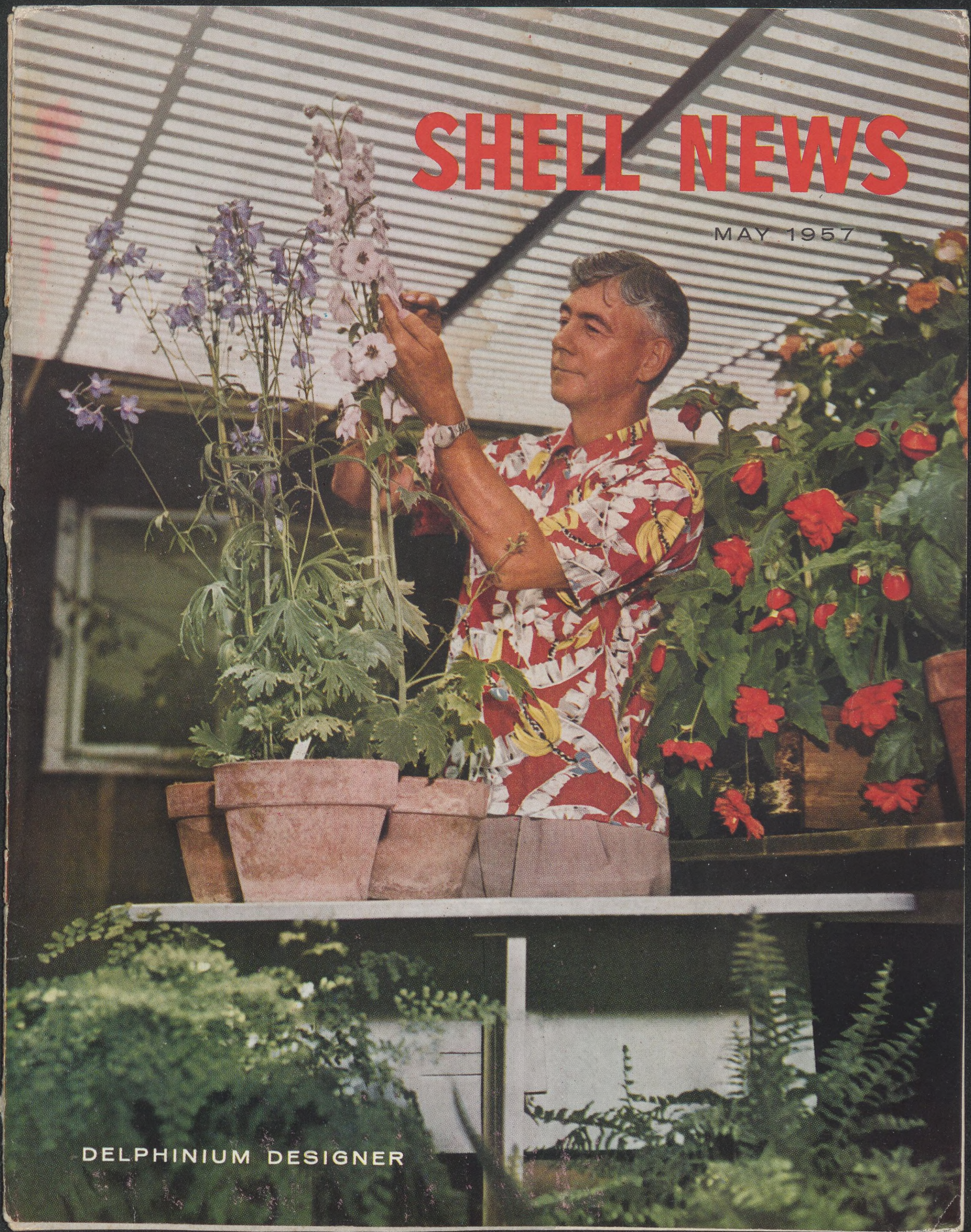
SHELL NEWS

MAY 1957



DELPHINIUM DESIGNER

Oil in the Icebox

The "Christmas tree" of a producing oil well shadowing deep-drifted snow in Canada's far north country marks success in one of the most challenging territories in the world for oil-seekers.

Exploration and production personnel of Shell Oil Company's Calgary Area have only from mid-December to mid-March to penetrate nature's icebox in northwest Alberta, northeast British Columbia and other areas from the United States border to near the Arctic Circle. Much of that region is "muskeg" country—marshland so soggy when thawed that it will not support vehicles. So all field operations, such as seismic shooting, drilling and bringing in

SHELL NEWS

VOL. 25—No. 5 **MAY, 1957**

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

Employee Communications Department
New York, N. Y.

contents

Published by Shell Oil Company (H. S. M. Burns, President; C. C. Combs, Treasurer; J. A. Horner, Secretary) for its employees and those of Shell Chemical Corporation, Shell Development Company and Shell Pipe Line Corporation. Address communications to Employee Communications Department, Shell Oil Company, 50 W. 50th St., New York 20, N. Y.

DELPHINIUM DESIGNER

As a Horticulturist at Shell Development Company's Modesto Agricultural Laboratory, Mason M. Turner works with growing plants every day. At home he uses his professional knowledge to further his project of developing a perfect flower — a delphinium which has scent and can be grown commercially in a wide range of pure colors. On this month's front cover Turner is shown removing pollen from a flower which will be fertilized with the pollen of another. In this way, he develops hybrid plants which often have new and more desirable characteristics. An article about Turner's hobby begins on page 13.

1. Seismic Helper K. T. Reese of the Calgary Area's Seismic Party 192 starts his morning by using a blow torch to thaw the wheels of a recording unit truck frozen during the 50-below-zero night. The tire chains are essential for driving through snow-covered terrain.

4. Here Reese plants a geophone in a snowbank before a seismic shot is fired. The geophone picks up sound waves from formations for recording in-

struments. W
the "jugs" c
be put into

2. Shell seismic parties in the north country use "Bombardier" personnel carriers equipped with treads to move out of camp to the scene of the shooting. The caterpillar-like tracks are ideal for traveling over the muskeg, which will support vehicles only when it is frozen solid.

equipment, must be delayed until the winter freeze-up in December.

But though the winter weather allows travel over the muskeg and the use of frozen lakes as aircraft landing fields, the task of carving trails through the wilderness is a tough one—and costly. (Often bulldozers lead the way, sometimes guided to paths of least resistance by aircraft.) Snowfall averages 40 inches a year, and the deep drifts may limit progress to a few miles per day.

Once in the north country, the crews must keep a close eye on the weather to be sure they are not caught by an early spring. Last year, for example, one piece of equipment bogged down in suddenly-thawed muskeg; it had to wait until the winter freeze to be chipped out of the ground.

Despite the difficulties, the exploration of the oil men is bringing the north country its biggest boost since the last century's fur-trapping boom. The pictures of winter operations on these pages are of seismic crews' work, but the scenes and problems of snow, sub-zero temperature and trackless terrain are equally true of any field work in the far north.

3. Although the temperature here was 20 degrees below zero, this fast-running mountain stream was not solidly frozen when this bulldozer led a shooting truck across.

6. At
tempe

struments. With snow this deep, the "jugs" often do not have to be put into holes in the ground.

5. The smoke plume of a seismic explosion rises from a snowbank a short distance from the seismic party's vehicles. The new trails followed by the party must be hacked out of the wilderness, often by a bulldozer directed by an overhead airplane to paths of least resistance.

6. At day's end, the party returns to its base camp, where portable generators provide electricity and heaters keep the men comfortable in temperatures that go as low as 65 degrees below zero. The seismic crews live in trailers while sounding out the muskeg country's oil potential.

SHELL FROM A TO Z — AN ALPHABET OF GOOD THINGS ABOUT PETROLEUM

A is for

Agriculture Farmers grow few things without oil. Not just oil and gasoline that make cars, trucks and tractors go. Shell research makes possible other farming aids—fertilizers, pesticides, ingredients for animal medicines. Oil helps the farmer farm, helps bring better foods to your table.

Accelerator

One accelerator feeds your car engine with gasoline—Shell with TCP, we hope. Another, Shell's new 3-million-volt accelerator, shoots electrons into plastics, rubber, fuels, lubricants. From such atomic tests Shell researchers gather knowledge that will serve all of us in the Age of the Atom.

Airplane

Know who supplies ½ of all fuel for air lines in North America? Shell. Maybe it's because we helped start the whole business. Shell supplied the first commercial quantities of 100-octane gasoline — way back in 1934.

Aldrin

This is a powerful Shell insecticide: two ounces per acre control grasshoppers.

Aldrin eliminates insect damage to corn, tobacco, peanut and strawberry roots. Above and below the ground farmers find posts are easy marks for aldrin—one of the chief ways Shell helps you enjoy healthier vegetables and fruits.

Antiseptic

Petroleum is important in medicine, too. Isopropyl alcohol, for example. It's one of the most widely used antiseptics, and Shell Chemical makes it from petroleum. Oil products also serve medicine in salves, ointments, vitamins. Shell — helping people stay well.

Artificial moon

In 1958 scientists will learn more about outer space from an artificial satellite circling the Earth like a tiny moon. Shell's UMF fuel is being tested to rocket the satellite from Earth. In two minutes it will push this "moon" to speeds over 3,000 miles an hour.

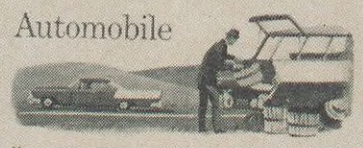
Artisan

Glass blowers, blacksmiths, tinsmiths — it takes men and women skilled in over 1800 different jobs to operate the Shell oil company. Some Shell people follow crafts honored for centuries. Their job: to make a Shell serve you better.

Asphalt

This smooth asphalt road may come from the same Shell well as the gasoline in your tank. Asphalt highways can be laid fast, stand up under heavy traffic for years and years, cost taxpayers less to build and maintain.

Automobile



How many petroleum products are there in your car—besides gasoline and motor oil? Dozens. Plastic steering wheels, synthetic tires come to you from oil chemistry. So do shock-absorbing dashboards, long-wearing plastic seat covers.

ABC's of Shell show you a few of the vast number of everyday conveniences and necessities that the oilman helps bring you. To accomplish this, Shell researchers are always seeking new ways to bring you more things from petroleum. Our ability to serve you depends on them and on all our other people. After all, oil companies are basically people. In Shell's case, almost 40,000 people—all working to make oil work harder for you. That's why Shell means a thousand and one good things for you.

Sign of a better future for you

THE SHELL COMPANIES

SHELL

SHELL OIL COMPANY · SHELL CHEMICAL CORPORATION · SHELL DEVELOPMENT COMPANY · SHELL PIPELINE CORPORATION · SHELL OIL COMPANY OF CANADA, LTD.

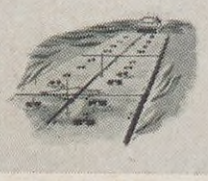
The first two of a new series of Shell Companies "alphabetical" advertisements, above and below, will appear in Life *magazine in May. Each of the advertisements will be built around a different letter to give readers an "alphabet of good things about oil."*

SHELL FROM A TO Z — AN ALPHABET OF GOOD THINGS ABOUT PETROLEUM

B is for

Baby At the tender age of three minutes, he was bathed in a soothing petroleum product. Soon after, he used baby lotions, bottle nipples, bibs and a lot of other b's that could come from petroleum. These started him on his way to the 57,805 gallons of oil he'll use during his life (lots of it from Shell, we hope).

Barge



One way 1001 oil products get to market. (Other ways: tank car, ocean tanker, pipeline, truck.) Barge trains — some longer than the "Queen Mary" —are a low-cost way to haul products, help us keep the price to you as low as possible.

Basement

The new basements are cheery places. A trim oil burner fits in —even in no-basement homes.

Always remember that you can rely on your local Shell fuel supplier. He knows your burner inside out, will see that it works perfectly. He's your best *foul*-weather friend!

Bathing suits

They're brighter, they dry faster, they hold their shape—and shapes—better. All made possible by the new oil-based synthetic fabrics, and the new colorfast dyes that come from petroleum products.

Beach

With 300,000 miles of swimming in North America, it's only a short drive to good wet fun. Your car, modern roads and gasoline combine to give you the world's most convenient family transportation.

Brain power

A mathematician covers his slate with equations. Geologists argue over midnight coffee. Brain power is a prime resource. That's why Shell supports schools and colleges to train the people who will work for you tomorrow.

Brass band

Oil products can be tar-heavy or air-light. One of the lightest: an oil refined by Shell to lubricate trumpet valves—a clear case where we help somebody blow his own horn.

Bugs

Shell can't kill all of the 10,000 harmful species of bugs on this continent. But minute doses of aldrin and dieldrin (Shell insecticides) can new deal death to whole plagues of insects like rootworms, grasshoppers, boll weevils and mosquitoes.

Butadiene

It's a basic ingredient of synthetic rubber. Shell researchers developed a way to make it as early as 1938. In 1941 Shell built a plant in time to supply defense needs. Now manufacturers use butadiene rubber in tires, overshoes, floor tiles, and other rubber items.

