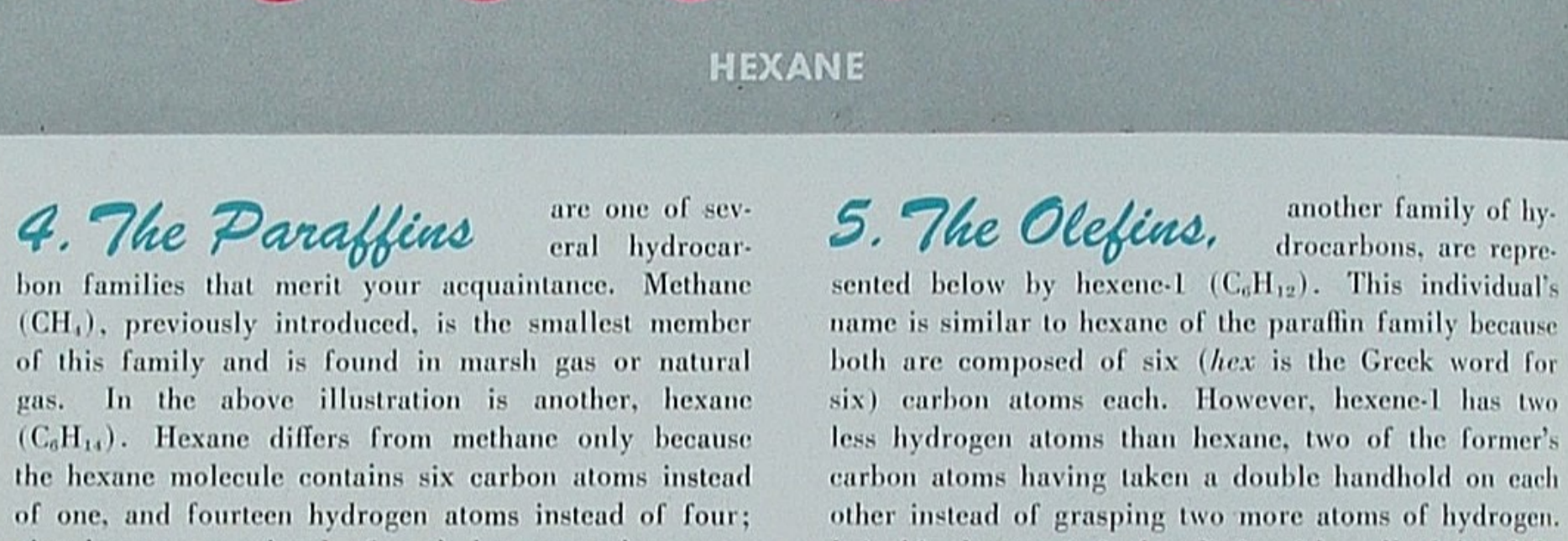
Crude oil as it emerges from the well is definitely a mixture of compounds. Rarely does it contain any of the elements in their pure, uncompounded state. But within every barrel of crude are literally thousands of different compounds. Those composed of the smaller molecules are gaseous at atmospheric temperatures and pressures; others containing larger molecules are liquids; a third class made up of the largest molecules are solids. Some are odorless, some are foul smelling, a few qualify for use in the manufacture of perfumes and dyes. Besides the desirable hydrocarbon compounds in limitless varieties, there are quantities of undesirable salt water, nitrogen and sulfur compounds in nearly all crudes.




HEXANE

**4. The Paraffins** are one of several hydrocarbon families that merit your acquaintance. Methane ($CH_4$), previously introduced, is the smallest member of this family and is found in marsh gas or natural gas. In the above illustration is another, hexane ($C_6H_{14}$). Hexane differs from methane only because the hexane molecule contains six carbon atoms instead of one, and fourteen hydrogen atoms instead of four; also because one hand of each hexane carbon atom grasps the hand of another carbon atom in place of holding a fourth hydrogen atom. The name paraffin, meaning "little affinity" in Latin, is appropriate for this family; their countless members have little affinity for other substances and are comparatively resistant to chemical change.

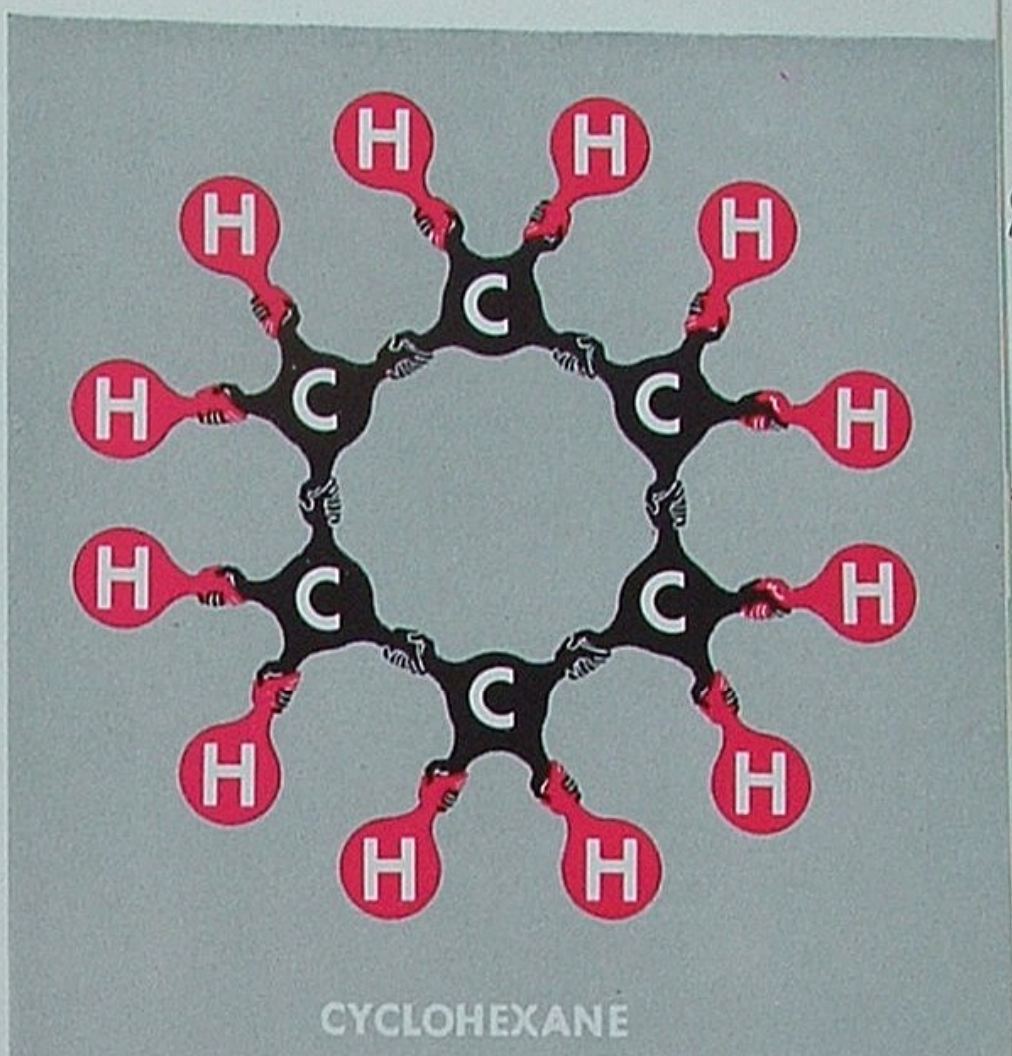
**5. The Olefins,** another family of hydrocarbons, are represented below by hexene-1 ($C_6H_{12}$). This individual's name is similar to hexane of the paraffin family because both are composed of six (*hex* is the Greek word for six) carbon atoms each. However, hexene-1 has two less hydrogen atoms than hexane, two of the former's carbon atoms having taken a double handhold on each other instead of grasping two more atoms of hydrogen. It is this characteristic that distinguishes all of the olefin family from other hydrocarbons. Each member has a double bond between two of its carbon atoms, hence two less hydrogen atoms than are contained in a paraffin molecule having the same number of carbons. Compounds that could hold more hydrogen are said to be *unsaturated*.




