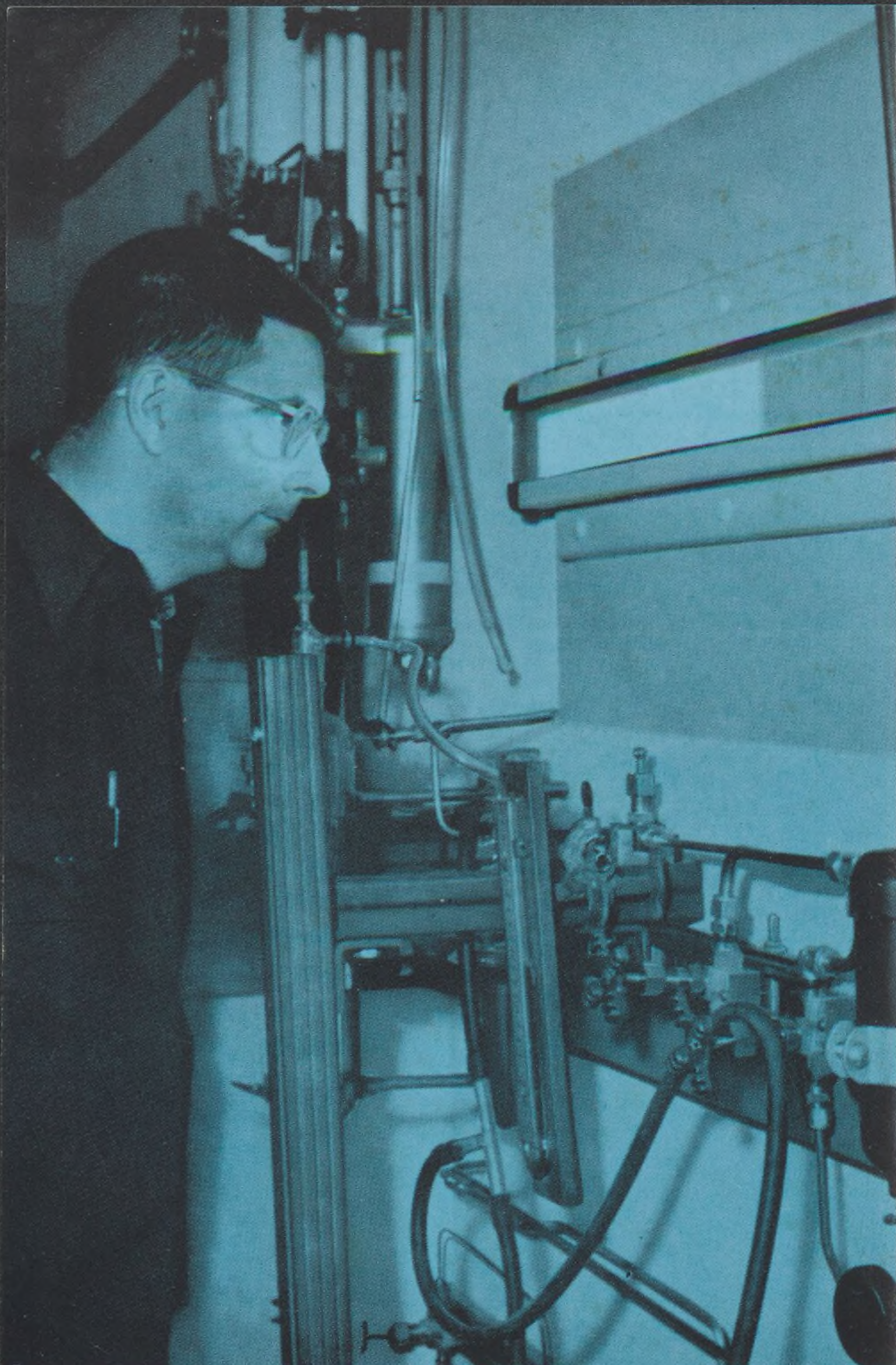
SHELL NEWS

POINTING TOWARD OIL

MAY 1959



Observing, through a window slit, preparation of the catalyst used to promote the polymerization step, is Laboratory Assistant P. J. Dougherty of the Chemical Reaction Process Department at Emeryville.

AT Shell Chemical Corporation's Torrance Plant, the recent recession was converted into an opportunity. The recession took away sales of rubber, but provided both time and facilities to achieve commercial production of a synthetic duplicate of natural rubber.

The new synthetic, which can be used in certain applications where ordinary synthetic rubber is not satisfactory, is Shell Isoprene Rubber. (Isoprene is the building block of the natural rubber molecule.) Its commercial production at Torrance ends man's search for an economic way to manufacture a duplicate of what nature makes in a tree. Natural rubber performs better than ordinary synthetic rubber in some uses.

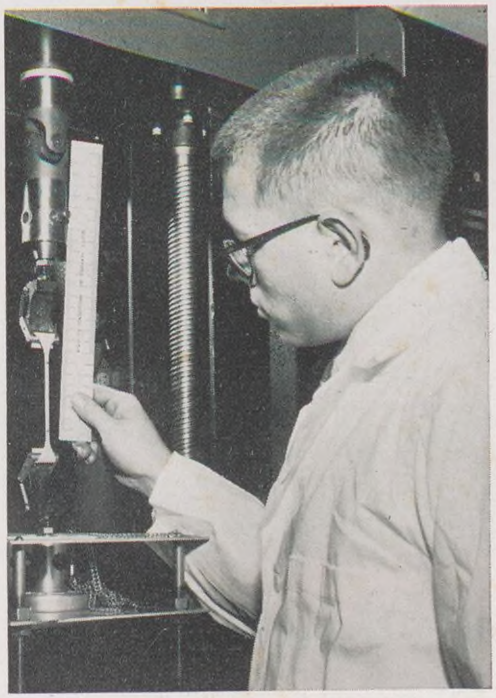
When Shell Chemical bought the Torrance facilities in 1955, Shell Development Company intensified its rubber research. (Shell Development had been engaged in synthetic rubber research since the early 1930's and in 1941 Shell Chemical first built a plant at Houston to manufacture butadiene, a major ingredient of ordinary synthetic rubber. Shell Chemical designed, built and then operated the Torrance butadiene facilities for the Federal Government from 1943 to 1947 and from 1950 to 1955.)

In the course of its general research on synthetic rubber, Emeryville Research Center had been conducting in-

TORRANCE TAKES AN

The recession gave this Shell Chemical plant an opportunity to p

Research Chemist W. R. Hendricks runs a sample of the new product through a Torrance "rubber mill."



The tensile strength of the new product is tested at Torrance by Research Analyst C. H. Baker.

vestigations into various synthetics that would be more effective substitutes for natural rubber, and by late 1957, it had developed several promising processes, one of which was for making Isoprene Rubber.

The general business recession of 1957 afforded an opportunity to use certain commercial-sized equipment part time for the development of this process. In effect, the pilot plant stage might be skipped if the equipment could be suitably modified, and the process made to work in it. By extraordinary effort, in which Development, Oil and Chemical people all contributed, this was done, and significant progress in the perfection of

N OPPORTUNITY

o produce the synthetic duplicate of natural rubber

SHELL NEWS

VOL. 27—No. 5 MAY, 1959

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

Employee Communications Department
New York, N. Y.

contents

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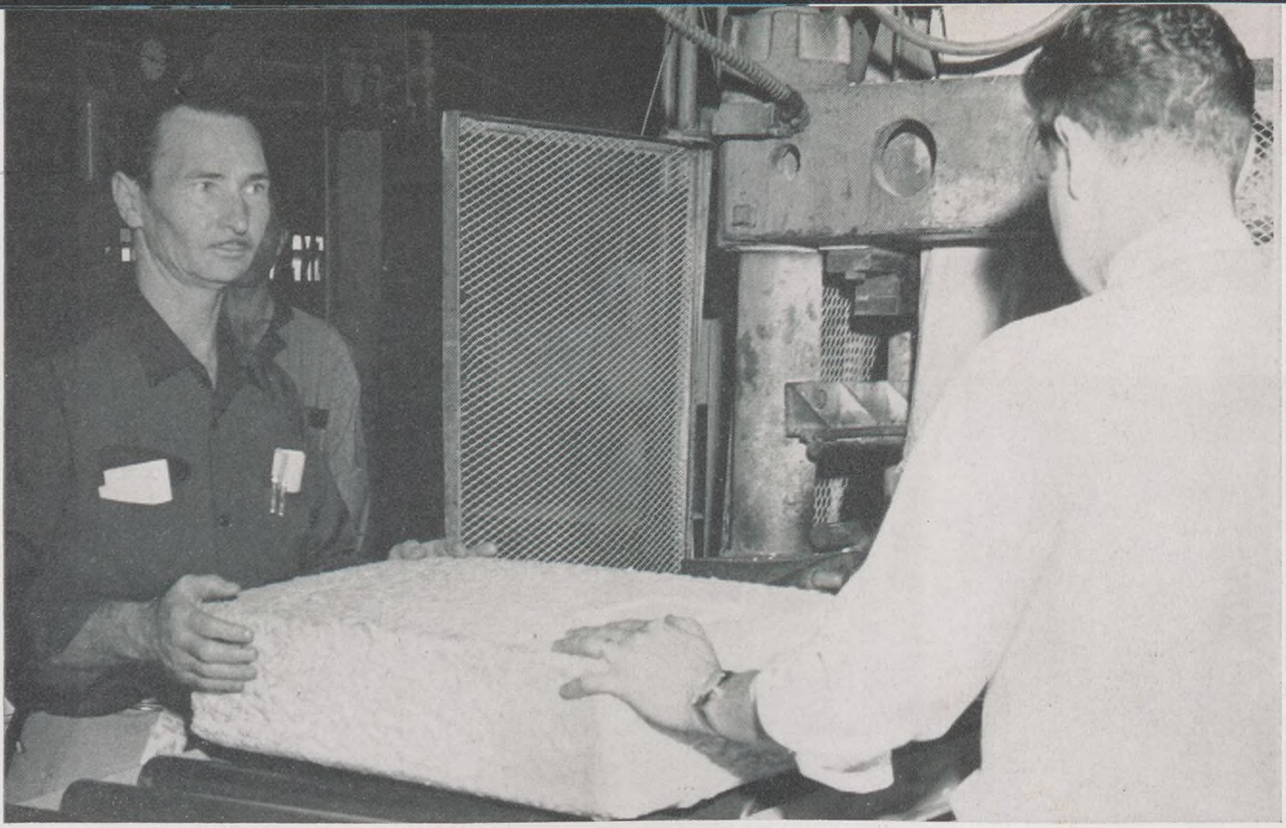
ABOUT THE COVER

The men on this month's front cover are using a special magnetometer, believed to be the most sensitive of its kind in the world. It was developed by scientists of Shell Development Company's Exploration and Production Research Division at Houston along principles previously announced by physicists at Carnegie Institution at Washington, D. C., to help develop a new clue in the search for oil. The men pictured are Laboratory Assistant R. C. Stokes, left, who is adjusting the recording equipment of the special magnetometer, and Technician A. Walters, who is watching the instrument's operation. For more information about Shell's new clue in oil exploration, turn to page 4.



The first bale of Shell Isoprene Rubber, fresh from the molding machine at the Torrance Plant, is held by Shift Foreman John Hicks, left, and Technical Assistant R. B. Howard, both of the Operations-Copolymer Finishing Dept.

The first bales of Shell Isoprene Rubber were sent from the Torrance Plant t

the process was made.

The pilot plant stage often may take from two to five years. Skipping it meant a chance to save a lot of time and money. But it also involved a gamble.

"We took a calculated risk in going directly to large-scale facilities," said J. P. Cunningham, General Manager of Shell Chemical's Synthetic Rubber Division. "But it paid off in process improvements and cost-saving modifications which might otherwise have taken years to find."

Progress was so rapid that experimental quantities of Shell Isoprene Rubber were produced before the end of 1958.

The United States Rubber Company's Tire Development Department at Detroit made tires of the new product, and tested them in the laboratory and on the road. U. S. Rubber said the new synthetic requires shorter curing time and fewer processing steps than natural rubber and causes fewer molding defects. It is "a duplicate of the better grades of natural rubber" in performance, U. S. Rubber said.

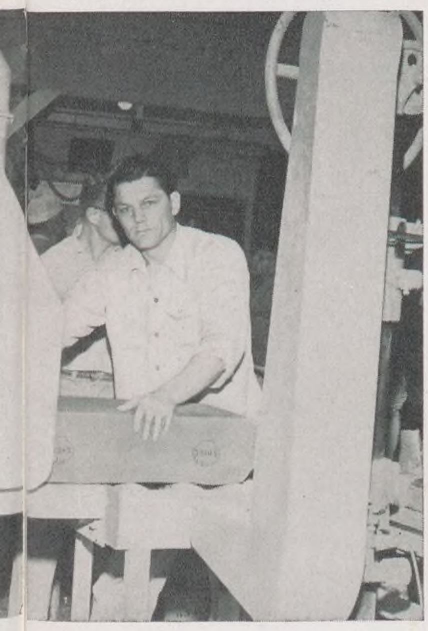
U. S. Rubber already is using Shell Isoprene Rubber in manufacturing truck tires—which formerly could be made only of natural rubber – in its Los Angeles plant. And Shell Chemical has announced plans to expand Torrance production of the new product to 15,000 to 20,000 tons a year.

R. C. McCurdy, President of Shell Chemical, pointed out that with the introduction of Shell Isoprene Rubber, the Torrance Plant will have a broader range of potential outlets than with general purpose synthetic rubber alone.

This is true because of the different characteristics of natural and ordinary synthetic rubbers. About one third of all rubber requirements of the United States previously could be met only by natural rubber. For example, truck tires required the cooler-running natural product because previous synthetic truck tires could not release heat quickly enough. Another one-third of all rubber needs are best met by ordinary synthetic rubber. For example, synthetic rubber treads on automobile tires—which do not have the heat problem of truck tires—outwear natural rubber.

But the remaining one-third of all U. S. rubber requirements – everything from drain plugs to door mats—can be made of either synthetic or natural rubber. The deciding factor usually has been cost; and because ordinary synthetic rubber has been selling for less than tree-grown rubber for some time, about two-thirds of

Packaging the first bale of the new product is O. J. Pray of the Operations-Copolymer Finishing Department.