Below you'll see that Shell is actually a family of five companies—all necessary to each other and to you. You may never have heard of Shell Development Company, where most of our basic research is done. But out of it have come some of the most important modern oil and chemical processes known today—methods that Shell uses to originate and refine inexpensive and useful things that you use daily. In our business, the supreme ingredient is quality—and you get it in supreme quantities, because we can follow oil and its 1001 derivatives all the way from well to you.

Sign of a better future for you

THE SHELL COMPANIES

SHELL

SHELL OIL COMPANY · SHELL CHEMICAL CORPORATION · SHELL DEVELOPMENT COMPANY · SHELL PIPELINE CORPORATION · SHELL OIL COMPANY OF CANADA, LTD.

THE ABC'S OF OIL

A Series of Two-Page Advertisements by Shell in Life *Magazine Will Give an Alphabet of Oil Uses*

Shell will start in May a series of two-page advertisements in *Life* magazine to give readers an "alphabet of good things about petroleum."

The advertisements will be signed by the Shell Companies—Shell Oil Company, Shell Chemical Corporation, Shell Development Company, Shell Pipe Line Corporation and Shell Oil Company of Canada, Limited. The advertisements will tell the story of Shell as a "family" of integrated companies covering the major phases of the oil industry: exploration and production, research, manufacturing, transportation and marketing.

Each of the advertisements, in full color, will be keynoted by a different letter of the alphabet to give *Life* readers a "dictionary of ideas" of the importance of petroleum products in their daily lives. The first four advertisements are scheduled to appear in *Life's* four issues in May. The next two will appear in July, one in August, three in September and three in November.

Each of the two-page spreads features one major topic and several others are treated less prominently. The first of the series, for example, has "A is for Agriculture" as its major feature. The illustration of a farm scene is accompanied by copy telling of the improvements in agriculture made possible by Shell research and products. The headline is: "Farmers grow few things without oil." Other subjects included in the advertisement, each with a smaller illustration, are: accelerator, airline, antiseptic, artificial moon, artisan, asphalt and automobile.

The variety of activities, services and products included in this initial advertisement is an indication of the scope—and a major objective—of the series. The advertisements will give *Life's* 28 million readers a good idea of the variety of products included among the more than 1,000 made and marketed by Shell, and will underline Shell's contribution to our way of life.

The second advertisement's main illustration features "B is for Baby" and says: "At the tender age of three minutes, he was bathed in a soothing petroleum product." The third features the physician's symbol, a Caduceus, and outlines how important petroleum products are in medicines. Dealers, particularly the 23,000 Shell service station owners, are saluted in the fourth of the series: "His gasoline hose is the last 10 feet of the route from oil well to you." That advertisement goes on to discuss such diverse topics as dance floor, D-D® soil fumigant, dead well, degree days, diesel, dinghy, doodle bug and drive-in.

The frequent appearances of the advertisements will provide the continuity necessary to give the public an over-all concept of the Shell Companies, and the advertisements' format—tailored to fit into *Life's* approach of telling a story with pictures—will add to their impact.

Through the series, *Life's* readers will learn about Shell's accomplishments in every phase of the oil industry and, perhaps most important of all, they will be reminded that Shell is not just a name, but is people—drillers and dealers, salesmen and scientists, secretaries and superintendents.

BOUNCING BABY GROWS UP

The Synthetic Rubber Industry Booms As Manufacturers Put the Material's Versatility to Work

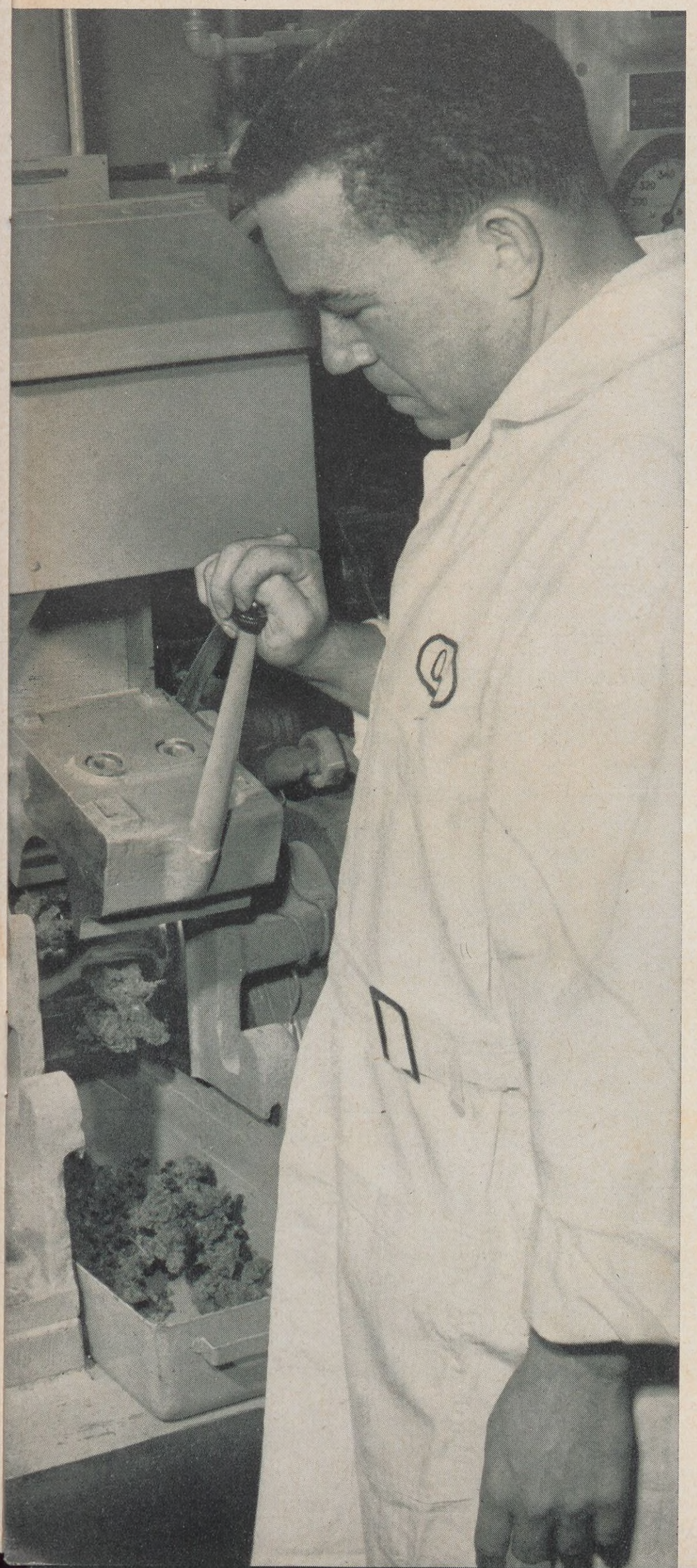
By the end of this year, the United States will be manufacturing almost as much rubber as all the rubber trees in the world produced in 1956. U. S. consumption of synthetic rubber bounced ahead of natural rubber in 1951 and has stretched its lead since then. Last year synthetic rubber accounted for about 61 per cent of the total rubber used in the nation —which is about the same position natural rubber held eight years earlier.

The big switch to synthetic rubber has developed because of its low, stable price and its versatility. For years the price of natural rubber has been erratic—going up and down in response to supply and demand and to various international crises—while synthetic rubber prices have remained steady. Moreover, since natural rubber has the same structure regardless of where it comes from, it cannot be tailored readily for specific applications. With synthetic rubber many types are available, each designed to meet specific needs.

To help meet the growing demand, Shell Chemical Corporation—the only manufacturer of synthetic rubber west of the Rocky Mountains—completed additional facilities at its Torrance (California) Plant late last year. Today the Torrance Plant supplies 23 different types of general purpose synthetic rubber for rubber firms whose chief products are tires and retread stock, as well as for hundreds of fabricators who make garden hose, floor tile, toys, teething rings, and countless other items.

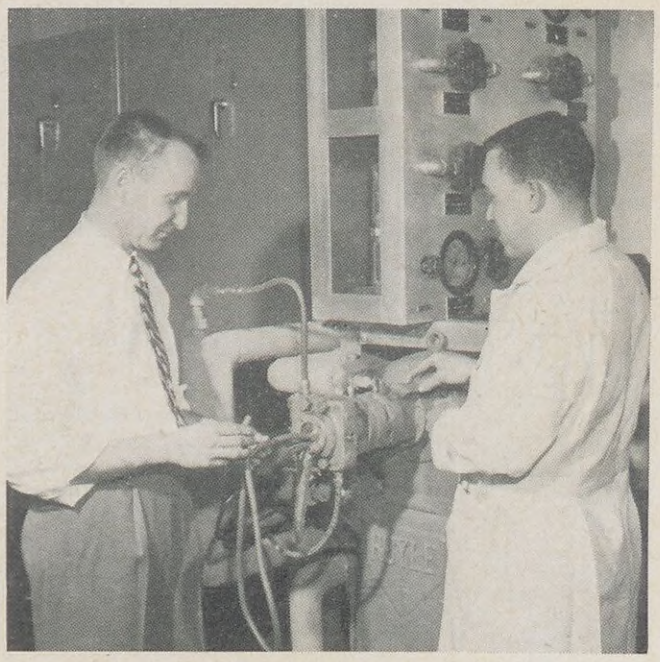
Craft Foreman S. W. Ermey examines particles of synthetic rubber in the "crumb" stage at Shell Chemical Corporation's Torrance Plant. In most cases, the latex particles are coagulated into these larger crumbs, dried and compressed into 75-pound bales for shipment to rubber product fabricators.

In the Technical Service Laboratory at the Torrance Plant, Laboratory Assistant O. B. Terrell operates a scale-model Banbury mixer patterned after the giant mixers used by rubber product manufacturers. The model is used to mix carbon black, sulfur and other additives into Shell rubbers.

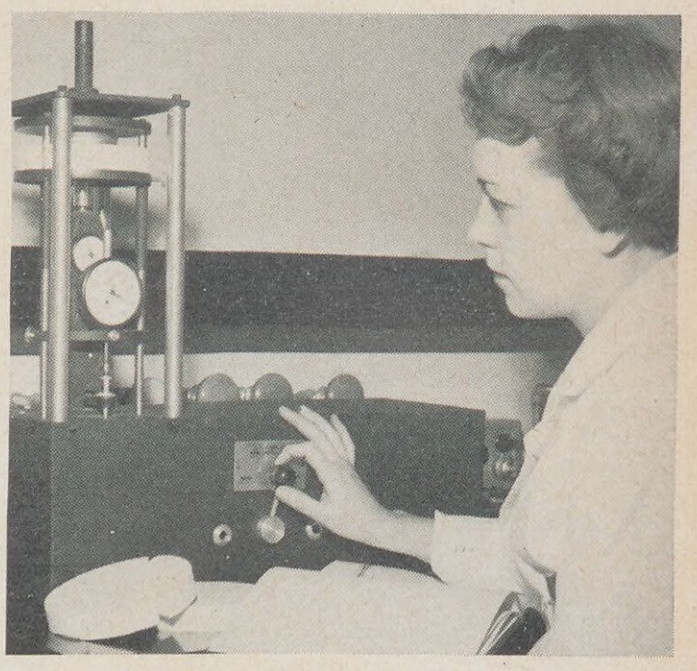


Laboratory Assistant E. S. Chapman operates the controls of the vulcanization presses in the Technical Service Laboratory. Here rubber compounds are cured by a combination of heat and pressure, which gives rubber its ability to bounce back into shape after receiving blows or being under pressure.

Preparing for the last step in making a sample of foam rubber, Laboratory Assistant E. E. Ewins pours whipped liquid latex into the mold in which it will be cured.



Chemist J. A. Sanford, left, and O. B. Terrell operate a model extruder. With this machine, Laboratory scientists study the production of tubing from Shell's synthetic rubber.



Laboratory Assistant Patricia M. Troutman operates a foam rubber compression tester. The apparatus measures the softness of foam rubber samples made in the laboratory.

Shell's synthetic rubbers are made from butadiene and styrene—products derived from petroleum. The principal source of butadiene is butylene, a petroleum gas, and the principal raw materials in styrene are benzene and propane. More than 80 per cent of the synthetic rubber manufactured in the United States is made from these two products.

Both butadiene and styrene are manufactured at the Torrance Plant. They are combined in a process called polymerization, which takes 11 to 17 hours. In the process, butadiene and styrene are mixed with minor portions of other chemicals and large quantities of soapy water. The result is latex, an emulsion containing about 25 per cent rubber in the form of small solid particles suspended in water. The latex may be sold directly to customers for specialized uses or—as is more often the case—the small rubber particles are coagulated to form rubber "crumbs" ranging in size from small beads to golf balls. The crumbs are washed, dried and pressed into 75-pound bales for shipment to customers.

Two polymerization processes are used at Torrance—the "cold" process, which takes place at 41 degrees Fahrenheit, and the "hot" process, at 122 degrees F. The cold method is used to manufacture about two-thirds of the rubber at the plant. Cold rubber is used in products which require strength and resistance to abrasion and, consequently, is particularly valuable in tire treads. Hot rubber, on the other hand, is used in making molded and extruded goods. However, many products contain both hot and cold rubber. For example, some automobile tires contain six different types of synthetic rubber, both hot and cold.

