

SHELL NEWS

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Dedicated to the principle that the interests of employees and employer are mutual and inseparable

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Personnel Department, New York

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VACATION TIME AGAIN

Shell's travel expert Carol Lane shares this month's front cover with two Sioux Indians taking part in the Frontier Days celebration at Cheyenne, Wyoming. Just before this picture was taken, the Chief placed a war bonnet on Carol's head and named her "Chief Woman Who Travels Much."

Carol had a wonderful time at the gala celebration. But you don't have to go to Cheyenne or any other distant spot to have fun on your 1950 vacation. The handy Tourette (the two-day vacation) and its interesting possibilities are discussed in detail on pages 4 and 5.

AS part of its continuing effort to increase efficiency of products pipe line operations and to serve better its Marketing outlets, Shell has just completed the installation of four new pumping stations between Wood River Refinery and Zionsville, Indiana. The stations are unique in pipe line design because they include efficiency and flexibility features never before used. Their installation makes a much higher throughput possible on the East Line than is usual in an 8-inch line.

The innovations are threefold:

First, pumping at the four stations can be started and stopped in the Chief Dispatcher's office in New York City, more than a thousand miles away. Second, without the aid of personnel at the stations, special electrical equipment can automatically report pumping conditions over a teletype system. And third, the design of each station permits "on and off" operation without the necessity of manual regulation at the station. This provides higher operating efficiencies on purchased electric power.

Dispatcher Has Pipe Line "At His Fingertips"

In practice, the system is simple. The teletype equipment at the New York dispatching office has a telephone dial attachment for contacting the automatic stations. Before the dispatcher, as he sits at the teletype machine, is a directory which lists the number sequences he can dial to activate various operations at each of the four stations. There are four number sequences for starting pumps at the stations, four other numbers to stop them. By dialing four more sets of numbers, the dispatcher can obtain readings on his teletype machine of the operating conditions at the stations. It takes only a few seconds for the sensitive electrical equipment to relay the information back to him. At the same time, the readings are relayed to every other station on the line.

In emergencies, such as mechanical failures along the line, another set of numbers can be dialed to call the attendant to a station to receive instructions coming in on his teletype machine.

In normal pipe line operation, stations are built around electrical motors and centrifugal pumps which can be throttled to match the incoming flow of products in the line. In the four new stations, however, the pressure "boost" is limited to about half the safe working pressure of the line, and thus it is possible to operate the stations without throttling. In this case the suction pressure and the discharge pressure of each station is determined by the characteristics of the pump and motor, and the resistance to the flow of liquid in the line. In this manner all throttling losses are eliminated and the application of power is on a much more efficient basis than in normal conventional stations. By this measure the economic limit of the capacity of the pipe line is extended to a throughput higher than ordinary. Thus the construction of additional line capacity is deferred or its necessity limited, and by means of



At Zionsville Pumping Station and Terminal (above) there has been an increase in Shell products received daily from Wood River due to the greater capacity of the East Line made possible by the installation of the four new remote control booster stations. From here a portion of the products are pumped on to Muncie, Indiana, and to points in Ohio.

these stations the capacity of the East Line has been extended by about 4,000 barrels a day without significant increase in unit cost of operation.

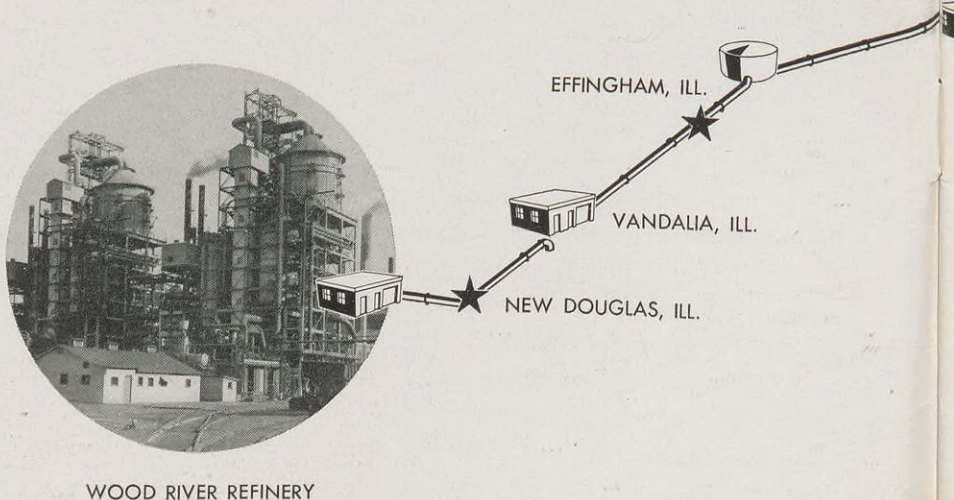
There are a number of advantages besides the actual increase of electrical efficiency in this type of station. The amount of increase of capacity obtained by one of the new stations in a section of line is fortunately approximately equivalent to the loss of capacity if fuel oil is being pumped instead of gasoline. By successively operating individual stations as a batch of fuel oil traverses the line, the loss of throughput in handling heavier oils is minimized and the balancing of the line under these conditions is made much simpler. The flexibility of this operation in the hands of the New York dispatching office is such that immediate take-offs of product can also be handled without loss of electrical power.

To move more products through the East Line, Shell began in 1947

to step up the power and capacity on the section delivering products to Zionsville. Established stations at Wood River, Vandalia, Casey, Carbon and Zionsville were revamped. With a greater flow through the latter station, the pumping station at Muncie, Ind., previously used intermittently, was put into continuous

operation. This expansion was completed in 1949. The most recent expansion, effected this year by strategic location of automatic booster stations, culminates another pioneering effort in pipe line technique.

Installation of the new operating procedures in the East Line took a good deal of technical cooperation






between Shell and other firms. The new stations were designed in collaboration with the General Electric Co., American Telephone and Telegraph Co., and the Bailey Instrument Co. General Electric Engineers furnished the know-how which provided the switch gear and sequence control in the stations. American Telephone and Telegraph experts contributed their knowledge of how to link up leased long line teletype systems into control methods tied into the stations. The Bailey Instrument

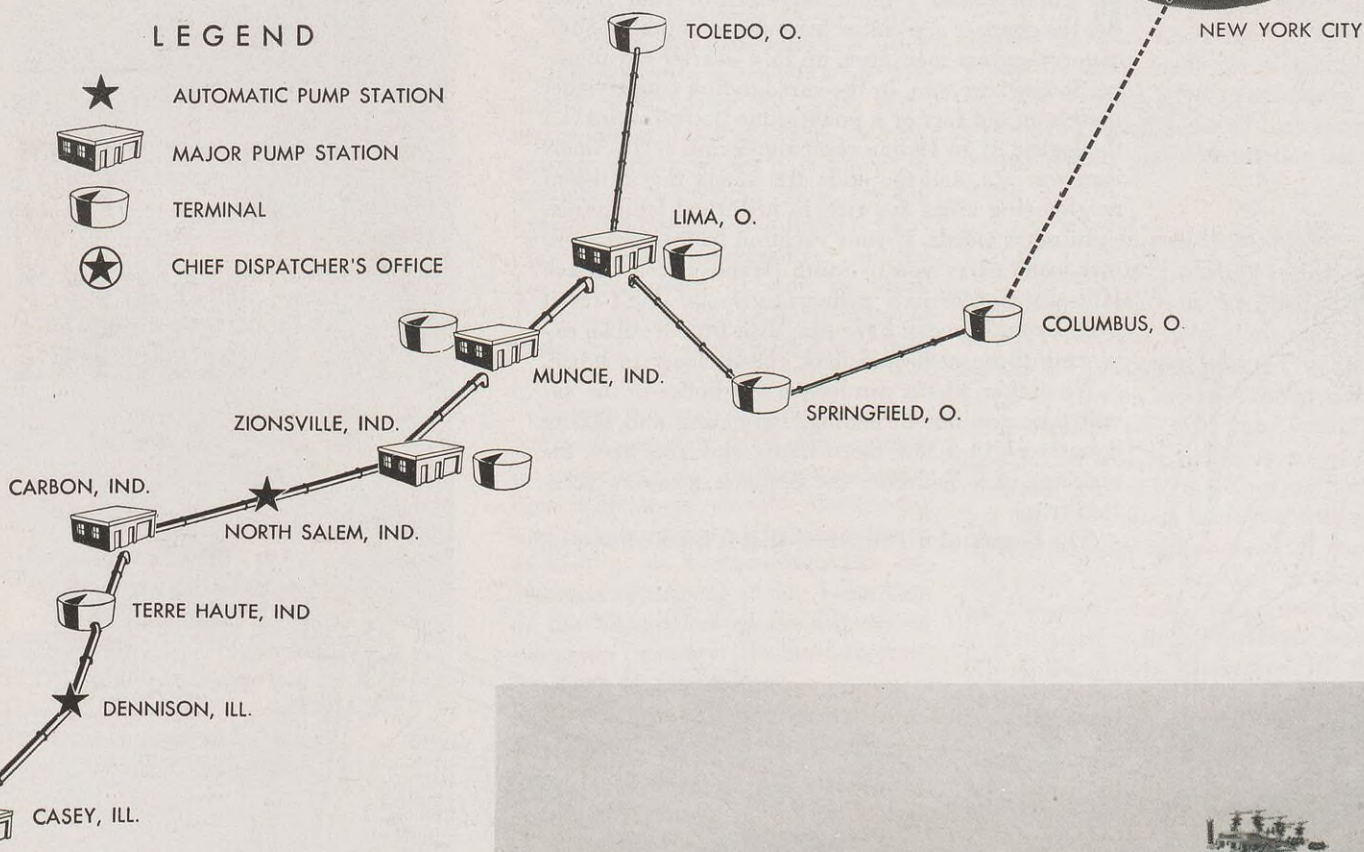
Company provided the engineering experience and the telemetering equipment which permitted the reporting of pressures and electrical loads across the teletype system to provide the information which enables the dispatching office to operate the new stations in full knowledge of what goes on in the line.

The progress achieved by the remote control operation of four stations on the East Line is a tribute to the experience gained in 12 years of product pipe line operations.



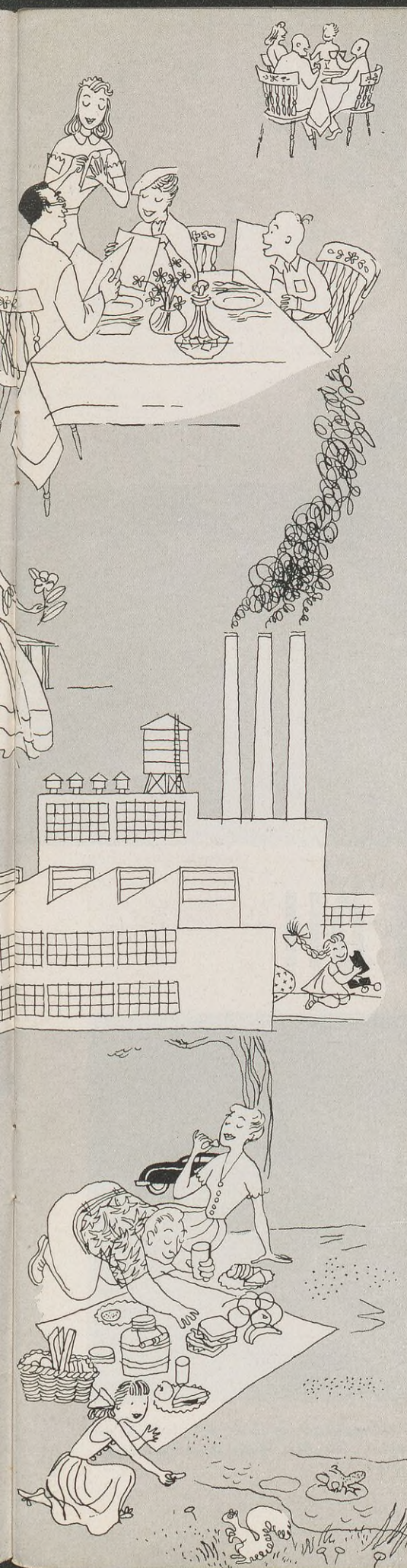
LEGEND

- ★ AUTOMATIC PUMP STATION
-  MAJOR PUMP STATION
-  TERMINAL
-  CHIEF DISPATCHER'S OFFICE



The new booster station at New Douglas, Illinois, (shown at right, during construction) is one of four which can be operated by remote control from the Chief Dispatcher's office in New York City. The control building is at left, the pump house in the center, and the electrical substation at right.





preparation. Get a map of the area you live in and draw a circle having a 200-mile radius, with your home town as the center. Two hundred miles is a comfortable distance; it is short enough to let you sight-see along the way, have a leisurely lunch and find a place to stay overnight. And, you'll be amazed at the places of interest that you will find within that 200-mile radius.