Loading the first shipment are, left to right, Fork Truck Operator J. E. Aragon, Truck Driver L. Esparza, and Fork Truck Operators J. W. Bailey and J. A. Baskett. The shipment went by rail to the U. S. Rubber Company in Detroit.

t to the U. S. Rubber Company for testing

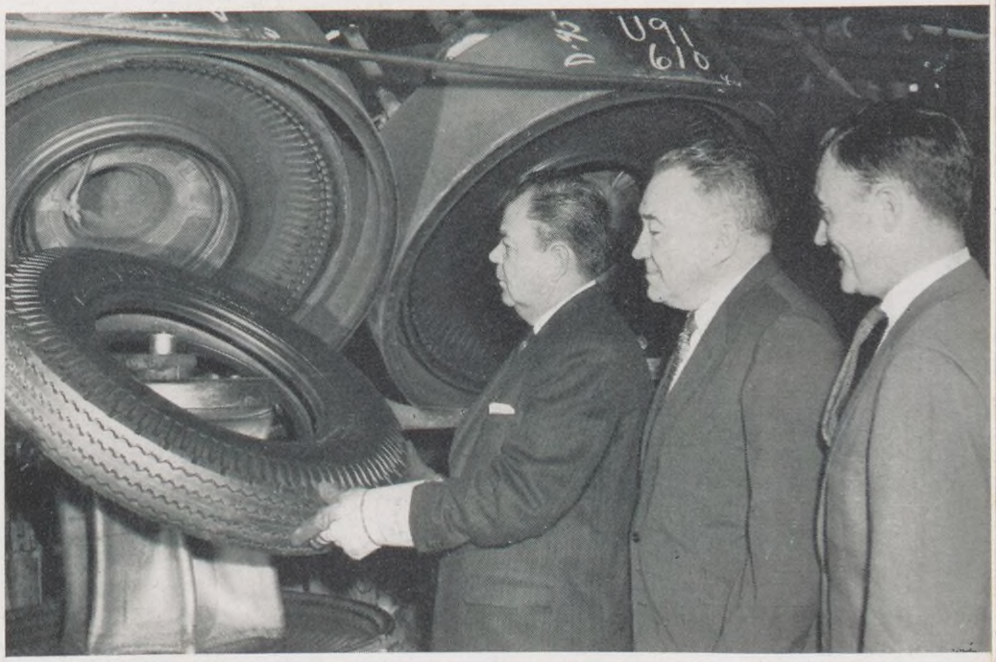
this country's rubber goods is made of synthetic rubber.

The initial price of Shell Isoprene Rubber was 30 cents a pound—about the same as the price of high-quality natural rubber.

McCurdy said that the so-called "synthetic natural rubbers" are expected to help reduce the ups and downs of the natural rubber market and to allow rubber fabricators to plan ahead with more confidence. This should broaden markets for both natural and synthetic rubbers.

Perhaps most important is that the U. S. now is potentially free of dependence on overseas sources of natural rubber – a fact that would be important in times of national emergency.

A considerable number of firms are testing the product with a view toward developing markets for it.



The first commercial tire made from Shell Isoprene Rubber in Los Angeles is checked by, left to right, B. S. Adams and D. W. Walsh, both of the United States Rubber Company, and J. P. Cunningham, General Manager of Shell Chemical's Synthetic Rubber Division.

POINTING TOWARD OIL

Geologists and physicists of Shell Development's E&P Research Division at Houston combined their talents to develop a new clue in the search for oil

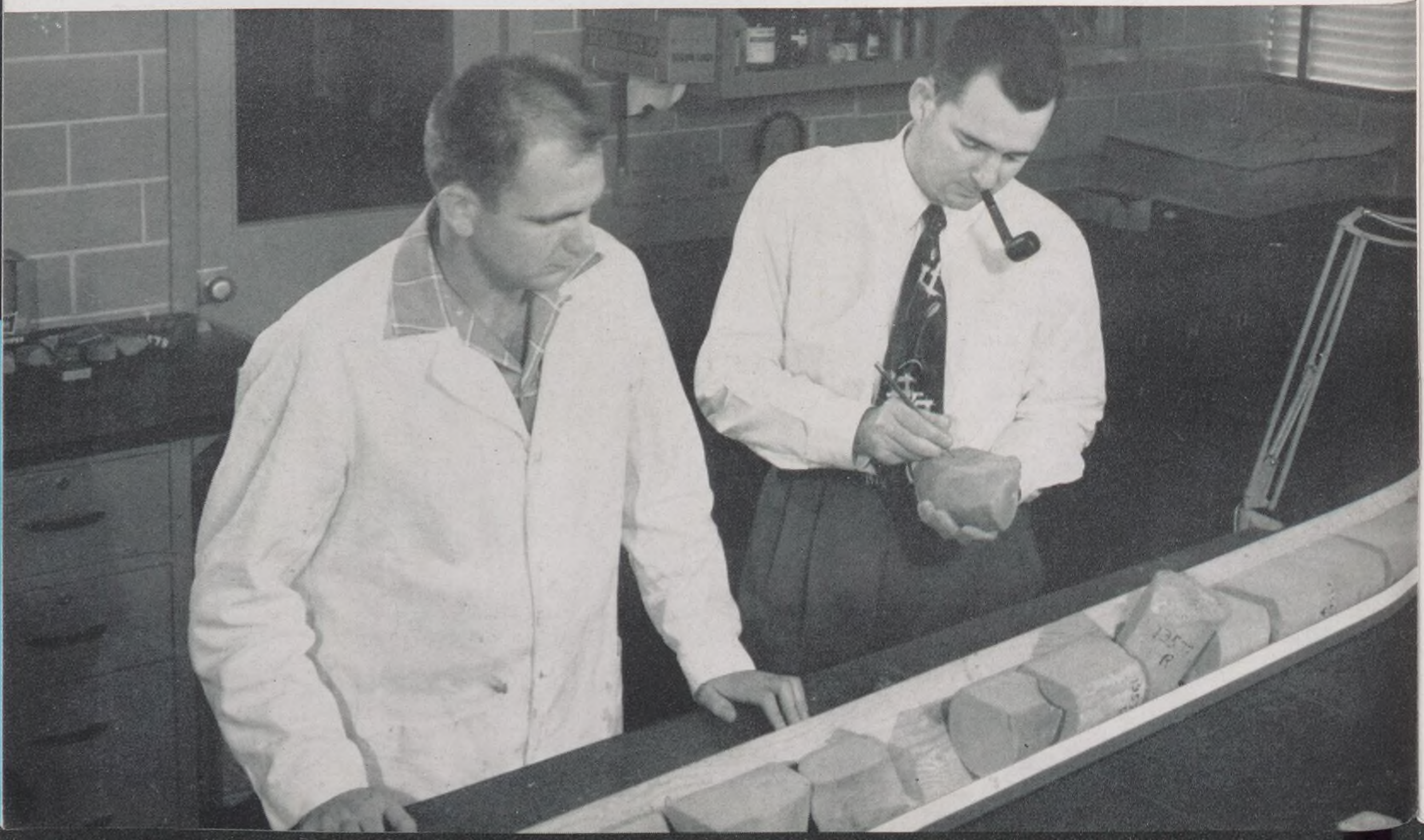
UNLOCKING the secrets of nature is often a matter of "putting two and two together." The solution sometimes comes from a combination of pieces of information from different sciences.

Such a combination is being made today by scientists of Shell Development Company's Exploration and Production Research Division at Houston. They are providing another clue in the search for oil.

The two main pieces of information they put together are: 1) the direction in which grains of sand are aligned in a compacted chunk (or core) of earth or rock; and 2) the location of the earth's magnetic pole, now and millions of years ago. The tool they use to link these two pieces of information is a special Shell-developed magnetometer, believed to be the most sensitive of its kind in the world.

In a way, developing the new clue began with a visit about eight years

Cores taken from a depth of 13,000 feet are examined by Laboratory Technician G. D. Peterson, left, and Geologist K. L. Sliger of Shell Development's E&P Research Division. The cores are sent to the laboratory from E&P Areas for magnetic and microscopic studies.



ago to Galveston Beach near Houston. Shell Development geologists went there to study the beach—its size and shape, the way the sand was deposited by water currents, and in what direction its sand grains point.

Their purpose was to relate what they could learn about Galveston Beach to the "beaches" or sand deposits, laid down millions of years ago by water currents, and now buried thousands of feet deep in the earth. Such geologically ancient sand deposits are of a type that hold oil today.

The geologists removed naturally compacted sand from Galveston Beach being careful to note its compass directions. In studying such samples under microscopes in their laboratory, they learned that the long axes of most of these grains parallel the direction of waves lapping on the shore. This may seem an obvious conclusion, but it wasn't at the time. The Shell scientists are believed to be among the first to use this information as a working hypothesis.

How could this knowledge be used to contribute to finding oil?

Their reasoning went something like this: The alignment of grains may show the direction of currents that deposited them—and if you could learn this, you would have a clue to help determine the shape of the sand deposit. Then, if you found oil at one point in the deposit, you could apply this clue in drilling other wells in the same formation.

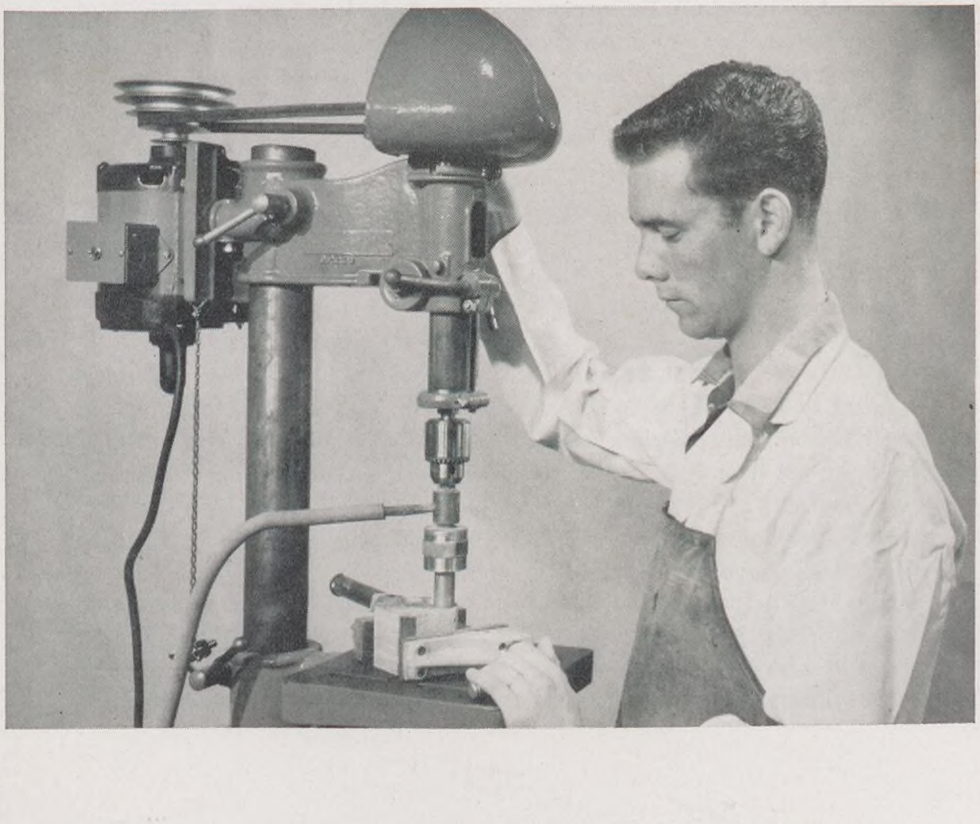
The geologists who took undisturbed samples of Galveston Beach, of course, knew the compass directions of the samples before they were removed. The Galveston samples were, in the geologists' word, "oriented." Similarly, samples taken from surface outcrops of rock wherever geologists work can be oriented geographically.

But when it comes to orienting a chunk, or core, drilled and brought up from thousands of feet below the earth, the job is not so simple, because the core barrel which brings it to the surface must revolve on the way up. Geologists can examine a core under a microscope and determine which way the compacted sand grains in it point. But the key question which remains is which way did the grains point in the formation from which they were taken?

This was the stage at which the geologists called for help from another science—physics. The problem was to find a way to measure the direction of the magnetism in cores. Knowing this direction, the scientists could then orient cores.

They had this fact to work with: When a core's sand grains were laid down the magnetic material (called

A plug is placed in a holder which goes into a spinner on the special magnetometer (shown in full on the front cover) which measures the direction of the plug's magnetic pole.

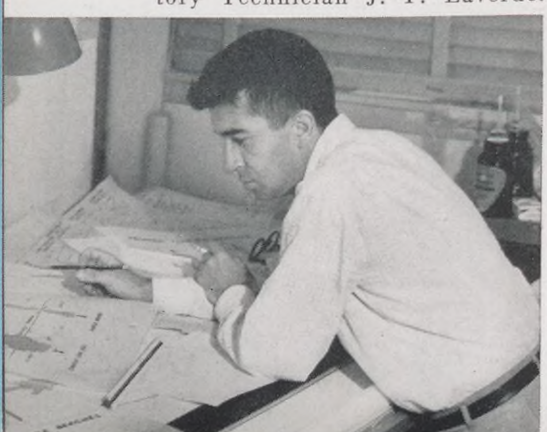


Drilling a plug out of the core is Laboratory Technician W. B. Cotton. He is using a drill press which has a diamond cutting bit. The plugs are each about one inch in length.

Pointing to the position of the earth's magnetic pole about 200 million years ago is Geologist B. W. Wilson. The circle on the map in the Arctic is the present pole position.

Examining a thin slice of one of the plugs is Senior Laboratory Technician A. W. Begin. He is determining in what direction the long axes of the sand grains point. At left, a photograph of the grains taken through a microscope shows that most of the long axes point in the same directions, in this case, up and down.

A diagram that plots the information developed in studies of the cores and plugs is drawn up by Laboratory Technician J. F. Laverde.



Pointing Toward Oil continued

magnetite) in them acted like a compass needle, and thus as the sands settled, they pointed toward the north magnetic pole. The magnetite was locked into this position as the sand compacted. As there is only a small amount of magnetite present, its magnetism is so weak that a particularly delicate instrument is needed for measuring it.

A special magnetometer was needed for this job. It was custom-built by physicists at the E&P Research Division along principles previously announced at Carnegie Institution in Washington, D. C. This instrument is more sensitive than standard magnetometers which have been used for years to measure the differences in intensity of the earth's magnetism. The traditional use of magnetometers in oil exploration has been to record the differences in magnetism of geological strata. Where magnetometer readings show a considerable variation in their intensity, it sometimes indicates the presence of structural conditions favorable for trapping oil. By suspending a magnetometer from a truck, or more recently, from an airplane, oil explorers survey large areas in a short time.