HEXENE-1

## 6. The Naphthenes

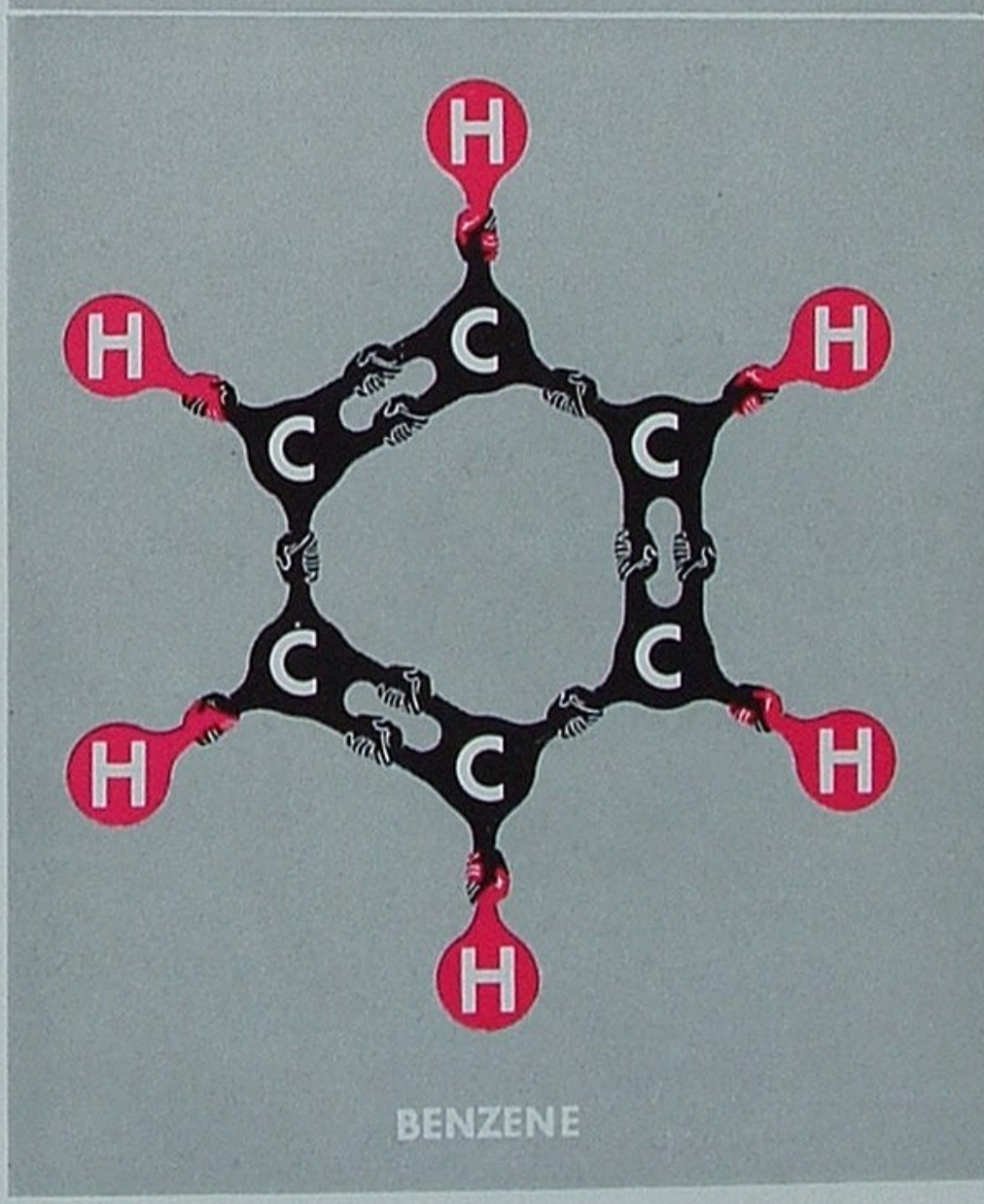
are a somewhat more complicated family of hydrocarbons whose heavy ancestors are said to have served as mortar in the Tower of Babel. Naphthenes are distinguished by the fact that their molecules are constructed in the form of rings. For example, cyclohexane ($C_6H_{12}$), right, of this family is formed quite as if someone had taken hexane ($C_6H_{14}$) of the paraffins, removed two hydrogen atoms from the ends, and connected the entire carbon chain into an unbroken ring. Cyclohexane has the same number of carbon and hydrogen atoms as hexene-1 of the olefins, but the manner of arrangement differentiates the two families.




CYCLOHEXANE

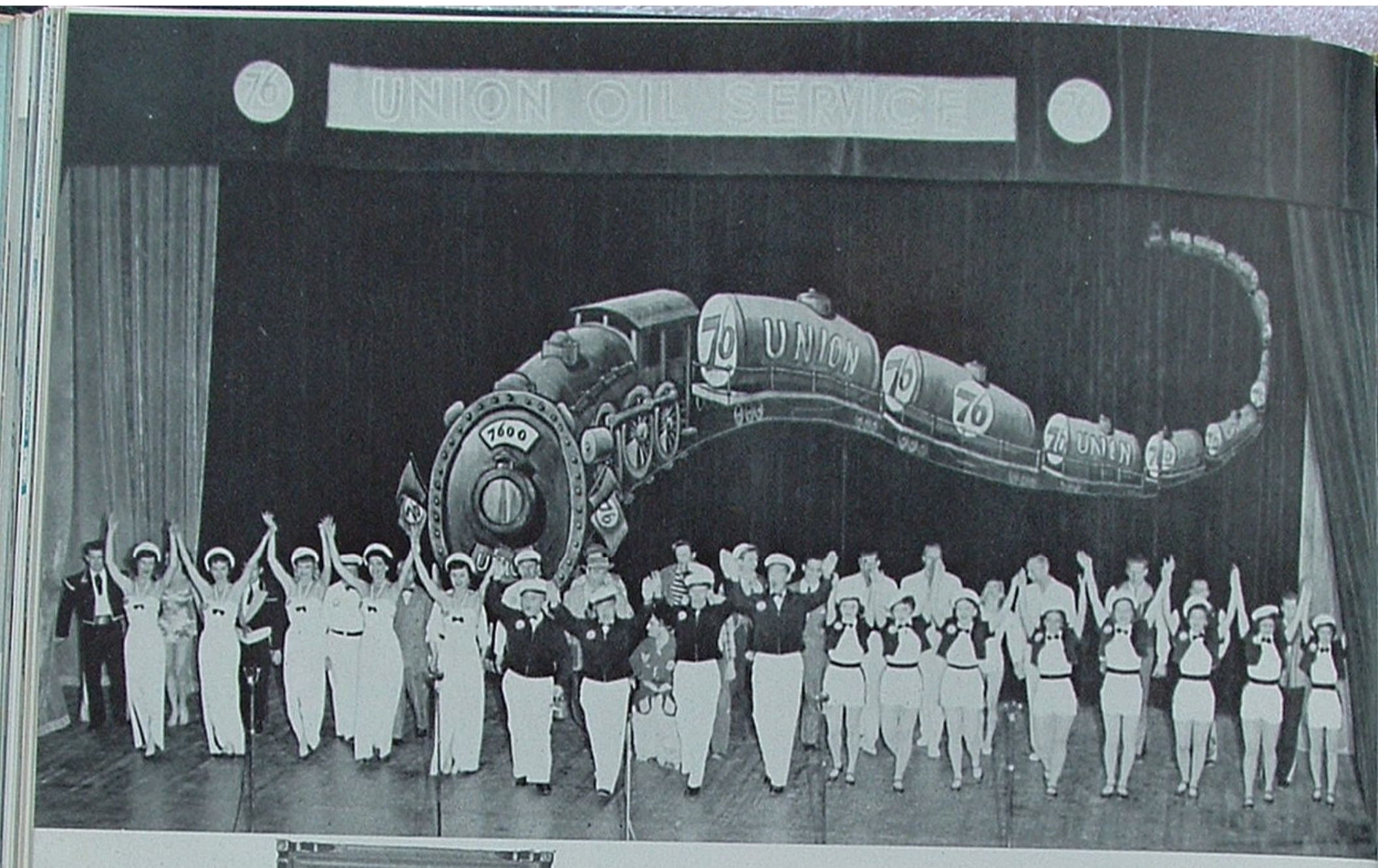
## 7. The Aromatics

are our final presentation of hydrocarbon families, but by no means the last ones existing. One of the better known members of this group, benzene ($C_6H_6$), right, establishes the family pattern, since each member must contain the "benzene ring" to qualify for membership. Note the double bonding of three carbon atoms, which makes the aromatics unique among hydrocarbons. They resemble the naphthenes in that both have a cyclic structure. Drawings of the larger members of these two families look not unlike a fence made of chicken wire. Though unsaturated, the aromatics do not tend to change readily.