Locations described in literature, for example, are numerous and often as interesting to see as famous historical sites; after all, any story makes better reading when its geographic setting is one you know intimately. The setting may be the Everglades country in southern Florida, a Boston background, or the Texas Panhandle. It may be Mark Twain's Mississippi with its store of fable, and . . . it may be closer than you think.

There's no end of places to visit. National and state parks are common to every region. Underground caverns with their eon-old stalagmites and stalactites make interesting places to visit as do communities like the Mormon settlement at Salt Lake City or the Mennonites of Pennsylvania's Lancaster County. Indian reservations can be fascinating.

Watching Government at Work

Or—take a few days to watch your government operate. You don't have to go to the Capitol in Washington, D. C., to watch it. Your state government is just as concerned with making laws, and often as interesting in action. The United Nations headquarters at Lake Success in New York City with its polished multi-language debate is fascinating, as are the daily courtroom scenes in cities and towns throughout the 48 states.

Every town has something, some specialty in industry, mining, agriculture or culture that is unique and interesting, and most of them have art centers, museums, schools and

zoological and botanical gardens to prove it.

And, of course, there are the special events that fill the summer months. Baseball, air shows, sailing regattas . . . there's always something doing for the spectator sportsman.

About costs. You'll find the Tourette an inexpensive vacation. Picnics along the way, for example, not only cut down on the food budget, but increase enjoyment. You'll find any number of spots along the open road which are tailor-made for picnicking, and the outing gives youngsters a chance to run off some of that excess energy which they accumulate on a trip.

Touring Service Ready to Assist

Whether you are sight-seeing, or just visiting relatives, the Shell Touring Service can help you, and the length of your tour doesn't matter. Drop in at your neighborhood Shell dealer and he will note your vacation destination and duration on a special card and mail it to the Touring Service. Within a short time you will get back a personalized package of maps and other information. Touring Service "mapmeters" will route you to and from your destination. Additional descriptive literature in the package will cover places of interest, accommodation guides regarding rates and facilities, hunting and fishing laws, and special events like "garden tours." In this connection, the Touring Service has prepared a calendar of special events going on in different sections of the country throughout the vacation season.

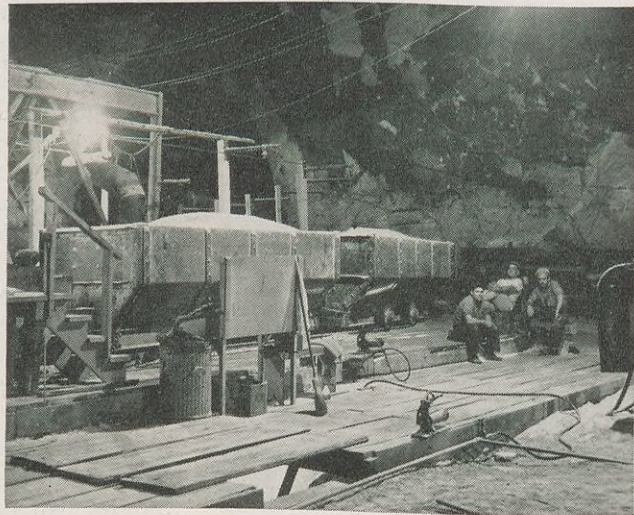
It doesn't take a special event, though, to warrant a Tourette. You can take one over any weekend; you can take several during this summer. Easy to arrange, inexpensive, the Tourette provides a pleasant two-day change of scene at the very least, and at best it can be as full of things to do and see as the more expensive, time-consuming, cross-country vacation.



Salt, Sugar and Oil



Salt mining begun during the Civil War spawned these huge installations of the Miles Salt Company at Weeks Island.



Miners load salt on a miniature railroad 600 feet below the surface. The tunnel is 80 feet high in some places.

Weeks Island in Southern Louisiana Has Long Been a Source of Seasoning and Sweetening; More Recently It Has Been Making Records as a Major Shell Oil Find

TAKE a large cake of salt, sprinkle the top with sugar, bathe the edges with oil. This recipe serves millions.

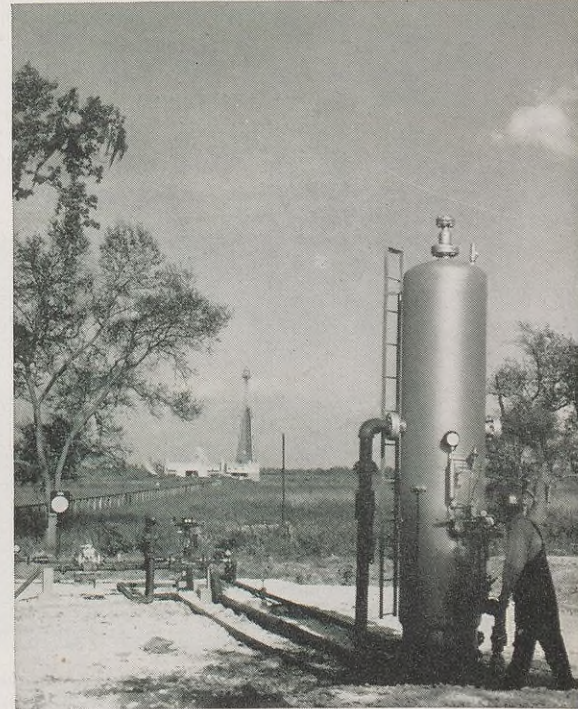
In fact, these are the ingredients of Weeks Island, a huge salt dome in Southern Louisiana where Shell discovered and has developed what is potentially one of its most prolific oil and gas fields. The sugar coating is provided by a lush cane plantation adjacent to the island. All three—oil, salt and sugar—are being developed commercially for millions of customers in the United States.

But Weeks Island is interesting for more reasons than its triple enterprises, one of which dates back to pre-Civil War days. In its five-year career as an oil field it has been marked by several production oddities and has set a number of drilling records—only to relinquish them voluntarily or to break them again with even greater achievements. At one time or another the Weeks Island Field has held world, U. S. and Louisiana State records for deep

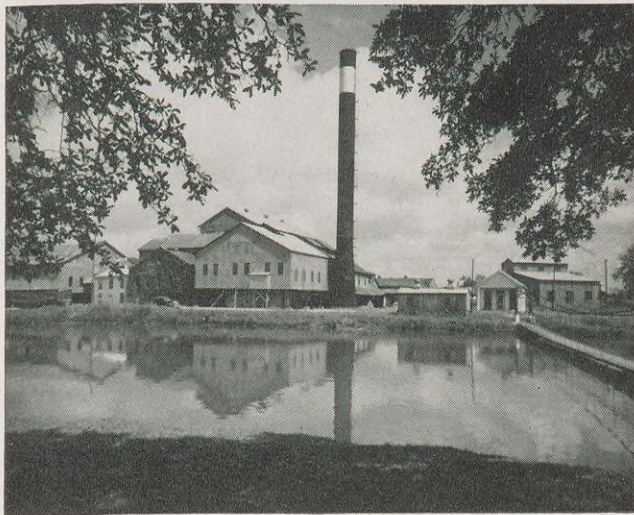
production. Even now, most of the oil taken from the structural traps around the flanks of the salt dome comes from formations more than two miles below the surface.

Weeks Island has long been known to be a salt dome—like many another dotted throughout the Gulf Coastal Plain and even offshore in the Gulf itself. It is located in Iberia Parish on the shore of Weeks Bay and is surrounded on the other three sides by the swampy marsh land typical of Southern Louisiana. Because the earth atop the dome rises to an elevation of approximately 135 feet—next to the highest point in all Southern Louisiana—the thickly jungled knoll covering roughly four square miles was originally called Grand Cote, meaning “Big Hill.” When the Weeks family received a land grant to part of the top of the hill, they established a sugar plantation there and changed the name to Weeks Island.

A need for salt during the Civil War led searchers to a brine spring



A separator on high ground (above) serves a well in the swamp while another well is drilled by a barge-based rig.



This nearby sugar mill of the Cyremort Company processes cane from Weeks Island and many other fields in the area.



A channel dredged in the swamp to drill the discovery well is left around the Christmas tree to facilitate servicing.

on the island. When excavators dug around the spring, they struck rock salt, thus establishing the presence of the salt dome below. Mining operations were subsequently started, and the mine is still a source of supply for one of the nation's largest salt companies. A meandering road across the bayous and through the marsh to Weeks Island served the salt mine and the farmers there until a spur of the Southern Pacific Railroad was built to take out the rock salt. The island can also be reached by way of the bay and bayou



Weeks Island was pushed up from the southern Louisiana marshland by a salt dome. Completed wells and drilling rigs circle the island's outer rim.

waters. Shell and two other oil companies now operating there have at times utilized all three—road, rail and waterways—for transportation needs.

Shell Acquired Leases in 1935

On the basis of an analogy of the Weeks Island dome to other oil producing salt domes in the region, Shell first acquired leases there in 1935 and in 1941 drilled a test well. This wildcat was abandoned as a dry hole at a depth of 11,510 feet. Combining the results of subsequent seismic work and subsurface information revealed in drilling the dry hole, Shell located a second test farther up the flank and tried again. This venture, the Shell, Smith-State Unit No. 1, a record-breaking discovery well in several ways, was completed early in 1945.

But even before completion of its discovery well, Weeks Island was breaking records in the oil industry.

To begin with, the crew of the Company-operated rig set the longest string of 7-inch well casing on record. They landed it 13,550 feet down—more than two and a half miles of pipe—and cemented it with 1,000 sacks of cement. The cementing job was done in 53 minutes, which is something of a record itself.

Within a few weeks the Smith-State Unit No. 1 had broken still another world record. The well had drilled up to 14,023 feet, finding crude oil, distillate and gas at various levels, but perforations at 13,505 to 13,520

feet produced 300 barrels of distillate a day to mark the world's deepest known production. The previous record had been held by a well in Terrebonne Parish in Louisiana which was producing from 13,498 to 13,503 feet. Thus, the "deepest producer" title had been won by a matter of 17 feet.

Commenting on the Weeks Island discovery well, the oil industry trade journals made a point of the fact that the deep hole had been achieved with no unusual difficulties. The OIL AND GAS JOURNAL attributed the feat to the experience of Shell drilling crews, pointing out that drillers on the test had an average service with Shell of 15 years. They had been drillers for an average of nine years.

The discovery well was later plugged back to an oil-bearing sand at about 13,100 feet, thus relinquishing its deep production title and setting a pattern oft-repeated in the field as

its development progressed. As if each new test was trying to out-drill its predecessor, deep drilling and deep producing records fell one by one. To date producing sands have been encountered as far down as 15,776 feet.

It takes powerful and specialized drilling tools to probe the rock formations almost three miles below the derrick floor. Accordingly, Shell has designed and had constructed drilling rigs tailor-made for the job. Best known is Rig No. 7, a record-breaker itself, for at the time of its construction it was the largest and most powerful rig ever built. The steam-powered rig and derrick stand on what is believed to be the largest barge hull of its kind, yet this mammoth rig towering 225 feet above the swamplands draws as little as five feet of water when it is towed by tugs through the bayous and the canals dredged to drilling sites. It is capable of drilling to a depth of 18,000 feet.

A chief advantage of Rig No. 7 is the time it saves in handling longer strings of drill pipe when going in or coming out of the hole. When a bit wears out two miles down, it takes hours of time to pull up all the pipe, uncouple and rack each section, change the bit and run the pipe back to the bottom. By handling drill pipe in 135 foot "thribbles"—oil men's parlance for three 45-foot sections coupled together—the big rig cuts down this nondrilling time considerably.