The new Shell magnetometer, on the other hand, measures magnetism in underground formations without leaving the laboratory.

Here's how the new Shell magnetometer is used:

A core sample from a well drilled by one of Shell's E&P Areas is sent to the E&P Research Division. A plug taken from the core is placed in the magnetometer. The magnetometer measures the direction of the north-seeking magnetic pole in the plug.

If this were all, orientation of the core would be relatively simple. But there is a catch: the north magnetic pole, now located in northern Canada, has wandered about. For example, about 200 million years ago, it was located about where Argentina is now. The reason for its wandering is not agreed on, but some scientists believe the cause has been the slow movement of continents during past millions of years.

Because the magnetic pole has wandered, scientists must know where the pole was located at the time the grains in a core sample were laid down. Not until they have this information can the magnetism in the core help orient it.

Shell scientists were among the first to develop this information—by collecting samples of rock from the surface of the earth during field trips. They have measured the direction of the north-seeking pole in these samples and—knowing the various ages of these rocks—have thus established the various positions of the north magnetic pole for these ages.

Having discovered the direction of the north-seeking pole in the core being studied and the position of the north magnetic pole at the time the core material was laid down, the geologists then can determine how the core was oriented in the formation from which it was taken.

Their next step is to examine a thin section of the core under a microscope and study the individual sand grains in it. The direction in which the majority of sand grains lie is then determined. This, when considered with the magnetism in the sample, the time the sample was deposited, and the location at that time of the earth's magnetic pole, provides a clue to be used in determining the shape of the sand deposit.

This knowledge adds another to the oil-finding techniques being used by the Shell men who must decide where to drill wells ●

A DC-8 jetliner parks on the United Airlines servicing apron at San Francisco International Airport. The apron was newly-paved with a new Shell product, Epon Asphalt, developed by Shell Development Company.

Photo Courtesy San Francisco Chronicle

JET-AGE PAVEMENT

Shell Development solves some airport problems

A new type of asphalt pavement, developed by Shell Development Company, is proving a boon to jet-age airports.

The growth of jet traffic has brought major problems in maintaining airport pavement. Around hangars and refueling stations, for example, jet fuels—as well as cleaning solvents and hydraulic fluids—cause ordinary asphalt to soften into a sticky surface. Also, intense heat and blast from jet engines, concentrated on a small area, attack asphalt as well as cement.

Shell's new paving material, called Epon* Asphalt Concrete, solves these problems. The binder is a blend of asphalt and Epon® resin, plus an additive. A chemical reaction takes place when these components are mixed. When combined with selected aggregates the result is a tough, flexible pavement that cannot be dissolved by jet fuel and is not affected by heat from jet engine blasts.

The new paving material is already in use at United Air Lines' maintenance headquarters at San Francisco International Airport. About 150,000 square feet of apron where jet airliners are to be serviced have been covered with a one-half inch overlay.

* *Trademark Shell Oil Company*

Jet-Age Pavement continued

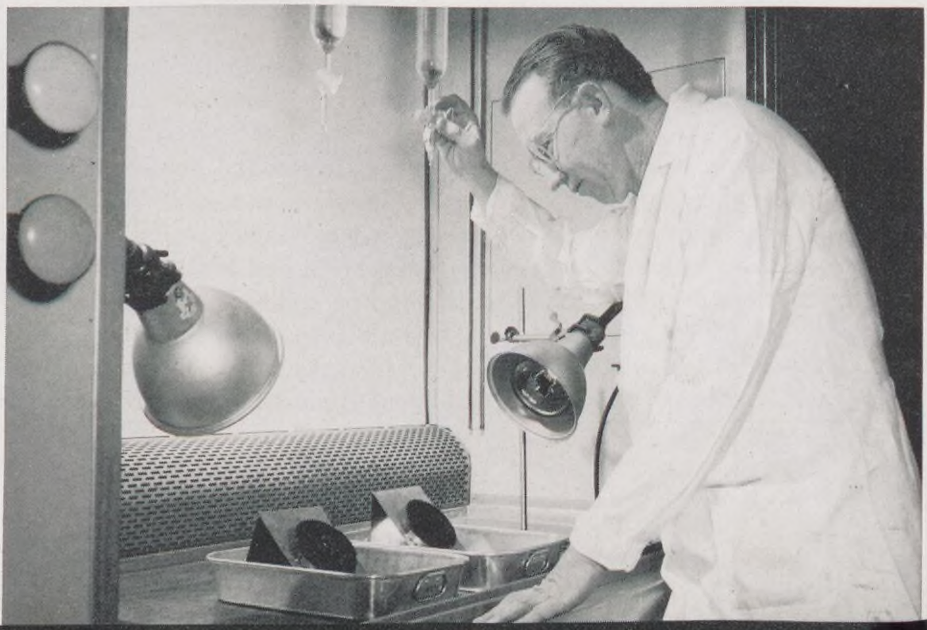
Several years of intensive research at Shell Development's Emeryville Research Center led to the jet-age product. During this time, chemists at Emeryville explored many possibilities but decided finally on the composition of Epon Asphalt as the best combination of properties. Those conducting research in Emeryville's Bitumen Department were: Research Supervisor W. C. Simpson and Chemist H. J. Sommer, assisted by Laboratory Assistant Harold Johnson. Field tests were conducted in cooperation with Shell Oil Company's Martinez Research Laboratory and Products Application Department.

Initially, a test patch of the material was laid at the Martinez Refinery. When this test patch looked promising, other experimental patches were put down, one covering half the driveway of a Shell service station and another at Shell's San Francisco Bulk Depot. After 1½ years of use at the service station, the test area shows no indentations, even though steel-wheeled jacks are used on it almost daily. The next step was a cooperative test program with United Air Lines at its base for piston-aircraft at San Francisco International Airport. Success with this test led to the paving job at the airline's jet base.

T. K. Miles, Head of Emeryville's Bitumen Department, says the application at the jet base points up another major advantage of the new material besides its flexibility and toughness: It can be laid over existing asphalt as a surface overlay, using conventional paving equipment. The Epon Asphalt is mixed, as regular asphalt is, with crushed rock and sand and is put down with ordinary paving machines and rollers.

In the International Airport project, Pacific Pavements Company, Ltd., of San Francisco, contracted with United Air Lines to do the paving. The mixing of the Epon Asphalt with crushed rock and sand was done at Pacific Pavements' plant in San Francisco in 4,000-pound batches and hauled by truck to the airport. The job, completed in

Paving operations move ahead to cover 3½ acres of the jet aircraft parking apron in front of the United Air Lines hangar at San Francisco's International Airport. Because the asphalt must



Opening the petcock on a tube of jet fuel at Emeryville is Laboratory Assistant Harold Johnson of the Bitumen Department. The fuel drips on samples of ordinary asphalt, left, and on Shell's new Epon Asphalt Concrete under conditions simulating an airport runway. Ordinary asphalt dissolves; Shell's new product is not affected.

be laid quickly, the trucks carrying it from the mixing plant to the airport had to make the run in under 45 minutes. They all made it on time and the job was completed in two days.

two days, was observed by representatives of other airlines and government agencies.

Shell people assisting in the paving plant operation were: Technologist H. E. Kubitschek, Martinez Research Laboratory; Engineer R. L. Griffin, on temporary assignment to Shell Oil from Shell Development; Sommer, Johnson and Senior Laboratory Assistant P. R. Chong, of Shell Development's Bitumen Department. Those assisting at the airport were: Simpson and Senior Engineer J. A. Lettier, of Shell Oil's Products Application Department in San Francisco.

The International Airport project is the first of many similar applications of the new material that can be made at commercial and military airports handling jet traffic. Aviation authorities believe that within five years every major airport will handle either turboprop or pure jet traffic.

The airport market is a big one in itself. But there are many other potential markets and uses for Shell's new paving material. Shell Oil's Asphalt and Products Application Departments are actively seeking them. The Asphalt Department has conducted a training program for those who will sell the new material. The Products Application Department is studying additional uses. One such use is in industrial applications where there is a need for protective coatings that are tough and resilient; another is in industrial plants where the hard wear of lift trucks and acid drippings have long needed paving materials with the qualities of the Shell paving.

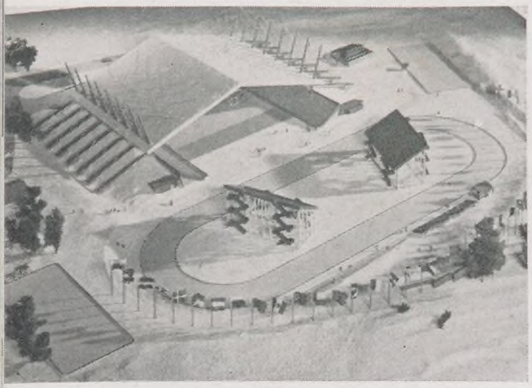
The new Epon Asphalt Concrete may be too expensive for general road construction at present but studies are being made to learn whether it can be adapted for this use.

The consensus of Shell people involved in developing and selling the new paving material is that many uses and markets will be opened as its advantages become more widely known ●

Testing the pavement are Laboratory Assistants A. B. Cox, left, of Emeryville's Bitumen Department and Chemist L. R. Roberts on assignment from Shell Oil's Martinez Research Laboratory to Shell Development. The test determines the pavement's permeability (the amount of fluid it will absorb). The tube contains water and detergent. The new product passed the test.

FROM WILDERNESS TO

Squaw Valley, almost a wilderness 10 years ago, will be



This architect's model shows the 11.000-seat Olympic Ice Arena and the 400-meter outdoor racing rink, with stands for spectators inside the oval.

WHEN Squaw Valley in the mountains of Northern California was picked in 1955 for the 1960 Winter Olympic Games, it seemed an unlikely spot for such an event. It had no ski-jumping, figure skating or hockey facilities, only one ski chair lift and few accommodations.

But now the finishing touches are being put to a $14 million project which will comprise perhaps the finest facilities for the Games since the Winter Olympics were first started in 1924.

To most of the estimated 3,000,000 skiers in the United States, Squaw Valley was until recently relatively unknown. But it will have two outstanding features besides its terrain to recommend it as a Winter Olympics site: 1) athletes will live in one community at the Games instead of separate lodges and hotels; and 2) athletes and spectators will be able to walk to almost all events in minutes because of the concentration of facilities.

When more than 1,000 athletes from about 34 countries arrive for the 11-day Games next February, they

A skier is lifted to the top of 8,960-foot Squaw Peak, the highest mountain rimming the Valley. This mountain, which has three lifts, will be the scene of a downhill race of 1.9 miles against time for men in the Winter Olympics. About 1,000 athletes from 34 countries will take part in the Games, which were last held in the United States at Lake Placid, N. Y. in 1932.

WINTER SPORTS MECCA

the scene of the Winter Olympic Games next February

will find:

• An "Olympic Village" for the athletes including four dormitories and a recreation building.

• A ski jump called the most mathematically perfect in Olympic history and one likely to bring new jumping records.

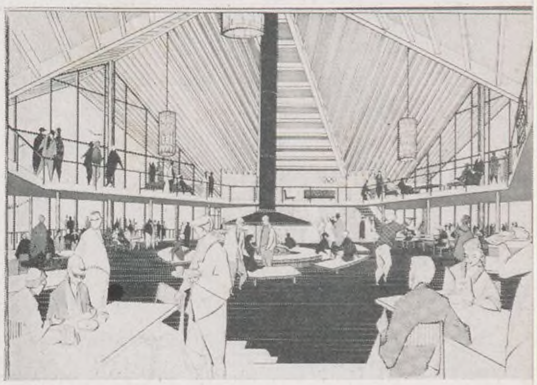
• Three ski lifts to the top of 8,960-foot Squaw Peak (the highest mountain rimming the Valley), KT-22 and Papoose Mountain.

• An ice rink for figure skating and hockey in a 11,000-seat Olympic Ice Arena, a 400-meter outdoor oval racing rink and two outdoor hockey rinks.

• Dormitories for officials and press.

Readying these facilities has taken feverish activity, particularly during the last year. But there is also a huge job in preparing for spectators, about 35,000 of whom are expected to attend every day of the Games.

Getting them to the spot each day involves the largest project of all. Squaw Valley is situated 40 miles west of Reno, Nev., and 116 miles northeast of Sacramento, Calif. There



A spectator center, one of two being built for the Games, is depicted in this drawing. The nine-sided buildings include restaurants and lounges.

Flashing through the gates of the giant slalom at the North American Ski Championships held at Squaw Valley last February, is Christian Pravda of Sun Valley who won the event.

This athletes' dormitory at Squaw Valley's "Olympic Village" is one of four built for the Games. Each dormitory will house about 300 persons. There is also a recreation building.

Ski jumping and speed skating will be major events at the Olympics

are still relatively few accommodations in the Valley so that roads are important to the Games. Officials expect many spectators will make their headquarters in Reno and Sacramento, and in towns and resorts between those cities.

U. S. Highway 40 is the major route connecting both Sacramento and Reno to State Highway 89 which runs about 10 miles south from U. S. 40 at Truckee to Squaw Valley. California began a program about 12 years ago to widen the mostly two-lane U. S. 40 to four lanes. But the job has been difficult because most of the roadbed had to be blasted out of solid rock in the rugged, mountainous terrain — which rises to 7,000 feet at Donner Summit, about 10 miles northwest of Squaw Valley as the crow flies. When Squaw Valley was picked for the Olympics, the state speeded up the road program. By the time the Games start, most of U. S. 40 between Sacramento and Reno will be four lanes.

Shell has been involved in the road work as a major supplier—through the Sacramento Marketing Division — of asphalt, lubricants, diesel fuel and gasoline to road contractors. Also, 13 Shell service stations between Sacramento and Reno will serve spectators driving between those points and the Games.

When visitors reach Squaw Valley, they should have no trouble parking despite the six feet of snow likely to be on the ground. Snow over an area large enough to park 12,000 cars will be packed down by a machine developed by the U. S. Navy. Temporary shelter and food will be provided for visitors in two "spectator centers" near the Ice Arena.