BENZENE

**(To be continued)**




# Standing Room Only

THAT an organization of some 7,500 oil people asked for and received more than 63,000 tickets to Union Oil's "60th Anniversary Show" proves we're quite a big family. And evidently not a single ticket was wasted. A packed house every night applauded the 68 professional show people who entertained us in 29 western cities. There were no postponements despite the fact that this show presented a greater "road" problem even than "Oklahoma."

Among many prominent guests seen in the audiences were governors, mayors and other leaders. Hundreds of appreciative expressions have been received by Union Oiler hosts. At least two cities, Santa Paula and Santa Barbara, passed resolutions commending the Company for thus sharing the pleasures of its 60th anniversary observance with so many others.

Center, President Reese H. Taylor welcomed Governor Vail Pittman of Nevada to the show's Reno performance. At bottom, Mrs. L. A. Gibbons, Lt. Governor Goodwin L. Knight and Mrs. S. S. Van Keuren exchanged greetings just before curtain time at the Wilshire-Ebell Theatre.

Governor Warren of California was one of many prominent guests. With him was Leigh M. Battson, director.


Mrs. Taylor accompanied the president of Union Oil to the show's first presentation in Los Angeles theatres.

Typical of the packed house that applauded every performance of the "60th Anniversary Show" was this happy crowd of Union Oilers photographed in Pasadena. Show played to 63,000 employees and guests.

# DIGEST OF THE ANNUAL REP

| | In 1949 | In 1948 | Increase or Decrease |
|---|---|---|---|
| **EARNINGS AND EXPENDITURES:** We received from all sources of revenue, principally sales | $205,717,999 | $208,985,132 | $ 3,267,133 |
| We spent for raw materials, supplies, operating, selling and administrative expense, excluding wages | 115,471,556 | 104,150,296 | 11,321,260 |
| We provided for eventual replacement of worn-out or obsolete equipment, for exhaustion of oil properties, and for losses on investments | 25,561,242 | 26,831,146 | 1,269,904 |
| We spent for interest and to cover retirement of 1967 Debentures and issuance of new notes | 2,168,372 | 1,550,513 | 617,859 |
| We paid in taxes on properties, operations and earnings, other than payroll taxes | 8,613,421 | 11,449,521 | 2,836,100 |
| There remained for employees and shareholders | 53,903,408 | 65,003,656 | 11,100,248 |
| We paid in wages, salaries, benefits, etc. | 33,546,462 | 33,710,509 | 164,047 |
| We paid to owners of Company preferred and common shares | 11,729,577 | 11,319,951 | 409,626 |
| From profits we plowed back into the business for expansion, contingencies and to strengthen operations | 8,627,369 | 19,973,196 | 11,345,827 |
| **OPERATIONS** | Barrels | Barrels | Barrels |
| Our controlled proved underground crude oil reserves increased to | 588,000,000 | 513,300,000 | 74,700,000 |
| Our crude oil production in all areas amounted to | 26,032,000 | 29,947,000 | 3,915,000 |
| Our refineries processed crude oil in the amount of | 42,829,000 | 40,989,000 | 1,840,000 |
| Our sales of crude oil and petroleum products amounted to | 48,205,000 | 46,236,000 | 1,969,000 |

| 48 | Increase or Decrease | Principal Reasons for Increase or Decrease |
|---|---|---|
| 5,132 | $ 3,267,133 | Although our volume of sales increased almost two million barrels in 1949 and we received greater revenue from the sale of most products, our total revenue was lower due to sharp decreases in prices received for fuel oil, a product in which the market was over-supplied. |
| 0,296 | 11,321,260 | These increased costs were due largely to the added material, transportation and distribution costs applicable to our larger 1949 sales volume. Also, average costs were higher due to shutting-in Company-controlled production of fuel-oil-type crudes while increasing our purchases of gasoline-type crudes. Operating expenses reflected higher charges from all industry and included, in 1949, certain charges formerly reported as wages. |
| ,146 | 1,269,904 | The decrease in these charges in 1949 represented, mainly, lower provision for losses on investments. It was considered by management that the reserve for possible losses on such investments—which reserve was first provided in 1947 in view of post-war inflation and unsettled conditions—had reached an adequate level. |
| 513 | 617,859 | Interest and other Debenture or note expense included $464,411 in 1949, representing costs of retiring our 3 per cent Debentures and issuing 2¾ per cent Promissory Notes. These costs will be more than offset in the future by interest savings at the lower rate. |
| 521 | 2,836,100 | Total taxes were lower only because income taxes decreased $4,100,000 due to lower earnings. On the other hand, property and other direct taxes increased $1,263,900, or almost 25 per cent over 1948. These direct taxes have increased 100 per cent since 1945. |
| 656 | 11,100,248 | This decrease is the result of lower earnings and higher expenditures mentioned above. |
| 509 | 164,047 | Wage and salary rates were actually higher in 1949. Total wages appear here to be lower only because a substantial portion of maintenance and other work performed by Company personnel in 1948 was contracted to others in 1949, and the corresponding charges are reflected as service and operating costs instead of salaries and wages. |
| 951 | 409,626 | Slightly higher dividends ($2.25 per common share in 1949, compared with $2.22½ per share in 1948) were more a reflection of earnings in 1948 than in 1949. After five quarterly dividends of 62½ cents per share, dividends were dropped to 50 cents a share in September, 1949. Dividends in 1949 also include amounts payable on the 600,000 shares issued in the last quarter as part payments for the purchase of Los Nietos Company. |
| 96 | 11,345,827 | The total expended for replacement of gradually depleting oil properties, worn-out or obsolete equipment, and expansion in 1949 was nearly $41,000,000. Of this amount, $25,500,000, shown opposite replacement costs above, was the maximum that could be set aside for such purposes under existing tax regulations. The remainder came from profits, in the amount of over $8,500,000, plus over $7,000,000 in reserves set aside in prior years. |
| | Barrels | These reserves have increased steadily for many years. Important additions in 1949 came from the acquisition of Los Nietos Company; also through our long-term contract to purchase the entire high-gravity production from certain properties in the Coalinga Nose, Pleasant Valley and Guijarral fields in California. |
| 000 | 74,700,000 | |
| 000 | 3,915,000 | A surplus of low-gravity or fuel-oil-type crude made it necessary to shut-in many wells. |
| 000 | 1,840,000 | Due to increased sales demand for refined products, refinery throughput reached a new high. |
| 000 | 1,969,000 | Sales of crude oil and refined products attained the greatest volume in Company history. |


**BOW TO BOW at the Company dock in Los Angeles Harbor, the SANTA PAULA discharges crude oil as the ST. CLAIR loads refined products for Chile.**

WORLD TRADE WEEK is being observed nationally this year from May 21 to 27. It originated as an outgrowth of National Maritime Day, which was declared by the United States Congress as a day to commemorate the first trans-Atlantic voyage of a steam propelled vessel, the U. S. S. SAVANNAH, in 1819. This will be the sixteenth national observance of World Trade Week, although the occasion has been observed in Los Angeles for 23 years.

Los Angeles County's 1950 slogan, "World Trade Reaches Your Home," is certainly applicable to Union Oil people, because our products, in steadily increasing volume, have been venturing into distant world markets for fully a half-century. Borrowing a description often given of the British Empire, we can claim with justification that "the sun never sets" on Triton Motor Oil and other world-renowned Company products.

# The Scope of Our For

By Jack Graham


By coincidence, our tankship L. P. ST. CLAIR leaves San Pedro during World Trade Week with 60,000 barrels of diesel oil and 30,000 barrels of light fuel oil for Union's Chilean marine storage terminals. This oil will be used, alongside our lubricants, in the electric and gas utilities of Chile, in their nitrate producing "oficinas de las pampas," railway systems, fishing boats, cement and steel mills. In tank cars the oil will follow torturous grades of the Antofagasta and Bolivian railroad over the high Andes. It will go to tin mines and road building projects in Bolivia. On Lake Titicaca, 12,500 feet above sea level, some of the T5X will disembark to lubricate the world's most highly elevated passenger and cargo vessel. Passengers who use this means of lake transportation, by the way, are pure-blood descendants of an Indian people whose history antedates the ancient Inca empire.