The types of rubber made by Shell vary not only in the temperature at which they are made, but also in the ratio of butadiene to styrene they contain and in the additives blended into them. One common additive is a special oil which softens the rubber and extends its quantity. This oil-extended rubber, first used during the Korean fighting to boost rubber supply, is used for tires, retreads and molded items. Carbon black is another additive used to meet certain specifications. This additive strengthens the rubber and makes it more resistant to abrasion.

To help manufacturers use synthetic rubber effectively and to develop new applications for its own synthetic rubber, Shell Chemical has established a Technical Service Laboratory at the Torrance Plant. The Laboratory is primarily interested in finding how to process and make better rubber articles from Shell's synthetic rubber and, consequently, has scale models of much of the production line equipment used by rubber product manufacturers. In testing rubber goods made with the small-scale machinery, the Laboratory scientists use equipment that stretches, twists,

pounds, tears and artificially ages the rubber.

Manufacturers who have been switching from natural rubber to synthetic rubber have found the Laboratory most useful in helping them choose the right rubber for a product and showing them how to make the best use of its particular characteristics. One rubber company was having difficulty finding a suitable synthetic rubber to replace natural rubber in a water pipe gasket. The gasket had to have enough flexibility to spring back into place when the pipe joint moved. The Technical Service Laboratory developed a special compound, using one of the cold rubbers and explained the best way to use it. The result was a more effective seal at less cost.

Another manufacturer was planning to make translucent fins for the gear used by skin divers. Normally, synthetic rubber would not be considered for such applications as it is generally thought to be weak and easily torn unless mixed with carbon black. However, the Technical Service Laboratory used a cold rubber and some new types of colorless reinforcing agents to make a rubber compound that did the job.

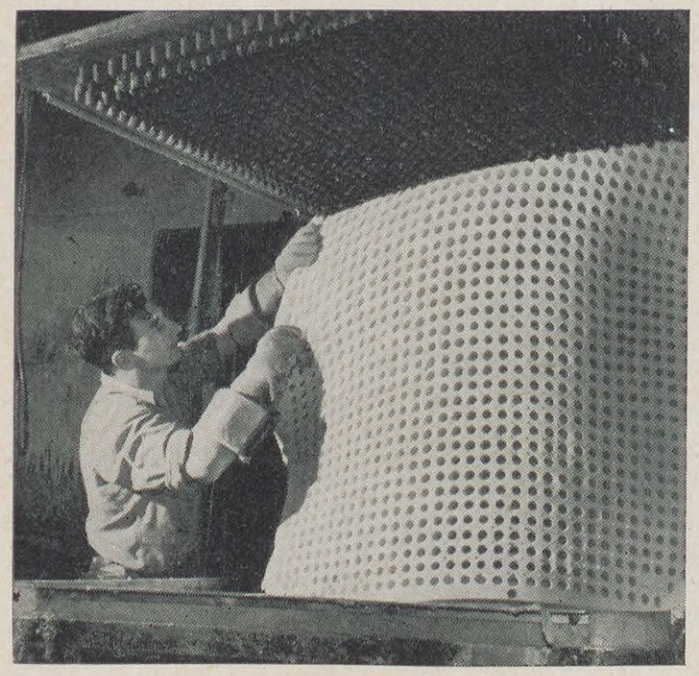
In addition to the Technical Service Laboratory, the Torrance Plant has a Research Laboratory which studies new emulsion polymerization processes, different methods of producing butadiene and styrene, and other basic research problems. While the Technical Service Laboratory studies how different rubbers perform, the Research Laboratory is interested in why the rubbers react the way they do. Having reasons for the performance of various types of synthetic rubber helps the Research Laboratory to develop new types and improve old ones.

A new cold, high solids latex unit was recently completed at the Torrance Plant to increase the production of this synthetic rubber compound for western manufacturers of foam rubber products. The unit makes latex which contains 60 per cent rubber, compared to the 25 per cent in ordinary latex.

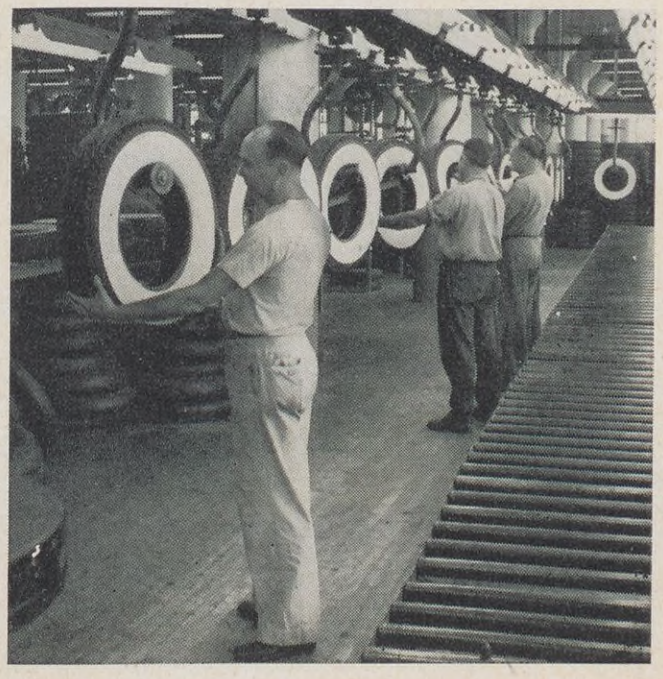
The completion of the latex unit, plus additions to the butadiene facilities and improvements in the polymerization unit, have increased the Torrance Plant's synthetic rubber production to 110,000 long tons annually. This compares to the plant's 89,000-ton capacity when it was purchased from the federal government in 1955.

Shell Chemical's increased production will help supply the mounting demand for synthetic rubber—which some experts predict will provide 75 per cent of the nation's rubber needs by 1960. During the first three months of this year, synthetic rubber gained one percentage point over natural rubber, bringing its total to 62 per cent of the rubber being used in the United States today.

This is what a full-size foam rubber mattress looks like as it is removed from its mold after being baked or cured in the plant of a Shell Chemical synthetic rubber customer.

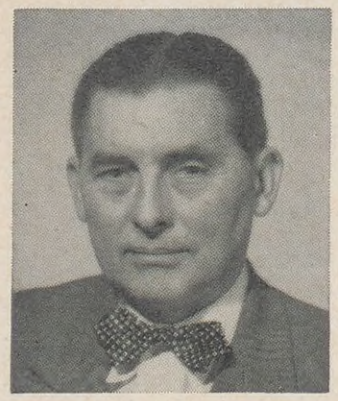


Almost 75 per cent of the synthetic rubber produced goes into automobiles, mostly in tires. Here whitewall tires come off an assembly line of a auto tire factory in Los Angeles.



Most of Shell Chemical's customers are small manufacturers who make products ranging from teething rings to the skin diver's swim fins and masks, shown below.

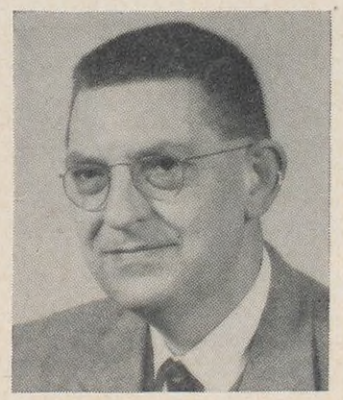
SHELL PEOPLE



M. W. TAMELE

Shell Development Company

M. W. TAMELE, Associate Director of Research at Shell Development Company's Emeryville Research Center, will be attached to Koninklijke/Shell Laboratorium, Amsterdam, the Netherlands, effective June 1. Mr. Tamele, who holds a Doctor's degree in science from the University of Prague, joined Shell Development Company at Emeryville in 1929 as a Research Chemist. He was named Associate Director of Research in 1945. In his new assignment, Mr. Tamele will assist the Director of Research of K. S. L. A. in planning and directing the implementation of the fundamental physico-chemical knowledge and insight in the field of their oil and chemical research activities.

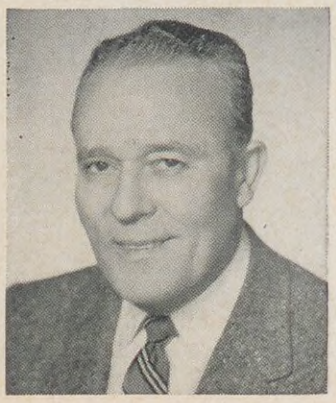


D. P. STEVENSON

D. P. STEVENSON will serve as Associate Director of Research at the Emeryville Research Center in consequence of Mr. Tamele's assignment in Amsterdam. Mr. Stevenson, who holds a Bachelor's degree in chemistry from the University of California and a Doctor's degree from Princeton University, joined Shell Development Company in 1942 as a Chemist at the Emeryville Research Center. He was named Assistant Department Head of the Physics Department in 1950. Mr. Stevenson was appointed Department Head of the Chemical Physics Department at Emeryville in 1952.

J. W. OTVOS

J. W. OTVOS will serve as Department Head of the Chemical Physics Department at the Emeryville Research Center replacing Mr. Stevenson. Mr. Otvos, who holds a Bachelor's degree in biochemistry from Harvard University and a Doctor's degree in physical chemistry from the California Institute of Technology, joined Shell Development Company as a Chemist in the Physics Department at the Emeryville Research Center in 1946. In 1952, he was named Assistant Department Head of the Spectroscopic Department and in 1956 he moved to the Chemical Physcis Department in the same capacity.



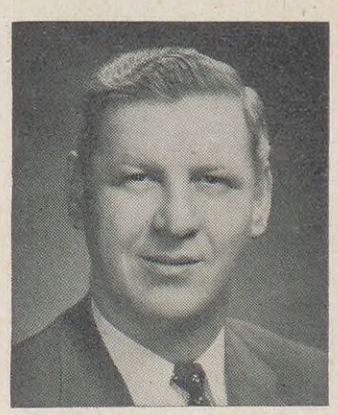
H. E. DISCHINGER

Shell Oil Company Pipe Line Department

H. E. DISCHINGER, Manager of Shell Oil Company's Pipe Line Department, Head Office, will retire June 30 after 31 years' service. Mr. Dischinger joined Shell Oil Company as a Design Engineer at the Wood River Refinery. Following a variety of positions in the Manufacturing, Marketing and Personnel Departments, he moved into the Products Pipe Lines Department in 1940 and became Manager in 1954.

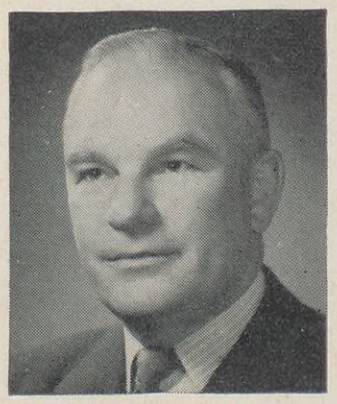
IN THE NEWS

V. K. LEONARD, General Superintendent, Products Pipe Lines-Indianapolis, transferred to New York in April and will become Manager of the Pipe Line Department, Head Office, on Mr. Dischinger's retirement. Mr. Leonard joined Shell Oil Company in 1939 as a Junior Engineer at the East Chicago Refinery. He started working in products pipe line positions in 1940 and was appointed Superintendent of the North Line in 1949. Mr. Leonard was appointed General Superintendent of Products Pipe Lines in 1954.



V. K. LEONARD

J. F. JOHNSON, JR., has been named General Superintendent, Products Pipe Lines-Indianapolis, replacing Mr. Leonard. Mr. Johnson joined Shell Oil Company in 1936 and served in several pipe line positions before becoming Superintendent of the East Line in 1949. He was appointed Northern Division Superintendent in 1955.



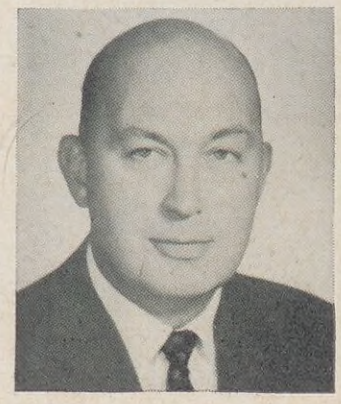
J. F. JOHNSON, JR.

Shell Oil Company Marketing Organization

C. B. MacGLASHAN has been named Sales Assistant to the Vice President, West Coast Marketing Divisions. Mr. MacGlashan joined Shell Oil Company in 1921 as a Service Station Attendant in Los Angeles. After serving in several positions in the West Coast Marketing Organization, he was appointed Sales Manager of the Oakland Division in 1937. In 1944, he was named Manager of the Light Oil Sales Department in the San Francisco Office. Mr. MacGlashan was appointed Manager of Fuel Oil-LP Gas Department in San Francisco in 1955. He will retain this managerial position in addition to his new assignment.