Elaborate plans have been made for the army of sports reporters and cameramen from around the world who will cover the Games for newspapers, magazines, radio and television. One innovation to help them is an electronic computer which will speed scoring, particularly of figure skating events which in the past have taken about five hours to compute. The machine also will have biographies of all athletes stored in its magnetic tape memory bank. At the push of a button, it will type out any biography—in English or French.

As in previous Winter Games, skis and skates will predominate in athletes' equipment. There will be no bobsledding in 1960 because of too few entries.

For skiers, there will be downhill racing, slalom, giant slalom, jumping, cross country and biathalon. The biathalon, making its debut as an Olympic event, combines cross-country skiing and rifle markmanship. Women have events in all skiing categories except jumping and biathalon.

The downhill is a race against time, 1.9 miles down Squaw Peak for men and 1.1 miles down KT-22 for women.

The slalom requires contestants to ski against time through a series of "gates" (pairs of colored flags 2½ feet apart) that mark a twisting, winding course down a slope. Women will maneuver through 40 to 50 gates on Papoose Mountain and men will have 65 to 75 gates on KT-22.

The giant slalom combines the downhill and slalom. The skiers follow a winding course downhill through 30 gates, men on KT-22 and women

Winning the North American 80-meter ski jump championship is Kalevi Karkinen of Finland. On this jump he sailed 278.8 feet; on his previous one he went 290.35 feet. Both beat the Olympic record of 275.9 feet. The ski jump facilities are termed the most mathematically perfect in Olympics history.

on Papoose Mountain.

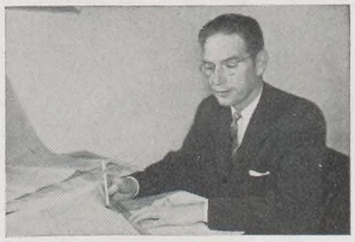
In skating, there will be events in figure and speed skating and in hockey. Hockey is for men only.

A special system, similar to those used to freeze indoor hockey rinks, will make ice for the Olympic rinks. The reason for artificial ice is not weather — average for February at Squaw Valley is 26 degrees. But artificial ice has a smooth, uniform surface, particularly ideal for figure skating and racing. Olympic experts believe the ice quality may help skaters set records in 1960.

Skaters and skiers at Squaw Valley will be the most photographed Olympic contestants in history—thanks to television, which was still in the laboratory stage in 1932 when the Games were last held in the United States. TV towers are being built along the ski courses to follow every race from start to finish.

All this will be a great boon to Squaw Valley, which 10 years ago was practically part of the wilderness. Next February it will be the focal point of the world of winter sports ●

LONG ON COMMUNICATIONS



M. V. LONG

M. V. Long of Shell Development Company's Emeryville Research Center went to a planning committee meeting as a ski patrol volunteer a few weeks before the North American Winter Games held last February at Squaw Valley. Before the meeting was over, he was in charge of planning the communications network — used during the North American Games and to be the basis for the Winter Olympics' communications needs next year.

Long, Head of Emeryville's Department of Mechanical and Electrical Engineering, noted at the ski patrol meeting that plans were not adequate for emergency and other necessary communications. Television, radio, news service and long-distance telephone facilities had been installed, but only 15 telephones had been planned for the administrative staff.

Long's suggestions led to his becoming Chief Communications Officer and started him on a volunteer project that took all his spare time—plus two weeks of his vacation—during the next six weeks.

Shortly before the North American Games began, Long and his volunteer staff completed arrangements for telephone and radio facilities linking the Games' events with the administrative staff and with outside emergency agencies, such as Tahoe Forest Hospital.

Telephones were installed at the start and finish of all race courses, at weather stations atop Squaw Peak and KT-22, and at many other locations.

Eight radio networks were set up for ski patrols, course police, fire department and medical staff.

The communications set up under Long's direction handled more than 5,000 messages during the two-week Games. The system's performance showed that only minor modifications and expansion will be required for communications at the Winter Olympics.

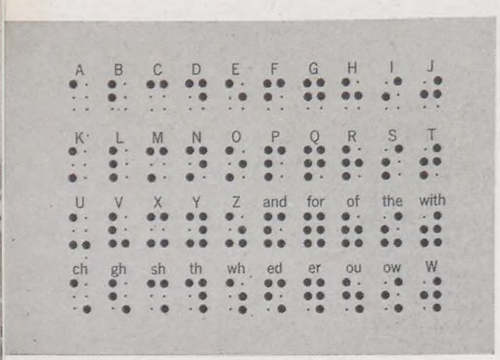
Out in front is Alf Gjestvang, left, of Norway, who won the 500-meter speed skating race at an International Invitational meet in Squaw Valley. His time was 40.7 seconds; the Olympic record is 40.2. At right is Keith E. Meyer of Glen Ellyn, Ill., second in 41.9 seconds.

Checking road construction near Squaw Valley are C. F. Hickey, right, General Salesman, Sacramento Marketing Division, and H. W. Russell of the contractor's staff.

Teaching her doll how to read a story in Braille is Debbie Sanvic, 7, a blind student at MacGregor School in Houston. The textbooks used in the school's Braille classes are transcribed by a Shell Steno-secretary and other volunteers.

THE TOUCH OF KNOWLEDGE

A Houston E&P Area employee inscribes Braille to help blind school children read



The Basic Braille Alphabet

ANNA FAE HARRIS helps bring knowledge to blind children who seek it with inquisitive, sensitive fingertips.

About a year ago, Miss Harris, a Steno-secretary in the Drafting-Surveying Division of the Houston Exploration and Production Area, volunteered to transcribe standard textbooks into Braille for blind pupils of a Houston elementary school. Since that time, learning and writing Braille has taken an average of nine hours of her spare time every week. These have been, she says, the most rewarding hours she has ever spent.

"It all began as a Sunday School project," she said. "Six of us in a young adult class had heard that the MacGregor School needed Braille textbooks for their blind students who attend classes with children who can see."

To learn the complicated mechanics of the Braille system, Miss Harris and the other girls took a special course offered by the Library of Congress through the Lighthouse for the Blind, a non-profit organization similar to other agencies for the blind found in most cities. For six months she attended night classes for two hours every week and worked at home on practice assignments.

Although the principle of substituting different combinations of six raised dots for each letter was not hard to learn, Miss Harris found that the development of accuracy and speed required a great deal of patience and practice.

There are 63 combinations of the six Braille dots, arranged in blocks three high and two across, she explains. "These include 26 letters, various punctuation marks; short words such as 'and,' 'for,' 'of'; and commonly-used letter combinations such as 'ch,' 'gh,' 'ed,' and others." (See Braille alphabet on page 14.)

One aspect of working with the Braille method that Miss Harris found difficult was in transcribing it from right to left. Since Braille is read by touching raised dots, it is necessary to emboss the dots with a stylus from the back of the heavy paper sheet, right to left. "That's so when the sheet is read, the words will run from left to right," she said.

"With practice, blind people can read Braille about as fast as sighted people read print. Their fingers can develop extreme sensitivity. For this reason, a mistake by a transcriber is serious. Although we try to smooth out an error, it is almost impossible to erase an indentation so that the blind reader will not feel it."

In her study of Braille, Miss Harris has developed a keen interest in affairs of the blind and the history of efforts to aid them. "The first recorded organized effort to help the blind was made during the fourth century by St. Basil, who opened an inn for blind travelers in the Middle East," she said. "No real attempt to train them was made until the 1700's when a Frenchman named Valentin Lauy, who was known as 'Father and Apostle of the Blind' started a school in Paris. It was there that a blind student named Louis Braille devised the first version of the system we use today."

She explained that the Braille system, which has also been modified for musical notation, wasn't officially adopted for all English-speaking countries until 1932. Now, through the auspices of many religious and other organizations, more and more literature is becoming available in Braille form.

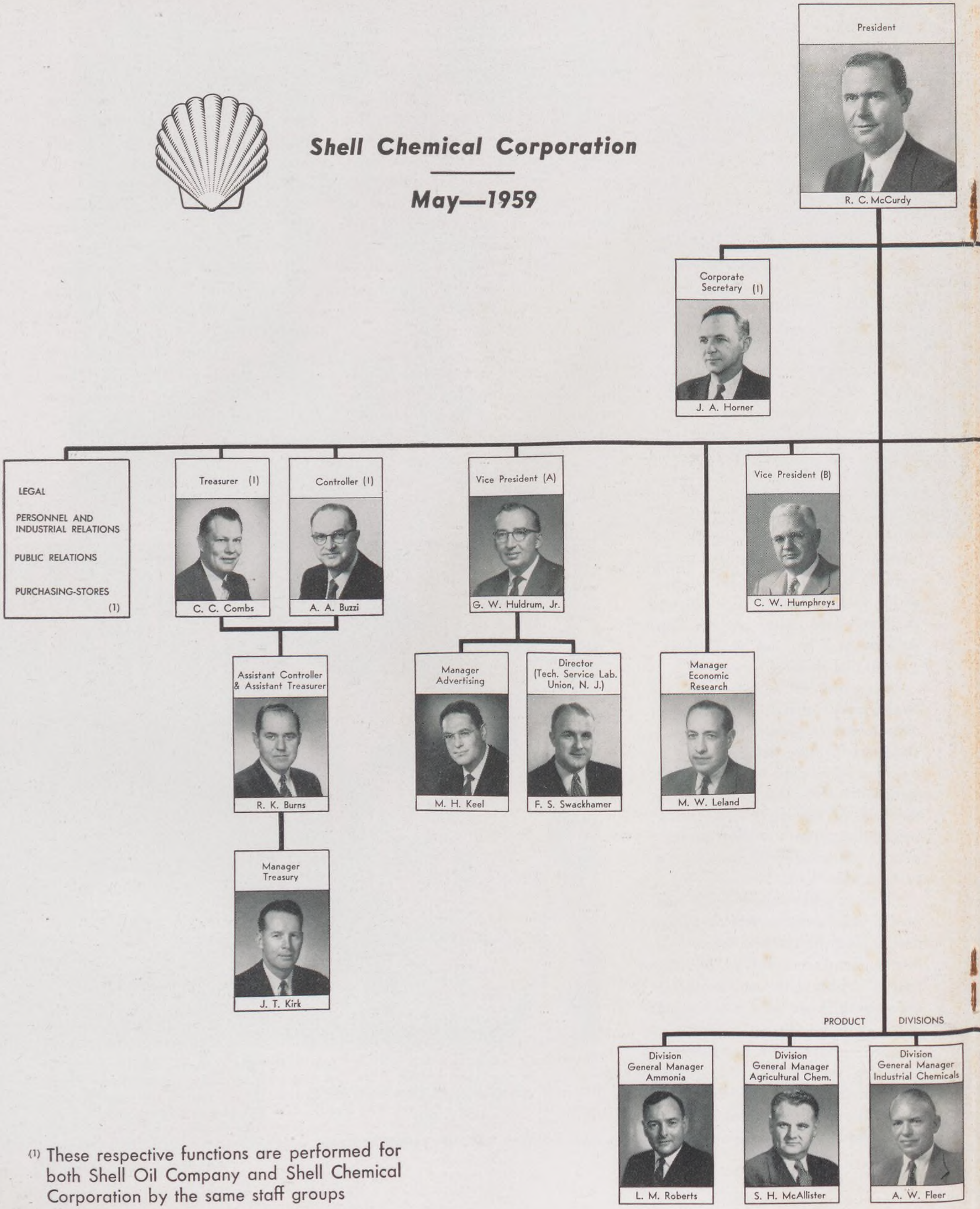
At present, Miss Harris and her group are transcribing six standard spelling books into Braille. They have completed six readers. Thus far she has donated 240 hours to the project. "It takes about 65 hours to completely and accurately transcribe an 150-page elementary reader," she said.

"When we finish this project we'll start on other books," she said. "There are still a lot of blind children who are waiting for the touch of knowledge" ●

Standard textbooks are transcribed into Braille by Anna Fae Harris, a Steno-secretary in the Houston E&P Area. She first became interested in Braille when her adult Sunday School class was notified that MacGregor School needed textbooks for their blind students. The Braille dots are embossed from the back of the paper, so that they can be felt in the front. The Braille must be carefully embossed since a mistake cannot be erased to escape detection by the blind reader.