**BESIDES the cargo of Diesol and Union Bunker Fuel Oil, other world-famous brands of commodities go abord as ship's supplies for officers and crew.**

# Foreign Trade

Elsewhere, throughout 42 countries and territories where distributors and customers bought our products during 1949, Triton has become a familiar trade name in 19 languages and at least 15 additional dialects. Union Oil fuels and lubricants serve major industrial needs among the steel and jute mills of India and Pakistan; the teak sawmills and lumber camps, rice mills and river steamers of Siam and Indo China; the sugar and rubber plantations, tin mines and tea estates of the Phillipines, Netherlands Indies, Malaya and Ceylon.

Union Oil's part in the rehabilitation of Japan began to develop about five years ago when we helped form the Japan Oil Storage Company (JOSCO). This was done at the request of General Douglas MacArthur's staff for the purpose of operating petroleum storage plants of the Japanese army and navy, together with plants formerly belonging to major oil companies. All products handled are imported by and are the property of U. S. occupational forces. Technical supervision is delegated to the experienced personnel of five major American oil companies, who employ and manage more than 4,000 Japanese workmen. Besides many shipments of Company products that have gone to Japan since the war, four of our most experienced overseas personnel are on loan to JOSCO. Most recently, Maruzen Oil Company, Ltd., have contracted to be Union Oil distributors in Japan. With two refineries and a daily crude capacity of 8,000 barrels, this firm will refine 2,000,000 barrels of Company blended crude during the first six months of 1950. They will market our branded products in addition to their own.

The dollar value of our foreign trade in 1949 amounted to $10,400,000, or 5.2 per cent of total Company sales. This is considered a good average for American companies who manufacture indigenous raw materials into finished products primarily for home consumption.

Approximately 750,000 barrels of bulk product storage is maintained by Union Oilers in Latin America into which Company tankships deliver fuel oils and gasolines from California refineries. Inland marketing stations receive their supplies by Company tank cars or tank trucks from these marine terminals. Packaged lubricants, technical and asphaltic products are delivered by the ocean-going vessels of the world's foremost steampship lines.


Above, Eileen Johnson, secretary, and Jack Graham, manager, and, below, Marvin Whyte, Paul Perry and Bob Adamson handle Head Office responsibilities of keeping 30 foreign jobbers adequately supplied.

Stenographers Evelyn Larkins and Eleanor Eidson find a knowledge of foreign languages helpful when corresponding with customers in other countries.

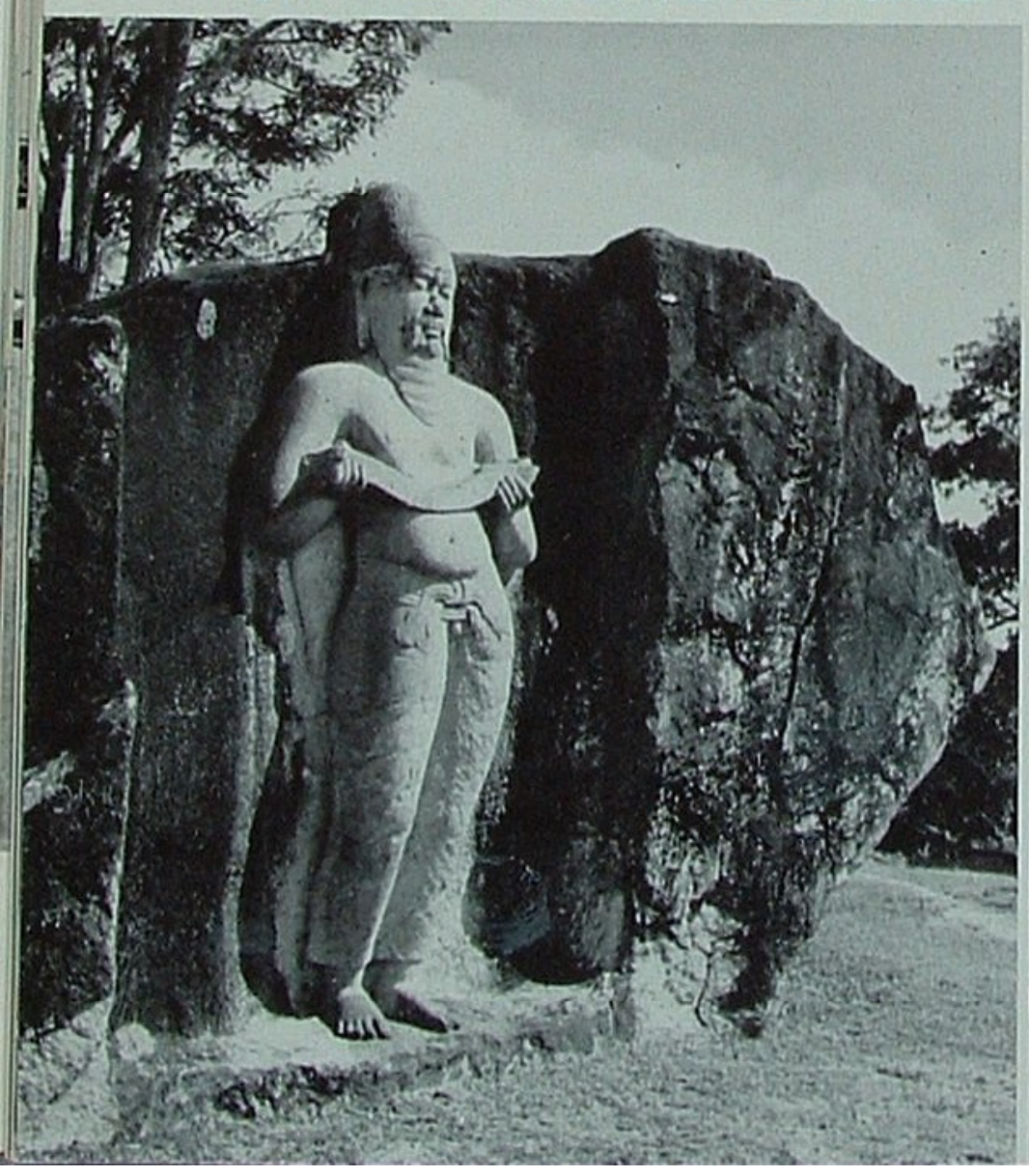
Los Angeles owes much of its prominence as a major harbor to tonnages of oil exported from this basin.


This "76" warehouse of Theo. H. Davies & Co. is located on the Pasig River just outside of Manila.

Most of the selling job is handled by about 30 distributors scattered throughout foreign markets. Some of them operate on a small scale with a staff of only several employees. Others are large import and export concerns whose branches embrace extensive areas of the map. Our Central American Division is operated by approximately 130 Union Oil employees. Besides four technical men on loan to JOSCO in Japan, we also have employee lubrication engineers stationed in South America and the Far East. These Union Oilers and six Head Office people comprise Foreign Sales. But, of course, every department from Field to Marine contributes immeasurably to the fine acceptance of our products abroad.

World Trade is a two-way street. From May 21 to 27 it will be the endeavor of Chambers of Commerce to show that American exports can be purchased only with imports from the countries who patronize us. And, as a concluding thought, maybe World Trade is the most practical approach to a united world.

In Ceylon, Triton-lubricated autos often pause beside King Parakramabahu 's statute, carved in 1153 A. D.



A new tank-truck, waiting to be hoisted aboard, will serve many petroleum buyers of Central America.

# A FEW PROBLEMS

## We Face In Common

***The substance of President Reese H. Taylor's report to shareholders at the Annual Meeting held on April 13, and to members of the Los Angeles Refinery Supervisors' Association on April 14, is herewith repeated for all Union Oil people.***

ONE of the most pressing problems currently facing your Company and the entire West Coast Oil industry is that of oversupply. While the primary surplus is in heavy fuel oil, there are currently available abundant quantities of all petroleum products.