C. B. MacGLASHAN

F. W. SPOONER has been named Assistant to the Manager, National Sales Department of Shell Oil Company's Head Office Marketing Organization. Mr. Spooner, who holds a degree in mechanical engineering from Cornell University, joined Shell Oil Company in 1933 as a Clerk in the St. Louis Marketing Division. In 1940, he was transferred to the Head Office Marketing Department, then located in St. Louis, as a Mechanical Engineer. He became Division Lubricants Engineer of the Chicago Division in 1950 and later served as Industrial Products Manager, Albany Division, and District Manager in the Minneapolis and Cleveland Divisions. Mr. Spooner was appointed Sales Manager of the Sacramento Division in 1955.

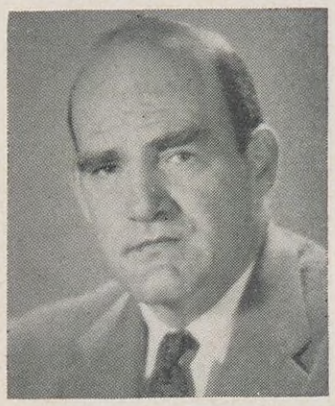


F. W. SPOONER

J. G. FULLER

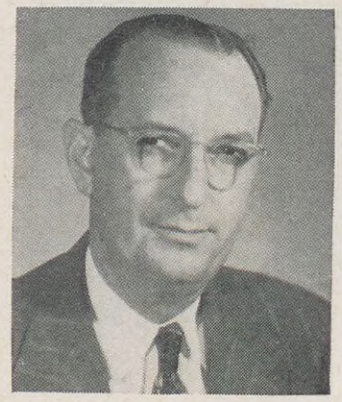
J. G. FULLER has been named Sales Manager of Shell Oil Company's Sacramento Marketing Division, replacing Mr. Spooner. Mr. Fuller, who holds a Bachelor's degree in mechanical engineering from the University of Wisconsin, joined Shell Oil Company as a Marketing Service Clerk in the Chicago Division in 1941. He was transferred to the Head Office Marketing Organization in 1943 as Technical Representative in the Lubricants Department. In 1946, he was named Lubricants Manager in the Indianapolis Division and later served as Industrial Products Manager at Indianapolis. Mr. Fuller was appointed Manager of the LP Gas Division of the Fuel Oil-LP Gas Department in Head Office Marketing in 1955.

Shell Oil Company Manufacturing Organization



C. S. MacGREGOR

C. S. MacGREGOR has been named Assistant Chief Engineer-Field at Shell Oil Company's Anacortes Refinery. A graduate of Purdue University with a Bachelor's degree in electrical engineering, Mr. MacGregor joined Shell in 1945 as an Engineer at the Wood River Refinery. The following year he was made an Assistant Foreman in the Utilities Department at the same location. In 1947, Mr. MacGregor was appointed a Senior Engineer and later that year became Assistant Manager of the Utilities Department. In 1953, he was transferred to the Houston Refinery as Manager of the Utilities Department.



E. J. NEWTON

E. J. NEWTON has been named Manager of the Utilities Department at Shell Oil Company's Houston Refinery, replacing Mr. MacGregor. Mr. Newton, who holds a Bachelor's degree in civil engineering from Rice Institute, joined Shell Oil Company in 1933 as a Laborer at the Houston Refinery. After serving in various positions in the Engineering and Cracking Departments at the refinery, he was named Chief Draftsman in the Engineering Department in June of 1946. Later the same year he was appointed Senior Engineer-Office. Mr. Newton was named Assistant Chief Engineer-Office in 1954.

W. G. EDDLEMAN

W. G. EDDLEMAN has been named Assistant Chief Engineer-Office at the Houston Refinery, replacing Mr. Newton. Mr. Eddleman, who holds a Bachelor's degree in mechanical engineering from the University of Illinois, joined Shell Oil Company in 1946 as a Junior Mechanical Engineer at the Wood River Refinery. After serving as an Industrial Engineer, Planning Engineer, Area Engineer and Project Engineer, Mr. Eddleman was appointed a Senior Project Engineer at Wood River in 1955.

Shell Chemical Corporation

W. H. PAULMAN

W. H. PAULMAN has been named Chief Engineer of Shell Chemical Corporation's Denver Plant. Mr. Paulman, who holds a Bachelor's degree in mechanical engineering from Stanford University, joined Shell Chemical Corporation in 1946 as a Junior Engineer at the Martinez Plant. He was named a Senior Engineer in the Martinez Alcohol Plant in 1951. Mr. Paulman was transferred to the Denver Plant in 1952 as Assistant Chief Engineer and in 1956 was appointed Acting Chief Engineer.

DELPHINIUM DESIGNER

A Shell Man Who Has Become an International Authority on Delphiniums Aims to Develop the Perfect Flower

M. M. Turner, Horticulturist at Shell Development Company's Modesto Agricultural Laboratory, is a flower expert who isn't satisfied with nature's design for the delphinium. For more than 30 years, Turner has been spending his spare time trying to create the perfect delphinium —something nature has not done.

"Perfect delphiniums would combine blossoms in a wide range of pure colors with scent," he says. The specifications seem simple, but the achievement is so difficult that it has eluded Turner for three decades.

It has eluded nature for a great deal longer. About 400 different species of delphinium grow in many areas of the world, but though some have blossoms of pure color and a few have scent, none combines Turner's ultimate flower.

Turner, who studied chemistry in New York at Pratt Institute and Columbia University, first became interested in delphiniums while he was the Connecticut neighbor of the famed photographer, Edward Steichen, also a delphinium expert.

"The tall stature and aristocratic look of the delphiniums appealed to me when I saw them in Steichen's garden," Turner says. In his spare time, he took up floriculture—the study of flowers—with emphasis on delphiniums and some interest in primroses and tuberous begonias.

At that time Turner was employed as a chemist in a Connecticut hat factory. However, impressed with California floral growths he had seen while visiting his brother, Turner moved there in 1945. Shortly thereafter, he was able to make his avocation his vocation; he joined the Modesto Laboratory staff as an assistant horticulturist.

At the Laboratory, Turner experiments with soil fumigants in greenhouse and field; in his home nursery, he delves into delphinium design. His method is to crossbreed various species to combine features he wants while eliminating those he does not want. This method is the major tool in floriculture; for example, the pink iris, now fairly common in home gardens, was unknown 10 years ago, but through crossbreeding blue, yellow and white

The skilled hands of Horticulturist M. M. Turner of Shell Development's Modesto Laboratory remove delphinium pollen with tweezers. His hobby is trying to get the perfect delphinium by crossbreeding.

Turner and his wife, Ruth, examine one of the results of his delphinium crossbreeding hobby in the garden of their Modesto, California, home. The statue in the background is of St. Francis of Assisi, patron saint of birds and flowers.

After Turner takes pollen from a flower with characteristics he wants, he uses a small brush to put the pollen on the "host" delphinium. If the crossbreed has good characteristics, he keeps its seeds for future use, but all do not produce seed.

varieties, a stronger, taller iris with pink blossoms was developed.

Turner crossbreeds his plants when they are in full bloom. First he removes all pollen from the "host" flower —the one used to grow the experimental delphinium. That step prevents the host from pollinating itself. Next Turner takes pollen from the delphinium that has characteristics he wants to develop in the host and puts it on the host's stigma to germinate seeds.

When the host produces seed, Turner plants it and waits to see if the blossoms bring the results he wants. But just getting blossoms with the characteristics he's looking for does not mean the crossbreeding is a success; many of the crossbred flowers may not produce seed. If they do not, the project meets a dead end.

To get delphinium varieties of unusual color or hardiness, Turner often spends his weekends hunting potential breeding stock in the Sierra Nevada mountains, the edge of the San Joaquin Valley or in the coastal mountains of California. (Delphiniums grow in almost all parts of the country, but grow best in a cool climate.) When he finds a plant he can use, he takes either seeds or a piece of root back with him.

He grows about 5,000 delphinium plants each year, and keeps records of the characteristics of each, such as color and scent (or lack of it). Scent presents a particularly knotty problem, because so few delphiniums have it. In his searches in the wilds of the California hills, Turner comes across few vagrants with fragrance. For crossbreeding that characteristic, he relies chiefly on a plant first found in Ethiopia, the *D. Wellbyi.*

Through the years Turner has developed delphiniums with many of the characteristics he seeks, including a branching type of flower stalk which is best for cutting. His system, which he recommends to amateur gardeners, starts with planting the seeds in a flat box containing about two inches

of light, porous soil. While the seeds are becoming seedlings, the box should be kept at a constant temperature of from 60 to 70 degrees; if the temperature tops 75 degrees, the seeds will not germinate.

After the seedlings sprout leaves, Turner transfers them to individual pots to help their growth. When they are about six inches high, he plants them from eight to 12 inches apart in his trial plot. Seeds put in a flat box in February or March should be ready for transfer to the garden by April, he says. As the plant grows taller, he ties the stalk to a bamboo stake to protect it from wind and rain.

He says the first blossoms usually appear in June, then the main flower spikes should be cut back after blooming to force side branches to bloom.

Turner terms the delphinium "one of the best garden perennials."

"It's been known to retain vitality for 15 years," he says. "Some varieties bloom as often as three times from the first of May to the first frost."

Here Turner is transferring a delphinium seedling from a flat seed box to a pot to give it more room to grow. When the seeds are first planted, their temperature must be kept between 60 and 70 degrees for germination.

Two of the species of delphinium in which Turner is most interested are the scented D. Wellbyi, on his left, and the D. Hansenii in the pot.

Turner ties the stalks of newly-planted delphiniums to bamboo stakes in his trial plot to keep them growing straight.

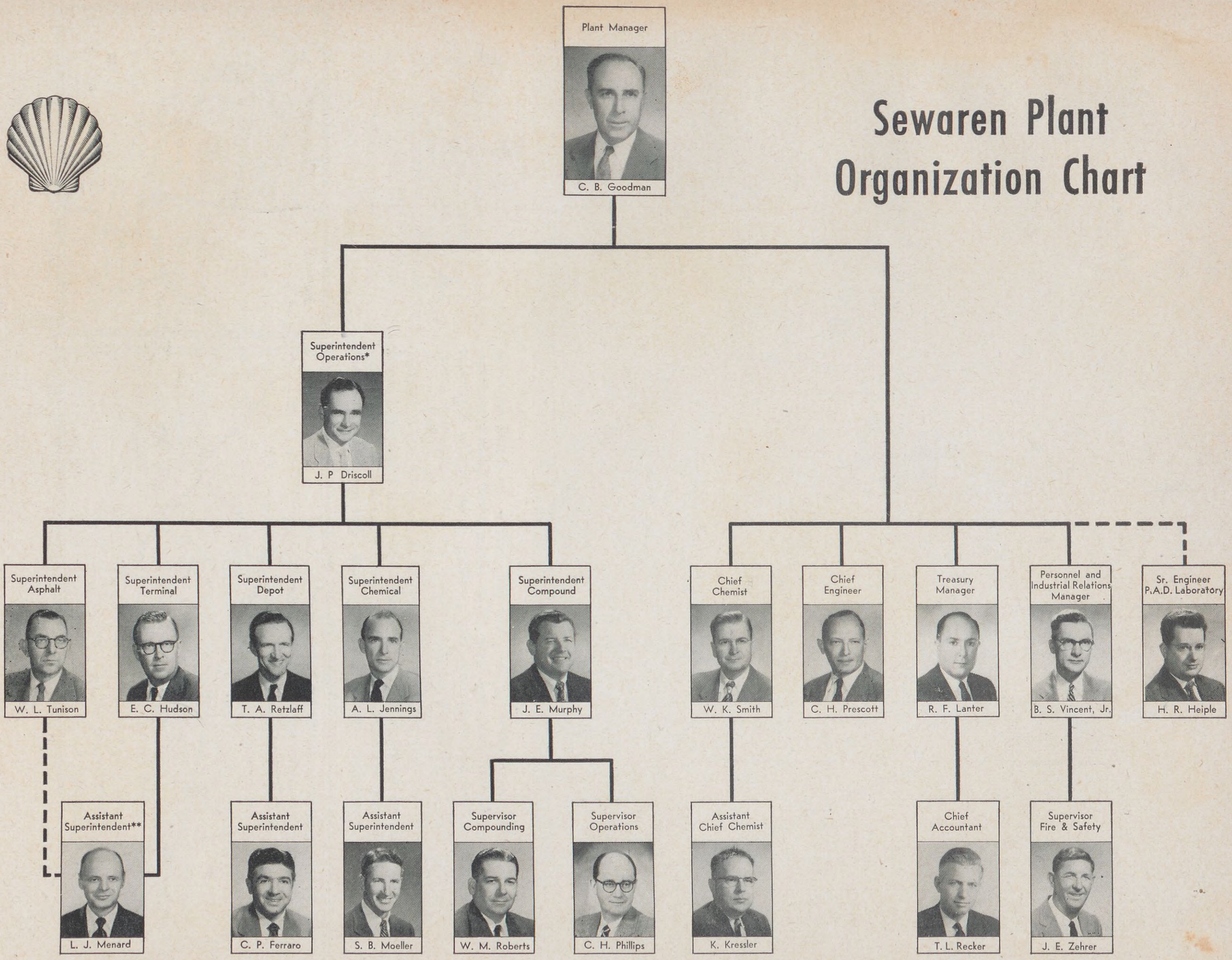
The twenty-ninth and thirtieth in a series of organization charts