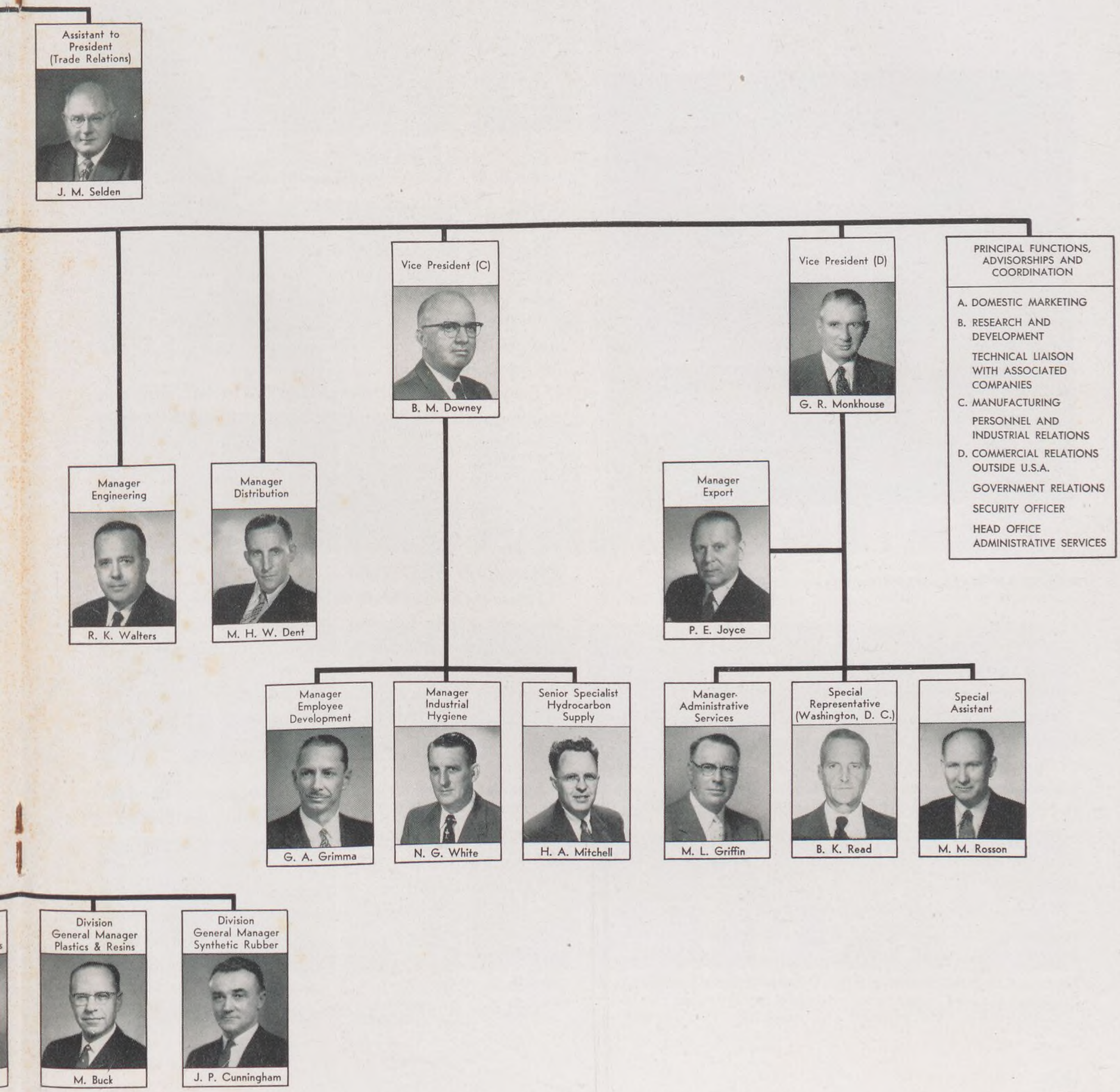
Shell Chemical Corporation

May—1959

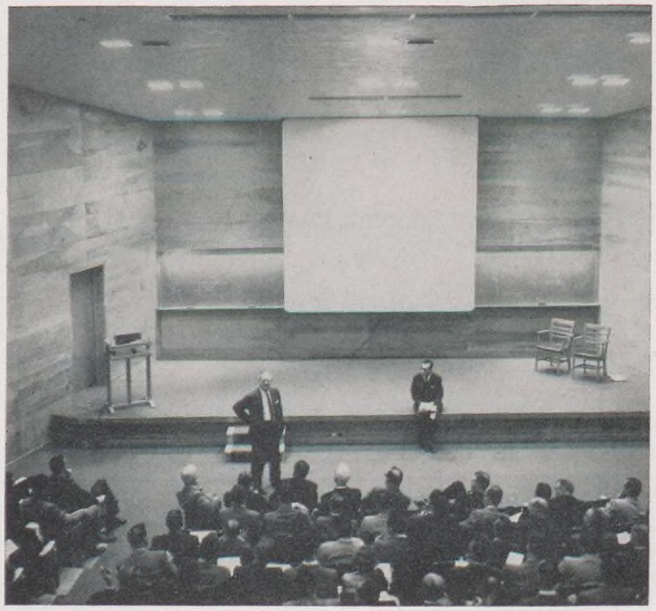


(1) These respective functions are performed for both Shell Oil Company and Shell Chemical Corporation by the same staff groups

Shell Chemical Corporation Management Organization



news and views



J. H. Hildebrand, Professor of Chemistry, Emeritus, University of California, guest speaker at the dedication, said the event marked a step to strengthen the bonds between education and industry.

P. J. W. Debye, Professor of Chemistry, Emeritus, Cornell University, and winner of the 1936 Nobel Prize in chemistry, delivered the first lecture in the hall. His subject was "Structure Analysis by Scattered Radiation."

The lecture hall was designed by R. A. Lippincott, A.I.A., in consultation with V. O. Knudsen, Dean of the Graduate Division of The University of California at Los Angeles, who is a nationally-recognized expert in physiological acoustics.

Debye is shown in the photograph at left answering questions after his lecture. Gershinowitz is seated on the edge of the platform.

LECTURE HALL DEDICATED

A 295-seat hall for lectures and seminars by leading figures in the physical sciences and engineering was completed recently at Emeryville Research Center.

Harold Gershinowitz, President of Shell Development Company, dedicated the ultra-modern hall to "the magic of thought and the magic of creativity." He said the purpose of the lecture hall is to "provide more suitable facilities in which the great minds of our generation could bring before us new knowledge and by their presence and example stimulate us to new ideas, new experiments, new inventions."

The relationship between industry and education works two ways, Gershinowitz said. Many outstanding educators lecture at Emeryville and many Shell scientists and engineers are invited by universities to impart their knowledge to students and faculty.

MISSISSIPPI DISCOVERY

Discovery of a new oil field in Scott County in central Mississippi early this year by the New Orleans Exploration and Production Area, has added to recent successes in the State.

The new Morton Field, named after the town four miles to the north of it, is 30 miles east of Jackson. The nearest production to Shell's wildcat well is in the Gwinville Field, 30 miles south.

The well flowed on initial production tests at the daily rate of 130 barrels of 27 degree gravity oil through a three-eighths-inch choke. Perforations were made from 6,410 to 6,420 feet.

The Scott County well is Shell's first in central Mississippi. Shell operates other oil fields at Diamond in eastern Mississippi, at Little Creek and Sweetwater in southern Mississippi, and a gas field at Aberdeen in the northeast part of the State.

Shell now is drilling a second well in the Morton Field.

They have RETIRED


C. J. ALMQUIST
Shell Pipe Line Corp.
West Texas Division


S. B. BEAN
Shell Pipe Line Corp.
Texas-Gulf Division


R. BIERBAUM
Wood River Refinery
Engineering Field


D. D. BITTLE
Tulsa Area
Production


G. J. BLANYER
Houston Refinery
Engineering Field


E. A. BLEVENS
Wilmington Refinery
Engineering Field


J. H. BOWEN
Martinez Refinery
Lubricating Oils


A. R. BOYER
Head Office
Marketing


C. R. BROWN
Tulsa Area
Production


A. J. BUCHHOLZ
Wood River Refinery
Engineering Field


J. F. BURNS
Wood River Refinery
Engineering Field


H. F. CAMPBELL
Wilmington Refinery
Engineering Field


K. U. CAMPBELL
Head Office
Pers. & Ind. Rel.


H. J. CARNEY
Los Angeles Division
Marketing Service


G. W. CARSTENS
Wood River Refinery
Engineering Field


J. E. CARTER
New Orleans Area
Production


A. J. CHAUVIN
New Orleans Area
Production


E. T. CLARY
Wood River Refinery
Engineering Field


L. N. COSTILOW
New Orleans Area
Transport & Materials


H. J. COURAGE
Boston Division
Operations


C. E. CUMMINGS
Shell Chemical Corp.
Houston Plant


E. J. DAY
Wood River Refinery
Distilling


H. H. De ARMOND
Pacific Coast Area
Production


S. J. DEROUEN
Norco Refinery
Engineering Field


J. A. DOWDY
Houston Refinery
Engineering Field


F. DUNSING
Wood River Refinery
Engineering Field


O. DUTZI
Pacific Coast Area
Production


H. C. EDGE
Houston Area
Production


H. A. EDWARDS
New Orleans Division
Sales


L. A. GIROIR
New Orleans Area
Production


E. L. GRABOWSKI
Wood River Refinery
Engineering Field


L. GRAMMER
Wood River Refinery
Engineering Field


G. L. GRANT
Wood River Refinery
Engineering Field


H. P. GRINE
Tulsa Area
Production


F. W. HAGERMAN
Wood River Refinery
Engineering Field


A. R. HAMEL
Boston Division
Operations


C. HANSEN
Pacific Coast Area
Production


G. D. HARPER
Martinez Refinery
Dispatching


L. F. HARVEY
Houston Refinery
Engineering Field


W. H. HENSLEY
Pipe Line Department
Muncie, Ind.

They have Retired continued

H. HOCKINGHOMER
Wood River Refinery
Engineering Field

J. F. HOFFNER
Wood River Refinery
Engineering Field

W. H. HOLTHAUS
Pipe Line Department
Freedom, Mich.

V. HOUTS
Pacific Coast Area
Gas

H. R. INLOW
Wilmington Refinery
Distilling

A. JACKSON
Wilmington Refinery
Experimental Laboratory

L. M. JACKSON
New Orleans Area
Production

F. K. KAZETSKY
Shell Development Co.
Houston

J. C. KRAFT
Shell Chemical Corp.
Shell Point Plant

T. O. LARSEN
New Orleans Area
Transport & Materials

S. G. LONG
Shell Pipe Line Corp.
Mid-Continent Division

C. LUCCHESI
Martinez Refinery
Compounding

F. I. MARION
New Orleans Division
Sales

C. M. MARTIN
Shell Pipe Line Corp.
Texas-Gulf Division

J. S. MARTIN
Wood River Refinery
Engineering Field

F. J. MATHEWS
Wood River Refinery
Engineering Field

R. J. C. McARTHUR
Shell Development Co.
Emeryville

P. J. McCARTHY
Pipe Line Department
East Chicago, Ind.

E. F. McQUAIN
Tulsa Area
Production

R. McREYNOLDS
Wood River Refinery
Compounding

E. MILLER
New Orleans Area
Production

W. MILLER
New Orleans Area
Production

J. C. NEELY
Shell Development Co.
Houston

F. L. NIEDERHOFER
Houston Refinery
Engineering Field

J. PARKER
Wood River Refinery
Engineering Field

A. E. PHINNEY
San Francisco Division
Sales

F. PILAND
Houston Area
Gas

M. T. POLLARD
Wood River Refinery
Engineering Field

T. H. PRICE
Shell Pipe Line Corp.
West Texas Division

T. C. RAYNES
Shell Pipe Line Corp.
Mid-Continent Division

F. O. ROBERTS
Houston Refinery
Lubricating Oils

O. J. SAPPINGTON
Shell Pipe Line Corp.
West Texas Division

T. R. SCOTT
Wood River Refinery
Catalytic Cracking

E. E. SENTER
Shell Pipe Line Corp.
West Texas Division

PAULINE H. SHORT
Tulsa Area
Exploration

E. SIMEN
Houston Refinery
Engineering Field

P. H. SLATER
Pacific Coast Area
Production

F. SMITH
Shell Chemical Corp.
Shell Point Plant

D. J. START
Shell Chemical Corp.
Houston Plant

B. F. STEFFON
Wood River Refinery
Engineering Field

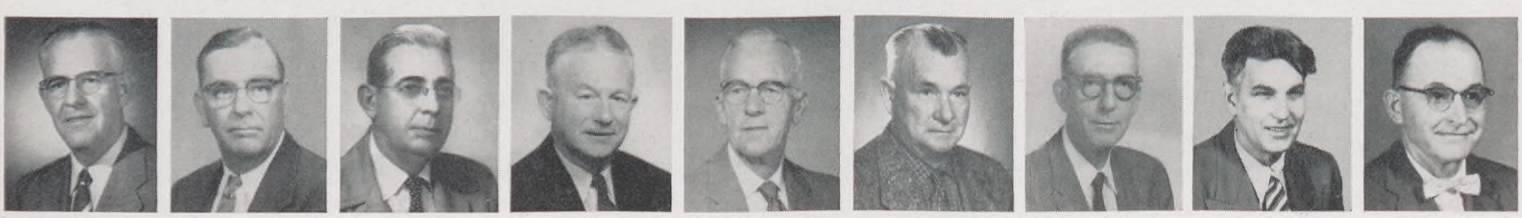
W. W. STILLMAN
Los Angeles Division
Sales

E. C. SWANSON
Baltimore Division
Treasury

A. B. TREGRE
Norco Refinery
Engineering Field

F. H. TWENTE
Wood River Refinery
Engineering Field

W. E. VAUGHAN
Shell Development Co.
Emeryville



W. W. VOGT
Tulsa Area
Treasury

J. L. WAKE
Shell Pipe Line Corp.
Texas-Gulf Division

N. WALLACE
Midland Area
Transport

A. L. WIEST
San Francisco Office
Industrial Products

V. V. WOODRUFF
Pipe Line Department
Ventura, Calif.

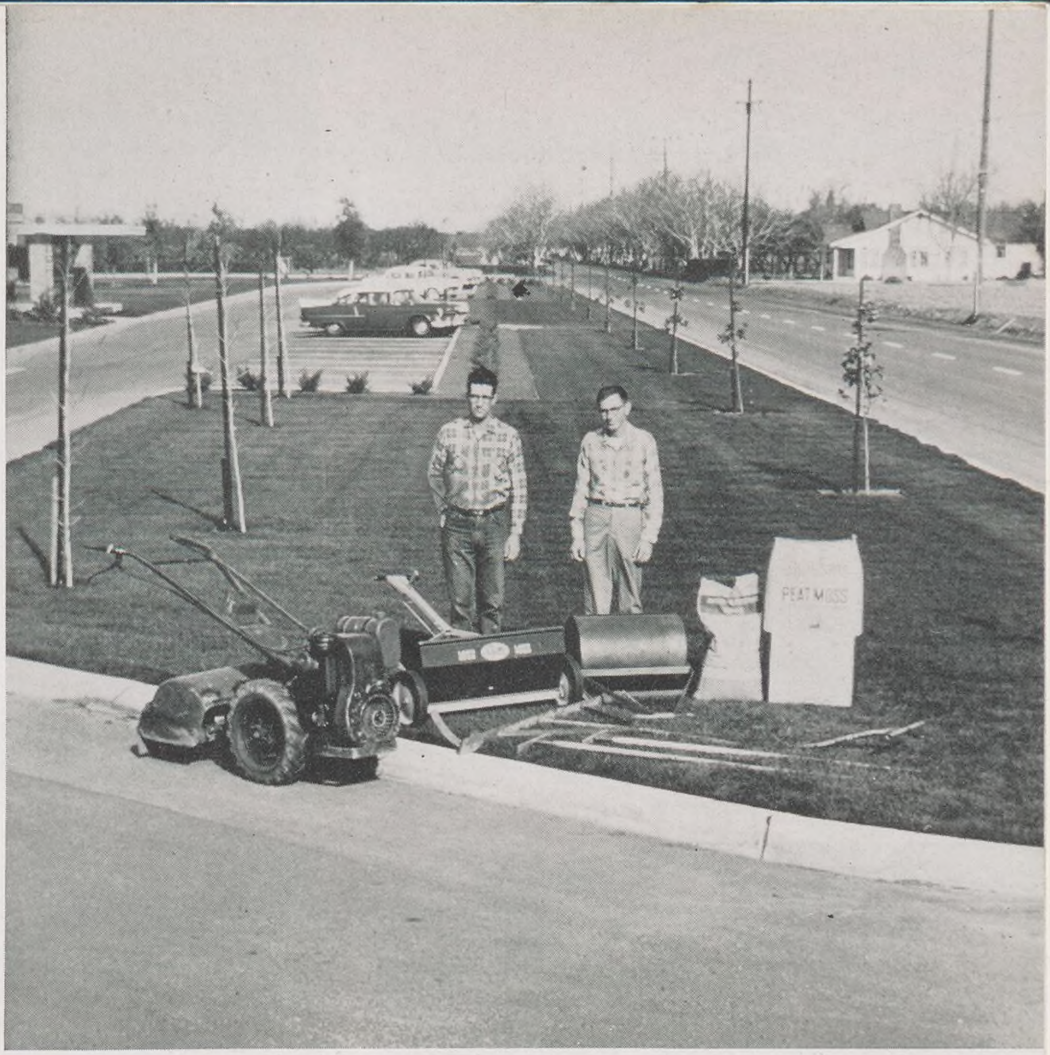
H. E. WOODS
Pacific Coast Area
Production

G. R. WOOLF
Shell Pipe Line Corp.
Head Office

J. S. YOUNG
Wood River Refinery
Lubricating Oils

T. L. YOUNG
Wood River Refinery
Engineering Field

This luxurious lawn in front of the Modesto Research Laboratory serves as a backdrop for Ranch Hand E. O. Spradlin, left, and Gardener G. R. Terryberry who installed it. Lined up are the tools they used: tiller, seed and fertilizer spreader, roller, Shell fertilizer, peat moss and gardening tools.