The current supply situation is the result of two factors. First: the outstanding job done by the industry to meet greatly increased petroleum requirements; and, second: the change in demand for certain products.

You are all familiar with the demands made upon the oil industry by the military during the last war which in turn was followed by the highest peace time demand in history. Because of this, exploration and development activities were accelerated beyond the expectations of even the most optimistic.

As a result, California's ability to produce crude oil was rapidly increased until it now exceeds 1,000,000 barrels per day. This, however, is the ability to produce; not the amount actually being produced. For the California industry has shut in a total of 137,000 barrels per day and Union Oil, alone, has shut in more than 20,000 barrels per day.

Postwar demand on the West Coast actually reached its peak in 1947. It declined in 1948 and declined still further in 1949. This decline in total demand can be blamed almost entirely on the reduced demand for fuel oil. A combination of factors—such as the importation of natural gas, reduced military requirements and the dieselization of the railroads—is responsible for this decline in fuel oil demand.

By contrast, the demand for gasoline has constantly been increasing although not fast enough to keep pace with the increased supplies. As a result prices for all products have tended to be soft.

In addition to the fact that there is too much total crude oil currently being produced, it has been necessary to do everything possible to decrease the proportionate yield of fuel oil per barrel of crude and increase the yield of lighter products.

We have taken several steps in an effort to improve our position in this respect. As you know we have altered our refinery operations wherever practical to increase the yield of light products. The 20,000 barrels per day of production which Union has shut in has been almost exclusively in those fields producing heavy crude oil of which fuel oil is the principal product.

Despite these corrective measures, our fuel oil inventories in common with other Western companies, continued to climb throughout 1948 and the first eight or nine months of 1949. In order to relieve the Company of the expensive burden of these excessive stocks, Union Oil began to sell fuel oil to East Coast markets. Soon, other Western oil companies followed suit.

Our ability to shift to lighter products was greatly improved by the purchase of Los Nietos Company. For production from Los Nietos properties, now averaging about 7,500 barrels per day, is high quality, light refining crude.

In addition we have entered into a long term contract for the purchase of 6,000 barrels per day of high gravity crude oil which represents the production from certain properties formerly held by Mrs. Carrie Estelle Doheny. This substantially upgrades the quality of total crude available for refining.

During the last part of 1949 almost 6-million barrels of West Coast fuel oil were sold on the East Coast and of this amount, 2-million barrels represented your Company's share. The West Coast industry has commitments for more than 10-million barrels for this year or an average of about 29,000 barrels per day. However, we must bear in mind that these sales are being made at very low prices and a consequent unfavorable net-back considering the present prices of crude oil.

Although these measures should bring new supply substantially in line with demand for 1950, existing West Coast inventories are still excessive by about 25-million barrels. Adverse price developments on the

East Coast, which are being accelerated by increased imports, may make further fuel oil sales to that area even more uneconomical. Further reduction of crude oil production will have to be made anyway, but more drastically should that develop, and crude oil prices may go lower.

There is nothing new or unique in the current condition of oversupply. There have been many such occasions in the past and they will probably occur again in the future. Over a period of time these situations tend to be self-corrective.

While there is necessarily a time lag before the effect is felt, the natural reaction to oversupply is a decrease in exploration and development activity. This, in turn, permits the normal decline in the production rate from existing wells to more than offset the reduced new production. The net result is a reduction in overall production capacity. Since the long term trend is for a continuing increase in demand for certain products, we have every reason for confidence in-so-far as overall supply and demand for the future is concerned.

## GASOLINE PRICES

The current variations in the price of gasoline at the service station level, is not entirely the result of the abundant supply of gasoline but more the result of the wide variation in the quality of gasolines being offered the motoring public.

No one refiner can reduce his costs two or three cents per gallon below competition and stay in business for long without reducing the quality of his products or services such as credit cards and so forth. Just as no service station operator can reduce his operating margin to point of loss and stay in business without reducing the quality of his service or greatly increasing the volume of his business.

The additional services provided by a Union Oil dealer cost approximately two and a half cents per gallon. This is a cost which the self-serves, for example, do not have to bear. To the extent that they maintain a large volume of business, they may be able to reduce their costs some more. Any further spread in price will have to come from the refiner who in turn must limit his quality of products and services in order to reduce his price to the dealer.

It must also be remembered that our higher marketing costs are contributed to by our desire and our customers' desire to have Union Oil products conveniently available in remote by-ways and communities where no large and stand all their own excess costs, their prices might in profitable volume exists. If we have those stations many cases be double or triple what they are today. This cost can be spread over the entire system or not and in the final analysis the public decides this issue. Our marketing policies are set accordingly.

There is a large percentage of the automotive public who demand quality products, who want our service and distribution and who are willing to pay for what we have to offer. It is this market that Union Oil Company serves. In this connection it is interesting to note that from 1948 to 1949 when the cut price signs first became prominent, Union Oil not only maintained its percentage share of the market but at the same time increased its annual volume by 13½-million gallons.

All of this does not mean that there is no place for the self-serve and other cut price gasoline marketers for they have greatly increased their share of the market. But it does mean that quality products and service can still be sold to people although not at a competitive price with non-quality products and no service.

## FOREIGN TRADE

While there are many other subjects of primary concern to Union Oil I would like to discuss, I want to use the remainder of my time to go over several subjects which are of importance not only to Union Oil and the oil industry but to all of the people of this country.

One very serious problem is the British Government's trade and exchange control practices which are eliminating American oil companies from the international oil trade.

In order to accomplish this objective, the British Government has arbitrarily classified as "sterling oil" all oil produced or marketed by British and British-Dutch oil companies regardless of the dollars it might cost to produce or acquire it and as "dollar oil" all oil produced or marketed by American owned companies.

Using these arbitrary definitions, the Socialistic British Government then refuses to license the import of "dollar oil" into the sterling areas when the so-called "sterling oil" is available even though the American companies would be willing to sell their oil for sterling. Furthermore, by means of bi-lateral trade agreements—such as they have with the Argentine—the British are effectively eliminating American oil from other world markets by demanding that those countries purchase all of their oil from British companies.

While this program was initiated under the guise of saving British foreign resources, it appears to be an out and out effort to grab the world oil markets with the help of a substantial subsidy from the American taxpayer through the Marshall plan. Currently the British and British-Dutch oil companies are expanding their facilities to produce and refine oil in amounts substantially in excess of that they could reasonably expect to sell on a competitive basis. By wasting American resources in duplicating existing facilities, the British have created what they call "surplus oil," and with this oil they are endeavoring to pre-empt the world market by dictatorially eliminating competition from American companies.

The effect of this upon the American oil industry will be most serious. The United States cannot possibly import sufficient oil to satisfy the production obligations of American controlled foreign concessions without drastically upsetting the domestic oil industry.

If a sufficient quantity of oil is imported—either as

product or crude—it will mean the loss of jobs for people in this country, the curtailment of exploration and production activities and a consequent decline in the nation's proved reserves. If the oil is not imported, and our Government allows the American companies to be forced out of the world markets, the companies will not be able to live up to their production obligations in foreign concessions and will therefore lose the investment of hundreds of thousands of Americans as well as control of oil which is needed for reasons of national security.

When this country made a loan to Britain in 1946, the British agreed not to discriminate against this country in the administration of its quotas upon the quantity of imports. The sterling oil policy makes it clear they have no intention of living up to this promise.

## DEPLETION ALLOWANCES

Another serious problem confronting the oil industry directly and indirectly all of the people the industry serves, is the recent demand by the Treasury Department that the oil depletion allowance be reduced. Should Congress accede to this demand the consequences would be harmful indeed.

For the purpose of determining taxable income under the present revenue act, producers of oil and gas are allowed a deduction from their gross income from oil and gas production of 27½% but in no case more than 50% of net income. This is known as "percentage depletion" and similar allowances are made for other natural resource industries such as the mining of metals, coal, sulfur and so forth.

In setting up "percentage depletion," Congress recognized that the sale of a raw material is the sale of a capital asset. And it should make no difference whether the capital assets are disposed of bit by bit—as in the case of an oil producer, or miner—or all at once as in the sale of an entire oil field or factory. In other words, the tax depletion clause is to oil production what a capital gains tax allowance is to any other business.