Rig Is One of Largest

The drawworks, largest in existence, can lift a string of tools weighing nearly a million pounds. Five boilers generate the steam to make it possible, and the barge has room for still another.

The rig is so large that driller, derrickman and fireman maintain contact over an "intercom" system. Besides supporting the derrick, which weighs 34,000 pounds exclusive of pipe and other drilling equipment, the three-deck barge has an office, sleeping quarters and galley, a change room and store rooms. This

additional space for convenience and comfort of the crew is equal to the floor space of a five-room house.

Similar, though slightly smaller, floating rigs are used extensively in the Weeks Island Field, for much of the drilling is done on water. Actually it is one of the few fields in the world where three types of drilling operation are carried on simultaneously. Barge-mounted rigs work in the open water of Weeks Bay, similar rigs work in canals dredged in the marsh around the island, and land rigs drill from higher ground around the outer perimeter of the island itself.

The drilling rigs and Christmas trees of completed wells form a ring around the island. Unlike Black Bayou, another Shell field to the west where oil was discovered in the caprock of a salt dome just 981 feet down, the top of the Weeks Island salt dome is too near the surface to hold an oil trap in its cap. Weeks Island is one of a group of shallow

domes called "The Five Islands." Its nearest neighbor, Avery Island, seven miles northwest, is the only salt dome in Southern Louisiana which is higher than Weeks Island. The Avery dome is also the nearest oil field to Weeks Island. The nearest Shell production is in the West Lake Verret Field, about 30 miles east.

Shell Holdings Substantial

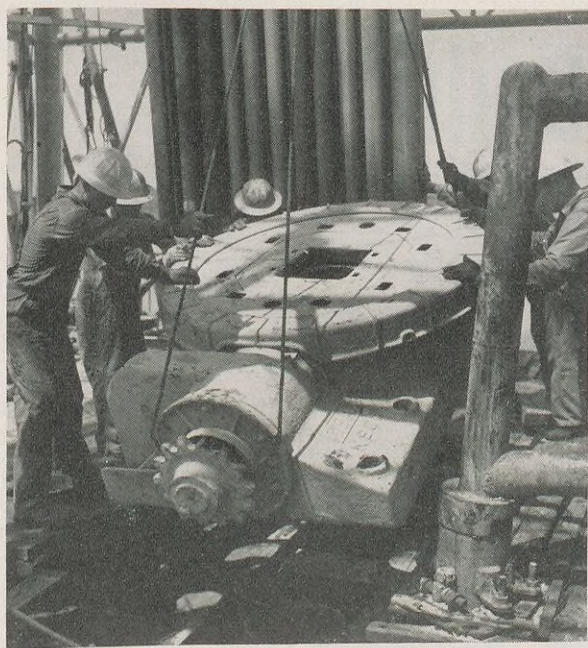
The present known producing area of the ring-shaped Weeks Island Field covers approximately 1,000 acres. Shell's holdings amount to about 75 per cent of this area, with the balance divided between Humble Oil and Refining Company and Gulf Oil Corporation. Humble began operating in the field shortly after Shell discovered it. Gulf is a fairly recent arrival.

The field now has 43 producing wells, of which Shell owns 33 and holds another in partnership with Gulf. Nine more wells are being drilled. Of these, six are Shell tests and another is being drilled in partnership with Gulf. Defining the field's limits, though not yet completed, has not been without disappointment. Shell has drilled four dry holes, including its first wild-cat attempt in the field.

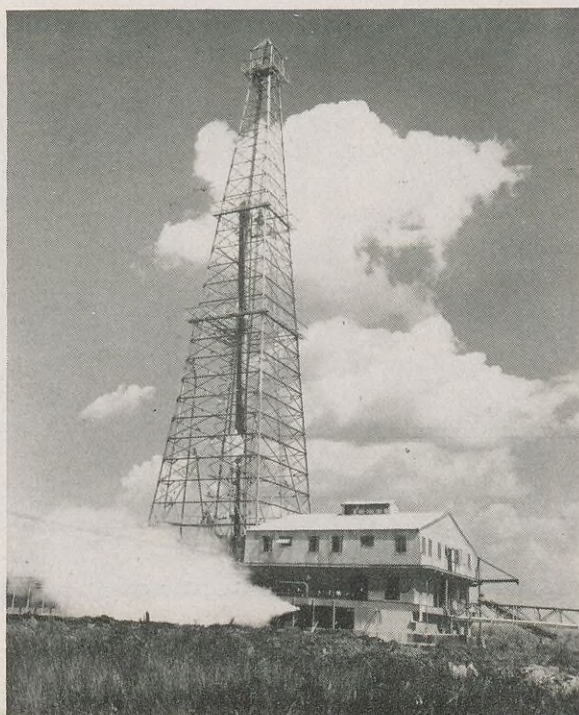
Nevertheless, official estimates of proven reserves at Weeks Island have increased many times over as drilling has progressed in the last five years. The oil reservoirs are Miocene in age, which means they are about 30 million years old, mere geological teen-agers as oil producing formations go. Drilling a well in the rocks fractured by the upthrust of the salt dome takes from 50 to more than 200 days, depending upon the depth drilled and the formations encountered. It costs about \$500,000 to drill a deep one.

Shell's present daily average production is approximately 9,000 barrels. As of March 31 of this year Weeks Island Field had a total accumulative production of 6,218,500 barrels. Shell had produced 5,661,500 barrels of this total.

On an average, Shell's Weeks Island crude oil is 33° gravity all-purpose crude. Originally all the crude went to Norco Refinery, but now most of it is barged to the Houston Refinery, where its highest yields are in gasoline, kerosene and light and heavy fuel oils. There are lesser, but good, yields of propane and butane, for Weeks Island crude is versatile—as versatile as its source, a high knoll rising from the flat marshes of the Cajun country, where salt, sugar and oil are produced for the palate and convenience of millions.



Rig No. 7 (right) was largest in the world at time of its construction. The derrick towers 225 feet above the bottom of its barge. The crew (above) replaces a rotary table worn out while drilling a well more than two and a half miles deep. Thribles of drill pipe are racked and ready behind them.





The Home Builder

Leonard S. Echols, Wood River Employee,
Builds an Unusual Home in His Spare Time

TODAY not many of us are jacks-of-all-trades handy enough with tools to undertake the task of building our own homes. But once in a while someone like Leonard S. Echols appears with enough of the pioneer in him to succeed. A Technical Advisor in the Research Laboratory at Wood River, Echols is neither an architect nor a construction man. But he designed and built an attractive three-bedroom house with very little help from others. The house was completed in eight months of working nights, week-ends and during a vacation.

The idea resulted from necessity and desire when Mr. and Mrs. Echols found that their rented home was

about to be sold. A futile search for another house to rent convinced them that none with the features they wanted was available. After much thought and discussion, they decided to design and build their own.

Careful Planning Preceded Start

Echols planned every step. Beginning in June, 1946, he read several books on construction, and talked to many people well versed in the field. Then he began drafting the floor plans for a ranch-type house with the living area at one end and the sleeping quarters at the other. Making the bedrooms remote from the living area was desirable because the children usually retire early and

Echols did not want them disturbed by adult activity. A carport was placed in the center of the house next to the kitchen so that groceries and packages would have to be carried only a short distance. The bathroom also adjoins the carport and can be entered from either the carport or the front patio. This makes it possible for the children to enter the bathroom and go directly to their rooms without going through the rest of the house.

Of clapboard construction, the house—with carport included—covers about 2,800 square feet. It is built on a concrete slab and has aluminum foil insulation in the ceiling and between all outer walls.



^

The kitchen is unusually large and has a wood paneled dinette at one end with windows on three sides. There is plenty of room here for children to play as Mrs. Echols prepares meals.

The fireplace in the living room is equipped with a draft control and a fire box which forces the heat out into the room. >

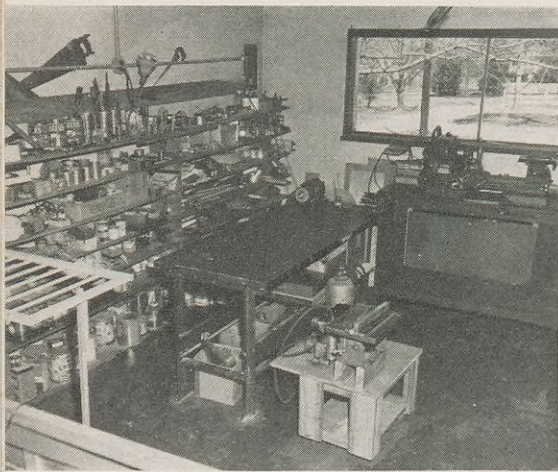
Below right, looking east from the living room, is the study, which has a ceiling lined with acoustical material. French doors in the sunlit study open out onto the front patio.

Below left, a view of the living room shows the spacious picture window. Mrs. Echols' small fruit trees benefit from the sunlight.



Rather than destroy this tree, Echols cut a space for it to grow through the eaves.





Echols' well-equipped work shop, complete with lathe and power saw, is located in a corner of the utility room.

Mr. and Mrs. Echols with children Billy (sitting on Mrs. Echols' lap), Lizette and Jon are shown at right. Leonard, Jr., was attending school when the picture was made. The dog is named Michael. The entire family enjoys the pleasant surroundings resulting from Mr. Echols' careful planning and work.



Considerable thought went into the heating and cooling arrangements. Echols finally decided to employ radiant heating by circulating hot air through the concrete floors. Along with the furnace in the heating and utility room, he installed a forced draft fan which draws air into any room in the house. To enhance cooling of the house, he has devised an ingenious sprinkler system to flood the flat roof with a thin film of water. Thus, on an unusually hot day it is possible, through evaporation of the water, to keep the inside temperature well below that of the outside.

In laying out the bathroom, Echols again diverged from conventional design by using walls of wood paneling and bright red tufted plastic material along the wall behind the tub. He wisely provided the bathroom with twin wash basins. This is a practical feature because they have four small children in a one-bath house.

Another unusual feature is the kitchen, which combines attractive-

ness with efficiency. Appliances are conveniently grouped and there are ample cabinets and open shelves. Fluorescent lights, reflecting from a corrugated aluminum ceiling, make the kitchen a pleasant place for Mrs. Echols to prepare meals. There is a serving port between the dining room and the kitchen, through which food and dishes may be passed.

Maximum of Sunlight Secured

The house is built with the main rooms away from the street and facing south, which gives a maximum of sunlight and privacy. Mr. Echols is especially proud of the large windows on this side of the house. To save on heating costs he used fixed double windows. The outer pane serves as a storm window and can be removed if desired.

The interior of the house reflects the good taste and resourcefulness of Mrs. Echols. The walls are of deep plum in the master bedroom, and the draperies are a plain burlap,

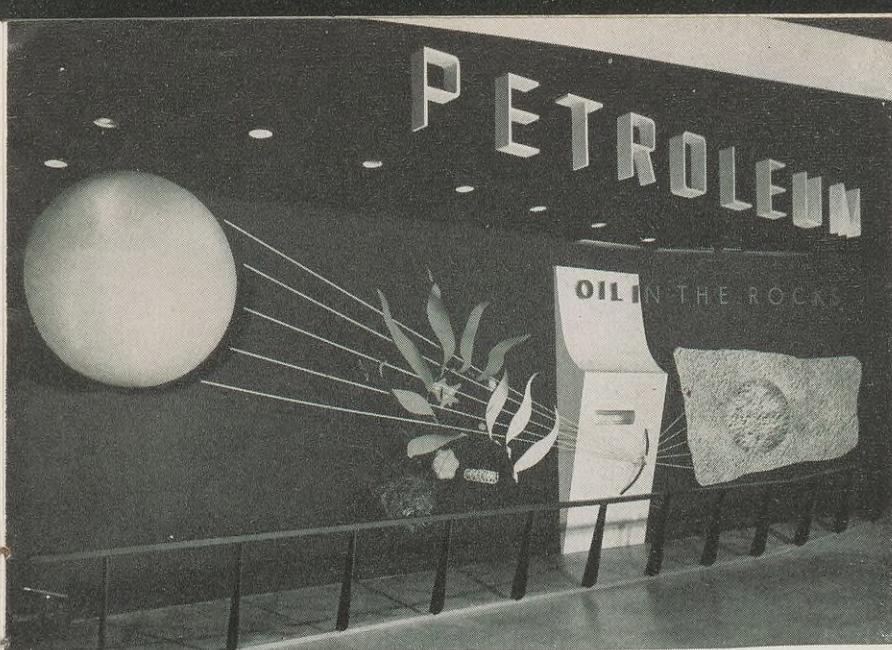
on which she has painted a series of ballet figures.