Planting and keeping a lawn is hard work, says a Shell Gardener. But if done right, the rewards are great because...

THE GRASS IS ALWAYS GREENER

"PEOPLE are always in a hurry with a new lawn. Some think all they have to do is toss some seed on a patch of ground and they'll have a good lawn in about a year. But within that time they're back buying more seed and starting all over again."

So said G. R. Terryberry, Gardener at Shell Development Company's Modesto Agricultural Research Laboratory. At that time, he was installing a new lawn at the Laboratory. SHELL NEWS followed him through the steps of planting a lawn to provide advice for readers planning to start a new lawn. In addition, he provided several tips for those making a special effort to maintain or improve an already established lawn.

Terryberry warned that no one set of instructions can cover all climatic or soil conditions around the country. He suggested that lawn makers and maintainers consult their local park department or garden supply store for details on local conditions. He cautioned, though, that as in most things, not all gardening experts agree on everything. "There are little tricks you pick up or habits you develop or just something that seems to work well for you, but not for others."

But the basic factors apply everywhere. These include planting, watering, feeding, mowing and fighting insects and weeds. The tools and materials needed to start a lawn also are generally the same everywhere, differing only because of the size of the lawn and special soil or weather problems. The tools: metal-toothed rake, shovel, spreader for seed and fertilizer, lawn mower and roller, tiller or spade and hose. The materials: weedkiller, a quality seed mixture, a complete fertilizer and peat moss or other mulch. In planting the Modesto lawn, Terryberry followed these steps—shown in the pictures on the following pages—and suggested the same ones for the home gardener.

Though climates and soils may differ, basic rules apply everywhere

1 . . . Water the area until six inches are soaked

2 . . . Till or s

3 . . .Level the lawn with a "drag"

4 . . . Apply quality seed mixture with a spreader

5 . . . Put on fe

6 . . . Cover with a layer of peat moss

7 . . . Roll the peat moss to keep the lawn level

8 . . . Water fr

1 Water the area until the top six inches are thoroughly soaked.

2 Till or spade the area to loosen soil—after the top several inches have dried out. (This step may not be necessary for the homeowner if the soil is not caked.)

3 Level and roll the area. Terryberry used the "drag" method for leveling. A drag can be made by bolting a short piece of 2 x 4 beam to the teeth of a rake. After leveling, Terryberry used a pre-emergence weed killer.

4 Spread grass seed. Terryberry used a mixture of Kentucky blue grass, bent grass and fescue. He said that the use to which a lawn will be put and the amount of sun it will receive determines what grade and type of seed mixture should be used. He cautioned that there are few bargains in seeds, and the gardener generally gets what he pays for. He applied the seed with a spreader to obtain uniform distribution. He said good results also can be obtained by shaking seeds from a jar with small holes in its lid. Some gardeners suggest mixing seeds with a small amount of soil if it is difficult to spread a small amount of seeds evenly. Too many seeds can be worse than not enough because they may choke out each other as they sprout.

5 Apply fertilizer in recommended amounts right on top of the seed. To save a step some experts suggest premixing fertilizer with grass seed, but either way the important thing is to give seeds sufficient food. The Modesto Gardener used Shell Chemical's ammonium phosphate sulfate. He said the other Shell Chemical fertilizers also are effective. (See page 24.) In areas where these are not available, the contents of other brands – which by law must be printed on the package – should be checked to

r spade the soil, then spray weed killer

n fertilizer, rake it into soil

r frequently until grass is grown

be sure they contain nitrogen and phosphorous. After the fertilizer is on, rake the lawn gently with a circular motion to insure that the seeds get down into the soil and thus prevent them from blowing away.

6 Apply one-quarter-inch layer of peat moss or other mulch to help soil retain water. Terryberry applied the peat moss with a wire drum but it also can be spread by hand.

7 Roll the peat moss and then water it immediately. (If mulch is not used, do not roll after raking in seed.)

8 Keep seed bed moist. Terryberry warned: Proper moisture conditions are required for good seed germination. After seedlings reach a height of one to two inches sufficient watering is necessary to keep the seed bed wet to a depth of approximately six inches. If the surface dries out temporarily under these conditions, growing roots will still have moisture.

Maintaining a lawn requires know-how and work

THESE eight steps taken and suggested by Terryberry should get a lawn underway. But, as any experienced lawnmaker knows, that is only half the battle. So Terryberry added the following suggestions for maintaining a lawn:

A. Water regularly. The lawn should be watered as often as the grass variety, soil and climate requires. Too much water may help unwanted weeds, but too little may dry out the lawn. A local nurseryman should be consulted for the proper balance to maintain in your area. One bit of gardener's lore: lawns watered during the day will not burn, in fact the grass will be cooled off.

B. Mow frequently. Terryberry suggests keeping grass about 1½ inches high and as much as two inches during hot weather to shade the roots. Not more than one-half inch—an average week's growth—should be cut off at a time. If it has grown too long, the grass should be cut to the desired height even more gradually. Longer grass also gives the added bonus of cutting off crabgrass from the sun. This weed, experts say, never grows in the shade.

C. Feed regularly. The Modesto Gardener suggests consulting a local nurseryman to determine the nutrients needed for a particular soil. However, spreading a complete fertilizer in early spring, mid-May and autumn will be sufficient for the average lawn.

D. Weed regularly. With rich soil and vigorous grass, some weeds are automatically eliminated. Other more hardy weed varieties must be individually plucked out by the roots or destroyed by weed killers—of which there are many varieties on the market for specific problems.

E. Protect regularly against insects such as ants, Japanese beetles, grubs and sod webworms, with Shell Chemical's dieldrin insecticide. (See Page 24.)

Anyone who follows all the steps suggested by Terryberry should be able to develop and keep a good lawn. But he adds this word of advice: "Lawn grass needs care and hard work and you can't buy that in a box."

(See Next Page)

SHELL CHEMICAL PRODUCTS FOR HOME GARDENERS

Insecticide

Shell Chemical's dieldrin insecticide provides one of the most effective weapons against almost every type of insect. It kills insects that attack plants both above and below the ground. Dieldrin can be used not only for lawn pests but also for insects attacking vegetables, fruits, ornamentals and shrubs. Manufactured at the Denver Plant, dieldrin is sold throughout the country, but only through formulators who package it in liquid, dust or granule form under their own brand names. The name "dieldrin," however, appears on a package when it is part of an insecticide formulation. (Be sure to follow instructions on the label.) Following is a list of the brand names of products for lawns made by formulators who use dieldrin and the states where they are available:

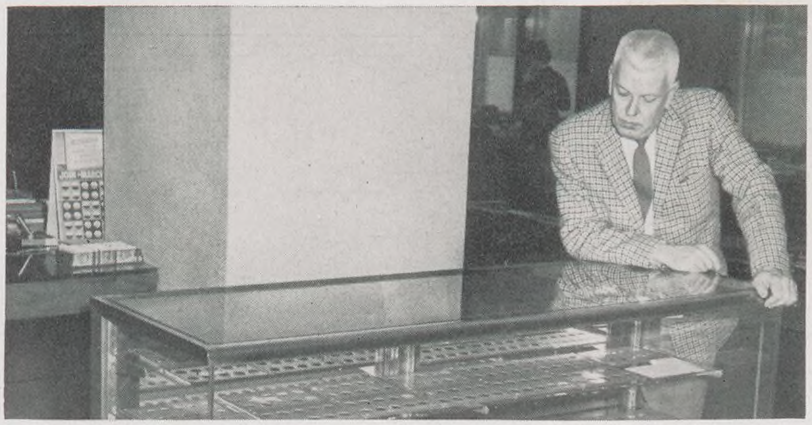
States	Brand Names
National Distribution	Acme, Triogen, Lawntrol, Black Flag, Black Leaf, Ortho
Florida, Georgia, South Carolina, North Carolina, Virginia, Eastern Tennessee	Master, Triangle, Fasco, Security, Planters, Flight
Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Tennessee	Green Light, De Pester, Red Panther, Mission Brand
New York, New Jersey, Pennsylvania, Maryland, Delaware, West Virginia, Kentucky, Michigan, Ohio and all New England States	Pratt, Brecks, G.L.F., Westicide, Lebenon, Miller, Twin Light, Mixture No. 49
California, Oregon, Washington, Idaho, Montana, Nevada, Utah, Arizona, New Mexico	Artco, Black J, Cha-ken-co Ant Insurance, Bug-Shot, Destruxol, Durham, Soildrin, Miller
North Dakota, South Dakota, Wyoming, Colorado, Kansas, Nebraska, Missouri, Indiana, Minnesota, Illinois, Iowa	Mackwin, Manco "Lawn Lift," Manco "Dieldrin 18," Dielthion, T-H (Thompson Hayward) Garden Products, Selco.

Fertilizers

Shell Chemical fertilizers available for use on lawns and gardens include urea, triple super phosphate, ammonium sulphate, ammonium phosphate sulphate and diammonium sulphate. Manufactured at the Shell Point and Ventura Plants, they are available only in the West Coast region, from nurseries and other fertilizer sellers. The smallest package in which Shell Chemical markets fertilizers under its own name is in 80-pound bags. However, Shell Chemical fertilizers are also sold to formulators who market them under their own brand names in smaller packages. Following is a list of the brand names of formulators using Shell Chemical fertilizers and the states where they are available:

States	Brand Names
California	Gardener's Special, Green All, Holiday (Liquid), Hacienda (Liquid), Bandini, Red Star Fertilizers, Gro-Master
California, Oregon, Washington, Arizona	Vigoro, Golden Vigoro, Wil-Gro
Oregon, Washington	Lilly's Orwon, Webfoot ●

SHELL Coast to Coast



MONEY MAN

E. A. Davenport, a Division Production Manager in the Denver E&P Area, saves money—but not just for a rainy day. He has been a collector of U. S. coins since 1933, and has accumulated almost every variety of one-cent pieces. One of these, worth $200, was run from the very first die cast by the U. S. mint in 1793. He also collects other denominations and now has every variety of silver dollars except one. Davenport, left, displayed some of his 1,200 coins, worth more than $5,000, at a Billings, Mont., bank recently.

TOP OF THE MARKS

Although Shell sons and daughters at the Anacortes, Wash., High School comprise less than 10 per cent of the school's enrollment, they achieved more than their share of scholarship and leadership.

Of 57 students from Shell families, six were named to the list of 10 "outstanding senior students of 1959" and five of these, plus 15 other Shell students, are on the scholastic honor roll.

Below, Sue Mayse (second from right), who is salutatorian of her class, is congratulated by the other Shell "outstanding seniors" (left to right) Keith Lauderbach, Linda Salsman, Han Swyter, Grace Malson and Denny Colacino. Sue is the daughter of Zone Manager G. F. Mayse. Keith, son of Shift Foreman G. C. Lauderbach, is student body vice president. Linda, daughter of Shift Foreman R. W. Salsman, is an officer in various clubs and a former homecoming queen. Han, student body president, is the son of H. W. Swyter, Assistant Zone Manager. Grace, daughter of Zone Manager P. E. Malson, is president of the Honor Society, and was secretary of the student body. Denny, stepson of M. O. Baker, Editor of the Refinery newspaper, is senior class vice president.

KNOWLEDGE BY THE TON

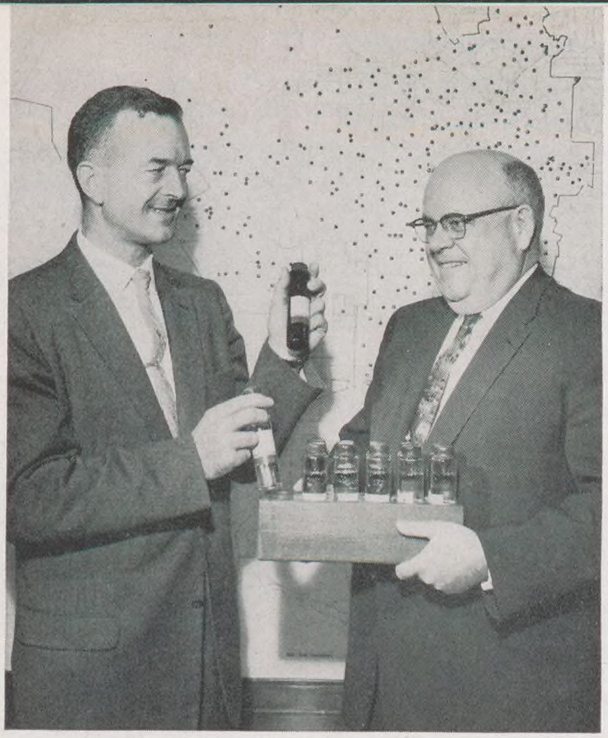
Awaiting shipment to Pakistan are 3½ tons of technical publications collected by D. B. Luten, a Supervisor in the Physical Chemistry Department at the Emeryville Research Center, facing camera, above. They were collected from American Chemical Society members for universities in Pakistan.