This theory of taxation has long been recognized as essential to provide an incentive for the individual to risk his capital in order to provide the tools of production. In presenting its recommendations to the Committee on Ways and Means of the House of Representatives, the Treasury Department, therefore, did not take issue with the theory of the tax but rather with the amount that should be allowed for percentage depletion. The recommended reduction was from 27½% to 15%. This is despite the fact that under the present percentage depletion provision the oil industry already pays more taxes than it would if established producing properties were sold under the 25% capital gains provision.

Careful examination of the Treasury's presentation indicates only one possible explanation for the proposed reduction and that is that it *might increase* the tax revenue on oil production by 200-million dollars annually.

In view of this "reason" it is worthwhile to examine the current depletion provision and the effect it has had upon the oil industry and the people the industry serves.

The 27½% tax depletion provision was established by the Revenue Act of 1926 and it was based upon various depletion allowances which had existed ever since 1913. On seven different occasions since 1926, the House Ways and Means Committee has carefully considered the amount of the percentage depletion provision and has each time recommended that it remain at its present level.

During this 25-year period the oil industry has put back into the ground approximately 25-billion dollars of oil income in order to assure a constant supply of petroleum for the people.

The industry has drilled about 640,000 wells during this same period and 170,000 of these were dry holes representing a complete loss to the investor. Despite the large number of dry holes, the industry in 25 years has discovered and developed 48-billion barrels of new oil reserves—more than one and a half times the volume consumed.

Currently the country's crude oil reserves are at the highest level in history even though this nation's oil industry was called upon to supply 6/7ths of all the oil used by the United States and her allies in the recent war.

In the same interval, there has been a marked decline in the prices of oil products as compared to all commodities.

Basically the problem confronting all of us in the industry—and in fact the people of this country—is not whether the percentage depletion rate could be lower but whether it is high enough at present to continue to make exploration and development work a reasonable risk for venture capital.

When the 27½% figure was arrived at twenty-five years ago, the cost of finding oil was considerably lower than it is today and the chances of finding it were a great deal better.

Today we are finding it necessary to go farther afield in the search for new sources of oil, to drill wells deeper and pay higher costs for everything needed to drill a well, from personnel to pipe. In the case of a wildcat well today, 5 out of 6 are dry holes. Including development wells, one out of every three wells drilled will be dry.

As we go deeper into the ground to discover and develop new reserves, the costs increase geometrically. A 10,000 foot well, for example, will cost ten times as much to drill as a 2,500 foot well drilled at the same time. Today the industry is drilling deeper and deeper, paying higher costs and with less chance of success.

Drilling and development are not the only production activities which are costing the oil industry more today. The cost of producing oil increases as wells and fields grow older because of the encroachment of water, the need for improved pumping equipment and the decline

in production. If all of the oil is to be extracted from a given field it eventually becomes necessary to undertake expensive secondary recovery methods and re-cycling.

Approximately 70% of the total producing wells of this nation are known as marginal or stripper wells and the majority of these are operated by small independent oil companies. In 1947 they accounted for about 15% of the total oil produced in the nation and they are responsible for approximately 8-billion barrels of the nation's proved reserves.

If these reserves are to be made available, it is essential that there be an incentive for the individual to risk this capital in the expensive and hazardous secondary recovery operations necessary to secure this oil from the ground. An insufficient percentage depletion allowance will eventually force the independent operator out of business and in all probability result in a complete loss of this oil to the country.

In exploration, also, an insufficient depletion allowance would have serious repercussions. Unless an operator is able to more than recover the capital invested in today's speculative and high cost search for oil, and makes a profit commensurate with the risks, he will have no incentive to continue operations. This would be a serious blow not only to the economy of our nation but to our national defense as well. Last year, for example, 78% of all wildcat wells were drilled by independent operators and the independents made a proportionate addition for the year to our national crude oil reserves.

However, unless the "wildcatter" is able to secure venture capital on a basis competitive with other businesses he cannot continue to operate. This can only result in decreased exploratory activities and a consequent reduction in needed reserves.

As a matter of fact, a decrease in this activity would result in a continuing decline in the amount of taxes the Treasury Department could collect, not only from the industry directly but from the suppliers, contractors and so forth who serve the industry. (And it must be remembered that these suppliers even make a profit and pay taxes on the industry's dry holes and other failures.)

In addition to reducing the amount of petroleum reserves available, a reduction in the depletion allowance would have another direct effect upon the people of this country. The suggested 15% percentage depletion, as I pointed out before might increase the nation's tax revenue by about 200-million dollars. It would be impossible to absorb these taxes in oil industry profits.

For example, during the 15 years ended with 1948, dividends paid to industry shareholders have reached 5% of net worth in only two years. The net effect would be to increase the price to consumers, force a great many operators out of business, and reduce exploration and development.

Since the tax rate on corporate income is 38%, the price of petroleum products to the consumer would have to be increased by about 350-million dollars if the companies in the industry were to realize the same net income after taxes.

In the long run the consumers of petroleum products will have to pay prices which compensate for the cost of finding, producing, transporting and distributing petroleum and that includes all of the taxes involved. If the oil industry is to continue to supply the petroleum needs of the people, there must be an incentive for individuals to risk their capital in the search for and development of new oil reserves.

The oil industry must secure this capital in competition with other industries that are not as hazardous from the investor's standpoint. If the industry can't secure capital, there just isn't going to be enough oil available at prices people can afford.

## GOVERNMENT TAXATION

Basically the current attack upon the oil industry is but a part of a condition brought about by the continued exorbitant government expenditures and consequent high taxation. Already the high rate of taxation has had a most serious effect upon the economic well being of this country and as time goes on the effects will become even more disastrous.

In the first place, the double taxation of profits—first as corporate profit and again as personal income—plus the capital gains tax—has practically eliminated any incentive for individuals to invest their savings in business.

Secondly—and even more dangerous—the high rate of taxation is siphoning into non-productive government expenditures billions of dollars annually which might be used to expand and improve the economy of the nation.

The only way this nation or any other nation can improve its standard of living is by increasing its production of useful goods at prices people can afford. To accomplish this, it is necessary for industry to provide productive jobs for more people and improve the tools with which they work.

As a result of the present tax policies, it is rapidly becoming impossible for industry to raise the capital necessary not only to provide tools for new workers but to replace and improve the tools of the present work force.

The lack of capital will make it impossible for private industry to provide the productive jobs needed by our expanding population, and at the same time the government is adding more people to its payroll using the taxpayers' money.

Since governmental jobs are non-productive in that they produce nothing of real value to add to the national income, taxes on the productive worker will have to be increased to support them. The more taxes are increased the less money there will be to provide the tools needed for productive jobs. And so it goes.

A tax policy of this nature is a vicious circle that can

*(continued on page 23)*


# THE PAY OFF

L-R, Jim Kauer, George Hurter, Jim Head, Tom Absher

HAPPINESS, as portrayed in the above picture, is not posed—it's genuine. And Jim Head is the happiest man of four because it was he whom the other three rescued from death in a Dominguez Field pipe trench on February 14th of this year.

Jim and his fellow-worker, Jim Kauer, both employees of Macco Construction Company, were assigned to repairing a small gas leak in one of Union Oil's pipe lines. Since the pipe was buried about four feet underground, the job called for an excavation. While the men were digging, they detected the presence of escaping gas, but hardly in bothersome quantity. Taking no chances, they dug alternately, one working in the trench with hand tools while the other watched from above and caught a few breaths of fresh air.

When Head's turn at digging came around again, he scraped a few handfuls of earth away and lay face downward to examine a two-inch connection on the pipe's under-side. A moment later, and without pain or even serious distress, he had a sensation of fainting. He felt slightly dizzy. A roaring sound seemed to swell up within his head. It occurred to him to call for help and his impression still is that he did shout several times. However, in a few seconds he lay unconscious. His breathing had stopped. Except for a gradually faltering pulse, he was little better than dead.

Not a sound of Head's imaginary shouts had reached Kauer, who now looked down at the prone figure and said, "Let me dig a while." Kauer repeated his words a little louder when Head failed to move, but to no avail.

Kauer can hardly account for his praiseworthy actions of the next hour other than to label them "the pay off" after several years of spare-time training as a life guard and First Aid instructor. Reaching down and grasping Head's belt, he lifted the unconscious man from the trench and applied artificial respiration. When a truck stopped nearby several minutes later, Kauer asked the driver to summon help from a Union Oil well-pulling crew working within view.