Shell Oil Company

May—1957

Sacramento Marketing Division Organization Chart

Sewaren Plant Organization Chart

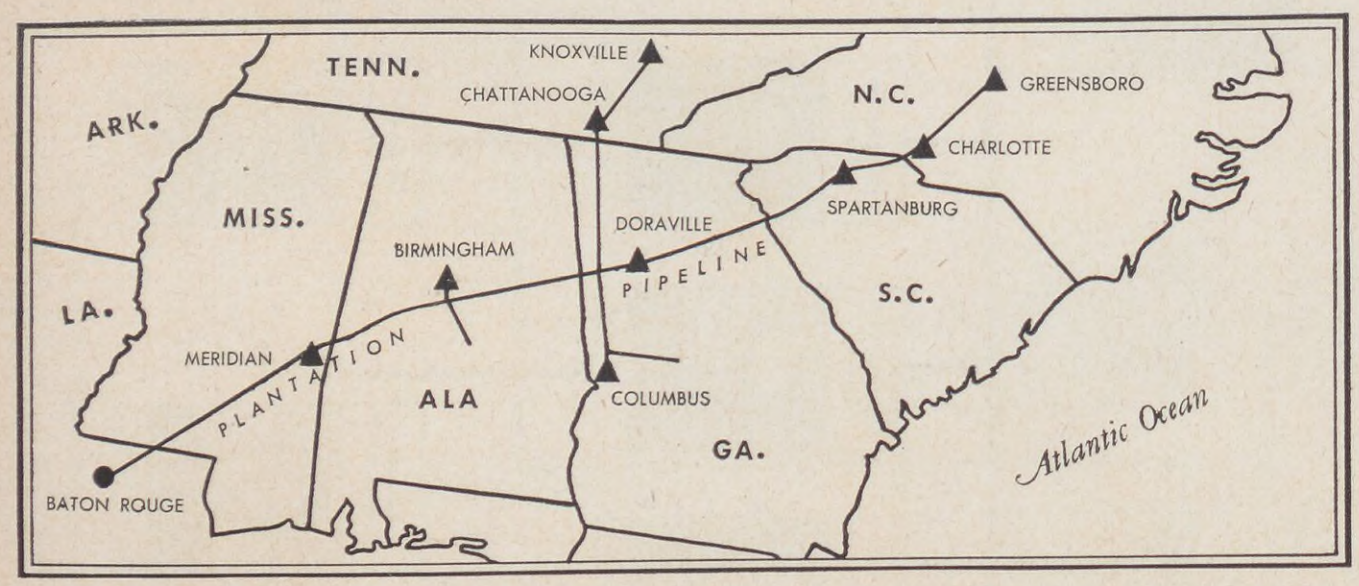


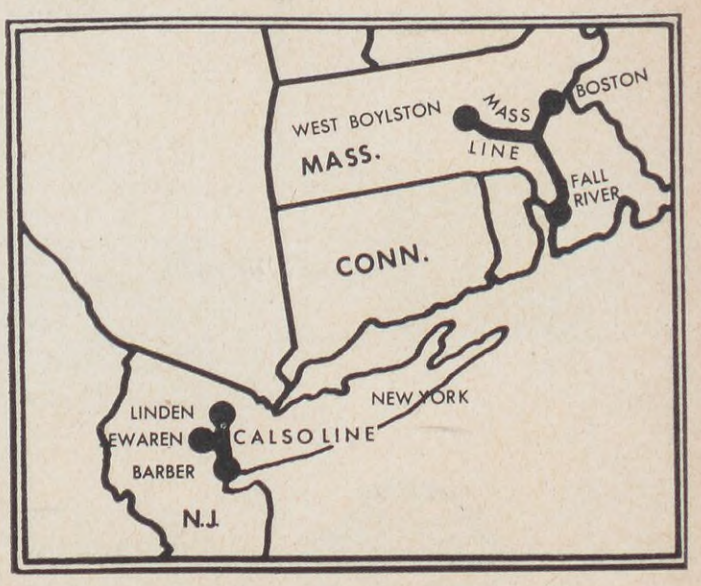
* Assumes Manager's responsibilities during his absence

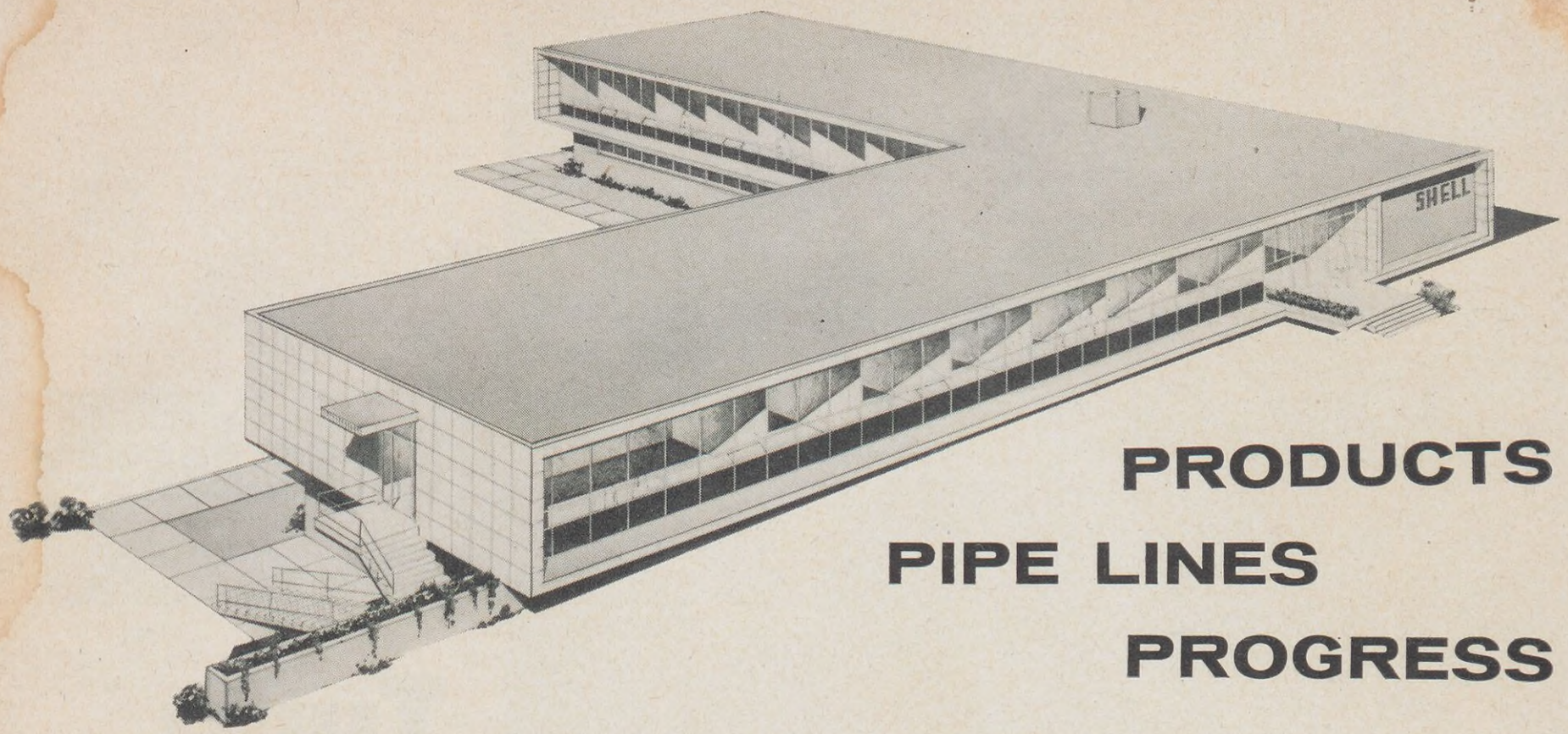
** Assumes charge in both departments in absence of Superintendents

Shell's Wood River Refinery is the point from which the North and East Lines travel to Argo, Illinois, and Lima, Ohio (shown above). These two lines are owned by Shell and carry only Shell's refined products. The Wolverine Line (also above) is jointly owned by Shell and two other companies, and is operated by Shell's Pipe Line Department. The section of the Inland System (in which Shell has part interest) from Lima to Springfield and Columbus, Ohio, is operated by Shell. Eight Plantation Pipe Line Terminals (shown below) are owned and operated by Shell. Both the Calso and Massachusetts Lines (lower right) are joint ventures, with Shell operating the latter.

LEGEND
- ▲ TERMINALS—SHELL
- △ TERMINALS—OTHERS
- ● PUMP STATIONS
- ☆ REFINERIES







PRODUCTS PIPE LINES PROGRESS

New Indianapolis Headquarters Centralizes Operation of Shell Products Lines

The nerve center for products pipe lines which annually carry more than 70 million barrels of Shell products to markets east of the Rocky Mountains is now located in a recently-completed masonry-and-glass building on the outskirts of Indianapolis, Indiana.

The new headquarters building increases the operating efficiency of Shell Oil Company's Pipe Line Department by centralizing the operation of widely-scattered products pipe lines. The installation is occupied by a completely integrated organization which includes these departments: Operating, Engineering, Rights-of-Way, Personnel, Treasury, Purchasing-Stores and Administrative. In addition, the building includes a dispatching office (recently moved from New York), a research and development laboratory and a product control laboratory.

From the new building, Shell's General Superintendent of Products Pipe Lines, and his staff, direct the shipment of Shell products through lines serving cities in 13 states from Illinois to the Atlantic seaboard. Also, the headquarters controls the operation of the East Line, North Line, Wolverine Line and a section of the Inland System (see large map at left).

All pump stations and terminals on these Shell-operated lines are connected by a teletype circuit for quick and efficient communication. Four semi-automatic pump stations on the East Line are operated directly by the Indianapolis headquarters with a telemeter push-button control.

The Shell-operated lines carry as many as 22 separate products at one time. The successive tenders of products are pumped through the pipe at about four miles an hour. As they move along the pipe, the tenders act as liquid plugs with vertical ends—each churning within itself but not mixing appreciably with its neighbors.

To control the products moving through the lines, the headquarters building has a dispatching board which gives Shell dispatchers a continuous picture of each of the products lines and tells them accurately how much of what product is where at a given time.

The board is a long counter-like device which has markers along it to represent the various stations and terminals on the North, East, Wolverine and Inland Lines. Each product traveling through the lines is represented by a colored paper tape, scaled so that an inch equals a given number of barrels of product in a tender. The tapes are moved along the board to show the progress of products through the lines. When a product is removed at a terminal, an appropriate length of tape is taken off the board. A large panel above the dispatching board contains a scale model of the pipe lines. Vari-colored lights on the panel indicating pumping stations and terminals along the lines are lighted only when the installations are in operation, enabling the dispatcher to get an over-all picture of the working units at a glance.

Besides operating the four pipe lines mentioned above, the Indianapolis headquarters directs the supply of Shell products to eight Company-owned and operated terminals on the Plantation Pipe Line, which runs from Louisiana to North Carolina. Also, the headquarters directs the shipment of products on the Calso Line in New Jersey and the Shell-operated Massachusetts Line.

Standing on metal racks at the stern of a tuna ship, a crew often hauls in daily 50 tons of tuna, tossing them onto the boat deck. The tuna are drawn to the surface by live bait, then strike at barbless hooks concealed in the anglers' lures.

Fueling The Tuna Fleet

Shell Diesel Fuel Powers San Diego's Tuna Clippers In Their Year-Round Search of the Seas

The Shell marine service station on the San Diego dock sells four million gallons of diesel fuel annually to the tuna clippers. It is owned by Shell jobbers George Alameda and Louis Brito.

A jet of steam into a tin can half a century ago changed the San Diego, California, tuna industry from several small craft working the waters a few miles offshore to a sea-cruising fleet fishing the Pacific Ocean from California to the equator.