Although they had two children at the time the house was being planned, Mr. Echols provided for future additions to the family. A large bedroom now serves adequately as a dormitory for the four Echols progeny. A long low closet with sliding doors and shallow shelves runs the entire length of this room. The children sleep on wooden army beds which have been painted a deep blue, and the walls are painted light blue. The curtains of white muslin have gay figures of animals painted by Mrs. Echols.

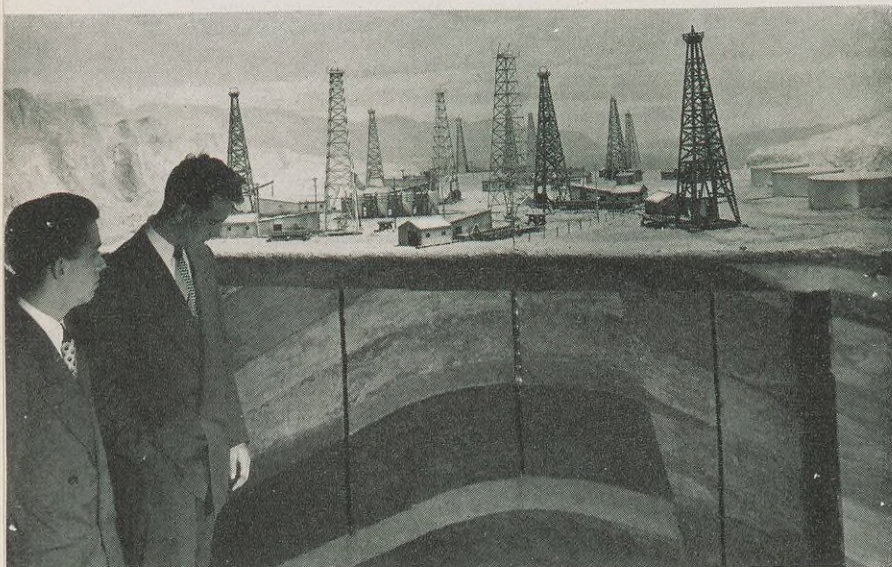
The period furniture in the dining room lends a touch of the old to furnishings which are otherwise contemporary. Handmade by her grandfather, these old mahogany pieces are cherished by Mrs. Echols. The living room, with a large picture window and an open fireplace, is furnished in a simple and modern manner. Next to the living room is Mr. Echols' study, with French doors opening onto the patio. The ceiling of the study has a covering of acoustical material which helps improve reception from their radio-phonograph console.

Almost any wood working job can be handled in the well-equipped work shop located in a corner of the utility room, and Echols has used it often as he makes improvements to his house. A recently completed project, which was heartily endorsed by Leonard's two oldest sons, Jon and Leonard, Jr., is a 10' x 35' swimming pool located adjacent to the front patio. The pool is 4 feet deep at one end and 6½ feet deep at the other. Echols' present plans call for building two spare rooms along the south side of the pool, connected to the rest of the house and enclosing the pool. He intends to construct these rooms from lumber used as concrete forms for the pool.

Even though the big job is done, Echols doesn't feel like letting up. The additional rooms and several other projects will occupy a good portion of his spare time for a long while.



Entering the oil exhibit at the Chicago Museum of Science and Industry, visitors see a display which explains how radiant energy from the sun is converted into the potential energy of petroleum through the medium of organic life.



The progress of successful wells and "dry holes" is made clear in the exhibit (above) in which lights trace the course of drilling operations carried on through stratified layers of the earth's crust in search of oil-bearing sands.



Oil Tells Its Story

The Many-sided Petroleum Industry's New Permanent Exhibit Opens in Chicago

VACATIONERS in the Windy City this summer will be able to satisfy their curiosity about petroleum by visiting the Oil Industry Exhibit at Chicago's Museum of Science and Industry. This large-scale, permanent exhibition is believed to be the only one of its kind in the nation.

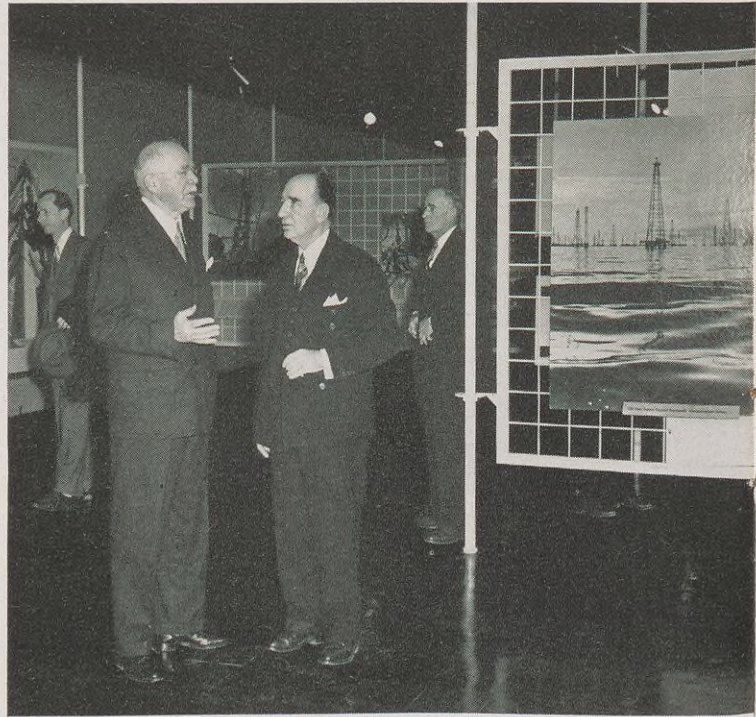
Covering more than 8,000 square feet, the exhibit explains the occurrence, discovery, production, manufacturing, distribution and ultimate uses of oil. Working models and animated scenes, accompanied by recorded commentaries, show industry operations. Photographic murals present the petroleum story, and oil industry films are projected in a small theatre at regular intervals.

Presented to the museum this spring, the exhibition was made possible by Shell and eight other oil companies. Shell's H. L. Curtis, Assistant to the President, Public Relations, was a member of the planning committee, while L. R. Craig of Shell's Public Relations Department was instrumental in designing the photographic displays.

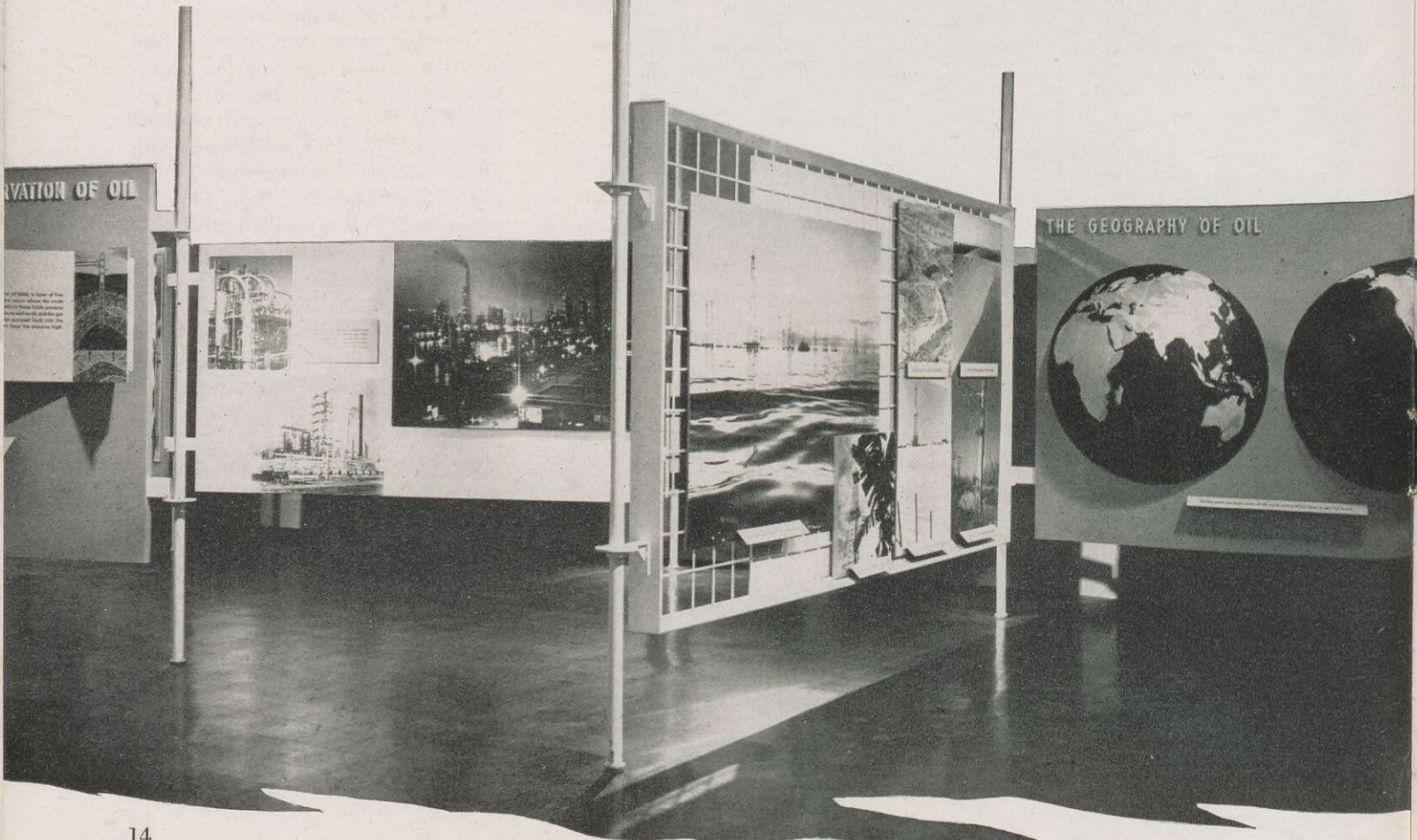
< From an elevated platform, visitors see working models (l. to r.) of a rotary drilling rig, a derrick for cable tool drilling, an early Pennsylvania rig and the pioneer Drake well, each lit up in turn by a spotlight.



One room is devoted to photographic murals, including many Shell pictures, which explain industry operation from exploration to the ultimate uses of products.



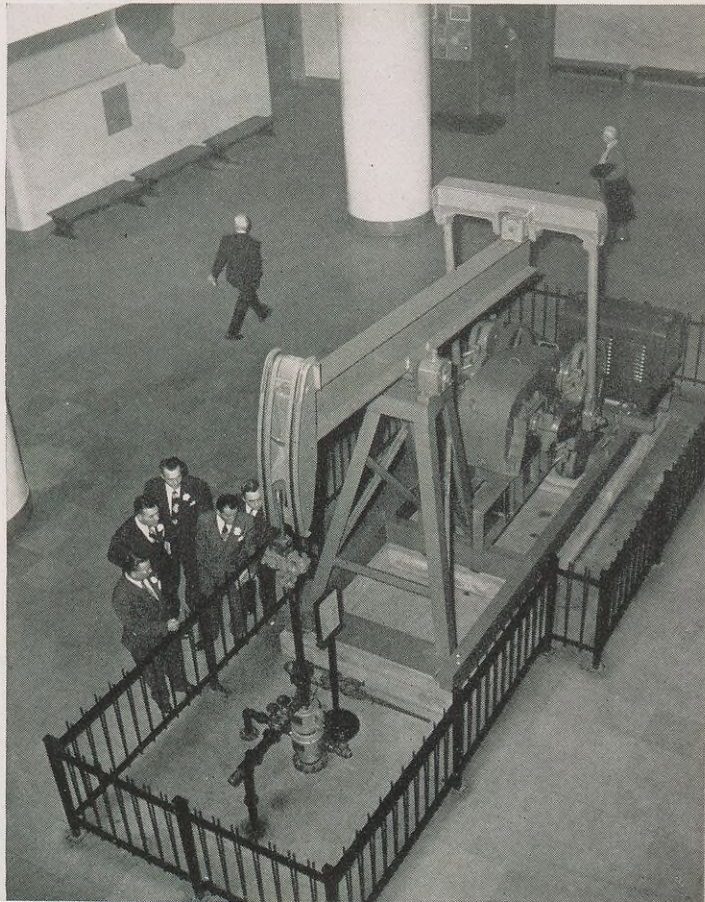
In the photographic room, at the opening of the oil exhibit, news commentator H. V. Kaltenborn (left) chats with Major Lenox R. Lohr, president of the Museum of Science and Industry.