Union Oilers Tom Absher and George Hurter swiftly joined the rescue. While Absher, himself a holder of three Red Cross First Aid certificates, alternated with Kauer in administering artificial breathing, Hurter sped for the Dominguez office to call for a fire department resuscitator and ambulance.

It was 40 minutes before professional help could reach the scene. By then, Head had resumed breathing. He regained consciousness an hour after reaching the County Hospital in Torrance. After two days of observation at Las Campanas Hospital in Compton, he was in good health and back on the job.

For a photographic study of how these men saved a human life, please turn to the following page.

Looking for a leak of natural gas under a pipe line, Jim Head was suddenly overcome by gas that apparently filled the bottom of a four-foot excavation . . .

His co-worker, Jim Kauer, soon discovered Head's plight and, with desperate exertion, managed to lift the unconscious man out of the gas-filled trap . . . . . .

Kauer's First Aid training began to click: "Patient is placed face down—head pillowed on one arm—face turned aside—tongue is forward—mouth free of dirt."

"Now to start him breathing by pressing forward on lower ribs every four or five seconds—twelve to fifteen times a minute—and keep going up to three hours"

Welcome help arrived when Union Oiler Tom Absher joined the rescue. After twenty minutes of artificial respiration and massage, Head began to breathe again.

Meanwhile, Union Oilers Reona Haskins and George Hurter had called for a resusciator and ambulance. A life was saved as the "pay off" of good training.

# INDUSTRIAL SUMMARY

## • INDUSTRIAL RELATIONS

A hearing conducted by the Twenty-first Regional Office of the National Labor Relations Board to determine a proper bargaining unit at the Oleum and Los Angeles Refineries and the Sixth and Mateo Marketing Terminal started March 29 and was concluded April 6, 1950.

Prior to the hearing the question of decertification of the Oil Workers International Union as sole bargaining agency for certain Sixth and Mateo Terminal employees was handled as a separate issue. The bargaining unit was agreed upon and April 14 set as the date for the election.

The four parties interested in a proper refinery unit, the Oil Workers International Union, the Independent Union of Petroleum Workers, the Company, and the National Labor Relations Board through its hearing officer, agreed upon three separate bargaining units; a Refinery general unit, a Research non-professional unit, and an Oleum Cafeteria unit. Dates of May 9 and 12 have been set for the elections.

The Company was advised on April 6 that the Oil Workers International Union representatives had, as of March 24, again appealed for a review of the National Labor Relations Board's decision that the Company had not been guilty of unfair labor practices at the time of the 1948 strike. It has been ruled that the filing of this latest request for review is not to further delay the elections reported above.

***from W. C. Stevenson***

## • FIELD

The Field Department has engaged in an extensive development program at Sansinena in the La Habra Heights area near Whittier, California, since the publication of "Soft Pedal Drilling" appearing in the May 1949 issue of ON TOUR. "Soft Pedal Drilling" described the unusual drilling techniques that were being used by the Union Oil Company in this area, the principal features of which were directional drilling at high angles from a central drilling site, the use of a soundproof derrick, and other innovations to cause as little disturbance as possible to residents living in the area.

The drilling operations from the "island" on Ardsheal Drive have met with very satisfactory results. This "island" was designed for the drilling of twelve wells. To date eight wells have been completed and the ninth well is being drilled. A total of four zones have been proved productive above a drilled depth of 5,000 feet and there is every reason to expect additional production with depth and in extension of the present produc-

**Techniques being used to drill the Sansinena wells near Whittier include use of this "whipstock." It deflects the bit from a perpendicular course, permitting drilling of a wide sub-surface area from a smaller surface site.**

tive area. The most recently completed well, Sansinena 25, has a productive capacity in excess of 800 barrels per day and the total productive capacity of all wells to date is in excess of 2,200 barrels per day. The gravity of the oil is from 20 to 30 degrees API.

Two wells drilled prior to 1949 established the fact that an oil field of some magnitude had been discovered by Union Oil Company, but the real importance of this discovery was not recognized until drilling operations were permitted to be continued under a zoning exception granted by the Regional Planning Commission of Los Angeles County. This exception permitted the drilling of only twelve wells from the Ardsheal Drive drilling site. As nine of these locations have already been utilized, we are again in the process of making application to the planning commission for the right to exploit from a new "island" mineral rights owned by the Company under an area which daily is assuming the aspects of a major oil field.

We have tried to be a good neighbor in our operations in the Ardsheal community and propose to put forth every effort to be an acceptable part of the community at the new drill site we are applying for.

***from Sam Grinsfelder***

## • MANUFACTURING

With the approaching warm weather, the refineries are gradually changing the distillation characteristics of 7600 and 76 gasolines so that by June 1, 1950, these gasolines will meet summer specifications.

During March the initial shipment of hydrogen sulfide solution was made from Los Angeles Refinery to the General Chemical Company at El Segundo for further processing. This operation is part of your company's continued program to render all assistance possible in smog abatement.

The Los Angeles Refinery fire fighting training area was recently used by the City of Long Beach Fire Department. This well equipped training area is used by various fire departments in Los Angeles County and by other oil company personnel for coordinated training purposes, and for the demonstration of new equipment and various fire fighting techniques.

***from K. E. Kingman***

## • PURCHASING

During 1949 the Surplus Material Sales Division of the Purchasing Department was instrumental in disposing of over 10,000 tons of scrap and obsolete material and equipment. This little-heard-of section is called on by all departments to dispose of the vast accumulation of scrap and surplus generated by normal company operations.

For the month of February, 1950, operations were on an even larger scale. In this one month, 1,318 tons, or enough material to fill 26 fifty-ton freight cars, was sold by this department.

***from E. H. Weaver***

## WANT TO BE AN AMBASSADOR?

**It has been suggested that a worthwhile amount of good might be accomplished if some of America's industrial publications—ON TOUR, for example—were sent regularly to our friends and relatives living outside the boundaries of the United States. Since such publications portray American industry and American people in a factual way and are written for home consumption, not foreign propaganda purposes, they should enjoy wide acceptance at face value.**

**Or perhaps you have friends and relatives living within the United States whose names could be added advantageously to the mailing list.**

**In either event, please nominate on the accompanying application the name and address of any such FREE SUBSCRIBER you wish to propose. Or, if you prefer, send us a request via letter.**

**Whether or not the Company acts on this suggestion depends upon your response. Therefore, please regard this first announcement as a FEELER.**

***Union Oil Company of California***
***617 West 7th Street***
***Los Angeles, California***

Attention: ON TOUR

In the event a **foreign** or **external** mailing list is approved for ON TOUR, please include the name

**Mr./Mrs.** .....

**Street** .....

**City**..... **Zone**.....

**State or Country**.....

**Employee Signature** .....

**Location** .....


**TRITON KICKOFF IN CHICAGO** is the description being given this meeting of resellers in the Hotel Sherman's Bal Tabarin room, March 8. Between last December, when the campaign began, and March 6, Company salesmen had stocked 150 of Chicago's retail stations and garages with the West's "distinctive purple motor oil." Besides direct selling, the Company is conducting a complete campaign of advertising via billboards, newspapers, television. Plans include a Triton canning plant in Chicago.

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**A Few Problems . . .** *(continued from page 18)*

only end in the complete strangulation of economic progress in this country. The more the government taxes, the fewer jobs industry will be able to supply. The fewer jobs industry can supply, the more the government will tax.

I cannot emphasize too strongly the danger this condition represents to all of us. Since the founding of this country, the trend has always been for a higher and higher standard of living for all of the people. The present government spending and taxation cannot help but reverse this trend and lead to a poorer and poorer standard of living.

The over-all result is bound to be complete government domination not only of industry but the private lives of us all. For you cannot have an economic dictatorship without losing both your individual liberty and economic freedom.

While this is a problem that should be of concern to us all as members of Union Oil's management, it should be of even more concern to us as citizens of this country. The pages of history are littered with nations whose people have lost their rights and freedoms by default over a period of years.

And it might happen here.