SMALL FRY SPEEDSTER

Jimmie Catano, eight-year-old son of P. C. Catano of the Sewaren Plant, was recently granted the wish of all small boys. His father decided to build him a two-horsepower car. Jimmie hopes to enter supervised junior races, which are run in many states. The cars, which cost $200, never exceed 20 miles per hour, are equipped with every practical safety device, and have never caused a serious accident.

CANINE CHAMPS

L. H. Cook, of the Norco, La., Refinery, left, poses his pedigreed one-year-old weimaraner, "Miss Lucky Belle." She has won eight prizes in three shows. Below, Paul Lemley, Tulsa Exploration and Production Area, puts his Walker wolf dog, "Doc Pickett," into a classic pose after he won first prize in a bench show for field dogs. Lemley runs "Doc Pickett" and his seven other Walker wolf dogs in organized coyote hunts.



SCIENCE BOOSTER

Wilmington-Dominguez Process Superintendent C. G. Petersen shows samples of refinery products to Los Angeles City School Superintendent E. A. Jarvis, right. Petersen helped organize a program in which scientists and engineers from Shell lectured at Los Angeles high schools to encourage greater scientific interest and study.

BOSS FOR A DAY

The Martinez Refinery had a new boss recently, but only for a day. He was 17-year-old Explorer Scout John A. Davis of Martinez, Calif. Above, Refinery Manager R. S. Douglass watches as John takes over his desk on Explorer Scout Recognition Day. This Day, which includes tours and conferences, is part of the annual National Boy Scout Week activities, designed to give Scouts a look at business.

SHAM SHAMUS SOLVES REEL CRIME

Members of The Shell Playhouse, a Head Office dramatic group, recently produced a feature-length sound motion picture. Entitled "Rock Diamond's Last Case," it is intended as a parody of all hardboiled detective stories with an exaggerated, complicated plot and an amazingly simple solution. The scene at left was taken from the movie, which was shot in Head Office and New York City suburbs. Standing, left to right, after vanquishing evil, in a tough fight, are T. A. Maloney, A. C. Welling, M. J. Long, R. D. Roe and R. F. Shawney, Jr. Floored, after being "temporarily knocked out" are "villains" D. T. Urmston, left, and L. P. Danckaert. The cast includes 122 players. Running 48 minutes, the black-and-white movie was given 15 evening showings in New York.

Service BIRTHDAYS

Forty Years

M. BERTA, Midland Area, Gas

J. J. DOOLING, Wood River Refinery, Engineering Field

R. A. ELDRIDGE, Head Office, Manufacturing

M. C. F. GRAEBER, Wilmington Refinery, Alkylation

E. G. SIMON, Norco Refinery, Utilities

Thirty-Five Years

P. L. BRISCOE, Pacific Coast Area, Production

W. T. BROWN, New Orleans Area, Gas

E. H. CHEESEMAN, Pacific Coast Area, Production

D. J. CIOCHETTI, Wilmington Refinery, Distilling

A. L. COOK, Pacific Coast Area, Production

A. H. CURRY, Denver Area, Production

J. E. EDELL, Wilmington Refinery, Engineering Field

H. W. EGLIHT, Head Office, Financial

J. P. FRIEDMAN, New Orleans Division, Sales

J. S. GILBERT, Tulsa Area, Purchasing-Stores

L. M. HETER, Midland Area, Production

D. KALB, Indianapolis Division, Sales

G. E. KEISTER, Chicago Division, Sales

F. KORTLANDT, Shell Chemical Corp., Head Office

W. E. KUEHNE, Minneapolis Division, Marketing Service

C. D. LEE, Tulsa Area, Production

V. A. LENOUX, Pacific Coast Area, Production

J. R. LEWIS, Midland Area, Gas

H. LOUNSBURY, Martinez Refinery, Lubricating Oils

K. L. MALCOLM, Sacramento Division, Marketing Service

W. M. MARTIN, San Francisco Division, Administration

E. J. McCRACKEN, Head Office, Transp. & Supp.

G. McKINLEY, Pacific Coast Area, Production

G. C. MERRIS, Portland Division, Treasury

C. E. MYER, Wilmington Refinery, Catalytic Cracking

F. L. NUTTING, Martinez Refinery, Cracking

C. C. PALMER, Martinez Refinery, Cracking

J. E. PENDERGAST, Seattle Division, Manager

S. G. ROGERS, Wilmington Refinery, Dispatching

J. A. ST. PIERRE, Norco Refinery, Refinery Laboratory

U. C. SCHOLL, Wilmington Refinery, Dispatching

F. U. SHUBERT, Wilmington Refinery, Engineering Field

H. R. P. THOMPSON, San Francisco Division, Operations

J. R. URTASUN, Pacific Coast Area, Production

L. W. VANCE, Tulsa Area, Production

B. K. VANDEVEER, Pacific Coast Area, Production

D. W. WISE, Tulsa Area, Land

O. A. WOHLWEND, Wilmington Refinery, Engineering Field

E. W. WRIGHT, Tulsa Area, Production

Thirty Years

R. W. ALCOCK, Wilmington Refinery, Refinery Laboratory

L. K. ALLEN, Pacific Coast Area, Production

Thirty Years *continued*

C. E. ARBUTHNOT Head Office Manufacturing	J. S. BABIN Norco Refinery Gas	C. L. BATEMAN Seattle Division Sales	C. BAUMGARDNER Martinez Refinery Engineering Office	J. BERVER Houston Refinery Engineering Field	E. F. BETTNER Seattle Division Operations	J. F. BISHOP Houston Refinery Utilities	R. S. BONNER Martinez Refinery Distilling

C. R. BROCKMEYER Houston Refinery Engineering Construction	W. H. BRUCE Martinez Refinery Refinery Laboratory	ANNA T. BUECHNER Boston Division Treasury	E. F. BULLARD Shell Development Co. Emeryville	C. H. CAPEN Wilmington Refinery Refinery Laboratory	W. R. CHAPPELL Houston Area Gas	H. C. CHARTER San Francisco Office Marketing Service	J. J. CHIVERS Martinez Refinery Compounding	W. H. CLEMMONS Pipe Line Dept. Los Angeles, Calif.

W. H. CRAIG Seattle Division Operations	W. E. DEHART Houston Refinery Engineering Field	M. C. DOBSON Pipe Line Dept. Birmingham, Ala.	W. W. DONEHOO Houston Refinery Aromatics	J. S. DRAIS New Orleans Division Marketing Service	T. H. EDMISTON Houston Refinery Engineering Field	A. J. ENGLISHBY Houston Refinery Engineering Field	B. D. FERGUSON Pacific Coast Area Production	D. H. FORD Head Office Financial

E. GEHRES Seattle Division Sales	S. J. GENNUSA Houston Refinery Dispatching	W. M. GEORGE Houston Refinery Dispatching	E. L. GIBSON Wilmington Refinery Compounding	R. C. GRANUCCI Los Angeles Division Operations	G. GUERRI Boston Division Operations	J. H. HAMILTON Indianapolis Division Administration	J. R. HAMILTON Wood River Refinery Distilling	C. M. HANLINE Pacific Coast Area Production

C. V. HANSON Martinez Refinery Engineering Office	W. M. HARRIS Chicago Division Treasury	W. V. HARRIS Seattle Division Treasury	HAZEL A. HARWOOD Atlanta Division Treasury	F. J. HAYES Washington Office Administration	J. HEANEY Shell Development Co. Emeryville	F. G. HEMINGHAUS Atlanta Division Operations	P. C. HICKEY Portland Division Treasury	L. B. HOLT Portland Division Operations

V. T. HOSKING Shell Chemical Corp. Martinez Plant	F. O. KENNEDY Shell Pipe Line Corp. Mid-Continent Division	O. C. LANGLEY Norco Refinery Engineering Field	A. M. LARSEN Chicago Division Operations	N. J. LOYET St. Louis Division Operations	C. E. LYNCH Portland Division Operations	H. A. MATTHEWS Norco Refinery Purchasing-Stores	S. W. McCARTHY Boston Division Sales	J. H. McELROY Indianapolis Division Operations

Thirty Years continued

W. McPHERSON
Sacramento Division
Treasury

D. E. McREYNOLDS
Seattle Division
Operations

F. H. MEYER
St. Louis Division
Marketing Service

G. H. MILLER
Shell Pipe Line Corp.
Head Office

A. K. MILLS
Wilmington Refinery
Experimental Laboratory

D. W. MUCKLE
Boston Division
Sales

J. C. NICHOLS
Tulsa Area
Gas

R. J. NICHOLS
Portland Division
Operations

J. NIERHAKE
Martinez Refinery
Lubricating Oils

E. A. NORDSTROM
Wood River Refinery
Engineering Office

E. E. OGLETHORPE
Houston Refinery
Engineering Field

M. L. ORD
Shell Chemical Corp.
Torrance Plant

A. M. OSE
Seattle Division
Operations

D. R. PEDERSEN
San Francisco Division
Treasury

A. R. PERRY
Wilmington Refinery
Engineering Field

E. J. PETIT
Norco Refinery
Engineering Field

F. O. POWELL
Shell Pipe Line Corp.
Texas-Gulf Division

J. F. PRESNAL
Sewaren Plant
Terminal

W. B. REYNOLDS
Los Angeles Division
Operations

H. A. RINK
Wood River Refinery
Purchasing-Stores

R. ROBERTSON
San Francisco Div.
Treasury

R. C. ROBINSON
Atlanta Division
Sales

W. A. SADLER
Pipe Line Dept.
Conejo, Calif.

R. SCHALLER
Shell Chemical Corp.
Shell Point Plant

LIDA MAY SCOTT
St. Louis Division
Treasury

D. B. SETTY
Pipe Line Dept.
Tranquility, Calif.

J. SILVIA
Boston Division
Operations

J. H. SIMONEAUX
New Orleans Area
Treasury

H. A. SOUMAN
Head Office
Marketing

L. H. SMITH
Pipe Line Dept.
East Chicago, Ind.

B. W. STANGER
Wilmington Refinery
Treasury

R. M. STEARNS
Portland Division
Sales

K. R. STOKER
Portland Division
Sales

L. E. STOVALL
Shell Pipe Line Corp.
Texas-Gulf Division

KATHLEEN M. STURGES
Baltimore Division
Treasury

W. A. SULLIVAN
Head Office
Manufacturing

L. M. SUTHERLAND
Shell Pipe Line Corp.
West Texas Division

L. L. SWANSON
Seattle Division
Operations

L. W. TALKINGTON
Wood River Refinery
Engineering Field

R. P. THOMPSON
Los Angeles Division
Sales

HELEN T. TOLLESEN
Portland Division
Treasury

C. H. VAN HEES
Norco Refinery
Purchasing-Stores

L. B. WALKER
Wilmington Refinery
Refinery Laboratory

W. R. WALKER
Los Angeles Division
Sales

M. W. WALSH
Norco Refinery
Catalytic Cracking

DOROTHY WANGLER
St. Louis Division
Treasury

H. M. WATCHERS
San Francisco Office
Marketing Service

W. L. WILLIAMS
Norco Refinery
Effl. Cont., Fire & Safety

E. J. WOOD
Seattle Division
Sales

H. YAHR
Shell Chemical Corp.
Houston Plant

E. C. YARWOOD
Seattle Division
Operations

R. G. YOUNG
Shell Pipe Line Corp.
West Texas Division

Thirty Years continued

W. K. YOUNG
Honolulu Division
Operations

F. C. ZELTMANN
New Orleans Area
Pers. & Ind. Rel.

Twenty-Five Years

O. ALEXANDRESCU
Wilmington Refinery
Technological

P. BARRACO
Norco Refinery
Engineering Field

E. F. BARTNIK
Portland Division
Operations

A. E. BOYER
Shell Chemical Corp.
Martinez Plant

C. L. BRANDSASSE
St. Louis Division
Treasury

R. C. BRUNSON
Houston Area
Production

A. A. BRUSATORY
Shell Chemical Corp.
Martinez Plant

J. H. BULLOCK
Pacific Coast Area
Production

M. I. CALDWELL
Shell Development Co.
Emeryville

E. W. CASAGRANDE
Shell Chemical Corp.
Martinez Plant, Manager

J. CASAS
Houston Refinery
Engineering Field

E. J. COWING
St. Louis Division
Sales

D. J. CREAGAN
Albany Division
Treasury

R. W. CROWSON
Martinez Refinery
Engineering Field

F. R. CURTISS
Shell Chemical Corp.
Houston Plant

L. G. DAILEY
Chicago Division
Operations

L. E. DAVIS
Shell Chemical Corp.
Dominguez Plant

C. DAWKINS
Martinez Refinery
Fire and Safety

C. R. DAWSON
Martinez Refinery
Research Laboratory

J. A. DOWD
New York Division
Operations

C. J. EDMUNDSON
Pacific Coast Area
Exploration

J. F. FIDIAM
Shell Development Co.
Emeryville

J. E. FLACY
Pacific Coast Area
Production

H. F. FLINT
Shell Chemical Corp.
Dominguez Plant

M. FOLDI
Sewaren Plant
Compound

C. P. GAJDASIK
New York Division
Operations

L. GARDENHIRE
Martinez Refinery
Cracking

J. A. GASPARD
New Orleans Area
Production

T. J. GASTON
Detroit Division
Operations

G. H. GELLERSEN
Pipe Line Dept.
Indianapolis, Ind.

R. H. GILLETTE
Portland Division
Treasury

EVELYN GLASCOCK
Shell Chemical Corp.
San Francisco, Calif.