Photographs courtesy of Ethyl Corporation

< The petroleum industry exhibit was dedicated and formally presented to the Chicago Museum of Science and Industry by the nine participating oil companies at a banquet in March sponsored by the Chicago Oil Men's Club.



< The planning and execution of the exhibit's photographic panels, consisting of approximately 80 oversize pictures of the oil industry, took four months. Shell's Public Relations Department helped do the job.



^ At the entrance to the petroleum industry exhibit, the oil field term "on the pump" is demonstrated to spectators who can pause to watch a real pumping unit in operation.

A large, multi-colored globe revolves to show visitors the widespread oil fields of the world, indicating how far afield oil men have traveled in constant search for petroleum.

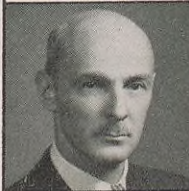


The sixteenth in a new series
of organization charts

Shell Oil Company

June—1950

Administrative
Assistant



S. H. Oatway

Manager
Personnel & Ind. Relations




W. S. Gage

Manager
Legal



R. T. Patton

Manager
Exploration



L. R. Newfarmer

Manager
Purchasing-Stores



A. E. Collins

Manager
San Joaquin
Division




F. R. Schmieder

Manager
Los Angeles Basin
Division



W. C. Chonette

Manager
Coastal
Division



J. E. Clark

EXPLORATION & PRODUCTION ORGANIZATION CHART PACIFIC COAST

Vice President
Exploration & Production
Pacific Coast



S. F. Bowlby

Public Relations
Representative



C. E. Totten

Manager
Land



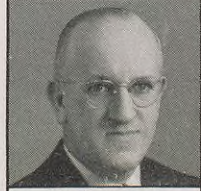
M. W. Sheppard, Jr.

Manager
Treasury



C. A. Peterson

Manager
Production



E. W. Masters

Manager
Rocky Mountain
Division



P. L. Kertzke

Manager
Pipe Line and
Crude Oil



W. C. Roberts

Manager
Natural Gas
And Gasoline



R. S. Tulin

Norco's 30th Anniversary

Annual Plant Day Celebration Is Especially Significant This Year As It Marks the 30th Birthday Of Shell's Refinery in Louisiana



Norco's first manager, R. B. High (l.), now retired, chats with F. E. Rehm, Vice Pres., Pers. & Ind. Rel., San Francisco.



Choice steaks went into the barbecue. (L. to r.) J. A. Bourgeois, Plant Day Chairman, H. A. LeBlanc and V. E. Bradley.



A. N. Smith, J. R. Noles, E. J. Lorio, C. W. Bradley, E. D. Jeffus and S. F. Good (from left) took part in the skeet shooting.



Two long lines of celebrants formed for barbecue lunch. Norco's gymnasium and baseball stadium are in the background.



Flag raising ceremonies held in front of the Main Office Building started the day's activities.



Horseshoe pitching finals climaxed weeks of elimination tournaments.

MORE than 4,000 Shell employees and guests turned out Saturday, May 13, to celebrate Plant Day at Norco. This year marks the Refinery's 30th Anniversary. The annual affair was, as usual, crammed with activities from eight in the morning until late at night. The occasion found many Shell employees and pensioners who formerly worked at Norco returning to meet old acquaintances.

Norco's children came in for their share of the fun. Besides the movies and games, there were rides for everyone. And to show their approval, the children kept regular lines waiting to ride the midget autos, the caterpillar and the Ferris wheel.

By midafternoon, 1,200 lbs. of barbecued beef and 800 lbs. of potato salad had been served. Activities then were transferred to the gymnasium where an amateur talent show was held. The festivities closed with a dance in the evening.



For the children there were free carnival rides, with the Ferris wheel the favorite of the day.



W. J. Bodin (left), in the far court with Sam Landry, Jr., won the doubles tennis matches.

Water: It Keeps Oil Flowing



Shell Uses Billions of Gallons of Water Every Year to Produce Its Products, but Sets Examples Along the Way in How to Conserve the Precious Liquid to Prevent Shortages

IN THE last year public attention has focussed on critical water shortages cropping up all over the nation. The drought in the mains of New York City is best known, but many areas of the country are affected. Los Angeles and Peoria, Atlantic City and Miami, Tucson, Albuquerque, El Paso and San Diego—all are worried by dwindling supplies and possible scarcities.

Industry is especially concerned, for water—even in the oil industry—is its life's blood. Water is a necessary content of thousands of manufactured items. Water makes their

manufacture more efficient and economical. For example, it takes a thousand gallons of water to produce a pound of rayon, according to estimates of the U. S. Soil Conservation Service. Over 65,000 gallons are used to make a ton of highly finished steel. It takes 300 gallons of water to brew a barrel of beer.

Oil Industry a Major Water User

Estimates of water used by the oil industry vary depending on whether or not the water used in exploration and production is counted in. The Conservation Service says it takes 10

gallons of water to turn out a gallon of gasoline. This estimate, low as it may seem in comparison with some other industries, probably includes only the water which is actually drawn from surface and underground sources for exploration, production and refining of crude oil into gasoline. It certainly does not take into account the re-use of water again and again before the oil industry is done with it.

It actually takes a great many more than 10 gallons of water just to refine a gallon of gasoline, not counting the water used in acquiring the

crude. But refineries as a general rule recirculate most of their water, using the same gallon many times. Thus they draw on their sources of supply for only a minor portion of total needs.

An Ally of the Oil Man

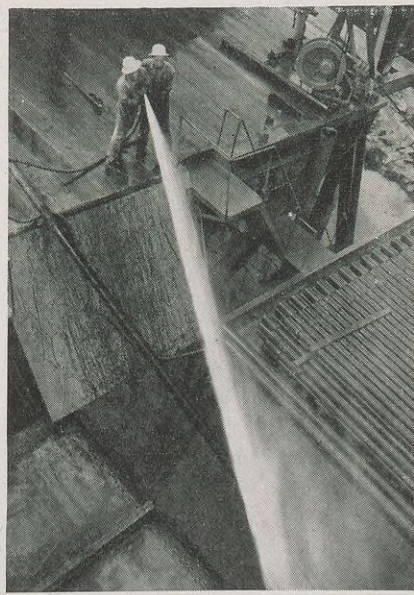
From the time crude oil is first discovered in the ground—even in the search for it—oil men find water a versatile ally. Water is used by seismic crews drilling shot holes. It is used in the drilling mud and power plants of drilling rigs. When a well is completed, water forces the crude from the ground, both naturally and by injection. It is necessary in the transportation of crude oil and finished products. It is part of the growing operations at natural gasoline plants. The greatest amount is used in refineries, but water plays a part in the oil business right down to the damp rag in the hand of a service station attendant.

There are two sources for this water: *ground water*, from underground reservoirs much like the porous oil-bearing formations, and *surface water*, drawn from lakes and streams and sometimes from the sea.

Shell exploration crews carry their own water in truck-mounted tanks, usually drawing it from municipal

taps or from wells before starting out in the morning. The many thousands of gallons needed for drilling a well are another matter. If a wildcat test is located near a river or lake, a pipe can be laid to the surface water. But often, as in the drilling of wildcats in the arid stretches of West Texas, a water well must first be drilled before the drilling for oil begins. If a wildcat comes in a producer and a field develops, a whole water system is laid out, drawing ground water from wells.

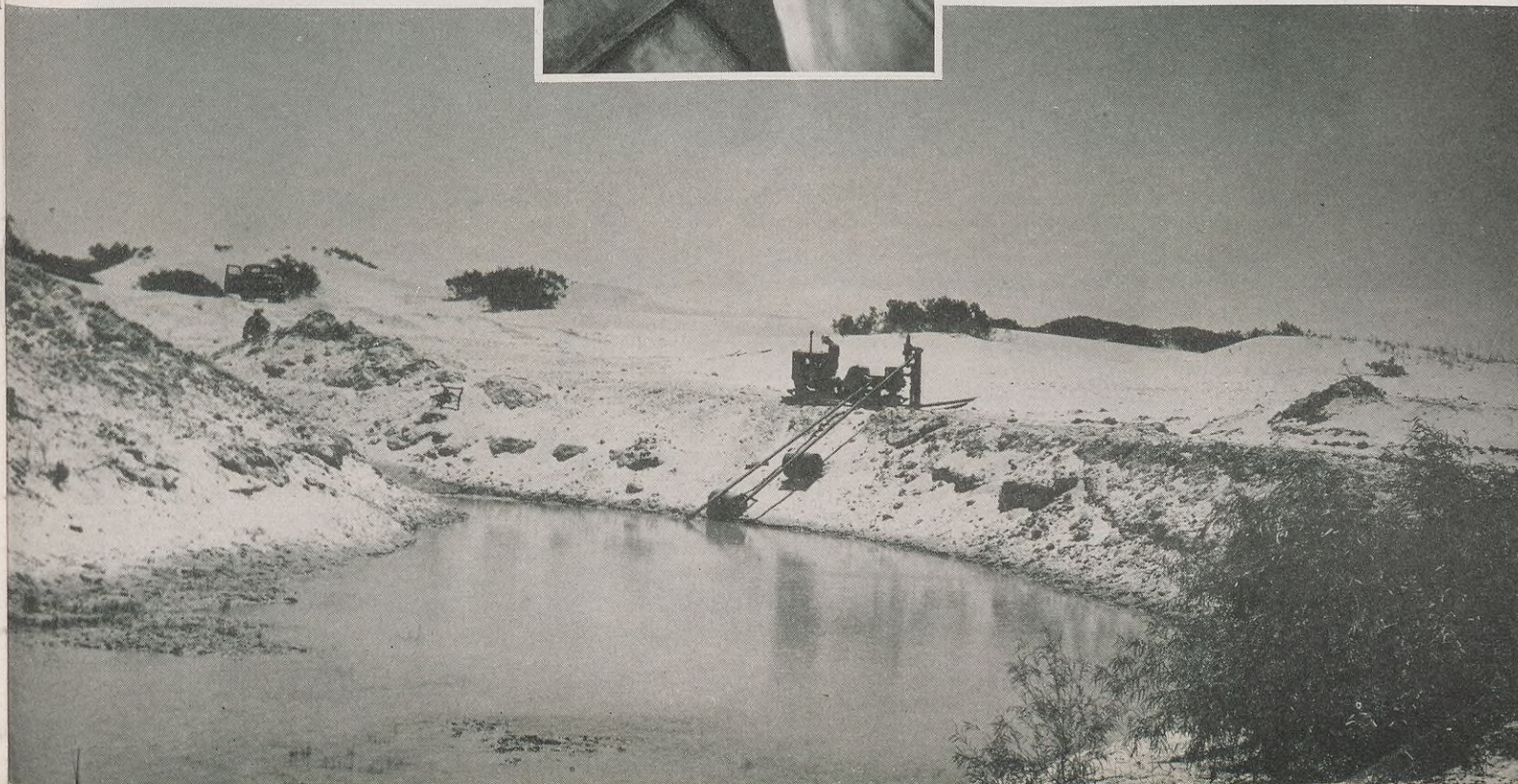
Though water, properly controlled, is necessary to the oil driller, it can be a time-consuming handicap when he strikes it underground, if accom-



^ Water for water injection, as at Benton, Ill. (above), has to be tested and kept pure so it won't clog up the porous oil strata.

< Mud making isn't the only duty of water at a rig. At Weeks Island bayou water is used to wash racks.

Water near the surface in a West Texas field was laid bare by a bulldozer, then pumped to rigs. v



panied by abnormal pressures. It can cave the sides of his hole, disrupt the circulation of his drilling mud, make special techniques and equipment necessary. But when a well is completed, water atones for its mischief and voluntarily begins to aid oil production.