## SERVICE BIRTHDAY AWARDS

### MAY 1950

***Thirty-Five Years***

Shaw, Grant L., Coast Div. Field
Washbon, Vivian E., So. Div. Field

***Thirty Years***

Bateman, Joseph N., Central Territory
Hamilton, Wm. H., So. Div. Field
Hinkle, Nelson G., L. A. Refinery Mfg.
Vincent, George M., Oleum Refinery Mfg.

***Twenty-Five Years***

Chandler, Lois M., H.O. Comptroller's
Fausset, Ernest C., Oleum Refinery Mfg.
Griffith, Burt R., Coast Div. Field
Lewis, Chas. A., Oleum Refinery Mfg.
Medina, Ernest J., Oleuum Refinery Mfg.
Stene, John B., H. O. Marine
Stevenson, Wm. C., H. O. Ind. Rel.
Tilston, Arthur N., Southwest Territory
Tudor, Edmund O., No. Div. Pipe Line

***Twenty Years***

Carr, Betty, H. O. Automotive
Clark, Henry A., H. O. Treasury
Espey, Leslie G., L. A. Refinery Mfg.
Gatewood, Schuah E., Southwest Terr'y
Gibbons, Lewis A., H. O. Legal
Lee, Milton W., Research—Wilmington
McPherson, Byron A., Oleum Ref. Mfg.
O'Neil, John E., L.A. Refinery Mfg.
Scherich, Royse B., Oleum Refinery Mfg.
Schneider, Waldo E., Central Territory
Serene, Lincoln Oleum Refinery Mfg.
Stewart, Edward W., Central Territory
Thomson, Lester J., L.A. Refinery Mfg.

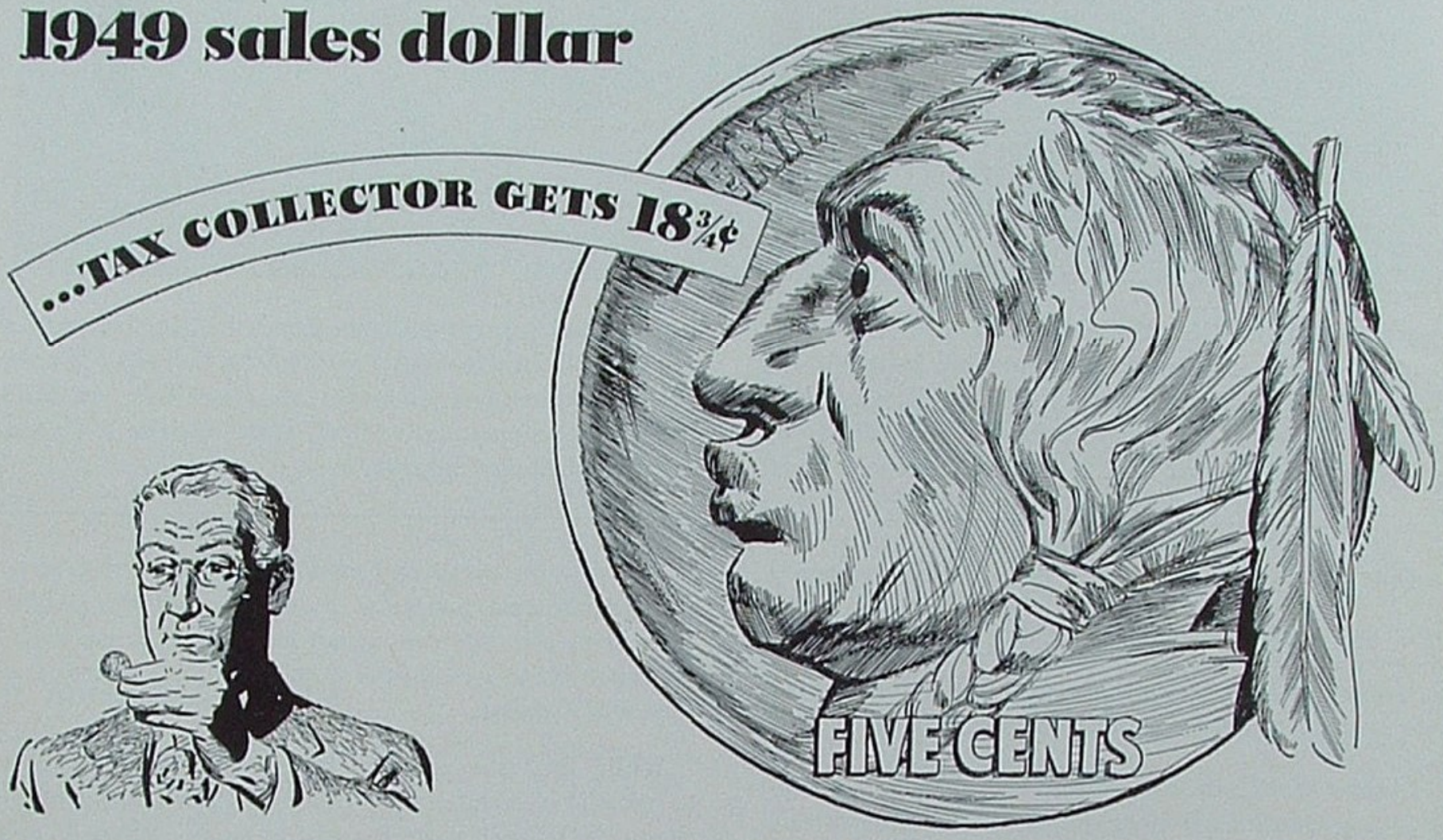
***Fifteen Years***

Amos, Alfred V., H. O. Traffic
Burklund, Laurence C., Northwest Terr'y
Bush, Fred W., H. O. Land
Carroll, Florence M., Oleum Ref. Mfg.
Dussard, John F., So. Div. Pipe Line
Eads, Chas. S., So. Div. Field
Katzenberger, Chas. O., Coast Div. Field
Lishman, Lester L., Marine—Wilmington
Mayville, Wm. C., Southwest Territory
McHenry, Jos. E., Southwest Territory
Noe, Robert G., Maltha Refinery
Rike, Harry W., Oleum Refinery Mfg.
Roberts, Hugh L. E., Coast Div. Field
Rose, James H., Southwest Territory
Roussel, Alice E., H. O. Sales Staff
Sagaser, Floyd J., Coast Div. Field
Sepulveda, Steven C., Southwest Terr'y
Troop, Carl E., Valley Div. Field

***Ten Years***

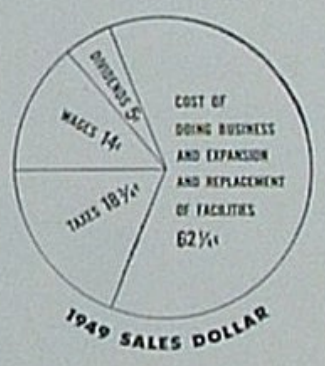
Bertrand, Jack P., Central Territory

# Stockholders get 5¢ from each Union Oil 1949 sales dollar






**1. Out of every dollar paid in** by Union Oil customers during 1949 the company made a profit of 8¼¢. 3¼¢ of this was put into expanded facilities to meet the growing demand for petroleum products in the West. 5¢ was paid out to the stockholders in dividends. Since these dividends were divided among 37,245 preferred and common stockholders, the payments averaged $315 per stockholder.


**2. Out of every dollar paid in** by Union Oil customers during 1949 the employees received 14¢ in wages, pensions and other employee benefits. Since these wages and benefits were divided among 7,316 employees, they averaged about $4,700 per employee.

**3. Out of every dollar paid in** by Union Oil customers during 1949 the federal, state and local tax collectors got 18¾¢*. So the tax collectors got almost 4 times as much money as the owners and 1 1/3 times as much as the employees.

*This figure represents taxes on all our products—fuel oils, asphalt, lube oil, greases and gasoline. When our customers buy *gasoline*, 31¢ of each dollar they spend goes to the tax collectors.

**4. "Cost of Doing Business** and Expansion and Replacement of Facilities" includes following:

| | |
|---|---|
| Raw materials | 26¼¢ |
| Transportation | 7¼¢ |
| Supplies, power, exploration, selling expense, etc. | 14¼¢ |
| Interest | ¾¢ |
| Expansion and replacement of facilities | 13¾¢ |
| TOTAL | 62¼¢ |

## UNION OIL COMPANY

### OF CALIFORNIA

INCORPORATED IN CALIFORNIA, OCTOBER 17, 1890

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