G. L. GOODPASTURE
Midland Area
Production

M. W. GOTH
Wood River Refinery
Compounding

W. HALE, JR.
Shell Pipe Line Corp.
West Texas Division

L. E. HALL
Shell Chemical Corp.
Martinez Plant

F. M. HASLAM
Pipe Line Dept.
Bakersfield, Calif.

B. HAWKINS
Midland Area
Purchasing-Stores

H. W. HEWSTON
Pacific Coast Area
Production

L. C. HINMAN
Wood River Refinery
Utilities

J. R. HOOD
Shell Pipe Line Corp.
Texas-Gulf Division

C. O. HURD
Shell Development Co.
Emeryville

R. E. JARRETT
Tulsa Area
Treasury

M. L. JOHNSON
New Orleans Area
Production

E. R. JONES
Houston Area
Production

J. H. JONES
Houston Area
Production

W. KENDRICK
Houston Area
Production

S. B. KIESELHORST
Head Office
Transp. & Supp.

L. T. KIRKLEN
Shell Pipe Line Corp.
West Texas Division

J. KOPI
Sewaren Plant
Compound

H. O. KRASS
Chicago Division
Operations

F. D. KUENZLY, JR.
Shell Chemical Corp.
Ventura Plant, Manager

W. S. LANDIS
San Francisco Office
Transp. & Supp.

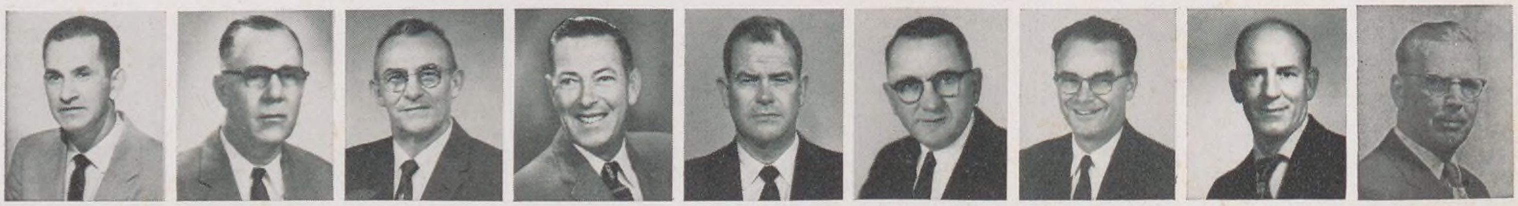
V. H. LEE
Shell Pipe Line Corp.
Mid-Continent Division

P. J. LIESMANN
St. Louis Division
Operations

R. M. LOWRY
Shell Chemical Corp.
Norco Plant

C. C. LUDWICK
Denver Area
Exploration

E. McKEE
Houston Area
Production



G. McSORLEY
Martinez Refinery
Lubricating Oils

R. E. MEBANE
Shell Pipe Line Corp.
Texas-Gulf Division

E. G. MITCHELL
Houston Refinery
Engineering Field

J. L. MOORE
New Orleans Area
Exploration

H. H. MOYERS
Shell Chemical Corp.
Torrance, Calif.

R. T. NELSON
Chicago Division
Operations

S. J. OERTLING
Norco Refinery
Technological

S. P. O'NEAL
Houston Refinery
Aromatics

A. H. ORN
Chicago Division
Operations

J. OSEP
Chicago Division
Operations

LUCY M. PAPAC
Los Angeles Division
Sales

F. E. PATTEN
Boston Division
Operations

R. V. PAYNE
Pacific Coast Area
Exploration

J. C. PEPPER
Shell Pipe Line Corp.
Texas-Gulf Division

G. T. PETERS
Pacific Coast Area
Production

W. S. PIPER
San Francisco Division
Sales

R. A. RAYMAKER
Chicago Division
Sales

G. R. REED
New Orleans Area
Gas

W. L. ROBBINS
Wood River Refinery
Compounding

G. J. RUESCH
Head Office
Marketing

G. B. RUFFING
San Francisco Office
Transp. & Supp.

C. B. SCHULZ
Baltimore Division
Sales

H. C. SCHULZ
San Francisco Division
Operations

J. I. SEYMOUR
New York Division
Operations

J. A. SHERIDAN
Chicago Division
Sales

G. B. SMITH
Houston Area
Production

J. L. SMITH
New Orleans Area
Production

L. F. SOARES
Sacramento Division
Sales

J. J. SONNIER
Shell Pipe Line Corp.
Head Office

E. G. STOREN
Chicago Division
Operations

E. J. TESHNOW
Chicago Division
Sales

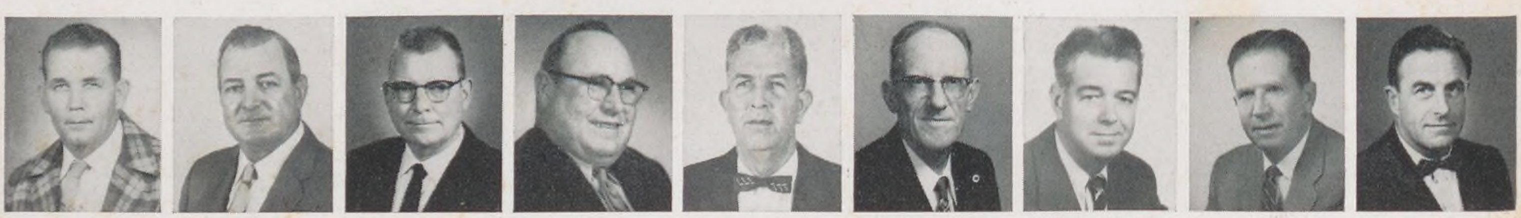
B. A. THOMPSON
Pacific Coast Area
Production

S. C. THOMPSON
Houston Area
Production

V. W. TIPTON
Shell Pipe Line Corp.
Texas-Gulf Division

E. K. TUTHILL
New Orleans Area
Production

F. J. UNDERWOOD
Houston Area
Land



W. B. UPCHURCH
Tulsa Area
Production

L. P. WAGUESPACK
Norco Refinery
Engineering Field

R. R. WARD
Shell Development Co.
Emeryville

F. H. WARNER
Houston Area
Production

B. M. WILSON
Shell Chemical Corp.
Norco Plant

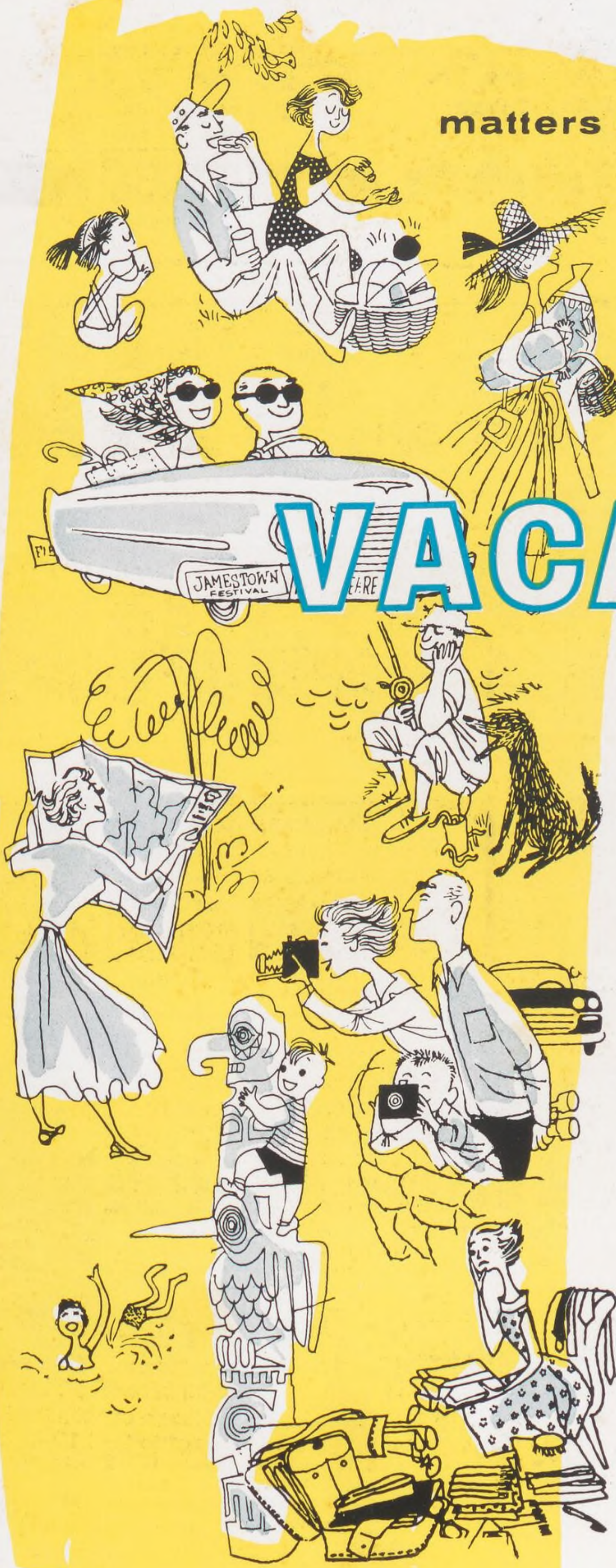
J. F. WINTERS
Boston Division
Operations

G. O. WRIGHT
San Francisco Division
Operations

G. L. WULFF
New Orleans Division
Treasury

P. S. ZUCCO
Shell Development Co.
Emeryville

matters of fact



VACATIONS PAY OFF

The vacation you earn each year "pays off" by providing you with opportunities for travel, relaxation and a change of pace.

Last year, Shell people spent a total of almost 100,000 weeks (or nearly 1,900 man-years) on vacation:

- **18,748** employees with between one and nine years of service had two-week vacations.
- **9,955** employees with between 10 and 19 years of service had three-week vacations.
- **7,468** employees with 20 or more years of service had four-week vacations.

During this time away from their jobs, employees received more than $13.5 million in vacation pay.

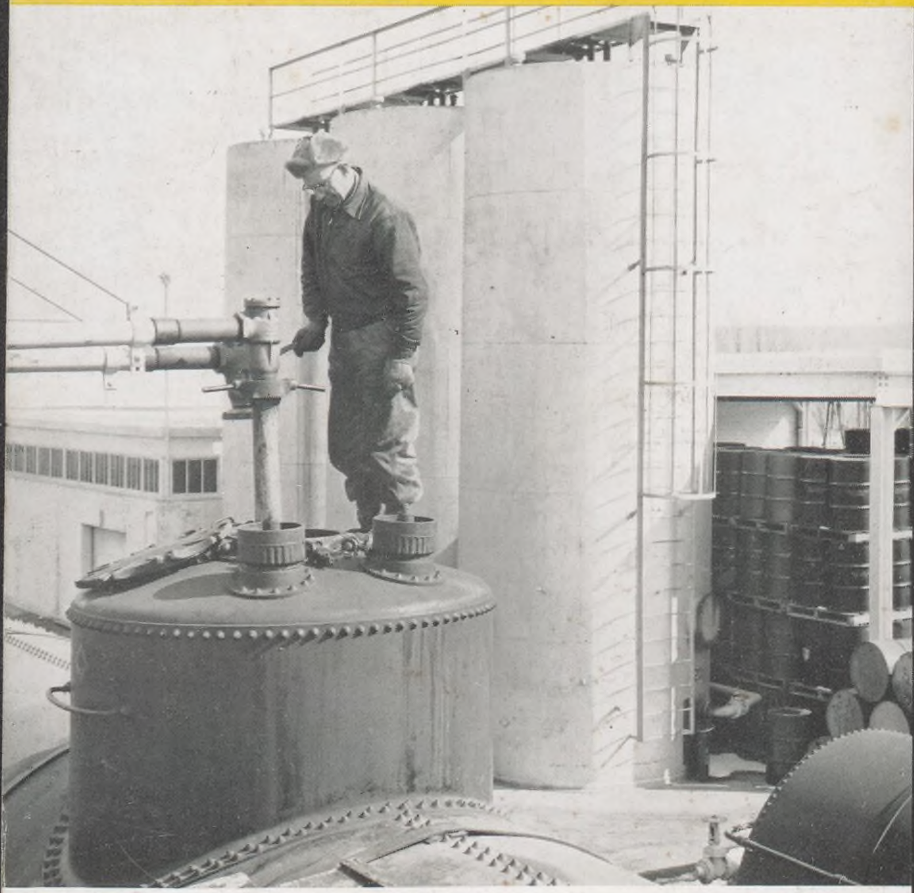
SHELL OIL COMPANY
50 West 50th Street
NEW YORK 20, N. Y.
RETURN POSTAGE GUARANTEED

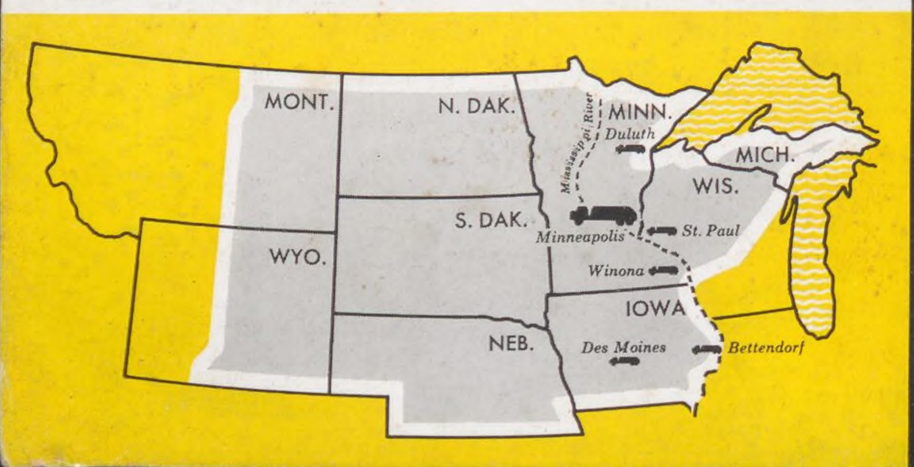
J. B. Bradshaw
10231 Eddystone Dr.
Houston 24, Texas

SPL

BULK RATE
U. S. POSTAGE
PAID
New York, N. Y.
Permit No. 1101

LANDMARKS OF PROGRESS





The Minneapolis Marketing Division

AS part of Shell Oil Company's original marketing expansion in the Midwest, in 1927, the Company established a marketing operation in the Minnesota twin cities of Minneapolis and St. Paul with two jobbers and 26 service stations.

Shell's marketing in that region—now the Minneapolis Division—has grown to include all or parts of nine states. In four of these states, Shell markets gasoline; in the others, transportation costs and other marketing problems make the sale of Shell motor gasoline uneconomic. However, the Division sells lubricants, heating fuels or other Shell products throughout its nine-state territory.

At the Division Office in Minneapolis there are 119 employees, while the five Districts, with offices at St. Paul, Duluth and Winona in Minnesota, and at Des Moines and Bettendorf in Iowa, include 167 employees.

In the photograph at the left at the St. Paul Terminal, Warehouseman E. J. Holst, who loaded the first tank car at the Terminal in 1937, is shown filling a car at a modern loading rack equipped to load 12 tank cars simultaneously, each at a rate of 1,000 gallons a minute.

The Division serves this bountiful agricultural and industrial region through 150 jobbers, 400 industrial accounts and more than 1,300 service stations.