Helps Force Crude to Surface

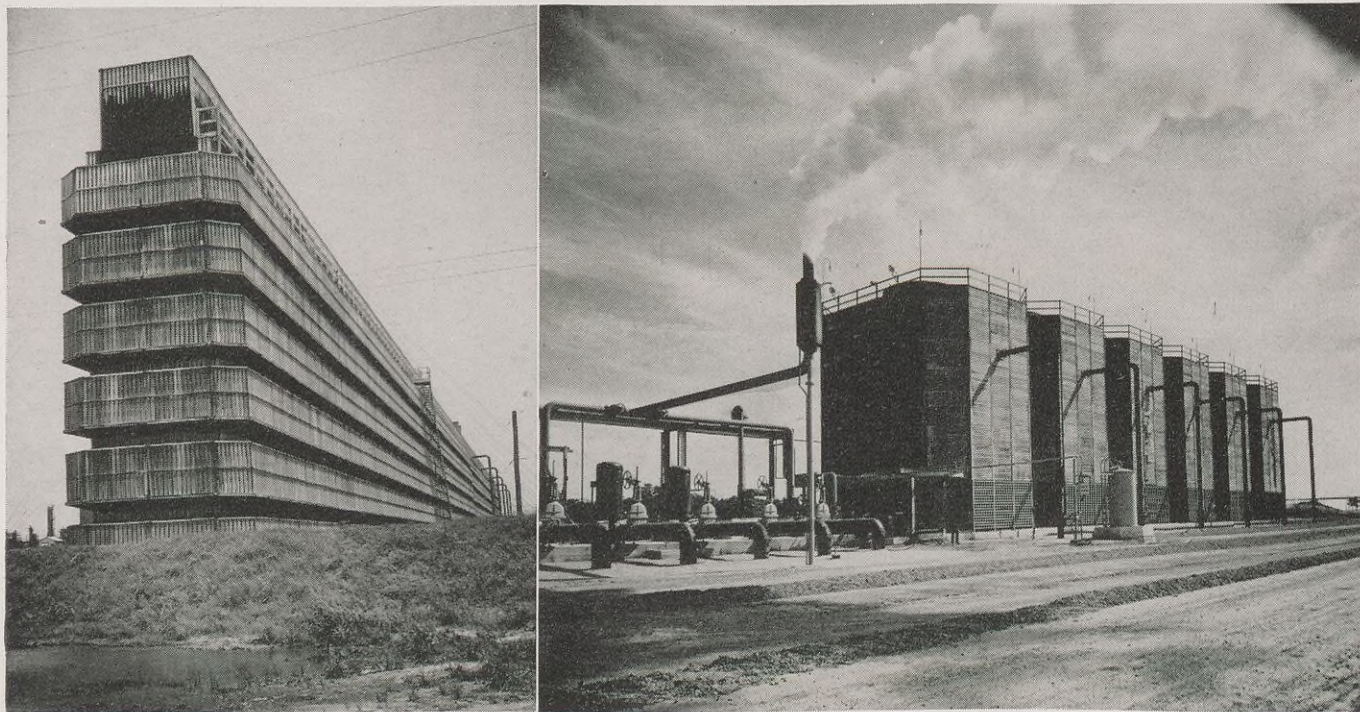
The pressure of surrounding water in the porous oil formations helps force the crude to the surface, making what is called a *flowing well*. More than half of the country's flowing wells produce by this *water drive*. In the others, gas is the force behind

mary source of supply. As the water makes a complete circuit—down the injection walls and out again with the oil in producing wells—it is separated from the crude and re-used over and over.

Pipe lines—both for crude and products—also use water, principally for cooling at pump stations. But in Shell's "hot oil pipe line," in the San Joaquin Valley of California, water is used to make steam to power the pumps and to heat the heavy crude flowing through the line. If the extremely viscous oil were not heated before entering the line, it would require 60 times as much pressure to

conservation record. For every gallon of crude oil processed in its five refineries, more than 33 gallons of water are used. But by condensing steam and re-using it, by recirculating water in cooling towers—in some cases more than two dozen times—Shell refineries draw on their water supplies to the extent of only a little more than three gallons for every gallon of crude oil processed. They actually take from the nation's resources only one-tenth of the water they need for operation.

Not all of the refinery water intake can be re-used. About a third of a gallon of the water taken in for every



Two designs for cooling towers, both at Houston Refinery, are shown here. By redesigning water cooling systems and enclosing towers in wind screens, loss by wind, splashing and leakage has been almost eliminated.

the flow, or a combination of both water and gas.

When the pressure in a well is depleted, it can still be kept flowing when conditions are favorable by repressuring the producing formation with injections of water. Shell's Benton Oil Field in Illinois, which is currently being flooded with 1,000,000 gallons of water a day, is one of the largest water injection projects in the world. In this case surface water from a nearby lake is the pri-

move it and special pipe to resist such forces.

When crude oil reaches a refinery, water floods into the picture. Shell alone uses nearly twenty-one billion gallons of water a year in its five refineries and three chemical plants, pumping in 2,350,000 gallons an hour. The intake figure is not, of course, indicative of the great volumes of water which are constantly being re-used in most of the plants. It is here that Shell sets its good water

gallon of crude is used for *domestic* purposes, like drinking fountains, toilets and showers, and for *miscellaneous* uses, such as fire fighting and washing equipment. Where the big saving is made is in the cooling systems. Seventy-five per cent of the water intake of the refineries goes for cooling—and over 29 gallons are recirculated for every two and a half gallons taken in.

About two-fifths of the water used for steam generation can be con-

densed and recirculated. But even before recirculation starts, refinery steam is doing double duty by producing electricity virtually as a by-product, thus cutting down on water intake requirements. Before going from the high pressure boilers to the processing plants, steam is first routed through large turbo-generators, where part of its heat is transformed into electrical energy. Only then is the steam sent on for processing oils by direct contact, heating oils and gases in exchangers and coils, driving pumps and compressors, maintaining temperatures in viscous products, heating buildings

their own wells. The rest is purchased from municipal water systems, except for an intake of 40,000 gallons an hour which Norco Refinery draws from the Mississippi River.

Wells Are Main Source of Supply

The river water at Norco is used for steam generation and domestic purposes, after treatment in the refinery filtration plant. Wood River uses water from its own wells for steam generation, cooling and miscellaneous uses, but buys water from nearby Roxana Village for its domestic uses. This municipal water is also taken from wells. Houston Refinery gets all

Untreated industrial water for 96 per cent of its requirements and treated domestic water for the rest.

In all, Shell refineries have 49 wells. Wood River has 20, Norco 15, Houston 10, and Wilmington 4, including the one under construction. The Houston Chemical Plant also has four of its own wells to supplement supplies from the refinery wells. The depth of the wells ranges from 125 feet at Wood River to over 1,500 feet. The deepest well at the Houston Refinery produces water from 1,540 feet below the surface. The highest pumping rate for any of the wells is 150,000 gallons per hour.

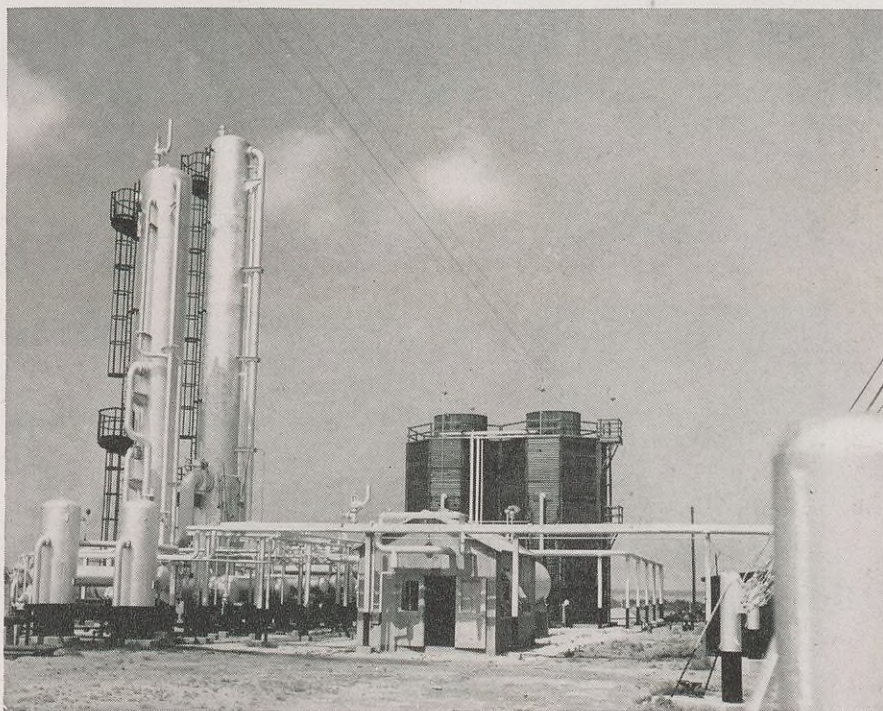
Since about 75 per cent of the refinery water intake is used in the cooling systems, most of this pumping is merely to replace that water which evaporates, splashes away or otherwise disappears from the cooling towers. Only a small portion of the water is ever deliberately discarded—and then only to prevent excessive concentrations of salt in the recirculated water and to carry off sediment which collects in the basins beneath the towers.

Evaporation Promotes Cooling

The evaporation is necessary, for otherwise there would be very little drop in temperature before the water enters the processing plants again. The real loss, which can be considered that in the strictest sense of the word, is the loss from leakage, splashing and wind.

In recent years, refining specialists have eliminated most of the waste by redesigning cooling systems and building drift eliminators in the towers. Today *drift* or *windage loss* accounts for only a tiny fraction of one per cent of the water used in Shell's refinery cooling systems. It's just another example of water conservation in the oil industry.

While comparatively few sections of the nation are in real danger of water failures, the peril can spread, and it remains for communities to enlist the same technology which has sparked our progress to develop further water resources and conservation methods.



Water is also much in use at natural gasoline plants, as shown by the cooling tower above (center, background) at Shell's Wasson No. 2 Plant.

and a myriad other tasks. Shell refineries produce over 400 million kilowatt hours of their own electricity every year. The amount generated at Houston and Wood River would serve a city the size of Oklahoma City, San Diego or Fort Worth. If a separate system were maintained to produce this electricity, more water, and, of course, more fuel and expense, would be necessary.

Almost 90 per cent of the water used by Shell refineries and chemical plants is ground water, taken from

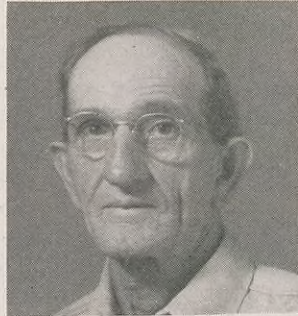
of its water from wells. Wilmington gets 93 per cent from three operating wells, purchasing the balance from the municipal water supply. A fourth well is under construction.