More than 150 tuna vessels now sail from San Diego harbor, each with a crew of about 20 full-time fishermen. More than four million gallons of Shell diesel fuel, pumped from the Shell marine service station on the docks, power many of the craft the year round. The dock station, a jobber operation owned by George Alameda and Louis Brito, is supplied by Shell Oil Company's San

T. C. MANGUS
Pacific Coast Area
Production

J. McFARLAND
Head Office
Transp. & Supplies

J. MILFORD
Martinez Refy.
Engineering

N. MILLER
Pipe Line Dept.
East Chicago, Ind.

C. W. MITCHELL
Tulsa Area
Production

H. G. MOE
Martinez Refy.
Engineering

R. N. POSGATE
Houston Area
Production

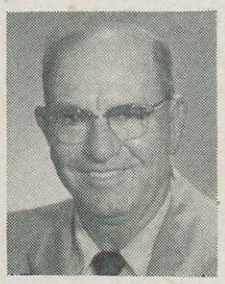
H. M. POTTER
Pacific Coast Area
Production

C. H. RADLOFF
Portland Div.
Operations

L. M. RAMSEY
New Orleans Area
Production

E. J. SAND
New Orleans Area
Production

L. SCALES
Wilmington Refy.
Compounding



T. W. SHIELDS
Houston Refy.
Engineering

L. F. SMITH
Wood River Refy.
Compounding

F. L. SOMERS
Wilmington Refy.
Dispatching

H. G. STUVELING
Pacific Coast Area
Production

F. M. L. SWAIM
Pacific Coast Area
Production

V. W. SWARTFAGER
San Francisco Div.
Marketing Service

T. VIVRETTE
Wood River Refy.
Engineering

G. L. WADE
Wood River Refy.
Thermal Cracking

C. E. WAGNER
Wilmington Refy.
Catalytic Cracking

J. P. WALLACE
Shell Pipe Line Corp.
Texas-Gulf Area

R. V. WARDEN
Shell Pipe Line Corp.
Texas-Gulf Area

W. B. WARFIELD
Martinez Refy.
Engineering

E. R. WATSON
Shell Pipe Line Corp.
West Texas Area

J. L. WEAVER
Wood River Refy.
Engineering

C. M. WILLIAMS
Wood River Refy.
Compounding

R. J. WRASPIR
Seattle Div.
Operations

C. D. YOUNG
Pacific Coast Area
Production

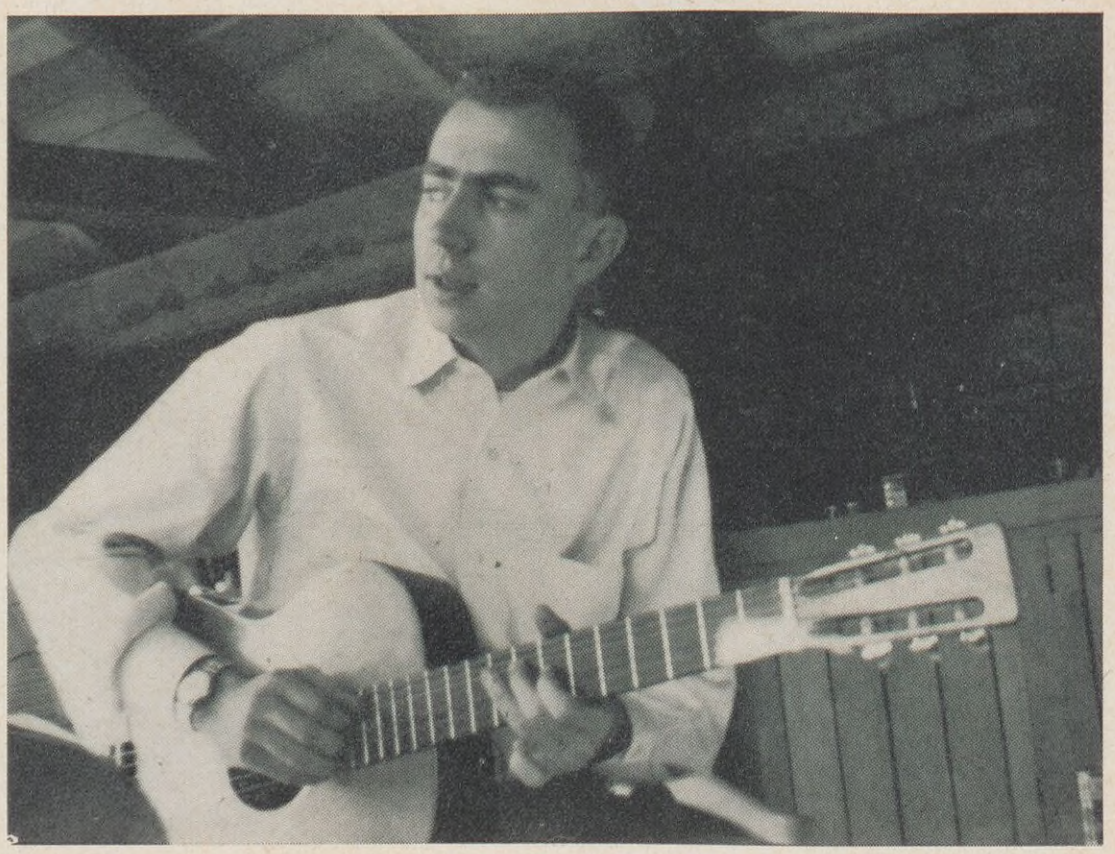
H. E. YOUNG
Wood River Refy.
Engineering

S. J. ZIMMERMAN
Detroit Div.
Sales

SHELL COAST TO COAST

Ribbon Winner

Marie Farley, Stenographer in the Corpus Christi Division of the Houston Exploration and Production Area, leans forward in the saddle to accept one of the three ribbons she won with her Tennessee walking horse "Lucky" in a recent Corpus Christi horse show. Mrs. Farley, who has been riding as a hobby for eight years, bought "Lucky" two years ago. She plans to enter the registered palomino mare in several shows and street parades this year, including the Corpus Christi Police Rodeo.



Guitar Star

A. B. Hall, Chemist in Shell Chemical Corporation's Martinez Chemical Plant Laboratory, is a guitarist who taught himself to play so well that he recently gave two concerts of flamenco (Spanish Gypsy) music —one over a Berkeley, California, radio station and the other on the campus of the University of California. Hall began teaching himself guitar in 1948, and now is an experienced performer, both solo and with small groups, in playing traditional jazz and flamenco music.

On the Air Four short-wave radio "hams" at the Anacortes Refinery have a hobby that not only allows them to make friends around the world, but also proves invaluable in times of emergency.

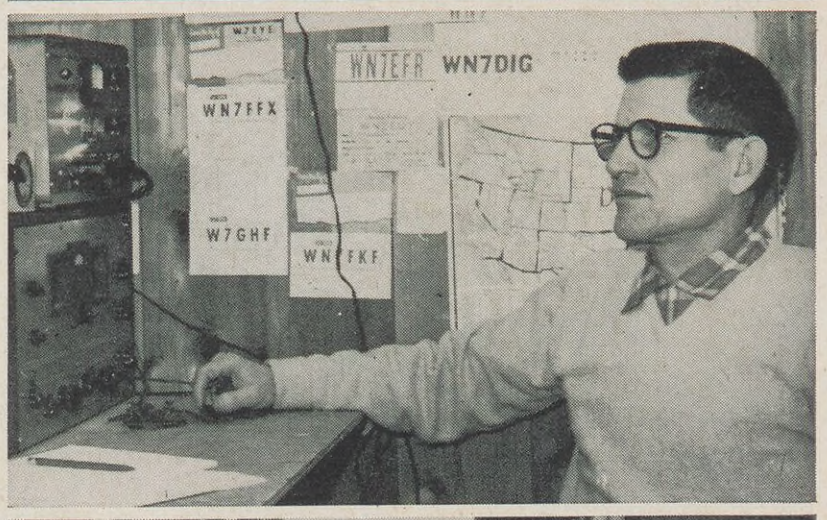
The amateur radio operators pictured at right are, top to bottom, Operator D. S. Strock, Shift Foreman A. H. Carlisle, and in bottom picture, Operating Assistant L. C. Beckman, left, and Operator R. F. Taylor.

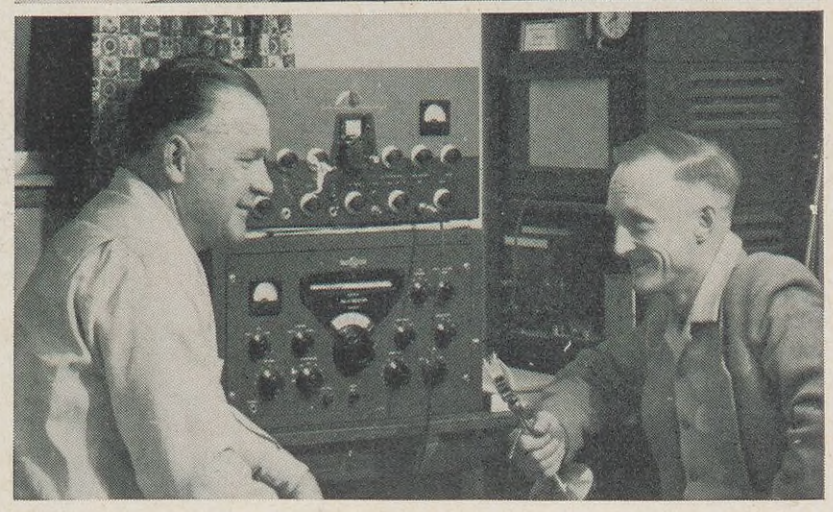
Strock has received citations from the American Radio Relay League for his radio work during floods in 1949 and 1950. The crisis of each flood lasted more than 36 hours, during which Strock and other hams along the Skagit River remained at their sets relaying messages. During his years as a ham, Strock has contacted more than 3,000 other amateur operators around the world.

Carlisle, though he has held his license only two years, has been interested in radio since 1936, when he was in the Air Corps. Since he has been on the air at Anacortes, he has contacted about 150 fellow hams in the Pacific Northwest area and in Canada.

Beckman is the radio veteran of the quartet. He has held a license since 1920. He made his first receiver in 1916 from a rolling pin wound with wire, a crystal detector and the family's telephone receiver. (He says when the telephone rang he had to do some rapid rewiring to remove the receiver from the radio and return it to the phone.)

Taylor also is a relative newcomer to the ham field; he has held his license for three years. During World War II he did radio work with the 14th Armored division. After the war was over, he operated an amateur station in Germany near the French border, and often contacted hams in the United States.





Life-Saver

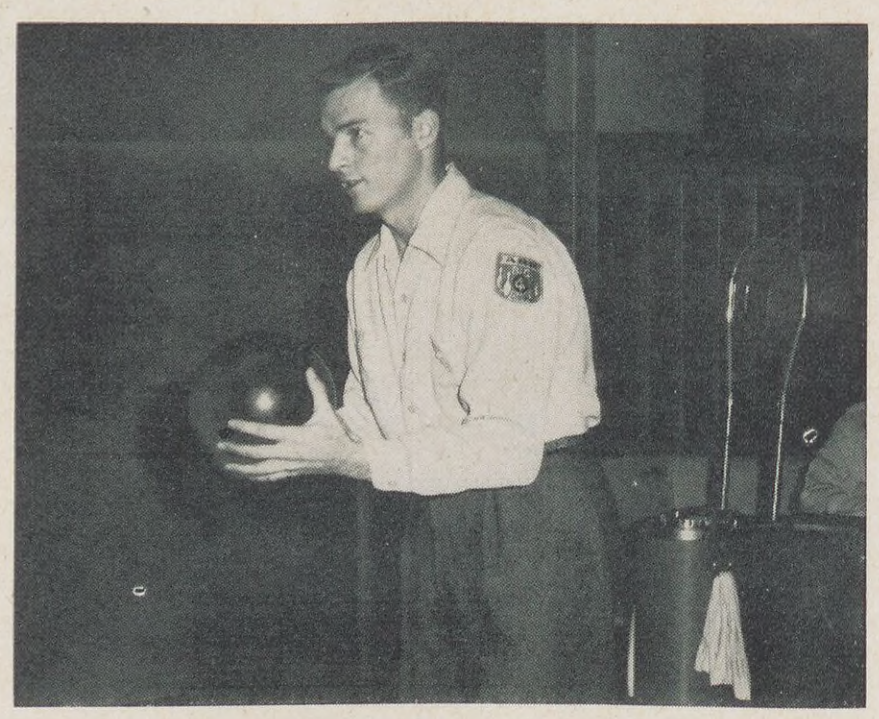
E. J. Cornette, Salesman in the Rockford District of the Chicago Marketing Division, recently saved the life of a 13-year-old boy who accidentally wounded himself while hunting. The boy, bleeding heavily from a chest wound, stopped Cornette on a Wisconsin rural road. Cornette drove him 25 miles to the nearby town of Crandon, where he bandaged the wound with undershirts and handkerchiefs. A state police car then escorted Cornette over 38 miles of icy road to the nearest physician and hospital. There Cornette gave a blood transfusion which doctors said saved the boy's life.

Outstanding Citizen

Dr. T. J. Kelly, Wood River Refinery Medical Director, is shown above holding the plaque presented to him as citizen of the year by the Wood River Veterans of Foreign Wars Post. He also was presented with a framed citation which praised his "unselfish devotion to duty and willingness to accept responsibility."

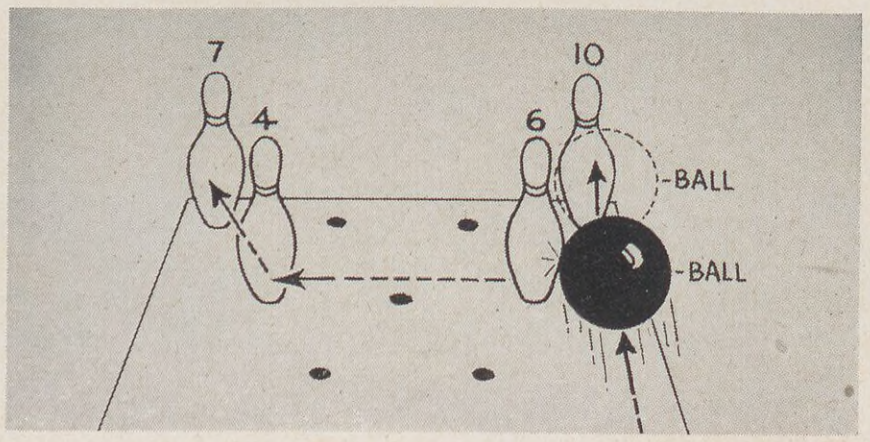
New Lawyer

W. E. Garst, below, Landman in the Houston Division Land Department of the Houston Exploration and Production Area, recently received his law degree after attending night classes at South Texas College of Law, Houston, since June of 1951. Here he holds his license to practice law in the state of Texas, presented after he passed his bar examination. He also has a business administration degree from Southwest Missouri State College, Springfield.