Martinez is the only Shell refinery buying all of its water. It formerly used river water for cooling processes. But tide and drainage caused wide variations in the content of salt and impurities, and it became more economical to buy water outright. The refinery takes two grades of water from the municipal supply:

They Have Retired



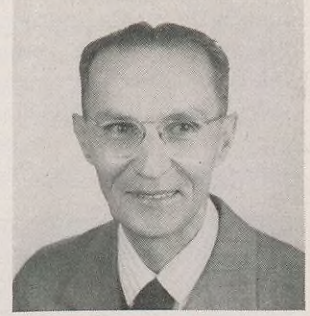
THOMAS ALEXANDER
Wilmington Refinery
Engineering



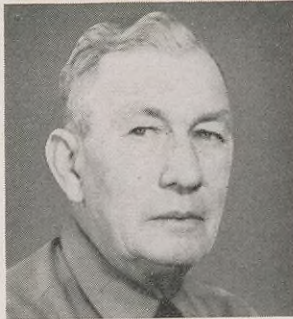
A. F. BECKER
Shell Pipe Line Corporation
West Texas Area



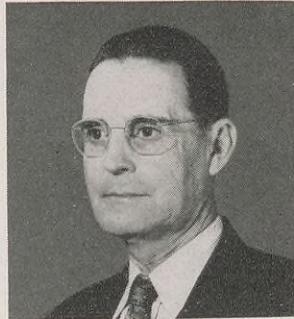
J. F. CARNEY
Wood River Refinery
Engineering



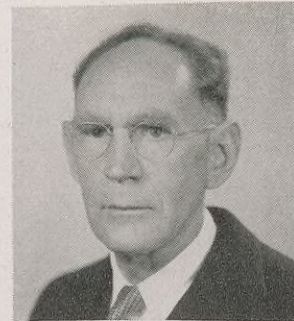
E. F. J. COLONNA
Martinez Refinery
Control Laboratory



C. A. GILHAM
Midland Area
Production



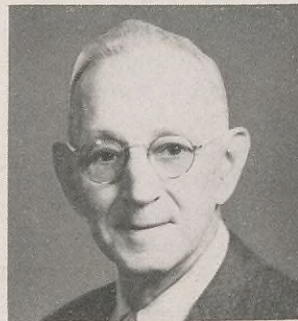
A. J. HASLER
Wilmington Refinery
Dispatching



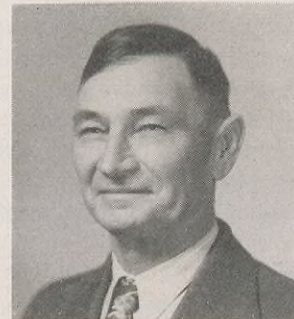
R. H. HILL
Los Angeles Basin Division
Production



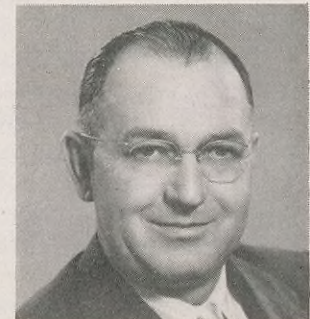
W. J. HOECHE
Wood River Refinery
Engineering



E. J. JUNEAU
Wood River Refinery
Engineering



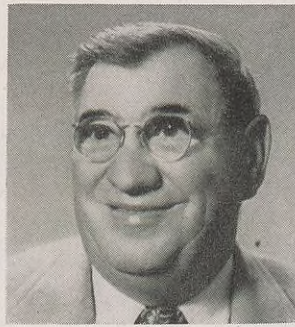
C. H. KRUEMCKE
Houston Area
Production



I. N. KUCKENBAKER
San Joaquin Division
Production



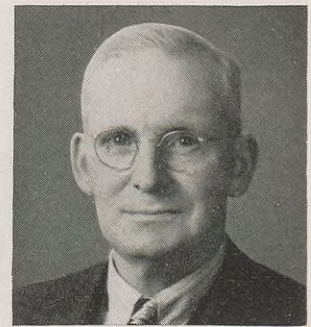
A. F. MEYER
Shell Pipe Line Corporation
Mid-Continent Area



H. J. MOOK
San Joaquin Division
Production



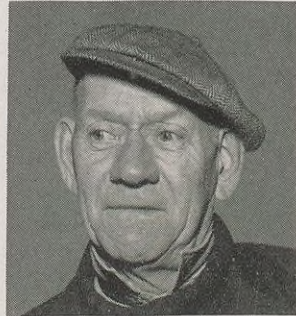
CAGE NIXON
Houston Refinery
Engineering



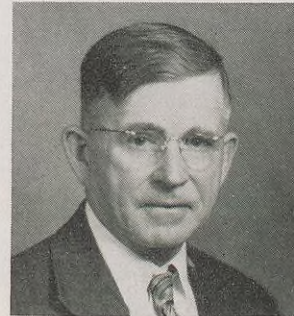
W. S. PARKER
Boston Division
Operations



F. B. PUGH
Midland Area
Production



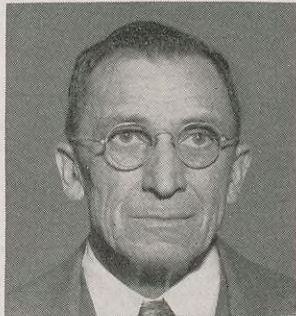
J. H. RANDOLPH
Sewaren Plant
Compounding



S. R. RICE
Wood River Refinery
Engineering



E. M. ROBINSON
Los Angeles Basin Division
Production



C. A. RUBAHA
Sewaren Plant
Terminal



J. R. SHENTON
Wood River Refinery
Engineering



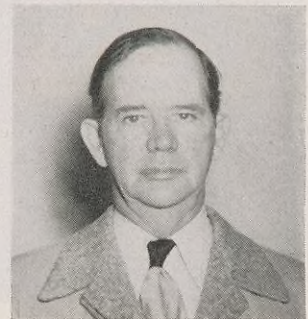
EDWARD SYLTE
Minneapolis Division
Operations



J. W. TICKNER
Wood River Refinery
Engineering



R. A. THOMAS
Cleveland Division
Sales



E. B. WAGNER
Shell Chemical Corporation
Houston Plant

coast to coast



The Ten-and-Over Club in the St. Louis Marketing Division recently held its annual Service Award Banquet in that city's De Soto Hotel. More than 200 employees and 45 retired employees attended.



Shown above is part of the large crowd which turned out for the barn dance recently sponsored by San Francisco Marketing Division personnel. Gingham dresses and plaid shirts were much in evidence.

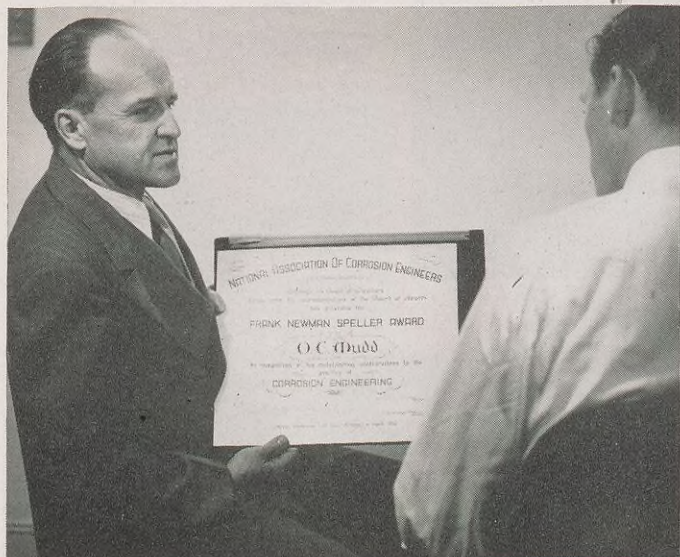


Atlanta Marketing Division Office bowlers closed the 1949-1950 season with a dinner at which trophies were awarded to members of the high-scoring team. Low-scoring team members received dunce caps.



Shell Pipe Line's President, T. E. Swigart (r.), and Vice President H. H. Anderson (l.) look on as D. M. Farrell (3rd from l.) receives the National Safety Council's 1949 petroleum section contest award.

Art Krull (l.), winning men's team captain, receives a trophy from Jim McNulty, ending the Head Office bowling season. Kay Schretzman, captain of the ladies' division winners, looks on. >



^ O. C. Mudd (l.), Shell Pipe Line Corp., displays the F. N. Speller Engineering Award for 1950 signifying top honors in corrosion engineering. Mr. Mudd received the award in St. Louis at the annual meeting of the National Association of Corrosion Engineers.



^ J. W. LaBoon, veteran Shell Pipe Line employee, has been installed as president of the Tulsa Petroleum Electric Club.



< At meetings in New York Head Office, W. D. Young, Communications Supervisor, and Miss Jean Thacker, Chief Operator (both at table), made it clear that Shell's long distance telephone calls are not cheap.



< When R. W. White, of Shell Chemical's Houston Plant, joined the Shell Employees Recreation Association, he became the 2,000th member. Thelma Swanson (center) presented White his membership card, and Juanita Price (right) was active in the membership drive.

> R. M. Noell, bowling league secretary in the Baltimore Marketing Division, presents trophies to winning team members (l. to r.) Mabel Siskron, E. C. Swanson, C. W. Kendall, Noell, G. H. Swanson and Elaine Kendall.



Shell Oil's Personnel and Industrial Relations team won first place in the 1949-50 bowling League in the San Francisco Office. Members are (l. to r.) Walt Barnes, Tom McCue, Jack Malloy, J. N. Hull and L. W. Bingham.



Eight French petro-chemical specialists visited Shell Development Company Laboratories at Emeryville during their recent ECA-sponsored tour of the United States. H. G. Vesper (center) acted as Shell's host to the visitors.

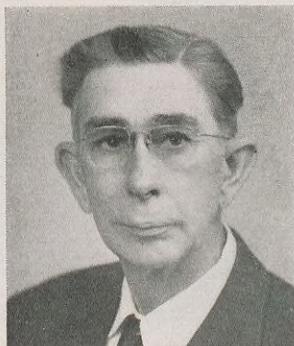


Service Birthdays



Thirty-Five Years

Thirty Years



H. J. BEST
Tulsa Area
Production



C. R. STRAIN
Martinez Refinery
Dispatching

Thirty Years



T. I. DEASY
San Francisco Office
Treasury

Thirty Years



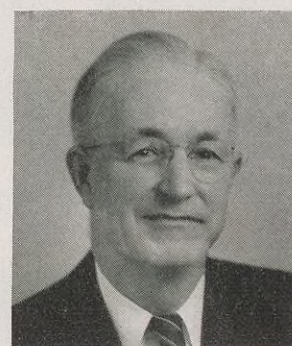
P. E. HURLEY
Norco Refinery
Manager



ANDREW MASTRIGHT
Los Angeles Basin Division
Production



H. F. MINER
Portland Division
Operations



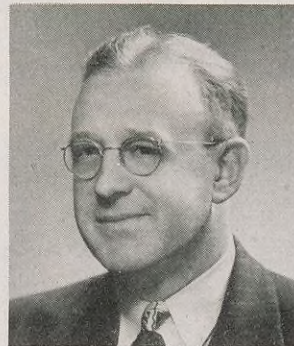
A. B. OTTINGER
Tulsa Area
Production



F. P. ROGERS
San Joaquin Division
Production



H. L. ROLLI
Wood River Refinery
Cracking



E. F. SCHULTE
San Francisco Office
Purchasing-Stores



E. N. WOOD
Wood River Refinery
Distilling

Twenty-Five Years



A. I. ARBOUGH
Wood River Refinery
Engineering



L. L. ARNOLD
Shell Pipe Line Corp.
Texas-Gulf Area



M. C. BARTHOLOMEW
San Francisco Division
Operations



L. B. BERRY
Midland Area
Crude Oil



L. W. BINGHAM
San Francisco Office
Per. & Ind. Relations



R. W. BOND
Houston Regional
Office—Production



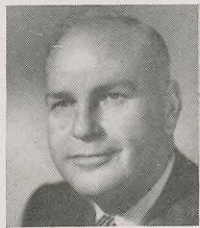
G. K. BRUCE
Wood River Refinery
Engineering



G. W. BURTON
Shell Pipe Line Corp.
Mid-Continent Area



C. H. CHRISTIE
Los Angeles Basin Div.
Production



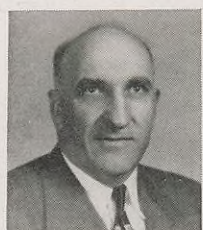
K. T. CONNELL
Los Angeles Division
Sales



T. R. CORREIA
Martinez Refinery
Engineering



E. N. CULLINGHAM
Los Angeles Office
Treasury



D. S. DAY
Portland Division
Sales



P. J. DUHE
Norco Refinery
Distilling



D. M. FARRELL
Shell Pipe Line Corp.
Head Office



W. F. GALLAGHER
Martinez Refinery
Engineering



L. J. HALL
Portland Division
Sales



H. R. HELVIE
Wood River Refinery
Lubricating Oils



A. H. JOHNSON
Tulsa Area
Production



B. KEENEY
Wilmington Refinery
Engineering



J. E. KENNEDY
Wood River Refinery
Engineering



K. C. KINKADE
Head Office
Marketing



J. J. KUEHN
Products Pipe Line
Lima, Ohio



L. LANDRY, JR.
Norco Refinery
Engineering



G. J. LANDWEEK
San Francisco Div.
Sales



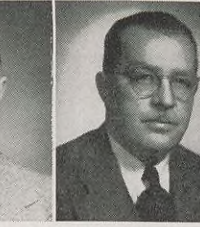
A. E. MARTIN
Detroit Division
Operations



E. H. MAY
Portland Division
Operations



A. McDONALD
Shell Chemical Corp.
Torrance, Calif.

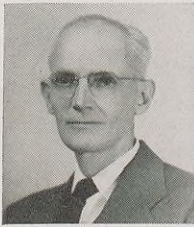


H. E. McDONALD
Wilmington Ref'y
Dispatching



J. McFARLAND
Head Office
Transp. & Supplies

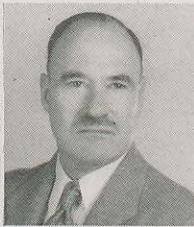
GUY MILLER
Wood River Ref'y
Engineering



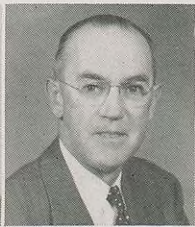
H. N. NUNNALLY
Wood River Ref'y
Lubricating Oils



L. B. PEARSON
Portland Division
Operations



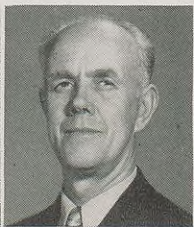
T. C. PETERS
Houston Area
Exploration



J. R. PUETT
Sacramento Division
Treasury



J. W. REID
Wood River Ref'y
Cracking



A. C. SANDSTROM
Wilmington Ref'y
Effluent Cont. & Util.



L. W. SCHROEDER
San Francisco Div.
Operations



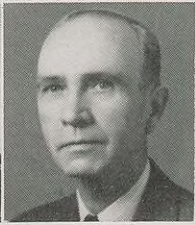
E. R. SMITH
New Orleans Area
Production



J. A. SPANHOLTZ
Wood River Ref'y
Engineering



E. E. SWARTZ
Seattle Division
Operations



F. S. TEAGUE
San Francisco Div.
Operations



H. C. TICKEL
Shell Pipe Line Corp.
Mid-Continent Area



L. E. WOLF
Wilmington Ref'y
Cracking



A. K. WOODS
Tulsa Area
Production

SHELL OIL COMPANY

Head Office

20 Years

Anna C. Carroll... *Provident Fund and Pension Trust*
W. J. Daly... *Treasury*
F. N. Turner... *Treasury*

15 Years

J. J. Pawol... *Marketing*
Doris S. Ramos... *Treasury*

San Francisco Office

20 Years

C. S. Garvin... *Marketing*

15 Years

F. R. Hatch... *Marketing*

Exploration and Production

CALGARY AREA

15 Years

H. L. Koch... *Exploration*

HOUSTON AREA

20 Years

T. G. Westbrook... *Production*

15 Years

K. R. Bowie... *Production*
R. J. Dobson... *Production*
E. Fincher... *Production*
S. Miron... *Production*
E. C. Thibodaux... *Exploration*

MIDLAND AREA

15 Years

C. A. Cox... *Production*
A. M. Moore... *Production*

10 Years

L. O. Storm... *Production*

NEW ORLEANS AREA

20 Years

H. K. Hubbard... *Gas*

15 Years

F. J. Taylor... *Production*
W. E. Walker... *Production*
V. O. Wunstel... *Production*

10 Years

L. P. Layman... *Production*

TULSA AREA

20 Years

C. Cosper... *Production*
E. F. Holeman... *Production*
C. M. Ross... *Production*

15 Years

B. O. Prescott... *Exploration*

10 Years

R. L. Rankin... *Production*
E. W. Triplett... *Production*

LOS ANGELES REGIONAL OFFICE

15 Years

Louise H. Schock... *Production*

10 Years

L. H. Smith, Jr... *Exploitation*

COASTAL DIVISION

15 Years

W. S. Cook... *Production*
R. G. Smith... *Production*
G. York... *Production*

10 Years

K. W. Plank... *Production*
R. L. Wood... *Production*

LOS ANGELES BASIN DIVISION

15 Years

N. C. Cook... *Treasury*

ROCKY MOUNTAIN DIVISION

15 Years

P. L. Kartzke... *Administration*

SAN JOAQUIN DIVISION

20 Years

C. A. Myers... *Production*

15 Years

R. B. Champlin... *Production*
F. J. Toth... *Production*

PIPE LINE DIVISION (California)

20 Years

A. C. Grant... *Production*

Manufacturing

HOUSTON REFINERY

20 Years

E. L. Curtis... *Engineering*
S. R. Martin... *Engineering*
W. W. Smith... *Engineering*

15 Years

H. M. Baines... *Engineering*
T. L. Billingsley... *Engineering*
O. P. Breeding... *Lubricating Oils*
L. R. Brossette... *Treating*
C. N. Evans... *Engineering*
R. J. Griffin, Jr... *Lubricating Oils*
L. B. Harris... *Engineering*

J. M. Hatcher.....Dispatching
 J. Kandal.....Dispatching
 L. D. Marsac.....Treating
 J. B. Masterson.....Engineering
 W. W. Myers.....Control Laboratory
 J. V. Newsom.....Engineering
 W. A. Phillips.....Distilling
 L. J. Schumacher.....Engineering
 C. M. Sharpe.....Engineering
 J. W. Spencer.....Engineering
 J. R. Wacey, Jr.....Engineering
 A. L. Williams.....Treating

10 Years

W. A. Enderson.....Control Laboratory
 R. P. Ermis.....Engineering
 E. Manning, Jr.....Research Laboratory
 J. A. Marshall.....Research Laboratory

MARTINEZ REFINERY

15 Years

W. P. Coward.....Dispatching
 C. L. Grover.....Engineering
 C. H. House.....Control Laboratory

10 Years

A. M. Kraintz.....Distilling

NORCO REFINERY

20 Years

G. J. Bleakley.....Personnel & Ind. Relations
 A. Duhe.....Engineering
 L. Keller.....Engineering

10 Years

J. R. Dufresne.....Personnel & Ind. Relations
 C. Simoneaux.....Engineering

WILMINGTON REFINERY

20 Years

C. H. Humrich.....Effluent Control & Utilities
 J. F. Ledbetter.....Engineering
 F. V. Whitehouse.....Engineering

15 Years

N. A. Cowan.....Engineering
 F. Hunter.....Engineering
 C. M. Jefferay.....Fire & Safety

WOOD RIVER REFINERY

20 Years

L. Bean.....Treating
 R. T. Gent.....Engineering
 R. G. Heidinger.....Cracking
 E. J. Jones.....Engineering
 S. T. Lane.....Control Laboratory

15 Years

J. R. D. Creekmore.....Engineering
 A. J. Elkey.....Engineering
 T. C. Harris.....Engineering
 H. R. Kemmerer.....Products Application
 C. E. Lexow.....Control Laboratory
 G. McConnell.....Engineering
 C. Moore.....Engineering
 J. H. Mourning.....Engineering
 J. L. Nagy.....Engineering
 A. J. Otte.....Engineering
 A. E. Sanders.....Engineering
 W. J. Schipkowski.....Engineering
 G. A. Sinniger.....Gas
 R. P. Skinner.....Cracking
 J. M. Stassi.....Compounding

10 Years

M. H. Brecht.....Control Laboratory
 W. B. Bryant.....Cracking
 E. A. Campbell.....Distilling
 B. C. Cole.....Fire & Safety
 J. L. Decker.....Control Laboratory
 L. A. Dye.....Alkylation
 N. E. Everett.....Dispatching
 L. A. Hemmer.....Gas
 B. E. Jarden.....Engineering
 G. G. Lamb.....Effluent Control
 H. G. Mead.....Treating
 I. B. Metheny.....Engineering
 D. W. Miller.....Technological
 R. C. Rathert.....Control Laboratory
 G. L. Rainwater.....Engineering
 J. B. St. Clair.....Lubricating Oils
 G. L. Shaver.....Engineering
 I. K. Simmons.....Lubricating Oils
 R. E. Waugh.....Alkylation

Marketing Divisions

20 Years

H. J. Herzog.....Albany, Operations
 F. S. McCook.....Albany, Sales
 T. H. Hughes.....Baltimore, Sales
 C. J. Bassett.....Boston, Operations
 G. E. Fitzgerald.....Boston, Operations
 E. R. Howard.....Boston, Operations
 D. L. Smith.....Boston, Operations
 L. J. Taylor.....Boston, Marketing Service
 A. B. Ravera.....Chicago, Operations
 F. C. Reeve.....Chicago, Treasury
 R. E. Ridgeway.....Chicago, Sales
 R. H. Funk.....Cleveland, Operations
 J. Ledermeier.....Cleveland, Operations
 J. C. Holzworth.....Detroit, Sales
 F. J. Winkel.....Detroit, Operations
 F. L. Knauer.....Los Angeles, Operations
 H. L. Freer.....Minneapolis, Sales
 H. A. Kornegor.....Minneapolis, Operations
 P. C. Velure.....Minneapolis, Operations
 W. S. Banta.....New York, Treasury
 J. Bodecker.....New York, Operations
 S. R. Bruckner.....New York, Sales
 C. S. Moreland.....Portland, Operations
 Evelyn O'Mahony.....San Francisco, Treasury
 L. C. Jacobson.....Seattle, Operations
 H. A. Lundberg.....Seattle, Operations

15 Years

F. L. Kinchen.....Atlanta, Operations
 W. C. Lehigh.....Atlanta, Sales
 J. G. Cleary.....Boston, Sales
 A. T. Bartlett.....Chicago, Operations
 W. M. Smith.....Chicago, Sales
 W. J. Leisring.....Cleveland, Operations
 G. A. Akers, Jr.....Los Angeles, Operations
 W. D. Kerr.....Minneapolis, Sales
 Margaret J. Schamerhorn.....Seattle, Operations

10 Years

T. Fredericks.....Albany, Operations
 R. E. Glatzel.....Baltimore, Treasury
 J. F. Alyward.....Boston, Operations
 W. C. DeCosta.....Boston, Operations
 M. R. Kelly.....Boston, Treasury
 V. R. McCubrey.....Boston, Sales
 P. L. Herrick.....Los Angeles, Sales
 A. S. Smith.....Los Angeles, Operations
 W. F. Otey.....Portland, Operations
 T. J. Grieve, Jr.....San Francisco, Sales

Products Pipe Line

10 Years

G. D. Harden.....East Chicago, Ind.
 R. A. Harvey.....East Chicago, Ind.

Sewaren Plant

20 Years

H. J. Stankiewicz.....Terminal

15 Years

P. Rohack.....Depot

10 Years

F. M. Maniscalco.....Terminal
 L. V. Moffitt.....Terminal
 F. Nagy.....Terminal

SHELL CHEMICAL CORPORATION

20 Years

J. A. MacKinnon.....Dominguez

15 Years

J. E. Mantoath.....Houston
 L. R. McCollum.....Houston
 R. K. Mead.....Eastern Division
 R. W. Smith.....Houston
 A. W. Williams.....Houston
 O. M. Williams.....Martinez
 R. E. Wright.....Houston

10 Years

L. J. Caten.....Shell Point
 O. J. Hollinger.....Shell Point
 B. W. Huie.....Shell Point
 A. L. Patton.....Shell Point

SHELL DEVELOPMENT COMPANY

20 Years

T. W. Evans.....Emeryville
 Thelma Hoffman.....San Francisco
 A. Pestana.....Emeryville
 E. D. Peters.....Emeryville
 B. Stolley.....Emeryville

15 Years

J. W. Givens.....Emeryville

SHELL PIPE LINE CORPORATION

20 Years

G. W. Hoel.....Mid-Continent Area
 O. C. Mudd.....Head Office
 W. E. Schuenemeyer.....Mid-Continent Area
 E. G. Stafford.....West Texas Area
 J. B. Webster.....Mid-Continent Area

15 Years

W. H. Bugg.....Mid-Continent Area
 C. W. Gold.....West Texas Area
 J. Kerr.....Texas Gulf Area
 M. D. Pool.....West Texas Area
 F. Rhay.....Mid-Continent Area
 C. B. Shell.....Head Office

10 Years

H. D. Burton.....West Texas Area
 C. H. Dawes.....Mid-Continent Area
 R. Hunsucker.....Mid-Continent Area
 B. E. Miller.....Head Office
 F. L. Smith.....West Texas Area