Split Hit

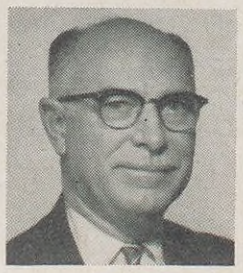
C. R. Nickell, Junior Draftsman in the Billings Exploration Division of the Denver Exploration and Production Area, recently accomplished a bowling rarity—he converted the 4-6-7-10 split into a spare. As shown in the diagram at right, Nickell nicked the six-pin just enough to slide it into the four-pin, which in turn downed the seven-pin. For the feat, performed during league competition, he received a special "Big Four Club" shoulder patch from the American Bowling Congress. Nickell has been bowling for two years and has an average of 152.

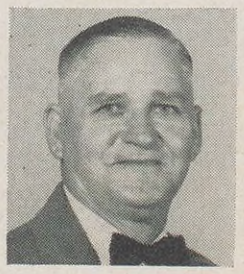


Service Birthdays

Forty Years


R. W. BOZEMAN
Pacific Coast Area
Production


H. C. GOLDSTONE
San Francisco Office
Purchasing


M. J. MATHERNE
Norco Refinery
Engineering


W. S. WORKMAN
Pacific Coast Area
Production

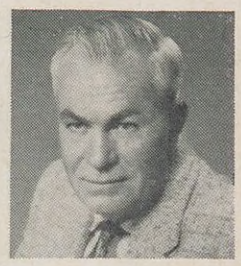
Thirty-Five Years


B. V. CLARK
Tulsa Area
Production


A. GLOVER
Midland Area
Production


R. H. FISHER
Midland Area
Gas


C. L. LaFORCE
Pacific Coast Area
Pers. & Indus. Rel.


R. W. LOOP
Pacific Coast Area
Gas


G. E. McCRACKEN
Wood River Refy.
Distilling


G. H. OVERBY
Tulsa Area
Production


L. L. SARGENT
Pacific Coast Area
Production


H. P. SHOCKLEY
Shell Pipe Line Corp.
Mid-Continent Area


J. SORSOLI
Martinez Refinery
Compounding

Thirty Years


M. G. BARNER
Shell Pipe Line Corp.
Mid-Continent Area


O. R. BENNETT
Wilmington Refy.
Catalytic Cracking


J. W. CONNER
Shell Pipe Line Corp.
West Texas Area


H. T. CORNELIUS
Tulsa Area
Production


G. J. DELANEY
Houston Refy.
Engineering


H. R. DONOHOO
Pacific Coast Area
Purchasing-Stores


D. E. DOONEY
Portland Division
Treasury


G. C. FAUBION
Tulsa Area
Production


R. B. FLINK
Shell Chemical Corp.
Martinez Plant


W. L. HUMES
Shell Pipe Line Corp.
Texas-Gulf Area


H. A. KOHFELD
Sacramento Div.
Sales


F. R. LOVERING
Midland Area
Production


R. U. LUGIBIHL
Cleveland Div.
Operations


B. D. MARTIN
Pipe Line Dept.
Coalinga, Calif.


F. J. METEER
Wilmington Refy.
Engineering


F. E. NIX
Head Office
Expl. & Prod.


R. F. NIXON
Houston Area
Exploration


W. S. NOVIKOFF
Pipe Line Dept.
East Chicago, Ind.

Thirty Years (cont'd)

O. OVERTON
Pipe Line Dept.
Blue Mound, Illinois

K. PERMANN
Shell Development Co.
Emeryville

A. L. PETERSON
Houston Area
Exploration

J. A. SCHILLINGER
Wood River Refy.
Control Laboratory

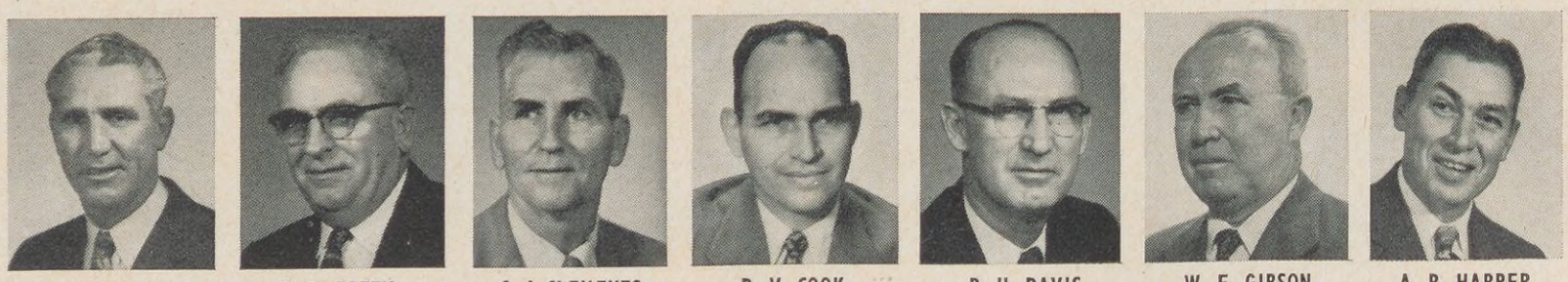
H. F. SIMMERS
New Orleans Area
Production

M. T. STORREY
Wilmington Refy.
Engineering

W. C. TAYLOR
Wilmington Refy.
Engineering

E. E. WINCKEL
Pacific Coast Area
Production

Twenty-Five Years



H. C. BACASTOW
Pipe Line Dept.
Zionsville, Indiana

O. R. BATTY
Pipe Line Dept.
Litchfield, Illinois

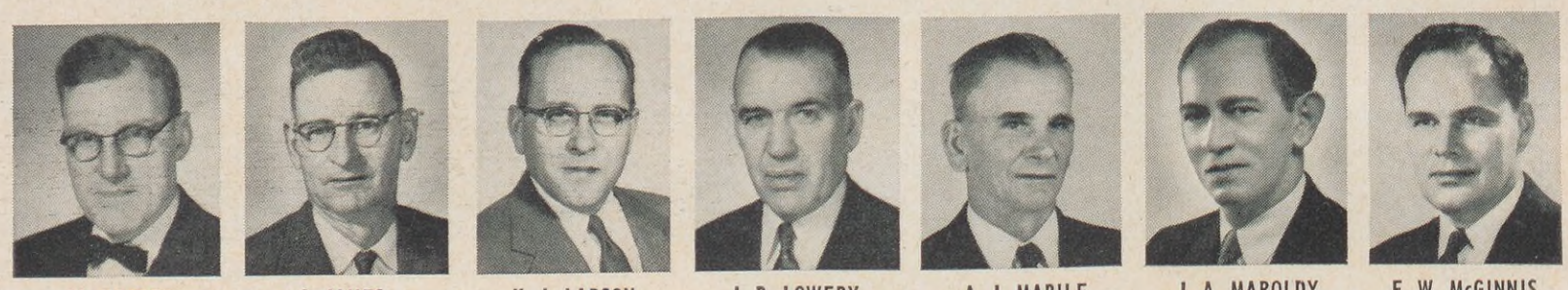
C. A CLEMENTS
Houston Refinery
Dispatching

D. V. COOK
Shell Chemical Corp.
Houston Plant

R. H. DAVIS
Pacific Coast Area
Treasury

W. E. GIBSON
Shell Chemical Corp.
Torrance Plant

A. R. HARPER
Shell Pipe Line Corp.
Mid-Continent Area



W. HOPPER
Head Office
Manufacturing

S. JAMES
New Orleans Area
Production

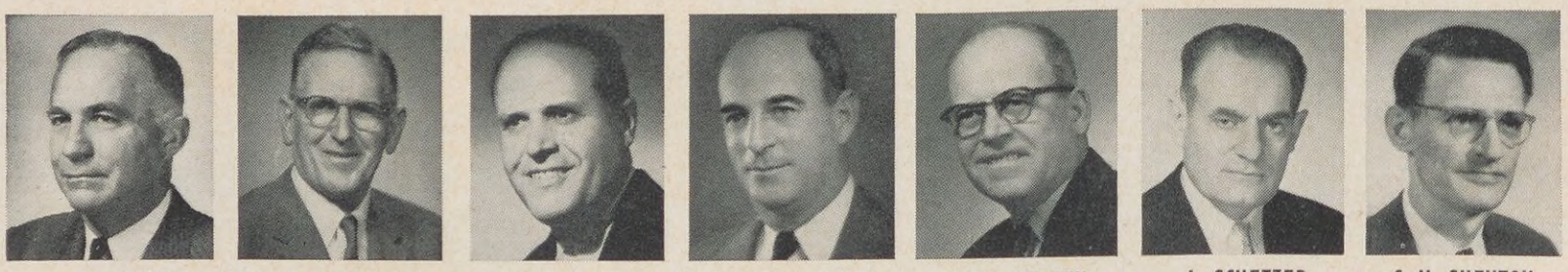
K. J. LARSON
Minneapolis Div.
Treasury

J. B. LOWERY
Head Office
Marketing

A. J. MABILE
Norco Refy.
Engineering

J. A. MAROLDY
New York Div.
Marketing Service

F. W. McGINNIS
Cleveland Div.
Sales



A. Q. OBERG
St. Louis Div.
Sales

A. B. OVERMOHLE
Los Angeles Div.
Operations

J. D. PACE
New York Div.
Operations

F. E. PASSARELLA
New York Div.
Operations

C. S. REDDEN
Boston Div.
Sales

L. SCHETZER
Head Office
Marketing

C. M. SHENTON
Baltimore Div.
Marketing Service

V. D. SKINNER
Cleveland Div.
Treasury

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

W. W. STEVENS
Sacramento Div.
Sales

P. C. THOMAS
Vice President
Midwest Mktg. Divs.

T. A. WEINZEL
Shell Chemical Corp.
Houston Plant

W. G. WESTGATE
Boston Div.
Operations

SHELL OIL COMPANY

Head Office

20 Years

T. F. Shaffer ..... Marketing
F. H. Staub ..... Marketing

10 Years

A. G. Adams ..... Marketing
Frances E. Costa ..... Public Relations
E. J. Greene, Jr. ..... Public Relations
R. Lawson ..... Marketing
R. E. Olson ..... Transp. & Supplies
Elizabeth R. Schoenmetz ..... Financial
Ann M. Spilich ..... Financial

HOUSTON OFFICE

10 Years

R. G. Goodnight ..... Transp. & Supplies

Exploration and Production

CALGARY AREA

20 Years

L. O. Wiringa ..... Exploration

DENVER AREA

20 Years

G. W. Kasserman ..... Land
G. J. Yonkman ..... Land

15 Years

A. T. Guernsey ..... Production
Ruth R. Johnson ..... Exploration

10 Years

J. E. Brookshire ..... Exploration

HOUSTON AREA

20 Years

C. C. Koenig ..... Production
E. M. Moore ..... Production
J. D. Vanya ..... Production

15 Years

H. Dickson ..... Production
M. R. Norris ..... Production

10 Years

A. Kloss ..... Gas
R. A. Pendery ..... Pers. & Indus. Rel.
H. E. Reddick ..... Treasury
R. J. Thorson ..... Gas
W. W. Watson ..... Production

MIDLAND AREA

20 Years

W. J. McKeel ..... Gas
A. D. Meek ..... Production
D. H. Mitchell ..... Production

15 Years

R. H. Norton ..... Production

10 Years

W. O. Anderson ..... Production
J. C. Caussey ..... Transport
J. L. Clark ..... Production
J. B. Harrell ..... Production
J. M. Hutto ..... Treasury
L. S. Koehl ..... Gas
H. M. Purkaple ..... Gas
J. K. Rindsig ..... Exploration
L. Taylor ..... Land
W. W. Weems ..... Treasury

NEW ORLEANS AREA

20 Years

J. E. Carter ..... Production
I. J. Dugas ..... Production
H. R. Hebert ..... Production
H. H. Jatzlau ..... Production
N. M. Jolet ..... Production
R. F. Porter ..... Production

15 Years

A. T. Giroir ..... Production
B. B. Hughson ..... Exploration

10 Years

S. B. Bier ..... Treasury
R. A. Bourg ..... Exploration
J. C. Cantrelle ..... Purchasing-Stores
I. J. Courtney ..... Exploration
R. C. DeBlanc ..... Production
J. W. Dunnehoo ..... Production
F. J. Guilfou ..... Production
I. J. Hebert ..... Production
L. J. Malbrough ..... Exploration
R. J. Ordello ..... Exploration
K. J. Parent ..... Production
I. W. Pipes ..... Exploration
G. A. Price ..... Exploration
L. S. Smith ..... Exploration

PACIFIC COAST AREA

20 Years

D. C. Erwin ..... Treasury
R. E. Millett ..... Production
J. P. Murphy ..... Production
O. H. Niemela ..... Production
Mary D. Williams ..... Treasury

15 Years

J. C. Cadet ..... Production
J. M. Fillman ..... Production
H. A. Fox ..... Production
N. Garner ..... Production
J. W. Moran ..... Production
M. W. Sherbet ..... Treasury

10 Years

O. M. Donathan ..... Production
H. Holland ..... Production
Dorothy A. Masten ..... Production

TULSA AREA

20 Years

J. V. Pocock ..... Production
J. J. Rogers ..... Production
W. M. Veach ..... Production

15 Years

H. G. Cockburn ..... Gas
A. A. Noble ..... Exploration
M. L. Sessing ..... Treasury

10 Years

H. H. Hart ..... Land

Manufacturing

ANACORTES REFINERY

15 Years

W. A. Mitchell ..... Zone B

10 Years

J. S. Rynaard ..... Technological

HOUSTON REFINERY

20 Years

F. M. McClain ..... Engineering

15 Years

W. P. Bryan ..... Thermal Cracking
W. O. Childs ..... Engineering
D. W. Dial ..... Engineering
J. C. Grissom ..... Utilities
L. J. Hallmark ..... Pers. & Indus. Rel.
B. L. Jones ..... Research Laboratory
R. L. Pollock ..... Lubricating Oils
L. B. Race ..... Engineering
C. A. Schaeffer ..... Utilities
R. H. Schultz ..... Thermal Cracking
W. H. Shields ..... Engineering

10 Years

J. R. Ryan ..... Thermal Cracking

MARTINEZ REFINERY

20 Years

D. H. Clemons ..... Research Laboratory
W. T. Senuty ..... Engineering

15 Years

B. E. Gordon ..... Research Laboratory
C. Stevenson ..... Distilling

10 Years

S. Andrewsen ..... Control Laboratory
J. Fleishman ..... Engineering
H. M. Knowles ..... Lubricating Oils
G. F. McGovney ..... Cracking
S. Mercurio ..... Compounding
A. L. Trujillo ..... Control Laboratory

NORCO REFINERY

15 Years

H. L. Hendricks ..... Technological

10 Years

S. H. Adams ..... Engineering
O. R. Banquer ..... Engineering
R. J. Boe ..... Stores
R. J. Carmouche ..... Catalytic Cracking
M. N. Champagne ..... Gas
H. J. Deslatte ..... Engineering
H. J. Falgout ..... Engineering
R. J. Guidry ..... Marine Loading
E. P. Knobloch ..... Engineering
P. R. Lambert ..... Engineering
R. J. Landry ..... Catalytic Cracking
J. F. Madere, Jr. ..... Engineering
J. J. Marino ..... Engineering
E. J. Millet ..... Gas
S. A. Petit ..... Engineering
N. L. Roques ..... Engineering
C. J. Triche ..... Engineering
W. J. Vicknair ..... Engineering

WILMINGTON REFINERY

20 Years

L. O. Brown ..... Control Laboratory

15 Years

I. R. Buchan ..... Engineering
N. A. Dean ..... Engineering
E. Fore ..... Engineering
L. G. Jackson ..... Engineering
W. M. Legg ..... Engineering
J. C. Malone ..... Engineering
G. Mathis ..... Engineering
R. L. Odom ..... Engineering
E. L. Shook ..... Engineering
G. E. Webster ..... Engineering

10 Years

W. J. Christie ..... Dispatching
C. B. Curtis ..... Engineering
T. E. Dalgleish ..... Engineering
A. R. Gray ..... Alkylation
V. L. Saulsberry ..... Dispatching
E. D. Shallis ..... Engineering
J. O. Workman ..... Thermal Cracking

WOOD RIVER REFINERY

20 Years

C. C. Berry ..... Engineering
H. H. Dinwiddie ..... Engineering
W. E. Gillespie ..... Control Laboratory
J. B. Raines ..... Engineering
E. Sehnert ..... Engineering
J. B. Williams ..... Engineering

15 Years

J. T. Ahrling ..... Engineering
C. P. Baumgartner ..... Engineering
R. J. Bishop ..... Gas
L. W. Brakemeyer ..... Control Laboratory
C. F. Brenkendorff ..... Engineering
J. S. Bull ..... Engineering
A. L. Coalson ..... Catalytic Cracking
L. W. Condellone ..... Utilities
G. S. Cornelison ..... Thermal Cracking
G. S. Crider ..... Engineering
C. L. Denton ..... Engineering
O. J. Espenscheid ..... Engineering
E. L. Gillespey ..... Distilling
J. Granger, Jr. ..... Engineering
W. L. Grove ..... Dispatching
E. D. Hanson ..... Engineering
P. J. Hardy ..... Engineering
J. A. Harris ..... Fire & Safety
H. C. Hochmuth ..... Thermal Cracking
G. R. Hudson ..... Treasury
T. O. Hughes ..... Engineering
C. L. Ingersoll ..... Control Laboratory
J. A. Jenkins ..... Engineering
C. M. Johnston ..... Dispatching
W. A. Jurgena ..... Alkylation
G. H. Koch ..... Engineering
W. E. Kress ..... Light Oil Treating
F. H. Langwisch ..... Compounding
E. Lee ..... Engineering
G. M. Luke ..... Engineering
G. W. McClery ..... Engineering
R. H. McKenzie ..... Catalytic Cracking
B. B. Magruder ..... Utilities
W. J. Miller ..... Engineering
W. R. Mott ..... Engineering
O. M. Muskopf ..... Research Laboratory
G. W. Pickerel, Jr. ..... Dispatching
D. L. Rhea ..... Compounding
E. O. Schaefer ..... Distilling
J. H. Scott ..... Engineering
J. H. Smith ..... Engineering
E. A. Steelman ..... Catalytic Cracking
L. C. Tegmeier ..... Engineering
F. Urban ..... Engineering
H. Wagner, Jr. ..... Engineering
C. E. Wise ..... Control Laboratory
A. A. Yann ..... Engineering
G. R. Zimmerman ..... Dispatching

10 Years

C. S. Allen, Jr. ..... Engineering
M. J. Arth ..... Aromatics
J. B. Baker ..... Research Laboratory
H. D. Baumeister ..... Stores
K. L. Bogart ..... Thermal Cracking
J. T. Ceresa ..... Lubricating Oils
D. L. Crammer ..... Catalytic Cracking
J. D. Dodd ..... Pers. & Indus. Rel.
E. F. Frisse ..... Engineering
W. F. Frizzell ..... Gas
W. N. Hausman ..... Aromatics
J. Henderson ..... Engineering
R. D. Huntress ..... Lubricating Oils
C. W. Hogue ..... Dispatching
L. V. Isom ..... Engineering
O. S. Kerr ..... Aromatics
H. L. Kirby ..... Stores
A. M. Knopik ..... Dispatching
W. F. Ragsdale ..... Thermal Cracking
R. H. Robertson ..... Light Oil Treating
E. K. Sedlacek ..... Engineering
L. A. Steckel ..... Fire & Safety
J. W. Thompson ..... Engineering
B. Traina ..... Lubricating Oils
P. Tucker ..... Engineering
W. W. Tucker, Jr. ..... Control Laboratory
W. B. Williams ..... Lubricating Oils

Marketing

MARKETING DIVISIONS

20 Years

Marjorie Hoag ..... Albany, Treasury
P. Nanes ..... Boston, Sales
J. J. Sullivan ..... Chicago, Sales
P. Zvara ..... Cleveland, Operations
H. E. Winkler .. Indianapolis, Marketing Serv.
H. J. Rasmussen ..... Portland, Operations
H. H. Gebhardt .. San Francisco, Operations

15 Years

C. M. Swagler ..... Cleveland, Sales
Leslie S. C. Ing ... Honolulu, Marketing Serv.
C. G. Upham ... Minneapolis Marketing Serv.
Virginia L. Peekema ... Sacramento, Treasury
R. L. Fisher ..... St. Louis, Operations
Rhoda A. Moore .. San Francisco, Operations
D. W. Parker ..... San Francisco, Operations

10 Years

J. E. Beauvais ..... Albany, Sales
M. S. Martin ..... Atlanta, Operations
W. A. Colman ..... Baltimore, Sales
G. J. Kraski ..... Baltimore, Operations
R. I. Nilsson ..... Chicago, Sales
R. C. Peters ..... Chicago, Operations
L. M. Clark, Jr. ..... Detroit, Sales
J. H. Ray ..... Detroit, Operations
M. E. Rogers ..... Indianapolis, Operations
M. A. Patrek ..... Minneapolis, Treasury
D. T. Swanson .. Minneapolis, Marketing Serv.
T. R. Bakey ..... New York, Real Estate
E. J. Harrington ..... New York, Operations
F. R. Kutak ..... New York, Sales
V. J. Ryan ..... New York, Operations
G. A. Nelson ..... Portland, Treasury
C. P. Piccardo ..... Sacramento, Treasury
D. L. Wissmann ..... St. Louis, Operations
R. W. Carr ..... Seattle, Sales
E. C. Lee ..... Seattle, Operations
H. Woods ..... Seattle, Operations

SEWAREN PLANT

20 Years

D. P. Montazzoli ..... Compound

10 Years

T. F. Barry ..... Engrg. & Maint.
J. M. Bernard ..... General Plant
M. Boris ..... Compound
E. H. Decker ..... Engrg. & Maint.
R. M. Dolman ..... Engrg. & Maint.
M. Hapstak ..... Engrg. & Maint.
A. Lehman ..... Engrg. & Maint.
W. F. Masyada ..... Engrg. & Maint.
A. Rusznak ..... Engrg. & Maint.
C. E. Worth ..... Terminal

Pipe Line Department

20 Years

F. E. Andrew ..... Wood River, Ill.
J. H. Ross ..... Los Angeles, Calif.

15 Years

R. Hames ..... Coalinga, Calif.

10 Years

V. E. Archer ..... Indianapolis, Ind.
R. Christensen ..... Simi, California
A. J. Marchal ..... Holliston, Mass.
G. A. Miller ..... Wood River, Ill.
A. E. Rafalski ..... East Chicago, Ind.

SHELL CHEMICAL CORPORATION

20 Years

F. S. Du Bose ..... Shell Point
H. J. Enea ..... Shell Point
B. C. Quackenbush ..... Ventura

15 Years

Gail E. Ely ..... Dominguez
J. E. Penick, Jr. ..... Head Office
C. N. Barker ..... Houston
A. E. Kachel ..... Houston
J. R. Lacy ..... Houston
F. S. Smith ..... Houston
N. H. McKay, Jr. ..... Martinez
H. J. Robbins ..... Martinez
C. C. Groves ..... Shell Point
R. E. Lewis ..... Shell Point
E. S. Martin ..... Torrance

10 Years

F. J. Schlick ..... Dominguez
Jane E. Chase ..... Head Office
W. J. Tally ..... Head Office
F. O. Gerbode ..... Houston
W. J. Barlettani ..... Martinez
L. R. Della Rosa ..... Martinez
G. F. Henion ..... Martinez
T. Davis ..... Norco
A. P. Melancon ..... Norco
R. J. Richard ..... Norco
Marie S. Robertson ..... Shell Point

SHELL DEVELOPMENT COMPANY

20 Years

L. L. Gore ..... Emeryville
W. H. Peterson ..... Emeryville
D. H. Sarno ..... Emeryville
C. G. Schwarzer ..... Emeryville
G. A. Stenmark ..... Emeryville
E. F. Gay ..... Houston

15 Years

C. Barter ..... Emeryville
J. M. Gordon ..... Emeryville
A. E. Handlos ..... Emeryville
W. B. Hartsock ..... Emeryville
D. L. Johnston ..... Emeryville
D. Melillo ..... Emeryville
H. K. Peck ..... Emeryville
D. P. Stevenson ..... Emeryville
G. T. Williamson ..... Emeryville
W. B. Wilson ..... Emeryville
G. M. Good ..... Head Office

10 Years

C. M. Monroe ..... Denver
M. E. Doyle ..... Emeryville
Carol S. Garner ..... Emeryville

SHELL PIPE LINE CORPORATION

20 Years

R. W. Clemmons ..... Head Office
M. M. Maxwell ..... West Texas Area
J. D. Williams ..... Texas Gulf Area

15 Years

B. H. Berry ..... Mid-Continent Area
H. H. Burnett ..... West Texas Area
E. C. Gray ..... West Texas Area
H. C. Herring ..... Mid-Continent Area
J. R. Hughes ..... Mid-Continent Area
A. E. Ingram ..... Mid-Continent Area
C. A. Niswonger ..... Rocky Mountain Div.
O. J. Sappington ..... West Texas Area

10 Years

J. O. McClanahan ..... Mid-Continent Area
C. N. Prater ..... West Texas Area
E. S. Walker ..... Rocky Mountain Div.